

V O L V O



Volvo Excavator | 22,3 - 23,7 t | 165 hp

EC220DL FORESTRY

Volvo Construction Equipment

Volvo EC220DL Forestry is the right equipment to leverage productivity and reliability in forestry harvesting operations.

The EC220DL Forestry excavator comes fully equipped to tackle the toughest forestry harvesting applications. With the reliability of the Volvo Equipment and leader-of-the-industry efficiency, this machine takes forestry harvesting efficiency to a higher level.



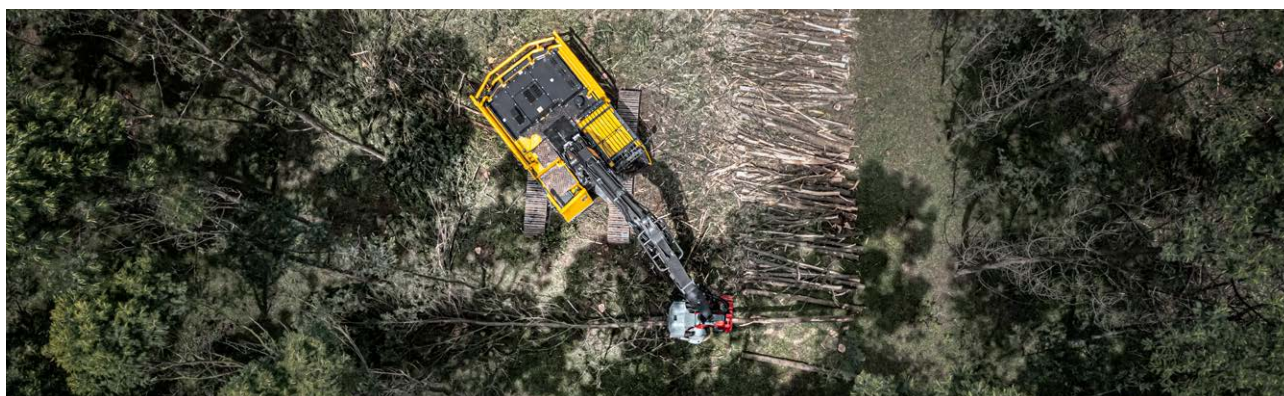
A solution developed after years of experience

We listen to customers to deliver an equipment to fully meet the demands of the forestry harvesting business, and that guarantees high levels of reliability, durability, and productivity. These years of experience and Volvo's assessments of the forestry segment gave rise to the new EC220DL Forestry. In addition to the exceptional performance and low fuel consumption, this machine features components, structures, and protection specially developed to meet the harshness of forestry harvesting operation needs.

Built to work day and night

To reach the required production level, the downtime must be as short as possible; and it is often necessary to work day and night. The EC220DL Forestry is ready for these situations. With a fuel tank capacity of 638 liters, the equipment can work more than 1 day without refueling. The high-capacity lighting system is equipped with 13 led work lights, which ensures optimal visibility and safety during night work.

The machine is also equipped with a new toolbox, a saw chain compartment and water tank, for operator convenience. For easier, cleaner and eco friendly maintenance, the EC220DL Forestry is prepared for vacuum pump installation.



Built specifically for forestry harvesting

Forest work requires an equipment with different characteristics from other segments. Operator integrity and safety, machine reliability and durability are particularly taken into account in forestry harvesting applications. Volvo is seriously committed to delivering an equipment that meets the needs and expectations of the demanding forestry customers.

Cabin is forestry ROPS/FOPS/OPS certified. The 19.7 mm, single-piece polycarbonate windshield, along with the 12 mm polycarbonate side windows, provide operator safety. EC220DL Forestry upper frame was specially developed for this application, and access to the upper frame from the side, ensures safe and easy access.

The heavy duty arm with underneath piping was developed for forestry applications. Adapter holds an oil reservoir for the harvester head chain lubrication.

The EC220DL Forestry features a new high capacity cooling package, with reversible fan, to meet the most severe hydraulic demand from harvester heads. This cooling package includes a tiltable condenser, for easier cleaning.

Built to last!

Forestry requires equipment with unparalleled robustness. That is why the EC220DL Forestry has a lower frame specially developed for this application.

The undercarriage is reinforced with bi-supported large diameter top rollers and extra guides for track chains. This machine is fitted with specific protection items for forestry application: full-track bottom rollers guard, traction motors extra duty cover plates and reinforced ribbing for idlers.

A bolt-on roll cage protects the superstructure against falling trees. Its modular design allows easier and faster repair if needed. Side doors and engine hood are made of thick steel plates. Upper frame also holds swing gear protection, extra duty under cover and SIPS (side impact protection structure).

Superstructure robustness is completed by front shield and protections for muffler, swing motor, boom cylinders, boom and arm hoses. These allow extra protection against logs and branches, for an increased machine uptime.

