

Volvo EC27D in detail

Engine		
Engine		Volvo D1.1A
Max. power at	r/min (r/s)	2,400 (40)
Gross	kW (hp)	15.6 (20.9)
According to ISO 9249 / SAE J1995		
Max. torque	Nm (ft lbf)	71.4 (52.7)
at engine speed	r/min	1,600
No. of cylinders		3
Displacement	cm ³ (in ³)	1,123 (68.5)
Bore	mm (in)	78 (3.07)
Stroke	mm (in)	78.4 (3.08)
Compression ratio		24
Electrical system		
Voltage	V	12
Battery	V	12
Battery capacity	Ah	70
Alternator	V/Ah	12 / 40
Swing system		
Max. slew speed	r/min	9.4
Max. slew torque	daNm (ft lbf)	485 (3,577)
Undercarriage		
Rubber track width	mm (in)	300 (11.8)
Steel track width	mm (in)	300 (11.8)
Bottom/top rollers per side		3 / 1
Track tension		by grease piston
Blade (width x height)	mm (in)	1 550 x 312 (61 x 12.3)
Weight and Ground Pressure		
Operating weight according to ISO 6016	kg (lb)	2,730 (6,019)
Ground pressure (cab)	kPa (psi)	27.8 (4)
Ground pressure (canopy)	kPa (psi)	26.9 (3.9)
Transport weight	kg (lb)	2,655 (5,853)
With heated cab		
With direct-fit bucket		
With rubber tracks	mm (in)	300 (11.8)
With short arm	mm (in)	1,200 (47.2)
With fuel tank capacity	%	100
With canopy	-kg (-lb)	90 (198.4)
With extra counterweight	+kg (+lb)	100 (220.5)
With long arm	+kg (+lb)	12 (26.5)
With rubber tracks	-kg (-lb)	78 (172)
Rubber tracks	mm (in)	250 (9.8)

Digging Performances		
Standard bucket width (blade, W/O side cutter)	mm (in)	500 (19.7)
Standard bucket mass	kg (lb)	59 (130)
Standard bucket rated capacity	l (ft ³)	74 (2.6)
Bucket rotation	°	203
Bucket breakout force (ISO)	daN (lbf)	2,459 (5,528)
Short arm tearout force (ISO)	daN (lbf)	1,806 (4,060)
With short arm	mm (ft in)	1,200 (3'11")
Long arm tearout force (ISO)	daN (lbf)	1,543 (3,469)
With long arm	mm (ft in)	1,500 (4'11")
Hydraulic system		
Pump type		Variable displacement, load sensing
Maximum system flow	l/min (gal/min)	65 (17.2)
Maximum flow for accessories	l/min (gal/min)	50 (13.2)
Maximum pressure for accessories	MPa (psi)	25 (3,626)
Maximum flow for 2nd accessory circuit (option)	l/min (gal/min)	23 (6.1)
Maximum operating pressure	MPa (psi)	25 (3,626)
Travel System		
Max. drawbar pull	daN (lbf)	2,500 (5,620)
Max. travel speed low	km/h (mi/h)	2.6 (1.6)
Max. travel speed high	km/h (mi/h)	4.8 (3)
Gradeability	°	30
Service Refill		
Fuel tank	l (gal)	28 (7.4)
Hydraulic system, total	l (gal)	33 (8.7)
Hydraulic tank	l (gal)	23 (6.1)
Engine oil	l (gal)	5.1 (1.3)
Engine coolant	l (gal)	4 (1.1)
Travel reduction unit	l (gal)	2 x 0.6 (2 x 0.159)
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

Specifications

LIFTING CAPACITY EC27D

These capacities are given for a machine equipped with a cabin, 300 mm 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.

