

V O L V O



Volvo Electric Crawler Excavator 21.6 - 26.2 t

EC230 ELECTRIC

Volvo Construction Equipment

EC230 ELECTRIC

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



Quiet 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 7-9 hrs depending on application
- Fully compatible with a Combo2-Plug
- 600 V Platform
- EU charging machine capacity:
Max 250 kw
- Volvo Cube Battery



Productivity

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



Functions and options

- Dynamic rpm control (DRC) mode
- Cooling capacity (47°) and reversible fan
- Ready to run - battery pre-heating/cooling
- Parking climate function
- Auto lubrication system (ALS)
- Lower wiper, air gun & tool box-storage



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	Lithium-ion (NCA)	
Battery Voltage	V	650
Battery capacity (full package)	kWh	450
	Ah	689
Indicative runtime (depending on application)	hours	7-8
Auxiliary Battery Voltage	V	2 x 12
Auxiliary Battery capacity	Ah	40
Electrical Motor		
Motor type		
Motor power (peak)	kW	160
Motor power (continuous)	kW	110
Electrical system		
Well protected high-capacity electrical system. Waterproof double-lock harness plugs are used to secure corrosion-free connections. The main relays and solenoid valves are shielded to prevent damage. The master switch is standard.		
Voltage	V	24
Batteries	V	2 x 12
Battery capacity	Ah	40

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	5.6
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	r/min	11.5
Max. slew torque	kNm	83.3
Service Refill		
Hydraulic system, total	l	240
Hydraulic tank	l	120
Electric Motor Coolant	l	2.3
Engine coolant	l	42
Slew reduction unit	l	4
Travel reduction unit	l	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.		
Sound Level		
Sound level in cab according to ISO 6396		
L _{pA}	dB	70
External sound level according to ISO 6395, EU Noise Directive (2000/14/EC)		
L _{WA}	dB	96

Undercarriage and structures

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

		EC230F L
Track shoe		2 x 49
Link pitch	mm	190
Shoe width, triple grouser	mm	500 / 600 / 700 / 800 / 900
Shoe width, triple grouser (HD)	mm	600
Shoe width, double grouser	mm	700
Shoe width, single grouser	mm	600
Bottom rollers		2 x 8
Top rollers		2 x 2
EC230F NL		
Track shoe		2 x 49
Link pitch	mm	190
Shoe width, triple grouser	mm	500 / 600 / 700
Shoe width, triple grouser (HD)	mm	600
Shoe width, double grouser	mm	700
Bottom rollers		2 x 8
Top rollers		2 x 2
EC230F N		
Track shoe		2 x 46
Link pitch	mm	190
Shoe width, triple grouser	mm	600 / 700 / 800 / 900
Shoe width, triple grouser (HD)	mm	600
Bottom rollers		2 x 7
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, high-digging capacity and excellent fuel consumption.

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
--------------	-------	---------

