

EC20D

VOLVO COMPACT EXCAVATORS 1.95 t / 4,300 lb 16.1 hp



A passion for performance.

At Volvo Construction Equipment, we're not just coming along for the ride. Developing products and services that raise productivity – we are confident we can lower costs and increase profits for customers around the globe. Part of the Volvo Group, we are passionate about innovative solutions to help you work smarter – not harder.

Helping you to do more

Doing more with less is a trademark of Volvo Construction Equipment. High productivity has long been married to low energy consumption, ease of use and durability. When it comes to lowering life-cycle costs, Volvo is in a class of its own.

Designed to fit your needs

There is a lot riding on creating solutions that are suited to the particular needs of different industry applications. Innovation often involves high technology – but it doesn't always have to. Some of our best ideas have been simple, based on a clear and deep understanding of our customers' working lives.





You learn a lot in 180 years

Over the years, Volvo has advanced solutions that have revolutionized the use of construction equipment. No other name speaks Safety louder than Volvo. Protecting operators, those around them and minimizing our environmental impact are traditional values that continue to shape our product design philosophy.

We're on your side

We back the Volvo brand with the best people. Volvo is truly a global enterprise, one that is on standby to support customers quickly and efficiently – wherever they are.

We have a passion for performance.

A strong, dedicated, capable dealer network.

Our dealers are strategically located throughout North America to provide the equipment you need and the parts and service support you demand for a productive and profitable operation.

The strength of our dealer network is enhanced with extensive individualized product support training at our best-in-class Customer Center in Shippensburg and through hands-on training. Using a great Product Demonstration Center featuring a dedicated area for most commons applications, visitors operate equipment from our entire product line under a variety of simulated working conditions. This facility is in year-round use by our dealers and customers.

Building the best starts right here.

The products designed and manufactured by Volvo Construction Equipment have their beginnings at the most advanced Research & Design centers in the industry. Volvo CE machines are designed in 11 R&D centers and produced in 15 manufacturing facilities across the world.

The major R&D center and manufacturing plant in the Americas is located in Shippensburg, Pennsylvania. This facility has been in operation for over 30 years and – with its recently added 200,000 sq. ft. expansion – now covers 570,000 sq. ft. on an 80 acre campus. Dedicated work teams and highly advanced technologies and techniques using the Volvo Production System ensure continuous quality improvements, labor savings and cost control to reach the high quality that our customers have come to expect from Volvo.



























Volvo Buses

Volvo Construction Equipment

Volvo Penta Volvo Financial Services

Built to last.

The EC20D compact excavator from Volvo is built to deliver superior performance that lasts. These robust, reliable machines are equipped with a tough rear counterweight and casted digging equipment to ensure maximum durability for a long machine life. With fully protected hydraulics and a strong, reinforced dozer blade, this is a machine designed to work harder for longer.

Quality components

Casted swing frame, boom and arm ends allow for excellent stress distribution and enduring performance. Hardened pins and bushings are designed to keep pivot points tight and secure for minimum wear, guaranteeing your machine is ready to work year after year.



In-track boom swing

To maintain visibility when working in tight conditions, the natural position is to offset the boom to the left. The machine is designed so that the swing post and cylinder stay within the tracks in this position, avoiding the risk of damage to your machine when working alongside obstacles.

Strong by design

All hoses are routed through the boom, providing full protection. A strong steel casing protects the boom cylinder on the EC20D, ensuring it is protected when digging and when using a breaker.





Reinforced blade

The robust dozer blade is equipped with a reinforced 400HB cutting edge for superior wear resistance. A strong, curved upper lip gives added protection against damage in tough applications. This sturdy structure ensures outstanding performance whether dozing, back filling or using the blade as a stabilizer.





Working made easy.

Step inside the spacious cab and experience the benefits of the comfortable and intuitive Volvo operator environment. The modern styling delivers superior all-around visibility from large expanses of glass as well as innovative, ergonomic features including ideally placed controls with no auxiliary pedals, allowing for good floor space.

