Volvo Construction Equipment
Building Tomorrow

ECR50

Volvo Compact Excavators, ECR50F 5.1 t 42 hp



WELCOME TO OUR WORLD

Welcome to a world of industry leading machinery. A world where imagination, hard work and technological innovation will lead the way towards developing a future which is cleaner, smarter, and more connected. A world supported by the enduring values of the Volvo Group. A world of stability, sustainability and innovation. A world which we put our customers at the heart of.

Welcome to the world of Volvo Construction Equipment – we think you're going to like it here.

Small machines, big results

With decades of experience in the design and manufacture of compact excavators and wheel loaders, our range of compact machinery is designed with customer success in mind. Built from the same DNA as large Volvo machinery, our compact range sets the standard for efficiency performance and uptime – complemented by an extensive range of Volvo attachments for maximum versatility.

Building on our proud history, the Volvo Concept Lab continues to create cutting-edge ideas and innovative concepts – such as our award-winning electric compact excavator – to ensure we offer our customers machines which deliver big results long into the future.



Solutions for you

Our industry leading machines are just the start of your relationship with Volvo. As your partner, we have developed an extensive range of additional solutions to help you improve uptime, boost productivity and reduce costs.

Designed for your business

Structured across nine blocks, our portfolio of products and services are designed to complement your machine's performance and boost your profitability. Simply put, we offer some of the best guarantees, warranties and technological solutions in the industry today..

There when you need us

Whether you're buying new or used, our global network of dealers and technicians offer around-the-clock support, including machine monitoring and world-class parts availability. It's the basis of everything offered by Volvo Services, so you can be confident we've got you covered right from the start.

BUILDING TOMORROW

Big versatility, low operating cost

With zero tail swing, the F-generation ECR50 is the ultimate all-rounder, delivering outstanding agility, versatility and ease-of-operation. A true 5 t machine ready to take on any job – anywhere – this compact excavator combines quality, reliability and innovation to deliver optimum profitability.

Intuitively efficient

Quickly and easily get to grips with the new ECR50. With the intuitive jogwheel and 5" color display, operators benefit from easy-to-navigate menus. Achieve precise and efficient work with ease thanks to the proportional fingertip controls, large and easy to control travel pedals and automatic two-speed travel.



True 5 t performer

Take on tough work with confidence and control. With best-in-class lifting capacity, the F-generation ECR50 is a true 5 t machine. Outstanding stability and hydraulic power contribute towards unrivalled digging performance, lifting capacity and tractive force.



Switch it up

Changing between hydraulic attachments is as easy as child's play. In the new ECR50 you can pre-program the hydraulic settings best suited to all your attachments in just a few steps. You can then choose whether operators select pre-defined settings only, or leave the option for operators to make final hydraulic adjustments from the cab.



Maximum uptime

Spend less time carrying out maintenance. A 50-hour greasing interval, easily accessed service points and wide-opening engine hood all help to keep uptime to a maximum. With auto engine shutdown, hours not worked are not recorded, keeping your machine efficient for longer while reducing maintenance costs. The patented multifunction hydraulic oil filter, provides outstanding protection to the hydraulic system.





DURABLE BY DESIGN

The zero tail swing radius of the F-generation ECR50 enables easy access and work in confined spaces, while also reducing the risk of machine damage. The in-track boom swing ensures the swing post and cylinder remain within the track width when digging in offset alongside obstacles. Sturdy digging equipment, undercarriage and hoods further contribute towards outstanding durability.

The ultimate all-rounder

DURABLE BY DESIGN

- Zero tail swing
- In-track boom swing
- New digging equipment
- Undercarriage and hoods from larger size machine

INTUITIVELY EFFICIENT

- Simple controls layout
- Intuitive jogwheel and 5” color display
- Proportional fingertip controls
- Large travel pedals
- Automatic two-speed travel



VERSATILE PERFORMER

- True 5 tonne machine
- Stability and hydraulic performance
- Pre-set hydraulic modes and multiple auxiliary line options
- Compatible with a wide range of attachments



