

**Volvo Construction Equipment** 

# L180H HIGH-LIFT

VOLVO WHEEL LOADERS 33-34 t 334 hp



### A passion for performance

At Volvo Construction Equipment, we're not just coming along for the ride. Developing products and services that raise productivity – we are confident we can lower costs and increase profits for industry experts. Part of the Volvo Group, we are passionate about innovative solutions to help you work smarter – not harder.

#### Helping you to do more.

Doing more with less is a trademark of Volvo Construction Equipment. High productivity has long been married to low energy consumption, ease of use and durability. When it comes to lowering life-cycle costs, Volvo is in a class of its own.

#### Designed to fit your needs.

There is a lot riding on creating solutions that are suited to the particular needs of different industry applications. Innovation often involves high technology – but it doesn't always have to. Some of our best ideas have been simple, based on a clear and deep understanding of our customers' working lives.



#### You learn a lot in 180 years.

Over the years, Volvo has advanced solutions that have revolutionized the use of construction equipment. No other name speaks Safety louder than Volvo. Protecting operators, those around them and minimizing our environmental impact are traditional values that continue to shape our product design philosophy.

#### We're on your side.

We back the Volvo brand with the best people. Volvo is truly a global enterprise, one that is on standby to support customers quickly and efficiently – wherever they are.

#### We have a passion for performance.













Volvo Trucks

Renault Trucks





























Volvo Penta

Volvo Financial Services

Mack Trucks

UD Trucks

Volvo Buses

Volvo high-lift arm system

Increase productivity and maximize your timber yard with Volvo's superior high-lift arm system – designed for high stacking and long reach. Benefits of the system include quick, safe loading and unloading as well as faster ground speeds when travelling with a load due to excellent stability. T

# Sky-high productivity.

Lift higher and reach further with the L180H HL and Volvo's range of grapples. Designed for log handling, this purpose-built machine allows you to stack higher and load faster – increasing productivity and profitability. Get the job done with Volvo.

#### **Boom Suspension System**

The Boom Suspension System (BSS) boosts productivity by up to 20% by absorbing shock and reducing the bouncing that occurs when operating on rough ground. This enables faster and more comfortable work cycles and increases machine life.



#### Log pusher

The log pusher helps to increase stack height by up to 30% (1-1.5 m) while increasing productivity and operating efficiency. Store more timber and push logs further onto the pile to increase space. For comfort and safety, the log pusher is operated by two push buttons in front of the hydraulic control levers.





#### Grapple with rotator unit

For ease of use when placing and picking up logs from the middle of the stack, or when operating over uneven terrain, the grapple with rotator unit and built in shock absorbers can be rotated and tilted. The grapple-tilt cylinder has an integrated damping function which effectively counteracts swaying and provides better control of the load.

## Loaded with efficiency.

The new L180H HL is a purpose-built, high-lift wheel loader designed by Volvo Construction Equipment for log handling. Loaded with innovations and fuel-saving features, this machine works in the most efficient and productive way. One example of this is Volvo's unique OptiShift technology which reduces fuel consumption by up to 18% and increases machine performance.

#### Reverse By Braking (RBB)

The Volvo patented RBB function senses the loader's direction and slows the machine when the operator changes direction by applying the service brakes automatically. This increases fuel efficiency and improves operator comfort. RBB is ideal for short cycle or truck loading applications.





#### Eco pedal

Volvo's unique eco pedal applies mechanical push-back force when the accelerator is used excessively and engine rpm is about to exceed the economic operating range. This encourages the operator to ease off the throttle, reducing fuel consumption.

#### Intelligent hydraulics

Volvo's load-sensing hydraulics supply power to the hydraulic functions according to demand, lowering fuel consumption. The powerful system ensures fast response for shorter cycle times while delivering smooth operation through superior control of both the load and the attachment.





#### OptiShift

VOLVO

Volvo's OptiShift technology combines the company's patented Reverse By Braking (RBB) technology and a torque converter with lock-up. Lock-up creates a direct drive between the engine and transmission – eliminating power losses in the torque converter and reducing fuel consumption by up to 18%.

