

**BID SUBMITTAL FORM**  
**Alabama County Joint Bidding Program**  
**Heavy Equipment – Bid Item: TRACK-MOUNTED HYDRAULIC EXCAVATOR**  
**Option B-1**

Company Name: Cowin Equipment Company Inc.

Address: 4325 N. Blvd.

Montgomery AL 36110

Bid Submitted by: John Edwards  
(Name of company representative)

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

Phone: 334-262-6642 Fax: 334-834-2272  
C-850-685-7055

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 Jan. 1, 2024 to Dec. 31, 2024.

JE

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

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

## TRACK-MOUNTED HYDRAULIC EXCAVATOR Option B-1

Total Bid Price for Standard Machine: \$ 188,815.00

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

Freight Preparation and Delivery: \$ 1,750.00

(Included in Standard Machine Bid Price)

Manufacturer's Suggested Retail Price for Standard Machine: \$ 230,639.00

Equipment Model #: Volvo EC 220E

Description: Track Mounted Excavator

Signature of company representative submitting bid: John Edwards

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**  
**TRACK-MOUNTED HYDRAULIC EXCAVATOR**  
**Option B-1**

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) with **any available Options** for the Standard Machine

JE

Equipment Model #: Volvo EC220E

Description: Track Mounted 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.



Sales Code	Description	MSRP
EC220EL	Volvo EC220EL Crawler Excavator	\$183,038
XC10116	Boom, 18' 8" (5.7m), GP	\$16,021
XC10222	Arm, 9' 6" (2.9m), HD	\$9,288
XC10403	Linkage with lifting eye, GP	\$527
XC10503	Decal Kit NA	\$0
XC20106	Track Pads, 32" Triple Grouser	\$11,250
XC20201	Roller guard STD	\$456
XC20302	Lower frame - foldable steps	\$0
XC20402	Belly Cover HD, 10mm	\$318
XC30101	Engine NA	\$0
XC30202	Cooling System High Capacity	\$0
XC30801	Standard fan drive	\$0
XC30401	Air precleaner, Cyclone	\$114
XC30910	Quick Hyd Oil Fill connection	\$0
XC40112	Anti-vandal mounting brackets on cab	\$0
XC40103	CareCab w/ Opening Hatch	\$460
XC40203	Seat, Air suspension w/Heater & X-Isolator	\$1,221
XC41204	Seat Belt, 3 inch Retractable	\$0
XC40301	Volvo Active Control	\$0
XC40502	Air conditioning, ACC (automatic climate control)	\$2,570
XC40602	Universal key	\$0
XC40708	Radio with MP3, USB port & Bluetooth	\$0
XC50801	Guardrail	\$0
XC50000	Work lights on deck & boom, Halogen	\$0
XC50101	Extra work lights on cab front/rear, CWT, boom & RH side, Halogens	\$349
XC50102	Travel alarm	\$0
XC50132	Battery switch protector	\$0
XC50144	Volvo Smart View on Instrument Cluster only	\$0
XC50155	Dig Assist Start	\$0
XC50402	CareTrack, GSM/Satellite	\$0
XC50404	CareTrack Connectivity 4 yr Subscription	\$0
XC50406	De-activate SAT	\$0
XC60102	Hydraulic oil ISO VG46	\$628
XC61301	Pre-setting for hyd. pressure (piping not installed for long reach boom and arm)	\$190
XC70302	Manual, English	\$0
XC80121	Counterweight, 9,260lbs (4200kg)	\$4,211
XC80202	Under cover HD, 4.5mm superstructure	\$0
XC70501	Frame lifetime guarantee	\$0
XC8291357	Less Bucket with pins	\$0
	MSRP Total	\$230,639



# **BID SPECIFICATIONS FOR TRACK-MOUNTED HYDRAULIC EXCAVATOR Option B-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 **49,000 lbs.**

Yes ☒ No ☐  
Page # 22

minimum **348** cubic inch diesel engine with  
minimum **170 net** flywheel horsepower, **(6) Cylinder.**

Yes ☒ No ☐  
Page # 20

**Engine must be designed and manufactured by machine manufacturer**

Yes ☒ No ☐  
20

### STARTING SYSTEM

Shall be equipped with a **24-volt** electrical system.

Yes ☒ No ☐  
Page # 20

### UNDERCARRIAGE

Track length shall be **minimum 14.5'**

Yes ☒ No ☐  
Page # 21

- Track shoe width shall be **minimum 31"**. 24"

Yes ☒ No ☐  
Page # 22

**Minimum eight (8)** track rollers per side.

Yes ☒ No ☐  
Page # 20

**Minimum two (2)** carrier rollers per side.

Yes ☒ No ☐  
Page # 20

### CAPACITIES

Fuel Tank Capacity – **85-gallon minimum**

Yes ☒ No ☐  
Page # 20

Hydraulic Tank Capacity – **30 gallon minimum**

Yes ☒ No ☐  
Page # 20

Engine Coolant – **6.6-gallon minimum**

Yes ☒ No ☐  
Page # 20

### BOOM AND STICK

One-piece boom with **minimum 18'** length

Yes ☒ No ☐  
Page # 21

Stick shall be a **minimum 9.5'** long

Yes ☒ No ☐  
Page # 2

### DIMENSIONS

Reach at ground level – **30' minimum**

Yes ☒ No ☐  
Page # 23

Bucket breakout force – **minimum 28,000 lbs.**

Yes ☒ No ☐  
Page # 23

Stick digging force – minimum **22,500 lbs.**

Yes ☒ No ☐  
Page # 23

**HYDRAULICS**

Hydraulic pump output shall be a minimum of **110 GPM**

Yes ☒ No ☐  
Page # 20

**CAB**

Enclosed ROPS cab with Air Conditioner and heater

Yes ☒ No ☐  
Page # 26

Factory installed air conditioning

Yes ☒ No ☐  
Page # 26

Defroster

Yes ☒ No ☐  
Page # 26  
*Part of Heater, A/C*

**Bucket:**

**Standard with no bucket. Buckets will be considered optional attachment's.**



# **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 27, 2023**. Bid specifications are available at <http://www.alabamacounties.org/heavy-equipment/> for each of the following items:

Backhoes  
Track Mount Excavators  
Compact Track Mount Excavators  
Mini Track Excavator  
Wheeled Excavators  
Highway Speed Truck Excavators  
Motorgraders  
Heavy Duty Hydrostatic Bulldozers  
Mulching Dozer  
Wheel Loaders  
Heavy Duty Dump Chassis'  
Lowboy Tractors  
Skid Steer Attachments  
Asphalt Milling Attachments

Ride-on Industrial Boom Mowers  
Rubber Tire Roller  
7.5 Ton Single Drum Vibratory Roller  
One-man Pothole Patchers  
Trailer Mounted Patcher s  
Trailer Mount Mastic Patcher/Crack Sealer  
Asphalt Storage Tanks  
Half Round End Dump Trailer  
Lowboy Trailers  
16' Steel Dump Bodies (Automatic and Manual)

**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 27, 2023 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 27, 2023 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](mailto: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](mailto: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 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](mailto: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 36103  
E-mail: [pattymackdaddy@gmail.com](mailto:pattymackdaddy@gmail.com)



# ACCA

Volvo Construction Equipment  
Building Tomorrow



John Edwards  
Governmental Sales Manager  
850-685-7055  
[jedwards@cowin.com](mailto:jedwards@cowin.com)

# EC220E

Volvo Excavators 20.6-25.1t / 45,350-55,360 lb 173 hp





# A passion for performance

At Volvo Construction Equipment, we're not just coming along for the ride. Developing products and services that raise productivity – we are confident we can lower costs and increase profits for customers around the globe. Part of the Volvo Group, we are passionate about innovative solutions to help you work smarter – not harder.

## Helping you to do more

Doing more with less is a trademark of Volvo Construction Equipment. High productivity has long been married to low energy consumption, ease of use and durability. When it comes to lowering life-cycle costs, Volvo is in a class of its own.

## Designed to fit your needs

There is a lot riding on creating solutions that are suited to the particular needs of different industry applications. Innovation often involves high technology – but it doesn't always have to. Some of our best ideas have been simple, based on a clear and deep understanding of our customers' working lives.



## You learn a lot in 180 years

Over the years, Volvo has advanced solutions that have revolutionized the use of construction equipment. No other name speaks Safety louder than Volvo. Protecting operators, those around them and minimizing our environmental impact are traditional values that continue to shape our product design philosophy.

## We're on your side

We back the Volvo brand with the best people. Volvo is truly a global enterprise, one that is on standby to support customers quickly and efficiently – wherever they are.

## We have a passion for performance.

## A strong, dedicated, capable dealer network

Our dealers are strategically located throughout North America to provide the equipment you need and the parts and service support you demand for a productive and profitable operation.

The strength of our dealer network is enhanced with extensive individualized product support training at our best-in-class Customer Center in Shippensburg and through hands-on training. Using a great Product Demonstration Center featuring a dedicated area for most common applications, visitors operate equipment from our entire product line under a variety of simulated working conditions. This facility is in year-round use by our dealers and customers.

