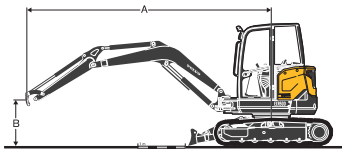
Volvo ECR50D in detail.

Engine		
Engine EU Stage 3A	Volvo	D2.6A
Rated speed	r/s / r/min	36.6 / 2 200
Maximum Gross power, ISO 3046-1	kW / hp	31.2 / 41.8
Max torque at	Nm / r/min	155 / 1 300
Nb of cylinders		4
Displacement	l	2.615
Bore	mm	87
Stroke	mm	110
Compression ratio		19
Electrical system		
Rated voltage	V	12
Battery capacity	Ah	74
Alternator	V / A	12 / 70
Hydraulic system		
Maximum system flow	l/min	103
Maximum flow for accessories	l/min	75
Maximum pressure for accessories	MPa/bar	22 / 220
Maximum flow for 2nd accessory circuit (option)	l/min	23
Maximum operating pressure	MPa/bar	26 / 260
Digging performances		
Standard bucket width (blade, W/O side cutter)	mm	600
Standard bucket mass	kg	113
Standard bucket rated capacity	m^3	0.144
Bucket rotation	deg	200
Bucket ISO breakout force	daN	3 612
Short arm (1400mm) ISO tearout force	daN	2 593
Long arm (1800mm) ISO tearout force	daN	2 177
Swing system		
Max, slew speed	r/min	9.5
Max, slew torque	daN.m	1 400
Undercarriage		
Rubber track width	mm	400
Bottom / Top rollers per side		5 / 1
Track tension		by grease piston
Blade (width x height)	mm	1 920 x 351

Drive		
Max, drawbar pull	daN	3 450
Max. travel speed (low / high)	km/h	3.0 / 4.9
Gradeability	deg	30
Service refill capacities		
Fuel tank	l	64.5
Hydraulic system, total	l	62
Hydraulic tank	l	32
Engine oil	l	10.2
Engine coolant	l	9.8
Travel reduction unit	l	2 X 1
Sound Level		
Interior sound level according to ISO 6396 (LpA)	dB(A)	78
External sound level according to ISO 6395 and EU Noise Directive (2000/14/EC) and 474-1:2006 +A1:2009 (LwA)	dB(A)	96
Weight and ground pressure		
Operating weight according to ISO 6016 (according to most usual configuration and including 75kg operator)	kg	5 010
Ground pressure	kg/cm^2 (kPa)	0.29 (28.4)
Transport weight (Heated cab, 380mm rubber tracks, short arm, 600mm direct-fit bucket, full fuel tank)	kg	4 935
With thumb	kg	+65
With extra counterweight	kg	+170
With long arm and additional counterweight	kg	+195
With 380mm steel tracks	kg	+100



