



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
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Pilot pump. Type: Gear pump

Maximum flow	l/min	1 x 18
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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.

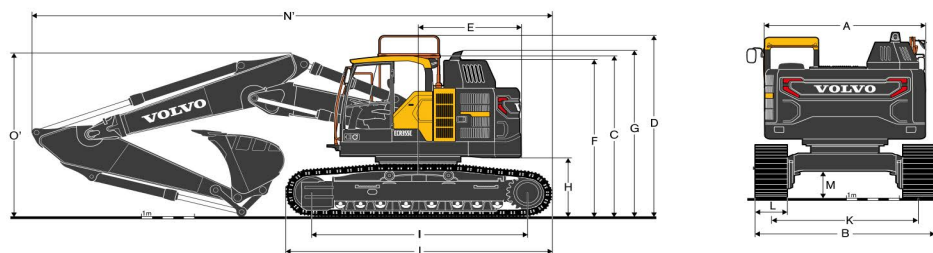
Refrigerant of the type R134a is used when this machine is equipped with air conditioning. Contains fluorinated greenhouse gas R134a, Global Warming Potential 1.430 t CO₂-eq.

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
Boom		6.2 m mono boom or 6.2 m 2-piece boom
Arm	m	3.05
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

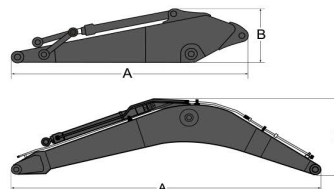
* Without shoe grouser

DIMENSIONS / Boom and arm

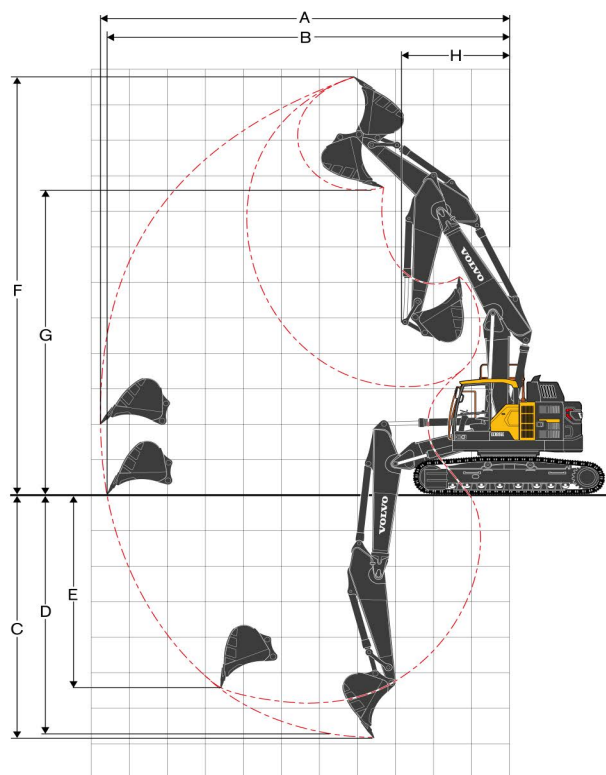
Description	Unit	Boom		Arm		
		HD	2-piece	HD	HD	GP
	m	6.2	6.2	2.55	3.05	3.7
A. Length	mm	6 430	6 427	3 710	4 150	4 900
B. Height	mm	1 680	1 490	1 010	1 010	1 050
Width	mm	770	770	545	545	545
Weight	kg	2 480	2 808	1 475	1 540	1 680

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

Arm: Includes cylinder, linkage and pin



Specifications



WORKING RANGES

Description	Unit	ECR355E
Boom		6.2 m 2-piece boom
Arm	m	3.05
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
		6.2 m 2-piece boom, 3.05 m arm, 1.27 m ³ bucket, 8 450 kg counterweight		
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