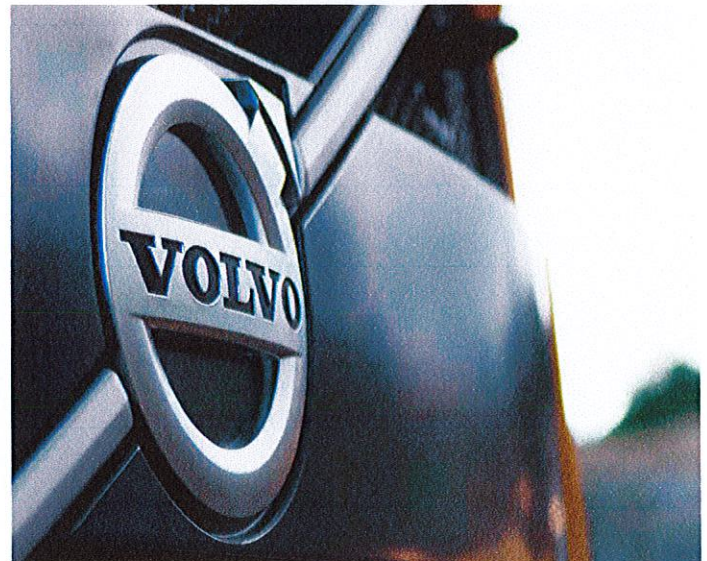
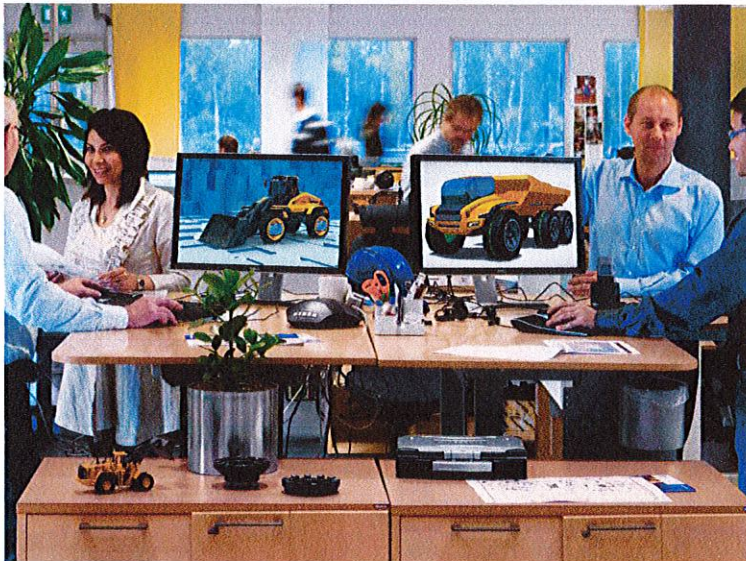
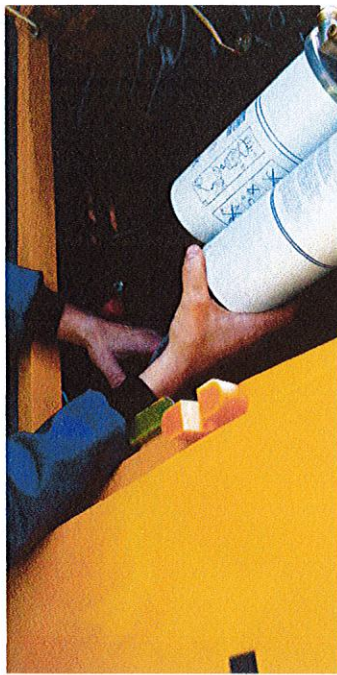
## Building the best starts right here.

The products designed and manufactured by Volvo Construction Equipment have their beginnings at the most advanced Research & Design centers in the industry. Volvo CE machines are designed in 11 R&D centers and produced in 15 manufacturing facilities across the world.

The major R&D center and manufacturing plant in the Americas is located in Shippensburg, Pennsylvania. This facility has been in operation for over 30 years and – with its recently added 200,000 sq. ft. expansion – now covers 570,000 sq. ft. on an 80 acre campus. Dedicated work teams and highly advanced technologies and techniques using the Volvo Production System ensure continuous quality improvements, labor savings and cost control to reach the high quality that our customers have come to expect from Volvo.



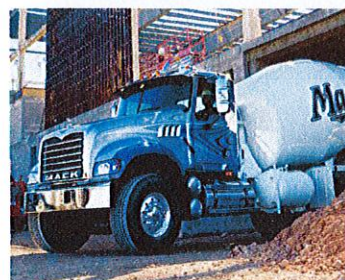




Volvo Trucks



Renault Trucks



Mack Trucks



UD Trucks



Volvo Buses



Volvo Construction Equipment



Volvo Penta



Volvo Financial Services

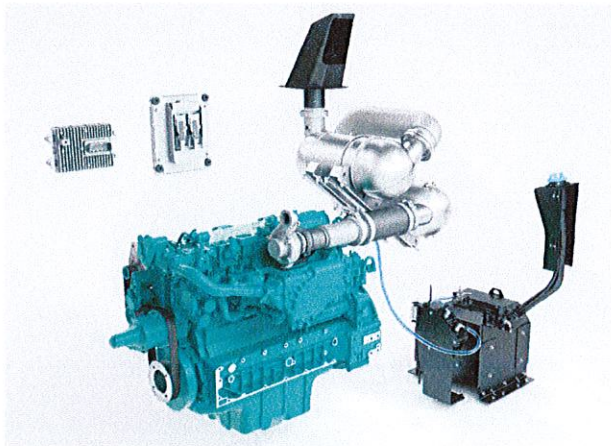


# Best in Class Efficiency

The EC220E builds on its efficiency reputation from the D-Series by ensuring all components work together and complement each other. The enhancements deliver the best in class fuel efficiency while not compromising on power – reducing emissions and consumption, while increasing productivity.

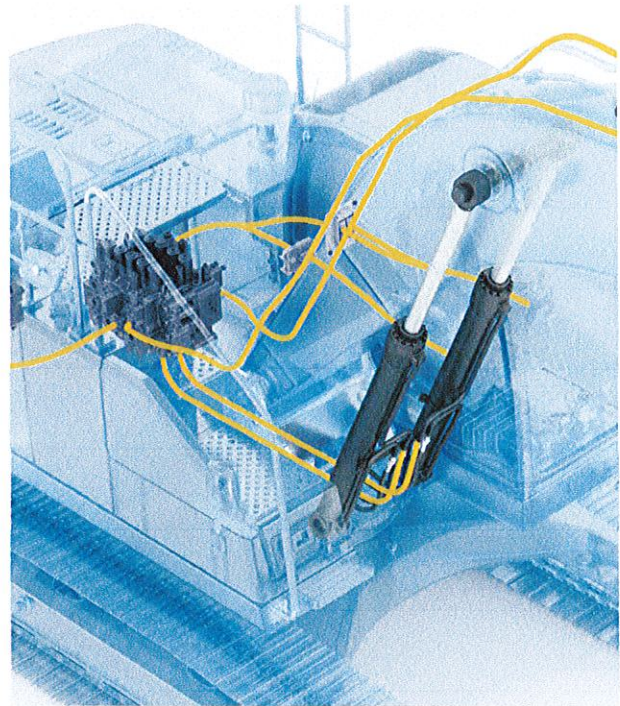
## Volvo engine

Featuring proven advanced technology, and built on decades of experience, Volvo's robust D6 Tier 4 Final engine boasts more power - while reducing both fuel consumption and emissions to deliver superior quality, reliability and durability.



## Increased power

The increased pump input power creates a highly responsive operation resulting in greater productivity and faster cycle time.



## Boom float function

With the boom float function, the pump power for boom lowering can be saved or used for other functions, reducing the cycle time. Also, the grading operation can be made easier.



## Main Control Valve and Software

The valve is compatible with software in the machine to aid controllability, by providing smooth and easy operation. In addition to increased swing force, the EC220E also comes with a boom swing priority valve; this enhances controllability of the swing and boom operation – making it ideal for loading trucks.

## Auto engine shutdown

To reduce fuel consumption, the engine will automatically switch off when the machine is inactive for a pre-set amount of time (five minutes is the default setting).





# OPTIMIZED HYDRAULICS

The hydraulics system, combined with the fully electronic control system and advanced ECO mode, has been optimized to work in harmony with D6 Tier 4 Final engine to match the engine power, reduce power loss and improve controllability and response time.





# HUMAN MACHINE INTERFACE (HMI)

All machine interfaces – including joysticks, keypad, panel and larger LCD monitor – are ergonomically designed for optimum control and efficiency, resulting in increased productivity and workplace wellbeing.. The number of switches have been simplified and climate control integrated into the keypad for easy adjustments.

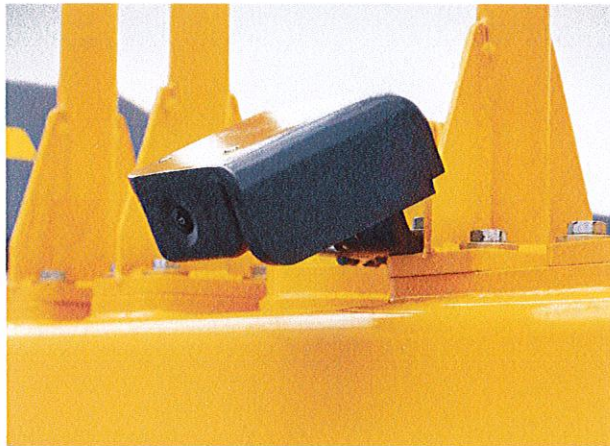


# First Choice for Comfort

The cab design puts the operator in the drivers' seat to control personal specifications - from climate control, to short-cut functions on the joystick. The spacious cab allows the operator to move comfortably, to create a working environment that naturally promotes increased productivity.

## Side view camera

As well as the rear view camera, side view camera can be optionally available for customers' comfort. Both views are displayed on the colour monitor, creating a safer working environment, protecting the operator and personnel on the ground.



## Short-cut key

For added convenience, functions such as windshield wipers, cameras, auto-mute or power max function can all be assigned a short-cut button on the joystick. This allows the operator to select a function during the application without disruption.



## Bluetooth®

To aid operator convenience and support better productivity, you can now connect a Bluetooth device to the machine enabling the handsfree function.



## Seatbelt warning alarm

If the seatbelt is not buckled when the ignition key is turned, an alarm is triggered in intervals along with a continuous visual alert. This emphasises our priority for operator safety.



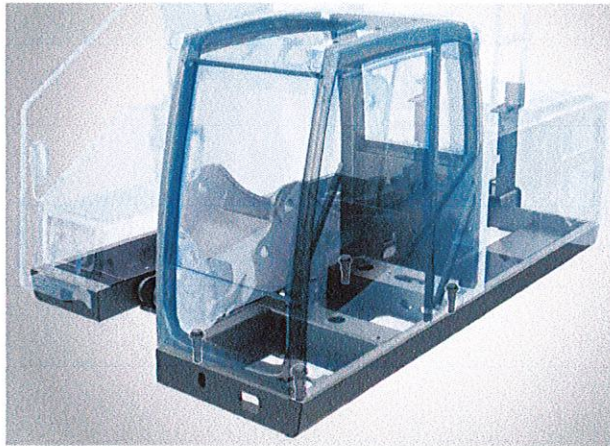


# Building on Foundations of Trust and Quality

Quality is one of Volvo's core values and it goes hand-in-hand with reliability and durability. The EC220E pays particular attention to having all the components working at a high level of capacity but also being built to stand the test of time – providing the customer and operator with peace of mind.