MAXIMUM UPTIME

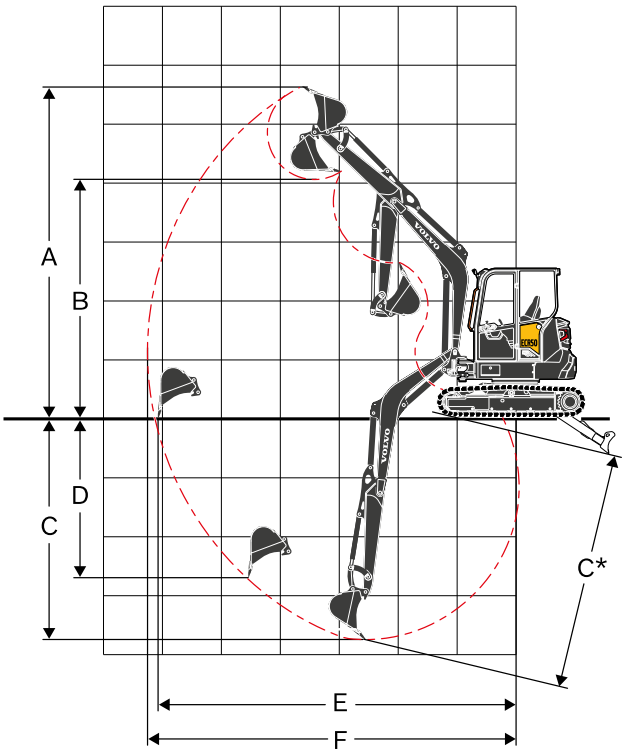
- 50-hour greasing intervals
- Patented multifunction hydraulic filter, protecting the hydraulic system
- Easily accessed service points, wide-opening engine hood
- Auto engine shutdown
- Genuine Volvo Parts

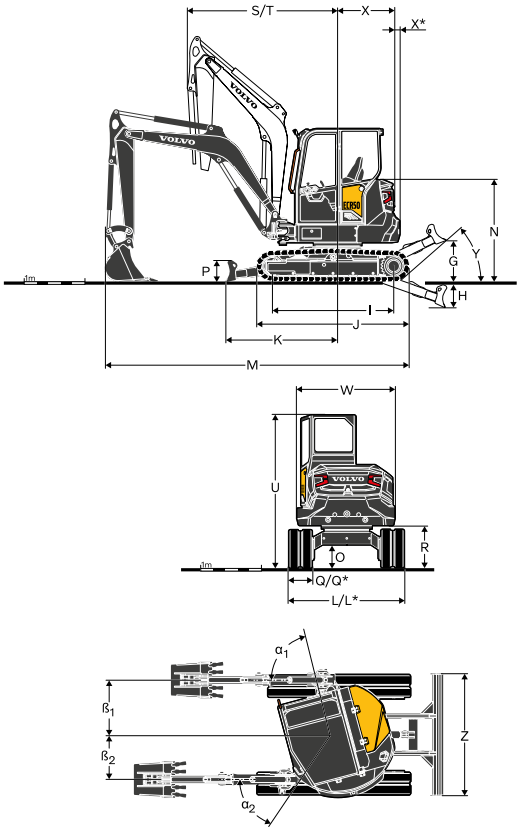
Volvo ECR50F in detail

Engine		
Engine		D2.4H
Max. power at	r/min	2 200
Gross	kW	31.2
	hp	42
According to ISO 3046-1 and SAE J1995		
Max. torque	Nm	160
at engine speed	r/min	1 500
No. of cylinders		4
Displacement	cm³	2 434
Bore	mm	87
Stroke	mm	102.4
Compression ratio		18:1
Electrical system		
Voltage	V	12
Battery	V	1 X 12
Battery capacity	Ah	74
Alternator	V/Ah	12 / 70
Swing system		
Max, slew speed	r/min	8.5
Max, slew torque	daNm	1 379
Undercarriage		
Rubber track width	mm	400
Steel track width	mm	380
Bottom/top rollers per side		5 / 1
Track tension		by grease piston
Blade (width x height)	mm	2 000 x 361
Digging Performances		
Standard bucket width (blade, W/O side cutter)	mm	600
Standard bucket mass	kg	113
Standard bucket rated capacity	l	144
Bucket rotation	°	199
Bucket breakout force (ISO)	daN	3 618
Short arm tearout force (ISO)	daN	2 595
With short arm	mm	1 400
Long arm tearout force (ISO)	daN	2 178
With long arm	mm	1 800
Weight and Ground Pressure		
Operating weight according to ISO 6016	kg	5 050
Ground pressure (cab)	kPa	28.4
Ground pressure (canopy)	kPa	27.7
Transport weight	kg	4 975
With rubber tracks	mm	400
With short arm	mm	1 400
With fuel tank capacity	%	100
With canopy	-kg	110
With extra counterweight	+kg	170
With long arm	mm	1 800
With long arm and additional counterweight	+kg	197
With steel tracks	+kg	120
Steel tracks	mm	380
With rubber pads	+kg	160
Rubber pads	mm	400