Pilot pump: Gear pump

Maximum flow	l/min	1 x 16
--------------	-------	--------

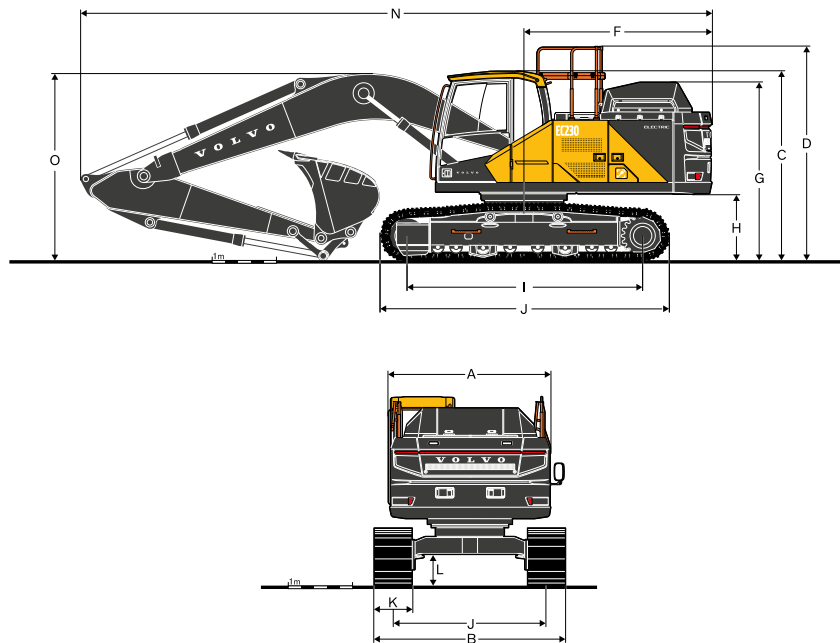
Max. pressure

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
2 piece boom		1
Bore x Stroke	ø x mm	160 x 1 070
Arm		1
Bore x Stroke	ø x mm	135 x 1 540
Bucket		1
Bore x Stroke	ø x mm	120 x 1 065
Bucket for LR boom		1
Bore x Stroke	ø x mm	100 x 865

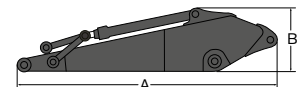
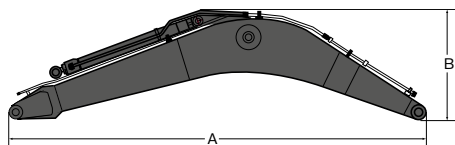
Specifications



DIMENSIONS

	Unit	EC230F Electric L		
Boom	m	5.7		
Arm	m	2.5	2.9	3.5
A. Overall width of upper structure	mm	2 500	2 500	2 500
B. Overall width	mm	2 990	2 990	2 990
C. Overall height of cab	mm	2 950	2 950	2 950
D. Overall height of handrail	mm	2 945	2 945	2 945
E. Overall height of guardrail	mm	3 320	3 320	3 320
F. Tail swing radius	mm	2 910	2 910	2 910
G. Overall height of engine hood	mm	2 785	2 785	2 785
H. Counterweight clearance *	mm	1 045	1 045	1 045
I. Tumbler length	mm	3 660	3 660	3 660
J. Track length	mm	4 460	4 460	4 460
K. Track gauge	mm	2 390	2 390	2 390
L. Shoe width	mm	600	600	600
M. Min. ground clearance *	mm	485	485	485
N. Overall length	mm	9 805	9 745	9 780
O. Overall height of boom	mm	3 175	3 035	3 170

* Without shoe grouser



DIMENSIONS

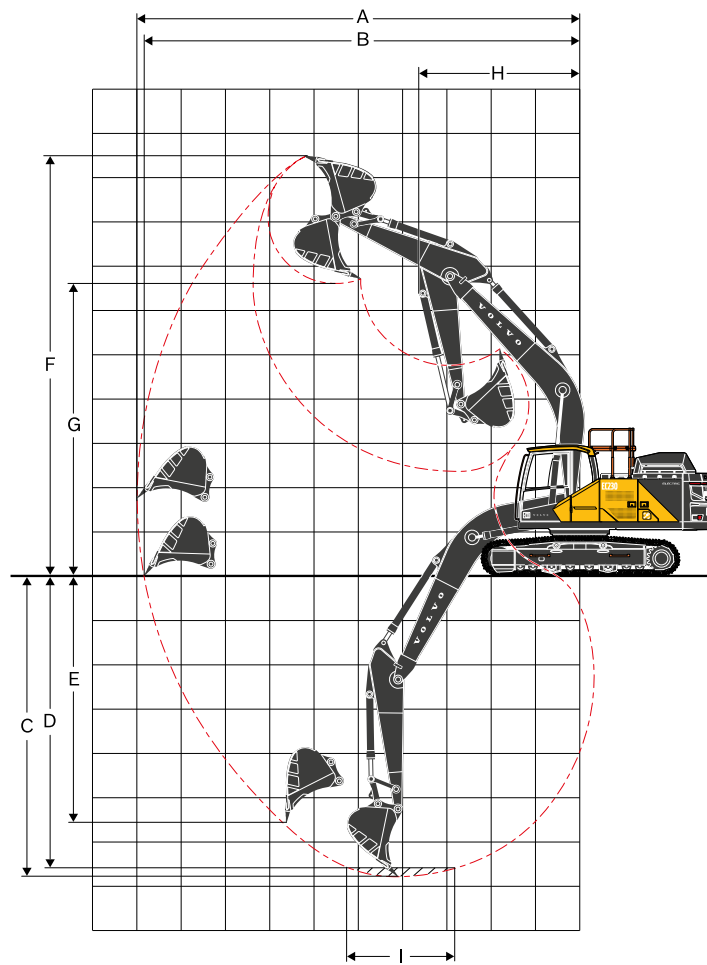
Description	Unit	Boom		
	m	5.7 GP	5.7 HD	5.57 2-piece
A. Length	mm	5 915	5 915	5 785
B. Height	mm	1 600	1 600	1 420
Width	mm	670	670	670
Weight	kg	2 010	2 155	2 640

