

BID SUBMITTAL FORM
Alabama County Joint Bidding Program
Heavy Equipment – Bid Item: Compact Track Excavator Option D-1

Company Name: Cowin Equipment Company Inc

Address: 4325 Northern Boulevard

Montgomery Al 36110

Bid Submitted by: John Edwards

(Name of company representative)

Title: Governmental Sales Manager E-mail address: jedwards@cowin.com

Phone: 850-685-7055 Fax: 334-834-2272

By submitting this bid, we agree:

Initials

The equipment model number identified below meets the bid specs for this bid item

JE

That the bid price will be honored for all counties for the period from January 1, 2023 to December 31, 2023.

JE

The equipment will be delivered at the bid price to all counties participating in the joint bid program.

JE

The company acknowledges the freight preparation and delivery price is to be included in the total bid price for the standard machine.

JE

The company representative listed above will be the contact person for purchasing this bid item under the joint bid program.

JE

The bid is accompanied by a current catalog or model specification document for the model number identified below.

JE

The bid is accompanied by a copy of the manufacturer's standard warranty as required in the bid specifications.

JE

The bid includes the e-verify documentation required by Alabama law.

JE

If awarded the bid, a performance bond will be provided upon request.

JE

The bid documents include the **Manufacturer's Suggested Retail Price Sheet (MSRP) for the Standard Machine.**

JE

Total Bid Price for Standard Machine: \$ 113,976.⁰⁰
(Total Bid Price for Standard Machine Includes Freight Preparation, Delivery and Standard Warranty Costs) *

Freight Preparation and Delivery: \$ 1,500.⁰⁰
(Included in Standard Machine Bid Price)

Manufacturer's Suggested Retail Price for Standard Machine: \$ 125,706.⁰⁰

Equipment Model #: Volvo ECR 88D

Description: Compact Track Excavator

Signature of company representative submitting bid: 

Title: Governmental Sales Manager

* **NOTE:** Award will be made based on the total cost of the **Standard Machine**. The total cost of the standard machine is to include the freight preparation, delivery and standard warranty cost. Freight preparation, delivery will be excluded from the total bid price of the standard machine in determining the percentage discount for any available options.

BID SUBMITTAL FORM: OPTION COST SHEET

By submitting this bid, we agree:

To offer any available options at the percent difference between the Manufacturer's Suggested Retail Price Sheet and the actual bid price on the Standard Machine*

JE

The bid documents include the **Manufacturer's Suggested Retail Price Sheet (MSRP)** for the Standard Machine

JE

Equipment Model #: Volvo ECR88D

Description: Compact Track Excavator

Signature of company representative submitting bid John Edwards

Title: Governmental Sales Manager

***Note:** The percent difference between the **Manufacturer's Suggested Retail Price Sheet (MSRP)** for the standard machine as specified by these **Bid Specifications** and the actual price bid by the vendor will be calculated to determine the percentage discount to be applied to any available options. The bid price of the freight preparation, delivery cost shall be excluded in determining the percentage discount to be applied to available options. Any individual county may choose to add any available option to the standard machine at the percentage discount at the time of purchase.

INVITATION TO BID HEAVY EQUIPMENT

NOTICE OF BID OPENING

NOTICE IS HEREBY GIVEN that the Association of County Commissions of Alabama, which administers the Alabama County Joint Bid Program on behalf of Alabama's county governing bodies, shall receive and open bids for the purchase of zero (0) or more items of heavy road equipment at its office located at 2 North Jackson Street, Montgomery, Alabama, at **10:00 a.m. on Friday, October 7, 2022**. Bid specifications are available at <http://www.alabamacounties.org/heavy-equipment/> for each of the following items:

Backhoes	Ride-on Industrial Boom Mowers
Tractors	Asphalt Distributor Truck
Track Mount Excavators	Chip Spreader
Compact Track Mount Excavators	Rubber Tire Roller
Mini Track Excavator	7.5 Ton Single Drum Vibratory Roller
Wheeled Excavators	One-man Pothole Patchers
Highway Speed Truck Excavators	Trailer Mounted Patchers
Motor Graders	Trailer Mount Mastic Patcher/Crack Sealer
Heavy Duty Hydrostatic Bulldozers	Half Round End Dump Trailer
Mulching Dozer	Lowboy Trailers
Wheel Loaders	Road Wideners and Attachments
Heavy Duty Dump Chassis	16' Steel Dump Bodies (Automatic and Manual)
Lowboy Tractors	
Skid Steer Loader w/no Attachments	
Skid Steer Attachments	

Time is of the essence in submitting bids and only bids received in the Association office by 10:00 a.m. Central Time on Friday, October 7, 2022 will be opened and considered. Bidders and any other interested individuals are invited to attend the bid opening.

NOTICE OF BID OPENING PROCEDURES

All bids for **Heavy Equipment** will be opened and the name(s) of the bidders read aloud on the morning of the bid opening on Friday, **October 7, 2022 at 10:00 a.m.** at 2 North Jackson Street, Montgomery, AL. The specifics of each bid submitted will be compiled by the Association staff thereafter and will be available, **upon written or emailed request**, one week after the bid opening. Requests should be emailed to jointbid@alabamacounties.org.

THE INVITATION PACKAGE

The invitation package for each item to be bid includes: this invitation to bid, the written bid specifications for the particular item of heavy road equipment, and a Bid Submittal Form to be used in submitting a bid for that particular item. Bidders should verify that they have received all pages of the invitation package. If there are any omissions, the bidder should contact **Kenya Howard** in the Association office by mail, fax, or e-mail (jointbid@alabamacounties.org) to request missing pages. It is the responsibility of the bidder to make this request in sufficient time to prepare and submit the bid in time for the bid opening. Bidders should carefully read and comply with all parts of the invitation package, including all attachments and/or any addendum.

PREPARING AND SUBMITTING BIDS

All bids must be typed or hand written in ink on the attached Bid Submittal Form. **The completed Bid Submittal Form shall be placed in front of and separated from all other documents included in the bid packet, such that it will be the first document viewed upon opening the bid packet.**

Bids submitted in pencil and bids not submitted on the Bid Submittal Form will **not** be considered. All bids shall include a current catalog or model specification document for the equipment model number being offered for consideration. Bids submitted without such documentation will **not** be considered. Only information contained on the attached Bid Submittal Form and in the model specification document will be considered in evaluating bids.

Each separate requirement in the bid specification includes a block for indicating whether or not the item bid meets the specification. The bidder shall indicate compliance with each requirement by checking "Yes" or "No" in the block to the right of each bid specification. In addition, the bidder shall indicate the page number in the supplied manufacturer's equipment literature on which compliance with the specification can be verified. Failure to complete this portion of the bid form may result in the subject bid not being considered.

Each bid for one of the heavy equipment items included in the bid package must be submitted on the Bid Submittal Form for that item and forwarded in a separate envelope with the bid item and item number clearly identified on the outside of the envelope. Envelopes containing a "no bid" shall also include the words "NO BID" on the outside of the envelope. Facsimiles and e-mails will not be accepted. Bids submitted by "Express/Overnight" services must be in a separate inner envelope or package sealed and identified as stated above. All bids must be received in the Association office prior to the bid opening. Bids received after the deadline will be returned unopened.

The County Joint Bid Program reserves the right to require a performance bond from successful bidders as permitted under Alabama law. However, **no bid bond is required for this bid offering.**

All bids should be mailed or hand-delivered to:

**ATTN: Joint Bid Program
Association of County Commissions of Alabama
2 North Jackson Street, FL 7, Montgomery, Alabama 36104 (Physical Address)
P.O. Box 5040, Montgomery, Alabama 36103 (Mailing Address)**

BID SPECIFICATIONS

Please note that each piece of heavy equipment available for bid may include several different sizes and categories of machines. You should read each set of specifications very carefully as the differences vary depending upon the piece and size of equipment.

The award will be based on the total cost of the **Standard Machine** bid by the lowest responsible bidder. Each Bid shall include a **Manufacturer's Suggested Retail Price Sheet (MSRP)** for each machine bid. The percent difference between the Manufacturer's Suggested Retail Price (MSRP) for the standard machine as specified by these bid specifications and the actual price bid by the vendor will be calculated and that percentage discount shall be applied to any options an individual county may choose to add to the machine.

Once the bids have been awarded, any county participant purchasing under this program may, at its discretion, add any of the vendor's available options at the same discount off the Manufacturer's Suggested Retail Price Sheet as was applied to the Standard Machine Price Bid.

Any use of specific names and/or model numbers in the attached specifications is not intended to restrict the bidder or any seller or manufacturer, but is included solely for the purpose of indicating the type, size, and quality of materials, product services, or equipment considered best adapted to the use of the counties participating in the joint bid program.

ACQUISITION AND FINANCING OPTIONS

The awarded Vendor will provide the equipment, including any options required by the purchaser, at the awarded price as contracted through the Joint Bid Program. The purchaser may secure its own financing to acquire the equipment or execute any financial options available under Alabama law with the awarded Vendor in order to acquire the equipment.

