

FSA

Volvo Construction Equipment



John Edwards  
Governmental Sales Manager  
jedwards@cowin.com  
850-685-7055

# ECR88D

Volvo Excavators 8.6-9.5 t / 19,010-20,950 lb 58 hp



# Volvo ECR88D in detail

## Engine

The new Tier 4f / Stage V 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

Open-center, negative hydraulic system providing accurate controllability		
Main pump: Variable-displacement pump		
Maximum flow	l/min (gal/min)	2 x 68 + 54 (2 x 18 + 14)
Pilot pump: Gear pump		
Maximum flow	l/min (gal/min)	13 (3.4)
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
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	
---	--

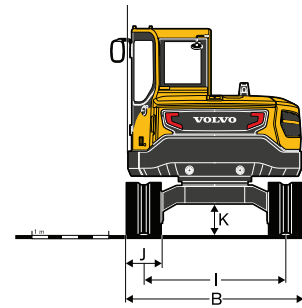
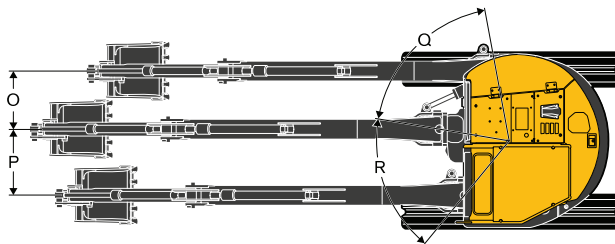
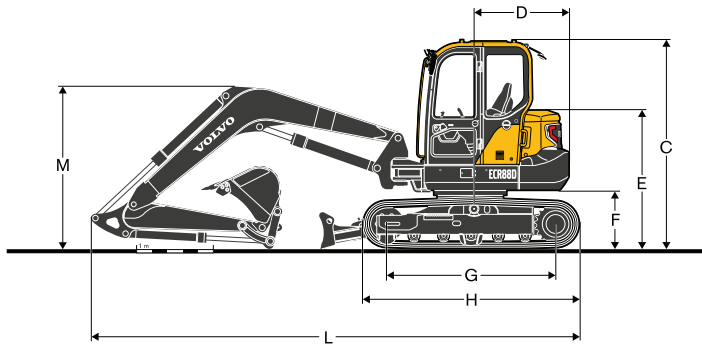
## Sound Level

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
Quick coupler bucket	900	35	205	450	333	20,320
	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

