Volvo has developed and manufactured wheel loaders for over 50 years. The latest experiences and leading technology have been used in designing the L90E. It is the true all-round machine, giving you countless possibilities to expand your application range. With the Volvo engine and Automatic Power Shift (APS) gearshifting system, you get optimal performance and low fuel consumption in all types of applications. The Torque Parallel Linkage, hydraulic attachment bracket and wide range of Volvo genuine attachments further increase the machine's versatility.

You work hard every day and you expect your machines to work just as hard. The Volvo L90E wheel loader is a partner you can count on to not only meet, but exceed expectations. The versatility of the L90E makes it a reliable business partner in a wide range of industries. Public authorities and agricultural applications, such as grain handling, rely on its power and production, while operators in glass and paper recycling facilities get the job done with the added ease and maneuverability of the L90E.

**A great deal for your investment**
Proven reliability, excellent financing, extremely low fuel consumption and a high trade-in value provide the cornerstones of a safe investment. Add to that outstanding handling and productivity, a market-leading operator environment to protect the person in the machine, quick and simple daily maintenance and modest service requirements.

And what do you get? The most cost-efficient loader in its class, delivering unparalleled profitability — both now and in years to come.

With the L90E, everybody is a winner. Quite simply, a great deal for your money.

### Specifications L90E

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>Volvo D6D LA E2</td>
</tr>
<tr>
<td>Max power at 32.0 r/s</td>
<td>1,900 rpm</td>
</tr>
<tr>
<td>SAE J1995 gross 122 kW</td>
<td>166 hp</td>
</tr>
<tr>
<td>ISO 9249, SAE J1349 net 121 kW</td>
<td>165 hp</td>
</tr>
<tr>
<td>Breakout force: 118.3 kN*</td>
<td>26,600 lbf</td>
</tr>
<tr>
<td>Static tipping load at full turn: 9 450 kg*</td>
<td>20,840 lb</td>
</tr>
<tr>
<td>Buckets: 2.3 – 7.0 m³</td>
<td>3.0–9.2 yd³</td>
</tr>
<tr>
<td>Log grapple: 1.3 – 2.4 m²</td>
<td>14.0–25.8 ft²</td>
</tr>
<tr>
<td>Operating weight: 15.0 – 17.0 t</td>
<td>33,070–37,480 lb</td>
</tr>
<tr>
<td>Tires: 20.5 R25, 650/65 R25</td>
<td></td>
</tr>
</tbody>
</table>

* Bucket: 2.5 m³ (3.3 yd³) straight edge with bolt-on edges.
Load more tons per hour with the Volvo L90E. Its powerful engine and the Automatic Power Shift (APS) gear shifting system provide immediate response even in the toughest conditions. And Volvo axles are designed to ensure that the rimpull is there when needed. Torque Parallel Linkage (TP Linkage), load-sensing hydraulics, smooth steering and stable operation help make the L90E a precision performer.

**Volvo engine delivers rapid response for faster work cycles**
L90E is equipped with Volvo’s 6-liter engine, correctly matched to the Volvo transmission, axles and hydraulic system for unbeatable productivity and economy. The electronically-controlled engine transmits high torque at low engine speeds for faster work cycles and fuel efficient operation.

**Responds to your commands**
The Volvo fully-automatic countershaft transmission provides smooth and effective gear shifting. All the operator has to do is select forward or reverse and APS automatically selects the right gear according to both engine rpm and ground speed. Volvo’s in-house engineered axles and drivetrain are well matched and designed for top dependability. And Volvo’s oil circulation-cooled wet disc brakes provide smooth, effective braking — and, of course, a long service life.

**Torque Parallel Linkage — a breakthrough in the industry**
The reliable TP Linkage, Volvo’s patented lift-arm system, delivers high and even breakout torque throughout the entire lifting range. The system is exceedingly user-friendly. The operator can easily handle heavy materials and maintain full control in all positions. In addition, TP Linkage provides excellent parallel movement, making it possible for the L90E to perform well in applications where other manufacturers need two different machine types.

**Hydraulics that make sense**
The Volvo L90E features an intelligent load-sensing system for both the main and steering hydraulics. Two variable piston pumps provide the exact flow and pressure required at any given moment, distributing power when and where it’s needed. In addition to rapid response, this system facilitates smoother operation, lower fuel consumption and precise control, even at low rpm.

