

FSA

Volvo Construction Equipment



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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 (in ³) | 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

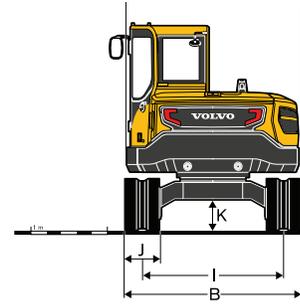
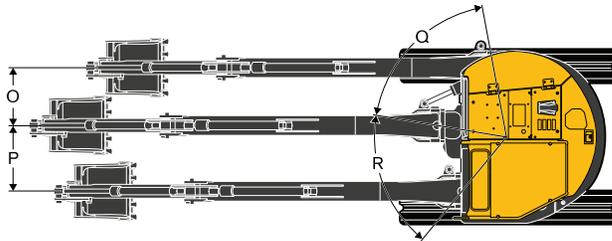
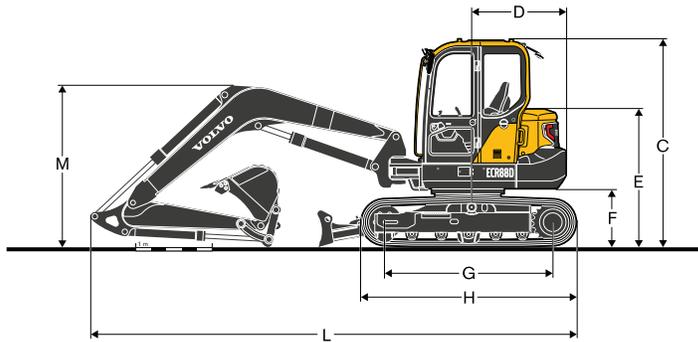
Sound level in cab according to ISO 6396

| | | |
|--|-------|----|
| 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 | 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

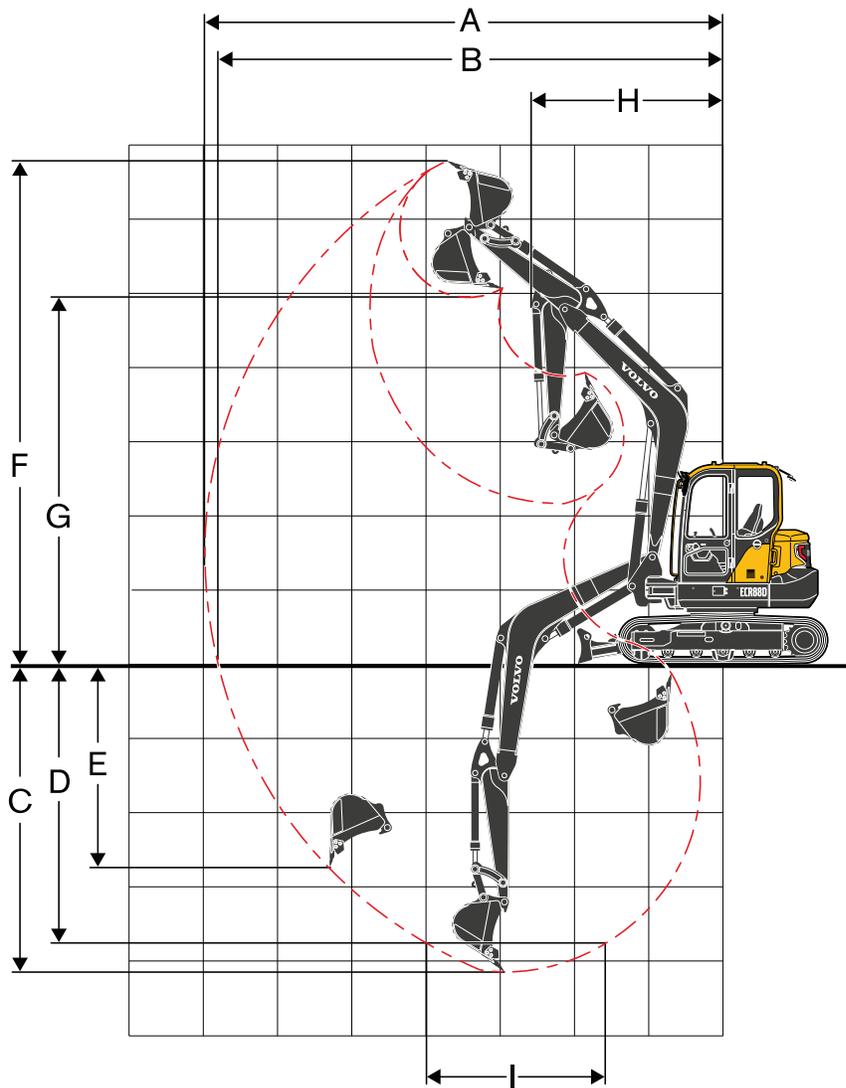


DIMENSIONS

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 | | | | | |
|-------------|---|------|-------|-------|--------|-------|--------|
| | | m | ft in | 3.55 | 11'8" | 3.55 | 11'8" |
| 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

Volvo Construction Equipment

www.volvoce.com

| Description | Article |
|---|----------------|
| 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

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.