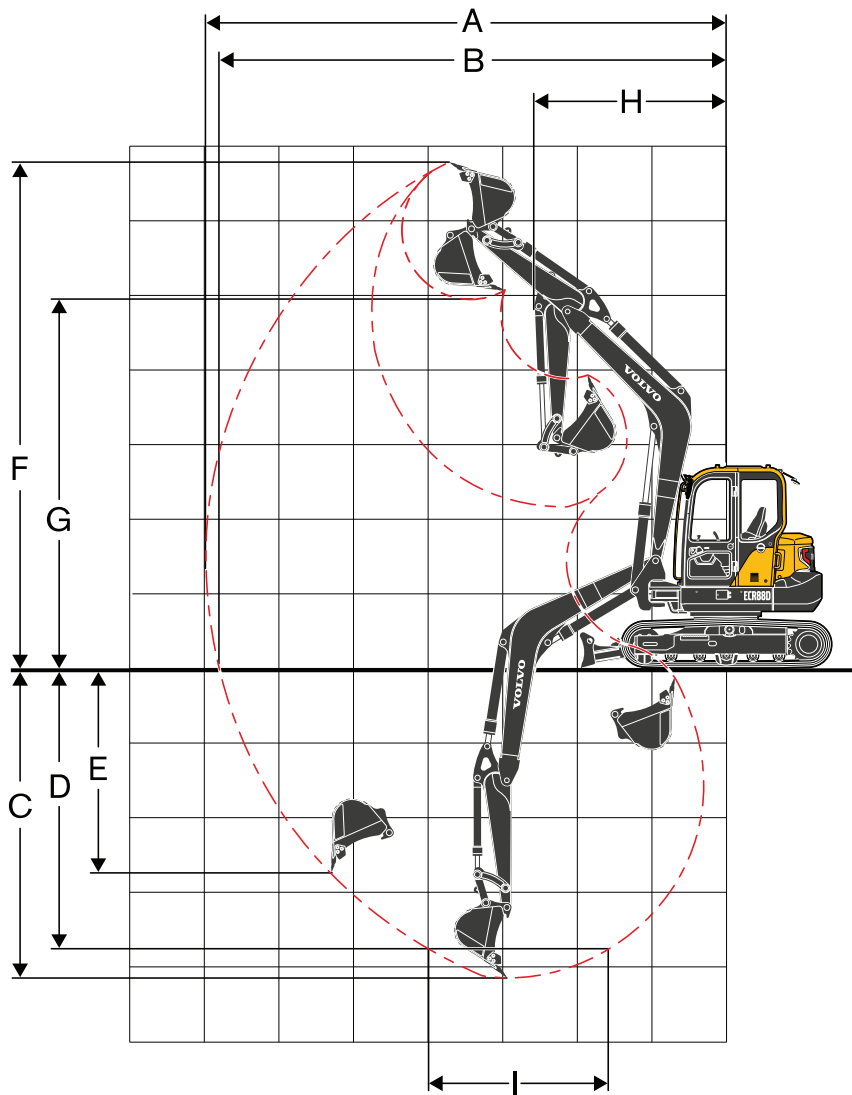


## DIMENSIONS

### 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	2,210	7'3"	2,210	7'3"
B	Overall width	mm	ft in	2,300	7'7"	2,300	7'7"
C	Overall height of cab	mm	ft in	2,715	8'11"	2,715	8'11"
D	Tail swing radius	mm	ft in	1,290	4'3"	1,290	4'3"
E	Overall height of engine hood	mm	ft in	1,180	3'10"	1,180	3'10"
F	Counterweight clearance *	mm	ft in	760	2'6"	760	2'6"
G	Tumbler length	mm	ft in	2,200	7'3"	2,200	7'3"
H	Track length	mm	ft in	2,830	9'3"	2,830	9'3"
I	Track gauge	mm	ft in	1,850	6'1"	1,850	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	6,370	20'11"	6,420	21'1"
M	Overall height of boom	mm	ft in	2,115	6'11"	2,230	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



#### 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	

# Equipment

## STANDARD EQUIPMENT

### Engine

Low-emission Tier 4f / Stage V diesel engine

Standard cooling system

Two-stage air filter

Fuel filter and water separator

Alternator, 70 A

Full auto regeneration

ECO mode

### Electric / Electronic control system

Safe engine start function

Automatic idling system

Halogen working lights:

Cab-mounted 2 (front)

Battery, 12 V / 100 Ah

Start motor, 12 V / 2.5 kW

Travel alarm

Monitor and keypad along with visual and audible alarms

Master electrical disconnect switch

### Frame

1 480kg (3,260lb) counterweight

Under cover

Dozer blade

### Undercarriage

Greased and sealed track link

450mm rubber track

### Hydraulic system

Automatic two speed travel motors

Cylinder cushioning

Hydraulic fluid mineral 46

Pilot control pattern change

### Cab and interior

Canopy

PVC operator seat with suspension

Seat belt, 2 inch retractable

Seat belt alarm

Control joystick

Master key

Hour meter (non analog)

### Digging equipment

Boom: 3.55m (11'8"), Arm: 1.7m (5'7")

Linkage

### Service

Tool kit-daily maintenance

### Official approval

Object handling device conforming to ISO20474-1 and ISO20474-5 standards (when equipped)

FOPS Level 2 conforming to ISO3449 standard (when equipped)

ROPS conforming to ISO12117-2 standards

TOPS conforming to ISO12117 and EN13531 standards

FOG Level 2 conforming to ISO10262 standard and SAE J1356 standard (when equipped)

## OPTIONAL EQUIPMENT

### Electric / Electronic control system

Fuel filler pump: 35 l/min, with automatic shut-off

Auto engine shutdown

LED light

Extra working lights:

Cab-mounted 1 (rear), Boom-mounted 1

Caretrack

Travel alarm

Anti theft, code-lock

Rotating warning beacon

### Undercarriage / Superstructure

450mm (18"), 600mm (24") steel track

450mm (18") rubber pad

Heavy counterweight

Wide dozer blade for 600mm (24") shoe

### Frame

Rearview mirror

Dozer blade with floating function

### Hydraulic system

Hydraulic piping:

Breaker & shear

- Max. flow: 68 l/min (18 gal/min)

- Pressure: 21.6 MPa (3,132 psi) (X1 single) / 29.4 Mpa (4,264psi) (X1 double)

Slope & rotator

- Max. flow: 28 l/min (7.4 gal/min)

- Pressure: 14.7 MPa (2,130 psi)

Grapple

Quick coupler

Hose rupture valve for boom and arm

Overload warning device

Hydraulic oil, ISO VG 32, 68

Hydraulic oil, biodegradable 46

Hydraulic oil, longlife oil 46

### Cab and interior

Cab

Carecab

Fabric operator seat with suspension

Heater and air-conditioner

Control joystick, X3 proportional

Seat belt, 3 inch retractable

Rain visor

Boom swing pedal

AM/FM stereo

AM/FM stereo with CD player and USB input

Mechanical hour meter

Cab mounted FOG (Falling Object Guard)

FOPS (Falling Object Protection Structure)

Sun screen, front/roof

Safety net

### Digging equipment

Arm: 2.1m (6'11")

### Service

Tool kit, full scale

Spare parts



**Volvo Construction Equipment**

[www.volvoce.com](http://www.volvoce.com)

<b>Description</b>	<b>Article</b>
Volvo ECR88D Compact Excavator	ECR88D
Offset Boom 140" (3550mm)	CE12005
Standard Arm, 67" (1700mm) w/ thumb bracket w/cw	CE13018
Dozer Blade with Float Function	CE15023
18" rubber tracks	CE21007
Engine for NA,Stage V	CE30013
Auto idling	CE31001
Engine Auto Shutdown	CE31002
Standard Cooling Package for Engine and Work	CE32001
Canopy	CE40023
PVC seat Mech susp w/o heat	CE41007
Seat belt, 3" retractable	CE42003
ISO Pattern Selector Valve	CE43001
Rearview mirror	CE45010
Hour meter, analog	CE45012
Universal key	CE46002
Joystick_ w/o X3	CE47011
Work light basic_Halogen	CE54001
Work light, additional rear	CE50002
Travel alarm w/ delay	CE51001
Hydraulic oil ISO VG46 14°F to 86°F (-10°C to 30°C)	CE60003
X1 Piping w offset boom control in r/h joystick	CE62015
Tool kit - daily maintenance	CE70002
Manual - English	CE71005
Frame lifetime guarantee	CE72001
Decals NA	CE80002
HD Counterweight 240lbs (110kg)	CE87002
Cab " ONLY" (pre-wired for Caretrack); for heat add	CE40022
Heat & A/C	CE44006
24" , .262yd, GP trenching bucket, VTS Tooth System	CE8293214





**Volvo Construction Equipment North America**  
**Warranty – Disclaimers – Limitations**  
**Limited Warranty for Governmental / Municipalities**

Volvo Construction Equipment North America (“Volvo CE”) hereby extends to its authorized dealers (“Dealer”) and the Dealer’s Governmental / Municipalities customers (“Customer”, and both Dealer and Customer are referred to herein as a “Buyer”), who purchase a new Volvo construction equipment machine (“Machine”) or new Volvo part (“Part”, both of which are referred to herein as a “Product”) from Volvo, the following limited warranty:

Subject to the exceptions and limitations set forth below, Volvo CE or Dealer will repair or replace any part of a new Machine or new Part which proves to be defective in material or workmanship during the following periods (the “Warranty Period”):

- Volvo wheel loaders: 12 months/2500 hours, whichever first occurs
- Volvo articulated haulers: 12 months/2500 hours, whichever first occurs
- Volvo hydraulic excavators: 12 months/2500 hours, whichever first occurs
- Volvo motor graders: 12 months/2500 hours, whichever first occurs
- Volvo compactors: 12 months/1500 hours, whichever first occurs  
24 months unlimited hours on DD90 and larger compactors
- Volvo pavers: 12 months/1500 hours, whichever first occurs  
24 months unlimited hours on 6000 / 7000 series pavers
- Volvo milling: 12 months/1500 hours, whichever first occurs
- Volvo compact wheel loaders (up to 100 net hp.): 12 months/unlimited hours
- Volvo skid steer loaders: 12 months/unlimited hours; Lifetime arm for one-sided
- Volvo compact hydraulic excavators (less than 11 metric tons): 12 months/unlimited hours
- Volvo backhoe loaders: 12 months/unlimited hours
- Volvo engines: 12 months/2500 hours, whichever first occurs
- Volvo parts: 6 months/1500 hours, whichever first occurs
- Volvo remanufactured components: 12 months/2500 hours, whichever first occurs
- Volvo Attachments: 12 months

