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 Northern Blvd	
Montgomery AI 36110	
Bid Submitted by:John Edwards	
(Name of company representative)	
Title:Governmental Sales Manager E-mail address:jedwards@cowin.com	1
Phone: <u>0 334-262-2262</u> c- 850-685-7055 Fax: <u>334-834-2272</u>	
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, 2021 to Dec. 31, 2021.	ZE
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	2E
If awarded the bid, a performance bond will be provided upon request	RE
The bid documents include the Manufacturer's Suggested Retail Price Sheet (MSRP) for the Standard Machine	ZE

TRACK-MOUNTED HYDRAULIC EXCAVATOR Option B-1

Freight Preparation and Delivery: \$________ (Included in Standard Machine Bid Price)

Manufacturer's Suggested Retail Price for Standard Machine: \$ \$181,788.00

Equipment Model #: Volvo EC220E

Description: ____ Hydraulic Track Mount Excavator

Signature of company representative submitting bid:

hu Edwardo

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*

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

Equipment Model #: ______Volvo EC220E Description: ____Hydraulic Track Mount Excavator Signature of company representative submitting bid: _____*Jahn Elwart*

Title: Governmental Sales Manager

JE JE.

*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 any 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, September 4, 2020. Bid specifications are available at <u>http://www.alabamacounties.org/heavy-equipment/</u> for each of the following items:

Light Duty Backhoe Medium Duty Backhoe Heavy Duty Backhoe Option A Heavy Duty Backhoe Option C 85 PTO Tractor Option A 85 PTO Tractor Option B 95 PTO Tractor Option A 95 PTO Tractor Option B Track Mount Excavator Option A-1 Track Mount Excavator Option A-2 Track Mount Excavator Option A-3 Track Mount Excavator Option B-1 Track Mount Excavator Option B-2 Track Mount Excavator Option B-3 Track Mount Excavator Option C-1 Track Mount Excavator Option C-2 19 Ton Wheeled Excavator 21 Ton Wheeled Excavator Compact Track Mount Excavator Option D-1 Compact Track Mount Excavator Option D-2 Light Duty Motorgrader - Option A Light Duty Motorgrader - Option B Heavy Duty Motorgrader - Option A Heavy Duty Motorgrader - Option B Medium Duty Motorgrader - Option A Medium Duty Motorgrader - Option B Medium Duty Motorgrader - AWD Light Duty Motorgrader - Option B

100 HP Heavy Duty Hydrostatic Bulldozer - Option B 100 HP Heavy Duty Hydrostatic Bulldozer - Option C 100 HP Heavy Duty Hydrostatic Bulldozer - Option D 125 HP Heavy Duty Hydrostatic Bulldozer - Option A 125 HP Heavy Duty Hydrostatic Bulldozer - Option B Mulching Dozer 3 CY Wheel Loader Option A 3 CY Wheel Loader Option B 3 CY Wheel Loader Option C 3.65 CY Wheel Loader Option A 3.65 CY Wheel Loader Option B Heavy Duty Dump Chassis - Option B Heavy Duty Dump Chassis - Option C Heavy Duty Dump Chassis - Option E Lowboy Tractor Option - B Lowboy Tractor Option - C Lowboy Tractor Option - D Skid Steer Attachments Ride-on Industrial Boom Mower Telescopic Boom Cutter 75 FT. Reach Telescopic Boom Cutter 55 FT. Reach Asphalt Distributor Truck Chip Spreader Rubber Tire Roller One-man Pothole Patcher Option A 2WD Highway Speed Truck Excavator 4WD Highway Speed Truck Excavator

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, September 4, 2020 will be opened and considered. Bidders and any other interested individuals are invited to attend the bid opening.