**Engine**
- Volvo D6D, a turbocharged, air-to-air intercooled low-emission engine with electronically controlled fuel injection delivers high torque even at low rpm.
- The electronically-controlled hydrostatic fan is only activated when necessary, thus saving fuel.

**Transmission**
- With Volvo’s 3rd generation of APS, the operator can select between four different operating modes, including the new AUTO function, which adaptively chooses the most convenient shifting program for the job at hand, equally weighing the operator’s driving habits together with the operating cycle.
- The 3rd generation APS now has fully-automatic shifting 1-4, meaning all the operator has to do is choose forward or reverse.

**Axles/Brakes**
- The Volvo axles are fully integrated with the drivetrain, delivering superior rimpull.
- Oil circulation-cooled wet disc brakes ensure effective braking and a long service life.
- An electronic brake test in Contronic gives you instant access to the status of the brakes.
- A brake wear indicator on each wheel allows you to easily check the brake pad wear.

**Steering**
- Load-sensing steering only uses power when it’s needed, thereby saving fuel.
- E-series loaders feature an accumulator system, providing stable, smooth steering and greater safety.

**Frame**
- Rugged frame design for secure mounting of components increases the service life of the machine.
- Volvo’s frame joint bearing design is a well-proven concept that’s easy to maintain and renowned for its long service life.
TP Linkage

- Unique patented lift-arm system, which provides two solutions in one: excellent breakout torque and parallel action throughout the entire lifting range.

Load-sensing hydraulics

- 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 Care Cab with the Contronic monitoring system 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 comfortable workplace
The right cab climate does wonders for efficiency, keeping operators sharp during long shifts. In fact, all incoming air is filtered in two stages, making this one of the cleanest cabs on the market. Even the recirculated air is filtered. Furthermore, Volvo’s state-of-the-art air-conditioning* provides a pleasant temperature year-round, regardless of outdoor conditions. So even after a long work shift, the air in the cab is still fresh and the operator’s mind is still clear.

Comfort and productivity go hand-in-hand
There is a range of comfortable seats, all of them with multiple adjustment functions for optimal individual comfort. All instruments are visible at a glance, and all important information is right in front of the operator. The forward, reverse and kick-down functions are situated both on the lever on the left-hand side of the steering wheel and on the hydraulic console to the right. And thanks to Comfort Drive Control (CDC)*, you can steer, change directions and kickdown to first gear with easy-to-use controls integrated into the left-hand armrest — an excellent way to combat fatigue and static muscle strain. Furthermore, to avoid monotonous arm movements, you can shift at any time from lever steering to using the steering wheel.

Contronic keeps an eye on everything
Contronic, the highly reliable control and monitoring system from Volvo, continuously monitors the machine’s operation and performance. The system is an electronic network made up of three computers. Operating at three levels, the system keeps an eye on the machine’s various functions in real-time. If a potential problem should occur, the system generates an immediate warning, making the operator aware of the condition. All operating data is saved and can be used to analyze how the machine performs and also to trace its history since the latest service. The machine’s functions can be updated for optimal adaptation to new and changing operating conditions via the Contronic service display tool. With VCADS Pro, it’s also possible to check and adjust the machine’s functions and performance characteristics.

Low noise levels
Thanks to its ingenious rubber mounting system and heavy-duty insulation, the Care Cab is one of quietest cabs on the market. By reducing tiresome earfuls and annoying vibrations, the operator will stay sharp throughout the shift. In short, it’s a great place to work.

* Optional equipment
Quality, safety and care for the environment are Volvo’s core values. Indeed, we see our commitment as an integral part of our operation. Few machines have to work in tougher conditions. The ultimate goal is maximized productivity and efficiency for the lowest cost per hour, with minimized environmental impact. For instance, plants and manufacturing processes are certified in accordance with ISO 14001. This is but one example of our tangible commitments and high quality standards. And that’s why Volvo customers get one of the most environmentally considerate and dependable wheel loaders on the market.

**A winner for years to come**

Your Volvo L90E has to be a winner — both in day-to-day and long-term operations, always operating economically with maximum consideration of the environment. The machinery has to be trusted in all aspects. It must deliver the anticipations of productivity and economy. High-quality and easy maintenance are imperative for keeping up the work process. The high-performance, low-emission engine is both good for your business and for the environment.

