

Volvo Construction Equipment
Building Tomorrow



EC20E

Volvo Compact Excavators 1.88-2.12 t 16.3 hp



Light work of tough jobs

A small machine packed with big features, the EC20E is designed to promote low operating costs. Built for durability and easy to service, this compact excavator will make light work of tough jobs.

Small but tough

The unique high-profile counterweight design is made from three strong pieces of cast iron which wrap around the rear of the machine, protecting all vital components. All-around steel panels, recessed 10mm from the counterweight, offer further protection.



Best-in-class serviceability

Complete maintenance tasks with speed thanks to the hinged fuel tank which enables an impressive ease of access to the engine compartment, and easy to locate daily check points. A 50-hour greasing interval further contributes towards the best-in-class serviceability of this machine.



Safety first

Safety is built-in to the machine with a ROPS/TOPS/FOPS cab and canopy, a large entrance including high visibility step, and an orange seatbelt as standard for easy checks by site managers.



The operator's choice

The roomy and uncluttered cab is designed to keep operators comfortable and productive, while its flat floor makes it easy to keep clean. Superior visibility, simple layout of the controls, fingertip controls and large travel pedals contribute towards the great ease of operation.





SMALL MACHINE, BIG PERFORMANCE

Take performance to a new level, with a 13% increase in traction force and 3 120kg of combined digging forces. Add in the smooth combination of movements which make grading jobs easier, as well as the ability to work close to the blade, and completing tasks on site has never been quicker.

The ultimate all-rounder

Go where other machines cannot thanks to the compact design of the EC20E. Easy to operate and easy to transport, this 2t excavator is the perfect choice when a compact machine is right for your application.



Transport with ease

Transportation of the machine is safe and secure, thanks to its light weight and convenient design. With automatic slew lock and four easily accessed large tie-down points on the upper frame, the machine can be safely transported on a small trailer with up to three buckets and a hydraulic breaker, while maintaining a total transport weight close to 2t.



Versatile performance

Take on many jobs with one machine thanks to a full range of purpose-built attachments, and change attachments quickly with the Volvo quick coupler. For further flexibility, the auxiliary hydraulic flows can be independently adjusted in each direction, ensuring optimal speed and control whatever hydraulic attachment you are working with. A second auxiliary line is also available as an option.



Compact by design

With a variable undercarriage that retracts to less than 1m and expands up to 1.35m, combined with a reduced machine height to less than 2.35m, you can count on the compact excavator to deliver superior performance when working in confined spaces. The machine design ensures that the right frame corner, swing post and cylinder stay within the tracks, resulting in maximum visibility and a reduced risk of machine damage when working alongside obstacles.



Perfect control

Experience precise, smooth and effortless command of the boom offset and auxiliary hydraulic flows with proportional fingertip controls. The easy-to-use joystick allows you to fine-tune the maximum hydraulic flow of any attachment to ensure ideal speed and power for any task.

Compact versatility

SMALL MACHINE, BIG PERFORMANCE

- 13% increase in traction force
- 3 120 kg combined digging forces
- Improved lifting capacity by an average of 22% to the front and 7% to the side

SMALL BUT TOUGH

- All-around steel panels **NEW**
- High-profile cast counterweight **A VOLVO EXCLUSIVE**
- Protected hoses, routed inside the boom
- In-track boom swing

SAFETY FIRST

- High visibility entry step and cab handrail, orange seatbelt **A VOLVO EXCLUSIVE**
- 4 large easily accessible tie-down points on the upper frame **NEW**
- Controls lock options (switch, seat operator presence or buckled seatbelt sensor) **A VOLVO EXCLUSIVE**
- Easy entrance-exit to cab

VERSATILE PERFORMANCE

- Secondary accessory circuit **A VOLVO EXCLUSIVE**
- Double acting circuit for hydraulic quick coupler **NEW**
- Variable undercarriage, under 1-meter wide





THE OPERATOR'S CHOICE

- Easy front window opening with lower window removal and storage ability **NEW**
- Fingertip controls, with adjustable hydraulic flow **A VOLVO EXCLUSIVE**
- Simple controls layout
- Automatic 2-speed travel
- Smooth combined movements

MAXIMIZE PROFITABILITY

- Convenient access to engine compartment thanks to hinged fuel tank **A VOLVO EXCLUSIVE**
- Auto engine shutdown and auto-idle (options) **A VOLVO EXCLUSIVE**
- All-around flat windows
- 50-hour greasing intervals
- Patented hydraulic filter

THE COMPLETE PACKAGE

- Range of Volvo buckets and quick couplers
- Matched Volvo breaker
- Genuine Volvo Parts
- Volvo Financial Services

