

Volvo Construction Equipment
Building Tomorrow



EC20E

Volvo Compact Excavators 1.88-2.12 t / 4,145-4,674 lb 16.1 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 (0.4") 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, and a large entrance including high visibility step.



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 (6 878 lbs) 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 (39") and expands up to 1.35m (53"), combined with a reduced machine height to less than 2.35m (92"), 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 BUT TOUGH

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

SMALL MACHINE, BIG PERFORMANCE

- 13% increase in traction force
- 3,120 kg (6,878 lbs) combined digging forces
- Improved lifting capacity by an average of 22% to the front and 7% to the side

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 (39") 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 breaker
- Genuine Volvo Parts: 2 years warranty, 24-hours delivery guaranteed
- Volvo Financial Services

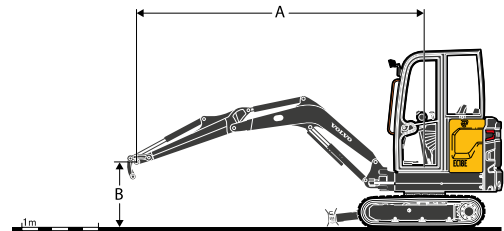
Volvo EC20E in detail

Engine		
Engine		D0.9A
Max. power at	r/min (r/s)	2 300 (38.3)
Gross	kW (hp)	12 (16.1)
According to ISO 2534 / SAE J1995		
Max. torque	Nm (ft lbf)	52 (38.4)
at engine speed	r/min	1 800
No. of cylinders		3
Displacement	cm ³ (in ³)	898 (54.8)
Bore	mm (in)	72 (2.83)
Stroke	mm (in)	73.6 (2.9)
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 (ft lbf)	345 (2,545)
Undercarriage		
Bottom/top rollers per side		3 / 0
Track tension		By grease piston
Blade (width x height)	mm (in)	1 340 x 241 (52.8 x 9.5)
Digging Performances		
Standard bucket width (blade, W/O side cutter)	mm (in)	500 (19.7)
Standard bucket mass	kg (lb)	48 (106)
Standard bucket rated capacity	l (ft ³)	63 (2.2)
Bucket rotation	°	199
Bucket breakout force (ISO)	daN (lbf)	1,827 (4,107)
Short arm tearout force (ISO)	daN (lbf)	1,229 (2,763)
Long arm tearout force (ISO)	daN (lbf)	1,033 (2,322)