**Comfortable and quiet operator’s environment**

The operator inside deserves a comfortable, reliable and safe machine to work with. A good environment helps to spare operator, equipment and nature for years to come. The Volvo L90E is a super competitive wheel loader that puts the operator right in the middle, literally speaking. Tedious vibrations and noise have been heavily reduced. If the operator feels comfortable and secure, it’s easier to stay attentive.

**More than 95% recyclable**

The L90E is almost completely recyclable. We see it as a natural step in our commitment. Components such as the engine, transmission and hydraulics are re-engineered and re-used in our Parts Exchange program. The equipment has to be as trustworthy, service-friendly, productive and as cost-effective as possible. Choose this wheel loader for maximum productivity and minimal impact on operator, machinery and environment. Feel free to feel secure in a Volvo L90E.

**VOLVO’S COMMITMENT TO NATURE AND MANKIND**

Quality
- The air is vented from all major components with easy to replace breather filters, used to prevent dirty air from entering the transmission, axles, fuel tank, and hydraulic tank.
- All electrical wires are routed through sturdy conduits, protected from water, dust, and abrasion with rubberized connectors and terminal caps.
- The L90E is designed from the beginning for easy service and maintenance. Easy-access to all components lays the foundation for shorter service and maintenance time and longer life.

Safety
- A dual-circuit service brake system that fulfills all requirements according to ISO 3450, electronic brake test in Contronic and easy to check brake wear indicators are all ways to ensure safe and effective braking.
- Volvo Care Cab is tested and approved according to ROPS ISO 3471 and FOPS ISO 3449 standards.
- Optimized panoramic visibility gives effective control over the entire work area.
- The L90E has steps and platforms that are equipped with anti-slip surfaces and well positioned hand rails.

Environment
- The low rpm, high-performance D6D engine meets all current emission requirements according to stage 2 legislation in Europe and the US.
- The L90E is manufactured in environmentally certified factories according to ISO 14001.
- The L90E is more than 95% recyclable according to material weight.
- Low external and internal sound levels.
Volvo L90E in Detail

**Engine**
6 liter, 6-cylinder straight turbocharged diesel engine with electronically-controlled unit pumps and conventional injectors. The engine has dry 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.

**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 cast steel axle housings. Fixed front axle and oscillating rear axle. 100% differential lock on the front axle.

**Electrical system**
Central warning system: Central warning light for the following functions (buzzer with gear engaged): Engine oil pressure, charge-air temperature, fuel 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.

**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.

**Engine**
Volvo D6D LA E2
Max power at 320 r/s (1,900 rpm)
SAE J1995 gross 122 kW (166 hp)
SAE J1349 net 121 kW (165 hp)
Max torque at 233 r/s (1,400 rpm)
SAE J1995 gross 739 Nm (545 lbf ft)
SAE J1349 net 732 Nm (540 lbf ft)
Economic working range 1100-1600 rpm
Displacement 5.7 l (348 in³)

**Transmission**
Volvo HTE 202
Torque multiplication 2.45:1
Maximum speed, forward/reverse
1 6.6 km/h (4.2 mph)
2 12.7 km/h (7.9 mph)
3 25.6 km/h (15.9 mph)
4 37.1 km/h (23.1 mph)
Measured with tires 205 R25 L2
Front axle/rear axle Volvo/AWB 25/20
Rear axle oscillation ±13°
Ground clearance at 13° osc. 470 mm (18.5 in)

**Number of brake discs per wheel**
front/rear 1/1

**Accumulators**
2x0.5 l (2x0.13 US gal), 1x1.0 l (1x0.26 US gal)

**Accumulators for parking brake**
1x1.0 l (1x0.26 US gal)
**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.

<table>
<thead>
<tr>
<th>Steering cylinders</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder bore</td>
<td>80 mm (3.2 in)</td>
</tr>
<tr>
<td>Piston rod diameter</td>
<td>50 mm (2.0 in)</td>
</tr>
<tr>
<td>Stroke</td>
<td>345 mm (13.6 in)</td>
</tr>
<tr>
<td>Working pressure</td>
<td>21 MPa (3,046 psi)</td>
</tr>
<tr>
<td>Maximum flow</td>
<td>200 l/min (52.8 US gpm)</td>
</tr>
<tr>
<td>Maximum articulation</td>
<td>±40°</td>
</tr>
</tbody>
</table>

**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).

Emergency exits 1

<table>
<thead>
<tr>
<th>Sound level in cab according to ISO 6396</th>
<th>LpA 70 dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>External sound level according to ISO 6395 (Directive 2000/14/EC)</td>
<td>Lwa 105 dB (A)</td>
</tr>
<tr>
<td>Ventilation</td>
<td>9 m³/min (318 ft³/min)</td>
</tr>
<tr>
<td>Heating capacity</td>
<td>11 kW (37,500 Btu/h)</td>
</tr>
<tr>
<td>Air conditioning (optional)</td>
<td>8 kW (27,300 Btu/h)</td>
</tr>
</tbody>
</table>

**Hydraulic system**
System supply: One load-sensing axial piston pump 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.