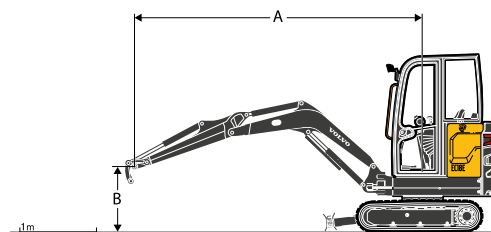
Volvo EC20E in detail

Engine		
Engine		D0.9A
Max. power at	r/min	2 300
Gross	kW	12
	hp	16.3
According to ISO 2534 / SAE J1995		
Max. torque	Nm	52
at engine speed	r/min	1 800
No. of cylinders		3
Displacement	cm ³	898
Bore	mm	72
Stroke	mm	73.6
Compression ratio		24
Electrical system		
Voltage	V	12
Battery	V	1 x 12
Battery capacity	Ah	70
Alternator	V/Ah	12/40
Swing system		
Max, slew speed	r/min	9.5
Max, slew torque	daNm	345
Undercarriage		
Bottom/top rollers per side		3 / 0
Track tension	By grease piston	
Blade (width x height)	mm	1 340 x 241
Digging Performances		
Standard bucket width (blade, W/O side cutter)	mm	500
Standard bucket mass	kg	48
Standard bucket rated capacity	l	63
Bucket rotation	°	199
Bucket breakout force (ISO)	daN	1 827
Short arm tearout force (ISO)	daN	1 229
Long arm tearout force (ISO)	daN	1 033

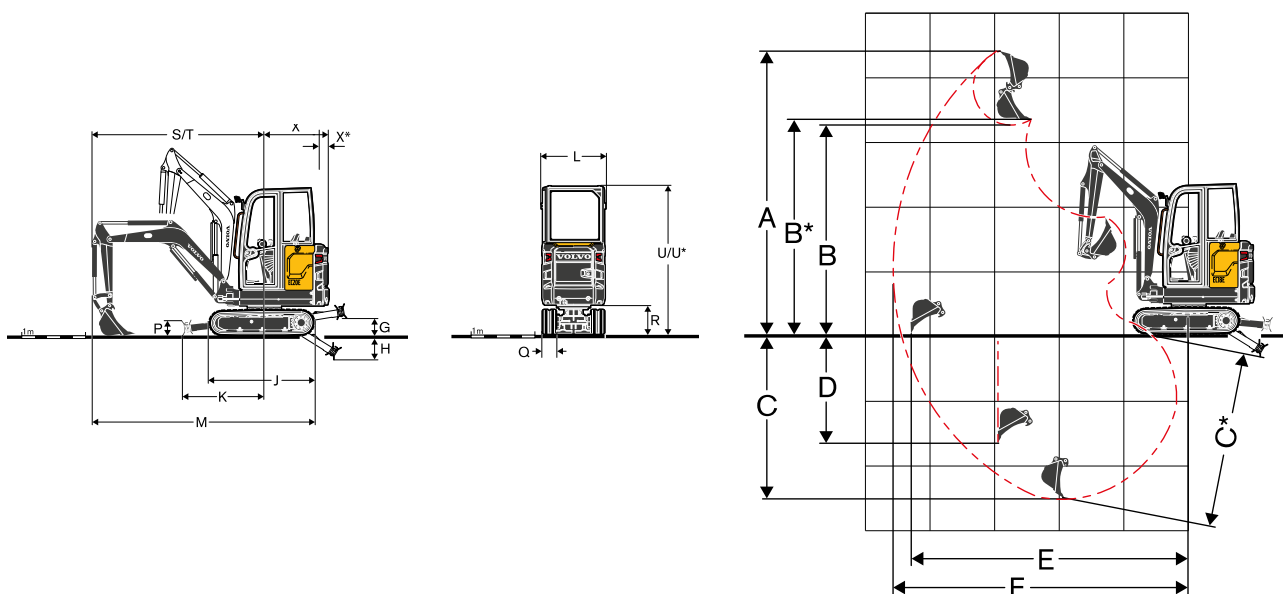
Weight and Ground Pressure		
Operating weight according to ISO 6016	kg	1 965
Ground pressure (cab)	kPa	30.4
Transport weight	kg	1 890
With rubber tracks	mm	230
With short arm	mm	1 050
With fuel tank capacity	%	100
With canopy	-kg	84
With long arm	+kg	10
Hydraulic system		
Pump type	Piston pump	
Maximum system flow	l/min	48
Maximum flow for accessories	l/min	43
Maximum flow for 2nd accessory circuit (option)	l/min	23
Maximum operating pressure	MPa	21
Travel System		
Max, drawbar pull	daN	1 620
Max. travel speed low	km/h	2.5
Max. travel speed high	km/h	4.6
Gradeability	°	30
Service Refill		
Fuel tank	l	21
Hydraulic system, total	l	21
Hydraulic tank	l	15
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 +A1:200		
LwA	dB(A)	93