#### Powertrain

The ideally-matched, all-Volvo powertrain has been built to work together in perfect harmony. The Volvo design has been rigorously tested to deliver optimized performance, high productivity, low fuel consumption and superior reliability.

### New levels of reliability.

Experience top to bottom quality with the Volvo L180H HL. Featuring proven, advanced technology including the premium Volvo Tier 4 Final/Stage IV engine, this dependable machine has been built to last. With reliability you can count on, trust Volvo to help you reach new levels of uptime.

#### Volvo engine

Featuring advanced technology and built on decades of experience, the powerful Volvo Tier 4 Final/Stage IV engine delivers high performance and low fuel consumption. During the regeneration process, particulate matter collected in the DPF is burnt off without interrupting operation, performance or productivity.



#### Reversible cooling fan

The hydraulically-driven, electronically controlled cooling fan regulates the temperature of the vital components. It automatically activates only when it's needed – reducing fuel consumption and noise. The optional reversible functionality – which blows air in the opposite direction – allows for self-cleaning of the cooling units.





#### Axle oil cooling

Both the front and the rear axle feature an axle oil circulation which allows the axle oil to flow and cool inside the axle – protecting components.

### Innovative access.

Access greater uptime and spend longer working with the L180H HL. With a tilting cab and an electrically activated, wide-opening engine hood, it's easy to see that this machine has been designed for quick and easy service and maintenance checks. Get the most out of each working day with Volvo.

#### Maintenance-free batteries

Two heavy-duty, maintenance-free 12V batteries in series provide a 24V electrical system. The batteries are located in a well-sealed compartment on the right side of the machine.



#### Lubrication system

The automatic lubrication system controls greasing when the machine is in operation, resulting in more uptime and reduced maintenance. The operator can alter the lubrication cycle to suit the application.





#### Engine access

Electrically activated, the wide-opening engine hood allows quick and easy service access to the engine and components for maximum uptime.

#### Maintaining a smooth operation

Enjoy peace-of-mind for maximum machine uptime with the rear axle design. The sealed oscillation pins cradle keeps the grease in and the dirt out, keeping components greased for up to 8,000 hours so you can rely on reduced overall service time and costs.



- AOTO

HOBIT

#### Tilting cab

The cab can be tilted in two positions – 35° and 70°. Tilting the cab greatly improves service and maintenance access which leads to more uptime and increased machine availability. The cab is tilted via a hydraulic pump.



#### High-lift arm system

Volvo's high-lift arm system is designed for high stacking and long reach - allowing you to increase productivity and maximize your timber yard.

#### Grapple with rotator unit

The grapple can be tilted and rotated for easy placement and pick-up of logs from anywhere in the stack.

#### Fire suppression system

For added safety, the optional fire suppression system consists of up to 16 nozzles that are automatically activated inside the engine compartment when excessive heat is detected.



#### OptiShift

Volvo's OptiShift technology reduces fuel consumption by up to 18%, increases operator comfort and reduces stress in the drivetrain.

#### Boom Suspension System (BSS)

The BSS boosts productivity by up to 20% by absorbing shock and reducing the bouncing that occurs when operating at speed on rough terrain.



#### Powertrain

The ideally-matched, all-Volvo powertrain has been built to work together in perfect harmony - ensuring optimized performance.

### Set your targets higher.



#### Volvo cab

Volvo's industry-leading, certified ROPS/FOPS cab features ergonomically placed controls, low internal noise levels, vibration protection and ample storage space.



#### Tilting cab

The cab can be tilted in two positions –  $35^\circ\,\text{and}\,\,70^\circ$ - for improved service and maintenance access. This leads to more uptime and increased machine availability.

#### AdBlue®

Volvo offers a total AdBlue solution that is quality assured, cost efficient and easily accessible. Contact your Volvo dealer for more information.

#### Volvo engine

Volvo's Tier 4 Final/Stage IV engine delivers high performance and low fuel consumption.