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:

Association of County Commissions of AlabamaAttention: JOINT BID PROGRAMAttention: JOINT BID PROGRAM2 North Jackson StreetORP.O. Box 5040Montgomery, Alabama 36104

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: Chase Cobb Association of County Commissions of Alabama P.O. Box 5040 Montgomery, Alabama 36103 E-mail: ccobb@alabamacounties.org

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 Vo____

Page# or Attachment

<u>WEIGHT</u> Minimum 49,000 lbs .	Yes 🗸 No Page #_ 22
minimum 348 cubic inch diesel engine with minimum 158 net flywheel horsepower, (6) Cylinder .	Page # Yes / No Page #20
Engine must be designed and manufactured by machine manufacturer	Yes <u>/</u> No
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".	Yes Ver No Page #1
Minimum eight (8) track rollers per side.	Yes 🖌 No Page #20
Minimum two (2) carrier rollers per side.	Yes 🖌 No Page #20
<u>CAPACITIES</u> Fuel Tank Capacity – 85-gallon minimum	Yes 🖌 No Page #20
Hydraulic Tank Capacity – 34 gallon minimum	Yes 🗸 No Page # 20
Engine Coolant – 7.5-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 #21
DIMENSIONS Reach at ground level – 30' minimum	Yes
Bucket breakout force – minimum 29,000 lbs .	Yes 🖌 No Page #23

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Stick digging force – minimum 23,000 lbs.	Yes 🖌 No Page #23
HYDRAULICS Hydraulic pump output shall be a minimum of 110 GPM	Yes 🖌 No Page #20
<u>CAB</u> Enclosed ROPS cab with Air Conditioner and heater	Yes√_ No Page #26
Factory installed air conditioning	Yes 🖌 No Page #26
Defroster	Yes 🖌 No Page #_attached

Bucket:

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

Model: Volvo EC220EL Crawler Excavator

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Description	Article	MSRP
Volvo EC220EL Crawler Excavator	EC220EL	143815.24
Boom, 18` 8" (5.7m), GP	XC10116	12650.04
Arm, 9` 6" (2.9m), HD	XC10222	7334.48
Linkage with lifting eye, GP	XC10403	416.16
Decal Kit NA	XC10503	0.00
Track Pads, 32" Triple Grouser	XC20106	8883.52
Roller guard STD	XC20201	359.72
Lower frame - foldable steps	XC20302	0.00
Belly Cover HD, 10mm	XC20402	250.92
Engine NA	XC30101	0.00
Cooling System High Capacity	XC30202	0.00
Standard fan drive	XC30801	0.00
Air precleaner, Cyclone	XC30401	89.76
Anti-vandal mounting brackets on cab	XC40112	0.00
CareCab w/ Opening Hatch	XC40103	363.80
Seat, Air suspension w/Heater & X-Isolator	XC40203	964.24
Seat Belt, 3 inch Retractable	XC41204	0.00
Air conditioning, ACC (automatic climate control)	XC40502	2029.12
Universal key	XC40602	0.00
Radio with MP3, USB port & Bluetooth	XC40708	0.00
Guardrail	XC50801	0.00
Work lights on deck & boom, Halogen	XC50000	0.00
Extra work lights on cab front/rear, CWT, boom & RH side, Halogens	XC50101	275.40
Travel alarm	XC50102	0.00
Battery switch protector	XC50132	0.00
Volvo Smart View on Instrument Cluster only	XC50144	0.00
Dig Assist Start	XC50155	0.00
CareTrack, GSM/Satellite	XC50402	0.00
CareTrack Connectivity 4 yr Subscription	XC50404	0.00
De-activate SAT	XC50406	0.00
Hydraulic oil ISO VG46	XC60102	495.72
Pre-setting for hyd. pressure (piping not installed for long reach boom and arm)	XC61301	149.60
Manual, English	XC70302	0.00
Counterweight, 9,260lbs (4200kg)	XC80121	3324.52
Under cover HD, 4.5mm superstructure	XC80202	0.00
Frame lifetime guarantee	XC70501	386.24
Less bucket with pins	XC8291357	0.00
TOTAL MSRP STANDARD SPECIFIC	ATION	181788.48

ACCA

Volvo Construction Equipment





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



Volvo Excavators 20.6-25.1 t / 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 commons 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



Mack Trucks

Volvo Penta

MÖ



UD Trucks



Volvo Financial Services





Volvo Construction Equipment



Volvo Buses



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.

