VOLVO WHEEL LOADERS

L150E, L180E, L220E

VOLVO

POWERFUL, DEPENDABLE AND EASY TO OPERATE

Thanks to a new generation of engines, Volvo wheel loaders are now both more powerful and easier to operate. Using all-new technology, we have been able to build machines that meet the full range of tougher environmental legislation, while at the same time retaining high productivity and low fuel consumption.

Entirely new generation of Volvo engines

The new machines are the result of Volvo's constant drive to remain one step ahead of our competitors, to always fulfil our customers' wishes and demonstrate our care for the environment. The new machines are equipped with an entirely new generation of Volvo engines. They utilise every single drop of fuel, provide full power from idling speed, and meet the tougher new demands on reduced emissions. Together with the fully automatic transmission, the load-sensing hydraulic system, Volvo's patented TP linkage and the highly comfortable Volvo Care Cab, you get machines that are as strong and cost-effective as they are driver-friendly and easy to operate.

Fast and comfortable work cycles

Since we at Volvo develop both the engines and the machines in-house, we can tailor engine performance to suit each application. This means higher productivity in all situations, the operator gets a smooth, manoeuvrable machine and we can ensure low emissions, low fuel consumption and low noise levels.

The interplay between the high-torque engine and the automatic transmission promotes fast response in all situations. At the same time, the steering system permits gentle and precise manoeuvring. With TP linkage, our wheel loaders penetrate even the most demanding material, and the high breakout force and penetration make it very easy to fill the bucket. This promotes fast and comfortable work cycles.

	Specifications L150E	Specifications L180E	Specifications L220E
Engine	Volvo D12D LD E3 Stage III A/Tier 3	Volvo D12D LA E3 Stage III A/Tier 3	Volvo D12D LB E3 Stage III A/Tier 3
Max power at	23,3–28,3 r/s (1400–1700 r/m)	23,3–26,7 r/s (1400–1600 r/m)	26,7 r/s (1600 r/m)
SAE J1995 gross	210 kW (286 hp)	235 kW (320 hp)	261 kW (355 hp)
ISO 9249, SAE J1349 net	209 kW (284 hp)	234 kW (318 hp)	259 kW (352 hp)
Breakout force:	184,7 kN*	214,7 kN**	224,5 kN***
Static tipping load at full turn:	15 150 kg*	18 130 kg**	20 660 kg**
Buckets:	3,1–12,0 m^3	3,7–14,0 m^3	4,5–14,0 m^3
Log grapples:	1,6–3,5 m^2	1,6–3,7 m^2	1,7–4,0 m^2
Operating weight:	23,0–26,0 t	26,0–29,0 t	31,0–33,0 t
Tires:	26.5 R25 775/65 R29	26.5 R25 775/65 R29	29.5 R25 875/65 R29

* Bucket: 4,0 m^3 straight edge with bolt-on edges, tires 26.5 R25 L3, standard boom.
** Bucket: 4,6 m^3 straight edge with bolt-on edges, tires 26.5 R25 L3, standard boom.
*** Bucket: 5,4 m^3 straight edge with bolt-on edges, tires 29.5 R25 L4, standard boom.


VOLVO
VOLVO

THREE OF THE WORLD'S MOST PRODUCTIVE AND PROFITABLE WHEEL LOADERS

The Volvo L150E, L180E and L220E are not just three of the most productive loaders on the market. They are also three of the most cost-effective in existence. There are several reasons for this: Volvo's renowned dependability, our excellent financing packages, the low fuel consumption, the high resale value and the minimal service requirement. All this makes them safe investments, no matter which model you choose. All three are productive and profitable solutions that give you a whole lot of machine for your money.

L150E – flexible and quick
The Volvo L150E is a lively, economical and versatile production loader. It is excellent for loading trucks, feeding crushers, earthmoving and timber handling. Our comprehensive range of attachments and the machine's efficiency make this a flexible production loader that is built to handle the toughest of operations.

The L150E is a pleasure to operate. It is both powerful and nimble, and the powerful new engine responds instantly to your commands.

L180E – both agile and sturdy
The Volvo L180E is an outstandingly robust and powerful loader, perfect for tough operations both before and after the crusher. It is also dynamic, agile and easy to operate, making it equally effective for loading and moving material. Its high breakout torque, the fast-responding hydraulics, the swift, precise movements and the low fuel consumption make it the most productive loader in its class.

The L180E also has one of the market's highest breakout torque at the top of the lift range, making it an excellent timber handler for quickly and efficiently unloading a timber truck.

L220E – more power and higher productivity
The Volvo L220E is an extremely powerful and easy to operate machine, the obvious choice if you want to move as much material as possible, as quickly and cheaply as possible.

The L220E excels at loading shot rock. With Volvo's TP linkage, it easily forges ahead into even the most demanding material. Breakout torque and penetration ability are impressive, making it very easy to fill the bucket.


VOLVO
VOLVO
VOLVO
L70E

THE ART OF MOVING GRAVEL AND MOUNTAINS AS QUICKLY AND CHEAPLY AS POSSIBLE

Volvo wheel loaders provide you a way to move more tons per hour; a powerful engine combined with the fully automatic transmission that gives instant response at even the lowest engine speed. Under the most demanding conditions, Volvo's in-house manufactured driveline always promotes maximum pulling power when and where it's needed most. The result? The highest productivity and lowest cost per tone available anywhere.

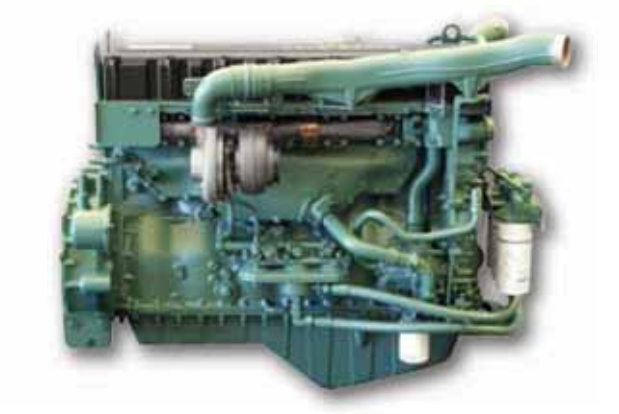
Rapid response means higher productivity and lower operating costs
With Volvo's new generation of engines, our wheel loaders provide alert response even from really low rpm. Even at idling speed, no less than 92 percent of maximum torque is available. The machine responds quickly and powerfully, resulting in excellent pulling power, low fuel consumption and minimum emissions. This together with the engine's long service life promotes unsurpassed productivity and profitability.

Automatic shifting with an eye on both engine revs and ground speed
Volvo's Countershaft transmission provides smooth and effective gear shifting in all gears. All the operators has to do is to select forward or reverse – the Automatic Power Shift (APS) automatically selects the right gear to suit current engine revs and ground speed.

Volvo's axles keep the machine firmly on the ground
Volvo's in-house engineered axles and drivetrain are tailormade to suit each other and dimensioned to provide top dependability. The front axle features a hydraulically operated 100% differential lock. On the L220E the rear axle is mounted in a maintenance-free axle housing cradle, which means the operator does not have to carry out lubrication and there is no downtime in operation.

Gentle and powerful brakes
The Volvo L150E, L180E and L220E are all equipped with Volvo's hydraulically operated, circulation-cooled wet disc brakes. This system is both powerful and gentle in operation, while ensuring long service life.

For extremely hot and demanding conditions, the machine can also be equipped with external axle oil cooling*, which makes brake cooling even more effective. What is more, the oil is filtered, which considerably extends the service interval.



Engine
- The Volvo D12D is a turbocharged low emission engine with an air-to-air Intercooler and electronically controlled fuel injection, an overhead camshaft and four valves per cylinder – a package that provides extremely high torque from low engine rpm.
- The engine's computer system communicates with the other on-board systems to ensure the best possible interaction.
- This makes for optimum performance with faster response, lower fuel consumption and faster work cycles.
- The electronically controlled hydrostatic fan operates only when required, which saves fuel.

Transmission
- Volvo's enhanced, tried and tested torque converter and the electronically controlled engine provide unparalleled hill-climbing properties.
- With the 3rd generation Volvo APS the driver can choose between four different gear shifting programs, including the new AUTO function, which adjusts to suit current conditions and selects the most effective gear changing program for the job at hand, with regard to both the operator's driving style and the work cycle.
- The 3rd generation Volvo APS features fully automatic gear changing 1–4, which means the driver only has to choose between forward and reverse.