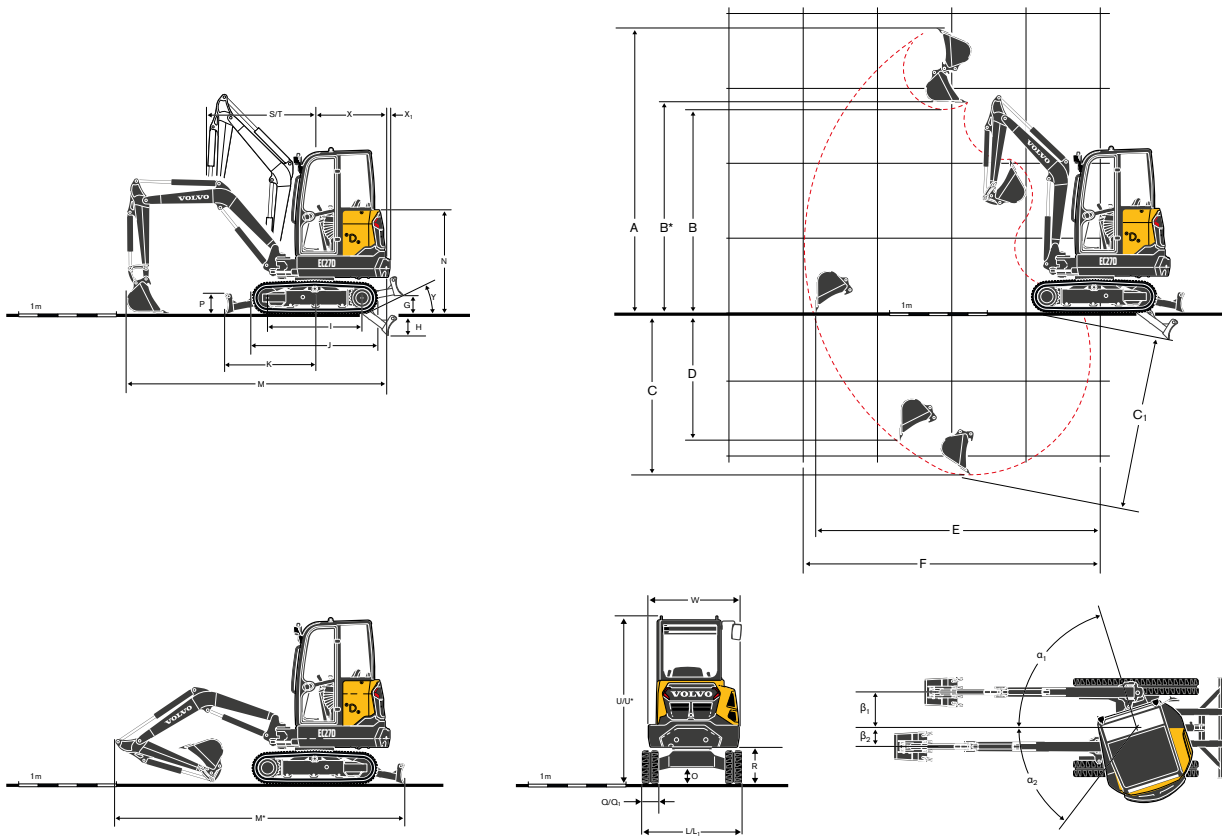
Loads marked with an asterisk (*) are limited by machine's hydraulic lifting capacity rather than tipping load.

