

Volvo Construction Equipment



# ECR355E

Volvo Crawler Excavators 34.1-38.0 t 245 hp





# Volvo ECR355E in detail

## Engine

The latest generation, Volvo engine Tier 4f / Stage IV emissions certificated diesel engine fully meets the demands of the latest, emissions regulations. Featuring Volvo Advanced Combustion Technology (V-ACT), it is designed to deliver superior performance and fuel efficiency. The engine uses precise, high pressure fuel injectors, turbo charger and air-to-air intercooler, and electronic engine controls to optimize machine performance.

- Air Filter: 3-stage with precleaner

- Automatic Idling System: Reduces engine speed to idle when the levers and pedals are not activated resulting in less fuel consumption and low cab noise levels.

Engine	Volvo	D8J
Max power at	r/min	1 800
Net, ISO 9249/SAE J1349	kW	179
	hp	243
Gross, ISO 14396/SAE J1995	kW	180
	hp	245
Max torque	Nm	1 238
at engine speed	r/min	1 350
No. of cylinders		6
Displacement	l	7.8
Bore	mm	110
Stroke	mm	136

## 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. Contronics provides advanced monitoring of machine functions and important diagnostic information.

Voltage	V	24
Batteries	V	2 x 12
Battery capacity	Ah	170
Alternator	V/A	28/120
Start motor	V - kW	24 - 5.5

## Undercarriage

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

### ECR355EL

Track shoe		2 x 48
Link pitch	mm	215.9
Shoe width, triple grouser	mm	600 / 700 / 800 / 850
Shoe width, double grouser	mm	600
Bottom rollers		2 x 8
Top rollers		2 x 2

## 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	10.2
Max. slew torque	kNm	117.6

## 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	275
Max. travel speed (low)	km/h	3
Max. travel speed (high)	km/h	4.5
Gradeability	°	35

## Hydraulic system

The hydraulics system, combined with the fully electronic control system and advanced ECO mode, has been optimized to work in harmony with engine to match the engine power, reduce power loss and improve controllability and response time. 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. Type: 2 x Variable displacement axial piston pumps

Maximum flow	l/min	2 x 263
--------------	-------	---------

### Pilot pump. Type: Gear pump

Maximum flow	l/min	1 x 18
--------------	-------	--------

### Relief value setting pressure

Implement	MPa	33.3 / 36.3
Travel circuit	MPa	36.3
Slew circuit	MPa	27.5
Pilot circuit	MPa	3.9

## Hydraulic Cylinders

Mono boom		2
Bore x Stroke	ø x mm	140 x 1 511
1st boom of 2-piece boom		2
Bore x Stroke	ø x mm	140 x 1 460
2nd boom of 2-piece boom		1
Bore x Stroke	ø x mm	170 x 1 300
Arm		1
Bore x Stroke	ø x mm	150 x 1 745
Bucket		1
Bore x Stroke	ø x mm	140 x 1 140
Dozer blade		2
Bore x Stroke	ø x mm	165 x 385

## Service Refill

Fuel tank	l	348
DEF/AdBlue® tank	l	31
Hydraulic system, total	l	370
Hydraulic tank	l	243
Engine oil	l	32
Engine coolant	l	36
Slew reduction unit	l	6.1
Travel reduction unit	l	2 x 6.8

## 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 RH side of cab inner space.

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 8 vents.

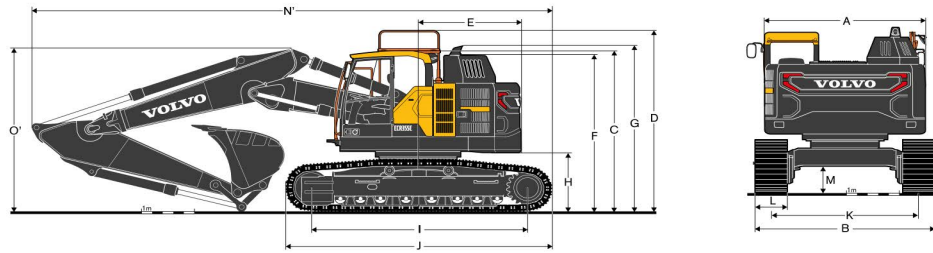
Ergonomic operator's seat: The adjustable seat and joystick console move independently to accommodate the operator. The seat has 12 different adjustments plus a seat belt for the operator's comfort and safety.

Refrigerant of the type R134a is used when this machine is equipped with air conditioning. Contains fluorinated greenhouse gas R134a, Global Warming Potential 1.430 t CO<sub>2</sub>-eq.