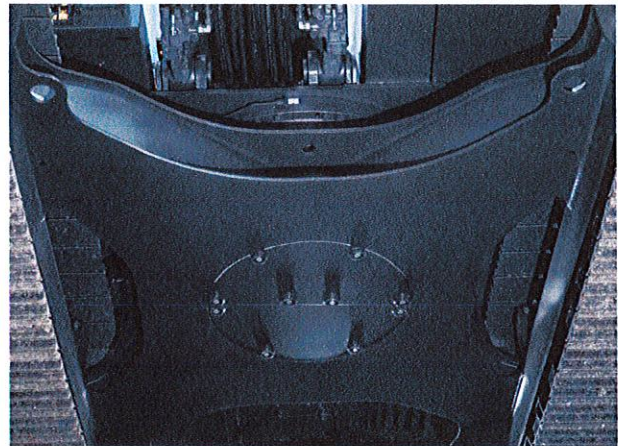
## ROPS

The cab features ROPS – this reinforced steel structure ensures the operator is protected in the unlikely event of the machine rolling over, while it also meets the ISO standards for safety.



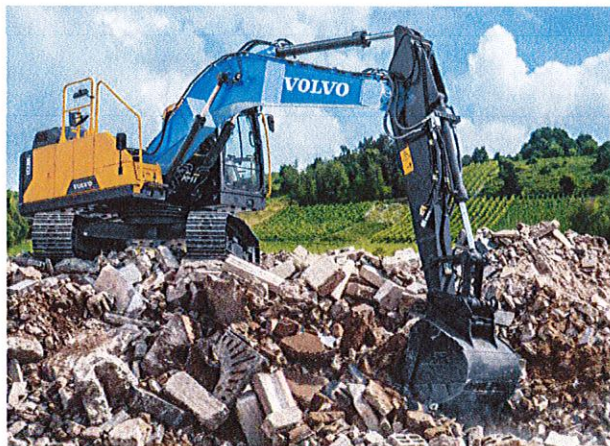
## Lower frame

The intelligently designed X-shape lower frame enables even weight distribution increasing stability and durability - preventing damage from rock and debris.



## Boom and Arm

The robust design includes internal plates positioned to support pressure points during the range of applications. This helps disperse the stress from high-pressure areas of the boom and arm, to ensure maximum productivity time after time, during the most demanding applications.



## Narrow and Heavy-duty (NH) Undercarriage

The EC220E NH's oversized and heavy-duty undercarriage creates excellent tractive force for improved durability and reliability in demanding terrain. A robust undercarriage increases the service life of the machine.







# BUILT TO LAST

Working in tough conditions means every component matters - this is why Volvo pays extra attention to each detail during the manufacturing and product design processes. Silicone caulking is used to prevent rust, waterproof harnesses and connections are installed - as well as heavy-duty door hinges and bolted-on protection for the frame-work lights.





# ULTIMATE TOOL CARRIER

The machine can be adjusted to take a wide variety of hydraulic lines, which are factory fitted with breaker and shear piping (X1), as well as rotator piping (X3). State-of-the-art auxiliary lines provide the correct flow and pressure for special attachments such as mowers and grinders, shears, crushers and tilt rotators among other attachments. You can choose between the one or two pump flow to maximize profits and productivity.

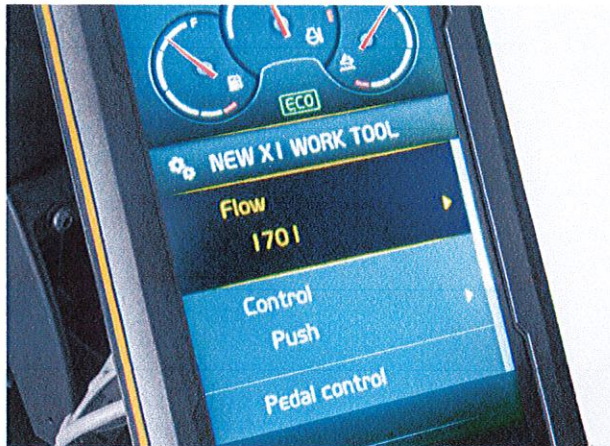


# Customer Choice

Creating a machine that can adapt to a number of attachments increases productivity and reduces cycle time. The EC220E not only manages to achieve this versatility but it is a machine that incorporates the same high quality performance across its entire menu of applications – meaning the operator is safe in the knowledge that with Volvo there is no better option.

## Attachment Management System

The password protected management system allows storage for up to 20 different attachments. It pre-sets and permits hydraulic flow and pressure to be adjusted within the cab, which ensures the use of various attachments for increased versatility.



## Extra pipping

An additional piping solution is available on the breaker and shear piping (X1), accommodating the use of tilt/rotator attachments.



## Electrical pedal

The electric pedal offers precise control to allow the operator to use a wider variety of attachments.



## Response mode

The attachment response sensitivity can be adjusted using the keypad. This allows the operator to tailor machine response for maximum impact in different environments.





# Proactive Maintenance Solutions

Maintaining your machine will ensure you get the maximum lifetime and productivity. This is why Volvo have made this process easy – developing it to be fast, regular and safe.

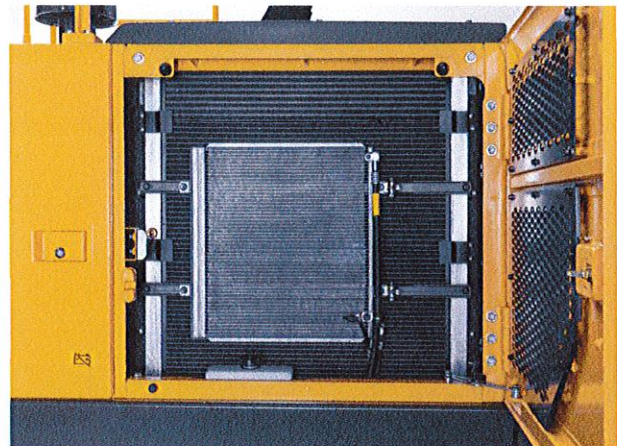
## Full size guard rails

Multiple sturdy handrails provide safe and easy access to the superstructure for inspection and maintenance.



## Single layer cooling system

The radiator, charged air cooler and hydraulic oil cooler are situated side-by-side on a single layer, to maximize efficiency, reduce blockages and aid cleaning. The system is easily accessed from ground level by simply opening the side door.



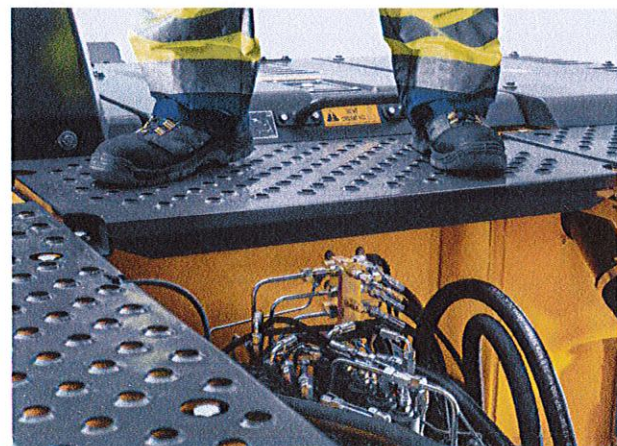
## Service interval alerts

Real-time service alerts are displayed on the colour monitor to enable diagnostic checks. Separate service intervals include – the engine oil/ filter, fuel filter/water separator, hydraulic oil and hydraulic oil filter. This ensures peace of mind and maximum uptime.



## Anti-slip steel plates

Well-positioned punched anti-slip plates provide superior grip and durability. The design facilitates easy cleaning while promoting safety.







# GROUPED FILTERS

Maintaining a good level of inspection is important for machine longevity and that is why Volvo has grouped filters together, making them easily accessible for regular checks to maximize machine uptime.





# MATCHED ATTACHMENTS

Volvo's durable attachments have been purpose-built to work in perfect harmony with Volvo machines, forming one solid, reliable unit. With functions and properties ideally matched, Volvo attachments are an integrated part of the excavator for which they're intended.

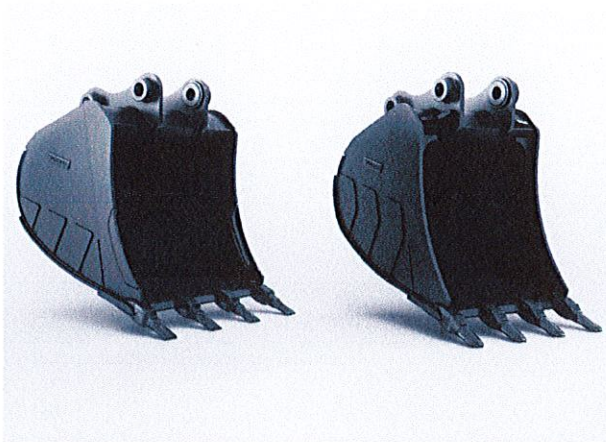


# Mix and match for a superior fit

Maximize your productivity and profitability with Volvo's EC220E crawler excavator and a range of durable attachments. Increase your versatility, access more applications and perform a variety of tasks – all while experiencing faster cycle times and excellent control.

## Buckets – GP/HD/XD

Volvo's buckets are the perfect tool for digging and re-handling in all conditions from soft, medium and hard materials. Heavy-duty buckets are intended for productive digging in compact materials. All provide maximum productivity and long life and feature original Volvo wear components.



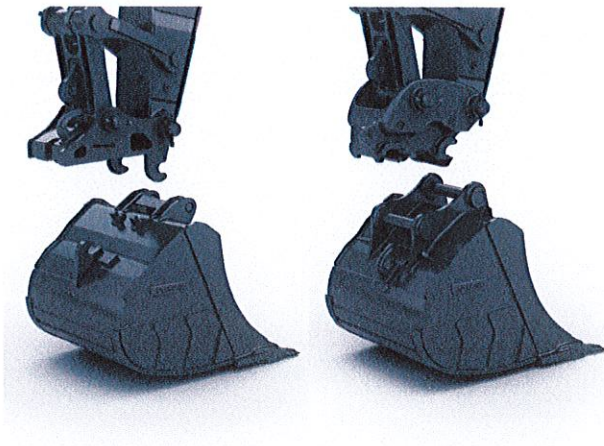
## Breakers HB21, HB22

The HB-Series of hydraulic breakers are optimized to the specific weights of Volvo machines and tailored to Volvo quick couplers for swift, safe and simple attachment changes. They are available with a full assortment of tools.



## Quick Coupler

Volvo offers a full range of quick couplers, from its dedicated Volvo S-type coupler to the Steelwrist® ones. Both couplers feature Front Pin Lock technology, which allows supreme safety when changing attachments. Those innovative couplers are not only designed to fit perfectly with Volvo excavators but they also comply with the latest safety regulations of ISO 13031 and EN474-1. Steelwrist® is a registered trademark of Steelwrist AB



## Tilt Rotator

Volvo's tilt rotator can be ordered factory installed with multifunctional joysticks and color display that's fully integrated into the machine's system. The new series of Volvo XD excavator buckets are perfectly matched to the factory installed tilt rotator.