Caution: In accordance with 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 m (ft in)		Lifting point radius									Max. m (ft in)
			2.0 m (6.5 ft)			3.0 m (9.8 ft)			Max reach			
			Along undercarriage, dozer blade up	Along undercarriage, dozer blade down	Across undercarriage	Along undercarriage, dozer blade up	Along undercarriage, dozer blade down	Across undercarriage	Along undercarriage, dozer blade up	Along undercarriage, dozer blade down	Across undercarriage	
Arm: 1 200mm / 3' 11.2" Counterweight: standard	3 (9' 10")	kg (lb)	-	-	-	626* (1,380*)	626* (1,380*)	602 (1,327)	593 (1,307)	622* (1,371*)	567 (1,250)	3.1 (10' 2")
	2 (6' 7")	kg (lb)	-	-	-	619 (1,365)	673* (1,483*)	592 (1,305)	456 (1,005)	583* (1,285*)	437 (963)	3.6 (11' 11")
	1 (3' 3")	kg (lb)	1 081 (2,383)	1 473* (3,247*)	1 017 (2,242)	591 (1,303)	870* (1,918*)	565 (1,246)	418 (922)	617* (1,360*)	401 (884)	3.8 (12' 6")
	0 (0' 0")	kg (lb)	1 034 (2,280)	1 804* (3,977*)	972 (2,143)	569 (1,254)	1 024* (2,257*)	543 (1,197)	437 (963)	744* (1,640*)	418 (922)	3.6 (11' 11")
	-1 (-3' -3")	kg (lb)	1 036 (2,284)	1 688* (3,721*)	974 (2,147)	569 (1,254)	967* (2,131*)	543 (1,197)	546 (1,204)	911* (2,008*)	522 (1,151)	3.1 (10' 2")
Arm: 1 200mm / 3' 11.2" Counterweight: + 100kg / 220lb additional	3 (9' 10")	kg (lb)	-	-	-	626* (1,380*)	626* (1,380*)	626* (1,380*)	622* (1,371*)	622* (1,371*)	618 (1,362)	3.1 (10' 2")
	2 (6' 7")	kg (lb)	-	-	-	673* (1,483*)	673* (1,483*)	646 (1,424)	499 (1,100)	583* (1,285*)	479 (1,056)	3.6 (11' 11")
	1 (3' 3")	kg (lb)	1 180 (2,601)	1 473* (3,247*)	1 110 (2,447)	647 (1,426)	870* (1,918*)	618 (1,362)	459 (1,012)	617* (1,360*)	441 (972)	3.8 (12' 6")
	0 (0' 0")	kg (lb)	1 134 (2,500)	1 804* (3,977*)	1 065 (2,348)	625 (1,377)	1 024* (2,257*)	596 (1,314)	480 (1,058)	744* (1,640*)	460 (1,014)	3.6 (11' 11")
	-1 (-3' -3")	kg (lb)	1 135 (2,502)	1 688* (3,721*)	1 067 (2,352)	625 (1,377)	967* (2,131*)	596 (1,314)	600 (1,322)	911* (2,008*)	573 (1,263)	3.1 (10' 2")
Arm: 1 500mm / 4' 11" Counterweight: standard	3 (9' 10")	kg (lb)	-	-	-	494* (1,089*)	494* (1,089*)	494* (1,089*)	484* (1,067*)	484* (1,067*)	484* (1,067*)	3.5 (11' 4")
	2 (6' 7")	kg (lb)	-	-	-	576* (1,269*)	576* (1,269*)	576* (1,269*)	410 (903)	456* (1,005*)	394 (868)	3.9 (12' 11")
	1 (3' 3")	kg (lb)	1 111 (2,449)	1 258* (2,773*)	1 046 (2,306)	601 (1,325)	794* (1,750*)	575 (1,267)	380 (837)	482* (1,062*)	365 (804)	4.1 (13' 5")
	0 (0' 0")	kg (lb)	1 042 (2,297)	1 752* (3,862*)	980 (2,160)	574 (1,265)	991* (2,184*)	548 (1,208)	393 (866)	553* (1,219*)	377 (831)	3.9 (12' 11")
	-1 (-3' -3")	kg (lb)	1 032 (2,275)	1 770* (3,902*)	969 (2,136)	566 (1,247)	1 025* (2,259*)	540 (1,190)	470 (1,036)	777* (1,712*)	450 (992)	3.4 (11' 4")
Arm: 1 500mm / 4' 11" Counterweight: + 100kg / 220lb additional	3 (9' 10")	kg (lb)	-	-	-	494* (1,089*)	494* (1,089*)	494* (1,089*)	484* (1,067*)	484* (1,067*)	484* (1,067*)	3.5 (11' 4")
	2 (6' 7")	kg (lb)	-	-	-	576* (1,269*)	576* (1,269*)	576* (1,269*)	450 (992)	456* (1,005*)	432 (952)	3.9 (12' 11")
	1 (3' 3")	kg (lb)	1 210 (2,668)	1 258* (2,773*)	1 139 (2,511)	657 (1,448)	794* (1,750*)	628 (1,385)	418 (922)	482* (1,062*)	402 (886)	4.1 (13' 5")
	0 (0' 0")	kg (lb)	1 142 (2,518)	1 752* (3,862*)	1 073 (2,366)	630 (1,389)	991* (2,184*)	601 (1,325)	433 (955)	553* (1,219*)	415 (915)	3.9 (12' 11")
	-1 (-3' -3")	kg (lb)	1 131 (2,493)	1 770* (3,902*)	1 063 (2,344)	622 (1,371)	1 025* (2,259*)	593 (1,307)	516 (1,138)	777* (1,712*)	494 (1,089)	3.4 (11' 4")