* Includes cylinder, piping and pin, excludes boom cyl. Pin

DIMENSIONS

Description	Unit	Arm				
	m	2.0 ME	2.5 HD	2.9 GP	2.9 HD	3.5 GP
A. Length	mm	3 070	3 530	3 895	3 895	4 540
B. Height	mm	980	865	865	865	865
Width	mm	440	440	440	440	440
Weight	kg	1 080	1 135	1 140	1 190	1 165

* Includes cylinder, linkage and pin



WORKING RANGES WITH DIRECT FIT BUCKET

Description	Unit	EC230F Electric L			
Boom	m	5.7			
Arm	m	2.0	2.5	2.9	3.5
A. Max. digging reach	mm	9 145	9 605	9 995	10 450
B. Max. digging reach on ground	mm	8 975	9 445	9 835	10 305
C. Max. digging depth	mm	5 925	6 425	6 825	7 425
D. Max. digging depth (I=2.44 m level)	mm	5 670	6 205	6 635	7 235
E. Max. vertical wall digging depth	mm	4 315	5 070	5 535	5 885
F. Max. cutting height	mm	8 925	9 205	9 445	9 450
G. Max. dumping height	mm	6 090	6 330	6 555	6 600
H. Min. front swing radius	mm	3 660	3 670	3 645	3 630

DIGGING FORCES WITH DIRECT FIT BUCKET

Bucket radius			mm	1 528	1 528	1 528	1 528
Breakout force (bucket)	Normal	SAE J1179	kN	146	125	125	125
	Power boost	SAE J1179	kN	154	132	132	132
	Normal	ISO 6015	kN	165	141	141	141
	Power boost	ISO 6015	kN	174	149	149	149
Tearout force (arm)	Normal	SAE J1179	kN	144	117	101	92
	Power boost	SAE J1179	kN	153	124	107	97
	Normal	ISO 6015	kN	149	121	104	94
	Power boost	ISO 6015	kN	158	128	110	99
Rotation angle, bucket			°	166	175	175	175

