

Volvo ECR88D in detail

Engine

The new Tier 4f/Stage IIIB compliant diesel engine is equipped with in-line, turbocharged and water cooled.		
Model	Volvo	D2.6H
Max. power at	r/min (r/s)	2,000 (33.3)
Net (ISO 9249/SAEJ1349)	kW (hp)	41 (55)
Gross (SAE J1995)	kW (hp)	43 (58)
Max. torque	Nm (ft lbf)	220 (162)
at engine speed	r/min	1,300
No. of cylinders		4
Displacement	l (in³)	2.62 (160)
Bore	mm (in)	87 (3.4)
Stroke	mm (in)	110 (4.3)

Electrical system

Voltage	V	12
Batteries	V	1 x 12
Battery capacity	Ah	100
Alternator	V/Ah	12/70
Starter motor output	V - kW	12 - 2.5

Hydraulic system

Closed-Center Load-Sensing (CCLS) system with load independent functions.		
Main pump: Variable-displacement pump		
Maximum flow	l/min (gal/min)	1 x 169 (1 x 44.6)
Pilot pump: Gear pump		
Maximum flow	l/min (gal/min)	1 x 14 (1 x 3.7)
Relief valve setting pressure		
Implement	MPa (psi)	29.4 (4,264)
Travel circuit	MPa (psi)	29.4 (4,264)
Swing circuit	MPa (psi)	24.5 (3,553)
Pilot circuit	MPa (psi)	3.4 (493)

Swing system

Direct drive swing with radial piston motor-maintenance free and automatic holding brake anti-rebound valve.		
Max. swing speed	r/min	9.3
Max. swing torque	kNm (ft lbf)	22.9 (16,890)

Undercarriage

Robust X-shaped frame with sealed and greased track chains.		
Track shoes		2 x 39
Link pitch	mm (in)	154 (6.1)
Shoe width - steel	mm (in)	450 / 600 (17.7 / 23.6)
Shoe width - rubber	mm (in)	450 (17.7)
Bottom rollers		2 x 5
Top rollers		2 x 1

Travel System

Each track is powered by an automatic two-speed shift travel motor. The track brakes are multi-disc, spring-applied and hydraulic released.		
Travel speed low	km/h (mi/h)	2.6 (1.6)
Travel speed high	km/h (mi/h)	4.9 (3)
Max. drawbar pull	kN (lbf)	65 (14,613)
Gradeability	°	35

Service Refill

Fuel tank	l (gal)	110 (29)
Hydraulic system, total	l (gal)	140 (37)
Hydraulic tank	l (gal)	84 (22)
Engine oil	l (gal)	10 (2.6)
Engine coolant	l (gal)	9.3 (2.5)
Travel reduction unit	l (gal)	2 x 1.6 (2 x 0.4)

Cab

Refrigerant of the type R134a is used when this machine is equipped with air conditioning. Contains fluorinated greenhouse gas R134a, Global Warming Potential 1.430 t CO₂-eq

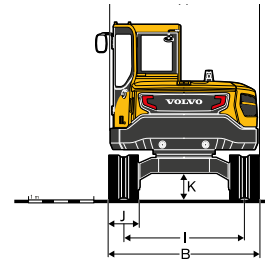
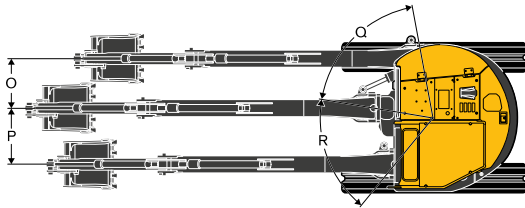
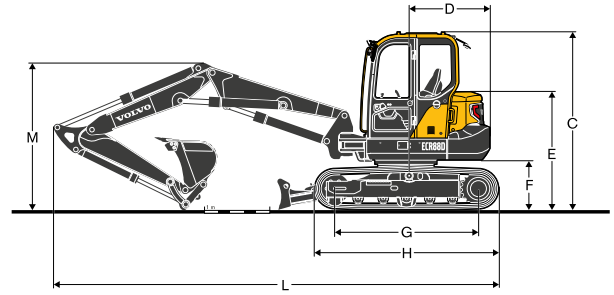
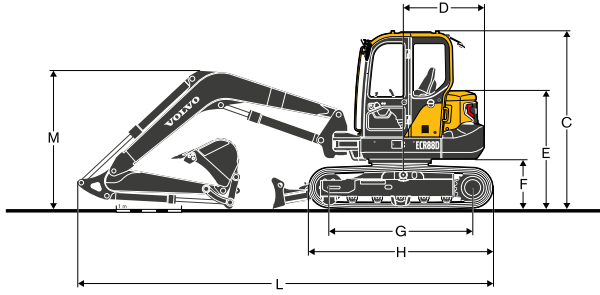
Sound Level