Specifications



DIMENSIONS

Description		Unit		EC27D	
		mm	ft in	1 200 (3' 11")	1500 (4' 11")
Arm					
A	Maximum cutting height	mm	ft in	4 333 (14' 3")	4 598 (15' 1")
B	Maximum dump height	mm	ft in	3 092 (10' 2")	3 209 (10' 6")
B*	Maximum bucket clearance	mm	ft in	3 198 (10' 6")	3 280 (10' 9")
C	Digging depth	mm	ft in	2 486 (8' 2")	2 859 (9' 5")
C*	Maximum digging depth	mm	ft in	2 715 (8' 11")	3 088 (10' 2")
D	Maximum vertical wall digging depth	mm	ft in	1 959 (6' 5")	2 601 (8' 6")
E	Maximum digging reach at ground level	mm	ft in	4 295 (14' 1")	4 665 (15' 4")
F	Maximum digging reach	mm	ft in	4 427 (14' 6")	4 786 (15' 8")
G	Highest position dozer blade	mm	ft in		401 (1' 3.7")
H	Lowest position dozer blade	mm	ft in		422 (1' 4.6")
I	Tumbler length	mm	ft in		1 440 (4' 8.6")
J	Track length	mm	ft in		1 906 (6' 3")
K	Dozer blade, maximum reach at ground level	mm	ft in		1 365 (4' 5.7")
L	Overall width with 300mm (11.8") rubber tracks	mm	ft in		1 550 (5' 1")
L ₁	Overall width with 250mm (9.8") rubber tracks	mm	ft in		1 500 (4' 11")
M	Overall length	mm	ft in	3 933 (12' 11")	3 811 (12' 6")
M*	Transport length	mm	ft in	4 400 (14' 5")	4 295 (14' 1")
N	Overall height of engine hood	mm	ft in		1 571 (5' 1.8")
O	Minimum ground clearance	mm	ft in		2 90 (0' 11.4")
P	Dozer blade height	mm	ft in		312 (1' 0.2")
Q	Shoe width (rubber)	mm	ft in		300 (0' 11.8")
Q ₁	Shoe width (rubber)	mm	ft in		250 (0' 9.8")
R	Ground clearance to superstructure	mm	ft in		559 (1' 10")
S	Front slew radius	mm	ft in	1 712 (5' 7")	1 759 (5' 9")
T	Front slew radius with maximum offset	mm	ft in	1 346 (4' 5")	1 389 (4' 7")
U	Overall height cab	mm	ft in		2 535 (8' 4")
U*	Overall height canopy	mm	ft in		2 505 (8' 3")
W	Overall width of superstructure	mm	ft in		1 340 (4' 5")
X	Tail slew radius	mm	ft in		1 080 (3' 7")
X ₁	Additional counterweight overhang	mm	ft in		75 (0' 3")
Y	Angle of approach		°		31
Z	Dozer blade width	mm	ft in		1 550 (5' 1")
α ₁	Maximum boom swing angle to the left		°		72.5
β ₁	Maximum boom offset to the right	mm	ft in		542 (1' 9")
α ₂	Maximum boom swing angle to the right		°		53
β ₂	Maximum boom offset to the left	mm	ft in		279 (0' 11")

1: Option

Equipment

STANDARD EQUIPMENT

Engine

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

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

Dry-type single element air filter.

Plastic fuel tank with drain plug.

Protective strainer on the fuel suction pipe inside the tank.

Water separator.

Translucent fuel filter.

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.

Electric / Electronic control system

Maintenance free battery.

IP67 protected electrical system and high quality connectors.

Protected battery cut-off switch.

In-cab 12V power socket.

Swing system

Radial piston hydraulic motor with direct engagement on the ball internal crown wheel (no reduction gears).

Integrated shockless valve.

Automatic multi-disc spring applied hydraulic released 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 lifting points on the frame.

Sturdy removeable protecting covers for track motors and slew system.

400HB weld-on edge on dozer blade.

Hydraulic system

Plastic tank with drain plug.

Variable displacement, load-sensing piston pump.

Closed centre flow-sharing main control valve.

Cushoning on cylinders:

Boom up

Arm out

Large tiltable oil cooler.

Patented filtering and filling element.

Double-acting hydraulic circuit for accessories.

Canopy

Certified FOPS level 1 on top (Falling Objects Protective Structure).

Certified TOPS (Tip-Over Protective Structure).

Certified ROPS (Roll-Over Protective Structure).

Cushionned operator station.

Large and roomy uncluttered floor.

Left hand-rail access.

Seat-belt with warning indicator.

Right rear-view mirror.

One working light on the top front.

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

Phone holder.

STANDARD EQUIPMENT

Cab

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

Certified TOPS (Tip-Over Protective Structure).