Specifications

BUCKET SELECTION GUIDE

EC230F Electric L with 600 mm shoe, 2 600 kg counterweight

Bucket Type		Capacity	Cutting width	Weight	Teeth	Recommended maximum material density (kg/m³)			
						5.7 m GP Boom			
		L	mm	kg	EA	H2.5 m Arm	G2.9 m Arm	H2.9 m Arm	G3.5 m Arm
V4	GP	480	600	666	3	1 800	1 800	1 800	1 800
		590	750	711	3	1 800	1 800	1 800	1 800
		630	800	703	4	1 800	1 800	1 800	1 800
		750	900	749	4	1 800	1 800	1 800	1 800
		920	1 050	862	4	1 800	1 800	1 800	1 800
		920	1 050	819	4	1 800	1 800	1 800	1 800
		1 090	1 200	908	5	1 800	1 800	1 800	1 800
		1 090	1 200	951	5	1 800	1 800	1 800	1 800
		1 270	1 350	1 038	5	1 800	1 800	1 800	1 700
		1 270	1 350	995	5	1 800	1 800	1 800	1 800
		1 440	1 500	1 085	6	1 800	1 700	1 700	1 500
		1 320	1 420	999	5	1 800	1 800	1 800	1 700
		1 320	1 420	1 041	5	1 800	1 800	1 800	1 700
	HD	480	600	738	3	2 100	2 100	2 100	2 100
		480	600	675	3	2 100	2 100	2 100	2 100
		750	900	872	4	2 100	2 100	2 100	2 100
		750	900	808	4	2 100	2 100	2 100	2 100
		920	1 050	951	4	2 100	2 100	2 100	2 100
		920	1 050	888	4	2 100	2 100	2 100	2 100
		1 090	1 200	1 046	5	2 100	2 100	2 100	2 000
		1 090	1 200	983	5	2 100	2 100	2 100	2 100
		1 270	1 380	1 045	5	2 100	2 000	2 000	1 700
		1 270	1 380	1 108	5	2 100	1 900	1 900	1 700
Bucket Type		Capacity	Cutting width	Weight	Teeth	Recommended maximum material density (kg/m³)			
						5.7 m HD Boom			
		L	mm	kg	EA	H2.5 m Arm	G2.9 m Arm	H2.9 m Arm	G3.5 m Arm
V4	GP	480	600	666	3	1 800	1 800	1 800	1 800
		590	750	711	3	1 800	1 800	1 800	1 800
		630	800	703	4	1 800	1 800	1 800	1 800
		750	900	749	4	1 800	1 800	1 800	1 800
		920	1 050	862	4	1 800	1 800	1 800	1 800
		920	1 050	819	4	1 800	1 800	1 800	1 800
		1 090	1 200	908	5	1 800	1 800	1 800	1 800
		1 090	1 200	951	5	1 800	1 800	1 800	1 800
		1 270	1 350	1 038	5	1 800	1 800	1 800	1 700
		1 270	1 350	995	5	1 800	1 800	1 800	1 800
		1 440	1 500	1 085	6	1 800	1 700	1 700	1 500
		1 320	1 420	999	5	1 800	1 800	1 800	1 700
		1 320	1 420	1 041	5	1 800	1 800	1 800	1 600
	HD	480	600	738	3	2 100	2 100	2 100	2 100
		480	600	675	3	2 100	2 100	2 100	2 100
		750	900	872	4	2 100	2 100	2 100	2 100
		750	900	808	4	2 100	2 100	2 100	2 100
		920	1 050	951	4	2 100	2 100	2 100	2 100
		920	1 050	888	4	2 100	2 100	2 100	2 100
		1 090	1 200	1 046	5	2 100	2 100	2 100	2 000
		1 090	1 200	983	5	2 100	2 100	2 100	2 100
		1 270	1 380	1 045	5	2 100	2 000	1 900	1 700
		1 270	1 380	1 108	5	2 100	1 900	1 900	1 700

BUCKET SELECTION GUIDE

EC230F Electric L with 600 mm shoe, 2 600 kg counterweight

Bucket Type		Capacity	Cutting width	Weight	Teeth	Recommended maximum material density (kg/m ³)			
						5.57 m VA Boom			
		L	mm	kg	EA	H2.5 m Arm	G2.9 m Arm	H2.9 m Arm	G3.5 m Arm
V4	GP	480	600	666	3	1 800	1 800	1 800	1 800
		590	750	711	3	1 800	1 800	1 800	1 800
		630	800	703	4	1 800	1 800	1 800	1 800
		750	900	749	4	1 800	1 800	1 800	1 800
		920	1 050	862	4	1 800	1 800	1 800	1 800
		920	1 050	819	4	1 800	1 800	1 800	1 800
		1 090	1 200	908	5	1 800	1 800	1 800	1 800
		1 090	1 200	951	5	1 800	1 800	1 800	1 800
		1 270	1 350	1 038	5	1 800	1 800	1 800	1 700
		1 270	1 350	995	5	1 800	1 800	1 800	1 800
		1 440	1 500	1 085	6	1 800	1 700	1 700	1 500
		1 320	1 420	999	5	1 800	1 800	1 800	1 700
		1 320	1 420	1 041	5	1 800	1 800	1 800	1 700
	HD	480	600	738	3	2 100	2 100	2 100	2 100
		480	600	675	3	2 100	2 100	2 100	2 100
		750	900	872	4	2 100	2 100	2 100	2 100
		750	900	808	4	2 100	2 100	2 100	2 100
		920	1 050	951	4	2 100	2 100	2 100	2 100
		920	1 050	888	4	2 100	2 100	2 100	2 100
		1 090	1 200	1 046	5	2 100	2 100	2 100	2 000
		1 090	1 200	983	5	2 100	2 100	2 100	2 100
		1 270	1 380	1 045	5	2 100	2 000	2 000	1 700
		1 270	1 380	1 108	5	2 100	1 900	1 900	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