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.





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.

Increased power

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

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).



VOLVO

Optimized hydraulics system

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.



10.



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.

Boom and Arm

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.

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.

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.



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Built to last

Working in tough conditions means every component i î î 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.

VOLVO

Thom

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-theart 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 piping

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 fold-able guard rails

Multiple sturdy handrails and fold-able guardrails provide safe and easy access to the superstructure for inspection and maintenance. The fold-able guardrail is to minimize transportation height when it is folded.



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.

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.





Anti-slip steel plates

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



VOLVO

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.

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VOLVO

Matched attachments

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> 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 inl 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 complies 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

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.



Optimized hydraulics

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

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.

Boom float

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.



OLVO

Full size fold-able guard rails

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

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.



HMI

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

Bluetooth®

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

Short cut key function

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

Volvo engine

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



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.

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VOLVO

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 the positive return of your investment.





Complete Solutions

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





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.

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





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.



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PROFITABILITY

Customer Support Agreements

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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.

FUEL CONSUMPTION

Volvo EC220E in detail

Engine

The latest generation, Volvo engine Tier 4f / Stage IV 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/:	s / r/min	30	0/1800
Net, ISO 9249/SAE J1349		kW / hp	1	28/172
Gross, ISO 14396/SAE J1995		kW / hp	1	29/173
Max torque at	Nm / r/min	lbf ft / r/min	849 / 1 350	626 / 1,350
No. of cylinders				6
Displacement	1	cu.in	5.7	348
Bore	m	in	98	3.86
Stroke	m	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

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

Swing system

The swing system uses an av maximum torgue. An automa				
Max. slew speed	-	r/min		11.1
Max. slew torque	kNm	lbf ft	83	61,220
Drive				
E 1 1 1 1	a second second second	and all the last	al mater 7	The treat

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	km/h	mph	3.5 / 5.7	2.2 / 3.5
Gradeability		o		35
Undercarriage				
Robust X-shaped frame with	greased and seal	ed track	chains as sta	ndard
Track shoe				2 x 49
Link pitch	mm	in	190	7.5

Shoe width, triple grouser	mm	in	500 / 600 / 700 / 800 / 900	20 / 24 / 28 / <mark>32</mark> / 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
Service refill capacities				
Fuel tank	1	gal	320	85
Hydraulic system, total	1	gal	290	77
Hydraulic tank	1	gal	140	37
DEF tank	1	gal	27	7
Engine oil	1	gal	25	7
Engine coolant	1	gal	35	9
Swing reduction unit	1	gal	6	2

 2×5.8

gal

2×2

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 Type 2 x 55 Maximum flow 1/min apm 2 x 207 Pilot pump Gear pump Type 1 x 5 Maximum flow I/min gpm 1 x 18 Relief valve setting 4,980 / psi 34.3 / 36.3 Implement Mpa 5.260 Travel circuit Мра DS 34.3 4,980 4.050 27.9 Slew circuit Mpa psi 3.9 570 Pilot circuit Мра psi 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 1 235	4.9 x 48.6
2 piece boom			1
Bore x Stroke	ø x mm	øx in 160 x 1 070	6.3 x 42.1
Arm			1
Bore x Stroke	ø x mm	øx in 135 x 1 540	5.3 x 60.6
Bucket			1
Bore x Stroke	ø x mm	ø x in 120 x 1 065	4.7 x 41.9
Bucket for LR boom			1
Bore x Stroke	ø x mm	øxin 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 Level		
Sound level in cab according to	ISO 6396	
LpA (standard)	dB(A)	69
LpA (tropical)	dB(A)	70
External sound level according to	ISO 6395, EU Noise Directive	(2000/14/EC)
LwA (standard)	dB(A)	102
LwA (tropical)	dB(A)	103

