

V O L V O



Volvo Electric Crawler Excavator 23.8 - 24.5 t

EC230 ELECTRIC

Volvo Construction Equipment

EC230 ELECTRIC

A general-purpose machine that will lower your total cost of ownership thanks to being electric.



Quite sustainable power

This is a general-purpose machine designed for extraction, earthmoving and grading for site preparation as well as waste and scrap handling. The EC230 Electric is based on the conventional diesel-powered EC230, and will deliver the same performance, if not better, with the added benefits of zero emissions, low noise, and low total cost of ownership.



Charging facts

- Operating time 5-9 hrs. depending on application
- Fully compatible with GBT plug and Combo2-Plug
- 600 V Platform
- GBT charging machine capacity: 250 kw
- CCS2 charging machine capacity: 230 kw
- CATL battery C pack, 422.85 kWh, 4(series)*3(parallel) C pack



Productivity

- Low vibrations and noise for operator
- Boom float function
- Side view camera



Functions & option

- Dynamic rpm control (DRC) mode
- Cooling capacity (47°) and reversible fan
- Combined emergency stop switch
- Charging stop switch
- X1 / X3 / QC piping / HRV



Serviceability

- Maintenance-free electric motor
- No engine-related components and maintenance requirements
- Ground-level service access
- Newly designed electric control cabinet positioned on the side of upper frame



A clean, smart choice

- No engine-related consumables
- A zero-emission, quiet power source that can work in low carbon zones
- Ability to work indoor and noise sensitive areas
- Work a full shift thanks to fast charge time

Volvo EC230 Electric in detail

Battery

Battery Type		LFP
Battery Voltage	V	155
Battery capacity (full package)	kWh	423
Auxiliary Battery Voltage	V	2 x 12
Auxiliary Battery Capacity	Ah	100

Electrical Motor

Motor power (peak)	kW	160
Motor power (continuous)	kW	110

Electrical System

Voltage	V	24
Batteries	V	2 x 12
Battery capacity	Ah	100

Travel System

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	178
Max. travel speed (low)	km/h	3.4
Max. travel speed (high)	km/h	5.8
Gradeability	°	35

Swing System

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

Max. slew speed	rpm	11.5
Max. slew torque	kN/m	83.3

Service Refill

Hydraulic system, total	lit	255
Hydraulic tank	lit	120
Electric Motor Coolant	lit	2.3
Engine coolant	lit	42
Slew reduction unit	lit	4
Travel reduction unit	lit	2 x 3.5

Cab

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. The front windshield can easily slide up into the ceiling, and the lower front glass can be removed and stored in the side door.

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 10 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.

Sound Level

Sound level in cab according to ISO 6396		
L _{pA}	dB	71
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC		
L _{WA}	dB	98



Undercarriage

The undercarriage has a robust X-shaped frame. Greased and sealed track chains are standard.

Track shoe		2 x 49
Link pitch	mm	190
Shoe width, triple grouser	mm	600 / 700 / 800 / 900
Shoe width, triple grouser (HD)	mm	600
Bottom rollers		2 x 8
Top rollers		2 x 2

Hydraulic System

The new electro-hydraulic system and new MCV (main control valve) use intelligent technology to control on-demand flow for high productivity and high-digging capacity.

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.

Auto warm up: Hydraulic oil temperature can be set below the threshold that has been set.

Creep mode: Lower travel speed (10%~50% of 1st full speed) can be set by creep switch on.

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

Main pump: 2 x Variable displacement axial piston pumps

Maximum flow	l/min	2 x 208
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Swing pump: Gear pump

Maximum flow	l/min	1 x 16
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Max. pressure