GROUND PRESSURE

EC230F Electric L

Description	Shoe width	Operating weight	Ground pressure	Overall width
	mm	kg	kPa	mm
Triple grouser	500	22 690	56.9	2 890
	600	22 950	48.0	2 990
	600 (HD)	23 120	48.0	2 990
	700	23 410	41.2	3 090
	800	23 690	37.3	3 190
	900	23 980	33.3	3 290
Single grouser	600	23 090	48.0	2 990
Double grouser	700	23 670	42.2	3 090
EC230F Electric L, 5.7 m GP boom, 2.9 m GP arm, 909 kg bucket, 2 600 kg counterweight				

Specifications

LIFTING CAPACITY EC230F Electric L

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. m
			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 GP Arm : 2.9 m GP Shoe : 600 mm CWT : 2 600 kg	7.5 m	kg							*5 090	*5 090			*4 910	*4 910	6.16
	6.0 m	kg							*4 980	*4 980			*4 570	4 110	7.3
	4.5 m	kg							*5 540	5 530	*5 230	3 890	*4 510	3 480	8.0
	3.0 m	kg					*8 260	7 980	*6 450	5 260	*5 620	3 770	*4 630	3 160	8.37
	1.5 m	kg					*10 140	7 410	*7 400	4 980	6 080	3 640	*4 950	3 040	8.46
	0 m	kg			*5 370	*5 370	*11 180	7 100	*8 090	4 790	5 960	3 540	5 180	3 090	8.27
	-1.5 m	kg	*6 210	*6 210	*10 260	*10 260	*11 350	7 020	8 190	4 710	5 930	3 510	5 630	3 340	7.79
	-3.0 m	kg	*11 320	*11 320	*15 340	13 540	*10 700	7 090	*7 910	4 750			*6 500	3 940	6.95
	-4.5 m	kg			*12 480	*12 480	*8 870	7 340					*6 750	5 450	5.59
Boom : 5.7 m GP Arm : 2.9 m GP Shoe : 700 mm CWT : 2 600 kg	7.5 m	kg							*5 090	*5 090			*4 910	*4 910	6.16
	6.0 m	kg							*4 980	*4 980			*4 570	4 260	7.3
	4.5 m	kg							*5 540	*5 540	*5 230	4 030	*4 510	3 610	8.0
	3.0 m	kg					*8 260	*8 260	*6 450	5 450	*5 620	3 910	*4 630	3 290	8.37
	1.5 m	kg					*10 140	7 710	*7 400	5 180	*6 090	3 780	*4 950	3 170	8.46
	0 m	kg			*5 370	*5 370	*11 180	7 400	*8 090	4 990	6 070	3 680	5 280	3 220	8.27
	-1.5 m	kg	*6 210	*6 210	*10 260	*10 260	*11 350	7 320	*8 330	4 900	6 030	3 650	5 730	3 480	7.79
	-3.0 m	kg	*11 320	*11 320	*15 340	14 180	*10 700	7 390	*7 910	4 940			*6 500	4 090	6.95
	-4.5 m	kg			*12 480	*12 480	*8 870	7 640					*6 750	5 670	5.59
Boom : 5.7 m GP Arm : 2.9 m GP Shoe : 800 mm CWT : 2 600 kg	7.5 m	kg							*5 090	*5 090			*4 910	*4 910	6.16
	6.0 m	kg							*4 980	*4 980			*4 570	4 390	7.3
	4.5 m	kg							*5 540	*5 540	*5 230	4 160	*4 510	3 730	8.0
	3.0 m	kg					*8 260	*8 260	*6 450	5 630	*5 620	4 040	*4 630	3 400	8.37
	1.5 m	kg					*10 140	7 990	*7 400	5 350	*6 090	3 910	*4 950	3 280	8.46
	0 m	kg			*5 370	*5 370	*11 180	7 670	*8 090	5 160	6 140	3 810	5 340	3 330	8.27
	-1.5 m	kg	*6 210	*6 210	*10 260	*10 260	*11 350	7 590	*8 330	5 080	6 100	3 780	5 790	3 600	7.79
	-3.0 m	kg	*11 320	*11 320	*15 340	14 780	*10 700	7 670	*7 910	5 120			*6 500	4 230	6.95
	-4.5 m	kg			*12 480	*12 480	*8 870	7 910					*6 750	5 860	5.59