Travel reduction unit

Specifications

DIMENSIONS



Description	U	nit				EC2	20EL				EC22	20ELR
Boom	m,	m, ft in 5.7 (18'8") mono and 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"	6.25	20'6"
A. Overall width of upper structure	mm	ft in	2 5 4 0	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 9 9 0	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 0 7 5	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 7 9 0	9'2"	2 7 9 0	9'2"	2 790	9'2"	2 7 9 0	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 0 2 5	3'4"	1 0 2 5	3'4"	1 0 2 5	3'4"	1 0 2 5	3'4"	1 0 2 5	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 7 9 5	32'2"	9745	32'0"	9 690	31'9"	9 7 2 0	31'11"	12 880	42'3"
N ¹ . Overall length	mm	ft in	9 6 6 0	31'8"	9610	31'6"	9 570	31'5"	9 560	31'4"	-	-
O. Overall height of boom	mm	ft in	3100	10'2"	3 080	10'1"	2 940	9'8"	3 260	10'8"	3 055	10'0"
O ¹ . Overall height of boom * Without shoe grouser. ¹ 2-piece boom	mm	ft in	3 065	10'1"	3 065	10'1"	2 960	9'9"	3 310	10'10"	-	-

DIMENSIONS

	B	loom			Arm								
2		0	B B B B B B B B B B B B B B B B B B B										
Description	Unit	mo	ono	mo	no	2-p	iece	Long-Reach					
Boom	m	5.7	18'8"	5.7 HD	18'8"	5.57	18'3"	8.85	29'0"				
Length	mm	5910	19'5"	5910	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	-	boom cylinder j	pin										

Description Unit 8'2" 9'6" 2.9 HD 9'6" 2.9 2.0 6'7" 2.5 Arm m 3 5 2 5 11'7" 3910 12'10 3910 12'10 Length 3 0 6 5 10'1" mm

4 5 4 0 14'11 7 330 24'1" 2'10" 945 3'1" Height mm 980 3'3" 860 2'10" 860 2'10" 860 2'10" 855 1'5" 440 1'5" 385 1'3" 1'5" 440 1'5" 440 Width 1'5" 440 mm 440 2,700 1 309 2,890 1 1 3 3 2,500 1 1 4 6 2,530 1 183 2,610 1 226 2,410 Weight kg 1 0 9 1 * Includes cylinder, linkage and pin

Long-Reach

20'6"

6.25

3.5

11'6"

Specifications

Description	Shoe	width	Operatin	g weight	Ground	pressure	Overal	l width	Operating weight		Ground pressure		Overall width	
•	mm	ft in	kg	lb	kPa	psi	mm	ft in	kg	lb	kPa	psi	mm	ft in
								EC2	20EL					
			9	860kg	/ 0.92m ³	n, 2.9m (9 (1,810lb) lb) counte	bucket,		5	860kg	/ 0.92m ³	ce, 2.9m (1,810lb) lb) counte	bucket,	m,
	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"
Triple grouser	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"
	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"
Triple grouser HD	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"
Double 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"
Single grouser	600	24	21 950	48,400	45.1	6.5	2 990	9'10"	22 630	49,910	47.1	6.8	2 990	9'10"
					EC22	20ELR								
			8.	452kg /	0.52m ³	n, 6.25m ((1 000lb))lb) counte	bucket,		_					
	800	32	23 690	52,250	37.3	5.4	3 190	10'6"						
Triple grouser	900	36	23 990	52,890	33.3	4.8	3 290	10'10"						