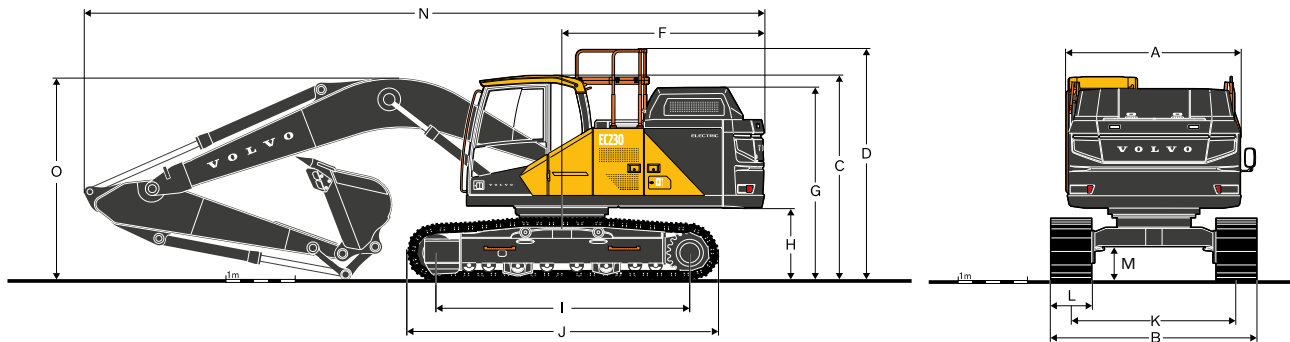
Implement	MPa	34.3 / 36.3
Travel circuit	MPa	34.3
Slew circuit	MPa	29.5
Pilot circuit	MPa	3.9

Hydraulic Cylinders

Boom		2
Bore x Stroke	ø x mm	125 x 1 235
Arm		1
Bore x Stroke	ø x mm	135 x 1 540
Bucket		1
Bore x Stroke	ø x mm	120 x 1 065



Specifications



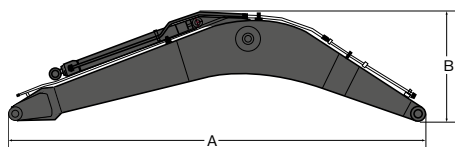
DIMENSIONS

	Unit	EC230 Electric
Boom	m	5.7
Arm	m	2.9
A. Overall width of upper structure*	mm	2 500
B. Overall width**	mm	2 990
C. Overall height of cab	mm	2 950
D. Overall height of handrail	mm	3 035
E. Overall height of guardrail	mm	3 320
F. Tail swing radius	mm	3 060
G. Overall height of engine hood	mm	2 785
H. Counterweight clearance***	mm	1 045
I. Tumbler length	mm	3 660
J. Track length	mm	4 460
K. Track gauge	mm	2 390
L. Shoe width	mm	600
M. Min. ground clearance***	mm	485
N. Overall length	mm	9 745
O. Overall height of boom	mm	3 035

*Exclude walkway, handrail

**Shoe end to end

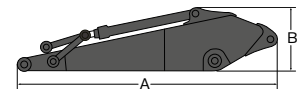
***Without shoe grouser



DIMENSIONS

Description	Unit	Boom
	m	5.7 HD
A. Length	mm	5 915
B. Height	mm	1 600
Width	mm	670
Weight*	kg	2 155