Hydraulic system		
Pump type		Variable displacement, load-sensing piston pump.
Maximum system flow	l/min	120
Maximum operating pressure (main pump)	MPa	26
Maximum flow for accessories	l/min	75
Maximum pressure for accessories	MPa	22
Maximum flow for 2nd accessory circuit	l/min	40
Travel System		
Max, drawbar pull	daN	3 830
Max. travel speed low	km/h	2.7
Max. travel speed high	km/h	4.4
Gradeability	°	20
Service Refill		
Fuel tank	l	70
Hydraulic system, total	l	70
Hydraulic tank	l	49
Engine oil	l	8.4
Engine coolant	l	9
Travel reduction unit	l	2 X 0.8
Sound Level		
Interior sound level according to ISO 6396		
L_{pA}	dB	74
External sound level according to ISO 6395 and EU Noise Directive (2000/14/EC) and 474-1:2006 +A1:200		
L_{WA}	dB	96
Cab		
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.		

Specifications





DIMENSIONS

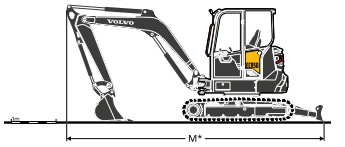
Description		Unit	ECR50F	
Arm		**mm**	**1 400**	**1 800**
A	Maximum cutting height	mm	5 369	5 634
B	Maximum dump height	mm	3 787	4 052
C	Digging depth	mm	3 374	3 768
C*	Maximum digging depth	mm	3 716	4 144
D	Maximum vertical wall digging depth	mm	2 335	2 700
E	Maximum digging reach at ground level	mm	5 748	6 137
F	Maximum digging reach	mm	5 879	6 260
G	Highest position dozer blade	mm	441	
H	Lowest position dozer blade	mm	610	
I	Tumbler length	mm	2 000	
J	Track length	mm	2 521	
K	Dozer blade, maximum reach at ground level	mm	1 860	
L	Overall width with 400mm rubber tracks	mm	2 000	
M	Overall length	mm	5 198	5 018
M*	Transport length	mm	6 075	5 950
N	Overall height of engine hood	mm	1 700	
O	Minimum ground clearance	mm	359	
P	Dozer blade height	mm	361	
Q	Shoe width (rubber)	mm	400	
R	Ground clearance to superstructure	mm	645	
S	Front slew radius	mm	2 428	2 479
T	Front slew radius with maximum offset	mm	1 951	1 995
U	Overall height	mm	2 540	
W	Overall width of superstructure	mm	1 708	
X	Tail slew radius	mm	951	1 032
X[1]	Additional counterweight overhang	mm	80	incl.
Y	Angle of approach	°	31	
Z	Dozer blade width	mm	2 000	
α_1	Maximum boom swing angle to the left	°	75	
β_1	Maximum boom offset to the right	mm	891	
α_2	Maximum boom swing angle to the right	°	55	
β_2	Maximum boom offset to the left	mm	690	

[1]: Option

Specifications

LIFTING CAPACITY ECR50F

These capacities are given for a machine equipped with a cabin, 400mm rubber tracks and without a bucket or quick-coupler.
The below values are in compliance with ISO standard 10567. They do not exceed 75% of the tipping load or 87% of the hydraulic limit with the machine on firm level ground.
Loads market with an asterisk (*) are limited by machine's hydraulic lifting capacity rather than tipping load.
Caution: In accordance with standard EN 474-5, the machine must be equipped to carry out handling operations. It is the operator's obligation to know and follow the applicable national and local safety regulations.