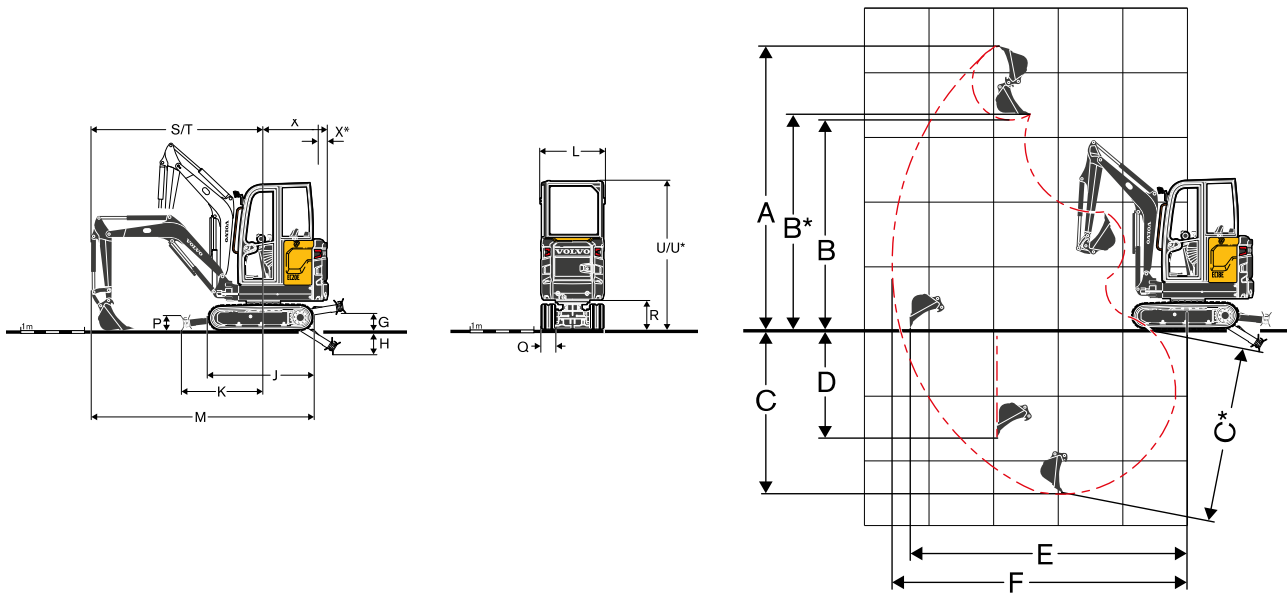
Weight and Ground Pressure		
Operating weight according to ISO 6016	kg (lb)	1,965 (4,332)
Ground pressure (cab)	kPa (psi)	30.4 (4.4)
Transport weight	kg (lb)	1,890 (4,167)
With rubber tracks	mm (in)	230 (9.1)
With short arm	mm (in)	1,050 (41.3)
With fuel tank capacity	%	100
With canopy	-kg (-lb)	84 (185)
With long arm	+kg (+lb)	10 (22)
Hydraulic system		
Pump type		Piston pump
Maximum system flow	l/min (gal/min)	48 (12.7)
Maximum flow for accessories	l/min (gal/min)	43 (11.4)
Maximum flow for 2nd accessory circuit (option)	l/min (gal/min)	23 (6.1)
Maximum operating pressure	MPa (psi)	21 (3,046)
Travel System		
Max. drawbar pull	daN (lbf)	1 620 (3,642)
Max. travel speed low	km/h (mi/h)	2.5 (1.6)
Max. travel speed high	km/h (mi/h)	4.6 (2.9)
Gradeability	°	30
Service Refill		
Fuel tank	l (gal)	21 (5.55)
Hydraulic system, total	l (gal)	21 (5.55)
Hydraulic tank	l (gal)	15 (4)
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 (ft)		Lifting point radius (A)						Max. m (ft in)
			2.0 m (6.5 ft)		3.0 m (9.8 ft)		Max reach		
Arm: 1 050mm (3'5") + Dozer blade up	2 (6.5)	kg (lb)	-	-	365 (805*)	352 (776*)	320 (705*)	310 (683*)	3.25 (10'8")
	1 (3.3)	kg (lb)	641 (1413*)	608 (1340*)	351 (774*)	338 (745*)	281 (619*)	272 (600*)	3.48 (11'5")
	0 (0)	kg (lb)	609 (1343*)	577 (1272*)	339 (747*)	327 (721*)	291 (642*)	281 (619*)	3.35 (11'0")
	-1 (-3.3)	kg (lb)	613 (1351*)	580 (1279*)	-	-	379 (836*)	365 (805*)	2.79 (9'2")
Arm: 1 050mm (3'5") + Dozer blade down	2 (6.5)	kg (lb)	-	-	396* (873*)	352 (776*)	404* (891*)	310 (683*)	3.25 (10'8")
	1 (3.3)	kg (lb)	774* (1706*)	608 (1340*)	474* (1045*)	338 (745*)	429* (946*)	272 (600*)	3.48 (11'5")
	0 (0)	kg (lb)	964* (2125*)	577 (1272*)	540* (1190*)	327 (721*)	465* (1025*)	281 (619*)	3.35 (11'0")
	-1 (-3.3)	kg (lb)	850* (1874*)	580 (1279*)	-	-	511* (1127*)	365 (805*)	2.79 (9'2")
Arm: 1 350mm (4'5") + Dozer blade up	2 (6.5)	kg (lb)	-	-	333* (734*)	333* (734*)	279 (615*)	270 (595*)	3.55 (11'8")
	1 (3.3)	kg (lb)	647* (1426*)	618 (1362*)	352 (776*)	339 (747*)	248 (547*)	240 (529*)	3.76 (12'4")
	0 (0)	kg (lb)	604 (1332*)	572 (1261*)	335 (739*)	323 (712*)	254 (560*)	246 (542*)	3.64 (11'11")
	-1 (-3.3)	kg (lb)	599 (1321*)	567 (1250*)	333 (734*)	320 (705*)	313 (690*)	301 (664*)	3.15 (10'4")
Arm: 1 350mm (4'5") + Dozer blade down	2 (6.5)	kg (lb)	-	-	333* (734*)	333* (734*)	353* (778*)	270 (595*)	3.55 (11'8")
	1 (3.3)	kg (lb)	647* (1426*)	618 (1362*)	426* (939*)	339 (747*)	377* (831*)	240 (529*)	3.76 (12'4")
	0 (0)	kg (lb)	928* (2046*)	572 (1261*)	519* (1144*)	323 (712*)	412* (908*)	246 (542*)	3.64 (11'11")
	-1 (-3.3)	kg (lb)	907* (2000*)	567 (1250*)	501* (1105*)	320 (705*)	457* (1008*)	301 (664*)	3.15 (10'4")