Axles
- Two-level warning for high axle oil temperature provides effective component protection and longer service life.
- 100 percent lockable differential lock is standard on the front axle, giving the best possible traction even in difficult ground conditions.
- Lubricated-for-life rear axle bearings require no additional greasing, which promotes higher uptime and longer service life (applies only to the L220E)

Brakes
- Fully hydraulic twin-circuit system for increased safety.
  Circulation-cooled wet disc brakes ensure efficient braking and provide long service life.
- Electronic brake test in Contronic provides information about the condition of the brakes.
- Brake-wear indicator on each wheel for simple monitoring of brake lining wear.
- Automatic application of parking brake if pressure is too low.

* Optional equipment


VOLVO
L90E


VOLVO
L220E

PRECISION ALLIED TO POWER

Torque-Parallel linkage, load-sensing hydraulics, light steering and high stability allows the operator equal measures of precision and power. The load-sensing hydraulic system ensures that hydraulic oil is pumped around the system only when and where it's needed. This means greater efficiency and lower fuel consumption.

Superior breakout torque throughout the lifting range
Volvo's unique, patented and highly reliable TP linkage lifting arm system provides optimum breakout torque and excellent parallel action throughout the lifting range. The system is remarkably easy to operate and the driver can efficiently handle heavy materials with full power and control at all attachment positions.

Load-sensing hydraulic system
Volvo wheel loaders are equipped with an intelligent load-sensing hydraulic system. two variable piston pumps provide exactly the flow rate and pressure required at any given moment in time, distributing the power to where it is needed, when it is needed. When no flow is required in the hydraulic system, all engine power is diverted to the driveline. In addition to quick response, this system provides smoother operation, lower fuel consumption and more precise control over the machine and load, even at low engine revs. You always get the same power, irrespective of revs.

Easy to operate precision steering
The steering is light and precise, even at low revs. The load-sensing hydrostatic steering system is activated only when the steering wheel is turned. This results in a highly efficient system where no fuel and no power are used unless unnecessary.

Long wheelbase gives smooth progress and reassuring stance
The long wheelbase makes our wheel loaders smooth and stable even on uneven surfaces. Volvo's comfortable Boom Suspension System, BSS* with its gas/oil accumulators, absorbs shocks and boosts productivity by up to 20 percent.

TP linkage
- Unique patented lifting arm system that provides two solutions and benefits in one: Excellent breakout torque and excellent parallel action throughout the lifting range.
- Intelligent, compact geometry keeps the bucket close to the machine and promotes superb stability in tasks involving loading, carrying and transporting.

Load-sensing hydraulic system
- The load-sensing hydraulic system ensures that hydraulic oil is pumped around the system only when and where it's needed. This means greater efficiency and lower fuel consumption.
- Pilot-operated hydraulics allow precise control of the attachments, making life easier, and safer, for the operator.
- Volvo's comfortable Boom Suspension System (BSS)* increases machine stability in all applications and promotes faster, more comfortable work cycles with less waste. It also increases productivity by up to 20 percent.

Steering
- Load-sensing steering only utilises power when it is needed, which saves fuel.
- E-series loaders feature an accumulator system, providing stable, smooth steering and greater safety.
- With the optional Comfort Drive Control (CDC)* you can handle steering and gearchanging conveniently via handy controls fitted in the left-hand armrest.

Frame
- Rugged frame design for secure mounting of components reduces vibration and increases service life.
- A long wheelbase permits more stable progress, which further improves capacity for fast and comfortable work cycles.
- The three-point mounting of the engine and transmission in the E-series promotes a low noise level and less vibration.
- Volvo's frame steering is a tried and tested concept that is very service-friendly and renowned for its long service life.

* Optional equipment


VOLVO
RDM 670
LAXO

ONLY A SATISFIED OPERATOR IS A PRODUCTIVE OPERATOR

Volvo Care Cab reinforces Volvo's reputation as a leader in operator environments and cab comfort. We never forget the operator inside the machine. A comfortable, operator-friendly and safe environment makes the workday easier and more productive.

A clean and pleasant workplace
A good in-cab climate is a precondition for the driver to stay alert and remain efficient throughout long shifts. Volvo offers by far the market's cleanest cab environment, thanks to our filter system where all air entering the cab is filtered twice. And with the stepless controls, you can choose to recirculate already tempered air instead of taking in all the air from outside. In truly dusty conditions, you can choose to go down to taking just 10 percent of air from the outside, instead of the usual 100 percent as in the case of our competitors.

Volvo's powerful air-conditioning* provides a pleasant temperature year-round, regardless of outdoor conditions.

A comfortable workplace
We have a large number of comfortable seats to choose between, all with a wide variety of adjustment scope for best possible individual comfort. All the instruments are easy to overview and all the important information is gathered together in front of the driver. Forward and reverse control is duplicated in both the lever on the left of the steering wheel and in the hydraulic system lever console on the right.

Thanks to Comfort Drive Control (CDC)* the driver can handle the steering and forward/reverse shifts via convenient controls in the left-hand armrest. This is an excellent way to avoid repetitive movements and static muscular tension. In order to avoid monotonous movements, the driver can at any time switch between lever and steering wheel control.

A quiet workplace
Thanks to the ingenious cab suspension with its viscous cab elements and the effective sound insulation, the Volvo Care Cab is one of the quietest cabs on the market. Owing to the reduction of disruptive noise and annoying vibration, the driver is less tired by the end of his shift.

Care Cab
- Unbeatable driver's environment with one of the market's best in-cab air filtration systems.
- Pleasant interior with first-class finish. Simplifies maintenance and makes it easy to keep things clean.
- Adjustable seat, armrest, hydraulic lever console and steering wheel* for optimum driver comfort and high production.
- All the service platforms and foot-steps feature improved anti-slip surfaces. Angled steps for better entry access.
- Standard-equipped with viscous cab mountings made of silicone and rubber to dampen cab vibration and increase driver comfort.
- Large windows, slim pillars and a sloping engine compartment cover provide good all-round vision, which contributes to even higher safety.
- Large laminated windscreen enhances safety.
- Visibility-optimised TP linkage provides unobstructed view of the attachments.
- Powerful halogen lights front and rear provide a uniform spread of light and good visibility over the entire working area.

* Optional equipment


TURBO
30 s
60 s
VOLVO

FAST SERVICE FOR MAXIMUM UPTIME

Few machines work as hard and in as tough environment as wheel loaders. What is more, they have to do so round the clock, every day of the year – without unplanned downtime. In order to keep stops as short as possible, Volvo provides warranties and service systems that are tailored to your particular machine and suited to the toughest imaginable operating conditions - reducing downtime and maximizing uptime to produce more over the life of the machine.

Service-friendliness means more time over for productive work
We assist you in your daily maintenance by providing simple and quick electronic checks of oil and fluid levels. What is more, all the filters and service points are easily accessible. All the hatches are large and easy to open. Hydraulic couplings and quick-release connectors are gathered conveniently together for fast and simple inspection.

Contronic takes control
The machine's operation and performance are regulated and monitored by Volvo Contronic, a built-in and highly reliable electronic network consisting of three computers. The system works on three levels.

Level 1: The system keeps an eye on the machine's functions in real-time. Should a potential problem occur, Contronic alerts the operator instantly. A service technician can then connect his Contronic service tool to the system and trace the fault on the spot.

Level 2: All operational data is stored and can be used to analyze the machine's performance and trace its history since the most recent service. This information is then presented in the Machine Tracking Information System (MATRIS), providing valuable information for fault tracing and service measures.

Level 3: The machine's functions can be optimised according to changes in working conditions via the Contronic service display. Thanks to the VCADS Pro analysis and programming tool, the machine's functions and performance can be monitored and adapted to suit changing conditions.

MATRIS stores operational data and shows how the machine is working. This provides valuable information for fault-tracing and service.

Contronic electronic monitoring system
- Over-riding computerised electronic and monitoring system, dependable and easy to use.
- Coordination of reliable engine and machine computers for optimum performance and safety.
- Display information in three categories – current operating data, warning texts and error messages.
- Available in 13 languages, monitors fuel consumption, cycle times and service intervals.
- Electronic checking of important oil and fluid levels from inside the cab simplifies daily inspections and increases operating reliability.
- The system has built-in safety functions that automatically limit the engine's torque and power output in the event of major faults so as to protect the engine and transmission and thus reduce the risk of consequential damage.

Maintenance and uptime
- Electronic monitoring of fluid levels simplifies and reduces the time needed for daily inspections, and enhances reliability.
- Long lubrication intervals means more time for productive work.
- Contronic alerts the operator if there are problems and provides a diagnosis for relevant action.
- Suitably designed steps and platforms and well-positioned grab-handles make for safe and convenient service.
- Breather filter provides component protection for the transmission, axles, fuel tank and hydraulic tank.
- Volvo's oil-bath pre-filter* in combination with the standard air filter is far more effective in dusty and dirty operating conditions.
- Easily accessible hatches and service points make service easier.