	Lifting point height (B) m	Lifting capacity kg	Lifting point radius (A)										
			2.0 m		3.0 m		4.0 m		5.0 m		Max. reach		Max.
			Along under-carriage	Across under-carriage	Along under-carriage	Across under-carriage	Along under-carriage	Across under-carriage	Along under-carriage	Across under-carriage	Along under-carriage	Across under-carriage	m
Arm: 1 400mm + Dozer blade up	3	kg					1 050*	817			904	647	4.58
	2	kg			1 583*	1 207	1 114	791			792	565	4.94
	1	kg			1 665	1 126	1 078	758	777	554	759	539	5.04
	0	kg			1 626	1 092	1 054	737			787	557	4.88
	-1	kg	2 567	2 083	1 626	1 092	1 052	734			900	634	4.44
	-2	kg	2 786	2 128	1 658	1 120					1 252*	873	3.56
Arm: 1 800mm + 170kg Additional counterweight + Dozer blade up	3	kg					880*	880*	855*	621	847*	612	5.00
	2	kg			1 282*	1 282*	1 063*	861	852	613	760	545	5.33
	1	kg			1 805	1 230	1 161	821	834	597	731	523	5.42
	0	kg	1 064*	1 064*	1 741	1 173	1 128	791	820	584	752	535	5.28
	-1	kg	2 134*	2 134*	1 726	1 160	1 115	779			838	595	4.88
	-2	kg	3 432	2 239	1 746	1 178	1 132	795			1 070	753	4.13
Arm: 1 400mm + Dozer blade down	3	kg					1 050*	817			1 081*	647	4.58
	2	kg			1 583*	1 207	1 213*	791			1 104*	565	4.94
	1	kg			2 171*	1 126	1 431*	758	1 150*	554	1 143*	539	5.04
	0	kg			2 383*	1 092	1 562*	737			1 193*	557	4.88
	-1	kg	2 567*	2 083	2 248*	1 092	1 498*	734			1 243*	634	4.44
	-2	kg	2 786*	2 128	1 708*	1 120					1 252*	873	3.56
Arm: 1 800mm + 170kg Additional counterweight + Dozer blade down	3	kg					880*	880*	855*	621	847*	612	5.00
	2	kg			1 282*	1 282*	1 063*	861	979*	613	838*	545	5.33
	1	kg			1 934*	1 230	1 313*	821	1 072*	597	882*	523	5.42
	0	kg	1 064*	1 064*	2 305*	1 173	1 501*	791	1 139*	584	982*	535	5.28
	-1	kg	2 134*	2 134*	2 312*	1 160	1 530*	779			1 116*	595	4.88
	-2	kg	3 432*	2 239	1 972*	1 178	1 255*	795			1 155*	753	4.13

Equipment

STANDARD EQUIPMENT
Engine
Volvo 4-cylinders, vertical, in-line, electronically controlled, water-cooled, diesel engine; meeting EU Stage V or EPA Tier 4f environmental regulations. Diesel Oxidation Catalyst and Diesel Particulate Filter exhaust after treatment system with 6000 hours service interval.
Engine restart prevention system: starter motor is protected against ignition when the engine is already running.
Safe engine start function: the left console must be raised to operate the starter.
Time adjustable auto-idling system.
Eco mode.
Dry-type dual element air filter.
Plastic fuel tank with drain plug.
Protective strainer on the fuel filling pipe.
Fuel filter with water separator.
Drivetrain
Axial piston hydraulic motors equipped with an epicyclic reduction gears.
Automatic two speed travel.
Multi-disc track brakes, spring-applied and hydraulic released.
5 bottom flanged rollers lubricated for life.
Grease tensioning wheel lubricated for life.
Electric / Electronic control system
Maintenance free battery.
IP67 protected electrical system and high quality connectors.
Battery cut-off switch protected in engine compartment.
In-cab 12V power socket.
In-cab diagnostic port.
In-cab fuse box.
One LED working light on top front left of the cab.
Swing system
Radial piston hydraulic motor with direct engagement on the ball internal crown wheel (no reduction gears).
Integrated shockless valve.
Automatic multi-disc slew brake.
Centralized and remote lubrication of crown wheel & ball bearing.
Undercarriage
“X” shape, box welded fabricated frame with sloping side members.
2 Tie-down points on the dozer blade.
2 Tie-down points on the frame.
2 Integrated lifting points.
Sturdy removeable protecting covers for track motors and slew system.
400HB weld-on edge on dozer blade
Hydraulic system
Variable displacement, load-sensing piston pump.
Closed centre flow-sharing main control valve.
Single and double acting hydraulic circuit for auxiliaries.
In-cab electrically controled changeover valve for main auxiliary circuit.
Proportional controls with flow and direction adjustment for all auxiliary circuits.
Cylinder cushoning on boom up and arm out.
Large hinged and key-locked access panel.
Patented filtering and filling element.
Single layer cooling system.
Plastic tank with drain plug.