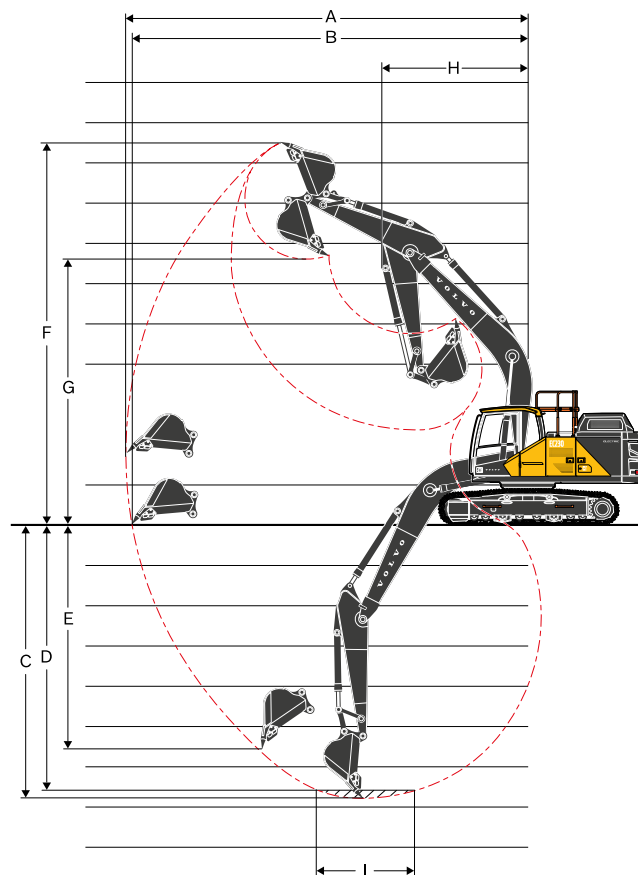
*Includes arm cylinder, piping and pin



DIMENSIONS

Description	Unit	Arm
	m	2.9 HD
A. Length	mm	3 895
B. Height	mm	865
Width	mm	440
Weight*	kg	1 190

*Includes arm cylinder, piping and pin



WORKING RANGES WITH DIRECT FIT BUCKET

Description	Unit	EC230 Electric
Boom	m	5.7
Arm	m	2.9
A. Max. digging reach	mm	9 965
B. Max. digging reach on ground	mm	9 815
C. Max. digging depth	mm	6 825
D. Max. digging depth (l=(2.44 m level)	mm	6 635
E. Max. vertical wall digging depth	mm	5 295
F. Max. cutting height	mm	9 405
G. Max. dumping height	mm	6 560
H. Min. front swing radius	mm	3 645

DIGGING FORCES WITH DIRECT FIT BUCKET

Bucket radius			mm	1 528
Breakout force (bucket)	Normal	SAE J1179	kN	125
	Power boost	SAE J1179	kN	132
	Normal	ISO 6015	kN	141
	Power boost	ISO 6015	kN	149
Tearout force (arm)	Normal	SAE J1179	kN	101
	Power boost	SAE J1179	kN	107
	Normal	ISO 6015	kN	104
	Power boost	ISO 6015	kN	110
Rotation angle, bucket			°	175

Specifications

GROUND PRESSURE

EC230 Electric

Description	Shoe width	Operating weight	Ground pressure	Overall width
	mm	kg	kPa	mm
Triple grouser	600	23 605	49.0	2 990
	600 (HD)	23 740	49.0	2 990
	700	24 015	43.1	3 090
	800	24 295	38.2	3 190
	900	24 575	34.3	3 290
		EC230 Electric, 5.7 m HD boom, 2.9 m HD arm, 909 kg bucket, 2 050 kg counterweight		

BUCKET SELECTION GUIDE

EC230 Electric with 600 mm shoe, 2 050 kg counterweight

Bucket Type		Capacity	Cutting width	Weight	Recommended maximum material density (kg/m ³)
					5.7 m HD Boom
		L	mm	kg	HD 2.9 m Arm
V2	GP	520	1 020	456	1 600
		1 100	1 320	984	1 600
		1 220	1 505	889	1 600
		1 300	1 520	960	1 600
		1 400	1 580	960	1 600
	FD	950	1 500	725	1 600
		1 030	1 600	761	1 600
V4	GP	480	600	623	1 800
		480	600	666	1 800
		920	1 050	862	1 800
		920	1 050	819	1 800
		1 090	1 200	908	1 800
		1 090	1 240	940	1 800
		1 090	1 200	951	1 800
		1 090	1 240	919	1 800
		1 270	1 350	1 038	1 700
		1 270	1 350	995	1 700
		1 270	1 380	1 003	1 700
		1 440	1 500	1 085	1 500
		1 440	1 500	1 088	1 500
	HD	750	900	872	2 100
		750	900	808	2 100
		920	1 090	955	2 100
		1 090	1 200	983	2 000
		1 090	1 240	1 054	2 000
		1 270	1 380	1 059	1 700
		1 270	1 380	1 129	1 700

Please consult with your Volvo dealer for the proper match of buckets and attachments to suit the application.
The recommendations are given as a guide only, based on typical operation conditions.
Bucket capacity based on ISO 7451, heaped material with a 1:1 angle of repose.