Large cab access

Gain easy and safe entry to the cab via a wide door with three contact points. When equipped with a canopy, the machines feature a large, practical handrail.



Assisted front window opening

The front window is equipped with a gas strut, together with large handles for easy opening, ensuring a comfortable, safe working environment.





Intuitive fingertip controls

The boom offset and the auxiliary hydraulics are operated by ergonomic fingertip controls, rather than pedals. A single-acting button on the joystick makes it easy to send the maximum flow available to the accessory. This ensures precise control.

Maintain your uptime.

With a comprehensive range of built-in service features, Volvo makes it easy to take care of your machine. Guaranteed long greasing intervals and Volvo's patented hydraulic oil filter maximize your uptime. The auto-idle and auto engine shut down features ensure reduced fuel consumption and servicing requirements, decreasing your total cost of ownership. And, for assured peace of mind, you are fully supported by Volvo's global service network.

Auto-idle and auto engine shutdown

Engine speed is reduced to idle when the controls are inactive for five seconds – reducing fuel consumption and noise. If the machine is left idling for longer, the engine can be set to automatically shut down. This then stops the hour meter, leading to longer service intervals, lower operating costs and ensuring a better resale value for your machine.

50 hour greasing interval

Grease points are easily accessible, with a greasing interval of 50 hours. Longer greasing intervals increase uptime, lower maintenance costs and provide longevity for all pivot points.









Flat windows

The flat, toughened glass used on the four sides of the cab guarantees that replacements can be fitted simply, quickly and inexpensively if damage occurs.

Patented hydraulic oil filter

With Volvo's patented multifunctional hydraulic oil filter, filtration occurs when the tank is filled or topped up and before the oil returns back to tank via the drain lines. The transparent bowl enables easy oil level checks and permits early detection of contamination. Preventative maintenance can be carried out before damage occurs.





Power to perform.

Outstanding lifting capacities and excellent digging forces give you the ability to efficiently handle a variety of demanding jobs. Experience stability and versatility with a variable-width undercarriage, and benefit from superior control thanks to flow sharing hydraulics and automatic two-speed travel system.

Impressive digging forces

The EC20D features class-leading tear-out forces and excellent break-out forces. Thanks to the optimized digging equipment, this powerful compact excavator allows you to stretch further, dig deeper and reach higher.



Harmonized hydraulics

The state-of-the-art hydraulic system delivers superior performance no matter what the application. The flow sharing system ensures the operator has precise control of simultaneous functions for more efficient operations.





Variable-width undercarriage

For maximum versatility, the undercarriage can be extended or retracted to suit your needs. A reduced width can be selected when going through narrow spaces. The undercarriage can be extended for more stability and improved performance.



Automatic travel speed

For optimized travel speed and traction, automatic two speed travel allows the operator to continually drive the machine at high speed. When more traction is needed, the speed is automatically reduced.

Durable by design.

Superior operator environment Ergonomic, spacious and safe Volvo cab/canopy features all-round visibility, intuitive controls and built-in comfort.

Quality components

All components are designed to deliver outstanding durability and reliability, to maximise your machine life and lower maintenance costs.

Auto-idle and auto engine shutdown

Reduce fuel consumption and servicing requirements with auto-idle and auto engine shutdown.



Ultimate lifting capacity

Excellent stability and outstanding hydraulics ensure the machines are capable of lifting heavy loads.

50 hour greasing interval

The greasing interval is 50 hours lowering operating costs and increasing uptime.

Intuitive fingertip controls

The boom offset and the auxiliary hydraulics are operated by ergonomic fingertip controls, rather than pedals.



High profile rear counterweight

A robust, high-profile cast iron rear counterweight provides excellent resistance for outstanding durability.