Built specifically for one purpose

Boom and arm

- HD forestry boom with underneath piping
- Adapter with oil reservoir

Electric System

- Battery master switch with locking device (lock-out, tag-out)
- Vacuum pump installation preparation
- 13 LED work lights
 - 4 frontal lights on the top of the cabin
 - 2 rear lights on the top of the cabin
 - 2 lights on the boom
 - 1 light on counterweight
 - 2 lights on the frontal shield
 - 2 lights on deck

Upper Frame

- Side access to upper frame
- HD side doors
- HD engine hood
- 638-liter fuel tank
- High-capacity cooling package with reversible fan
- Tilting condenser
- Bolt-on compartment for saw chain storage
- Water tank
- New toolbox

Hydraulic System

- X1 forestry hydraulic auxiliary line
 - Simple harvesting and processing use
- X3 rotation low flow hydraulic auxiliary line



Tough terrains, mud, freezing winters, scorching summers, around-the-clock operation, 7 days a week... Forestry is a demanding business. You need an equipment you can rely on to tackle your operation. The EC220DL Forestry is the ideal solution.

Operator Cabin

- Forestry cabin with forestry ROPS/ FOPS/OPS certification
- One-piece 19.7-mm polycarbonate windshield and 12-mm polycarbonate side windows
- Easy access emergency stop switches – above dashboard and below the seat
- Bracket for forestry head panel installation

Protection

- Bolt-on upper structure protection
- Front shield with integrated LED lights
- Muffler protection
- Slew engine protection and turning joint
- Gap protection behind the cabin
- Arm and boom hose protection
- Boom cylinder protection
- Swing gear protection
- Welded SIPS



Undercarriage

- Bi-supported top rollers
- Forestry-type full-track guard
- Extra track chain guides
- Reinforced ribs on idler support
- HD traction motor covers
- HD under cover plates

Customer Support Agreements

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.

The background image shows two Volvo construction workers in a quarry. One worker is wearing a yellow hard hat and an orange high-visibility jacket, while the other is wearing a blue hard hat and a yellow high-visibility jacket. They are both looking at a tablet held by the worker in the yellow jacket. In the background, there is a large quarry with a Volvo excavator and a Volvo truck.

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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 the 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.



CareTrack

CareTrack is the state-of-the-art Volvo telematics system that provides access to a wide range of machine monitoring information designed to save time and money. Proactively manage service and maintenance schedules, optimize machine and operator performance and reduce fuel costs with CareTrack.



Volvo EC220DL Forestry details

Engine

The engine, which provides excellent performance, is equipped with four cylinder, vertical, electronic-controlled high pressure fuel injectors, turbo charger with waste gate, air-to-air intercooler and water cooled diesel type.

Engine	Volvo	D6E
Max power at	r/min	1 800
	kW	115
Net, ISO 9249/ SAE J1349	cv	156
	hp	154
	kW	123
Gross, ISO 14396/ SAE J1995	cv	167
	hp	165
Max torque	Nm	730
at engine speed	r/min	1 350
No. of cylinders		6
Displacement	l	5.7
Bore	mm	98
Stroke	mm	126

Electric System

Well protected high-capacity electrical system. Waterproof double-lock connectors are used to ensure corrosion-free connection. Main relays and fuses are located in a shielded electrical distribution box. The master switch is standard. Advanced monitoring of machine functions and important diagnostic information is displayed on the I-ECU.

Voltage	V	24
Batteries	V	2 x 12
Battery capacity	A	150
Alternator	V/Ah	28/80
Start motor	V/kW	24/5.5

Swing System

The swing system uses an axial piston motors, driving a planetary gearbox for maximum torque. An automatic holding brake and anti-rebound valve are standard.

Max slew speed	r/min	12.1
Max. slew torque	kN.m	76.7

Drive

Each track is powered by an automatic two-speed shift travel motor. The track brakes are multi-disc, spring-applied and hydraulic released. The travel motor, brake and planetary gears are well protected within the track frame.

Max drawbar pull	kN	183
Max travel speed (low)	km/h	3.5
Max travel speed (high)	km/h	5.7
Gradeability	degrees	35° (70%)

Undercarriage

Robust X-shaped frame with greased and sealed track chains as standard.

Link pitch	mm	190
Track shoe		2 x 49
Shoe width, triple grouser	mm	600/700
Shoe width, double grouser	mm	600
Bottom rollers		2 x 8
Top rollers		2 x 2

Hydraulic System

The hydraulic system and MCV (main control valve) use intelligent technology to control on-demand flow for high productivity, high-digging capacity and excellent fuel economy. The summation system, boom, arm and swing priority along with boom and arm regeneration provides optimum performance. The following important functions are included in the system:

Summation system: Combines the flow of both hydraulic pumps to ensure quick cycle times and high productivity.