# Improved total cost of ownership

## OPTIMIZED HYDRAULICS

Designed to perfectly match the engine power, reduce power loss, and improve controllability and response time.

### Boom and Arm

To achieve the best performance, select the most suitable boom and arm configuration combination for your requirements.

## ULTIMATE TOOL CARRIER

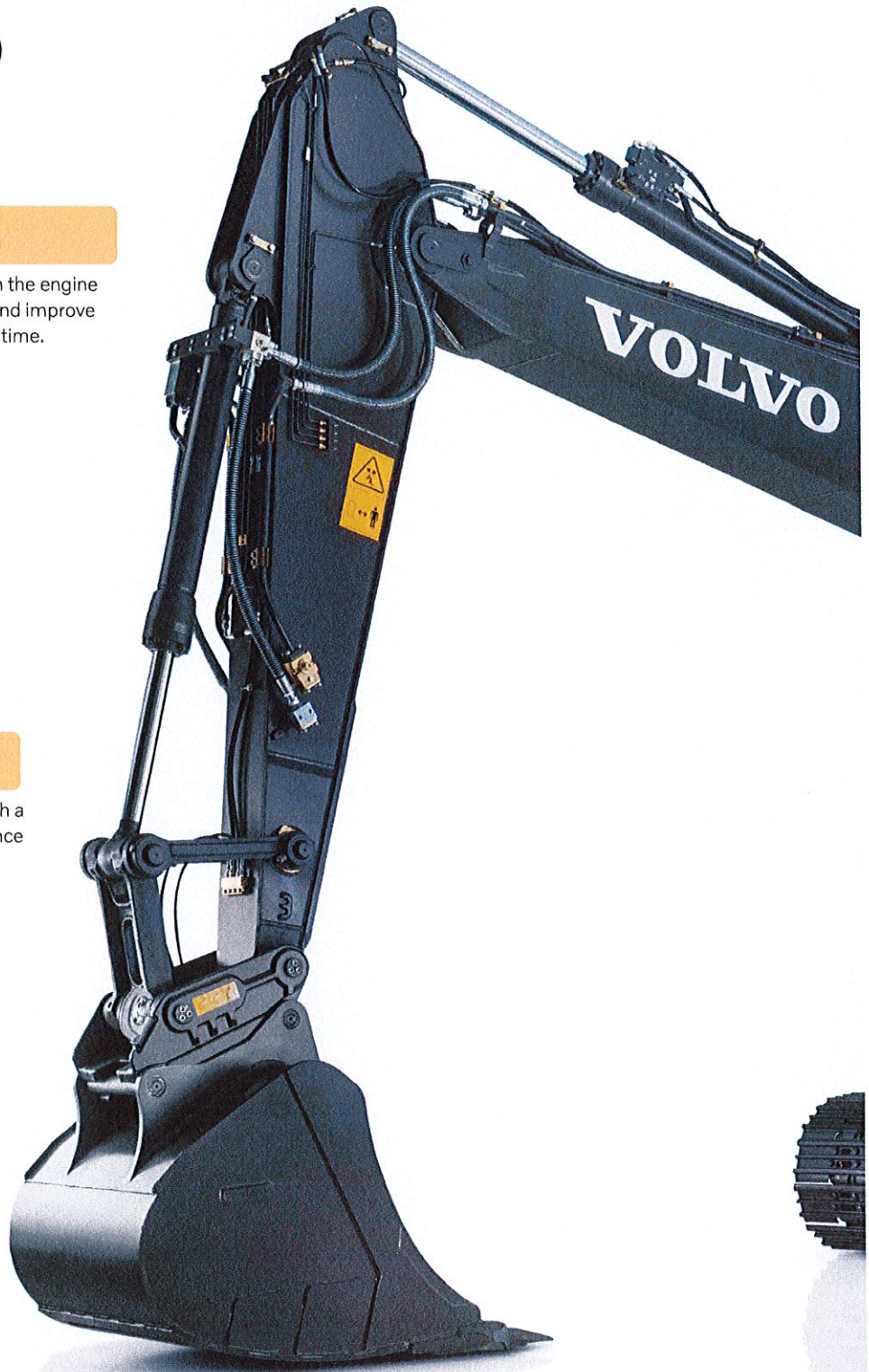
Designed to not only be compatible with a range of attachments, but also to enhance their performance by easily and quickly switching to accommodate any needs.

### Boom float function

The pump power for boom lowering can be saved or used for other functions, reducing the cycle time. Also, the grading operation can be made easier.

### Attachment Management System

The password protected management system allows storage for up to 20 different attachments. It pre-sets and permits hydraulic flow and pressure to be adjusted within the cab.





## HMI

All machine interfaces are ergonomically positioned and designed for optimum control and efficiency.

### Side view camera

Covers the visual blind spot at the side of machine. View is displayed on the colour monitor, creating a safer working environment, protecting the operator and personnel on the ground.

### Full size guard rails

Multiple sturdy handrails provide safe and easy access to the super-structure for inspection and maintenance.

### Short-cut key

For ease of use, functions such as windshield wipers, cameras, auto-mute or power max function can all be assigned a short-cut button on the joystick.

### Bluetooth®

Bluetooth and hands-free functions have been added, allowing the operator to connect to wireless functions for increased comfort and safety.

### Volvo engine

Volvo's efficient D6 Tier 4 Final engine gives you more power while consuming less fuel for low emission levels.

### Diesel Exhaust Fluid (DEF)

Volvo offers a total DEF solution that is quality assured, cost efficient and easily accessible. Contact your Volvo dealer for more information.

## GROUPED FILTERS

Filters are well grouped and easily accessible from the ground level. This facilitates the speed and ease of servicing.

## BUILT TO LAST

All detail – no matter how small – is overlooked. Silicone caulking is used to prevent rust, waterproof harnesses and connections have been installed – as well as heavy-duty door hinges and bolted-on protection for the framework lights.





# 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.









# Volvo EC220E in detail

## Engine

The latest generation, Volvo engine Tier 4f emissions compliant diesel engine fully meets the demands of the latest, emissions regulations. Featuring Volvo Advanced Combustion Technology (V-ACT), it is designed to deliver superior performance and fuel efficiency. The engine uses precise, high pressure fuel injectors, turbo charger and air-to-air intercooler, and electronic engine controls to optimize machine performance.

Air Filter: 3-stage with precleaner

Automatic Idling System: Reduces engine speed to idle when the levers and pedals are not activated resulting in less fuel consumption and low cab noise levels.

Engine	Volvo	D6J
Max power at	r/min (r/s)	1 800 (30)
Net, ISO 9249/SAE J1349	kW (hp)	128 (172)
Gross, ISO 14396/SAE J1995	kW (hp)	129 (173)
Max torque	Nm (ft lbf)	849 (626)
at engine speed	r/min (r/s)	1 350 (22.5)
No. of cylinders		6
Displacement	l (in³)	5.7 (348)
Bore	mm (in)	98 (3.86)
Stroke	mm (in)	126 (4.96)

## Electrical system

Well protected high-capacity electrical system. Waterproof double-lock harness plugs are used to secure corrosion-free connections. The main relays and solenoid valves are shielded to prevent damage. The master switch is standard.

Contronics provides advanced monitoring of machine functions and important diagnostic information.

Voltage	V	24
Batteries	V	2 x 12
Battery capacity	Ah	140
Alternator	V/A	28/80
Start motor	V - kW	24 - 5.5

## Swing system

The swing system uses an axial piston motors, driving a planetary gearbox for maximum torque. An automatic holding brake and antirebound valve are standard.

Max. slew speed	r/min	11.1
Max. slew torque	kNm (ft lbf)	83 (61,220)

## 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. The travel motor, brake and planetary gears are well protected within the track frame.

Max. drawbar pull	kN (lbf)	183 (41,150)
Max. travel speed (low)	km/h (mi/h)	3.5 (2.2)
Max. travel speed (high)	km/h (mi/h)	5.7 (3.5)
Gradeability	°	35

## Undercarriage

Robust X-shaped frame with greased and sealed track chains as standard

Track shoes		2 x 49
Link pitch	mm (in)	190 (7.5)
Shoe width, triple grouser	mm (in)	500 / 600 / 700 / 800 / 900 (20 / 24 / 28 / 32 / 36)
Shoe width, triple grouser (HD)	mm (in)	600 (24)
Shoe width, double grouser	mm (in)	700 (28)
Bottom rollers		2 x 8
Top rollers		2 x 2

## Hydraulic system

The hydraulics system, combined with the fully electronic control system and advanced ECO mode, has been optimized to work in harmony with engine to match the engine power, reduce power loss and improve controllability and response time. The following important functions are included in the system:

Summation system: Combines the flow of both hydraulic pumps to ensure quick cycle times and high productivity.

Arm priority: Gives priority to the arm operation for faster cycle times in leveling and for increased bucket filling when digging.

Swing priority: Gives priority to swing functions for faster simultaneous operations.

Regeneration system: Prevents cavitation and provides flow to other movements during simultaneous operations for maximum productivity.

Power boost: All digging and lifting forces are increased.

Holding valves: Boom and arm holding valves prevent the digging equipment from creeping.

Main pump: 2 x variable displacement axial piston pumps

Maximum flow	l/min (gal/min)	2 x 207 (2 x 55)
--------------	-----------------	------------------

Pilot pump: Gear pump

Maximum flow	l/min (gal/min)	1 x 18 (1 x 5)
--------------	-----------------	----------------

## Relief valve setting pressure

Implement	MPa (psi)	34.3 / 36.3 (4,980 / 5,260)
Travel circuit	MPa (psi)	34.3 (4,980)
Slew circuit	MPa (psi)	27.9 (4,050)
Pilot circuit	MPa (psi)	3.9 (570)

Travel: Variable displacement axial piston motor with mechanical brake

Slew: Fixed displacement axial piston motor with mechanical brake

## Hydraulic Cylinders

Mono boom		2
Bore x Stroke	ø x mm (ø x in)	125 x 1235 (4.9 x 48.6)
2 piece boom		1
Bore x Stroke	ø x mm (ø x in)	160 x 1070 (6.3 x 42.1)
Arm		1
Bore x Stroke	ø x mm (ø x in)	135 x 1540 (5.3 x 60.6)
Bucket		1
Bore x Stroke	ø x mm (ø x in)	120 x 1065 (4.7 x 41.9)
Bucket for LR boom		1
Bore x Stroke	ø x mm (ø x in)	100 x 865 (3.9 x 34.1)

## Cab

The operator's cab has easy access via a wide door opening. The cab is supported on hydraulic dampening mounts to reduce shock and vibration levels. These along with sound absorbing lining provide low noise levels. The cab has excellent all-round visibility. The front windshield can easily slide up into the ceiling, and the lower front glass can be removed and stored in the side door. Integrated air-conditioning and heating system: The pressurized and filtered cab air is supplied by an automatically-controlled fan. The air is distributed throughout the cab from 14 vents.