* Optional equipment


L220E


L220E


L220E

COMMITMENT TO MANKIND AND NATURE

Quality, safety and environmental care are Volvo's core values. We regard our commitment to the environment as a natural part of our entire operation, whose goal is maximum productivity and efficiency at the lowest cost, and with the least possible effect on the environment. Volvo's customers get one of the market's cleanest and most reliable wheel loaders.

Powerful, dependable and environmentally optimised
With the new generation of diesel engines, Volvo has taken yet another giant stride forward to reduce emissions, without any dramatic changes that reduce engine power. This is possible thanks to the new V-ACT (Volvo Advanced Combustion Technology). The system's secret lies in its advanced method of fuel injection, its enhanced electronic control of engine operation, and its smart system for exhaust gas recirculation. The new engine generation makes the L150E, L180E and L220E more environmentally optimised, without affecting fuel consumption.

More than 95 percent recyclable
Volvo wheel loaders are almost entirely recyclable. Components such as the engine, transmission and hydraulic system are re-engineered and reused in our Parts Exchange Programme. For us, this is an obvious and natural part of our undertaking.

Quality
- Air from all the major components is vented via easy to replace filters, preventing dirty air from entering the transmission, axles, fuel tank and hydraulic tank.
- High-quality components for demanding environments, including Volvo's renowned articulated frame with a bearing design known for its long service life.
- All electrical cables are well protected against water, dirt and chafing, routed in sturdily attached conduits with rubber-encapsulated connectors and terminal caps. All the most vital components are well protected inside the cab.
- Volvo wheel loaders are designed for simple service and maintenance. Easily accessible components form the basis for shorter service and maintenance downtime and longer service life.

Safety
- Twin circuit wheel braking system that meets all the ISO 3450 requirements, electronic brake testing in Contronic and simple inspection via wear indicators contribute to guaranteed safe and effective brake function.
- The parking brake is activated automatically when the engine is switched off, this guarantees that the machine is always braked when it is parked.
- The Volvo Care Cab has been tested and approved according to the requirements in ROPS ISO 3471 and FOPS ISO 3449.
- Warning signs offer clear information in the form of symbols and illustrations.
- Excellent all round visibility gives effective control over the entire working area.
- Sloping engine compartment cover gives better visibility to the rear.
  Volvo wheel loaders have steps and platforms treated with an anti-slip surface, as well as well positioned hand rails.

The environment
- The low revving, high performance D12D engine meets all existing emissions requirements according to stage III A regulations in Europe and Tier 3 in the USA.
- Volvo wheel loaders are manufactured in environmentally certified factories according to ISO 14001.
- The load-sensing hydraulic system contributes to low fuel consumption.
- Volvo wheel loaders are more than 95% recyclable, calculated per vehicle weight.
- Low interior and exterior noise levels.


VOLVO
Luftfilter Air filter
Luftfilter Filtre à air
11172907

VOLVO GENUINE ATTACHMENTS – FOR A PERFECT MATCH

Volvo genuine buckets and wear parts are built to the same quality standard as our wheel loaders. As a machine manufacturer, we have both the knowledge and information to design our attachments as an integral part of the loader. Machines and attachments that are made for each other obviously work best together.

Wide range of attachments
Volvo offers a wide range of attachments and wear parts, including the new Volvo Tooth System. Volvo genuine attachments are designed for all types of applications, from handling timber to breaking out hard and rocky materials, such as shot rock.

Standard bucket with teeth

Spade nose rock bucket with teeth

Standard bucket with edge savers

Timber grapple/Sorting grapple

Side cutters with extra hardened and tempered steel wear plates provide high abrasion resistance (up to 500 Brinell)

Bucket shell and side plates (up to 400 Brinell)

Reinforced load transition structures reduce wear and increase useful life

Base cutting edge manufactured from abrasion resistant steel (500 Brinell)

Replacable bolt-on bottom wear plates (500 Brinell)

Bolt on edge savers and segments help protect the cutting edge from excessive wear (500 Brinell)

Volvo Tooth System with bolt on or weld on adapters for excellent penetration and reduced bucket wear (up to 515 Brinell)

WHATEVER THE JOB, WE HAVE THE TOOLS TO GET IT DONE – VOLVO OPTIONAL EQUIPMENT

Boom Suspension System (BSS)

Comfort Drive Control (CDC)

Automatic Lubrication System

3rd and 4th hydraulic functions*

Volvo offers a full range of equipment that has been specifically designed for your business. You pick the options that are right for you and your application to increase productivity, economy, comfort, serviceability and safety.

Selection of Volvo optional equipment.

Boom Suspension System (BSS)*
BSS effectively absorbs shocks and reduces the bouncing and rocking that often occurs when operating on rough ground. Volvo's Boom Suspension System offers two different operating modes for faster cycle times, higher productivity and improved operator comfort in all types of extraction applications.

Comfort Drive Control (CDC)*
When operating with CDC, there is a significant reduction of repetitive and tiring steering wheel movements. Comfort Drive Control provides comfortable operation of steering and shifting with user-friendly controls integrated in the left armrest. CDC is especially effective in short cycle loading applications, where continuous operation with the steering wheel can cause fatigue and static muscle strain.

Automatic lubrication system*
Volvo's factory mounted central lubrication system automatically lubricates service points on the machine so you don't have to. Uniform application of lubricant ensures that the lubrication points always have the correct amount of grease. It cuts maintenance costs and downtime, which means higher productivity and reduced operating costs.

3rd and 4th hydraulic functions*
Volvo wheel loaders can be equipped with third and fourth hydraulic functions, which are operated with additional control evers.

These functions are necessary when there's a need to operate a third and fourth hydraulic function at the same time; such as when using a timber grapple with hydraulic heel kick-out.

* Optional equipment

THE VOLVO L150E, L180E, L220E IN DETAIL

Engine
12 liter, 6-cylinder straight turbocharged diesel engine with 4 valves per cylinder, overhead camshaft and electronically controlled unit injectors. The engine has wet replaceable cylinder liners and replaceable valve guides and valve seats. The throttle application is transmitted electrically from the throttle pedal or the optional hand throttle. Air cleaning: three-stage. Cooling system: Air-to-air intercooler and hydrostatic, electronically controlled fan.

L150E

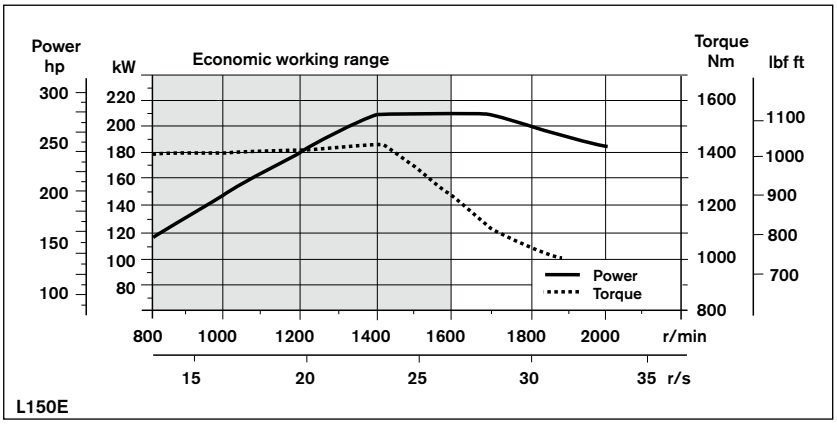
Engine	Volvo D12D LD E3
Max power at	23,3–28,3 r/s (1400–1700 r/min)
SAE J1995 gross	210 kW (286 hp)
ISO 9249, SAE J1349	209 kW (284 hp)
Max torque at	23,3 r/s (1400 r/min)
SAE J1995 gross	1432 Nm
ISO 9249, SAE J1349	1423 Nm
Economic working range	800–1600 r/min
Displacement	12 l