Harmonized hydraulics

Flow sharing hydraulics ensure smooth, precise control of simultaneous functions for more efficient operations.

Fast daily checks

Daily service points are grouped under the wide-opening lockable engine hood to ensure straightforward maintenance and maximized uptime.

Variable-width undercarriage

For maximum versatility, the undercarriage can be extended for maximum stability or retracted during transport.

Wide range of attachments

A wide range of Volvo attachments makes the EC20D ready to tackle any job.

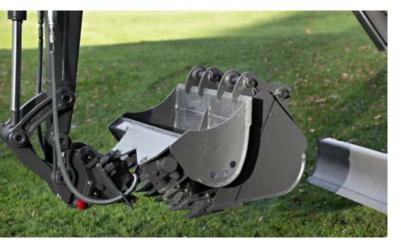


Ultimate versatility for any job.

These machines have been developed to work in harmony with a range of quality Volvo attachments, making them a versatile addition to your fleet. Volvo quick couplers allow you to switch between attachments with ease for ultimate flexibility, ready to tackle any job, at any site.

Smart bucket transport system

Volvo's simple and effective bucket transportation system enables buckets to be transported safely and easily. Transportation hooks are integrated into the bucket design, allowing it to carry up to two general buckets by attaching them onto a ditching bucket, and securing them against the blade at the end of the working day.



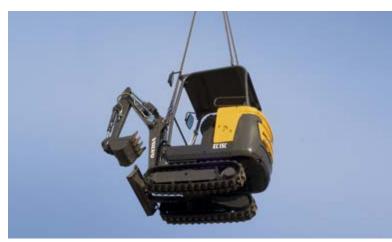
Adjustable hydraulic flows

Easily adjust auxiliary hydraulic flows from inside the cab and benefit from the optimal speed and power for attachment operation. Flows can be independently adjusted in each direction.

Volvo quick coupler

Volvo's dedicated quick coupler makes attachment changes easy. Pick up Volvo hydraulic attachments and buckets for use in both the face shovel and normal backhoe position.





Safe transportation

Whether you are lifting your machine into a demolition site or transporting it on a trailer, you can safely get where you need to be with dedicated lifting points and an automatic swing brake for easy transportation.

Volvo EC20D in detail.

Engine				
Engine		Volvo		D0.9A
Rated speed	r/s	(r/min)	40.3	(2,420)
Maximum Gross power, ISO 14396/SAE J1995	kW	hp	12	16.1
Max torque at	Nm	/ r/min	51	/ 2,000
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				29
Electrical system				
Rated voltage		V		12
Batteries		V		1 x 12
Battery capacity		Ah		64
Alternator		V / Ah		12 / 40
Swing system				
Max, slew speed		r/min		9.5
Max, slew torque	daN.m	lb ft	304	2,242
Undercarriage				
Bottom/top rollers per side				4/0
Track tension			by greas	e piston
Blade (width x height)	mm	in	1 356x 248	53.4x 9.8
Digging performances				
Standard bucket width (blade, W/O side cutter)	mm	in	500	20
Standard bucket mass	kg	lb	48	106
Standard bucket rated capacity	Ĭ	ft ³	63	2.22
Bucket rotation	deg		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	1 950	4,300
Ground pressure		kg/cm ²		0.31
	kPa	psi	30.4	4.4
Transport weight (Heated cab, rubber tracks, short arm, standard direct-fit bucket, 10% fuel tank capacity)	kg	lb	1 890	4,167
With canopy	kg	lb	-78	- 172
With long arm	kg	lb	+4	+ 8.8
	wg.	110		. 0.0