Boom priority: Gives priority to the boom operation for faster raising when loading or performing deep excavations.

Arm priority: Gives priority to the arm operation for faster cycle times in leveling and for increased bucket filling when digging.

Swing priority: Gives priority to swing functions for faster simultaneous operations.

Regeneration system: Prevents cavitation and provides flow to other movements during simultaneous operations for maximum productivity.

Power boost: All digging and lifting forces are increased.

Holding valves: Boom and arm holding valves prevent the digging equipment from creeping.

Main pump, 2 x variable displacement axial piston pumps

Max. flow	l/min	2 x 207
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Pilot pump. Gear pump

Max. flow	l/min	1 x 18
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Relief valve setting pressure

Implement	MPa	34.3 / 36.3
Travel circuit	MPa	34.3
Slew circuit	MPa	27.9
Pilot circuit	MPa	3.9

Hydraulic Cylinders

Mono boom		2
Bore x Stroke	ø x mm	125 x 1 235
Arm		1
Bore x Stroke	ø x mm	135 x 1 540

Service Refill

Fuel tank	l	638
Hydraulic system, total	l	295
Hydraulic tank	l	160
Engine oil	l	25
Engine coolant	l	28
Slew reduction unit	l	8.6
Travel reduction unit	l	2 x 5.8

Cab

ROPS forestry/FOPS/OPS (ISO 8082-2 / ISO 10262/ ISO 8084) certified cabin. The operator's cab has easy access via a wide door opening. The cab is supported on hydraulic dampening mounts to reduce shock and vibration levels. These along with sound absorbing lining provide low noise levels. The cab has excellent all-round visibility. It features an one-piece 19.7 mm polycarbonate windshield, 12 mm polycarbonate side windows and tempered-glass rear window emergency exit.

Integrated air-conditioning and heating system:

The pressurized and filtered cab air is supplied by an automatically controlled fan. The air is distributed throughout the cab from 14 vents.

Ergonomic operator's seat:

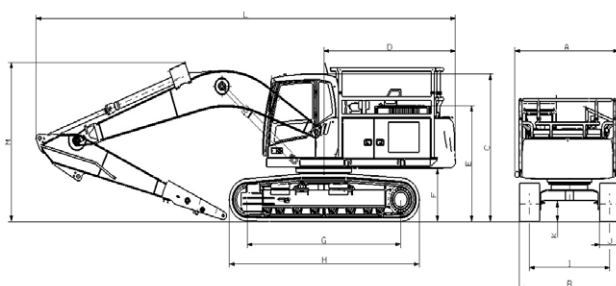
The adjustable seat and joystick console move independently to accommodate the operator. The seat has 12 different adjustments plus a seat belt for the operator's comfort and safety.

Specifications

MACHINE WEIGHTS AND GROUND PRESSURE

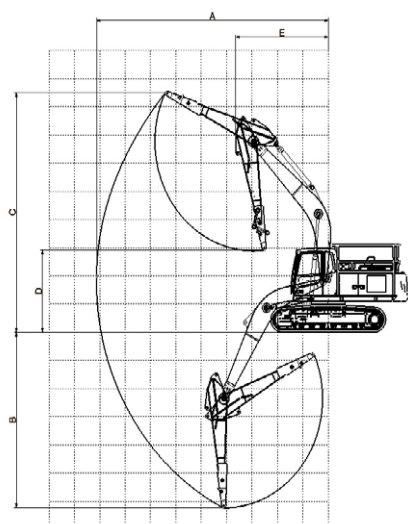
Description	Shoe Width	Operating Weight	Ground pressure	Overall width
Units	mm	kg	kPa	mm
5.7 m HD boom; 2.9 HD forestry arm; 3 200 kg counterweight				
Triple grouser	600	23 260	52.0	3 080
Double grouser	600	23 660	53.0	3 080

DIMENSIONS



Description	Unit	EC220DL Forestry
Boom	m	5.7
Arm	m	2.9
A Overall width of upper structure	mm	3 080
B Overall width	mm	2 990
C Overall height of cab	mm	2 930
D Tail swing radius	mm	3 130
E Overall height of engine hood	mm	2 355
F Counterweight clearance*	mm	1 025
G Tumbler length	mm	3 660
H Track length	mm	4 460
I Track gauge	mm	2 390
J Shoe width	mm	600
K Min. ground clearance*	mm	460
L Overall length	mm	9 990
M Overall height of boom	mm	3 230

* Without shoe grouser



WORKING RANGES

Description	Unit	EC220DL Forestry
Boom	m	5.7
Arm	m	2.9
A Max reach from center	mm	9 120
B Max depth from ground level	mm	6 240
C Max lifting height (with arm fully extended)	mm	8 505
D Max lifting height (with arm fully retracted)	mm	2 910
E Minimum front swing radius	mm	3 640