**Lift arm system**
Torque Parallel Linkage (TP Linkage) with high breakout torque and parallel action throughout the entire lifting range.

<table>
<thead>
<tr>
<th>Lift cylinders</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder bore</td>
<td>120 mm (4.7 in)</td>
</tr>
<tr>
<td>Piston rod diameter</td>
<td>70 mm (2.75 in)</td>
</tr>
<tr>
<td>Stroke</td>
<td>733 mm (28.8 in)</td>
</tr>
<tr>
<td>Tilt cylinder</td>
<td>1</td>
</tr>
<tr>
<td>Cylinder bore</td>
<td>180 mm (7.1 in)</td>
</tr>
<tr>
<td>Piston rod diameter</td>
<td>90 mm (3.54 in)</td>
</tr>
<tr>
<td>Stroke</td>
<td>430 mm (16.9 in)</td>
</tr>
</tbody>
</table>

**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.

**Refill capacities**

<table>
<thead>
<tr>
<th>Fuel tank</th>
<th>205 l (54.1 US gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine coolant</td>
<td>36 l (9.5 US gal)</td>
</tr>
<tr>
<td>Hydraulic oil tank</td>
<td>115 l (30.4 US gal)</td>
</tr>
<tr>
<td>Transmission oil</td>
<td>40 l (10.6 US gal)</td>
</tr>
<tr>
<td>Engine oil</td>
<td>20 l (5.3 US gal)</td>
</tr>
<tr>
<td>Axles front/rear</td>
<td>30/25 l (7.9/6.6 US gal)</td>
</tr>
</tbody>
</table>

**Lift cylinders**

<table>
<thead>
<tr>
<th>Lift cylinders</th>
<th>2</th>
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<td>Piston rod diameter</td>
<td>90 mm (3.54 in)</td>
</tr>
<tr>
<td>Stroke</td>
<td>430 mm (16.9 in)</td>
</tr>
</tbody>
</table>

**Working pressure maximum**

<table>
<thead>
<tr>
<th>Flow</th>
<th>175 l/min (46.2 US gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>and engine speed</td>
<td>32 r/s (1,900 rpm)</td>
</tr>
<tr>
<td>Pilot system</td>
<td>3,5 MPa (508 psi)</td>
</tr>
</tbody>
</table>

**Cycle times**

| Raise*                                | 5.4 s |
| Tilt*                                 | 2.1 s |
| Lower, empty                          | 2.5 s |
| Total cycle time                      | 10.0 s |

* with load as per ISO 14397 and SAE J818
Where applicable, specifications and dimensions are according to ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 14397, SAE J818.

### SPECIFICATIONS

#### Operating weight (incl. logging cw 680 kg (1,500 lb)):
- 16,740 kg (36,900 lb)
- Operating load: 4,600 kg (10,140 lb)