Equipment

STANDARD EQUIPMENT
Cab
FOPS on top level 1 (Falling Object Protective Structure).
TOPS (Tip-Over Protective Structure).
ROPS (Roll-Over Protective Structure).
Cushioned operator station.
Height adjustable seat, consoles and joysticks; all suspended together.
Retractable 50mm orange seat belt with warning indicator.
Highly visible orange handrail and cab entry step.
Large door access.
Large and roomy uncluttered floor with easy to clean floor mat.
Gas-strutt assisted front window opening.
Full opening front bay with in-cab storage for the front lower window.
Front windscreen wiper and washer nozzle.
Right hand side sliding window.
Heating system.
Multiple adjustable air vents.
Filtered air inlet with large size and easy to replace element.
Cab inside light.
LCD dislplay.
Large capacity key-locked toolbox.
Digging equipment
Monobloc box welded 2.75m boom.
Boom cylinder rod protection.
In-track swing frame: the boom offset cylinder is below the cab.
Integrated lifting point on the boom.
Monobloc box welded arm.
Long-life steel bushings.
Hardened, pre-lubricated and corrosion resistant pins.
Remote greasing point for arm cylinder with ground level access.
50 hours greasing intervals.
Instrumentation and monitoring
High contrast LCD display with day and night modes enabling good readability whatever lighting conditions.
Gauges for fuel and coolant temperature levels, engine speed, auxiliary and boom offset flows.
Icones & graphics for engine and work modes.
Colour coded messages and help menu.
Hourmeter.
Self-acting emergency engine shutdown. Prevents failures in case of coolant overheating or too low engine oil pressure.
Warning lights for hydraulic filter and air filter restriction.
Several warning lights, coupled to an audible signal, in the event of malfunction (overheating, drop in oil pressure, low battery voltage...)
Machine control system
Finger tip control for boom offset.
Finger tip control for auxiliary circuit.
Breaker toggle switch on right joystick.
Jogwheel for easy navigation and engine speed adjustment.
Automatic locking device for the controls when the left console is raised.
Pressure accumulator to lower the equipment on the ground when the engine is switched off.
Two speed change button on the dozer lever.
Large travel pedals.
Official approval
Machine conforming to European directive 2006/42/EC.
Noise emissions in the environment conforming to directive 2000/14/EC.
Hand Arm Vibrations - Whole Body Vibrations compliant with directive 2002/44/EC.
Electromagnetic compatibility (EMC) conforming to European directive 2004/108/EC and its amendments.
Object handling device conforming to EN 474-1 and EN 474-5 standards.
FOPS on top level 1 conforming to ISO 10262 standard.
TOPS conforming to ISO 12117 and EN 13531 standards.
ROPS conforming to ISO 3471-1 and / SAE J1040 standards.