## Sound Level

Sound level in cab according to ISO 6396		
LpA (standard)	dB(A)	72
LpA (tropical)	dB(A)	72
External sound level according to ISO 6395, EU Noise Directive (2000/14/EC)		
LwA (standard)	dB(A)	104
LwA (tropical)	dB(A)	105

# Specifications



## DIMENSIONS

Description	Unit	ECR355EL
<b>Boom</b>		<b>6.2 m mono boom or 6.2 m 2-piece boom</b>
<b>Arm</b>	<b>m</b>	<b>3.05</b>
A. Overall width of upper structure	mm	2 990
B. Overall width	mm	3 340
C. Overall height of cab	mm	3 200
D. Overall height of guardrail (Unfolded)	mm	3 615
E. Tail swing radius	mm	1 900
F. Overall height of engine hood	mm	3 110
G. Overall height of diffuser	mm	3 300
H. Counterweight clearance *	mm	1 160
I. Tumbler length	mm	4 020
J. Track length	mm	4 946
K. Track gauge	mm	2 740
L. Shoe width	mm	600
M. Min. ground clearance *	mm	500
N. Overall length	mm	9 865
N'. Overall length	mm	9 883
O. Overall height of boom	mm	3 305
O'. Overall height of boom	mm	3 300

2piece boom

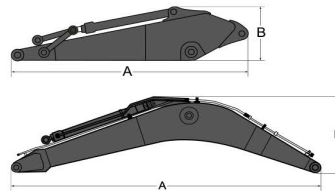
\* Without shoe grouser

## DIMENSIONS / Boom and arm

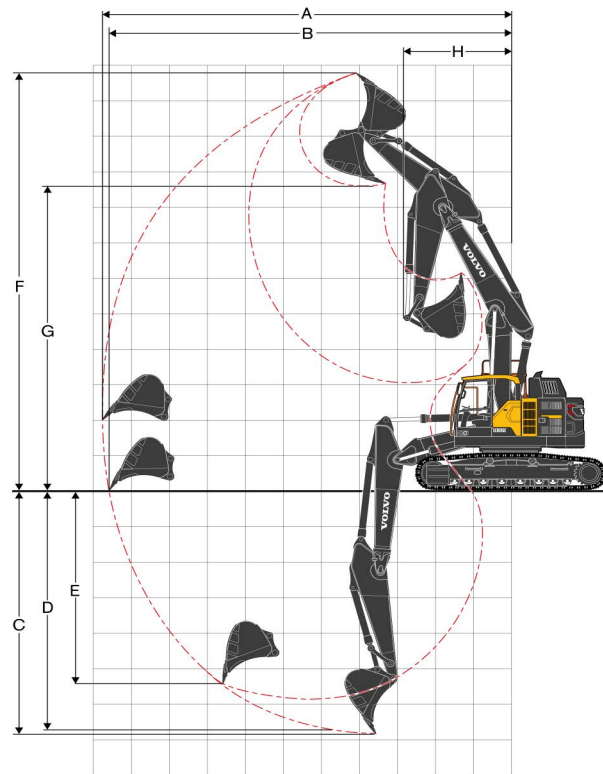
Description	Unit	Boom		Arm		
		HD	2-piece	HD	HD	GP
	<b>m</b>	<b>6.2</b>	<b>6.2</b>	<b>2.55</b>	<b>3.05</b>	<b>3.7</b>
A. Length	mm	6 430	6 427	3 710	4 150	4 900
B. Height	mm	1 680	1 490	1 010	1 010	1 050
Width	mm	770	770	545	545	545
Weight	kg	2 480	2 808	1 475	1 540	1 680

Boom: Includes cylinder, piping and pin, excludes boom cyl. Pin

Arm: Includes cylinder, linkage and pin



# Specifications



## WORKING RANGES

Description	Unit	ECR355E
<b>Boom</b>		<b>6.2 m 2-piece boom</b>
<b>Arm</b>	<b>m</b>	<b>3.05</b>
A. Max. digging reach	mm	10 741
B. Max. digging reach on ground	mm	10 550
C. Max. digging depth	mm	6 818
D. Max. digging depth (l=2440 m level)	mm	6 721
E. Max. vertical wall digging depth	mm	5 384
F. Max. cutting height	mm	11 773
G. Max. dumping height	mm	8 577
H. Min. front swing radius	mm	2 747