#### Easy service access

Electrically activated, wide-opening engine hood allows quick and easy service access to the engine compartment.

#### Reversible cooling fan

The cooling fan automatically activates only when it's needed to regulate the temperature of components. The reversible functionality allows for selfcleaning of the cooling units.

#### Intelligent hydraulics

Volvo's load-sensing hydraulics supply power to the hydraulic functions according to demand, lowering fuel consumption.

® = registered trademark of the Verband der Automobilindustrie e.V. (VDA)



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#### Volvo cab

The spacious ROPS/FOPS certified cab provides a comfortable operating environment with ergonomically placed controls and ample storage space. With low internal noise levels and vibration protection, operators will experience a productive work shift.

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### Unparalleled operator comfort.

Volvo's industry-leading cab provides operators with the most effective workplace in the business. Featuring ample leg room, easy to access controls and built in safety, it's clear to see that the cab has been designed with productivity in mind. But don't just take our word for it, step inside and take a look for yourself.

#### Visibility

Volvo offers a variety of options to improve safety and visibility when working in the dark. This includes reflectors which follow the contour of the machine, LED entrance lights which illuminate the cab for safe entry and exit and additional LED work lamps which increase visibility around the machine.





#### Cab air filter

The cab air intake is located high on the machine, where air is cleanest. The easy-to-replace pre-filter separates coarser dust and particles before the air passes through the main filter and finally enters the cab. Volvo's industry-leading design allows 90% of the cab air to be recirculated through the main filter for continuous dust removal.



#### Fire suppression system

For added safety, the optional fire suppression system consists of up to 16 nozzles that are automatically activated inside the engine compartment if excessive heat is detected. The system has been rigorously tested and is purpose built for Volvo wheel loaders. It is a semi-automatic system which also can be manually activated both inside and outside the cab.

### Adding value to your business.

Being a Volvo customer means having a complete set of services at your fingertips. Volvo can offer you a long-term partnership, protect your revenue and provide a full range of customer solutions using high quality parts, delivered by passionate people. Volvo is committed to increasing the positive return on your investment and maximising uptime.



#### **Complete Solutions**

Volvo has the right solution for you. So why not let us provide all your needs throughout the whole life cycle of your machine? By listening to your requirements, we can reduce your total cost of ownership and increase your revenue.









#### **Genuine Volvo Parts**

Our attention to detail is what makes us stand out. This proven concept acts as a solid investment in your machine's future. Parts are extensively tested and approved because every part is vital for uptime and performance. Only by using Genuine Volvo Parts, can you be sure that your machine retains the renowned Volvo quality.



#### Service Network

In order to respond to your needs faster, a Volvo expert is on their way to your job site from one of our Volvo facilities. With our extensive infrastructure of technicians, workshops and dealers, Volvo has a comprehensive network to fully support you using local knowledge and global experience.





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PROFITABILITY

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#### **Customer Support Agreements**

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The range of Customer Support Agreements offer preventive maintenance, total repairs and a number of uptime services. Volvo uses the latest technology to monitor machine operation and status, giving you advice to increase your profitability. By having a Customer Support Agreement you are in control of your service costs.

FUEL CONSUMPTION

### Volvo L180H High-Lift in detail.

#### Engine

V-ACT Stage IV/Tier 4F, 13 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 applications is transmitted electrically from the throttle pedal or the optional hand throttle.

Air cleaning: Two-stage: - primary filter -secondary filter. Cooling system: Hydraulically driven radiator cooling fan. Engine

| Engine                  |             | D13J                           |
|-------------------------|-------------|--------------------------------|
| Max power at            | r/s (r/min) | 21.7 - 23.3<br>(1 300 - 1 400) |
| SAE J1995 gross         | kW / hp     | 246 / 334                      |
| ISO 9249, SAE J1349 net | kW / hp     | 245 / 333                      |
| Max torque at           | r/s (r/min) | 16.7 (1 000)                   |
| SAE J1995 gross         | Nm          | 2 030                          |
| ISO 9249, SAE J1349 net | Nm          | 2 024                          |
| Economic working range  | r/min       | 800 - 1 600                    |
| Displacement            | I           | 12.8                           |



#### Brake system

**Service brake:** Volvo dual-circuit system with nitrogen-charged accumulators. Outboard-mounted fully hydraulic operated, fully sealed oil circulation-cooled wet disc brakes. The operator can select automatic declutch of the transmission when braking by a switch on the instrument panel.