Ergonomic operator's seat: The adjustable seat and joystick console move independently to accommodate the operator. The seat has nine different adjustments plus a seat belt for the operator's comfort and safety.

## Sound Level

Sound pressure level in cab according to ISO 6396

L <sub>PA</sub> (standard)	dB	69
L <sub>PA</sub> (tropical)	dB	70

External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC

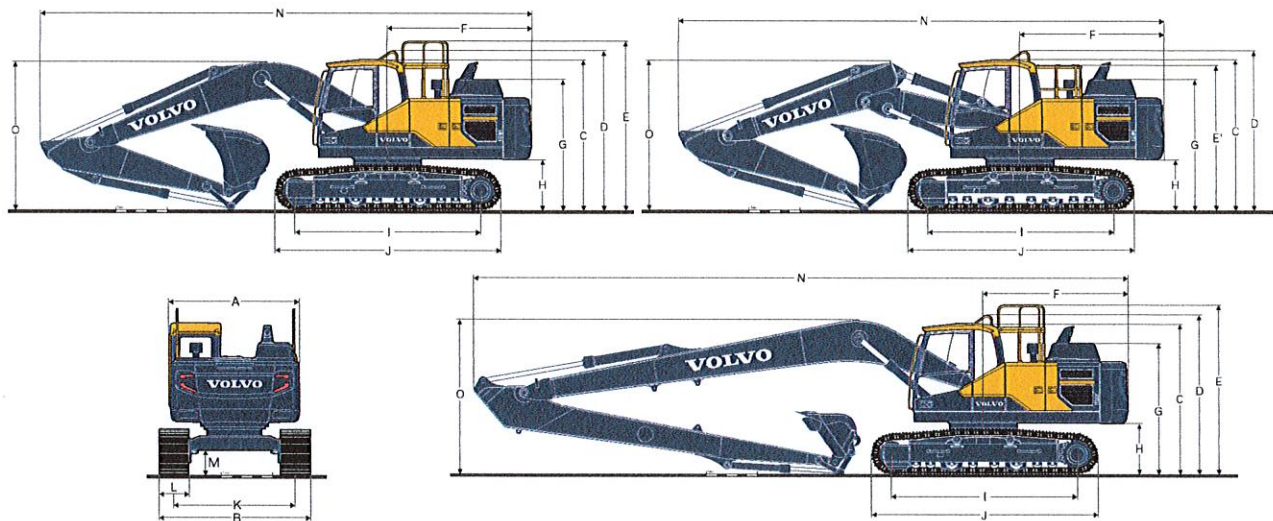
L <sub>WA</sub> (standard)	dB	102
L <sub>WA</sub> (tropical)	dB	103

## Service Refill

Fuel tank	l (gal)	320 (85)
DEF/AdBlue® tank	l (gal)	27 (7)
Hydraulic system, total	l (gal)	290 (77)
Hydraulic tank	l (gal)	140 (37)
Engine oil	l (gal)	25 (7)
Engine coolant	l (gal)	35 (9)
Slew reduction unit	l (gal)	6 (2)
Travel reduction unit	l (gal)	2 x 5.8 (2 x 2)



# Specifications



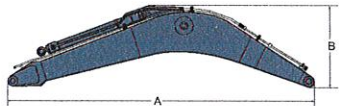

## DIMENSIONS

Description	Unit	EC220EL								EC220ELR	
		5.7 (18'8") mono and 5.57 (18'3") 2-piece								8.85	29'0"
Boom	m, ft in										
Arm	m, ft in	2.0	6'7"	2.5	8'2"	2.9	9'6"	3.5	11'6"	6.25	20'6"
A. Overall width of upper structure	mm ft in	2 540	8'4"	2 540	8'4"	2 540	8'4"	2 540	8'4"	2 540	8'4"
B. Overall width	mm ft in	2 990	9'10"	2 990	9'10"	2 990	9'10"	2 990	9'10"	3 190	10'6"
C. Overall height of cab	mm ft in	2 955	9'8"	2 955	9'8"	2 955	9'8"	2 955	9'8"	2 955	9'8"
D. Overall height of handrail	mm ft in	3 075	10'1"	3 075	10'1"	3 075	10'1"	3 075	10'1"	3 075	10'1"
E. Overall height of guardrail(unfolded)	mm ft in	3 270	10'9"	3 270	10'9"	3 270	10'9"	3 270	10'9"	3 270	10'9"
E'. Overall height of guardrail(folded)	mm ft in	2 790	9'2"	2 790	9'2"	2 790	9'2"	2 790	9'2"	2 790	9'2"
F. Tail swing radius	mm ft in	2 850	9'4"	2 850	9'4"	2 850	9'4"	2 850	9'4"	2 850	9'4"
G. Overall height of engine hood	mm ft in	2 600	8'6"	2 600	8'6"	2 600	8'6"	2 600	8'6"	2 600	8'6"
H. Counterweight clearance *	mm ft in	1 025	3'4"	1 025	3'4"	1 025	3'4"	1 025	3'4"	1 025	3'4"
I. Tumbler length	mm ft in	3 660	12'0"	3 660	12'0"	3 660	12'0"	3 660	12'0"	3 660	12'0"
J. Track length	mm ft in	4 460	14'8"	4 460	14'8"	4 460	14'8"	4 460	14'8"	4 460	14'8"
K. Track gauge	mm ft in	2 390	7'10"	2 390	7'10"	2 390	7'10"	2 390	7'10"	2 390	7'10"
L. Shoe width	mm ft in	600	2'0"	600	2'0"	600	2'0"	600	2'0"	800	2'7"
M. Min. ground clearance *	mm ft in	460	1'6"	460	1'6"	460	1'6"	460	1'6"	460	1'6"
N. Overall length	mm ft in	9 795	32'2"	9 745	32'0"	9 690	31'9"	9 720	31'11"	12 880	42'3"
N1. Overall length	mm ft in	9 660	31'8"	9 610	31'6"	9 570	31'5"	9 560	31'4"	-	-
O. Overall height of boom	mm ft in	3 100	10'2"	3 080	10'1"	2 940	9'8"	3 260	10'8"	3 055	10'0"
O1. Overall height of boom	mm ft in	3 065	10'1"	3 065	10'1"	2 960	9'9"	3 310	10'10"	-	-

\* Without shoe grouser.

1 2-piece boom

## DIMENSIONS

Boom					Arm								
													
Description	Unit	mono		mono		2-piece		Long-Reach					
Boom	m	5.7	18'8"	5.7 HD	18'8"	5.57	18'3"	8.85	29'0"				
Length	mm	5 910	19'5"	5 910	19'5"	5 780	19'0"	9 060	29'9"				
Height	mm	1 585	5'2"	1 585	5'2"	1 570	5'2"	1 460	4'9"				
Width	mm	670	2'2"	670	2'2"	670	2'2"	670	2'2"				
Weight	kg	2 006	4,420	2 151	4,740	2 585	5,700	2 510	5,530				
* Includes cylinder, piping and pin, excludes boom cylinder pin													
Description	Unit	Long-Reach											
Arm	m	2.0	6'7"	2.5	8'2"	2.9	9'6"	2.9 HD	9'6"	3.5	11'6"	6.25	20'6"
Length	mm	3 065	10'1"	3 525	11'7"	3 910	12'10"	3 910	12'10"	4 540	14'11"	7 330	24'1"
Height	mm	980	3'3"	860	2'10"	860	2'10"	860	2'10"	855	2'10"	945	3'1"
Width	mm	440	1'5"	440	1'5"	440	1'5"	440	1'5"	440	1'5"	385	1'3"
Weight	kg	1 091	2,410	1 133	2,500	1 146	2,530	1 183	2,610	1 226	2,700	1 309	2,890
* Includes cylinder, linkage and pin													

\* Includes cylinder, linkage and pin



# Specifications

## MACHINE WEIGHTS AND GROUND PRESSURE

Description	Shoe width		Operating weight		Ground pressure		Overall width		Operating weight		Ground pressure		Overall width	
	mm	ft in	kg	lb	kPa	psi	mm	ft in	kg	lb	kPa	psi	mm	ft in
Triple grouser	EC220EL													
	5.7m (18'8") boom, 2.9m (9'6") arm, 860kg / 0.92m³ (1,810lb) bucket, 4 200kg (9,260lb) counterweight							5.57m (18'3") 2-piece, 2.9m (9'6") arm, 860kg / 0.92m³ (1,810lb) bucket, 4 200kg (9,260lb) counterweight						
	500	20	21 480	47,370	53.9	7.8	2 890	9'6"	22 170	48,880	54.9	8.0	2 890	9'6"
	600	24	21 740	47,940	45.1	6.5	2 990	9'10"	22 425	49,450	46.1	6.7	2 990	9'10"
	700	28	22 200	48,950	39.2	5.7	3 090	10'2"	22 880	50,460	40.2	5.8	3 090	10'2"
Triple grouser HD	800	32	22 485	49,580	35.3	5.1	3 190	10'6"	23 170	51,090	36.3	5.3	3 190	10'6"
	900	36	22 780	50,230	31.4	4.6	3 290	10'10"	23 460	51,740	32.4	4.7	3 290	10'10"
Double grouser	600	24	21 910	48,310	45.1	6.5	2 990	9'10"	22 590	49,820	47.1	6.8	2 990	9'10"
Single grouser	700	28	22 465	49,540	40.2	5.8	3 090	10'2"	23 150	51,050	41.2	6.0	3 090	10'2"
Triple grouser	EC220ELR													
	8.85m (29'0") boom, 6.25m (20'6") arm, 452kg / 0.52m³ (1 000lb) bucket, 5 000kg (11 030lb) counterweight													
	800	32	23 690	52,250	37.3	5.4	3 190	10'6"						
	900	36	23 990	52,890	33.3	4.8	3 290	10'10"						