												EC22	20EL					
		Cap	acity	Cutting	g width	We	Weight			5.7m (18'	8") Booi	n	5.	ce				
Bucke	et type								800mm (32") shoe, 4 200kg (9 260lb) counterweight									
		L	yard ³	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")		
		480	0.63	600	23.40	666	1,468	3.00	С	С	С	С	С	С	С	С		
		590	0.77	750	29.25	711	1,568	3.00	С	С	С	С	С	С	С	С		
	General	750	0.98	900	35.10	792	1,746	4.00	С	С	С	С	С	С	С	С		
	purpose	920	1.20	1 050	40.95	862	1,900	4.00	С	С	С	С	С	С	С	С		
		1 090	1.43	1 200	46.80	951	2,096	5.00	С	С	С	С	С	С	С	С		
		1 270	1.66	1 350	52.65	1 038	2,289	5.00	С	С	С	С	С	С	С	С		
Direct fit		480	0.63	600	23.40	738	1,628	3.00	D	D	D	D	D	D	D	D		
Buckets		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		
	Heavy	750	0.98	900	35.10	808	1,783	4.00	D	D	D	D	D	D	D	D		
	duty	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 materal density

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



Description	n		U	nit								EC2	20EL								EC22	OELR
Boom			m	ft in			5.	7 (18'8	") mo	no					5.57	7 (18'3	") 2-р	iece			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. dig	ging reac	h	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"	10310	33'10"	15 800	51'10
B. Max. dig ground	ging reac	h on	mm	ft in	8910	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. dig	gging dep	th	mm	ft in	5 830	19'2"	6 3 3 0	20'9"	6 7 3 0	22'1"	7 330	24'1"	5410	17'9"	5 900	19'4"	6 300	20'8"	6 850	22'6"	12 100	39'8"
D. Max. dig (2.44 m	ging dep / 8' level		mm	ft in	5 560	18'3"	6100	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. ver depth	tical wall o	digging	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 4 1 0	17'9"	5 930	19'5"	11 290	37'0"
F. Max. cut	ting heigh	t	mm	ft in	8940	29'4"	9 220	30'3"	9 460	31'0"	9 460	31'0"	10 0 10	32'10"	10 380	34'1"	10710	35'2"	10 920	35'10"	13 300	43'8"
G. Max. du	Imping he	ight	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"	8010	26'3"	10 950	35'11
H. Min. fro	nt swing r	adius	mm	ft in	3 790	12'5"	3 670	12'0"	3 640	11'11"	3 660	12'0"	2 890	9'6"	2 7 4 0	9'0"	2 470	8'1"	2 7 3 0	8'11"	5 200	17'1"
DIGGING	G FORC	ES W	ITH	DIF	RECT	FITE	BUCK	ET		-			111111000	TE CALLED		- DOLLAR ST		Englished	1 DOLLAR TO		1 anastron	
Bucket rad	lius		mm	ft in	1 528	5'0"	1 528	5'0"	1 528	5'0"	1 528	5'0"	1 528	5'0"	1 528	5'0"	1528	5'0"	1528	5'0"	1250	4'1"
	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	125	28,100	68	15,29
Breakout force -	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	132	29,670	-	•
bucket	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	141	31,700	77	17,31
	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	149	33,500	- 1	•
	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
Tearout	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) -	-
dipper arm	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	10,12
	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 an	ngle, buck	ket		0	1	66	1	75	1	75	1	75	1	75	1	75	1	75	1	75	1	78