**Parking brake:** Fully sealed, wet multi-disc brake built into the transmission. Applied by spring force, electro-hydraulic release with a switch on the instrument panel.

**Secondary brake:** Dual brake circuits with rechargeable accumulators. One circuit or the parking brake fulfills all safety requirements.

**Standard:** The brake system complies with the requirements of ISO 3450.

| Number of brake discs per w | heel (front) | 1                 |
|-----------------------------|--------------|-------------------|
| Accumulators                | I            | 2 x 1.0 + 1 x 0.5 |

#### Electrical system

**Central warning system:** Contronic electrical system with central warning light and buzzer for following functions: - Serious engine fault - Low steering system pressure - Over speed warning engine - Interruption in communication (computer fault) Central warning light and buzzer with the gear engaged for the following functions. - Low engine oil pressure - High engine oil temperature - High charge air temperature - Low coolant level - High coolant temperature - High crank case pressure - Low transmission oil pressure - High transmission oil temperature - Low brake pressure - Engaged parking brake - Fault on brake charging - Low hydraulic oil level - High hydraulic oil temperature - Overspeeding in engaged gear - High brake cooling oil temperature front and rear axles.

| Voltage                        | V   | 24         |
|--------------------------------|-----|------------|
| Batteries                      | V   | 2 x 12     |
| Battery capacity               | Ah  | 2 x 170    |
| Cold cranking capacity, approx | А   | 1 000      |
| Alternator rating              | W/A | 2 280 / 80 |
| Starter motor output           | kW  | 7.0        |

#### Drivetrain

Torque converter: Single-stage.

**Transmission:** Volvo countershaft transmission with single lever control. Fast and smooth shifting of gears with Pulse Width Modulation (PWM) valve. Torque converter with lockup. **Transmission:** Volvo Automatic Power Shift (APS) with fully automatic shifting 1-4 and mode selector with 4 different gear shifting programs, including AUTO.

**Axles:** Volvo fully floating axle shafts with planetary hub reductions and nodular iron axle housing. Fixed front axle and oscillating rear axle. 100% differential lock on the front axle.

| Transmission                       |              |      | Volvo HTL 221 |
|------------------------------------|--------------|------|---------------|
| Torque multiplication, stall ratio |              |      | 1.856:1       |
|                                    | 1st gear km/ |      | 6.5           |
| Maximum speed,                     | 2nd gear     | km/h | 12.5          |
| forward/reverse                    | 3rd gear     | km/h | 26.0          |
| 4th gear*                          |              | km/h | 38.0          |
| Measured with tires                |              |      | 800/65R29     |
| Front axle/rear axle               |              |      | AWB 40B       |
| Rear axle oscillation ±            |              | 0    | 13            |
| Ground clearance at 13° osc.       |              | mm   | 610           |

\*) limited by ECU

#### Cab

**Instrumentation:** All important information is centrally located in the operator's field of vision. Display for Contronic 3.0 monitoring system.

**Heater and defroster:** Heater coil with filtered fresh air and fan with auto and 11 speeds. Defroster vents for all window areas. **Operator's seat:** Operator's seat with adjustable suspension and retractable seatbelt. The seat is mounted on a bracket on the rear cab wall. The forces from the retractable seatbelt are absorbed by the seat rails.

**Standard:** The cab is tested and approved according to ROPS (ISO 3471), FOPS (ISO 3449). The cab meets with requirements according to ISO 6055 (Operator overhead protection - Industrial trucks) and SAE J386 ("Operator Restraint System").