Hydraulic system									
Maximum system flow		I/min	gpm	48	12.7				
Maximum flow for accessories		l/min	gpm	43	11.3				
Maximum flow for 2nd accessory cir	l/min	gpm	19	5					
Maximum operating pressure	Мра	psi	21	3,045					
				bar		210			
Drive									
Max, drawbar pull			daN	lbf	1 440	3			
Max. travel speed (low / high)		km/h	mph	2.5 / 4.7	1.55 / 2.9				
Gradeability				deg		30			
Service refill capacities									
Fuel tank			I	gal	20	5.28			
Hydraulic system, total		- 1	gal	21	5.55				
Hydraulic tank		- 1	gal	15	3.96				
Engine oil		- 1	gal	3.7	0.98				
Engine coolant			- 1	gal	4	1			
Travel reduction unit			- 1	gal	2 x 0.33	2 x 0.09			
Sound Level									
Interior sound level according to ISO				78					
External sound level according to It and EU Noise Directive (2000/14/				93					
474-1:2006 +A1:2009 (LwA)									
Attachments	Wie	446	C-		14/-	inh			
Туре	mm	in	I	pacity ft ³	kg	ight lb			
	250	10	28	1	32	71			
	300	12	32	1.13	34	75			
General purpose buckets	400	16	47	1.66	41	90			
derierar parpode backets	500	20	63	2.22	48	106			
	600	24	78	2.75	53	117			
Fix-ditching buckets	1 000	39	76	2.68	57	125			
2 X 45° Tiltable-ditching buckets	850	33	59	2.08	83	183			

LIFTING CAPACITY EC20D

These capacities are given for a machine equipped with heated cab, rubber tracks and without a bucket or quick-coupler.

The handling capacity is 75% of the tipping load or 87% of the hydraulic limit.

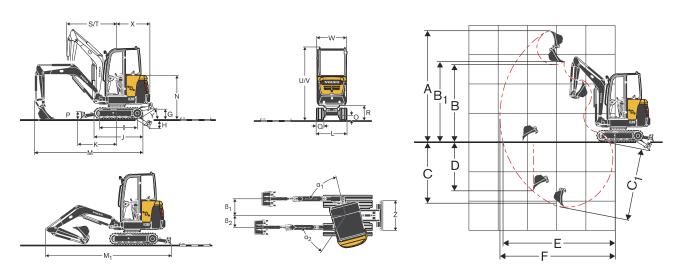
Caution: In accordance with standard EN 474-5, the machine must be equipped with safety valves and an overload indicator (available as options) to carry out handling operations.

			Lifting point radius (A)													
	Li	fting		2.0 m,	78.7"			3.0 m,	118.1"		Max reach					
	p he	oint eight (B)	Ē					Ė				M	ax.			
	m	in	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	m	in
	2	78.7	-	-	-	-	295	650	330	728	259	571	289	637	3.25	128
Arm: 1 050 mm, 41.3"	1	39.4	506	1,115	567	1,250	281	619	316	697	225	496	253	558	3.48	137
+ Dozer blade up	0	0	475	1,047	536	1,182	270	595	304	670	232	551	262	578	3.35	131.9
	-1	-39.4	479	1,056	540	1,190					302	666	340	750	2.79	109.8
	2	78.7	-	-	-	-	399*	880	330	728	407*	897	289	637	3.25	128
Arm: 1 050 mm, 41.3"	1	39.4	776*	1,711	567	1,250	476*	1,049	316	697	431*	950	253	558	3.48	137
+ Dozer blade down	0	0	965*	2,127	536	1,182	542*	1,195	304	670	468*	1,031	262	578	3.35	131.9
	-1	-39.4	851*	1,876	540	1,190	-	-	-	-	514*	1,133	340	750	2.79	109.8
	2	78.7					298	657	332	732	223	492	250	551	3.55	139.8
Arm: 1 350 mm, 53.1"	1	39.4	517	1,140	578	1,274	281	619	315	694	197	434	222	489	3.76	148
+ Dozer blade up	0	0	471	1,038	532	1,173	265	584	299	659	201	443	227	500	3.64	143.3
	-1	-39.4	466	1,027	527	1,162	262	578	297	655	247	545	279	615	3.15	124
	2	78.7	-	-	-	-	334*	736	332	732	354*	780	250	551	3.55	139.8
Arm: 1 350 mm, 53.1"	1	39.4	648*	1,429	578	1,274	427*	941	315	694	379*	836	222	489	3.76	148
+ Dozer blade down	0	0	931*	2,052	532	1,173	520*	1,146	299	659	413*	910	227	500	3.64	143.3
	-1	-39.4	910*	2,006	527	1,162	503*	1,109	297	655	459*	1,012	279	615	3.15	124

^{*}hydraulic limit

Specifications.