Sound level in cab according to ISO 6396		
LpA	dB(A)	73
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC		
LwA	dB(A)	97

Buckets

	Width		Weight		Capacity	
	mm	in	kg	lb	l	cu.in
Direct bucket	300	12	111	250	79	4,820
	450	18	139	310	143	8,730
	600	24	162	360	200	12,200
	750	30	182	400	266	16,230
	900	35	205	450	333	20,320
Quick coupler bucket	450	18	132	290	143	8,730
	600	24	156	340	200	12,200
	700	28	171	380	244	14,890
	850	33	191	420	310	18,920

Specifications



DIMENSIONS

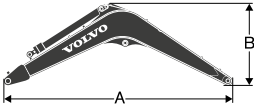
Machine

Boom		m	ft in	3.55	11'8"	3.55	11'8"
Arm		m	ft in	1.7	5'7"	2.1	6'11"
A	Overall width of upper structure	mm	ft in	2210	7'3"	2210	7'3"
B	Overall width	mm	ft in	2300	7'7"	2300	7'7"
C	Overall height of cab	mm	ft in	2715	8'11"	2715	8'11"
D	Tail swing radius	mm	ft in	1290	4'3"	1290	4'3"
E	Overall height of engine hood	mm	ft in	1180	3'10"	1180	3'10"
F	Counterweight clearance *	mm	ft in	760	2'6"	760	2'6"
G	Tumbler length	mm	ft in	2200	7'3"	2200	7'3"
H	Track length	mm	ft in	2830	9'3"	2830	9'3"
I	Track gauge	mm	ft in	1850	6'1"	1850	6'1"
J	Shoe width	mm	ft in	450	1'6"	450	1'6"
K	Min. ground clearance *	mm	ft in	405	1'4"	405	1'4"
L	Overall length	mm	ft in	6370	20'11"	6420	21'1"
M	Overall height of boom	mm	ft in	2115	6'11"	2230	7'4"
O	Boom swing distance	mm	ft in	760	2'6"	760	2'6"
P	Boom swing distance	mm	ft in	860	2'10"	860	2'10"
Q	Boom swing angle	°		70		70	
R	Boom swing angle	°		60		60	

* Without shoe grouser

Specifications

Boom and Arm

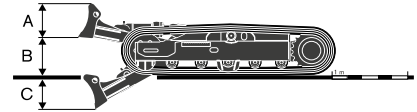
									
				Boom		Arm			
		m	ft in	3.55	11'8"	1.7	5'7"	2.1	6'11"
A	Length	mm	ft in	3690	12'1"	2283	7'6"	2684	8'10"
B	Height	mm	ft in	1244	4'1"	518	1'8"	562	1'10"
	Width	mm	ft in	335	1'1"	305	1'0"	305	1'0"
	Weight	kg	lb	530	1,170	280	620	340	750

Boom: Includes cylinder, piping and pin, excludes boom cyl. Pin.

Arm: Includes cylinder, linkage and pin.