Sound level in cab according to ISO 6396/SAE J2105

| LpA                            | dB(A)                  | 70  |
|--------------------------------|------------------------|-----|
| External sound level according | g to ISO 6395/SAE J210 | 04  |
| LwA                            | dB(A)                  | 108 |
| Ventilation                    | m³/min                 | 9   |
| Heating capacity               | kW                     | 16  |
| Air conditioning (optional)    | kW                     | 7.5 |

#### Steering system

**Steering system:** Load-sensing, hydrostatic articulated steering. **System supply:** The steering system has priority feed from a loadsensing axial piston pump.

Steering cylinders: Two double-acting cylinders.

| •••                  | 0 )   |               |
|----------------------|-------|---------------|
| Cylinder bore        | mm    | 100           |
| Piston rod diameter  | mm    | 60            |
| Stroke               | mm    | 525           |
| Working pressure     | MPa   | $21 \pm 0.35$ |
| Maximum flow         | l/min | 252           |
| Maximum articulation | ±°    | 37            |
| Sorvico              |       |               |

#### Service

**Service accessibility:** Large, easy-to-open hood covering whole engine department, electrically operated. Fluid filters and component breather air filters promote long service intervals. Possibility to monitor, log and analyze data to facilitate troubleshooting.

| Fuel Tank           | I | 366     |
|---------------------|---|---------|
| Engine coolant      | I | 55      |
| AdBlue              | I | 31      |
| Hydraulic oil tank  | I | 156     |
| Transmission oil    | I | 48      |
| Engine oil          | I | 50      |
| Axle oil front/rear | I | 46 / 55 |

#### Lift arm system

The Volvo high-lift arm system is a rugged and stabile in-house design, with optimized visibility throughout the work cycle. The new lift arm design gives increased lift height and the possibility to rotate the grapple 360 degrees fully open at top position. The lift height is 5.8 meters under closed grapple.

| Lift cylinders      |    | 2     |
|---------------------|----|-------|
| Cylinder bore       | mm | 140   |
| Piston rod diameter | mm | 110   |
| Stroke              | mm | 2 220 |
| Tilt cylinder       |    | 2     |
| Cylinder bore       | mm | 140   |
| Piston rod diameter | mm | 70    |
| Stroke              | mm | 691   |

#### Hydraulic system

**System supply:** Two load-sensing axial piston pumps with variable displacement. The steering function always has priority from one of the pumps.

Valves: Two main valves. Main valve 1: 2 spool control valve for

lift- and tilt function. Main valve 2: 4 spool control valve for grapple, grapple tilt, rotator and log pusher (extra equipment).

| Filter: Full now intration through 10 micron | (absolute) filte | er cantriage. |
|--|------------------|---------------|
| Working pressure maximum, pump 1             | MPa              | 20            |
| Working pressure maximum, pump 2             | MPa              | 21            |
| Pilot system                                 | MPa              | 3.2 - 4.0     |
| Lower, empty (top to bottom)                 | S                | 6             |

### Specifications.





Note: When loading a vehicle, the log grapple's width (M-measure) should be 150 mm narrower compared to the distance between the "stakes" (W) on the vehicle.

#### Tires: 775/65 R29\*

| Rota           | ting grapple, 360°, 3.2 m², 821     | 27 |         |
|----------------|-------------------------------------|----|---------|
| A <sub>1</sub> | Grapple positioned lengthwise       | mm | 9 600   |
|                | <ul> <li>with log pusher</li> </ul> | mm | 9916    |
| $A_2$          | Grapple tilted forward              | mm | 10 590  |
| $C_1$          | Grapple positioned lengthwise       | mm | 5 160   |
| $C_2$          | Grapple tilted forward              | mm | 4 760   |
| Н              |                                     | mm | 9 1 3 2 |
| I              |                                     | mm | 8 930   |
| K              |                                     | mm | 2 760   |
| L              |                                     | mm | 3 990   |
| Х              |                                     | mm | 2 280   |
| Υ              |                                     | mm | 3 080   |
| a,             |                                     | mm | 7 630   |
| $a_2$          |                                     | mm | 6 840   |
| a <sub>3</sub> |                                     | mm | 3 830   |
| a <sub>4</sub> |                                     | 0  | ±37     |