STANDARD AND OPTIONAL EQUIPMENT	
• = Standard o = Optional	
Engine	
ECO mode	•
Engine auto idling with time adjustment	•
Engine auto shutdown with time adjustment	o
35lpm fuel filling pump with auto-stop	o
Hydraulics	
Proportional finger tip control for boom offset	•
Proportional finger tip control for accessories	•
Single and double acting main accessory circuit	•
”Detent” mode for main accessory circuit	•
Work modes to match machine settings to accessories in use	•
Bucket or grapple change over valve	o
Second accessory circuit	o
Third accessory circuit (for side tilting quick coupler)	o
Secondary relief valves for auxiliaries (22 MPa)	•
Hydraulic drain including flat face coupling for accessories	o
Flat face hydaulic quick couplings for main and second accessories circuits	o
Single acting circuit for quick couplers	o
Double acting circuit for quick couplers	o
Boom and arm safety lifting valves with lifting mode and overload indicator	o
Boom, arm and dozer blade safety lifting valves with lifting mode and overload indicator	o
Safety valve certification	o
Mineral hydraulic oil VG46	o
Bio hydraulic oil VG46 (PANOLIN®)	o
Mineral hydraulic oil VG68	o
Mineral hydraulic oil VG32	o
Bio hydraulic oil VG32 (PANOLIN®)	o
Undercarriage	
400mm rubber tracks	o
400mm rubber pads on steel chain	o
380mm steel tracks	o
400mm add-on rubber pads on steel shoe	o
Standard dozer blade	•
Floating dozer blade	o
Angle and floating dozer blade	o
Machine exterior	
Right rearview mirror	o
Left rearview mirror	o
Front left LED workligt on cab roof	•
Front right LED workligt on cab roof	o
Rear right LED worklight on cab roof	o
Amber flashing LED beacon	o
2 x cab mounted LED worklights illuminating left & right sides of the machine	o
Green flashing LED beacon (lights-up when the operator has buckled the seat belt)	o
Protected LED worklight on the boom	o
Additional counterweight	o
Several level of paint customisation (RAL specifications) to match with your corporate identity	o

Equipment

STANDARD AND OPTIONAL EQUIPMENT	
• = Standard o = Optional	
Canopy	
Vinyl low back seat	o
Vinyl high back seat	o
Head rest	o
3” Seat belt	o
Height adjustable arm rests	•
Large size monoblock travel pedals	•
Bottle holder	•
Lockable seat backrest storage box	o
1 x 12V power socket	•
Control pattern change	o
Travel alarm	o
Codelocked anti-theft device	o
Additional hour meter	o
Large capacity, key-lockable toolbox	•
Cab	
Heater	•
Manual air conditioning	o
Vinyl low back seat	o
Vinyl high back seat	o
Textile high back seat	o
Head rest	o
3” Seat belt	o
Height adjustable arm rests	•
Large size monoblock travel pedals	•
Bottle holder	•
Large capacity storage box	o
Lockable seat backrest storage box	o
Storage net	o
Coat hook	•
Ceiling light	•
Radio preparation	o
Radio (AUX, USB, SD, Bluetooth, DAB+)	o
1 x 12V power socket	•
2 x USB charging ports	o
Control pattern change	o
Travel alarm	o
Codelocked anti-theft device	o
Additional hour meter	o
Large capacity, key-lockable toolbox	•
Digging equipment	
Standard arm	o
Long arm + additional counterweight	o
Service and maintenance	
In-cab diagnostick socket	•
Service reminder	•
Tool kit	o
Attachments	
Volvo quick coupler mechanical or hydraulic (pin-on)	o
LH hydraulic quick coupler with lifting hook (HS03)	o
Symetrical-type hydraulic quick coupler with lifting hook (S40)	o
Hydraulic side tilting quick coupler with lifting hook (HS03 & S40)	o
Tiltrotators (S40)	o
A choice of 30cm / 62L up to 90cm / 235L general purpose buckets	o
A choice of general purpose, twin pick or spade nose teeth	o
Bolt-on side cutters for general purpose buckets	o
A choice of fix or hydraulic tiltable ditching buckets	o
Hydraulic breaker HB06LN	o
Telematics	
Care Track	o

SELECTION OF VOLVO OPTIONAL EQUIPMENT

Extra hour meter



Green beacon



Track types



Custom colors



Extra counterweight



Tilt Quick Coupler



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.

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Volvo Construction Equipment

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