DIMENSIONS

Description		Unit	EC20E	
			1 050 (3'5")	1 350 (4'5")
Arm				
A	Maximum cutting height	mm (ft in)	3 793 (12'5")	3 968 (13'0")
B	Maximum dump height	mm (ft in)	2 621 (8'7")	2 796 (9'2")
B*	Maximum bucket clearance	mm (ft in)	2 733 (8'12")	2 908 (9'6")
C	Digging depth	mm (ft in)	2 279 (7'6")	2 579 (8'6")
C*	Maximum digging depth	mm (ft in)	2 636 (8'8")	2 853 (9'4")
D	Maximum vertical wall digging depth	mm (ft in)	1 713 (5'7")	1 999 (6'7")
E	Maximum digging reach at ground level	mm (ft in)	3 976 (13'1")	4 266 (13'12")
G	Highest position dozer blade	mm (ft in)		259 (0'10")
H	Lowest position dozer blade	mm (ft in)		404 (1'4")
J	Track length	mm (ft in)	1 620 (5'4")	
K	Dozer blade, maximum reach at ground level	mm (ft in)	1 288 (4'3")	
L	Overall width with 230mm tracks	mm (ft in)		995 (3'3")
		Min		
		Max		1 352 (4'5")
M	Overall length	mm (ft in)	3 707 (12'2")	3 554 (11'8")
M*	Transport length (arm lowered)	mm (ft in)	4 145 (13'7")	4 100 (13'5")
P	Dozer blade height	mm (ft in)		241 (0'9")
Q	Shoe width (rubber)	mm (ft in)		230 (0'9")
R	Ground clearance to superstructure	mm (ft in)		456 (1'6")
S	Front slew radius	mm (ft in)	1 679 (5'6")	1 732 (5'8")
T	Front slew radius with maximum offset	mm (ft in)	1 401 (4'7")	1 450 (4'9")
U	Overall height cab	mm (ft in)		2 334 (7'8")
U*	Overall height canopy	mm (ft in)		2 298 (7'6")
X	Tail slew radius	mm (ft in)		1 018 (3'4")
X1	Rear overhang (across tracks)	mm (ft in)		342 (1'1")
β1	Maximum boom offset to the right	mm (ft in)		398 (1'4")
β2	Maximum boom offset to the left	mm (ft in)		545 (1'9")

(1) Option

ATTACHMENTS SPECIFICATIONS

	Unit	General Purpose buckets					Aggressive Cut buckets			Ditching buckets		Hydraulic breaker HB02 Low Noise
		250 (0'10")	300 (1'0")	400 (1'4")	500 (1'8")	600 (2'0")	350 (1'2")	550* (1'10")*	550 (1'10")	1 000 (3'3")	850 (2'9")	
Quick Coupler type	mm (ft in)											
Volvo mechanical (pin-on)	l (gal)	28 (7.4)	32 (8.5)	47 (12.4)	63 (16.6)	78 (20.6)	-	-	-	76 (20.1)	59 (15.6)	Pin-on bracket
Lehnhoff® mechanical	l (gal)	-	32 (8.5)	47 (12.4)	63 (16.6)	78 (20.6)	-	-	-	76 (20.1)	59 (15.6)	Lehnhoff type bracket
Mechanical, symmetrical type	l (gal)	-	-	-	-	-	25 (6.6)	55 (14.5)	55 (14.5)	76 (20.1)	-	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 (0.4" to 0.6")
4 integrated tie-down points on upper structure
Undercarriage
230mm (0'9") 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 (0'9") 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
Cushioned 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)
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

STANDARD EQUIPMENT
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
- Tiltable Ditching buckets
- Hydraulic breaker HB02LN

SELECTION OF VOLVO OPTIONAL EQUIPMENT

LED lights and beacon**Anti-theft, coded key****Antitheft, PIN code****ISO SAE control pattern change****Hydraulic lock seat belt sensor****Auto-idle and auto engine shutdown**

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

Volvo Construction Equipment

www.volvoce.com