#### Standard boom

<table>
<thead>
<tr>
<th>Tires: 20.5 R25 L2</th>
<th>Standard boom</th>
<th>Long boom</th>
</tr>
</thead>
<tbody>
<tr>
<td>B 6020 mm</td>
<td>19°*</td>
<td>6450 mm</td>
</tr>
<tr>
<td>C 3000 mm</td>
<td>9°10'</td>
<td>—</td>
</tr>
<tr>
<td>D 400 mm</td>
<td>1°40'</td>
<td>—</td>
</tr>
<tr>
<td>F 3260 mm</td>
<td>10°8'</td>
<td>—</td>
</tr>
<tr>
<td>G 2130 mm</td>
<td>7°9'</td>
<td>—</td>
</tr>
<tr>
<td>J 3650 mm</td>
<td>12°0'</td>
<td>4080 mm</td>
</tr>
<tr>
<td>K 3960 mm</td>
<td>13°0'</td>
<td>4380 mm</td>
</tr>
<tr>
<td>O 56°</td>
<td>—</td>
<td>57°</td>
</tr>
<tr>
<td>P ° max</td>
<td>45°</td>
<td>—</td>
</tr>
<tr>
<td>R 43°</td>
<td>46°</td>
<td>—</td>
</tr>
<tr>
<td>R °</td>
<td>47°</td>
<td>52°</td>
</tr>
<tr>
<td>S 67°</td>
<td>66°</td>
<td>—</td>
</tr>
<tr>
<td>T 112 mm</td>
<td>0°44'</td>
<td>117 mm</td>
</tr>
<tr>
<td>U 430 mm</td>
<td>1°9'</td>
<td>520 mm</td>
</tr>
<tr>
<td>X 1960 mm</td>
<td>6°9'</td>
<td>—</td>
</tr>
<tr>
<td>Y 2490 mm</td>
<td>8°2'</td>
<td>—</td>
</tr>
<tr>
<td>Z 3260 mm</td>
<td>10°8'</td>
<td>3620 mm</td>
</tr>
<tr>
<td>a 5370 mm</td>
<td>17°7'</td>
<td>—</td>
</tr>
<tr>
<td>a 2880 mm</td>
<td>9°5'</td>
<td>—</td>
</tr>
<tr>
<td>a °</td>
<td>±40°</td>
<td>—</td>
</tr>
</tbody>
</table>

* Carry position SAE

#### Tires: 650/65 R25

<table>
<thead>
<tr>
<th>Width over tires mm in</th>
<th>25.8 ft²</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 24 m²</td>
<td>25.8 ft²</td>
</tr>
<tr>
<td>B 3420 mm</td>
<td>11'3&quot;</td>
</tr>
<tr>
<td>C 1810 mm</td>
<td>5'11&quot;</td>
</tr>
<tr>
<td>D 2800 mm</td>
<td>9'2&quot;</td>
</tr>
<tr>
<td>E 1430 mm</td>
<td>4'8&quot;</td>
</tr>
<tr>
<td>F 1450 mm</td>
<td>4'9&quot;</td>
</tr>
<tr>
<td>G 2750 mm</td>
<td>9'0&quot;</td>
</tr>
<tr>
<td>H 4530 mm</td>
<td>14'11&quot;</td>
</tr>
<tr>
<td>I 6580 mm</td>
<td>21'7&quot;</td>
</tr>
<tr>
<td>J 2790 mm</td>
<td>9'2&quot;</td>
</tr>
<tr>
<td>K 2990 mm</td>
<td>9°10'</td>
</tr>
<tr>
<td>L 2130 mm</td>
<td>7°0&quot;</td>
</tr>
<tr>
<td>M 8320 mm</td>
<td>27°3&quot;</td>
</tr>
</tbody>
</table>

#### Supplemental Operating Data

<table>
<thead>
<tr>
<th>Tires 20.5 R25 L2</th>
<th>Standard boom</th>
<th>Long boom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width over tires mm</td>
<td>+200</td>
<td>+7.87</td>
</tr>
<tr>
<td>Ground clearance mm</td>
<td>+10</td>
<td>+0.39</td>
</tr>
<tr>
<td>Tipping load, full turn kg</td>
<td>+320</td>
<td>+705</td>
</tr>
<tr>
<td>Operating weight kg</td>
<td>+550</td>
<td>+1,212</td>
</tr>
</tbody>
</table>
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 2,780 lb/yd³. Result: The 3.5 yd³ bucket carries 3.7 yd³. For optimal stability always consult the bucket selection chart.

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

### Bucket Selection Chart

<table>
<thead>
<tr>
<th>Material</th>
<th>Bucket fill, %</th>
<th>Material density, t/m³</th>
<th>ISO/SAE bucket volume, m³</th>
<th>Actual volume, yd³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth/Clay</td>
<td>~ 110</td>
<td>~ 1.80 – 3.035</td>
<td>2.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Sand/Gravel</td>
<td>~ 105</td>
<td>~ 1.80 – 3.035</td>
<td>2.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Aggregate</td>
<td>~ 100</td>
<td>~ 1.80 – 3.035</td>
<td>2.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Rock</td>
<td>≤100</td>
<td>~ 1.80 – 3.035</td>
<td>2.2</td>
<td>2.9</td>
</tr>
</tbody>
</table>