BIDDER QUALIFICATIONS

All bidders and all program participants must be in compliance with any applicable federal, state, county and municipal laws, regulations, resolutions and ordinances, including but not limited to, licensing, permitting, and taxation requirements. All bidders should be prepared to submit evidence or documentation as proof that they are properly licensed and permitted under any applicable laws upon request. Such evidence or documentation may be submitted with the bid. Additionally, all bidders shall provide proof that they are in compliance with the e-verify requirements of Alabama's Immigration Law (Ala. Code § 31-13-1 et seq., as amended by Act No. 2012-491).

BID AWARD

The Houston County Commission will serve as the awarding authority for all bids and will award all contracts at a regular meeting of the Houston County Commission. Any and all bids submitted in compliance with this invitation to bid shall be considered, and award will be made to the lowest responsible bidder meeting bid specifications as determined by the awarding authority in compliance with Alabama law. All bids will be reviewed and evaluated by a committee created for that purpose, which committee will make comments and recommendations to the awarding authority regarding the award. All factors contained in each invitation package will be evaluated in determining the successful bidder, and any omissions of the stated requirements may be cause for rejection of the bid submitted. The awarding authority reserves the

right to reject any and all bids, to waive any informality in bids, and to accept in whole or in part such bid or bids solely at its discretion.

The contract period will be one year with an option to renew for a second and third year under identical price, terms, and conditions upon the mutual consent of the vendor and the awarding authority. Any renewal contract shall be approved in writing by the vendor and the awarding authority no later than 90 days prior to the expiration of the existing contract.

CONTACT REGARDING BIDS AND INVITATION

Contact initiated by a potential bidder with any county official, county employee, or member of the Association staff shall only be as specifically set out in this Invitation to Bid. Any questions related to the bid or the County Joint Bid Program shall be directed to Association staff in writing under the procedures set out in this Invitation to Bid. Additionally, a bidder may contact the Association in writing to request an appointment to review bid specifications following the bid opening. **However, there shall be no communication with any county official or county employee regarding this bid between the date of this invitation and the date of bid award.** Any contact other than as set out here shall be deemed as an attempt to unduly influence the bid award, and shall be grounds for rejection of the bid submitted by the bidder initiating such other contact.

Any questions or problems related to downloading or obtaining copies of this Invitation to Bid should be directed to **Kenya Howard** at jointbid@alabamacounties.org or **334-263-7594**.

Any other questions or requests for additional information regarding this invitation or the bid specifications shall be submitted **in writing** no later than five (5) days prior to bid opening to:

**ATTN: Patrick McDougald
Association of County Commissions of Alabama
P.O. Box 5040
Montgomery, Alabama 36104**

OR

**Patrick McDougald
E-mail: barbeng@bellsouth.net**

**BID SPECIFICATIONS
FOR
COMPACT TRACK-MOUNTED HYDRAULIC EXCAVATOR
Option D-1**

GENERAL

These specifications shall be construed as the minimum acceptable standards for a track mounted hydraulic excavator with long undercarriage. Should the manufacturer's current published data or specifications exceed these standards, the manufacturer's standards shall be considered minimum and shall be furnished. All integral parts not specifically mentioned in the scope of these specifications that are necessary to provide a complete working unit shall be furnished. Additionally, the machine offered for bid shall include all standard manufacturers' equipment. The excavator must be a new current production model and shall meet all EPA and other applicable standards at the time of manufacture.

Use of specific names and numbers in the specifications is not intended to restrict the bidder or any seller or manufacturer, but is intended solely for the purpose of indicating the type, size and quality of equipment considered best adapted to the uses of the counties participating in this joint bid.

BID SUBMITTAL FORM

Each bidder must submit his or her bid on the bid submittal form included in the invitation to bid package. All written warranties to be submitted shall be attached to the bid submittal form.

BID PRICE

The price bid shall include all destination charges, delivery charges, title fees, rebates, and all other applicable costs and refunds.

MANUALS

Each unit shall be provided with one (1) copy of the operator's manual, one [1] repair manual, and one (1) copy of the current parts manual. Units will not be accepted for delivery until the manuals as outlined above are received by the purchaser.

REPLACEMENT PARTS AVAILABILITY

Parts must be available for 5 years or 7,500 hours of use for the piece of equipment. If any replacement parts are not delivered within three (3) working days of an order being placed, the bidder will deliver an equivalent machine for the county to use at no cost to the county until such time as the parts are delivered to the county so it can affect repairs to its machine.

WARRANTY

Bidders shall submit a copy of the manufacturer's standard warranty. Warranty shall include service response time of maximum of 36 hours within notification by county.

Yes No

Page# _____

or

Attachment

WEIGHT

Minimum 18,000 lbs.

Yes No
Page # 18

Three (3) cylinders (or more), minimum 149 cubic inch diesel engine with minimum 55 net flywheel horsepower.

Yes No
Page # 16

UNDERCARRIAGE

Track length shall be minimum 9'

Yes No
Page # 17

Track shoe width shall be minimum 17".

Yes No
Page # 17

Minimum five (5) track rollers per side. ✓

Yes No
Page # 17

Minimum one (1) carrier rollers per side.

Yes No
Page # 17

Unit shall be equipped with steel tracks with rubber track pads.

Yes No
Page # option

CAPACITIES

Fuel Tank Capacity – 29 gallon minimum

Yes No
Page # 16

Hydraulic Tank Capacity – 14 gallon minimum

Yes No
Page # 16

BOOM AND STICK

One-piece boom with minimum 11' length

Yes No
Page # 12

Stick shall be a minimum 5.5' long

Yes No
Page # 17

DIMENSIONS

Reach at ground level – 22' 0" minimum

Yes No
Page # 19

Bucket breakout force – minimum 10,000 lbs.

Yes No
Page # 19

Stick digging force – minimum 6,500 lbs.

Yes No
Page # 19

BUCKET

Bucket size and type will be provided as an option to be determined by ordering County

Yes No
Page # 22

HYDRAULICS

Hydraulic pump output shall be a minimum of 38 GPM

Yes No
Page # 16

Blade

Blade width – minimum 7.5'

Yes No
Page # 18

Blade height – minimum 14"