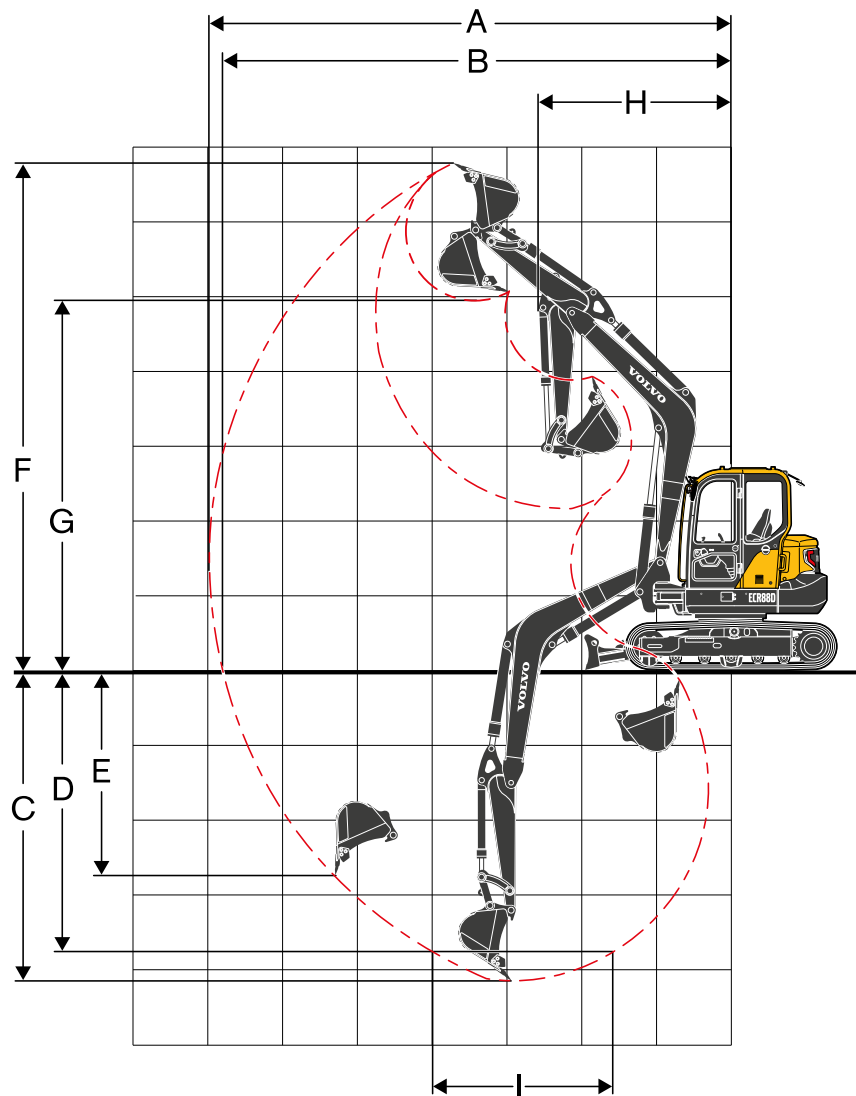
Dozer blade

A	Height	mm	ft in	470	1'7"
	Width	mm	ft in	2 300	7'7"
B	Lifting height	mm	ft in	518	1'8"
C	Digging depth	mm	ft in	433	1'5"



MACHINE WEIGHTS AND GROUND PRESSURE

	Shoe width		Operating weight		Ground pressure	
	mm	in	kg	lb	kPa	psi
Mono boom 3.55 m 11'8", Arm 1.7 m 5'7", Bucket 188 kg (266 l) 410 lb, Counterweight 1 480 kg 3 260 lb						
Steel track	450	18	9 010	19,860	40.5	5.9
	600	24	9 180	20,240	30.9	4.5
Rubber track	450	18	8 810	19,420	39.6	5.7
Rubber pad	450	18	9 030	19,910	40.4	5.9
Mono boom 3.55 m 11'8", Arm 2.1 m 6'11", Bucket 188 kg (266 l) 410 lb, Counterweight 1 480 kg 3 260 lb						
Steel track	450	18	9 090	20,040	40.9	5.9
	600	24	9 260	20,410	31.2	4.5
Rubber track	450	18	8 890	19,600	40.0	5.8
Rubber pad	450	18	9 110	20,080	40.8	5.9