|                               |                | Timber<br>Length<br>5.0 m |               | Timber<br>Length<br>4.0 m | Pulpv<br>Len<br>4.0 | gth    |
|-------------------------------|----------------|---------------------------|---------------|---------------------------|---------------------|--------|
| Tires 775/65 R29*             |                | 6                         |               |                           |                     |        |
| Grapple area                  | m <sup>2</sup> | 3.2                       | 3.2           | 3.5                       | 3.8                 | 3.8    |
| Grapple weight                | kg             | 1 880                     | 2 050/1 960   | 2 150                     | 2 020/1 940         | 2 210  |
| Working load                  | kg             | 8 800                     | 8 600/8 700   | 8 500                     | 8 600/8 700         | 8 500  |
| A                             | mm             | 5 800                     | 5 800         | 5 700                     | 5 350               | 5 350  |
| В                             | mm             | 6 700                     | 6 700         | 6 600                     | 6 450               | 6 450  |
| С                             | mm             | 3 630                     | 3 630         | 3 750                     | 4 500               | 4 500  |
| D                             | mm             | 2 900                     | 2 900         | 2 850                     | 3 350               | 3 200  |
| E                             | mm             | 1 330                     | 1 330         | 1 430                     | 1 780               | 1 780  |
| F                             | mm             | 2 255                     | 2 255         | 2 150                     | 1 800               | 1 800  |
| G                             | mm             | 1 100                     | 1 100/900     | 11                        | 1 100/900           | 900    |
| Μ                             | mm             | 2 400                     | 2 400         | 2 550                     | 2 350               | 2 350  |
| Operating weight*             | kg             | 33 600                    | 33 800/33 700 | 33 700                    | 33 760/33 680       | 34 030 |
| Shortwood (pulpwood)          |                |                           |               |                           | х                   | Х      |
| Timber                        |                | Х                         | х             | Х                         |                     |        |
| Terminal handling             |                | Х                         | х             | Х                         | х                   | Х      |
| Unloading/loading of vehicles |                | х                         | х             | х                         | x/x                 | x/x    |
| Unloading against wall        |                |                           |               |                           | х                   | х      |
| With hydraulic clamping arms  |                |                           | Х             | Х                         |                     | х      |
| With triplex chain            |                | х                         |               |                           | Х                   |        |
| Order no.                     |                | 91 852                    | 82 127/82 126 | 82 128                    | 94 463/93 607       | 82 129 |

\* Including liquid in rear tires. Optional liquid in front tires increases the weight by 1830 kg. The log pusher increases operating weight by 800 kg. Log pusher, order no. 84184.