LIFTING CAPACITY ECR50D

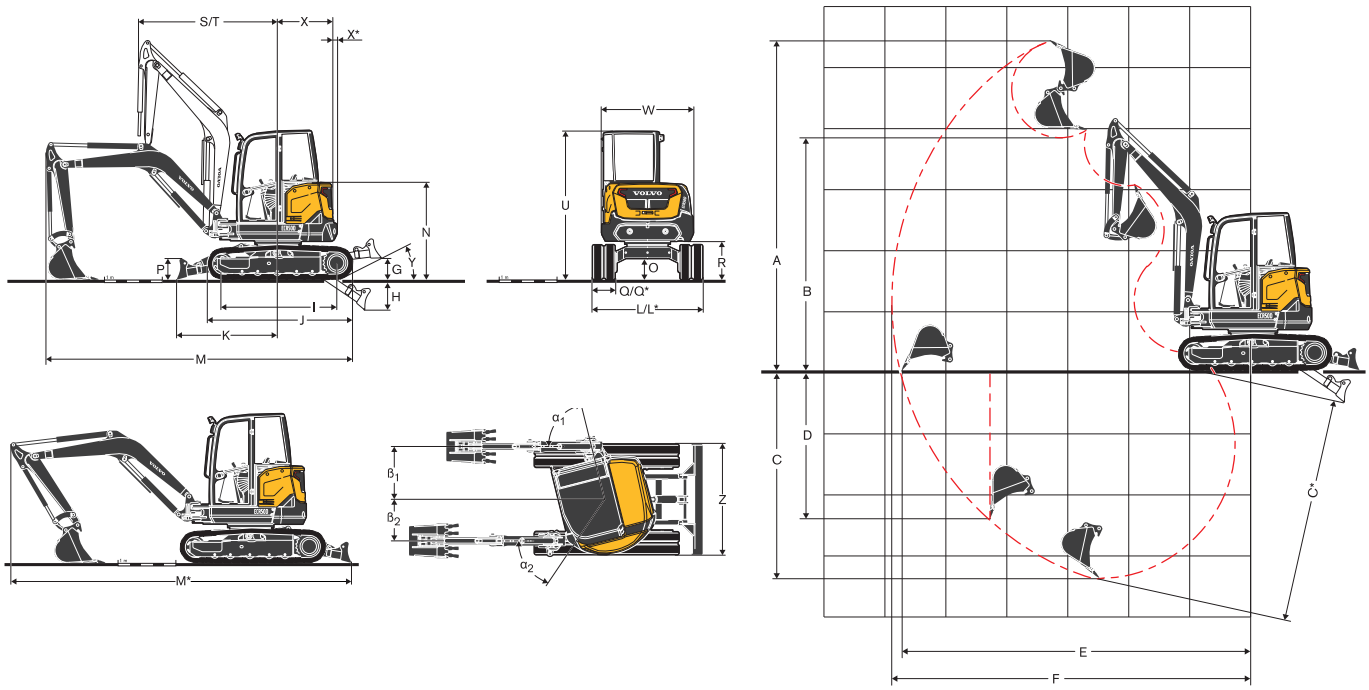
These capacities are given for a machine equipped with a cabin, 400mm rubber tracks and without a bucket or quick-coupler.
The below values are in compliance with ISO standard 10567. They do not exceed 75% of the tipping load or 87% of the hydraulic limit with the machine on firm level ground.
Loads 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		2.0 m		3.0 m		4.0 m		Max. reach		Max. m
Arm: 1 400mm + Dozer blade up	3	kg					892	770	700	605	4.65
	2	kg			1 332	1 129	866	745	615	531	5.01
	1	kg			1 250	1 052	833	713	589	508	5.09
	0	kg			1 217	1 021	811	692	610	597	4.93
	-1	kg	2 404	1 922	1 217	1 021	808	689	696	597	4.48
	-2	kg	2 449	1 962	1 244	1 046			961	819	3.6
Arm: 1 800mm + Additional counterweight + Dozer blade up	3	kg					877*	839	764	672	5.07
	2	kg			1 318	1 241	1 076	810	689	512	5.39
	1	kg			1 569	1 150	1 041	772	572	589	5.48
	0	kg	968*	968*	1 514	1 098	1 011	744	684	504	5.33
	-1	kg	2 030*	2 030*	1 502	1 087	999	733	760	560	4.92
	-2	kg	2 977	2 067	1 519	1 102	1 012	745	962	710	4.16
Arm: 1 400mm Dozer blade down	3	kg					1 048*	770	1 077*	605	4.65
	2	kg			1 634*	1 129	1 227*	745	1 100*	531	5.01
	1	kg			2 253*	1 052	1 456*	713	1 139*	508	5.09
	0	kg			2 450*	1 021	1 589*	692	1 189*	597	4.93
	-1	kg	2 460*	1 922	2 293*	1 021	1 522*	689	1 238*	597	4.48
	-2	kg	2 841*	1 962	1 727*	1 046			1 241*	819	3.6
Arm: 1 800mm + Additional counterweight + Dozer blade down	3	kg					877*	839	863*	672	5.07
	2	kg			1 318*	1 241	1 076*	810	866*	512	5.39
	1	kg			2 014*	1 150	1 339*	772	908*	589	5.48
	0	kg	968*	968*	2 385*	1 098	1 533*	744	1 014*	504	5.33
	-1	kg	2 030*	2 030*	2 375*	1 087	1 559*	733	1 115*	560	4.92
	-2	kg	3 560*	2 067	2 011*	1 102	1 279*	745	1 161*	710	4.16

*hydraulic limit

Specifications.