DIMENSIONS EC20D



Description			Un	it	EC20D					
Arm length			mm,	in		nm, 41.3"		1 350 mm, 53.1"		
Α	Maximum cutting height		mm	in	3 807	149.9	3 982	156.8		
В	Maximum dumping height		mm	in	2 635	103.7	2 810	110.6		
B,	Maximum bucket clearance		mm	in	2 746	108.1	2 920	115		
C.	Digging depth		mm	in	2 257	88.9	2 557	100.7		
C,	Maximum digging depth		mm	in	2 482	97.7	2 781	109.5		
D .	Maximum vertical wall digging depth		mm	in	1 692	66.6	1 978	77.9		
E	Maximum digging reach at ground level		mm	in	3 971	156.3	4 261	167.8		
F	Maximum digging reach		mm	in	4 080	160.6	4 362	171.7		
G	Highest position dozer blade		mm	in	3	326	12	2.8		
Н	Lowest position dozer blade		mm	in	3	311	12	2.2		
1	Tumbler length		mm	in	1	240	48			
J	Track length		mm	in	1	620	63	8.8		
K	Dozer blade, maximum reach at ground level		mm	in	1	215	47	'.8		
L	Overall track width	min	mm	in	1	014	39).9		
		max	mm	in	1	356	53	3.4		
M	Overall length		mm	in	3	746	14	7.5		
M,	Transport length		mm	in	2 850	112.2	2 880	113.4		
N'	Overall height of engine hood		mm	in	1	423	5	6		
0	Minimum ground clearance		mm	in	1	59	6.	3		
Ρ	Dozer blade height		mm	in	2	248	9.	8		
Q	Shoe width		mm	in	2	250	9.	8		
R	Ground clearance to superstructure		mm	in	4	81	18	3.9		
S	Front slew radius		mm	in	1	683	66	6.3		
Т	Front slew radius with maximum offset		mm	in	1	383	54	.5		
U	Overall height (canopy)		mm	in	2	318	91	.3		
V	Overall height (cab)		mm	in	2	395	94	.3		
W	Overall width of superstructure		mm	in	S	93	39).1		
Χ	Tail slew radius		mm	in	1	090	42	2.9		
Υ	Angle of approach		deg				28			
Z	Dozer blade width	min	mm	in	1	014	39	0.9		
		max	mm	in	1	356	53	3.4		
α,	Maximum boom swing angle to the left		deg				75			
β	Maximum boom offset to the right		mm	in	5	647	21	.5		
α_{2}	Maximum boom swing angle to the right		deg				55			
β_2	Maximum boom offset to the left		mm	in	9	392	15	: 1		

Equipment.

STANDARD EQUIPMENT

Engine

Low emission, water-cooled, Volvo 3-cylinder diesel engine, meeting EPA Tier 4 environmental regulations

Starter motor protected against ignition when engine is already running

Dry-type single element air filter

Water separator Translucent fuel filter

Electric/Electronic control system

Maintenance free battery

IP67 protected electrical system and high quality connectors

Removable breaker switch

Two working lights on cab version

Working light on the canopy frame

12V power socket in cab / canopy

Hydraulic system

Flow-sharing main control valve

Boom cylinder cushioning at end stroke (up)