## BUCKET SELECTION GUIDE

Bucket type		Capacity		Cutting width		Weight		Teeth	EC220EL							
									5.7m (18'8") Boom				5.57m (18'3") 2-piece			
									800mm (32") shoe, 4 200kg (9 260lb) counterweight							
		L	yard³	mm	in	kg	lb	EA	2.0m (6'7")	2.5m (8'2")	2.9m (9'6")	3.5m (11'6")	2.0m (6'7")	2.5m (8'2")	2.9m (9'6")	3.5m (11'6")
Direct fit Buckets	General purpose	480	0.63	600	23.40	666	1,468	3.00	C	C	C	C	C	C	C	C
		590	0.77	750	29.25	711	1,568	3.00	C	C	C	C	C	C	C	C
		750	0.98	900	35.10	792	1,746	4.00	C	C	C	C	C	C	C	C
		920	1.20	1 050	40.95	862	1,900	4.00	C	C	C	C	C	C	C	C
		1 090	1.43	1 200	46.80	951	2,096	5.00	C	C	C	C	C	C	C	C
		1 270	1.66	1 350	52.65	1 038	2,289	5.00	C	C	C	C	C	C	C	C
	Heavy	480	0.63	600	23.40	738	1,628	3.00	D	D	D	D	D	D	D	D
		480	0.63	600	23.40	675	1,488	3.00	D	D	D	D	D	D	D	D
		750	0.98	900	35.10	872	1,922	4.00	D	D	D	D	D	D	D	D
		750	0.98	900	35.10	808	1,783	4.00	D	D	D	D	D	D	D	D
		920	1.20	1 050	40.95	951	2,098	4.00	D	D	D	D	D	D	D	D
		920	1.20	1 050	40.95	888	1,959	4.00	D	D	D	D	D	D	D	D
		1 090	1.43	1 200	46.80	1 046	2,307	5.00	D	D	D	D	D	D	D	D
		1 090	1.43	1 200	46.80	983	2,168	5.00	D	D	D	D	D	D	D	D

Please consult with your Volvo dealer for the proper match of buckets and attachments to suit the application.

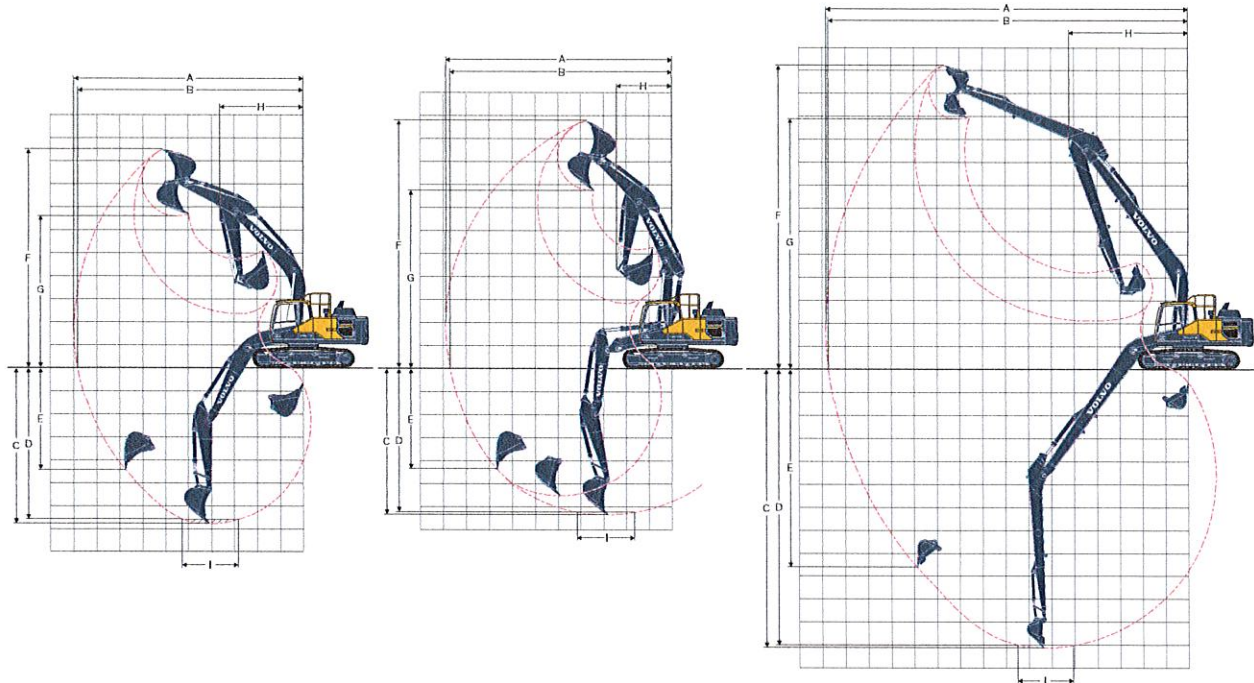
The recommendations are given as a guide only, based on typical operation conditions.

Bucket capacity based on ISO 7451, heaped material with a 1:1 angle of repose.

## Maximum material density

	kg/m³	lb/yd³	
A	1 200 - 1 300	2,000 - 2,200	Coal, Caliche, Shale
B	1 400 - 1 600	2,300 - 2,700	Wet earth and clay, Limestone, Sandstone
C	1 700 - 1 800	2,800 - 3,100	Granite, Wet sand, Well blasted rock
D	> 1 900	> 3,200	Wet mud, Iron ore





#### WORKING RANGES

Description	Unit		EC220EL																EC220ELR	
Boom	m	ft in	5.7 (18'8") mono										5.57 (18'3") 2-piece						8.85	29'0"
Arm	m	ft in	2.0	6'7"	2.5	8'2"	2.9	9'6"	3.5	11'6"	2.0	6'7"	2.5	8'2"	2.9	9'6"	3.5	11'6"	6.25	20'6"
A. Max. digging reach	mm	ft in	9 090	29'10"	9 550	31'4"	9 930	32'7"	10 390	34'1"	8 980	29'6"	9 450	31'0"	9 840	32'3"	10 310	33'10"	15 800	51'10"
B. Max. digging reach on ground	mm	ft in	8 910	29'3"	9 380	30'9"	9 770	32'1"	10 240	33'7"	8 800	28'10"	9 280	30'5"	9 670	31'9"	10 150	33'4"	15 700	51'6"
C. Max. digging depth	mm	ft in	5 830	19'2"	6 330	20'9"	6 730	22'1"	7 330	24'1"	5 410	17'9"	5 900	19'4"	6 300	20'8"	6 850	22'6"	12 100	39'8"
D. Max. digging depth (2.44 m / 8' level)	mm	ft in	5 560	18'3"	6 100	20'0"	6 540	21'5"	7 130	23'5"	5 290	17'4"	5 790	19'0"	6 200	20'4"	6 750	22'2"	12 000	39'4"
E. Max. vertical wall digging depth	mm	ft in	4 880	16'0"	5 620	18'5"	6 090	20'0"	6 470	21'3"	4 390	14'5"	4 990	16'4"	5 410	17'9"	5 930	19'5"	11 290	37'0"
F. Max. cutting height	mm	ft in	8 940	29'4"	9 220	30'3"	9 460	31'0"	9 460	31'0"	10 010	32'10"	10 380	34'1"	10 710	35'2"	10 920	35'10"	13 300	43'8"
G. Max. dumping height	mm	ft in	6 190	20'4"	6 430	21'1"	6 650	21'10"	6 700	22'0"	7 100	23'4"	7 460	24'6"	7 780	25'6"	8 010	26'3"	10 950	35'11"
H. Min. front swing radius	mm	ft in	3 790	12'5"	3 670	12'0"	3 640	11'11"	3 660	12'0"	2 890	9'6"	2 740	9'0"	2 470	8'1"	2 730	8'11"	5 200	17'1"

#### DIGGING FORCES WITH DIRECT FIT BUCKET

Bucket radius			mm	ft in	1528	5'0"	1528	5'0"	1528	5'0"	1528	5'0"	1528	5'0"	1528	5'0"	1528	5'0"	1250	4'1"		
Breakout force - bucket	Normal	SAE J1179	kN	lb	146	32,820	125	28,100	125	28,100	125	28,100	146	32,820	125	28,100	125	28,100	68	15,290		
	Power boost	SAE J1179	kN	lb	154	34,620	132	29,670	132	29,670	132	29,670	154	34,620	132	29,670	132	29,670	-	-		
	Normal	ISO 6015	kN	lb	165	37,090	141	31,700	141	31,700	141	31,700	165	37,090	141	31,700	141	31,700	77	17,310		
	Power boost	ISO 6015	kN	lb	174	39,120	149	33,500	149	33,500	149	33,500	174	39,120	149	33,500	149	33,500	-	-		
Tearout force - dipper arm	Normal	SAE J1179	kN	lb	144	32,370	117	26,300	101	22,710	92	20,680	144	32,370	117	26,300	101	22,710	92	20,680	44	9,890
	Power boost	SAE J1179	kN	lb	153	34,400	124	27,880	107	24,050	97	21,810	153	34,400	124	27,880	107	24,050	97	21,810	-	-
	Normal	ISO 6015	kN	lb	149	33,500	121	27,200	104	23,380	94	21,130	149	33,500	121	27,200	104	23,380	94	21,130	45	10,120
	Power boost	ISO 6015	kN	lb	158	35,520	128	28,780	110	24,730	99	22,260	158	35,520	128	28,780	110	24,730	99	22,260	-	-
Rotation angle, bucket			°		166		175		175		175		175		175		175		178			



# Specifications

## LIFTING CAPACITY EC220EL

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 hook related to ground level		1.5m (5')				3.0m (10')				4.5m (15')				6.0m (20')			
			Along UC		Across UC		Along UC		Across UC		Along UC		Across UC		Along UC		Across UC	
	m	in	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb
Boom: 5.7m (18'8") Arm: 2.5m (8'2") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
Boom: 5.7m (18'8") Arm: 2.9m (9'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	-4.5	-15																
	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
Boom: 5.7m (18'8") Arm: 3.5m (11'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	-3.0	-10																
	-4.5	-15																
	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
Boom: 5.7m (18'8") Arm: 2.5m (8'2") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	-1.5	-5																
	-3.0	-10																
	-4.5	-15																
	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
Boom: 5.7m (18'8") Arm: 2.9m (9'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	0.0	0																
	-1.5	-5																
	-3.0	-10																
	-4.5	-15																
	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
Boom: 5.7m (18'8") Arm: 3.5m (11'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
	-4.5	-15																
	7.5	25																
	6.0	20																
	4.5	15																
Boom: 5.7m (18'8") Arm: 2.9m (9'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
	-4.5	-15																
	7.5	25																
	6.0	20																
Boom: 5.7m (18'8") Arm: 3.5m (11'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
	-4.5	-15																
	7.5	25																
Boom: 5.7m (18'8") Arm: 2.9m (9'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
	-4.5	-15																
Boom: 5.7m (18'8") Arm: 3.5m (11'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
-4.5	-15																	
Boom: 5.7m (18'8") Arm: 2.9m (9'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
-4.5	-15																	
Boom: 5.7m (18'8") Arm: 3.5m (11'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
-4.5	-15																	
Boom: 5.7m (18'8") Arm: 2.9m (9'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
-4.5	-15																	
Boom: 5.7m (18'8") Arm: 3.5m (11'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
-4.5	-15																	
Boom: 5.7m (18'8") Arm: 2.9m (9'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																
	-3.0	-10																
-4.5	-15																	
Boom: 5.7m (18'8") Arm: 3.5m (11'6") Shoe: 800mm (32") CWT: 4,200kg (9,260lb)	7.5	25																
	6.0	20																
	4.5	15																
	3.0	10																
	1.5	5																
	0.0	0																
	-1.5	-5																

Notes: 1. Machine in "Fine Mode-F" (Power Boost) for lifting capacities. 2. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards. 3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. 4. Rated loads marked with an asterisk (\*) are limited by hydraulic capacity rather than tipping load.