### Equipment.

| STANDARD EQUIPMENT   |
|--|
| Service and maintenance  |
| Automatic lubrication system   |
| Engine oil remote drain and fill   |
| Transmission oil remote drain and fill   |
| Lubrication manifolds, ground accessible   |
| Pressure check connections: transmission and hydraulic, quick-connects                             |
| Tool box, lockable   |
| Engine   |
| Exhaust after-treatment system<br>Two stage air cleaner, pre-cleaner, primary and secondary filter |
| Indicator for coolant level  |
| Preheating of induction air  |
| Fuel pre-filter with water trap  |
| Fuel filter  |
| Crankcase breather oil trap  |
| Exterior radiator air intake protection  |
| Electrical system  |
| 24 V, pre-wired for optional accessories   |
| Alternator 24V/80A/2280W<br>Battery disconnect switch  |
| Fuel gauge   |
| Hour meter   |
| Electric horn  |
| Instrument cluster:  |
| Fuel level   |
| Diesel Exhaust Fluid/AdBlue level  |
| Transmission temperature   |
| Coolant temperature  |
| Instrument lighting<br>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)   |
| Contronic monitoring system  |
| Monitoring and logging of machine data<br>Contronic display  |
| Fuel consumption   |
| Diesel Exhaust Fluid/AdBlue consumption  |
| Ambient temperature  |
| Clock  |
| Test function for warning and indicator lights   |
| Brake test   |
| Test function, sound level at max fan speed  |
| Warning and indicator lights:<br>Battery charging  |
| Parking brake  |
| Warning and display message:   |
| Regeneration   |
| Engine coolant temperature   |
| Charge-air temperature   |
| Engine oil temperature<br>Engine oil pressure  |
| Transmission oil temperature   |
| Transmission oil pressure  |
| Hydraulic oil temperature  |
| Brake pressure   |
| Parking brake applied  |
| Brake charging<br>Overspeed at direction change  |
| Axle oil temperature   |
| Steering pressure  |
| Crankcase pressure   |
| Attachment lock open   |
| Safety Belt Warning<br>Level warnings:   |
| Fuel level   |
| Diesel Exhaust Fluid/AdBlue level  |
| Engine oil level   |
| Engine coolant level   |
| Transmission oil level   |
| Hydraulic oil level<br>Washer fluid level  |
| Engine torque reduction in case of malfunction indication:   |
| High engine coolant temperature  |
| High engine oil temperature  |
| Low engine oil pressure  |
| High crankcase pressure<br>High charge-air temperature   |
| Engine shutdown to idle in case of malfunction indication:   |
| High transmission oil temperature  |
| Slip in transmission clutches  |
| Keypad, background lit   |
| Start interlock when gear is engaged   |

#### Drivetrain Automatic Power Shift Fully automatic gearshifting, 1-4 PWM-controlled gearshifting Forward and reverse switch by hydraulic lever console Indicator glass for transmission oil level Differentials: Front, 100% hydraulic diff lock. Rear, conventional. OptiShift OptiShift Lock-up first gear Brake system Dual brake circuits Dual brake pedals Secondary brake system Parking brake, electro-hydraulic Brake wear indicators Oil cooler and filter front & rear axle Cab ROPS (ISO 3471), FOPS (ISO 3449) Single key kit door/start Acoustic inner lining Cigarette lighter, 24 V power outlet Cab heating with fresh air inlet and defroster Fresh air inlet with two filters Automatic heat control Floor mat Dual interior lights Interior rear-view mirrors Dual exterior rear-view mirrors Sliding window, right side Tinted windshield glass Retractable seatbelt (SAE J386) Adjustable steering wheel Storage compartment Document pocket Sun visor Beverage holder Windshield washer front and rear Windshield wipers front and rear Interval function for front and rear wipers Hydraulic system Hydraulic system Main valve, double acting 2-spool with hydraulic pilots Variable displacement axial piston pumps (3) for: 1 Working hydraulics, Pilot hydraulics and Brake system 2 Working hydraulics, Pilot hydraulics, Steering and Brake system 3 Cooling fan and Brake system Electron-hydraulic servo controls Electron-bydraulic servo controls Electronic hydraulic lever lock Automatic boom kick-out Automatic bucket positioner Double-acting hydraulic cylinders Indicator glass for hydraulic oil level Hydraulic oil cooler Boom suspension system External equipment Orange hand rails Fenders, front and rear Viscous cab mounts Rubber engine and transmission mounts Frame, joint lock Vandalism lock prepared for Engine compartment Radiator grille Lifting eyes Tie-down eyes Fabricated counterweight Counterweight, pre-drilled for optional guards Other equipment Counterweight, logging **OPTIONAL EQUIPMENT**

| Service and maintenance                    |
|--|
| Oil sampling valve                         |
| Refill pump for grease to lube system      |
| Tool kit                                   |
| Wheel nut wrench kit                       |
| CareTrack, GSM, GSM/Satellite              |
| Telematics, Subscription                   |
| Engine                                     |
| Air pre-cleaner, cyclone type              |
| Air pre-cleaner, oil-bath type             |
| Air pre-cleaner, turbo type                |
| Engine auto shutdown                       |
| Engine block heater 230V/110V              |
| Fuel fill strainer                         |
| Fuel heater                                |
| Hand throttle control                      |
| Max. fan speed, hot climate                |
| Radiator, corrosion-protected              |
| Reversible cooling fan                     |
| Reversible cooling fan and axle oil cooler |
|  |