Certified ROPS (Roll-Over Protective Structure).

Cushioned operator station.

Large door access.

Large and roomy uncluttered floor.

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.

Flat toughened glass.

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.

Cab inside light.

Seat-belt with warning indicator.

Right rear-view mirror.

Two working lights on top front.

Cup holder.

Phone holder.

Digging equipment

Monobloc box welded fabricated boom.

Boom cylinder rod protection.

Integrated lifting point on the boom.

Monobloc box welded arms with casted ends.

Long-life steel bushings.

Hardened, pre-lubricated and corrosion resistant pins.

50 hours greasing intervals.

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 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 switch on the dashboard.

High speed toggle switch on the dozer blade lever.

Large travel pedals.

Instrumentation and monitoring

Permanent digital hour meter.

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.

OPG 1 conforming to ISO 10262 standard (when equipped).

OPG 2 conforming to ISO 10262 standard (when equipped).

Equipment

STANDARD AND OPTIONAL EQUIPMENT

• = Standard; ○ = Option

Machine standard and optional equipment may differ depending on local setup.

Engine

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

Operator environment

Canopy	○
Cab with heater	○
Vinyl or textile seat, low backrest and standard seat belt	○
Vinyl or textile seat, lumbar adjustment, high backrest and retractable seat belt	○
High visibility 2" orange seatbelt	○
3" or 75mm black retractable seat belt	○
High visibility orange entrance foot step	○
Storage box	•
Additional lockeable storage box (behind the seat)	○
ISO / SAE control pattern change	○
Travel alarm	○
Radio preparation (cab)	•
Radio, AUX, USB, Bluetooth	○
Anti-theft, code lock	○
Anti-theft, coded key	○
Digital hourmeter	•
Cupholder (cab only)	•
Phone holder	•

Machine exterior

Right rearview mirror	•
Left rearview mirror	○
Protected worklight on the boom	○
Rear worklight	○
Rotating beacon, halogen	○
Warning beacon, flashing LED	○
Halogen worklights	○
LED worklights	○
Additional counterweight	○
Front canopy guard (OPG1)	○
Severe-duty guards for cab or canopy (OPG2, front & top)	○
Several level of paint customisation (RAL specifications) to match with your corporate identity	○

Undercarriage

250mm / 9.8" rubber tracks	○
300mm / 11.8" rubber tracks	○
Standard dozer blade with 400 HB weld-on edge	•

STANDARD AND OPTIONAL EQUIPMENT

• = Standard; ○ = Option

Machine standard and optional equipment may differ depending on local setup.

Hydraulic system

Proportional finger tip control for boom offset and accessories	○
On / Off finger tip control for boom offset and accessories	○
Accessory flow adjustment	○
Secondary relief valves for auxiliaries	•
Hammer / shear valve	○
Hydraulic drain for accessories	○
Breaker and clamshell auxiliaries	○
Second accessory circuit	○
Flat face hydraulic quick couplings	○
Single acting circuit for hydraulic quick couplers	○
Double acting circuit for hydraulic quick couplers	○
Boom & arm safety lifting valves with overload indicator	○
Boom, arm and dozer blade safety lifting valves with overload indicator	○
Safety valve certification	○
Mineral hydraulic oil VG46	○
Bio hydraulic oil VG46 (PANOLIN®)	○
Mineral hydraulic oil VG68	○
Mineral hydraulic oil VG32	○
Bio hydraulic oil VG32 (PANOLIN®)	○

Digging equipment

Short arm 1200mm / 3' 11.2"	○
Long arm 1500mm / 4' 11"	○

Service and maintenance

In-cab air filter clogg warning lamp	•
In-cab engine overheating warning indicator	•
Tool kit	○

Attachments

Volvo quick coupler mechanical (pin-on)	○
Extra pin kit	○
Lehnhoff® Quick Coupler Mechanical (MS03)	○
S-type hydraulic quick coupler (S40)	○
General purpose buckets (250mm or 10" / 34L or 0,04yd3 up to 750mm or 29" / 119L or 0,15yd3)	○
Aggressive cut buckets (350mm / 50L or 550mm / 95L)	○
Fix ditching buckets (1200mm or 47" 125L or 0,16yd3 or 1300mm or 51" 141L or 0,18yd3)	○
Tilttable ditching buckets (1200mm or 47" 125L or 0,16yd3)	○
Hydraulic breaker	○

Telematics

Care Track	○
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