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

**Engine**
- Three-stage air cleaner with ejector and inner filter
- Indicator glass for coolant level
- Preheating of induction air
- Muffler, spark arresting
- Fuel filter, extra large with water trap
- Fuel fill strainer
- Oil filter

**Electrical system**
- 24 V, prewired for optional accessories
- Alternator, 24 V/80 A
- Exchange battery
- Battery disconnect switch
- Battery boxes, steel
- Fuel gauge
- Hour meter
- Electric horn
- Reverse alarm, self-adjusting
- Instrument panel with symbols

**Lighting**
- • Two halogen front headlights with high and low beams
- • Parking lights
- • Double brake and tail lights
- • Turn signals with flashing hazard light function
- • Halogen working lights (2 front and 2 rear)
- • Instrument lighting

**Contronc monitoring system**
- ECU with log and analysis system
- Contronc display

**Contronic display**
- Fuel consumption
- Outdoor temperature

**Engine shutdown to idle in case of malfunction indication:**
- • High engine coolant temperature
- • Low engine oil pressure
- • High transmission oil temperature

**Start interlock when gear is engaged**
- Brake test

**Test function for warning and indicator lights**
- Warning and indicator lights:
  - Charging
  - Engine pressure
  - Oil pressure, transmission
  - Parking brake pressure

**Auxiliary equipment**
- • Parking brake
- • Hydraulic oil level
- • Axle oil temperature
- • Primary steering
- • Secondary steering (if equipped)
- • High beams
- • Turn signals
- • Rotating beacon (if equipped)
- • Preheating coil (if equipped)
- • Differential lock
- • Coolant temperature
- • Transmission oil temperature
- • Brake charging
- • Level warnings
- • Coolant level
- • Hydraulic oil level
- • Washer fluid level

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

**Tires**
- 20.5 R25

**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), TOPS (ISO 3449)
- Lock kit, one combination
- Fan motor
- Boom lowering system
- Boom kick-out, automatic, adjustable

**Bucket positions, 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
- Basic fenders with wideners for 20.5 R25 tires

**Protective equipment**
- Cover plates, rear frame

**Other equipment**
- Decals, USA

**OPTIONAL EQUIPMENT**

**Service and maintenance**
- Toolbox, lockable
- Tool kit
- Automatic lubrication system, stainless steel
- Automatic lubrication system incl. long boom
- Automatic lubrication system for attachment bracket, cast
- Automatic lubrication system, stainless steel, for attachment bracket, cast

**Fuel system**
- Refill pump for automatic lubrication system
- Wheel nut wrench kit
- Grease nipple guards

**Air sampling valve**
- Oil sampling valve

**Engine configuration**
- Engine block heaters, 120 V
- Engine auto shut down
- Air pre-cleaner, oil-bath type
- Air pre-cleaner, turbo type, one-stage
- Air pre-cleaner, Si-Wolne type, one-stage
- Air pre-cleaner, Si-Wolne type, two-stage
- Fuel filter with water trap and heating

**Hand throttle control**
- Radiator: hydraulic oil cooler and fuel cooler, corrosion-protected
- Fan air intake protection, extra close-meshed
- Reversible cooling fan

**Electrical system**
- Alternator, 80 A, including air filter
- Battery disconnect switch, additional in cab
- Work light, attachments
- Work lights front, extra
- Work lights rear, extra
- Work lights front, on cab, dual
- Work lights front, high intensity
- License plate holder, lighting
- Reverse lights, automatic
- Warning beacon, rotating, collapsible
- Warning beacon, flashing strobe light

**Cab**
- Installation kit for radio, 11 A, 12 V, left and right in cab
- Installation kit for radio, 20 A, 12 V
- Radio with cassette player
- Radio with CD-player
- Sun blinds, front and rear windows
- Sun blinds, side windows
- Retractable hipbelt, longer and wider than standard

**Air-conditioning**
- Conditioning with corrosion prot. condenser and ATC (Automatic Temperature Control)
- Fan for AC condenser

**Ventilation air filter for work in asbestos environment**
- Cab air pre-cleaner, Si-Wolne type
- Operator's seat with low backrest
- Operator's seat, air suspended with electrical heating
- Operator's seat, air suspended, with high backrest
- Operator's seat, air suspended, with electrical heating
- Operator's seat, air suspended, heavy-duty (up to 350 lbs)
- Armrest (left) for operator's seat
- Steering wheel knob
- Noise reduction kit
- Rearview camera incl. monitor
- Rearview camera, color, LCD monitor
- Rearview mirrors, electrically heated
- Foot steps, front frame
- Cab ladder, rubber suspended