WORKING RANGES

Description		Unit					
Boom		m	ft in	3.55	11'8"	3.55	11'8"
Arm		m	ft in	1.7	5'7"	2.1	6'11"
A	Max. digging reach	mm	ft in	6 970	22'10"	7 350	24'1"
B	Max. digging reach on ground	mm	ft in	6 800	22'4"	7 180	23'7"
C	Max. digging depth	mm	ft in	4 130	13'7"	4 530	14'10"
D	Max. digging depth (l=2.44m / 8' level)	mm	ft in	3 750	12'4"	4 200	13'9"
E	Max. vertical wall digging depth	mm	ft in	2 820	9'3"	3 200	10'6"
F	Max. cutting height	mm	ft in	6 790	22'3"	7 050	23'2"
G	Max. dumping height	mm	ft in	4 960	16'3"	5 220	17'2"
H	Min. front swing radius	mm	ft in	2 560	8'5"	2 640	8'8"

Digging forces with direct fit bucket

Breakout force (bucket)	SAE J1179	kN	lb	50.7	11,400	50.4	11,330
	ISO 6015	kN	lb	57.2	12,860	56.8	12,770
Tearout force (arm)	SAE J1179	kN	lb	38.9	8,740	33.8	7,600
	ISO 6015	kN	lb	39.8	8,950	34.4	7,730
Rotation angle, bucket			°	190		190	

Specifications

LIFTING CAPACITY ECR88D

Lifting capacity at the arm end without bucket.

For lifting capacity including bucket. Simply subtract actual weight of the direct fit bucket or the bucket with quick coupler from the following values.

	Lifting point		1.0 m, 3.3 ft		2.0 m, 6.6 ft		3.0 m, 9.9 ft		4.0 m, 13.2 ft		5.0 m, 16.5 ft		6.0, 19.8 ft		Max. reach		
	m	ft	Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Max.
Boom 3.55m, 11'8" Arm 1.7m, 5'7" Shoe 450mm, 18" CWT 1 480kg / 3,260lb Dozer blade down	5.0	kg							*1 520	*1 520					*1 600	*1 600	4.6 m
	16.5	lb							*3,380	*3,380					*3,550	*3,550	14.9 ft
	4.0	kg							*1 580	*1 580	*1 540	1390			*1 560	1230	5.3 m
	13.2	lb							*3,470	*3,470	*3,400	3,050			*3,450	2,740	17.5 ft
	3.0	kg					*2 490	*2 490	*1 890	*1 890	*1 640	1360			*1 540	1060	5.8 m
	9.9	lb					*5,420	*5,420	*4,150	*4,150	*3,610	2,980			*3,400	2,340	19.0 ft
	2.0	kg					*3 700	2830	*2 330	1840	*1 830	1310	*1 590	980	*1 580	980	6.0 m
	6.6	lb					*8,040	6,200	*5,100	4,040	*4,010	2,870			*3,490	2,160	19.7 ft