LIFTING CAPACITY EC20E

These capacities are given for a machine equipped with a cabin, 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 marked with an asterisk (*) are limited by machine's hydraulic lifting capacity rather than tipping load. Caution: In accordance with 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 point radius (A)							
			2.0 m		3.0 m		Max reach		Max. m	
Arm: 1 050mm + Dozer blade up	2	kg	-	-	365	352	320	310	3.25	
	1	kg	641	608	351	338	281	272	3.48	
	0	kg	609	577	339	327	291	281	3.35	
	-1	kg	613	580	-	-	379	365	2.79	
Arm: 1 050mm + Dozer blade down	2	kg	-	-	396*	352	404*	310	3.25	
	1	kg	774*	608	474*	338	429*	272	3.48	
	0	kg	964*	577	540*	327	465*	281	3.35	
	-1	kg	850*	580	-	-	511*	365	2.79	
Arm: 1 350mm + Dozer blade up	2	kg	-	-	333*	333*	279	270	3.55	
	1	kg	647*	618	352	339	248	240	3.76	
	0	kg	604	572	335	323	254	246	3.64	
	-1	kg	599	567	333	320	313	301	3.15	
Arm: 1 350mm + Dozer blade down	2	kg	-	-	333*	333*	353*	270	3.55	
	1	kg	647*	618	426*	339	377*	240	3.76	
	0	kg	928*	572	519*	323	412*	246	3.64	
	-1	kg	907*	567	501*	320	457*	301	3.15	



DIMENSIONS

Description		Unit	EC20E	
Arm		mm	1 050	1 350
A	Maximum cutting height	mm	3 793	3 968
B	Maximum dump height	mm	2 621	2 796
B*	Maximum bucket clearance	mm	2 733	2 908
C	Digging depth	mm	2 279	2 579
C*	Maximum digging depth	mm	2 636	2 853
D	Maximum vertical wall digging depth	mm	1 713	1 999
E	Maximum digging reach at ground level	mm	3 976	4 266
G	Highest position dozer blade	mm	259	
H	Lowest position dozer blade	mm	404	
J	Track length	mm	1 620	
K	Dozer blade, maximum reach at ground level	mm	1 288	
L	Overall width with 230mm tracks	Min	995	
		Max	1 352	
M	Overall length	mm	3 707	3 554
M*	Transport length (arm lowered)	mm	4 145	4 100
P	Dozer blade height	mm	241	
Q	Shoe width (rubber)	mm	230	
R	Ground clearance to superstructure	mm	456	
S	Front slew radius	mm	1 679	1 732
T	Front slew radius with maximum offset	mm	1 401	1 450
U	Overall height cab	mm	2 334	
U*	Overall height canopy	mm	2 298	
X	Tail slew radius	mm	1 018	
X1	Rear overhang (across tracks)	mm	342	
β1	Maximum boom offset to the right	mm	398	
β2	Maximum boom offset to the left	mm	545	
(1) Option				

ATTACHMENTS SPECIFICATIONS

	Unit	General Purpose buckets					Aggressive Cut buckets			Ditching buckets		Hydraulic breaker HB02 Low Noise
		250	300	400	500	600	350	550*	550	1 000	850	
Quick Coupler type	mm											-
Volvo mechanical (pin-on)	l	28	32	47	63	78	-	-	-	76	59	Pin-on bracket
Lehnhoff® mechanical	l	-	32	47	63	78	-	-	-	76	59	Lehnhoff type bracket
Mechanical, symmetrical type	l	-	-	-	-	-	25	55	55	76	-	Symmetrical type bracket

*with teeth

For more details, see Attachments catalogue

Equipment

STANDARD EQUIPMENT

Engine

Low emission, water-cooled, Volvo 3-cylinder diesel engine, meeting EPA Tier 4 and EU Stage V environmental regulations
Starter motor protected against ignition when engine is already running
Automatic engine cut-off in case of overheating or low oil level
Engine starting safety device: the left console must be raised to operate the starter
Dry-type single element air filter
Water separator and translucent fuel filter
Plastic tank with drain plug

Drivetrain

Automatic two-speed travel hydraulic motors with reduction gears
Inner flange bottom 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 disconnect connector
Two working lights on cab version
Working light on the canopy frame
12V power socket in cab with cellular phone storage

Swing system

Radial piston hydraulic motor with integrated shockless valve
Automatic multi-disc spring applied hydraulic released slew brake
Centralized and remote lubrication of crown wheel and ball bearing

Superstructure

Stamped steel panels all-around, recessed 10 to 15mm
4 integrated tie-down points on upper structure

Undercarriage

230mm rubber tracks
Box welded fabricated frame
Sturdy removeable protecting covers for track motors and slew system
Box section highly rigid dozer blade structure
Weld-on edge on dozer blade
230mm rubber tracks