Yes No
Page # 18

CAB

Enclosed ROPS cab:
Heater

Yes No
Page # 22

Factory installed air conditioning

Yes No
Page # 22

AM/FM radio

Yes No
Page # 22

ACCA

Volvo Construction Equipment
Building Tomorrow



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

ECR88D

Volvo Excavators 8.6-10.0 t / 19,010-22,050 lb 58 hp





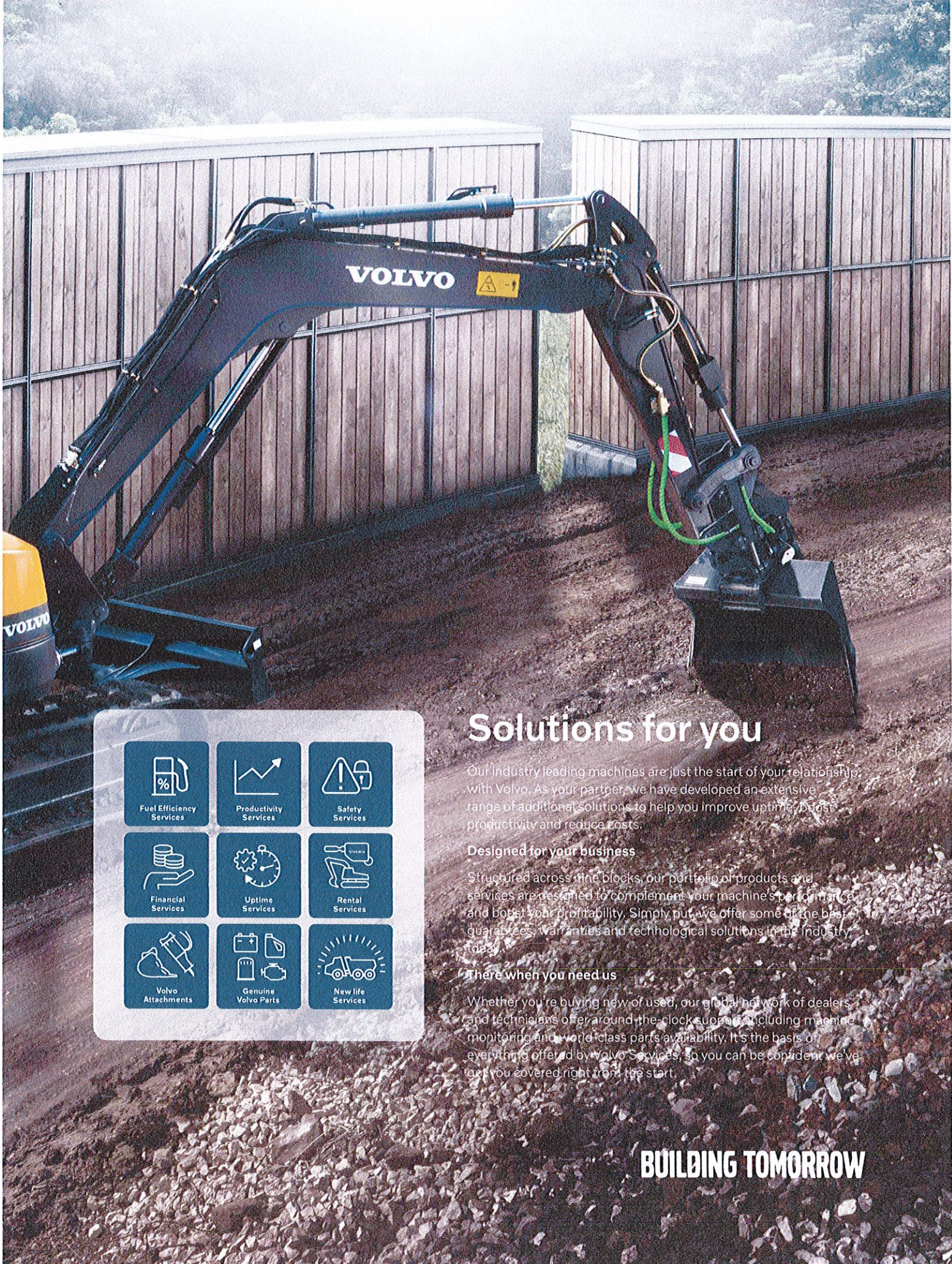
WELCOME TO OUR WORLD

Welcome to a world of industry leading machinery. A world where imagination, hard work and technological innovation will lead the way towards developing a future which is cleaner, smarter, and more connected. A world supported by the enduring values of the Volvo Group. A world of stability, sustainability and innovation. A world which we put our customers at the heart of.

Small machines, big results

With decades of experience in the design and manufacture of compact excavators and wheel loaders, our range of compact machinery is designed with customer success in mind. Built from the same DNA as large Volvo machinery, our compact range sets the standard for efficiency performance and uptime – complemented by an extensive range of Volvo attachments for maximum versatility.

Building on our proud history, the Volvo Concept Lab continues to create cutting-edge ideas and innovative concepts – such as our award-winning electric compact excavator – to ensure we offer our customers machines which deliver big results long into the future.



VOLVO



 Fuel Efficiency Services	 Productivity Services	 Safety Services
 Financial Services	 Uptime Services	 Rental Services
 Volvo Attachments	 Genuine Volvo Parts	 New life Services

Solutions for you

Our industry leading machines are just the start of your relationship with Volvo. As your partner, we have developed an extensive range of additional solutions to help you improve uptime, boost productivity and reduce costs.

Designed for your business

Structured across nine blocks, our portfolio of products and services are designed to complement your machine's performance and boost your profitability. Simply put, we offer some of the best guarantees, warranties and technological solutions in the industry today.

There when you need us

Whether you're buying new or used, our global network of dealers and technicians offer around-the-clock support, including machine monitoring and world-class parts availability. It's the basis of everything offered by Volvo Services, so you can be confident we've got you covered right from the start.

BUILDING TOMORROW

Powered to perform

Volvo proudly introduces the new ECR88D compact short swing radius excavator. Featuring a powerful Volvo engine and perfectly matched hydraulic system, this machine delivers high performance, excellent control and low fuel consumption. Sustain optimum power and productivity with Volvo.

Volvo engine

Volvo's premium Tier 4f / Stage V engine delivers superior performance and low fuel consumption. The engine features an Exhaust After Treatment System (EATS) to lower emissions and a regeneration process that does not interrupt operation, performance or productivity.



Slew and boom offset

Slew and boom offset movements are controlled simultaneously for easy and fast positioning of the machine. Joystick control enables precise, smooth and effortless command of the slew and boom offset.



Tractive force

High system pressure delivers impressive tractive force when climbing gradients or traveling over rough terrain. For improved performance, the ECR88D boasts a 16% improvement in tractive force compared to the previous model.





ENHANCED HYDRAULICS

Volvo's state-of-the-art hydraulic system is perfectly matched to the Volvo engine and components – delivering high performance and improved fuel efficiency. The hydraulic system has been designed for fast response and smooth operation.



STABILITY

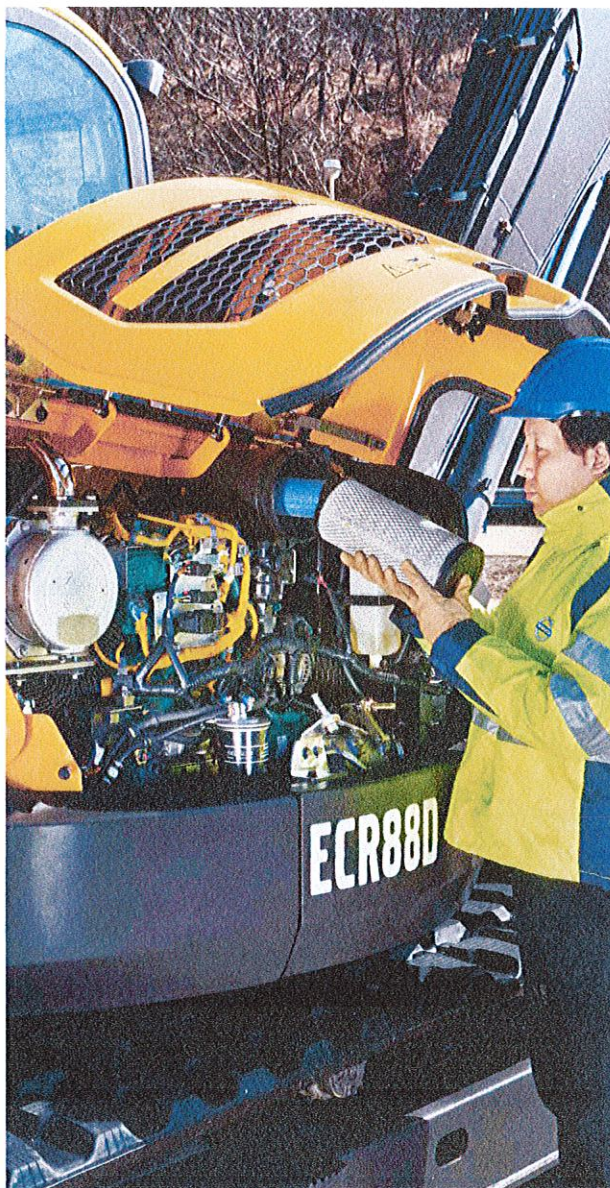
Design improvements including a counterweight have shifted the center of gravity towards the rear of the machine. Together with a strong undercarriage, this delivers superior stability while lifting bigger loads.

Stability you can count on

Whether you're working in the road construction, utilities, landscaping or any other application, the ECR88D will give you access to more jobsites, where you can work closer to obstacles, safely. With a heavy counterweight and strong undercarriage, this machine delivers superior stability. And with easy service access you'll enjoy maintenance made easy with Volvo.

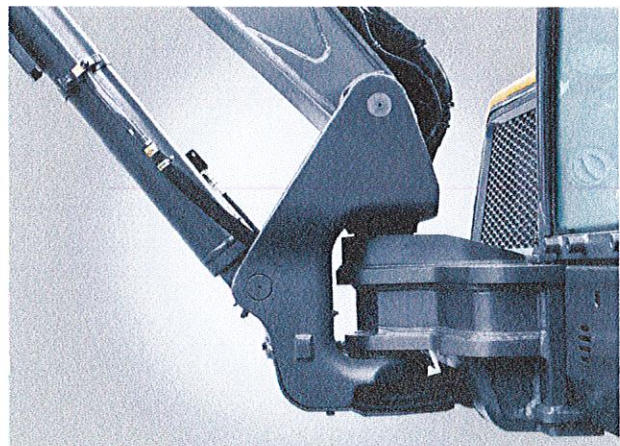
Service access

For safe and easy access, all service check points are located under the wide-opening engine hood and are accessed from ground level. Grouped filters ensure regular maintenance is straightforward and uptime is maximized.



Single pivot pin

Volvo uses a single pivot design that achieves maximum support between main frame and front equipment. This concept increases stability, durability and lifetime of the components.



MATRIS and VCADS Pro

For increased uptime, Volvo's high-tech, computer-based MATRIS tool allows you to monitor machine usage and analyze machine operation. VCADS Pro analysis and programming software provides fast diagnostics.