L180E

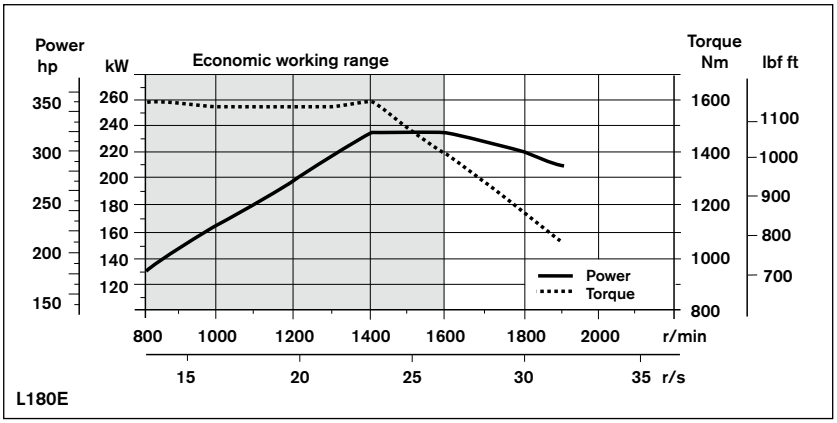
Engine	Volvo D12D LA E3
Max power at	23,3–26,7 r/s (1400–1600 r/min)
SAE J1995 gross	235 kW (320 hp)
ISO 9249, SAE J1349	234 kW (318 hp)
Max torque at	23,3 r/s (1400 r/min)
SAE J1995 gross	1603 Nm
ISO 9249, SAE J1349	1594 Nm
Economic working range	800–1600 r/min
Displacement	12 l

L220E

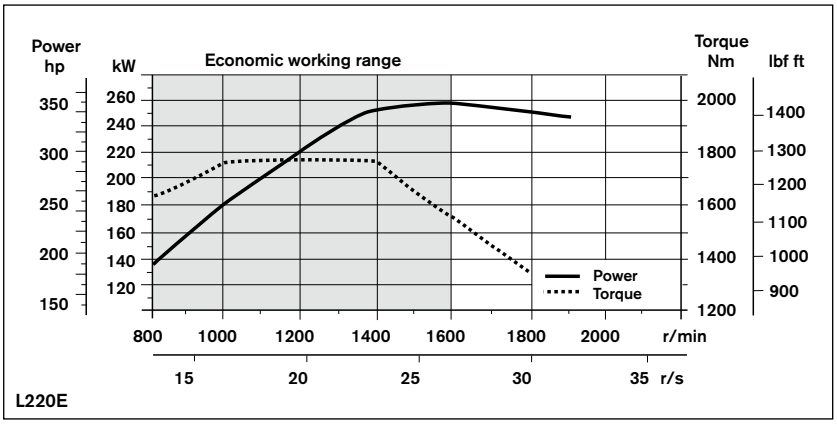
Engine	Volvo D12D LB E3
Max power at	26,7 r/s (1600 r/min)
SAE J1995 gross	261 kW (355 hp)
ISO 9249, SAE J1349	259 kW (352 hp)
Max torque at	23,3 r/s (1400 r/min)
SAE J1995 gross	1765 Nm
ISO 9249, SAE J1349	1756 Nm
Economic working range	800–1600 r/min
Displacement	12 l



L150E



L180E



L220E

Electrical system

Central warning system: Central warning light for the following functions, (buzzer with gear engaged): Engine oil pressure, charge-air temperature, transmission oil pressure, brake pressure, parking brake applied, hydraulic oil level, steering pressure, low coolant level, coolant temperature, transmission oil temperature, hydraulic oil temperature, overspeeding in engaged gear, brake charging, axle oil temperature, crankcase pressure.

L150E, L180E, L220E

Voltage	24 V
Batteries	2x12 V
Battery capacity	2x140 Ah
Cold cranking capacity, approx	1050 A
Reserve capacity, approx	285 min
Alternator rating	1540 W/55 A
Starter motor output	7,0 kW (9,5 hp)

Drivetrain

Torque converter: single-stage. Transmission: Volvo countershaft transmission with single lever control. Fast and smooth shifting of gears between forward and reverse with Pulse Width Modulation (PWM) valve. Gearshifting system: Volvo Automatic Power Shift (APS) with fully automatic shifting 1-4 and mode selector with 4 different gearshifting programs, including AUTO. Axles: Volvo fully floating axle shafts with planetary hub reductions and nodular iron axle housings. Fixed front axle and oscillating rear axle. 100% differential lock on the front axle.

L150E

Transmission	Volvo HTE 210
Torque multiplication	2,4:1
Maximum speed, forward/reverse	
1	6,8 km/h
2	12,9 km/h
3	26,8 km/h
4	41,9 km/h
Measured with tires	26.5 R25 L3
Front axle/rear axle	Volvo/AWB 40B/40C
Rear axle oscillation	±15°
Ground clearance at 15° osc.	610 mm

L180E

Transmission	Volvo HTE 220
Torque multiplication	2,1:1
Maximum speed, forward/reverse	
1	6,6 km/h
2	12,3 km/h
3	25,3 km/h
4	38,1 km/h
Measured with tires	26.5 R25 L3
Front axle/rear axle	Volvo/AWB 40B/40B
Rear axle oscillation	±15°
Ground clearance at 15° osc.	610 mm

L220E

Transmission	Volvo HTE 305
Torque multiplication	2,1:1
Maximum speed, forward/reverse	
1	6,9 km/h
2	11,1 km/h
3	22,9 km/h
4	34,6 km/h
Measured with tires	29.5 R25 L3
Front axle/rear axle	Volvo/AWB 50/41
Rear axle oscillation	±15°
Ground clearance at 15° osc.	600 mm

Brake system

Service brake: Volvo dual-circuit system with nitrogen charged accumulators. Outboard mounted hydraulically operated, fully sealed oil circulation-cooled wet disc brakes. The operator can select automatic disengagement of the transmission when braking using Contronic. Parking brake: Fully sealed, wet multi-disc brake built into the transmission. Applied by spring force and electro-hydraulically released with a switch on the instrument panel. Secondary brake: Dual brake circuits with rechargeable accumulators. Either one circuit or the parking brake fulfills all safety requirements. Standard: The brake system complies with the requirements of ISO 3450.

L150E, L180E

Number of brake discs per wheel front/rear	1/1
Accumulators	2x1,0 l and 1x0,5 l
Accumulators for parking brake	1x0,5 l

L220E

Number of brake discs per wheel front/rear	2/1
Accumulators	2x1,0 l, 1x0,5 l
Accumulators for parking brake	1x0,5 l

Steering system

Steering system: Load-sensing hydrostatic articulated steering. System supply: The steering system has priority feed from a load-sensing axial piston pump with variable displacement. Steering cylinders: Two double-acting cylinders.

L150E

Steering cylinders	2
Cylinder bore	90 mm
Piston rod diameter	50 mm
Stroke	423 mm
Working pressure	21 MPa
Maximum flow	190 l/min
Maximum articulation	±37°

L180E

Steering cylinders	2
Cylinder bore	100 mm
Piston rod diameter	50 mm
Stroke	418 mm
Working pressure	21 MPa
Maximum flow	190 l/min
Maximum articulation	±37°

L220E

Steering cylinders	2
Cylinder bore	100 mm
Piston rod diameter	60 mm
Stroke	502 mm
Relief pressure	21 MPa
Maximum flow	234 l/min
Maximum articulation	±37°

Cab

Instrumentation: All important information is centrally located in the operator's field of view on the Contronic monitoring system's display unit. Heater and defroster: Heater coil with filtered fresh air and fan with four speeds. Defroster vents for all window areas. Operator seat: Ergonomic seat with adjustable suspension and retractable seatbelt. The seat is mounted on a bracket, which is mounted on the rear cab wall. The forces from the retractable seat belt are absorbed by the seat rail. Standard: The cab structure is tested and approved according to ROPS (ISO 3471) and FOPS (ISO 3449). The cab meets all requirements according to ISO 6055 (Operator Overhead Protection - Industrial Trucks) and SAE J386 (Operator Restraint System).

L150E

Emergency exits	1
Sound level in cab according to ISO 6396	LpA 69 dB (A)
External sound level according to ISO 6395 (Directive 2000/14/EC)	LwA 107 dB (A)
Ventilation	9 m^3/min
Heating capacity	11 kW
Air conditioning (optional)	8 kW

L180E

Emergency exits	1
Sound level in cab according to ISO 6396	LpA 70 dB (A)
External sound level according to ISO 6395 (Directive 2000/14/EC)	LwA 108 dB (A)
Ventilation	9 m^3/min
Heating capacity	11 kW
Air conditioning (optional)	8 kW

L220E

Emergency exits	1
Sound level in cab according to ISO 6396	LpA 75 dB (A)
External sound level according to ISO 6395 (Directive 2000/14/EC)	LwA 108 dB (A)
Ventilation	9 m^3/min
Heating capacity	11 kW
Air conditioning (optional)	8 kW

Hydraulic system

System supply: Two load-sensing axial piston pumps with variable displacement. The steering system always has priority. Valves: Double-acting 2-spool valve. The main valve is controlled by a 2-spool pilot valve. Lift function: The valve has four positions including lift, hold, lower and float. Inductive/magnetic automatic boom kick-out can be switched on and off and is adjustable to any position between maximum reach and full lifting height. Tilt function: The valve has three functions including rollback, hold and dump. Inductive/magnetic automatic tilt can be adjusted to the desired bucket angle. Cylinders: Double-acting cylinders for all functions. Filter: Full flow filtration through 20 micron (absolute) filter cartridge.