The Warranty Period commences immediately following the delivery of said Product to the Buyer who first puts said Product into use. The foregoing limited warranty shall include the labor cost to accomplish the repair or replacement of the defective part provided that the repair or replacement was performed by a Dealer.

The foregoing warranty does not cover: (i) any Product found to have been damaged by abuse, accident, other casualty or a failure to maintain or use the warranted Product in accordance with the applicable manuals or instructions (Buyer is required to use only original equipment manufacturer filters during the Warranty Period); (ii) the labor costs to repair or replace defective Parts after the expiration of the Warranty Period of the Machine in which such Part is located; (iii) overtime labor premiums; (iv) costs and expenses associated with the transportation of Dealer’s service personnel to and from the location of the warranted Product; (v) any parts, components, attachments or accessories for which Buyer receives a separate warranty by the manufacturer or producer thereof (in specified cases said warranty may be administered by Volvo CE); (vi) maintenance items or ground engaging parts that have achieved their normal service life.

**DISCLAIMER OF IMPLIED WARRANTIES AND LIMITATION OF REMEDIES**

THE FOREGOING WARRANTY TO BUYER IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

REMEDIES AVAILABLE TO BUYER ARE LIMITED TO MAKING A CLAIM UNDER THE FOREGOING WARRANTY AND ARE EXCLUSIVE AND EXPRESSLY LIMITED TO OBTAINING THE PARTS AND LABOR IN ACCORDANCE WITH THE TERMS OF SAID WARRANTY.



# **Warranty – Disclaimers – Limitations**

## **LIMITATIONS OF LIABILITY AND DAMAGES**

Regardless of whether a claim against Volvo CE or Dealer is based on the foregoing warranty or is an action in contract, tort (negligence or strict liability) or otherwise, their respective liability for losses, damages or expenses of any kind arising from the design, manufacture, repair or sale of the Products is limited, unless otherwise prohibited by law, to an amount not exceeding the cost performing the obligations contained in the foregoing warranty, and in no event shall their respective or joint liability exceed the value of the Product or part thereof giving rise to such liability.

## **CONSEQUENTIAL AND SIMILAR DAMAGES NOT RECOVERABLE**

Except for performing the obligations of the foregoing warranty in accordance with its terms, Volvo CE and Dealer shall have no liability for loss, damage, or expense, directly or indirectly, attributable to a loss of use of a Product, loss or damage to property other than the Product, loss or damage to the Product or any part thereof or any other economic or commercial loss, including, without limitation, lost profits or special or consequential damages (except liability for any type of consequential damages which by law may not be disclaimed). The parties intend that this prohibition against consequential and similar damages will survive and be effective even if the limitation of remedies in the foregoing sections is found to fail of its essential purpose under section 2-719 of the Uniform Commercial Code.

## **ALLOCATION OF RISK**

The foregoing warranty disclaimers, limitations of liability and limitation of remedies are bargained allocations of risks among (i) the Customer who purchased the Product; (ii) the Dealer who sold the Product, and (iii) Volvo CE, which is a third party beneficiary of the contract of sale between the Customer and the Dealer. The Buyer of the Product accepts the foregoing warranty and the other bargained for allocations of risk as part of the agreed price for the purchase of the Product to which the foregoing warranty applies. Volvo CE is prepared to offer different warranties and other allocations of risk for other prices. However, any such change in the warranty or the allocation of risks must be confirmed in writing by Volvo CE.

## **STATUTE OF LIMITATIONS**

Any action by a Buyer of a Product for breach of contract, for breach of warranty arising under, or for a cause of action arising out of the sale of a Product, whether based on contract, tort (negligence or strict liability) or otherwise, shall be commenced within one (1) year after the cause of action has accrued. Any such cause of action shall be deemed to have accrued at the earlier of (i) the discovery of the defect or breach, or (ii) the expiration of the applicable Warranty Period.