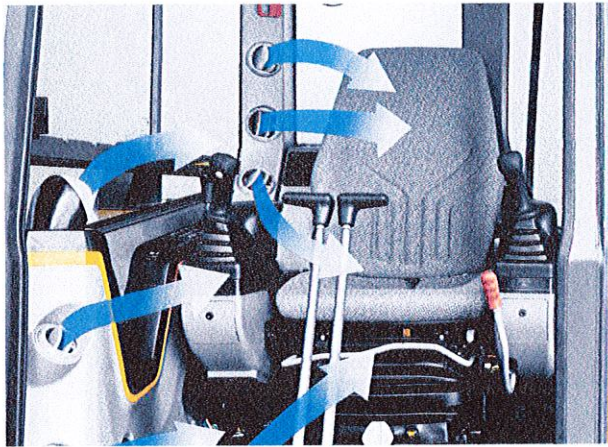


Superior operator cab

At Volvo we know that when operators are comfortable they experience less fatigue and work more productively. That's why the premium, Volvo designed cab provides superior visibility, a safe and spacious working environment and easy to access controls. Step inside and see the results for yourself.

Climate control

Control your climate with Volvo's powerful, industry-leading climate control system. With seven well-spaced vents quickly heating or cooling the cab, this air circulation and defrosting system increases comfort and productivity.



Keypad

The majority of switches are integrated in one centralized keypad on the right-hand console. The operator can intuitively control the I-ECU monitor and audio system for increased comfort.



Proportional joysticks

Via the joystick controls, the operator can easily adjust the direction and amount of hydraulic flow sent to the attachment. Benefit from the correct speed and power for optimal attachment operation.



Storage

The Volvo cab features ample storage locations for personal belongings including an additional glove-box, side pocket, phone storage, cup holder and a pocket behind the seat.





VOLVO CAB

All-around visibility from slim cab pillars and large expanses of glass is at the center of Volvo's cab design. The ROPS certified cab features vibration and noise isolation, ergonomic controls and an adjustable seat for increased comfort, reduced fatigue and increased productivity.



ATTACHMENTS VERSATILITY

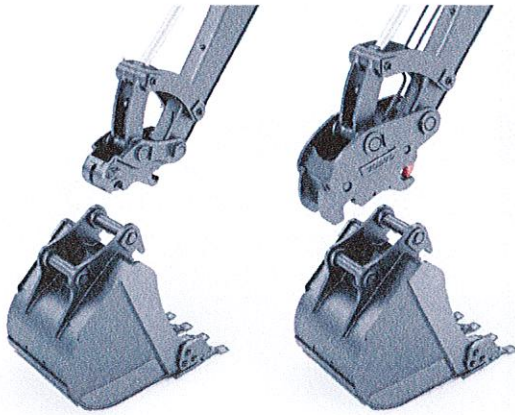
The machine's attachment can be easily changed to save time and costs. Its design, hydraulics, piping and in-cab controls combined with Volvo's attachments range allows the ECR88D to take on a variety of tasks. Volvo attachments work in harmony with the machine to deliver maximum productivity.

One machine, many applications

Volvo offers a wide range of durable attachments that are suitable for any job site, including utilities, building, agriculture, landscaping and forestry. Volvo attachments are an integrated part of the excavator for which they're intended – delivering maximum productivity and versatility.

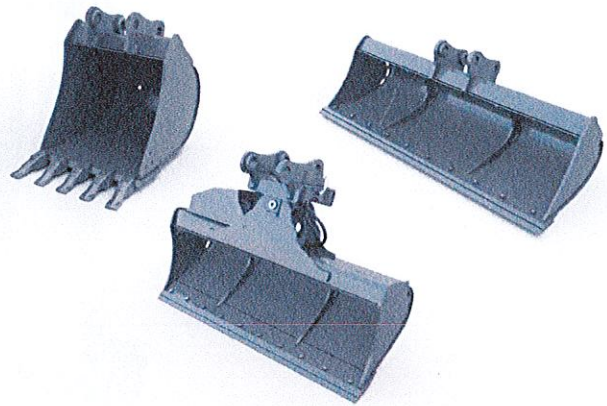
Quick coupler

Both the mechanical and the hydraulic quick couplers allow a complete range of buckets to be changed quickly and efficiently.



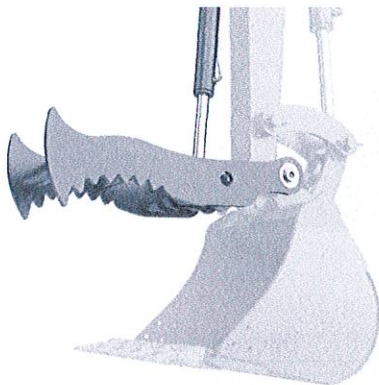
Buckets

A complete range of buckets from general purpose reinforced buckets to ditching buckets, allow the ECR88D to work on many job sites for a wide range of applications. The durable buckets are built to work in loose gravel, crushed rock, dirt and soil.



Thumb

Designed to work with both Volvo direct fit buckets and Volvo quick coupler, the Volvo thumb makes handling material easy for tasks including piling, placing, loading, lifting and carrying.



Steelwrist tiltrotator

A Volvo compact excavator together with a Steelwrist® tiltrotator delivers the ultimate combination of high productivity, safety, precision and control. Steelwrist tiltrotators provide a superior tilt angle and the compact design with low build height results in improved digging performance and higher fuel efficiency. Get more done with your machine, without changing attachment or machine position.



Built to get the job done

Auto idle

Engine speed is reduced to idle when the controls are inactive for more than five seconds or the left-hand console is raised – reducing fuel consumption and noise.

ENHANCED HYDRAULICS

The hydraulic system is perfectly matched to the engine and components for fast response and smooth operation.

STABILITY

A heavy counterweight and a strong undercarriage deliver superior stability and the ability to lift bigger loads.

Optional hydraulics

For increased versatility, auxiliary hydraulic systems are available to enable the operation of a wide range of attachments.

MATRIS and VCADS Pro

The MATRIS tool monitors machine usage and operation. VCADS Pro analysis and programming software provides fast diagnostics.

Optional dozer floating

The optional dozer blade float function 'floats' the dozer blade over the ground for improved leveling control and fuel efficiency.



VOLVO CAB

Volvo's purpose designed cab offers excellent allround viability, enhanced by the slim cab pillars and large windows.

VOLVO ENGINE

Tier 4f compliant Volvo Engine delivers superior performance with low fuel consumption.

SERVICE ACCESS

All service check points are accessed from ground level. Grouped filters make regular maintenance easy.

Auto engine shutdown

The auto engine shutdown provides lower fuel costs, less noise, much lower maintenance costs and a greater resale value.

ECO mode

The ECO mode provides optimal working performance together with fuel saving.

Single pivot pin

Volvo uses a single pivot design that achieves maximum support between main frame and front equipment, This concept increases, stability, durability and lifetime of the components

Undercarriage

Durable and strong X-shape undercarriage ensures superior stability and increases machine lifetime.



Adding value to your business

Being a Volvo customer means having a complete set of services at your fingertips. Volvo can offer you a long-term partnership, protect your revenue and provide a full range of customer solutions using high quality parts, delivered by passionate people. Volvo is committed to increasing the positive return on your investment and maximising uptime.

Complete Solutions

Volvo has the right solution for you. So why not let us provide all your needs throughout the whole life cycle of your machine?

By listening to your requirements, we can reduce your total cost of ownership and increase your revenue.



Genuine Volvo Parts

Our attention to detail is what makes us stand out. This proven concept acts as a solid investment in your machine's future. Parts are extensively tested and approved because every part is vital for uptime and performance. Only by using Genuine Volvo Parts, can you be sure that your machine retains the renowned Volvo quality.

Service Network

In order to respond to your needs faster, a Volvo expert is on their way to your job site from one of our Volvo facilities. With our extensive infrastructure of technicians, workshops and dealers, Volvo has a comprehensive network to fully support you using local knowledge and global experience.





CUSTOMER SUPPORT AGREEMENTS

The range of Customer Support Agreements offer preventive maintenance, total repairs and a number of uptime services. Volvo uses the latest technology to monitor machine operation and status, giving you advice to increase your profitability. By having a Customer Support Agreement you are in control of your service costs.

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)
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Pilot pump: Gear pump

Maximum flow	l/min (gal/min)	13 (3.4)
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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)

Breaker & shear X1 maximum flow	l/min (gal/min)	118 (32) - X1 single 68 (18) - X1 double"
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Breaker & shear X1 maximum pressure	MPa (psi)	21.6 (3,132) - X1 single 29.4 (4,264) - X1 double"
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Slope & rotator X3 maximum flow	l/min (gal/min)	28 (7.4)
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Slope & rotator X3 maximum pressure	MPa (psi)	14.7 (2,130)
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Swing system

Direct drive swing with radial piston motor-maintenance free and automatic holding brake anti-rebound valve.