DIMENSIONS ECR50D



Description		Unit	Arm 1 400 mm	Arm 1 800 mm
A	Maximum cutting height	mm	5 400	5 656
B	Maximum dump height	mm	3 809	4 070
C	Digging depth	mm	3 400	3 800
C*	Maximum digging depth	mm	3 659	4 048
D	Maximum vertical wall digging depth	mm	2 417	2 791
E	Maximum digging reach at ground level	mm	5 771	6 161
F	Maximum digging reach	mm	5 908	6 288
G	Highest position dozer blade	mm	441	
H	Lowest position dozer blade	mm	580	
I	Tumbler length	mm	1 955	
J	Track length	mm	2 507	
K	Dozer blade, maximum reach at ground level	mm	1 748	
L	Overall width with 400mm rubber tracks	mm	1 920	
L*	Overall width with 380mm steel tracks	mm	1 900	
M	Overall length	mm	5 266	5 090
M*	Transport length	mm	5 992	5 883
N	Overall height of engine hood	mm	1 678	
O	Minimum ground clearance	mm	360	
P	Dozer blade height	mm	367	
Q	Shoe width (rubber)	mm	400	
Q*	Shoe width (steel)	mm	380	
R	Ground clearance to superstructure	mm	666	
S	Front slew radius	mm	2 450	2 495
T	Front slew radius with maximum offset	mm	1 948	1 984
U	Overall height	mm	2 570	
W	Overall width of superstructure	mm	1 603	
X	Tail slew radius	mm	960	1 033
X*	Additional counterweight overhang	mm	73	(incl.)
Y	Angle of approach	deg	30	
Z	Dozer blade width	mm	1 920	
α_1	Maximum boom swing angle to the left	deg	76	
β_1	Maximum boom offset to the right	mm	922	
α_2	Maximum boom swing angle to the right	deg	56	
β_2	Maximum boom offset to the left	mm	726	

Equipment.

STANDARD EQUIPMENT

Engine

Low emission, direct injection, water-cooled, Volvo 4-cylinder diesel engine, meeting EU Stage 3A environmental regulations.

Engine restart prevention system. Starter motor is protected against ignition when engine is already running.

Auto engine shutdown. A maximum low idling time can be defined by operator. This function can be set, engaged and stopped easily through the keypad.

Dry-type single element air filter.

Plastic fuel tank with drain plug.

Water separator.

Translucent fuel filter.

Electric/Electronic control system

Maintenance free battery.

IP67 protected electrical system and high quality connectors.

Removable battery cut-off switch.

Two working lights on cab.

In-cab 12V power socket.

V-CADS pro

Hydraulic system

Variable displacement, load-sensing piston pump.

Closed centre flow-sharing main control valve.

- Boom up
- Arm out
- Boom offset, both sides

Patented filtering and filling element.

Large tiltable oil cooler.

Double-acting hydraulic circuit for accessories up to arm end.

Hammer / shear valve.

Plastic tank with drain plug.

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.

Drivetrain

Axial piston hydraulic motors equipped with an epicyclic reduction gears.

Automatic two speed travel

Bottom flanged rollers lubricated for life.

Grease tensioning wheel lubricated for life.

Undercarriage and dozer blade

“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

Digging Equipment

Monobloc box welded boom.

Boom cylinder rod protection.

Monobloc box welded arm.

Long-life steel bushings.

Hardened, pre-lubricated and corrosion resistant pins.

50 hours greasing intervals.

Single side greasing points

Cab

FOPS on top level 1 (Falling Object Protective Structure).

TOPS (Tip-Over Protective Structure).

ROPS (Roll-Over Protective Structure).

Cushioned operator station

Large door access.

Large and roomy uncluttered floor

Gas-strutt assisted front window opening.

Front windscreen wiper and washer nozzle.

Right hand side sliding window.

Heating systems with in-cab adjustment of temperature and air flow level.

Multiple adjustable air vents.

Filtered air inlet.

Provision for a radio (antena and electric wiring already fitted).

Cab inside light.

Seat-belt with warning indicator.

Right rear-view mirror.

Cupholder.

Net.

Machine controls

Proportional finger tip control for boom offset.

Proportional finger tip control for auxiliary circuit with flow adjustment

Direct access to main auxiliary settings (X1) via 3 function oriented buttons. Possibility to individually adjust and register the flow settings.

Breaker toggle switch on right joystick

Digital engine control with direct access to ECO mode, auto-idle and two preset engine speed. Possibility to indivudually adjust and register the two preferred engine speed.

Access to machine management system through right display and intuitive keypad.

Automatic locking device for pilot controls and travel levers when the left console is raised.

Engine starting safety device: the left console must be raised to operate the starter.

Pressure accumulator to lower the equipment on the ground when the engine is switched off.

High torque / automatic two speed change over button on the keypad.

High speed toggle switch on the dozer blade lever.

Large travel pedals

Instrumentation and monitoring

Water temperature and fuel level gauges.

Warning lights for hydraulic filter and air filter restriction.

Self-acting emergency engine shutdown. Prevents failures in case of coolant overheating or too low engine oil pressure.

Several warning lights, coupled to an audible signal, in the event of malfunction (overheating, drop in oil pressure, low battery voltage…)

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.