**Drivetrain**
- Limited slip rear
- Speed limiter 20 km/h (12.5 mph)
- Speed limiter 30 km/h (18.6 mph)

**Brake system**
- Parking brake, audible
- Stainless steel brake lines

**Hydraulic system**
- Single lever control
- Single lever control for 3rd hydraulic function
- 3rd hydraulic function for long boom
- 3rd hydraulic function for long boom, 19 km/h (11.5 mph)
- 3rd hydraulic function for long boom, 23 km/h (14.2 mph)
- 3rd hydraulic function for long boom, 28 km/h (17 mph)
- Detent for 3rd hydraulic function
- Boom Suspension System (BSS)
- Single-acting lifting function
- Biodegradable hydraulic fluid
- Attachment bracket, cast, visibility-optimized
- Attachment bracket, side-lifting
- Attachment bracket, side-lifting adapter
- Mounting kit for side-lifting adapter
- Arctic kit, attachment lifting hoses
- Arctic kit, pilot hoses and brake accum.
- Separate attachment locking, standard boom
- Separate attachment locking, long boom

**External equipment**
- Long boom
- Front and rear fenders with wideners for 650/65 R25 tires
- Full fenders for 650/65 R25 and 20.5 R25 tires

**Mudflaps for full fenders**
- Delete front fenders and rear fender wideners
- Logging counterweight (with approval)

**Protective equipment**
- Guards for front headlights
- Guards for tail lights
- Guards for tail lights, heavy-duty
- Guards for side and rear windows
- Guard for radiator grill
- Guards for grease nipple
- Guard for center hinge and rear frame
- Guards for boom cylinder hose and tube
- Guards for wheels/axle seals
- Guard for front windshield
- Cover plate, front frame, heavy-duty
- Cover plate under cab
- Belly guard, front
- Belly guard, rear
- Corrosion-protection, painting of machine
- Corrosion-protection, painting of attachment bracket
- Bucket teeth protection
- Fire suppression system
- Anti-theft device

**Other equipment**
- Comfort Drive Control, CDC
- Secondary steering
- Sign, slow moving vehicle

**Decals English/Spanish**
- Tires

**560/65 R25**

**Attachments**
- Buckets:
  - Straight with teeth or bolt-on edges
  - Spade nose
  - High tipping
  - Light materials
  - Grading
  - Pin on
  - Tipping bucket
  - Cutting edge in three sections, bolt-on, reversible

**Fork equipment**
- Material handling arm
- Log grapples
- Snow blade
- Boom
- Sand spreading bucket
- Bale clamp
- Drum rotator
Boom Suspension System (BSS)*
BSS utilizes gas/oil accumulators connected to the lift cylinders to absorb shocks and smooth out rough roads for faster cycle times, less spillage and increased operator comfort.

Automatic Lubrication System*
Our factory fitted Automatic Lubrication System takes care of greasing while the machine is in operation. This means less downtime for scheduled maintenance and more time for productive work.

Comfort Drive Control (CDC)*
CDC significantly reduces repetitive and tiring steering wheel movements. The operator can shift and steer easily with the aid of controls integrated in the left armrest.

3rd and 4th hydraulic functions*
Volvo wheel loaders can be equipped with third and fourth hydraulic functions, which are operated with additional control levers. 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 sweeper attachment or a timber grapple with hydraulic heel kick-out.

Genuine Volvo attachments
Genuine Volvo attachments and wear parts, including the new Volvo Tooth System, are designed as an integral part of the loader, making the L90E a swift and versatile machine in a wide range of applications.

Long boom*
A long boom gives the extra dump height and reach necessary for loading high trucks or feeders.

* Optional equipment
Volvo Construction Equipment is different. It's designed, built and supported in a different way. That difference comes from our 170-year engineering heritage. A heritage of thinking first about the people who actually use the machines. About how to help them be safer, more comfortable, more productive. About the environment we all share. The result of that thinking is a growing range of machines and a global support network dedicated to helping you do more. People around the world are proud to use Volvo. And we're proud of what makes Volvo different – More care. Built in.

All products are not available in all markets. Under our policy of continuous 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.