# LIFTING CAPACITY EC220ELR

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 hook related to ground level		6.0m (20')				7.5m (25')				9.0m (30')				10.5m (35')			
			Along UC		Across UC		Along UC		Across UC		Along UC		Across UC		Along UC		Across UC	
	m	in	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb
Boom: 8.85m (29'0") Arm: 6.25m (20'6") Shoe: 800mm (32") CWT: 5000kg (11 030lb)	12.0	40																
	10.5	35															*3,530	*3,530
	9.0	30															*4,750	*4,750
	7.5	25															*2.2	*4,910
	6.0	20															*2.4	*5,240
	4.5	15									*2.8	*6,140	*2.8	*6,140	*2.6	*5,700	2.5	5,450
	3.0	10	*4.6	*9,900	*4.6	*9,900	*3.7	*8,060	*3.7	*8,060	*3.2	*6,960	3.1	6,620	*2.9	*6,250	2.4	5,140
	1.5	5	*5.6	*12,040	5.0	10,860	*4.3	*9,370	3.7	8,000	*3.6	*7,820	2.9	6,140	*3.1	*6,830	2.2	4,830
	0	0	*6.4	*13,750	4.6	9,870	*4.9	*10,520	3.4	7,360	*4.0	*8,600	2.7	5,710	*3.4	*7,370	2.1	4,540
	-1.5	-5	*6.9	*14,860	4.3	9,270	*5.3	*11,380	3.2	6,910	4.1	8,920	2.5	5,390	3.3	7,170	2.0	4,310
	-3.0	-10	*7.1	*15,400	4.2	8,970	5.2	11,220	3.1	6,630	4.0	8,690	2.4	5,170	3.3	7,010	1.9	4,160
	-4.5	-15	*7.1	15,410	4.1	8,890	5.2	11,100	3.0	6,520	4.0	8,580	2.4	5,070	3.2	6,930	1.9	4,090
	-6.0	-20	*6.9	*14,980	4.2	8,980	5.2	11,130	3.0	6,550	4.0	8,600	2.4	5,080	3.2	6,960	1.9	4,110
	-7.5	-25	*6.5	*13,970	4.3	9,230	*5.2	*11130	3.1	6,710	4.0	8,750	2.4	5,220	3.3	7,130	2.0	4,270
	-9.0	-30	*5.7	*12,200	4.5	9,650	*4.6	*9,710	3.2	7,040	*3.6	*7,640	2.5	5,540				
	-10.5	-35	*4.4	*9,090	*4.4	*9,090	*3.4		*3.4									
	Lifting hook related to ground level		12.0m (40')				13.5m (45')				Max. reach							
			Along UC		Across UC		Along UC		Across UC		Along UC		Across UC		m		ft	
	m	in	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb				
	12.0	40									*0.8	*1,950	*0.9	*1,950	10.3	33.1		
	10.5	35									*0.8	*1,780	*0.8	*1,780	11.6	37.7		
9.0	30	*1.5	*2,610	*1.5	*2,610					*0.8	*1,680	*0.8	*1,680	12.6	41.1			
7.5	25	*2.1	*4,190	*2.1	*4,190					*0.7	*1,630	*0.7	*1,630	13.4	43.7			
6.0	20	*2.3	*5,120	2.1	4,420	*1.3	*2,230	*1.3	*2230	*0.7	*1,620	*0.7	*1,620	13.9	45.6			
4.5	15	*2.5	*5,410	2.0	4,260	*1.8	*3,440	1.6	3,330	*0.8	*1,650	*0.8	*1,650	14.3	46.9			
3.0	10	*2.6	*5,770	1.9	4,060	*2.2	*4,230	1.5	3,220	*0.8	*1,710	*0.8	*1,710	14.5	47.6			
1.5	5	*2.8	*6,160	1.8	3,850	2.4	*4,720	1.4	3,090	*0.8	*1,810	*0.8	*1,810	14.6	47.8			
0	0	2.82	6,070	1.7	3,660	2.3	*4,830	1.4	2,980	*0.9	*1,950	*0.9	*1,950	14.4	47.4			
-1.5	-5	2.74	5,910	1.6	3,510	2.3	*4,250	1.4	2,890	*1.0	*2,150	*1.0	*2,150	14.2	46.5			
-3.0	-10	2.69	5,800	1.6	3,410	*1.7	*2,460	1.3	*2460	*1.1	*2,430	*1.1	*2,430	13.7	45.0			
-4.5	-15	2.67	5,780	1.6	3,380					*1.3	*2,850	*1.3	*2,850	13.1	42.9			
-6.0	-20	*2.4	*3,580	1.6	3,460					*1.6	*3,490	1.6	3,460	12.3	40.0			
-7.5	-25									*2.0	*4,590	1.8	4,100	11.2	36.3			
-9.0	-30									*3.0	*6,990	2.3	5,280	9.7	31.2			
-10.5	-35									*3.3	*7,140	*3.3	*7,140	7.6	24.2			

Notes: 1. Machine in "Fine Mode-F" (Power Boost) for lifting capacities. 2. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards. 3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. 4. Rated loads marked with an asterisk (\*) are limited by hydraulic capacity rather than tipping load.



# Equipment

## STANDARD EQUIPMENT

### Engine

Turbocharged, 4 stroke diesel engine with water cooling, direct injection and charged air cooler that meets Tier 4f requirements  
Air filter with indicator  
Air intake heater  
Cyclone pre-cleaner  
Electric engine shut-off  
Fuel filter and water separator  
Alternator, 80 A  
Tropical cooling system (50 deg. C)

### Electric / Electronic control system

Contronics  
Advanced mode control system  
Self-diagnostic system  
Satellite Caretrack and 3yr-Caretrack subscription  
Machine status indication  
Engine speed sensing power control  
Automatic idling system  
One-touch power boost  
Safety stop/start function  
Adjustable LCD color monitor  
Master electrical disconnect switch  
Engine restart prevention circuit  
High-capacity halogen or LED lights:  
Frame-mounted 2  
Boom-mounted 1  
Travel alarm  
Batteries, 2 x 12 V / 140 Ah  
Start motor, 24 V / 5.5 kW

### Frame

Access way with handrail  
Tool storage area  
Punched metal anti-slip plates  
Undercover (heavy-duty)  
Full height counterweight:  
4 200 kg (9,260 lb) - Long Crawler (L)  
5 000 kg (11,030 lb) - Long Reach (LR)

### Undercarriage

Undercover  
Hydraulic track adjusters  
Greased and sealed track link  
Track Guard  
800 mm (32") shoe with triple grousers

### Hydraulic system

Boom float function without HRV  
Automatic sensing hydraulic system  
Summation system  
Arm priority  
Swing priority  
Pilot control pattern change  
ECO mode fuel saving technology  
Boom, arm and bucket regeneration valves  
Swing anti-rebound valves  
Boom and arm holding valves  
Multi-stage filtering system  
Boom cylinders (x2)  
Cylinder cushioning  
Cylinder contamination seals  
Auxiliary hydraulic valve  
Automatic two-speed travel motors  
Hydraulic oil, longlife oil 46

## STANDARD EQUIPMENT

### Cab and interior

ROPS (ISO12117-2) certified cab  
Silicon oil and rubber mounts with spring  
Opening top hatch  
Control lock out lever  
Travel pedals and hand levers  
Adjustable operator seat with heater and joystick control console  
Control joysticks with 4 switches each  
Straight travel pedal  
Heater & air-conditioner, automatic  
Flexible antenna  
Radio with MP3 and USB Jack with bluetooth  
Cab, all-weather sound suppressed, includes:  
Cup holders  
Door locks  
Tinted glass  
Floor mat  
Horn  
Large storage area  
Pull-up type front window  
Removable lower windshield  
Seat belt  
Safety glass  
Sun screens, front, roof, rear  
Windshield wiper with intermittent feature  
Rear view camera  
Master key

### Digging equipment

Boom: monoblock 5.7 m (18'8"), Long Reach 8.85 m (29'0")  
Arm: 2.9 m (9'6"), Long Reach 6.25 m (20'6")  
Manual centralized lubrication  
Linkage without lifting eye

## OPTIONAL EQUIPMENT

### Engine

Block heater: 120 V  
Oil bath pre-cleaner  
Diesel coolant heater, 5 kW  
Water separator with heater  
Auto engine shutdown  
Fuel filler pump: 50 l/min (13.2 gpm), with automatic shut-off  
Standard cooling system by fan clutch (40 deg. C)

### Electric

Extra work lights (Halogen or LED):  
Boom-mounted 1  
Cab-mounted 3  
Counterweight-mounted 1  
Anti-theft system  
Rotating warning beacon  
Flashing beacon, LED  
Side view camera  
Volvo Smart View (VSV)



## OPTIONAL EQUIPMENT

### Undercarriage

Full track guard  
500mm (20") / 600mm (24") / 600mm HD (24") / 700mm (28") / 900mm (36") shoe with triple grousers  
700 mm (28") shoe with double grousers  
600 mm (24") shoe with single grouser

### Hydraulic system

Boom hose rupture valve (HRV) with overload warning device  
Arm hose rupture valve (HRV)  
Boom float function with HRV  
Hydraulic piping:  
Work tool management system (up to 20 programmable memories)  
Hammer & shear, 1 and 2 pump flow  
Slope & rotator (40lpm/11gpm or 60lpm/16gpm)  
Extra for slope & rotator  
Grapple  
Oil leak (drain) line  
Quick coupler piping  
Breaker & shear pressure pre-setting  
Additional return filter  
Volvo hydraulic quick coupler S1, S1 without hook  
Hydraulic oil, biodegradable 46  
Hydraulic oil, longlife oil 32, 68

### Machine control system

Dig assist 2D/In-field/Steelwrist  
Volvo Active Control (Semi-autonomous)  
Please refer to separate Brochure for more details

## OPTIONAL EQUIPMENT

### Cab and interior

Fabric seat without heater  
Fabric seat with heater and air suspension  
Control joysticks with semi-long  
Control joysticks with 3 switch & 1 proportional  
Falling object guard (FOG)  
Frame-mounted  
Cab-mounted  
Cab-mounted falling object protective structure (FOPS)  
Side view camera  
Rain shield  
Smoker kit (ashtray and lighter)  
Safety net for front window  
Lower wiper with intermittent control  
Cleaning air gun  
Anti-vandalism kit

### Digging equipment

Boom: 5.7 m (18'8") monoblock, heavy duty  
Boom: 5.57 m (18'3") 2-piece boom  
Arm: 2.0 m (6'7"), 2.5 m (8'2"), 2.9 m (9'6"), 3.5 m (11'6")  
Linkage with lifting eye

### Service

Tool kit, daily maintenance  
Tool kit, full scale

## SELECTION OF VOLVO OPTIONAL EQUIPMENT

Auto engine shutdown



Two-piece boom



Diesel coolant heater



LED lights



Fuel fill pump



Cleaning air gun



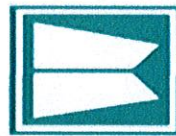
Not all products are available in all markets. Under our policy of continuous improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.