Max. swing speed	r/min	8.3
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)	5.2 (3.2)
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 (2.7)
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

L _{pA}	dB	74
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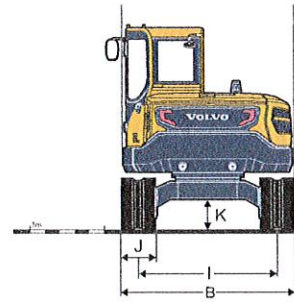
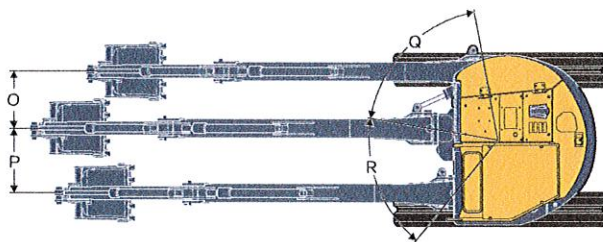
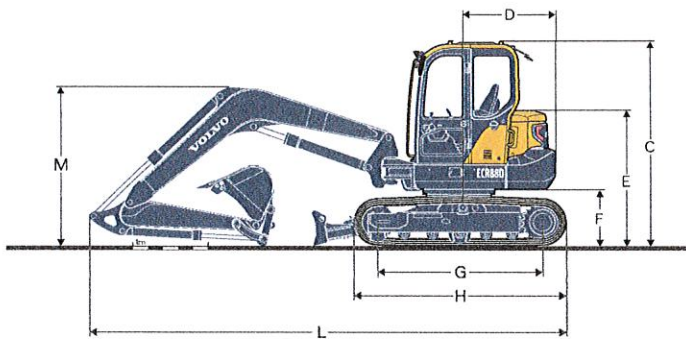
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC

L _{WA}	dB	98
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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

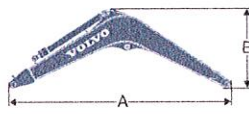
Machine

Machine	m	ft in	3.55	11'8"	3.55	11'8"
Boom						
Arm						
A Overall width of upper structure	mm	ft in	2,260	7'5"	2,260	7'5"
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	1,810	5'11"	1,810	5'11"
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

Specifications

Boom and Arm



			Boom		Arm			
			3.55	11'8"	1.7	5'7"	2.1	6'11"
A	Length	m	3,700	12'2"	2,283	7'6"	2,684	8'10"
B	Height	mm	1,244	4'1"	518	1'8"	562	1'10"
	Width	ft in	335	1'1"	305	1'0"	305	1'0"
	Weight	mm	530	1,170	280	620	340	750
		kg						
		lb						

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

Arm: Includes cylinder, linkage and pin.

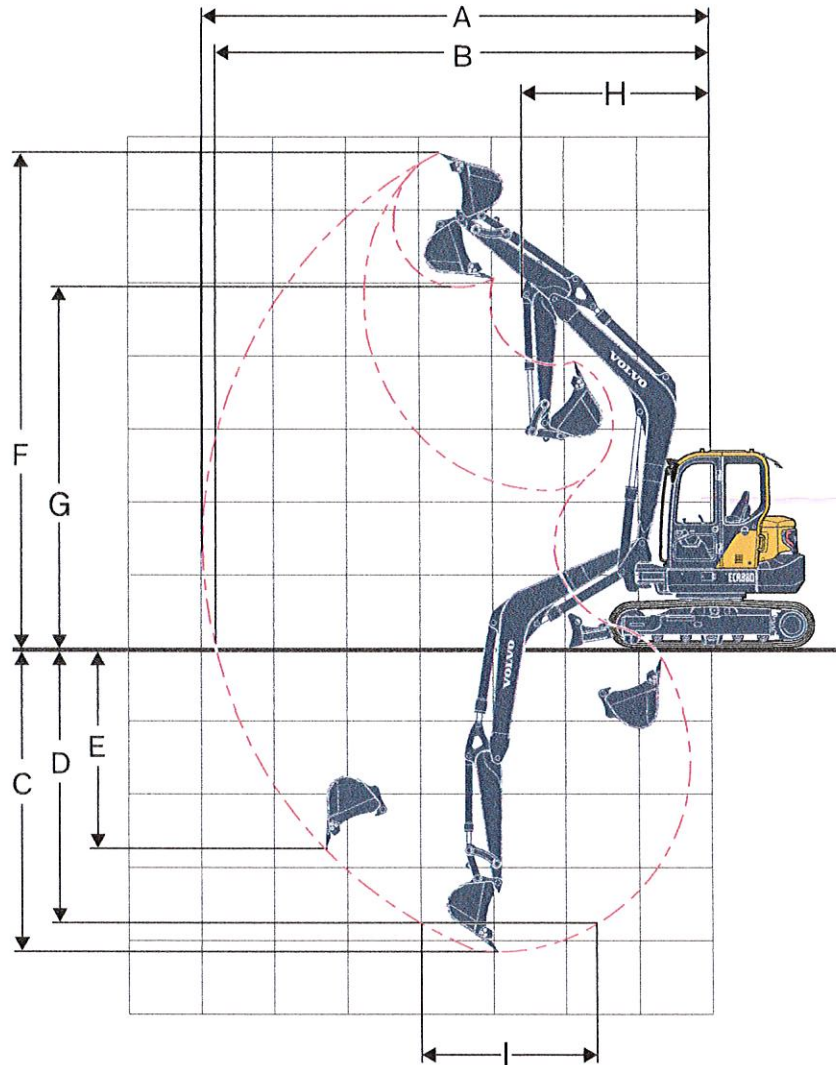
Dozer blade

A	Height	mm	470	1'7"
	Width	ft in	2,300	7'7"
B	Lifting height	mm	518	1'8"
C	Digging depth	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 1 400 kg 3 086 lb						
Steel track	450	18	8,939	19,710	40.2	5.8
	600	24	9,108	20,080	30.7	4.5
Rubber track	450	18	8,752	19,300	39.4	5.7
Rubber pad	450	18	8,988	19,820	40.2	5.8
Mono boom 3.55 m 11'8", Arm 2.1 m 6'11", Bucket 188 kg (266 l) 410 lb, Counterweight 1 400 kg 3 086 lb						
Steel track	450	18	8,997	19,830	40.5	5.9
	600	24	9,166	20,210	30.9	4.5
Rubber track	450	18	8,810	19,420	39.6	5.7
Rubber pad	450	18	9,046	19,940	40.5	5.9