L150E

Working pressure maximum, pump 1	24,0 MPa
Flow	171 l/min
at	10 MPa
and engine speed	32 r/s (1900 r/min)
Working pressure, pump 2	26,0 MPa
Flow	180 l/min
at	10 MPa
and engine speed	32 r/s (1900 r/min)
Pilot system Working pressure	3,5 MPa
Cycle times	
Raise*	5,9 s
Tilt*	2,0 s
Lower, empty	3,7 s
Total cycle time	11,6 s

* with load as per ISO 14397 and SAE J818

L180E	
Working pressure maximum, pump 1	24,0 MPa
Flow	247 l/min
at	10 MPa
and engine speed	32 r/s (1900 r/min)
Working pressure, pump 2	26,0 MPa
Flow	180 l/min
at	10 MPa
and engine speed	32 r/s (1900 r/min)
Pilot system	
Working pressure	3,5 MPa
Cycle times	
Raise*	6,4 s
Tilt*	1,8 s
Lower, empty	3,3 s
Total cycle time	11,5 s

* with load as per ISO 14397 and SAE J818

L220E	
Working pressure maximum, pump 1	24,0 MPa
Flow	199 l/min
at	10 MPa
and engine speed	32 r/s (1900 r/min)
Working pressure, pump 2	26,0 MPa
Flow	234 l/min
at	10 MPa
and engine speed	32 r/s (1900 r/min)
Pilot system	
Working pressure	3,5 MPa
Cycle times	
Raise*	5,8 s
Tilt*	1,6 s
Lower, empty	3,2 s
Total cycle time	10,6 s

* with load as per ISO 14397 and SAE J818

Lift arm system

Torque Parallel linkage (TP linkage) with high breakout torque and parallel action throughout the entire lifting range.

L150E	
Lift cylinders	2
Cylinder bore	160 mm
Piston rod diameter	90 mm
Stroke	784 mm
Tilt cylinder	1
Cylinder bore	230 mm
Piston rod diameter	110 mm
Stroke	452 mm

L180E	
Lift cylinders	2
Cylinder bore	180 mm
Piston rod diameter	90 mm
Stroke	788 mm
Tilt cylinder	1
Cylinder bore	250 mm
Piston rod diameter	120 mm
Stroke	480 mm

L220E	
Lift cylinders	2
Cylinder bore	190 mm
Piston rod diameter	90 mm
Stroke	768 mm
Tilt cylinder	1
Cylinder bore	260 mm
Piston rod diameter	120 mm
Stroke	455 mm

Service

Service accessibility: Large, easy-to-open service doors with gas struts. Swing-out radiator grille and cooling fan. Possibility to log and analyze data to facilitate troubleshooting.

L150E	
Refill capacities	
Fuel tank	335 l
Engine coolant	45 l
Hydraulic oil tank	156 l
Transmission oil	45 l
Engine oil	48 l
Axles front/rear	45/55 l

L180E	
Refill capacities	
Fuel tank	335 l
Engine coolant	45 l
Hydraulic oil tank	156 l
Transmission oil	45 l
Engine oil	48 l
Axles front/rear	45/55 l

L220E	
Refill capacities	
Fuel tank	335 l
Engine coolant	44 l
Hydraulic oil tank	215 l
Transmission oil	45 l
Engine oil	48 l
Axles front/rear	77/71 l

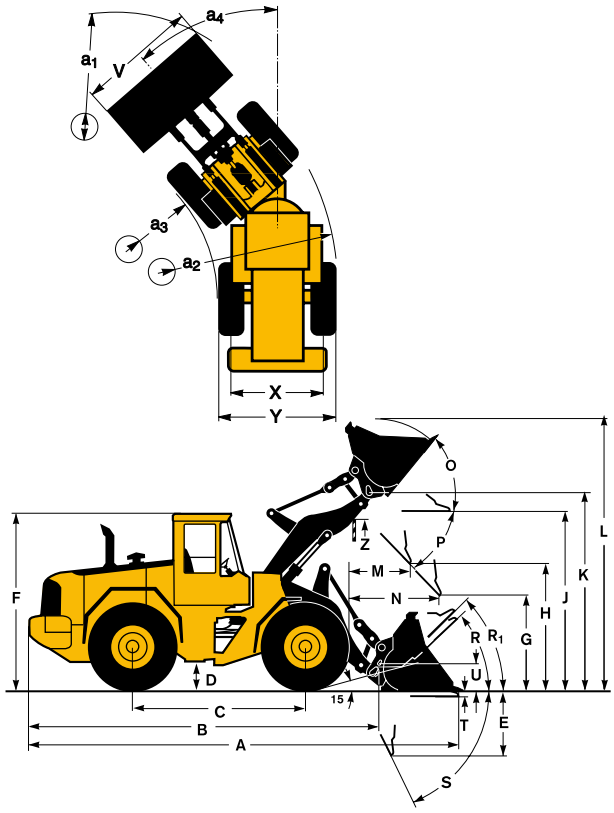
SPECIFICATIONS

Tires L150E, L180E: 26.5 R25 L3 Tires L220E: 29.5 R25 L4

	Standard boom			Long boom		
	L150E	**L180E**	**L220E**	**L150E**	**L180E**	**L220E**
B	7070 mm	7170 mm	7470 mm	7570 mm	7600 mm	7790 mm
C	3550 mm	3550 mm	3700 mm	———	———	———
D	480 mm	480 mm	540 mm	———	———	———
F	3580 mm	3580 mm	3730 mm	———	———	———
G	2130 mm	2130 mm	2130 mm	———	———	———
J	3930 mm	4060 mm	4260 mm	4500 mm	4550 mm	4620 mm
K	4340 mm	4470 mm	4670 mm	4910 mm	4970 mm	5030 mm
O	58 °	57 °	56 °	59 °	55 °	———
P_{max}	50 °	51 °	48 °	49 °	50 °	———
R	45 °	45 °	43 °	48 °	48 °	44 °
R_1*	48 °	48 °	47 °	53 °	53 °	49 °
S	66 °	71 °	65 °	61 °	63 °	63 °
T	85 mm	130 mm	90 mm	140 mm	210 mm	100 mm
U	520 mm	570 mm	590 mm	640 mm	———	670 mm
X	2280 mm	2280 mm	2400 mm	———	———	———
Y	2950 mm	2950 mm	3170 mm	———	———	———
Z	3510 mm	3810 mm	4060 mm	3960 mm	4170 mm	4390 mm
a_2	6780 mm	6780 mm	7110 mm	———	———	———
a_3	3830 mm	3830 mm	3940 mm	———	———	———
a_4	±37 °	±37 °	±37 °	———	———	———

* Carry position SAE

Where applicable, specifications and dimensions are according to ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 14397, SAE J818.



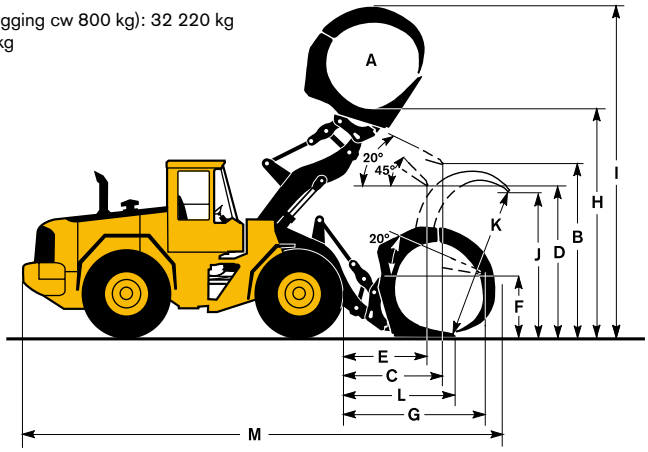
Tires L150E, L180E: 775/65 R29
Tires L220E: 875/65 R29

	L150E	L180E	L220E
A	3,1 m^2	3,5 m^2	4,0 m^2
B	3660 mm	3860 mm	3900 mm
C	2120 mm	1870 mm	2280 mm
D	2960 mm	3270 mm	3140 mm
E	1650 mm	1460 mm	1780 mm
F	1630 mm	1710 mm	1620 mm
G	2930 mm	2760 mm	3230 mm
H	5020 mm	5200 mm	5360 mm
I	7250 mm	7650 mm	7910 mm
J	3080 mm	3370 mm	3620 mm
K	3340 mm	3860 mm	3940 mm
L	2300 mm	2130 mm	2650 mm
M	9970 mm	10 240 mm	10 660 mm