Maximum material density

D: 2 100 kg/m³
C: 1 800 kg/m³
B: 1 500 kg/m³
A: 1 200 kg/m³
X : Not recommended

LIFTING CAPACITY EC230 Electric

Lifting capacity at the arm end without bucket.

For lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick coupler from the following values.

	Lifting hook related to ground level		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m		Max. reach		Max.
			Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	
Boom : 5.7 m HD Arm : 2.9 m HD Shoe : 600 mm CWT : 2 050 kg	7.5 m	kg							*4 850	*4 850			*4 740	*4 740	6.07
	6.0 m	kg							*4 680	*4 680			*4 390	4 030	7.24
	4.5 m	kg							*5 180	*5 180	*4 910	3 770	*4 310	3 400	7.97
	3.0 m	kg					*7 670	*7 670	*5 800	5 110	*5 270	3 660	*4 410	3 080	8.36
	1.5 m	kg					*9 050	7 210	*6 920	4 840	*5 710	3 530	*4 700	2 950	8.46
	0 m	kg			*4 870	*4 870	*10 510	6 900	*7 590	4 650	5 770	3 430	5 000	2 990	8.30
	-1.5 m	kg	*5 630	*5 630	*9 500	*9 500	*10 710	6 810	*7 850	4 570	5 730	3 390	5 400	3 210	7.83
	-3.0 m	kg	*10 520	*10 520	*14 600	13 110	*10 160	6 870	*7 510	4 590			*6 100	3 760	7.02
	-4.5 m	kg			*12 000	*12 000	*8 520	7 080					*6 350	5 120	5.71
Boom : 5.7 m HD Arm : 2.9 m HD Shoe : 700 mm CWT : 2 050 kg	7.5 m	kg							*4 850	*4 850			*4 740	*4 740	6.07
	6.0 m	kg							*4 680	*4 680			*4 390	*4 390	7.24
	4.5 m	kg							*5 180	*5 180	*4 910	4 130	*4 310	3 730	7.97
	3.0 m	kg					*7 670	*7 670	*5 800	5 610	*5 270	4 020	*4 410	3 390	8.36
	1.5 m	kg					*9 050	8 000	*6 920	5 340	*5 710	3 890	*4 700	3 250	8.46
	0 m	kg			*4 870	*4 870	*10 510	7 680	*7 590	5 140	5 880	3 790	5 090	3 300	8.30
	-1.5 m	kg	*5 630	*5 630	*9 500	*9 500	*10 710	7 590	*7 850	5 060	5 840	3 750	5 500	3 550	7.83
	-3.0 m	kg	*10 520	*10 520	*14 600	*14 600	*10 160	7 650	*7 510	5 080			*6 100	4 150	7.02
	-4.5 m	kg			*12 000	*12 000	*8 520	7 870					*6 350	5 650	5.71
Boom : 5.7 m HD Arm : 2.9 m HD Shoe : 800 mm CWT : 2 050 kg	7.5 m	kg							*4 850	*4 850			*4 740	*4 740	6.07
	6.0 m	kg							*4 680	*4 680			*4 390	*4 390	7.24
	4.5 m	kg							*5 180	*5 180	*4 910	4 170	*4 310	3 770	7.97
	3.0 m	kg					*7 670	*7 670	*5 800	5 660	*5 270	4 060	*4 410	3 420	8.36
	1.5 m	kg					*9 050	8 090	*6 920	5 400	*5 710	3 930	*4 700	3 290	8.46
	0 m	kg			*4 870	*4 870	*10 510	7 770	*7 590	5 200	5 950	3 830	5 150	3 330	8.30
	-1.5 m	kg	*5 630	*5 630	*9 500	*9 500	*10 710	7 670	*7 850	5 110	5 910	3 790	5 570	3 590	7.83
	-3.0 m	kg	*10 520	*10 520	*14 600	*14 600	*10 160	7 730	*7 510	5 140			*6 100	4 190	7.02
	-4.5 m	kg			*12 000	*12 000	*8 520	7 950					*6 350	5 710	5.71
Boom : 5.7 m HD Arm : 2.9 m HD Shoe : 900 mm CWT : 2 050 kg	7.5 m	kg							*4 850	*4 850			*4 740	*4 740	6.07
	6.0 m	kg							*4 680	*4 680			*4 390	*4 390	7.24
	4.5 m	kg							*5 180	*5 180	*4 910	4 210	*4 310	3 810	7.97
	3.0 m	kg					*7 670	*7 670	*5 800	5 720	*5 270	4 100	*4 410	3 460	8.36
	1.5 m	kg					*9 050	8 170	*6 920	5 450	*5 710	3 970	*4 700	3 330	8.46
	0 m	kg			*4 870	*4 870	*10 510	7 850	*7 590	5 260	6 020	3 870	5 210	3 370	8.30
	-1.5 m	kg	*5 630	*5 630	*9 500	*9 500	*10 710	7 760	*7 850	5 170	5 980	3 840	5 630	3 630	7.83
	-3.0 m	kg	*10 520	*10 520	*14 600	*14 600	*10 160	7 820	*7 510	5 200			*6 100	4 240	7.02
	-4.5 m	kg			*12 000	*12 000	*8 520	8 030					*6 350	5 770	5.71