	1.0	kg							*2 690	1750	*2 000	1260	*1 630	960	*1 620	950	6.0 m
	3.3	lb							*5,550	*5,550	*5,870	3,830	*4,380	2,770	*3,580	2,110	19.7 ft
	0.0	kg					*3 800	2640	*2 810	1700	*2 070	1230			*1 670	990	5.8 m
	0	lb					*8,570	5,760	*6,150	3,720	*4,540	2,700			*3,680	2,180	19.1 ft
	-1.0	kg			*3 560	*3 560	*3 840	2640	*2 690	1690	*1 970	1220			*1 700	1100	5.4 m
	-3.3	lb			*7,910	*7,910	*8,410	5,780	*5,890	3,690	*4,300	2,680			*3,760	2,430	17.7 ft
	-2.0	kg			*4 790	*4 790	*3 200	2690	*2 270	1710					*1 710	1370	4.7 m
	-6.6	lb			*10,470	*10,470	*6,990	5,870	*4,950	3,750					*3,760	3,030	15.4 ft
	-3.0	kg					*1 880	*1 880							*1 500	*1 500	3.4 m
	-9.9	lb					*4,040	*4,040							*3,290	*3,290	11.2 ft
Boom 3.55m, 11'8" Arm 1.7m, 5'7" Shoe 450mm, 18" CWT 1 480kg / 3,260lb Dozer blade up	5.0	kg							*1 520	*1 520					*1 600	1520	4.6 m
	16.5	lb							*3,380	*3,380					*3,550	3,400	14.9 ft
	4.0	kg							*1 580	*1 580	*1 540	1320			1470	1160	5.3 m
	13.2	lb							*3,470	*3,470	*3,400	2,880			3,270	2,580	17.5 ft
	3.0	kg					*2 490	*2 490	*1 890	1850	1630	1290			1270	1000	5.8 m
	9.9	lb					*5,420	*5,420	*4,150	4,040	3,560	2,820			2,820	2,210	19.0 ft
	2.0	kg					3440	2650	2210	1740	1580	1240	1180	920	1180	920	6.0 m
	6.6	lb					7,530	5,800	4,850	3,800	3,450	2,710			2,610	2,030	19.7 ft
	1.0	kg							2120	1640	1530	1190	1160	900	1160	900	6.0 m
	3.3	lb					*5,550	5,450	4,640	3,600	3,340	2,600			2,550	1,980	19.7 ft
	0.0	kg					3240	2460	2070	1590	1490	1160			1200	930	5.8 m
	0	lb					7,080	5,380	4,520	3,490	3,270	2,530			2,650	2,050	19.1 ft
	-1.0	kg			*3 560	*3 560	3250	2470	2050	1580	1480	1150			1330	1030	5.4 m
	-3.3	lb			*7,910	*7,910	7,100	5,400	4,490	3,460	3,250	2,510			2,940	2,280	17.7 ft
	-2.0	kg			*4 790	*4 790	*3 200	2510	2080	1610					1650	1280	4.7 m
	-6.6	lb			*10,470	*10,470	*6,990	5,490	4,550	3,520					3,660	2,850	15.4 ft
	-3.0	kg					*1 880	*1 880							*1 500	*1 500	3.4 m
	-9.9	lb					*4,040	*4,040							*3,290	*3,290	11.2 ft