WORKING RANGES

Description	Unit					
	m	ft in	3.55	11'8"	3.55	11'8"
Boom						
Arm			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		
			Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Along	Across	Max.
	m	ft															
Boom 3.55 m, 11'8" Arm 1.7 m, 5'7" Shoe Rubber 450 mm, 1'6" CWT 1,400 kg / 3,086 lb Dozer blade down	5.0	kg							*1,540	*1,540					*1,620	*1,620	4.6 m
	16.5	lb							*3,395	*3,395					*3,571	*3,571	14.9 ft
	4.0	kg							*1,600	*1,600	*1,560	1,450			*1,580	1,290	5.3 m
	13.2	lb							*3,527	*3,527	*3,439	*3,197			*3,483	*2,844	17.5 ft
	3.0	kg					*2,510	*2,510	*1,920	*1,920	*1,660	1,420			*1,550	1,110	5.8 m
	9.9	lb					*5,534	*5,534	*4,233	*4,233	*3,660	*3,131			*3,417	*2,447	19.0 ft
	2.0	kg					*3,740	2,940	*2,360	1,920	*1,850	1,370	*1,610	1,030	*3,600	1,030	6.0 m
	6.6	lb					*8,245	*6,482	*5,203	*4,233	*4,079	*3,020	*3,549	*2,271	*3,527	*2,271	19.7 ft
	1.0	kg							*2,720	1,830	*2,030	1,330	*1,650	1,010	*1,650	1,010	6.0 m
	3.3	lb							*5,997	*4,034	*4,475	*2,932	*3,638	*2,227	*3,638	*2,227	19.7 ft
	0.0	kg					*3,810	2,750	*2,850	1,780	*2,100	1,290			*1,690	1,040	5.8 m
	0.0	lb					*8,400	*6,063	*6,283	*3,924	*4,630	*2,844			*3,726	*2,293	19.1 ft
Boom 3.55 m, 11'8" Arm 1.7 m, 5'7" Shoe Rubber 450 mm, 1'6" CWT 1,400 kg / 3,086 lb Dozer blade up	-1.0	kg			*3,570	*3,570	*3,890	2,760	*2,730	1,770	*2,000	1,290			*1,730	1,160	5.4 m
	-3.3	lb			*7,870	*7,870	*8,576	*6,085	*6,019	*3,902	*4,409	*2,844			*3,814	*2,557	17.7 ft
	-2.0	kg			*4,870	*4,870	*3,240	2,800	*2,310	1,790					*1,740	1,430	4.7 m
	-6.6	lb			*10,736	*10,736	*7,143	*6,173	*5,093	*3,946					*3,836	*3,153	15.4 ft
	-3.0	kg					*1,930	*1,930							*1,540	*1,540	3.4 m
	-9.9	lb					*4,255	*4,255							*3,395	*3,395	11.2 ft
	5.0	kg							*1,540	*1,540					*1,620	1,580	4.6 m
	16.5	lb							*3,395	*3,395					*3,571	*3,483	14.9 ft
	4.0	kg							*1,600	*1,600	*1,560	1,370			*1,540	1,220	5.3 m
	13.2	lb							*3,527	*3,527	*3,439	*3,020			*3,395	*2,690	17.5 ft
	3.0	kg					*2,510	*2,510	*1,920	1,910	*1,660	1,340			*1,340	1,050	5.8 m
	9.9	lb					*5,534	*5,534	*4,233	*4,211	*3,660	*2,954			*2,954	*2,315	19.0 ft
2.0	kg					3,580	2,750	2,310	1,810	1,650	1,290	1,240	970	1,240	970	6.0 m	
6.6	lb					*7,893	*6,063	*5,093	*3,990	*3,638	*2,844	*2,734	*2,138	*2,734	*2,138	19.7 ft	
1.0	kg							2,220	1,720	1,600	1,250	1,220	950	1,220	950	6.0 m	
3.3	lb							*4,894	*3,792	*3,527	*2,756	*2,690	*2,094	*2,690	*2,094	19.7 ft	
0.0	kg					3,390	2,580	2,170	1,670	1,570	1,220			*2,690	980	5.8 m	
0.0	lb					*7,474	*5,688	*4,784	*3,682	*3,461	*2,690			*2,778	*2,161	19.1 ft	
-1.0	kg			*3,570	*3,570	3,400	2,580	2,160	1,660	1,560	1,210			1,400	1,090	5.4 m	
-3.3	lb			*7,870	*7,870	*7,496	*5,688	*4,762	*3,660	*3,439	*2,668			*3,086	*2,403	17.7 ft	
-2.0	kg			*4,870	*4,870	*3,240	2,620	2,180	1,690					*1,740	1,350	4.7 m	
-6.6	lb			*10,736	*10,736	*7,143	*5,776	*4,806	*3,726					*3,836	*2,976	15.4 ft	
-3.0	kg					*1,930	*1,930							*1,540	*1,540	3.4 m	
-9.9	lb					*4,255	*4,255							*3,395	*3,395	11.2 ft	
Boom 3.55 m, 11'8" Arm 2.1 m, 6'11" Shoe Rubber 450 mm, 1'6" CWT 1,400 kg / 3,086 lb Dozer blade down	6.0	kg													*1,520	*1,520	4.0 m
	19.8	lb													*3,351	*3,351	12.8 ft
	5.0	kg										*1,400	*1,400		*1,330	*1,330	5.1 m
	16.5	lb										*3,086	*3,086		*2,932	*2,932	16.6 ft
	4.0	kg										*1,360	*1,360		*1,230	1,120	5.8 m
	13.2	lb										*2,998	*2,998		*2,712	*2,469	18.9 ft
	3.0	kg							*1,660	*1,660	*1,490	1,420	*1,410	1,040	*1,210	980	6.2 m
	9.9	lb							*3,660	*3,660	*3,285	*3,131	*3,109	*2,293	*2,668	*2,161	20.3 ft
	2.0	kg					*3,190	3,000	*2,120	1,920	*1,700	1,360	*1,490	1,020	*1,520	910	6.4 m
	6.6	lb					*7,033	*6,614	*4,674	*4,233	*3,748	*2,998	*3,285	*2,249	*2,756	*2,006	20.9 ft
	1.0	kg					*3,640	2,770	*2,540	1,810	*1,910	1,310	*1,580	990	*1,330	890	6.4 m
	3.3	lb					*8,025	*6,107	*5,600	*3,990	*4,211	*2,888	*3,483	*2,183	*2,932	*1,962	21.0 ft
0.0	kg					*3,950	2,690	*2,770	1,750	*2,040	1,260	*1,610	970	*1,490	920	6.2 m	
0.0	lb					*8,708	*5,930	*6,107	*3,858	*4,497	*2,778	*3,549	*2,138	*3,285	*2,028	20.4 ft	
-1.0	kg	*2,670	*2,670	*3,090	*3,090	*4,040	2,680	*2,750	1,720	*2,020	1,250			*1,570	1,000	5.8 m	
-3.3	lb	*5,886	*5,886	*6,812	*6,812	*8,907	*5,908	*6,063	*3,792	*4,453	*2,756			*3,461	*2,205	19.1 ft	
-2.0	kg	*3,990	*3,990	*4,950	*4,950	*3,540	2,720	*2,470	1,730	*1,750	1,260			*1,600	1,200	5.2 m	
-6.6	lb	*8,796	*8,796	*10,913	*10,913	*7,804	*5,997	*5,445	*3,814	*3,858	*2,778			*3,527	*2,646	17.0 ft	
-3.0	kg			*3,940	*3,940	*2,550	*2,550	*1,690	*1,690					*1,560	*1,560	4.1 m	
-9.9	lb			*8,686	*8,686	*5,622	*5,622	*3,726	*3,726					*3,439	*3,439	13.5 ft	
Boom 3.55 m, 11'8" Arm 2.1 m, 6'11" Shoe Rubber 450 mm, 1'6" CWT 1,400 kg / 3,086 lb Dozer blade up	6.0	kg													*1,520	*1,520	4.0 m
	19.8	lb													*3,351	*3,351	12.8 ft
	5.0	kg										*1,400	1,370		*1,330	1,330	5.1 m
	16.5	lb										*3,086	*3,020		*2,932	*2,932	16.6 ft
	4.0	kg										*1,360	*1,360		*1,230	1,060	5.8 m
	13.2	lb										*2,998	*2,998		*2,712	*2,337	18.9 ft
	3.0	kg							*1,660	*1,660	*1,490	1,340	1,250	980	1,190	930	6.2 m
	9.9	lb							*3,660	*3,660	*3,285	*2,954	*2,756	*2,161	*2,623	*2,050	20.3 ft
	2.0	kg					*3,190	2,810	*2,120	1,810	1,640	1,280	1,230	960	1,110	860	6.4 m
	6.6	lb					*7,033	*6,195	*4,674	*3,990	*3,616	*2,822	*2,712	*2,116	*2,447	*1,896	20.9 ft
	1.0	kg					3,410	2,590	2,200	1,710	1,580	1,230	1,200	930	1,090	840	6.4 m
	3.3	lb					*7,518	*5,710	*4,850	*3,770	*3,483	*2,712	*2,646	*2,050	*2,403	*1,852	21.0 ft
0.0	kg					3,330	2,510	2,130	1,640	1,540	1,190	1,180	910	1,120	860	6.2 m	
0.0	lb					*7,341	*5,534	*4,696	*3,616	*3,395	*2,623	*2,601	*2,006	*2,469	*1,896	20.4 ft	
-1.0	kg	*2,670	*2,670	*3,090	*3,090	3,320	2,510	2,110	1,610	1,520	1,170			1,230	940	5.8 m	
-3.3	lb	*5,886	*5,886	*6,812	*6,812	*7,319	*5,534	*4,652	*3,549	*3,351	*2,579			*2,712	*2,072	19.1 ft	
-2.0	kg	*3,990	*3,990	*4,950	*4,950	3,350	2,540	2,120	1,620	1,540	1,180			1,460	1,190	5.2 m	
-6.6	lb	*8,796	*8,796	*10,913	*10,913	*7,385	*5,600	*4,674	*3,571	*3,395	*2,601			*3,219	*2,491	17.0 ft	
-3.0	kg			*3,940	*3,940	*2,550	*2,550	*1,690	*1,690					*1,560	*1,560	4.1 m	
-9.9	lb			*8,686	*8,686	*5,622	*5,622	*3,726	*3,726					*3,439	*3,439	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.