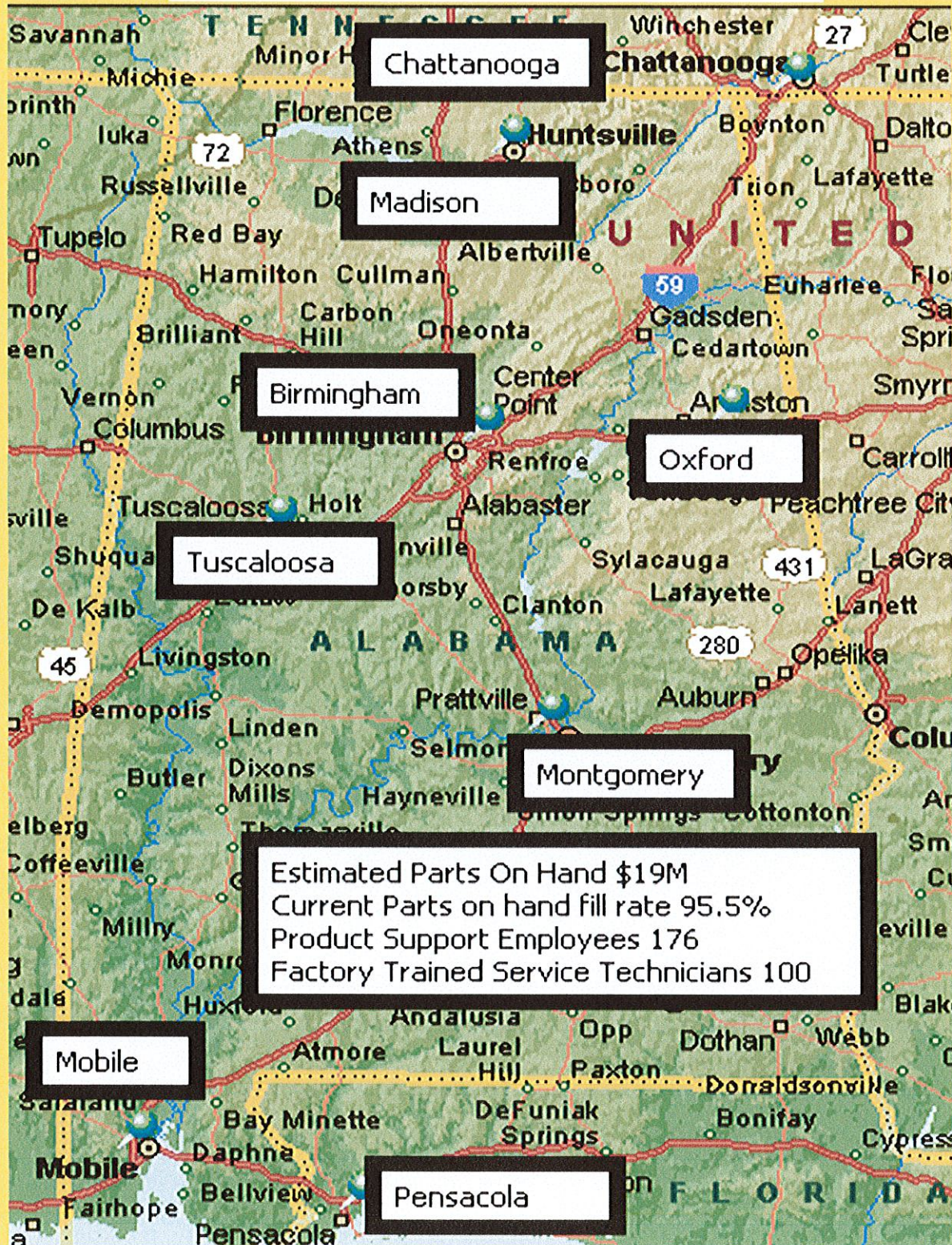


**Volvo Construction Equipment**  
[volvoce.com](http://volvoce.com)





**COWIN**  
EQUIPMENT COMPANY, INC.







Company ID Number: 505216

**THE E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION  
MEMORANDUM OF UNDERSTANDING**

**ARTICLE I**

**PURPOSE AND AUTHORITY**

This Memorandum of Understanding (MOU) sets forth the points of agreement between the Department of Homeland Security (DHS) and Cowin Equipment Co Inc (Employer) regarding the Employer's participation in the Employment Eligibility Verification Program (E-Verify). This MOU explains certain features of the E-Verify program and enumerates specific responsibilities of DHS, the Social Security Administration (SSA), and the Employer. E-Verify is a program that electronically confirms an employee's eligibility to work in the United States after completion of the Employment Eligibility Verification Form (Form I-9). For covered government contractors, E-Verify is used to verify the employment eligibility of all newly hired employees and all existing employees assigned to Federal contracts or to verify the entire workforce if the contractor so chooses.

Authority for the E-Verify program is found in Title IV, Subtitle A, of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA), Pub. L. 104-208, 110 Stat. 3009, as amended (8 U.S.C. § 1324a note). Authority for use of the E-Verify program by Federal contractors and subcontractors covered by the terms of Subpart 22.18, "Employment Eligibility Verification", of the Federal Acquisition Regulation (FAR) (hereinafter referred to in this MOU as a "Federal contractor with the FAR E-Verify clause") to verify the employment eligibility of certain employees working on Federal contracts is also found in Subpart 22.18 and in Executive Order 12989, as amended.

**ARTICLE II**

**FUNCTIONS TO BE PERFORMED**

**A. RESPONSIBILITIES OF SSA**

1. SSA agrees to provide the Employer with available information that allows the Employer to confirm the accuracy of Social Security Numbers provided by all employees verified under this MOU and the employment authorization of U.S. citizens.
2. SSA agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. SSA agrees to provide the Employer with names, titles, addresses, and telephone numbers of SSA representatives to be contacted during the E-Verify process.
3. SSA agrees to safeguard the information provided by the Employer through the E-Verify program procedures, and to limit access to such information, as is appropriate by law, to individuals responsible for the verification of Social Security Numbers and for evaluation of the E-Verify program or such other persons or entities who may be authorized by SSA as governed





Company ID Number: 505216

To be accepted as a participant in E-Verify, you should only sign the Employer's Section of the signature page. If you have any questions, contact E-Verify at 888-464-4218.

<b>Employer Cowin Equipment Co Inc</b>	
<b>Tracy Womack</b>	
Name (Please Type or Print)	Title
<b>Electronically Signed</b>	<b>02/15/2012</b>
Signature	Date
<b>Department of Homeland Security – Verification Division</b>	
<b>USCIS Verification Division</b>	
Name (Please Type or Print)	Title
<b>Electronically Signed</b>	<b>02/15/2012</b>
Signature	Date

Information Required for the E-Verify Program

Information relating to your Company:

Company Name:	Cowin Equipment Co Inc
Company Facility Address:	2238 Pinson Valley Parkway
	Birmingham, AL 35217
Company Alternate Address:	PO Box 10624
	Birmingham, AL 35202
County or Parish:	JEFFERSON
Employer Identification Number:	830141942



# 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

**Volvo Articulated Haulers**

- 12 months/2500 hours

**Volvo Rigid Haulers**

- 12 months/5000 hours

**Volvo Hydraulic Excavators**

- 12 months/2500 hours

**Volvo Pavers (ABG)**

- 12 months/2500 hours

**Volvo Landfill Compactors**

- 12 months/2500 hours

**Volvo Compact Diesel Excavators (less than 11 metric tons)**

- 12 months/2500 hours

**Volvo Compact Electric Excavators (less than 11 metric tons)**

- 12 months/2500 hours

**Volvo Compact Diesel Wheel Loaders (up to 100 net hp.)**

- 12 months/2500 hours

**Volvo Compact Electric Wheel Loaders**

- 12 months/2500 hours

**Volvo Compactors**

- 12 months/2500 hours

**Volvo Attachments**

- 12 months

**Volvo Parts**

- 12 months/2500 hours from the original purchase date from an authorized Volvo CE Dealer

**Volvo Remanufactured Components**

- 12 months/2500 hours from purchase date or install date if a VCE dealer completed the install.

**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.



## INFORMATION SYSTEMS

The customer/machine owner is aware that the Volvo CE machine is equipped with one or more systems which may gather and store information about the Volvo CE machine (the "Information Systems"), including but not limited to information relating to machine condition and performance, and information relating to the operation of the machine (together, the "Machine Data"). The customer/machine owner agrees not to interfere with the operation of the Information Systems in any way.

Notwithstanding any termination or expiry of this agreement, the customer/machine owner acknowledges and agrees that Volvo CE may: (i) access the Information Systems at any time (including remote access); (ii) gather the Machine Data; (iii) store the Machine Data on AB Volvo Group systems; (iv) use the Machine Data in order to provide services to the customer/machine owner, as well as for its own internal and other reasonable business purposes; and (v) share the Machine Data within the AB Volvo Group and with selected third parties.

This standard warranty is conditional upon Volvo CE being able to gather and access the Machine Data at any time.

## 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.