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 / 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	o
Advanced light package	o
Deluxe light package	o
Arm light	o
LH light	o

Electric powertrain

Standard fan drive	•
Reversible fan drive	o
New work mode with 10 steps	•
Automatic machine shutdown	o

Undercarriage / Superstructure

3-point side access	•
Openable 1 piece hood	•
Platform handrail fixed & Guardrail, foldable	•
SIPS (Side Impact Protection Steel)	o
HD S/door & hood, Demo	o
Lowr frame L,N,NL	o
Link 500/600/700/800/900 mm triple grouser shoe	o
Link 600 mm triple grouser shoe, HD	o
Link 600 mm single grouser shoe	o
Link 600 mm add rubber pad shoe	o
Link 700 mm double grouser shoe	o
Full track guard	o
Counterweight 2 600 kg	•

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 / Simple L8 / L8	o
Hydraulic oil mineral, 32 / 46 / 68	o
Longlife hyd oil mineral, 32 / 46 / 68	o
Hydraulic oil bio 46	o
Pattern change	o
Boom float function	o
Straight travel pedal	o
Comfort driving control	o
Creep mode	o
Variable X3 P-Q control	o
Hose rupture valve for boom	o
Hose rupture valve for arm	o

Digging equipment

GP 5.7 m boom	•
HD 5.7 m boom/ VA 5.57 m boom	o
GP 2.9 m arm	•
HD 2.9 m arm/ ME 2.0 m, arm/ HD 2.5 m arm/ GP 3.5 m arm	o

STANDARD AND OPTIONAL EQUIPMENT

• = Standard / o = Optional

Machine controls

Kinematic sensor package	•
Volvo Co-Pilot 2nd display, 12.8" touchable Full HD	•
Dig Assist, Start	o
Dig Assist, 2D	o
Dig Assist, In-Field Design	o
Dig Assist, Topcon 3D-MC	o
Dig Assist, Trimble Earthworks	o
Dig Assist, Infield-Design Advanced	o
Dig Assist, On-Board Weighing	o
Dig Assist, Laser Receiver	o
Volvo Active Control	o
Dig Assist, Boundary Limit	o

Safety

Travel alarm, white noise	•
Flashing beacon, LED	•
Green light beacon	o
Rear view camera	•
Side view camera	o
HD VSV (Volvo Smart View)	o
HD VSV with obstacle detection	o
Provision, HD VSV with obstacle detection	o

Cab, interior

Keyless machine start and stop	•
8" HD display	•
ROPS certified cab	•
Tiltable left console	•
Digital hour meter	•
Wireless mobile charger with Kinematic sensor package option	•
Various storage space with cool/heated	•
Cleaning air gun	o
1 piece wind shield cab	o
High visibility cab	o
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
Climate control-HEPA filter	o
Radio with MP3/USB/Bluetooth	o
Front rain shield	o
Sun screen	o
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

Service and Maintenance

Quick Hydraulic Oil Fill connection	o
Auto lubrication system	o
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