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	Max.				
Boom 3.55 m, 11'8" Arm 1.7 m, 5'7" Shoe Rubber 450 mm, 1'6" CWT 1,610 kg / 3,550 lb Dozer blade down	5.0	kg							*1,540	*1,540					*1,620	*1,620	4.6 m				
		16.5	lb							*3,395	*3,395					*3,571	*3,571	15.0 ft			
	4.0	kg							*1,600	*1,600	*1,560	1,530			*1,580	1,360	5.3 m				
		13.2	lb							*3,527	*3,527	*3,439	*3,373			*3,483	*2,998	17.5 ft			
	3.0	kg					*2,510	*2,510	*1,920	*1,920	*1,660	1,500			*1,550	1,180	5.8 m				
		9.9	lb					*5,534	*5,534	*4,233	*4,233	*3,660	*3,307			*3,417	*2,601	19.0 ft			
	2.0	kg					*3,740	3,110	*2,360	2,030	*1,850	1,460	*1,610	1,100	*1,600	1,090	6.0 m				
		6.6	lb					*8,245	*6,856	*5,203	*4,475	*4,079	*3,219	*3,549	*2,425	*3,527	*2,403	19.7 ft			
	1.0	kg							*2,720	1,940	*2,030	1,410	*1,650	1,080	*1,650	1,070	6.0 m				
		3.3	lb						*5,997	*4,277	*4,475	*3,109	*3,638	*2,381	*3,638	*2,359	19.7 ft				
	0.0	kg					*3,810	2,930	*2,850	1,900	*2,100	1,380			*1,690	1,110	5.8 m				
		0.0	lb						*8,400	*6,460	*6,283	*4,189	*4,630	*3,042		*3,726	*2,447	19.1 ft			
	-1.0	kg					*3,570	*3,570	*3,890	2,940	*2,730	1,890	*2,000	1,370		*1,730	1,230	5.4 m			
		-3.3	lb						*7,870	*7,870	*8,576	*6,482	*6,019	*4,167	*4,409	*3,020		*3,814	*2,712	17.7 ft	
-2.0	kg					*4,870	*4,870	*3,240	2,980	*2,310	1,910				*1,740	1,530	4.7 m				
	-6.6	lb						*10,736	*10,736	*7,143	*6,570					*3,836	*3,373	15.4 ft			
-3.0	kg							*1,930	*1,930							*1,540	*1,540	3.4 m			
	-9.9	lb						*4,255	*4,255							*3,395	*3,395	11.3 ft			
Boom 3.55 m, 11'8" Arm 1.7 m, 5'7" Shoe Rubber 450 mm, 1'6" CWT 1,610 kg / 3,550 lb Dozer blade up	5.0	kg							*1,540	*1,540					*1,620	*1,620	4.6 m				
		16.5	lb							*3,395	*3,395					*3,571	*3,571	15.0 ft			
	4.0	kg							*1,600	*1,600	*1,560	1,450			*1,580	1,290	5.3 m				
		13.2	lb							*3,527	*3,527	*3,439	*3,197			*3,483	*2,844	17.5 ft			
	3.0	kg					*2,510	*2,510	*1,920	*1,920	*1,660	1,420			1,410	1,120	5.8 m				
		9.9	lb					*5,534	*5,534	*4,233	*4,233	*3,660	*3,131			*3,109	*2,469	19.0 ft			
	2.0	kg					*3,740	2,920	*2,360	1,920	1,740	1,380	1,320	1,030	1,310	1,030	6.0 m				
		6.6	lb						*8,245	*6,437	*5,203	*4,233	*3,836	*3,042	*2,910	*2,271	*2,888	*2,271	19.7 ft		
	1.0	kg							*2,340	1,830	1,690	1,330	1,300	1,020	1,290	1,010	6.0 m				
		3.3	lb						*5,159	*4,034	*3,726	*2,932	*2,866	*2,249		*2,844	*2,227	19.7 ft			
	0.0	kg					3,580	2,740	2,290	1,780	1,660	1,300			1,340	1,050	5.8 m				
		0.0	lb						*7,893	*6,041	*5,049	*3,924	*3,660	*2,866		*2,954	*2,315	19.1 ft			
	-1.0	kg					*3,570	*3,570	3,590	2,750	2,280	1,770	1,650	1,290		1,490	1,160	5.4 m			
		-3.3	lb						*7,870	*7,870	*7,915	*6,063	*5,027	*3,902	*3,638	*2,844		*3,285	*2,557	17.7 ft	
-2.0	kg					*4,870	*4,870	*3,240	2,790	2,300	1,800				*1,740	1,440	4.7 m				
	-6.6	lb						*10,736	*10,736	*7,143	*6,151	*5,071	*3,968			*3,836	*3,175	15.4 ft			
-3.0	kg							*1,930	*1,930							*1,540	*1,540	3.4 m			
	-9.9	lb						*4,255	*4,255							*3,395	*3,395	11.3 ft			
Boom 3.55 m, 11'8" Arm 2.1 m, 6'11" Shoe Rubber 450 mm, 1'6" CWT 1,610 kg / 3,550 lb Dozer blade down	6.0	kg													*1,520	*1,520	4.0 m				
		19.8	lb													*3,351	*3,351	13.0 ft			
	5.0	kg									*1,400	*1,400			*1,330	*1,330	5.1 m				
		16.5	lb									*3,086	*3,086			*2,932	*2,932	16.7 ft			
	4.0	kg									*1,360	*1,360			*1,230	1,190	5.8 m				
		13.2	lb									*2,998	*2,998			*2,712	*2,623	19.0 ft			
	3.0	kg									*1,660	*1,660	*1,490	*1,490	*1,210	1,050	6.2 m				
		9.9	lb									*3,660	*3,660	*3,285	*3,285	*3,109	*2,447	*2,668	*2,315	20.3 ft	
	2.0	kg					*3,190	3,170	*2,120	2,040	*1,700	1,450	*1,490	1,080	*1,250	980	6.4 m				
		6.6	lb						*7,033	*6,989	*4,674	*4,497	*3,748	*3,197	*3,285	*2,381	*2,756	*2,161	20.9 ft		
	1.0	kg					*3,640	2,950	*2,540	1,930	*1,910	1,390	*1,580	1,060	*1,330	960	6.4 m				
		3.3	lb						*8,025	*6,504	*5,600	*4,255	*4,211	*3,064	*3,483	*2,337	*2,932	*2,116	21.0 ft		
	0.0	kg					*3,950	2,870	*2,770	1,860	*2,040	1,350	*1,610	1,040	*1,490	980	6.2 m				
		0.0	lb						*8,708	*6,327	*6,107	*4,101	*4,497	*2,976	*3,549	*2,293	*3,285	*2,161	20.4 ft		
-1.0	kg					*2,670	*2,670	*3,090	*3,090	*4,040	2,860	*2,750	1,840	*2,020	1,330		*1,570	1,070	5.8 m		
	-3.3	lb						*5,886	*5,886	*6,812	*6,812	*8,907	*6,305	*6,063	*4,057	*4,453	*2,932		*3,461	*2,359	19.1 ft
-2.0	kg					*3,990	*3,990	*4,950	*4,950	*3,540	2,890	*2,470	1,850	*1,750	1,340		*1,600	1,280	5.2 m		
	-6.6	lb						*8,796	*8,796	*10,913	*10,913	*7,804	*6,371	*5,445	*4,079	*3,858	*2,954		*3,527	*2,822	17.0 ft
-3.0	kg									*3,940	*3,940	*2,550	*2,550	*1,690	*1,690			*1,560	*1,560	4.1 m	
	-9.9	lb								*8,686	*8,686	*5,622	*5,622	*3,726	*3,726			*3,439	*3,439	13.6 ft	
Boom 3.55 m, 11'8" Arm 2.1 m, 6'11" Shoe Rubber 450 mm, 1'6" CWT 1,610 kg / 3,550 lb Dozer blade up	6.0	kg													*1,520	*1,520	4.0 m				
		19.8	lb													*3,351	*3,351	13.0 ft			
	5.0	kg										*1,400	*1,400			*1,330	*1,330	5.1 m			
		16.5	lb										*3,086	*3,086			*2,932	*2,932	16.7 ft		
	4.0	kg										*1,360	*1,360			*1,230	1,130	5.8 m			
		13.2	lb										*2,998	*2,998			*2,712	*2,491	19.0 ft		
	3.0	kg										*1,660	*1,660	*1,490	1,420	1,330	1,050		*1,210	990	6.2 m
		9.9	lb										*3,660	*3,660	*3,285	*3,131	*2,932	*2,315	*2,668	*2,183	20.3 ft
	2.0	kg					*3,190	2,980	*2,120	1,920	*1,700	1,370	1,300	1,020	1,180	920	6.4 m				
		6.6	lb						*7,033	*6,570	*4,674	*4,233	*3,748	*3,020	*2,866	*2,249	*2,601	*2,028	20.9 ft		
	1.0	kg					3,600	2,760	2,330	1,820	1,670	1,310	1,270	990	1,160	900	6.4 m				
		3.3	lb						*7,937	*6,085	*5,137	*4,012	*3,682	*2,888	*2,800	*2,183	*2,557	*1,984	21.0 ft		
	0.0	kg					3,520	2,680	2,260	1,750	1,630	1,270	1,250	970	1,190	930	6.2 m				
		0.0	lb						*7,760	*5,908	*4,982	*3,858	*3,594	*2,800	*2,756	*2,138	*2,623	*2,050	20.4 ft		
-1.0	kg					*2,670	*2,670	*3,090	*3,090	3,510	2,670	2,230	1,720	1,610	1,250		1,300	1,010	5.8 m		
	-3.3	lb						*5,886	*5,886	*6,812	*6,812	*7,738	*5,886	*4,916	*3,792	*3,549	*2,756		*2,866	*2,227	19.1 ft
-2.0	kg					*3,990	*3,990	*4,950	*4,950	*3,540	2,700	2,240	1,740	1,630	1,270		1,550	1,210	5.2 m		
	-6.6	lb						*8,796	*8,796	*10,913	*10,913	*7,804	*5,952	*4,938	*3,836	*3,594	*2,800		*3,417	*2,668	17.0 ft
-3.0	kg									*3,940	*3,940	*2,550	*2,550	*1,690	*1,690				*1,560	*1,560	4.1 m
	-9.9	lb								*8,686	*8,686	*5,622	*5,622	*3,726	*3,726				*3,439	*3,439	13.6 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.