BOOM/ARM HD				
	Boom	Arm	Counterweight	Shoe
EC220DL Forestry	5,7m	2,9m	3 200kg	600 mm double grouser

LIFTING CAPACITY

Lifting capacity at the arm end without attachment. For lifting capacity including attachment, simply subtract actual weight of the attachment from the following values.		1.5m		3.0m		4.5m		6.0m		7.5m		Máx. reach		
		Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Max. mm
Lifting point related to ground level	7.5m kg							*5 130	*5 130			*4 910	*4 910	@6 174
	6.0m kg							*5 030	*5 030			*4 570	3 900	@7 311
	4.5m kg							*5 600	5 280	*5 290	3 690	*4 510	3 290	@8 006
	3.0m kg					*8 350	7 690	*6 510	5 010	5 540	3 570	*4 630	2 990	@8 375
	1.5m kg					*10 250	7 130	*7 470	4 750	5 400	3 440	4 500	2 870	@8 460
	0 m kg			*5 420	*5 420	*11 290	6 830	7 360	4 560	5 290	3 350	4 600	2 920	@8 270
	-1.5 m kg	*6 260	*6 260	*10 320	*10 320	*11 450	6 740	7 280	4 480	5 260	3 310	5 000	3 160	@7 786
	-3.0 m kg	*11 380	*11 380	*15 460	13 330	*10 790	6 820	7 320	4 520			5 940	3 740	@6 943
	-4.5m kg			*12 560	*12 560	*8 920	7 050					*6 820	5 220	@5 577

Notes: 1. Machine in "Fine Mode-F" (Power Boost) for lifting capacities. 2. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards. 3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. 4. Rated loads marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.

Equipment

STANDARD EQUIPMENT

Engine

Turbocharged, 4 stroke diesel engine with water cooling, direct injection and charged air cooler

Air filter with restriction indicator

Air intake heater

Cyclone-type pre-cleaner

Fuel filter and water separator

Alternator, 80 A

Electric/Electronic Control System

Contronics system

Advanced mode control system

Self-diagnostic system

Machine status indication

Engine speed sensing power control

Automatic idling system

One touch power boost

Caretrack Program and Caretrack service activation for 3 years

Safety stop/start function

Adjustable LCD color monitor

Lockout-tagout (LOTO) master switch

Engine restart prevention circuit

13 high-capacity LED lights

Batteries, 2 x 12 V / 150 Ah

Emergency stop switches

Start motor, 24 V / 5.5 kW

Vacuum pump electrical pre-installation

Hydraulic System

Automatic sensing hydraulic system

Summation system

Boom priority

Arm priority

Swing priority

Boom and arm regeneration valves

Fuel saving ECO technology

Swing anti-rebound valves

Boom and arm holding valves

Multi-stage filtering system

Cylinder cushioning

Cylinder anti-contamination seals

Automatic two-speed travel motors

ISO VG 68 long life hydraulic oil

Auxiliary hydraulic valve

Auxiliary hydraulics prepared for forestry head

Vacuum pump hydraulic pre-installation

Superstructure

Under cover, superstructure

Access platform with handrail

Toolbox

Punched metal anti-slip plates

Bolt-on upper structure protection

Side impact protection (SIPS)

STANDARD EQUIPMENT

Cab and interior

ROPS Forestry, OPS and FOPS (ISO 8082-2 / ISO 8084 / ISO 10262) certified cabin with front 19.7-mm polycarbonate window, 12-mm polycarbonate windows, and tempered-glass rear window with emergency exit

Frontal sunshade

Control lock out lever

Travel pedals and hand levers

Air suspension operator seat with heater and adjustable control levers console

Control joysticks (4 switches)

Heater & air conditioner, automatic

Flexible antenna

Cab, all-weather sound suppressed, includes:

Cup holders

Door locks

Seat belt

Floor mat

Horn

Large storage area

Windshield wipers with intermittent function

Safety glass

Undercarriage

600-mm double-grouser shoes

Forestry-type full-track guard

Reinforced ribs on idler support

Bi-supported top rollers

Hydraulic track adjusters

Greased and sealed track link

Frontal Attachment

HD forestry boom and HD arm with underneath piping

Boom and arm hoses protection

Adapter upward with oil tank

OPTION EQUIPMENT

Adapter straight with oil tank

600mm or 700mm triple grouse shoes

Fuel filler pump: 50 l/min with auto stop

Radio with MP3/AUX

Anti-theft with code lock system

Straight travel pedal

Tool kit, full scale

Tool kit, daily maintenance

Spare parts kit

Not all products are available at all markets. According to our continuous improvement policy, we reserve the right to change specifications and projects without prior notice. The illustrations do not necessarily reflect the exact machine series version.

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