**MACHINE WEIGHTS AND GROUND PRESSURE - ECR355EL**

Description	Shoe width	Operating weight	Ground pressure	Overall width
	mm	kg	kPa	mm
	<b>6.2 m 2-piece boom, 3.05 m arm, 1.27 m<sup>3</sup> bucket, 8 450 kg counterweight</b>			
Triple grouser	700	35 195	56.9	3 440



# Specifications

## LIFTING CAPACITY - ECR355EL

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 fit from the following values. **Unit: 1 000 kg.**

	Lifting point	1,5 m		3 m		4,5 m		6,0 m		7,5 m		9,0 m		Max. 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	Along UC	Across UC	Max. m
Boom : 6.2 m 2 piece boom	9.0 m	-	-	-	-	-	-	-	-	-	-	-	-	*7.02	*7.02	5.73
Arm : 3.05 m	7.5 m	-	-	-	-	-	-	*8.89	*8.89	-	-	-	-	*6.19	*6.19	7.21
Shoe : 700 mm	6.0 m	-	-	-	-	*9.24	*9.24	*9.68	8.94	*8.52	6.17	-	-	*5.88	5.31	8.16
L/Frame: LC	4.5 m	-	-	*20.63	*20.63	*14.04	13.54	*11.08	8.57	*9.37	6.03	-	-	*5.82	4.65	8.75
	3.0 m	-	-	-	-	*16.14	12.48	*12.00	8.11	*9.74	5.81	*6.47	4.36	*5.97	4.31	9.05
	1.5 m	-	-	-	-	*17.16	11.67	*12.57	7.70	*9.94	5.59	*7.37	4.27	*6.31	4.20	9.10
	0.0 m	-	-	-	-	*16.57	11.30	*12.45	7.43	*9.71	5.43	-	-	*6.93	4.29	8.89
	-1.5 m	-	-	*10.43	*10.43	*14.74	11.23	*11.43	7.33	*8.78	5.37	-	-	*7.05	4.62	8.41
	-3.0 m	-	-	-	-	*11.75	11.35	*9.29	7.38	*6.44	5.46	-	-	*6.14	5.37	7.61

- 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, 6 stroke diesel engine with water cooling, direct injection and charged air cooler that meets Tier 4f / Stage IV requirements

Air filter with indicator

Air intake heater

Fuel filter and water separator

Fuel filler pump: 50 l/min, with automatic shut-off

Alternator, 120 A

### Electric / Electronic control system

Contronics

- Advanced mode control system

- Self-diagnostic system

Caretrack via GSM or satellite and 3yr-Caretrack subscription

Machine status indication

Engine speed sensing power control

Automatic idling system

One-touch power boost

Safety stop/start function

Adjustable LCD color monitor

Master electrical disconnect switch

Engine restart prevention circuit

High-capacity halogen or LED lights:

- Halogen: Frame-mounted 1, Boom-mounted 2

- LED: Frame-mounted 1, Boom-mounted 2

Batteries, 2 x 12 V / 170 Ah

Start motor, 24 V / 5.5 kW

### Superstructure

Counterweight: 8 450kg

Access way with handrail

Tool storage area

Punched metal anti-slip plates

Undercovers (heavy duty)

### Undercarriage

Undercovers

Hydraulic track adjusters

Greased and sealed track link

Standard track guard

### Hydraulic system

Automatic sensing hydraulic system

- Summation system

- Boom priority

- Arm priority

- Swing priority

"ECO" mode fuel saving technology

Boom, arm and bucket regeneration valves

Swing anti-rebound valves

Boom and arm holding valves

Multi-stage filtering system

Cylinder cushioning

Cylinder contamination seals

Automatic two-speed travel motors

Hydraulic oil, longlife oil 46

## STANDARD EQUIPMENT

### Cab and interior

ROPS (ISO12117-2) certified cab with fixed hatch

Silicon oil and rubber mounts with spring

Control lock out lever

Travel pedals and hand levers

Adjustable operator seat and joystick control console

Control joysticks (4 switches each or 3 switches & 1 proportional)

Heater & air-conditioner, automatic

Flexible antenna

Radio with AUX, USB Jack and Bluetooth

Cab, all-weather sound suppressed, includes:

- Cup holders

- Seat belt

- Door locks

- Tinted and safety glass

- Floor mat

- Horn

- Sun screens, front, roof, rear

- Large storage area

- Pull-up type front window

- Removable lower windshield

- Windshield wiper with intermittent feature

Side view camera

Rear view camera

Master key

### Track shoes

600 mm with triple grousers

### Digging Equipment

6.2 m mono boom

3.05 m arm

Linkage

Manual centralized lubrication

### Service

Tool kit, daily maintenance