Hydraulic system

Variable displacement piston pump
Flow-Sharing and Load Sensing main control valve
Boom cylinder cushioning at end stroke (up)
Patented filtering and filling element
Large side by side oil cooler and radiator
Double-acting hydraulic circuit for accessories
Hydraulic hoses routed inside the boom for increased protection
Plastic tank with drain plug

Cab / Canopy

Cushionned operator station
Large entrance access
Large and roomy uncluttered floor
Highly visible orange footstep
Highly visible orange seatbelt with warning indicator on display
Toolbox with integrated storage for operator's manual and lockable door

Cab

Highly visible orange handrail
Flat toughened glass all-around
Gas-strut 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, and multiple air vents
Filtered air inlet
Radio preparation (antenna, wire harness)

STANDARD EQUIPMENT

Digging equipment

Casted end and structural parts on arm, pivot, undercarriage and upper structure noze
Monoblock box welded fabricated boom and arm
Boom cylinder protection
Long-life steel bushings & hardened, pre-lubricated and corrosion resistant pins
50-hours intervals on all grease points

Machine controls

Automatic locking device for pilot controls and travel levers when the left console is raised
Proportional and adjustable fingertip control for boom offset and auxiliary circuit
Large travel pedals
Breaker (full flow) toggle switch on right joystick
Pressure accumulator to lower the equipment on the ground

Instrumentation and monitoring

Permanent digital hour meter visible from outside cab
Warning lights for hydraulic filter and air filter restriction
Engine temperature and fuel level gauges

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
ROPS (Roll-Over Protective Structure) conforming to ISO 3471-1 and SAE J1040 standards
TOPS (Tip-Over Protective Structure) conforming to ISO 12117 and EN 13531 standards
OPG 1 (Operator Protective Guard on top) conforming to ISO 10262 standard (when equipped)

OPTIONAL EQUIPMENT

Engine

Dual stage air filter
Auto idling system
Engine auto shut-down with time adjustment

Operator environment

Robust 4-pillar structure canopy
Heated cab
Vinyl seat with mechanical suspension, low back and 2" orange seatbelt
Vinyl seat with mechanical suspension, extended back with lumbar adjustment and 2" orange retractable seatbelt
Vinyl seat with mechanical suspension, extended back with lumbar adjustment and 3" retractable seatbelt
Fabric seat with mechanical suspension, low back and 2" orange seatbelt
Fabric seat with mechanical suspension, extended back with lumbar adjustment and 2" orange retractable seatbelt
Fabric seat with mechanical suspension, extended back with lumbar adjustment and 3" retractable seatbelt
Additional lockable storage box (behind the seat)
Electrical switch for ISO/SAE control pattern change
Travel alarm
Radio, AUX, USB, Bluetooth
Radio DAB, USB, Bluetooth, MP3
Anti-theft, code lock
Anti-theft, coded key
Controls lock, switch
Controls lock, seat operator presence and switch
Controls lock, seatbelt sensor
Front guard OPG1 for canopy
Severe-duty guards for cab (OPG2, front & top)
Tool kit

OPTIONAL EQUIPMENT

Machine exterior

Left/Right rearview mirror
One protected worklight on the boom
One rear worklight
Rotating beacon
One protected worklight on the boom LED
One rear worklight LED
LED worklights package
Warning beacon, flashing LED
Green beacon link to safety belt
Several level of customisation (RAL specifications) to match with your corporate identity

Hydraulics

Relief valve for auxiliaries
Breaker/Shear valve
Hydraulic drain for accessories
Second accessory circuit with proportional and adjustable controls
Kit 2 flat face hydraulic couplings
Kit 4 flat face hydraulic quick couplings
Double acting circuit for hydraulic quick couplers
Boom and arm safety lifting valves
Boom, arm and dozer blade safety lifting valves
Safety valve certification
Mineral hydraulic oil VG32
Mineral hydraulic oil VG46
Mineral hydraulic oil VG68
Bio hydraulic oil VG32 (PANOLIN®)
Bio hydraulic oil VG46 (PANOLIN®)

OPTIONAL EQUIPMENT

Digging equipment

Short arm
Long arm

Attachments

Volvo mechanical quick coupler (pin-on)
Lehnhoff® mechanical quick coupler
Symmetrical type mechanical quick coupler (S30)
General Purpose buckets
Fixed Ditching buckets
Tilttable Ditching buckets
Hydraulic breaker HB02LN

SELECTION OF VOLVO OPTIONAL EQUIPMENT

LED lights and beacon



Anti-theft, coded key



Short or long arm



Double acting circuit for hydraulic quick coupler



Auto-idle and auto engine shutdown



Secondary accessory circuit



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.



Volvo Construction Equipment

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