#### OPTIONAL EQUIPMENT

#### SELECTION OF VOLVO OPTIONAL EQUIPMENT

| OPTIONAL EQUIPMENT  |
|---|
| Electrical system<br>Anti-theft device  |
| Emergency stop  |
| Locking device, Tag out Lock out  |
| Headlights, assym. left   |
| License plate holder, lighting<br>Rear vision system, colour LCD monitor in the cab                         |
| Reduced function working lights, reverse gear activated   |
| Reverse alarm, audible  |
| Reverse alarm, audible, multi-frequency<br>Reverse warning light, strobe lighting                           |
| Side marker lamps   |
| Warning beacon LED  |
| Working lights halogen, attachments   |
| Working lights LED, attachments<br>Working lights on cab halogen, rear                                      |
| LED Head Light  |
| Working lights, on cab LED, rear  |
| Working lights, rear in grille, 2 LED lamps<br>Working lights, front above head lamps, 2 LED lamps          |
| Taillight, LED lamp   |
| Electrical distribution unit 24 volt  |
| Radar detect system   |
| Jump start connector, NATO-Type Cab   |
| Anchorage for Operator's manual   |
| Automatic Climate Control, ACC  |
| ACC control panel, with Fahrenheit scale  |
| Asbestos dust protection filter<br>Ashtray  |
| Cab air pre-cleaner, cyclone type   |
| Carbon filter   |
| Cover plate, under cab<br>Lunch box holder  |
| Volvo Armrest, operator's seat, left  |
| Operator's seat, Volvo air susp, heavy-duty, high back, heated  |
| Operator's seat, (air seat std) 2-point seat belt   |
| Operator's seat, (air seat std) 3-point seat belt<br>Radio installation kit incl. 12 volt outlet, left side |
| Radio installation kit incl. 12 volt outlet, right side   |
| Radio (with AUX, Bluetooth and USB connection)  |
| Subwoofer   |
| Steering wheel knob<br>Sun blinds, rear windows   |
| Sun blinds, side windows  |
| Timer cab heating   |
| Window, sliding, door<br>Universal door/ignition key  |
| Remote door opener  |
| Forward view mirror   |
| Cab heater power outlet 240V Drivetrain   |
| Speed limiter   |
| Brake system  |
| Stainless steel, brake lines Hydraulic system   |
| Separate attachment locking   |
| Hydraulic fluid, biodegradable, Volvo   |
| Hydraulic fluid, fire-resistant   |
| Hydraulic fluid, for hot climate External equipment   |
| Cab ladder, rubber-suspended  |
| Fire suppression system   |
| Mudguards, full cover wideners and prot. Included Tow hitch   |
| Protective equipment  |
| Belly guard rear  |
| Cover plate, rear frame<br>Cab roof, heavy-duty   |
| Guards for front headlights   |
| Guards for radiator grill   |
| Guards for tail lights  |
| Windows, side and rear guards<br>Windshield guard   |
| Other equipment   |
| CE-marking  |
| Comfort Drive Control (CDC)<br>Secondary steering with automatic test function                              |
| Sound decal, EU   |
| Sound decal, USA  |
| Reflecting stickers (decals), machine contour   |
| Reflecting stickers (stripes), machine contour Cab<br>Noise reduction kit, exterior                         |
| Sign, slow moving vehicle   |
| Sign, 50 km/h   |
| Tires<br>775/65 R29   |
| Attachments   |
| Log grapples  |
|   |



3-point seat belt



Radar detect system



Not all products are 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.



Volvo Construction Equipment