Notes: 1. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards. 2. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. 3. Rated loads marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.

LIFTING CAPACITY ECR88D

Lifting capacity at the arm end without bucket.

For lifting capacity including bucket. Simply subtract actual weight of the direct fit bucket or the bucket with quick coupler from the following values.

	Lifting point		1.0 m, 3.3 ft		2.0 m, 6.6 ft		3.0 m, 9.9 ft		4.0 m, 13.2 ft		5.0 m, 16.5 ft		6.0, 19.8 ft		Max. reach		
	m	ft	Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Max.
Boom 3.55m, 11'8" Arm 2.1m, 6'11" Shoe 450mm, 18" CWT 1 480kg / 3,260lb Dozer blade down	6.0	kg													*1 510	*1 510	4.0 m
	19.8	lb													*3,350	*3,350	12.8 ft
	5.0	kg									*1 380	*1 380			*1 320	*1 320	5.1 m
	16.5	lb									*3,080	3,060			*2,930	*2,930	16.6 ft
	4.0	kg									*1 340	*1 340			*1 230	1070	5.8 m
	13.2	lb									*2,960	*2,960			*2,710	2,380	18.9 ft
	3.0	kg							*1 650	*1 650	*1 470	1370	*1 390	990	*1 210	940	6.2 m
	9.9	lb							*3,610	*3,610	*3,230	2,990	*3,080	2,170	*2,660	2,070	20.3 ft
	2.0	kg					*3 160	2900	*2 100	1850	*1 680	1310	*1 470	970	*1 240	870	6.4 m
	6.6	lb					*6,870	6,350	*4,600	4,060	*3,690	2,860	*3,230	2,120	*2,730	1,920	20.9 ft
	1.0	kg					*3 630	2660	*2 520	1740	*1 890	1250	*1 560	940	*1 320	850	6.4 m
	3.3	lb					*8,300	5,830	*5,500	3,810	*4,130	2,730	*3,410	2,050	*2,920	1,870	21.0 ft
	0.0	kg					*3 940	2580	*2 730	1670	*2 010	1200	*1 590	920	*1 480	870	6.2 m
	0	lb					*8,870	5,640	*5,980	3,650	*4,410	2,630	*3,470	2,010	*3,270	1,920	20.4 ft
	-1.0	kg	*2 660	*2 660	*3 090	*3 090	*4 000	2570	*2 720	1640	*2 000	1180			*1 550	950	5.8 m
	-3.3	lb	*5,890	*5,890	*6,860	*6,860	*8,740	5,610	*5,950	3,590	*4,370	2,590			*3,420	2,100	19.1 ft
	-2.0	kg	*3 980	*3 980	*4 940	*4 940	*3 490	2600	*2 440	1650	*1 720	1200			*1 580	1140	5.2 m
	-6.6	lb	*8,830	*8,830	*11,000	*11,000	*7,630	5,680	*5,320	3,620	*3,740	2,630			*3,480	2,530	17.0 ft
	-3.0	kg			*3 870	*3 870	*2 510	*2 510	*1 650	*1 650					*1 530	*1 530	4.1 m
	-9.9	lb			*8,390	*8,390	*5,450	*5,450	*3,550	*3,550					*3,370	*3,370	13.5 ft
Boom 3.55m, 11'8" Arm 2.1m, 6'11" Shoe 450mm, 18" CWT 1 480kg / 3,260lb Dozer blade up	6.0	kg													*1 510	*1 510	4.0 m
	19.8	lb													*3,350	*3,350	12.8 ft
	5.0	kg									*1 380	1330			*1 320	1280	5.1 m
	16.5	kg									*3,080	2,890			*2,930	2,840	16.6 ft
	4.0	lb									*1 340	1330			*1 230	1010	5.8 m
	13.2	lb									*2,960	2,900			*2,710	2,250	18.9 ft
	3.0	kg							*1 650	*1 650	*1 470	1290	1200	930	1130	880	6.2 m
	9.9	lb							*3,610	*3,610	*3,230	2,820	2,620	2,040	2,510	1,950	20.3 ft
	2.0	kg					*3 160	2720	*2 100	1750	1570	1230	1170	910	1050	810	6.4 m
	6.6	lb					*6,870	5,950	*4,600	3,820	3,440	2,690	2,560	1,990	2,330	1,800	20.9 ft
	1.0	kg					3270	2480	2110	1630	1510	1170	1140	880	1030	790	6.4 m
	3.3	lb					7,150	5,440	4,610	3,580	3,300	2,570	2,500	1,930	2,280	1,750	21.0 ft
	0.0	kg					3180	2400	2030	1560	1460	1130	1120	860	1060	810	6.2 m
	0	lb					6,950	5,260	4,450	3,420	3,210	2,470	2,450	1,880	2,350	1,800	20.4 ft
	-1.0	kg	*2 660	*2 660	*3 090	*3 090	3170	2390	2010	1540	1440	1110			1160	890	5.8 m
	-3.3	lb	*5,890	*5,890	*6,860	*6,860	6,930	5,230	4,390	3,360	3,160	2,430			2,570	1,970	19.1 ft
	-2.0	kg	*3 980	*3 980	*4 940	*4 940	3200	2420	2020	1550	1460	1120			1390	1070	5.2 m
	-6.6	lb	*8,830	*8,830	*11,000	*11,000	7,000	5,300	4,420	3,390	3,200	2,460			3,070	2,370	17.0 ft
	-3.0	kg			*3 870	*3 870	*2 510	2500	*1 650	1610					*1 530	*1 530	4.1 m
	-9.9	lb			*8,390	*8,390	*5,450	*5,450	*3,550	3,530					*3,370	*3,370	13.5 ft

Notes: 1. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards. 2. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. 3. Rated loads marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.