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 AND OPTIONAL EQUIPMENT	
• = Standard / o = Optional	
Electric powertrain	
Electric cooling fan system	•
Reversible fan drive	o
New work mode with 10 steps	•
Automatic machine shutdown	o
Electric / Electronic control system	
Anti-theft with code lock system	•
Automatic idling system	•
Lock Out / Tag Out function on battery main switch	•
Standard light	o
Basic light package	•
Advanced light package	o
Deluxe light package	o
Arm light	o
Undercarriage and superstructures	
3-point side access	•
Openable 1 piece hood	•
Platform handrail fixed	•
Guardrail, foldable	o
Lower frame L	o
Lower frame L with welded step	o
Link 700 / 800 / 900 mm triple grouser shoe	o
Link 600 mm triple grouser shoe, HD	o
Link 600 mm triple grouser shoe	o
Full track guard	o
Counterweight 2 050 kg	•

STANDARD AND OPTIONAL EQUIPMENT	
• = Standard / o = Optional	
Hydraulic system	
EH-positive (Electro-Hydraulic) control system	•
Boom up & swing priority	•
Auto warm up	•
Auto power boost	•
One touch power boost	•
Priority Adjustment	•
Boom down speed control	•
Shock reduction function	•
Joystick, Semi-long / 4 switch / 4 switch & 1 proportional	o
Longlife hyd oil mineral, 32 / 46 / 68	o
Pattern change, 2 way	o
Pattern change, 5 way	o
Boom float function	o
Creep mode	o
Variable X3 P-Q control	o
Hose rupture valve for boom	o
Hose rupture valve for arm	o

STANDARD AND OPTIONAL EQUIPMENT	
• = Standard / o = Optional	
Cab and Interior	
Keyless machine start and stop	•
8" HD display	•
ROPS certified cab	•
Tilttable left console	•
Digital hour meter	•
Various storage space with cool/heated	•
Cabin large mirror	o
Cabin large mirror, Heated	o
Basic / Premium / Deluxe seat	o
Seat belt, 2 inch 2 point / 3 inch 2 point / 3 inch 3 point	o
Radio with MP3/USB/Bluetooth	o
Front rain shield	o
Sun screen	•
Lower wiper	o
Sun shield, roof hatch	o
Foot rest, High mount	o
FOG (Falling Object Guard)	o
FOPS (Falling Object Protection Structure)	o
Safety net	o

STANDARD AND OPTIONAL EQUIPMENT	
• = Standard / o = Optional	
Digging equipment	
HD 5.7 m boom	o
HD 2.9 m arm	o
Safety and security	
Travel alarm, white noise	•
Flashing beacon, LED	•
Rear view camera	•
Side view camera	o
Service and maintenance	
Tool kit	o

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.

V O L V O