L150E Operating weight (incl. logging cw 1140 kg): 25 130 kg
Operating load: 7700 kg
Pin-on sorting grapple

L180E Operating weight (incl. logging cw 1140 kg): 28 510 kg
Operating load: 8710 kg
Pin-on sorting grapple

L220E Operating weight (incl. logging cw 800 kg): 32 220 kg
Operating load: 10 080 kg
Pin-on sorting grapple



L150E

Tires 26.5 R25 L3		GENERAL PURPOSE						ROCK*		LIGHT MTRL	LONG BOOM
		 Bolt-on edges	 Teeth	 Bolt-on edges	 Teeth & Segments	 Teeth & Segments	 Bolt-on edges	 Teeth & Segments	 Teeth & Segments	 Bolt-on edges	
Volume, heaped ISO/SAE	m^3	3,7	3,8	4,0	4,0	4,2	4,4	3,5	3,8	6,8	——
Volume at 110% fill factor	m^3	4,1	4,2	4,4	4,4	4,6	4,8	——	——	7,5	——
Static tipping load, straight	kg	17 130	17 760	17 230	17 380	17 240	16 860	18 180	17 880	16 320	–3470
at 35° turn	kg	15 340	15 870	15 360	15 500	15 370	14 990	16 210	15 940	14 480	–3190
at full turn	kg	15 130	15 660	15 150	15 290	15 160	14 770	15 980	15 720	14 270	–3150
Breakout force	kN	179,1	188,4	184,7	184,8	174,3	176,2	172,6	188,3	168,9	——
A	mm	8620	8800	8590	8790	8880	8670	8870	8750	9140	+520
E	mm	1260	1420	1230	1400	1480	1290	1460	1360	1710	+20
H**)	mm	3010	2900	3030	2900	2830	2970	2860	2930	2620	+570
L	mm	5830	5930	5880	5880	5960	5990	5980	5940	6090	+570
M**)	mm	1250	1400	1210	1360	1420	1260	1410	1300	1560	–20
N**)	mm	1820	1930	1800	1880	1910	1830	1920	1850	1940	+440
V	mm	3200	3000	3200	3230	3000	3200	3230	3230	3200	——
a_1 clearance circle	mm	14 650	14 550	14 640	14 750	14 580	14 670	14 800	14 740	14 890	——
Operating weight	kg	23 430	22 900	23 190	23 100	23 140	23 530	24 510	24 470	23 690	+300

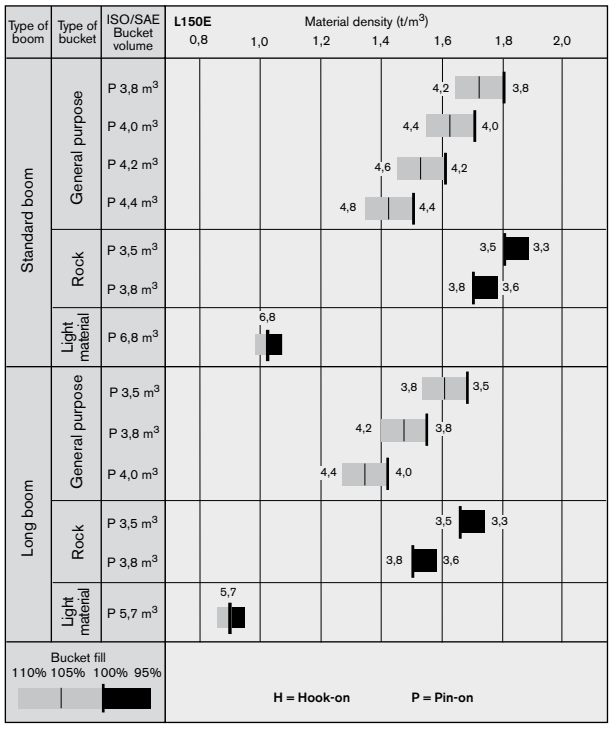
*) With L5 tires **) Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge. Measured at 45° dump angle. (Spade nose buckets at 42°.)
Note: This only applies to genuine Volvo attachments.

Bucket Selection Chart

The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration. **Example: Sand and gravel. Fill factor ~ 105%. Density 1,6 t/m³. Result: The 4,0 m³ bucket carries 4,2 m³. For optimal stability always consult the bucket selection chart.**

Material	Bucket fill, %	Material density, t/m³	ISO/SAE bucket volume, m³	Actual volume, m³
Earth/Clay	~ 110	~ 1,6	3,8	~ 4,2
		~ 1,6	4,0	~ 4,4
		~ 1,5	4,2	~ 4,6
Sand/Gravel	~ 105	~ 1,7	3,8	~ 4,0
		~ 1,6	4,0	~ 4,2
		~ 1,6	4,2	~ 4,4
Aggregate	~ 100	~ 1,8	3,8	~ 3,8
		~ 1,7	4,0	~ 4,0
		~ 1,6	4,2	~ 4,2
Rock	≤100	~ 1,7	3,5	~ 3,5

The size of rock buckets is optimized for optimal penetration and filling capability rather than the density of the material.



Supplemental Operating Data

Tires 26.5 R25 L3		Standard boom		Long boom	
		26.5 R25 L5	775/65 R29	26.5 R25 L5	775/65 R29
Width over tires	mm	+30	+170	+30	+170
Ground clearance	mm	+30	+25	+30	+25
Tipping load, full turn	kg	+770	+630	+650	+550
Operating weight	kg	+1050	+920	+1050	+920

L180E

Tires 26.5 R25 L3		GENERAL PURPOSE						ROCK*		LIGHT MTRL	LONG BOOM
		Bolt-on edges	Bolt-on edges	Teeth & Segments	Bolt-on edges	Teeth & Segments	Bolt-on edges	Teeth & Segments	Teeth & Segments	Bolt-on edges	
Volume, heaped ISO/SAE	m^3	4,0	4,4	4,4	4,6	4,6	4,8	4,2	4,4	7,8	——
Volume at 110% fill factor	m^3	4,4	4,8	4,8	5,1	5,1	5,3	——	——	8,6	——
Static tipping load, straight	kg	21 120	20 000	20 880	20 760	20 900	20 560	21 610	21 410	19 610	–3690
at 35° turn	kg	18 770	17 690	18 530	18 400	18 540	18 210	19 170	19 000	17 310	–3360
at full turn	kg	18 500	17 430	18 260	18 130	18 280	17 950	18 890	18 730	17 050	–3320
Breakout force	kN	225,1	202,5	214,9	214,7	214,9	206,0	193,7	215,4	157,9	——
A	mm	8710	8880	8990	8790	8990	8860	9130	8980	9340	+470
E	mm	1290	1440	1540	1360	1540	1420	1660	1510	1860	+40
H**)	mm	3160	3060	2980	3110	2980	3060	2900	3000	2690	+490
L	mm	6010	6170	6130	6170	6170	6170	6310	6210	6300	+490
M**)	mm	1230	1360	1420	1280	1420	1330	1520	1390	1620	+20
N**)	mm	1900	1970	2010	1930	2010	1960	2070	1990	2050	+400
V	mm	3200	3200	3230	3200	3230	3200	3230	3230	3400	——
a_1 clearance circle	mm	14 730	14 800	14 880	14 760	14 880	14 790	14 960	14 880	15 220	——
Operating weight	kg	26 030	26 680	26 270	26 410	26 310	26 470	27 700	27 590	26 830	+280

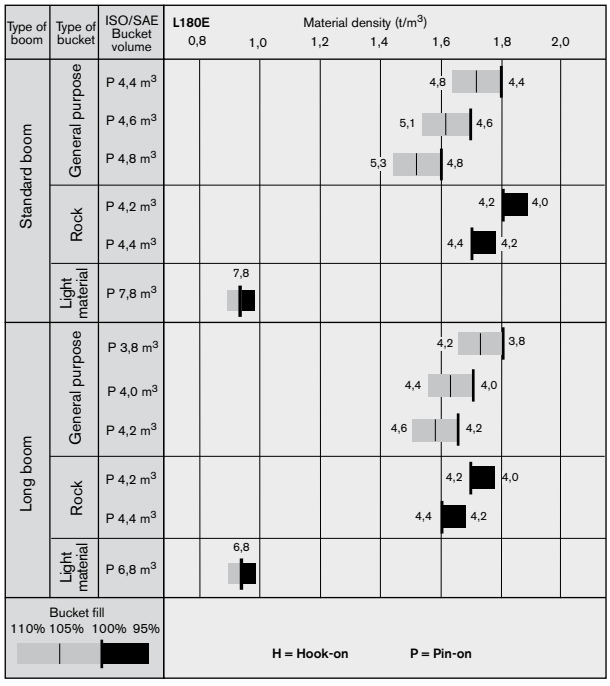
*) With L5 tires **) Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge. Measured at 45° dump angle. (Spade nose buckets at 42°.)
Note: This only applies to genuine Volvo attachments.