Patented filtering and filling element

Large tiltable oil cooler

Double-acting hydraulic circuit for accessories

On digging unit, the hydraulic hoses are routed inside the boom for increased

Plastic tank with drain plug

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 & ball bearing

Axial piston hydraulic motors equipped with an epicyclic reduction gears

Inner flange bottom rollers lubricated for life

Grease tensioning wheel lubricated for life

Undercarriage and dozer blade

Box welded fabricated frame

4 Integrated tie-down points

Sturdy removeable protecting covers for track motors and slew system

Weld-on edge on dozer blade

Digging Equipment

Monobloc box welded fabricated boom with integrated lifting eye

Boom cylinder protection

Monobloc box welded arms with casted ends

Long-life steel bushings

Hardened, pre-lubricated and corrosion resistant pins

50H hours greasing intervals

FOPS level 1 (Falling Objects Protective Structure)

TOPS (Tip-Over Protective Structure)

ROPS (Roll-Over Protective Structure)

Cushioned operator station

Toolbox with integrated storage for operator's manual and lockable door

Large and roomy uncluttered floor

Left hand-rail access

Seat-belt with warning indicator

Right rear-view mirror

2 Integrated lifting points

FOPS level 1 (Falling Objects Protective Structure)

TOPS (Tip-Over Protective Structure)

ROPS (Roll-Over Protective Structure)

OPG1 on top (Operator Protective Guard)

Cushioned operator station

Large door access

Large and roomy uncluttered floor

Flat toughened glass

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

Toolbox with integrated storage for operator's manual and lockable door

Seat-belt with warning indicator

Right rear-view mirror

2 Integrated lifting points

Machine controls

Finger tip control for boom offset

Finger tip control for auxiliary circuit

Breaker toggle switch on right joystick

Automatic locking device for pilot controls and travel levers when the left

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

Pressure accumulator to lower the equipment on the ground if the engine is

Two speed travel switch on the dozer blade lever

Instrumentation and monitoring

Permanent digital hour meter

Warning lights for hydraulic filter and air filter restriction

Water temperature and fuel level gauges

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

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 1 conforming to ISO 3449 standard

ROPS conforming to ISO 3471-1 and / SAE J1040 standards

TOPS conforming to ISO 12117 and EN 13531 standards OPG 1 conforming to ISO 10262 standard (when equipped)

STANDARD AND OPTIONAL EQUIPMENT

- = Standard
 ° = Option

Operator environment

Canopy

Vinyl seat, low-back seat and 2" standard seat belt Vinyl seat with mechanical suspension, low-back seat and 2" standard 0

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Vinyl seat with mechanical suspension, extended-back seat and 2" retractable seat belt

Vinyl seat with mechanical suspension, extended-back seat and 3" retractable seat belt Fabric seat with mechanical suspension, extended-back seat and 2"

retractable seat belt Fabric seat with mechanical suspension, extended-back seat and 3" retractable seat belt ISO / SAE control pattern change

Travel alarm Radio preparation (Antenna, wire harness) Radio, CD, MP3

Front guard OPG1 Machine exterior

Anti-theft device

One protected worklight on the boom One rear worklight

Rotating beacon Several level of customization (RAL specifications) to match with your corporate identity

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• = Standard	
° = Option	
Engine	
Dual stage air filter	0
Auto idling system	0
Auto engine shutdown	0
Service and maintenance	
Tool kit	0
Telematics	
Care Track	0
Attachments	
Volvo quick coupler mechanical (pin-on)	0
General purpose buckets	0
Fix ditching buckets	0
Tiltable ditching buckets	0

Above mentioned features and options might be available independently or through packs.

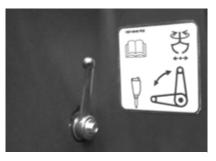
Selection of Volvo optional equipment

Auto idle

Auto engine shutdown



Breaker / shear valve



Second auxiliary circuit (X3)



OPG1 guards



Specific colour machine



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

www.volvoce.com