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:
 2ea on Cab front top LH/RH each
 Battery, 12 V / 100 Ah
 Start motor, 12 V / 2.5 kW
 Travel alarm
 Monitor and keypad
 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
 ISO/SAE pilot control pattern change

Cab and interior

Canopy
 Cup holder
 Seat belt, 2 inch retractable
 Seat belt alarm
 Control joystick
 Master key
 Hour meter (non analog)
 PVC operator seat with suspension
 Travel pedals and hand levers

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:
 1ea on Cab rear
 1ea on boom LH
 1ea on boom LH (1st boom) for 2-piece boom

Caretrack
 Travel alarm
 Anti theft, code-lock
 Rotating warning beacon

Frame

Rearview mirror
 Dozer blade with floating function
 1 690kg (3,726 lb) Heavy counterweight
 Wide dozer blade for 600mm (24") shoe

Undercarriage

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

Hydraulic system

Breaker & shear X1
 - Max. flow: 118 l/min (31 gal/min) (X1 single) / 68 l/min (18 gal/min) (X1 double)
 - Pressure: 21.6 MPa (3,132 psi) (X1 single) / 29.4 Mpa (4,264psi) (X1 double)
 Slope & rotator X3
 - Max. flow and pressure: 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
 Radio with MP3/AUX
 Mechanical hour meter
 Cab mounted FOG (Falling Object Guard)
 FOPS (Falling Object Protection Structure)
 Sun screen, front/roof
 Safety net

Digging equipment

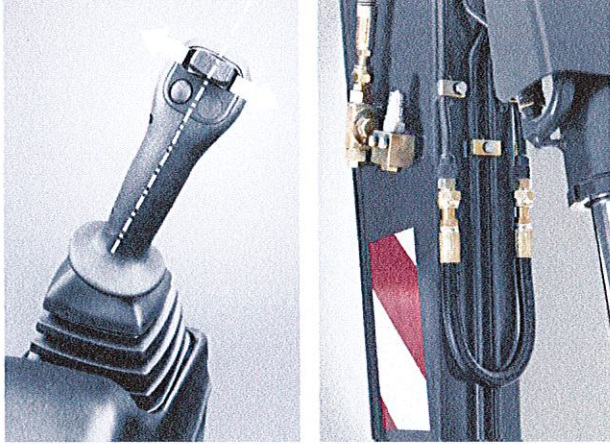
Arm: 2.1m (6'11")

Service

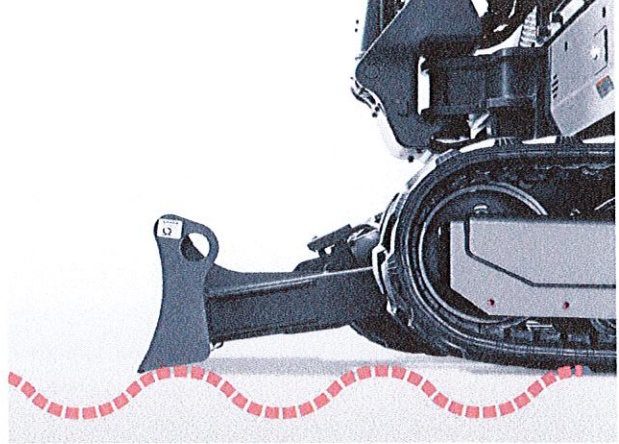
Tool kit, full scale
 Spare parts

SELECTION OF VOLVO OPTIONAL EQUIPMENT

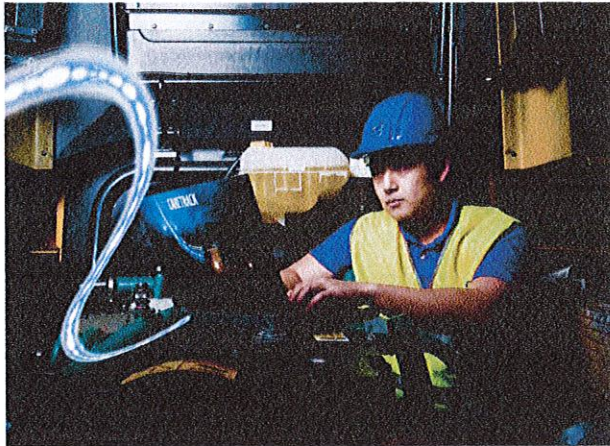
Slope and rotator piping



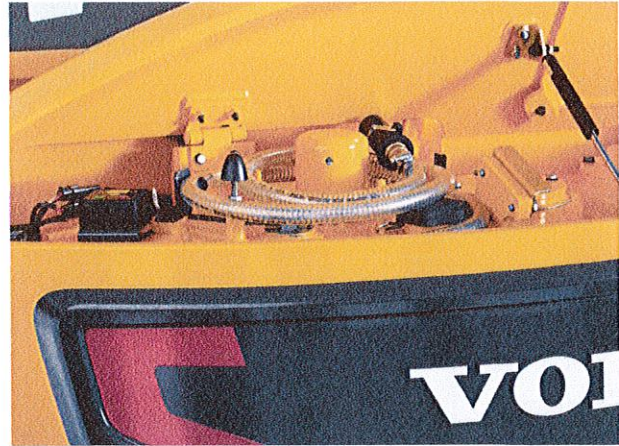
Dozer float



Caretrack



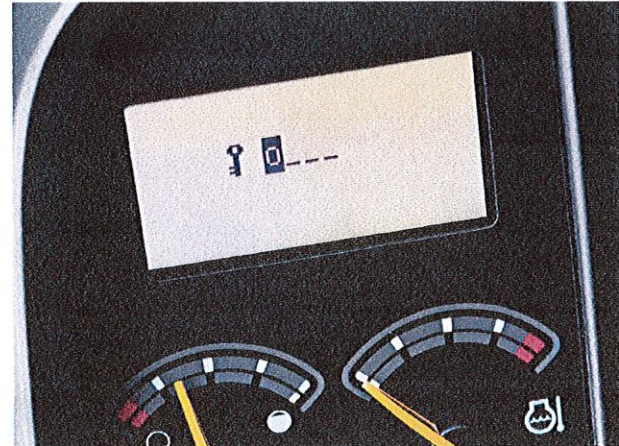
Fuel filler pump



Digital hour meter



Anti-theft



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

Volvo Construction Equipment
volvoce.com

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.

Model: Volvo ECR88D Compact Excavator

Description	Article	MSRP
Volvo ECR88D Compact Excavator	ECR88D	114352.20
Offset Boom 140" (3550mm)	CE12005	0.00
Long Arm, 83" (21000mm) w/ thumb bracket - w/cw CE87002 470lbs (210kg)	CE13019	2067.20
Dozer Blade with Float Function	CE15023	0.00
18" rubber tracks	CE21007	0.00
Engine for NA, Stage V	CE30013	0.00
Auto idling	CE31001	0.00
Engine Auto Shutdown	CE31002	242.08
Standard Cooling Package for Engine and Work Hydraulics	CE32001	0.00
Cab " ONLY" (pre-wired for Caretrack); for heat add CE44005; for heat and a/c add CE44006	CE40022	2995.40
Fabric Seat w/o heat no H/Adj	CE41006	0.00
Seat belt, 3" retractable	CE42003	89.76
ISO Pattern Selector Valve	CE43001	0.00
Heat & A/C	CE44006	2326.96
Rearview mirror	CE45010	153.68
Radio w/ CD and MP3 (n/a w/ canopy)	CE45013	651.44
Sun screen, front/roof	CE45015	0.00
Hour meter, analog	CE45012	0.00
Universal key	CE46002	0.00
Joystick_ w/o X3	CE47011	0.00
Work light basic_LED	CE54002	462.40
Flashing beacon_LED	CE50010	251.60
Extra work light, Cab rear,LED	CE50012	308.04
Extra work light, boom, LH ,LED	CE50013	308.04
Travel alarm w/ delay	CE51001	409.36
Hydraulic oil ISO VG46 14°F to 86°F (-10°C to 30°C)	CE60003	0.00
X1 Piping w offset boom control in r/h joystick	CE62015	0.00
Double-acting circuit (Required when ordering Volvo QC CE8309382)	CE64002	1088.00
Tool kit - daily maintenance	CE70002	0.00
Manual - English	CE71005	0.00
Frame lifetime guarantee	CE72001	0.00
Decals NA	CE80002	0.00
Volvo grey and yellow	CE82001	0.00
CareTrack, GSM	CE85001	0.00
HD Counterweight 470lbs (210kg)	CE87002	0.00
TOTAL PRICE STANDARD SPECIFICATION		125706.16

VOLVO

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

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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.