Bucket Selection Chart

The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration. **Example: Sand and gravel. Fill factor ~ 105%. Density 1,6 t/m^3. Result: The 4,6 m^3 bucket carries 4,8 m^3. For optimal stability always consult the bucket selection chart.**

Material	Bucket fill, %	Material density, t/m^3	ISO/SAE bucket volume, m^3	Actual volume, m^3
Earth/Clay	~ 110	~ 1,6	4,4	~ 4,8
		~ 1,5	4,6	~ 5,1
		~ 1,4	4,8	~ 5,3
Sand/Gravel	~ 105	~ 1,7	4,4	~ 4,6
		~ 1,6	4,6	~ 4,8
		~ 1,5	4,8	~ 5,1
Aggregate	~ 100	~ 1,8	4,4	~ 4,4
		~ 1,7	4,6	~ 4,6
		~ 1,6	4,8	~ 4,8
Rock	≤100	~ 1,7	4,3	~ 4,3

The size of rock buckets is optimized for optimal penetration and filling capability rather than the density of the material.



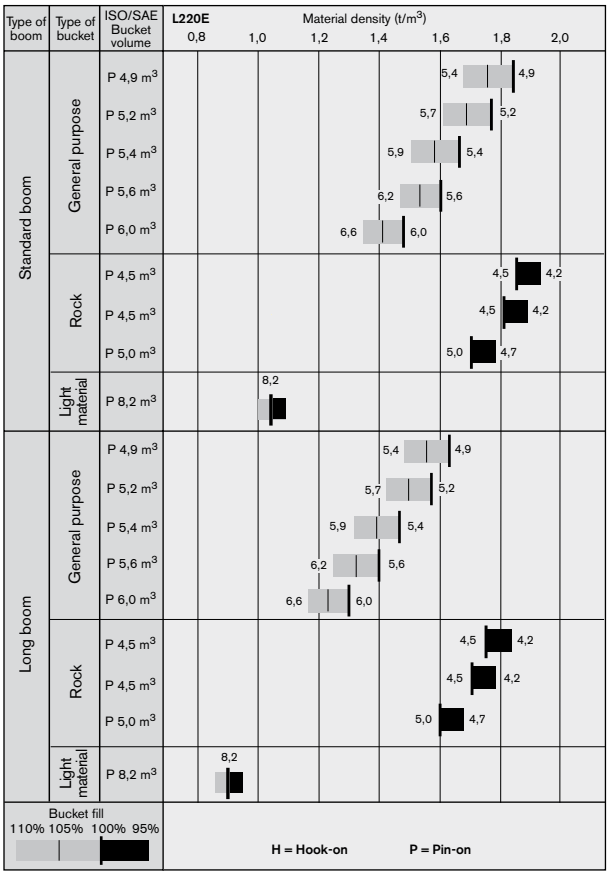
Supplemental Operating Data

Tires 26.5 R25 L3		Standard Boom		Long Boom	
		26.5 R25 L5	775/65 R29	26.5 R25 L5	775/65 R29
Width over tires	mm	+30	+130	+30	+130
Ground clearance	mm	+30	+20	+30	+20
Tipping load, full turn	kg	+700	+620	+680	+540
Operating weight	kg	+970	+920	+970	+920

L220E

Tires 29.5 R25 L4		GENERAL PURPOSE					ROCK*			LIGHT MATERIAL	LONG BOOM
		Bolt-on edges	Teeth & Segments	Bolt-on edges	Teeth & Segments	Bolt-on edges	Teeth & Segments	Teeth & Segments	Teeth & Segments	Bolt-on edges	
Volume, heaped ISO/SAE	m^3	4,9	5,2	5,4	5,6	6,0	4,5	4,5	5,0	8,2	——
Volume at 110% fill factor	m^3	5,4	5,7	5,9	6,2	6,6	——	——	——	9,0	——
Static tipping load, straight	kg	23 680	23 640	23 590	23 540	23 450	24 560	24 070	23 240	22 440	–2820
at 35° turn	kg	21 060	21 020	20 960	20 910	20 830	21 880	21 400	20 640	19 870	–2580
at full turn	kg	20 760	20 720	20 660	20 610	20 530	21 570	21 100	20 350	19 580	–2550
Breakout force	kN	231,0	225,3	224,5	220,7	212,9	240,7	192,6	178,6	172,6	——
A	mm	9050	9340	9090	9380	9190	9210	9580	9730	9550	+320
E	mm	1280	1530	1320	1570	1400	1410	1730	1870	1730	–20
H**)	mm	3310	3110	3280	3090	3220	3210	2980	2920	2940	+360
L	mm	6390	6450	6500	6540	6620	6480	6420	6500	6480	+360
M**)	mm	1260	1430	1290	1460	1350	1340	1640	1790	1580	–30
N**)	mm	2020	2120	2040	2130	2070	2060	2230	2280	2170	+270
V	mm	3400	3430	3400	3430	3400	3430	3430	3430	3700	——
a_1 clearance circle	mm	15 470	15 640	15 500	15 650	15 540	15 580	15 770	15 850	16 010	——
Operating weight	kg	31 110	31 130	31 250	31 320	31 360	32 320	32 520	32 690	31 680	+380

*) With L5 tires **) Measured to the tip of the bucket teeth or bolt-on edge. Dump height to bucket edge. Measured at 45° dump angle. (Spade nose buckets at 42°.)
Note: This only applies to genuine Volvo attachments.



Bucket Selection Chart

The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration. **Example: Sand and gravel. Fill factor ~ 105%. Density 1,6 t/m³. Result: The 5,2 m³ bucket carries 5,5 m³. For optimal stability always consult the bucket selection chart.**

Material	Bucket fill, %	Material density, t/m³	ISO/SAE bucket volume, m³	Actual volume, m³
Earth/Clay	~ 110	~ 1,6	4,9	~ 5,4
		~ 1,5	5,2	~ 5,7
		~ 1,4	5,4	~ 5,9
Sand/Gravel	~ 105	~ 1,7	4,9	~ 5,1
		~ 1,6	5,2	~ 5,5
		~ 1,5	5,4	~ 5,7
Aggregate	~ 100	~ 1,8	4,9	~ 4,9
		~ 1,7	5,2	~ 5,2
		~ 1,6	5,4	~ 5,4
Rock	≤100	~ 1,7	4,5	~ 4,5

The size of rock buckets is optimized for optimal penetration and filling capability rather than the density of the material.

Supplemental Operating Data

Tires 29.5 R25 L4		Standard boom			Long boom		
		29.5 R25 L3	29.5 R25 L5	875/65 R29	29.5 R25 L3	29.5 R25 L5	875/65 R29
Width over tires	mm	–20	+35	+95	–20	+35	+95
Ground clearance	mm	–20	+35	–25	–20	+35	–25
Tipping load, full turn	kg	–240	+855	+65	–230	+780	+70
Operating weight	kg	–445	+1130	+290	–445	+1130	+290

STANDARD EQUIPMENT

Engine
Three stage air cleaner with ejector and inner filter
Indicator glass for coolant level
Preheating of induction air
Fuel filter, extra large with water trap
Coolant filter
Oil trap
Fan air intake protection

Electrical system
24 V, pre-wired for optional accessories
Alternator, 24 V/55 A
Battery disconnect switch
Fuel gauge
Hour meter
Electric horn
Instrument panel with symbols
Lighting:
• Twin halogen front headlights with high and low beams
• Parking lights
• Double brake and tail lights
• Turn signals with flashing hazard light function
• Halogen work lights (2 front and 2 rear)
• Instrument lighting

Contronic monitoring system
ECU with log and analysis system
Contronic display
Fuel consumption
Ambient temperature
Engine torque reduction in case of malfunction indication:
• High engine coolant temperature
• High engine oil temperature
• Low engine oil pressure
• High crankcase pressure
• High charge air temperature
Engine shutdown to idle in case of malfunction indication:
• High transmission oil temperature
• Slip in transmission clutches
Start interlock when gear is engaged
Brake test
Test function for warning and indicator lights
Warning and indicator lights:
• Battery charging
• Oil pressure engine
• Oil pressure, transmission
• Brake pressure
• Parking brake
• Hydraulic oil level
• Axle oil temperature
• Primary steering
• Secondary steering
• High beams
• Turn signals
• Rotating beacon
• Preheating coil
• Differential lock
• Coolant temperature
• Transmission oil temperature
• Brake charging
Level warnings:
• Engine oil level
• Coolant level
• Transmission oil level
• Hydraulic oil level
• Washer fluid level

Drivetrain
Automatic Power Shift with operator-controlled disengagement function for transmission cut-out when braking and mode selector with AUTO function
Fully automatic shifting gears 1-4
PWM-control between different gear positions
Forward and reverse switch by lever console
Differentials:
front: 100% hydraulic diff lock
rear: conventional

Brake system
Wet oil circulation-cooled disc brakes on all four wheels
Dual brake circuits
Dual service brake pedals
Secondary brake system
Parking brake, el-hydraulic
Brake wear indicator

Cab
ROPS (ISO 3471), FOPS (ISO 3449)
Single key kit door/start
Acoustic inner lining
Ashtray
Cigarette lighter
Lockable door
Cab heating with filter, fresh air inlet and defroster
Floor mat
Interior light
Interior rear-view mirror
2 exterior rear-view mirrors
Openable window, right side
Tinted safety glass
Lap-type retractable seatbelt (SAE J386)
Adjustable lever console
Ergonomically designed operator's seat with adjustable suspension
Storage compartment
Sun visor
Beverage holder
Windshield washers front and rear
Windshield wipers front and rear
Interval function for front and rear windshield wipers
Service platforms with anti-slip surfaces on front and rear fenders
Speedometer

Hydraulic system
Main valve, 2-spool
Pilot valve, 2-spool
Variable displacement axial piston pumps (3) for:
• working hydraulics
• steering system, pilot hydraulics and brakes
• fan motor
Boom lowering system
Boom kick-out, automatic, adjustable
Bucket positioner, automatic with position indicator, adjustable
Hydraulic oil cooler

External equipment
Noise and vibration dampening suspension of cab, engine and transmission
Lifting eyes
Easy-to-open side panels
Frame steering, joint lock
Vandalism lock prepared for batteries and engine compartment
Tow hitch

OPTIONAL EQUIPMENT (Standard on certain markets)

Service and maintenance	L150E	L180E	L220E
Tool box, lockable	●	●	●
Tool kit	●	●	●
Automatic lubrication system	●	●	●
Automatic lubrication system, stainless steel	●	●	●
Automatic lubrication system inclusive long boom	●	●	●
Automatic lubrication system, stainless steel, for long boom	●	●	●
Automatic lubrication system for attachment bracket, welded	●	●	●
Automatic lubrication system, stainless steel, for attachment bracket, welded	●	●	●
Refill pump for automatic lubrication system	●	●	●
Wheel nut wrench kit	●	●	●
Grease nipple guards	●	●	●
Oil sampling valve	●	●	●
Engine equipment			
Engine block heater, 230 V	●	●	●
Engine auto shutdown	●	●	●
Increased engine protection	●	●	●
Disabled engine protection	●	●	●
Air pre-cleaner, oil-bath type	●	●	●
Air pre-cleaner, turbo type	●	●	●
Air pre-cleaner, Sy-Klone type	●	●	●
Hand throttle control	●	●	●
Fuel fill strainer	●	●	●
Fuel filter, with water trap and heating	●	●	●
Exhaust heat insulation	●	●	●
Radiator, corrosion-protected	●	●	●
Reversible cooling fan	●	●	●
Reversible cooling fan and axle oil cooler	●	●	●
Electrical system			
Language kit 1 or 2	●	●	●
Alternator, 80 A	●	●	●
Air filter for alternator	●	●	●
Work light, attachments	●	●	●
Work lights front, extra	●	●	●
Work lights rear, extra	●	●	●
Work lights front, on cab, dual	●	●	●
Work lights front, high intensity	●	●	●
Asymetrical lights for left-hand traffic	●	●	●
Back-up alarm	●	●	●
Back-up lights, automatic	●	●	●
Shortened headlight support brackets	●	●	●
Rotating beacon, collapsible	●	●	●
Battery disconnect switch, additional in cab	●	●	●
Anti-theft device	●	●	●
Side running lights	●	●	
License plate holder, lighting	●		
Cab			
Installation kit for radio, 11 A, 12 V left/right in cab	●	●	●
Radio with tape recorder	●	●	●
Radio with CD-player	●	●	●
Sun blinds, front and rear windows	●	●	●
Sun blinds, side windows	●	●	●
Sliding window, right	●	●	●
Sliding window, door	●	●	●
Retractable lap-type belt, longer and wider than standard	●	●	●
Air conditioning with corrosion-prot. condenser	●	●	●
Air conditioning with corrosion-prot. condenser and automatic temp. control (ATC)	●	●	●
Ventilation air filter for work in asbestos environment	●	●	●
Cab air pre-cleaner, Sy-Klone type	●	●	●
Operator's seat with low backrest	●	●	●
Operator's seat with electrical heating	●	●	●
Operator's seat with low backrest and electrical heating	●	●	●
Operator's seat with high backrest and electrical heating	●	●	●
Operator's seat air suspended, heavy-duty	●	●	●
Operator's seat air suspended with electrical heating	●	●	●
Operator's seat air suspended with high backrest and electrical heating	●	●	●
Instructor's seat	●	●	●
Armrest (left) for operator seat	●	●	●
Adjustable steering wheel	●	●	●
Steering wheel knob	●	●	●
Noise reduction kit	●	●	●
Rear-view camera incl. monitor	●	●	●
Rear-view camera incl. monitor, colour	●	●	●
Rear-view mirrors, el. heated	●	●	●
Cab ladder, rubber suspended	●	●	●

Drivetrain	L150E	L180E	L220E
Limited slip rear	●	●	●
Diff lock, limited slip front and rear in comb. with axle oil cooler			●
Speed limiter 20 km/h	●	●	●
Speed limiter 30 km/h	●	●	●
Wheel/axle seal guards	●	●	●
Brake system			
Oil cooler and filter for front and rear axle	●	●	●
Stainless steel brake lines	●	●	
Hydraulic system			
Single lever control	●	●	●
Single lever control for 3rd hydraulic function	●	●	●
3rd hydraulic function	●	●	●
3rd hydraulic function for long boom	●	●	●
3rd-4th hydraulic function	●	●	●
Boom Suspension System	●	●	●
Biodegradable hydraulic fluid	●	●	●
Fire resistant hydraulic fluid	●	●	●
Hydraulic fluid for hot climate	●	●	●
Attachment bracket, welded	●	●	●
Arctic kit, attachment locking hoses and 3rd hydraulic function	●	●	●
Arctic kit, pilot hoses and brake accum. incl. hydraulic oil	●	●	●
Separate attachment locking, standard boom	●	●	●
Separate attachment locking, long boom	●	●	●
Return-to-dig	●	●	●
Hydraulic oil cooler, extra	●	●	●
External equipment			
Long boom	●	●	●
Mudguards widener front/rear	●	●	●
Mudguards, fixed front and swing out rear	●	●	●
Deleted front mudguards	●	●	●
Logging counterweight	●	●	●
Block handling counterweight			●
Protective equipment			
Guards for front headlights	●	●	●
Guards for tail lights	●	●	●
Guards for tail lights, heavy-duty	●	●	●
Guards for side and rear windows	●	●	●
Guards for radiator grille	●	●	●
Windshield guard	●	●	●
Bellyguard front	●	●	●
Bellyguard rear	●	●	●
Bellyguard, oil pan	●	●	●
Cover plate front frame, heavy-duty	●	●	●
Cover plate, under cab	●	●	●
Guards for steer cylinder	●	●	●
Guards for boom cylinder hose and tube	●	●	●
Corrosion-protection, painting of machine	●	●	●
Bucket teeth protection	●	●	
Other equipment			
Comfort Drive Control, CDC	●	●	●
Secondary steering	●	●	●
CE-marking	●	●	●
Sound decal, EU	●	●	●
Sign, slow moving vehicle	●	●	
Noise reduction kit, exterior			●
Tires			
26.5 R25	●	●	
29.5 R25			●
775/65 R29	●	●	
875/65 R29			●
Attachments			
Buckets:	●	●	●
• Straight with/without teeth	●	●	●
• Spade nose with/without teeth	●	●	●
• High tipping	●	●	●
• Light materials	●	●	●
Bolt-on and weld-on bucket teeth	●	●	●
Cutting edge in three sections, bolt-on	●	●	●
Fork equipment	●	●	●
Material handling arm	●	●	●
Log grapples	●	●	●

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