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 relate grou	ed to		1.5m	(5')			3.0m	(10')			4.5m	(15')			6.0m		
		lev m		Alo t	ng UC Ib	Acro t	Ib	Alor	ng UC	Acro t	ss UC Ib	Alor t	ng UC	Acro	oss UC	Alo	ng UC	Acro	oss UC
Boom:	5.7m (18'8")	7.5	25			L .	10						<u> </u>						
Arm:	2.5m (8'2")	6.0	20													*5.5	12,110	*5.5	*12,110
Shoe:	800mm (32")	4.5	15									•7.0	15,100	•7.0	15,100	*6.0	13,120	5.6	12,150
CWT:	4,200kg	3.0	10									* 9.0	19,400	8.2	17,660	* 6.9	14,990	5.4	11,640
	(9,260lb)	1.5	5									*10.8	*23,250	7.7	16,610	*7.8	16,910	5.2	11,140
	1948 A. 19	0.0	0									*11.6	*25,050	7.5	16,120	8.0	17,210	5.0	10,810
		-1.5	-5					*10.8	*24,770	*10.8	*24,770	•11.5	· 24,900	7.5	16,050	7.9	17,100	5.0	10,710
		-3.0	-10					14.8	*32,010	14.7	31,560	*10.6	*22,840	7.6	16,280	•7.8	*16,730	5.0	10,890
		-4.5	-15					*11.4	· 24,370	*11.4	*24,370	*8.2	17,180	7.8	16,940				
Boom:	5.7m (18'8")	7.5	25													*5.2		•5.2	
Arm:	2.9m (9'6")	6.0	20													*5.1	*11,170	*5.1	.11,17
Shoe:	800mm (32")	4.5	15													*5.7	12,330	*5.7	12,310
CWT:	4,200kg	3.0	10									*8.4	*18,180	8.3	17,980	*6.6	14,300	5.5	11,78
	(9,260lb)	1.5	5										'22,370	7.8	16,830	•7.6	*16,400	5.2	11,24
		0.0	0					•5.4	12,560	•5.4	12,560	*11.4	*24,740	7.5	16,210	8.0	17,270	5.0	10,860
		-1.5	-5	*6.3	*14,060	·6.3	14,060	10.3	*23,490	*10.3	*23,490	*11.6	*25,120	7.4	16,030	7.9	17,090	5.0	10,70
		-3.0	-10	•11.4	*25,580	*11.4	*25,580	•15.7	*33,940	14.6	31,310	•10.9	*23,640	7.5	16,180	8.0	17,190	5.0	10,790
		-4.5	-15					*12.7	*27,330	*12.7	*27,330	*9.1	19,310	7.7	16,680				
Boom:	5.7m (18'8")	7.5	25																
Arm:	3.5m (11'6")	6.0	20																
Shoe:	800mm (32")	4.5	15													•4.9	10,720	·4.9	10,72
CWT:	4,200kg	3.0	10													*5.8	12,590	5.6	11,98
	(9,260lb)	1.5	5													·6.8	14,710	5.3	11,38
		0.0	0										100 100	7.4	15.000	•7.6	16,460	5.1	10,90
		-1.5	-5						100.000	111	00.040	10.8	*23,490	7.4	15,960	7.9	17,040	4.9 4.9	10,65
		a providence of the	-10		100.040	1167	.20.040	*15.4	*33,360 *28,240		30,840	*10.6 *9.3	*22,860 *20,080	7.4 7.6	15,980	*7.9 *6.9	17,020	4.9 5.0	10,03
		-4.5 Lifting		·16.7	*38,240	10.7	'38,240	13.1	20,240	13.1	20,240	9.5	20,000	7.0	10,320	0.9	14,000	0.0	10,520
		relate	ed to		7.5m	(25')			9.0m	(30')				Max	. reach				
		grou		Alo	ng UC	Acro	oss UC	Alo	ng UC	Acro	ss UC	Alo	ng UC	Acro	oss UC		4		
		m	in	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	m	ft		
													*10E40						
Boom:	5.7m (18'8")	7.5	25									*5.7	12,540	*5.7	12,540	5.6	18.0		
	5.7m (18'8") 2.5m (8'2")		25 20									*5.6	12,350	4.7	10,400	6.9	22.3		
Boom: Arm: Shoe:		7.5		*5.7		4.0						*5.6 *5.7	12,350 12,530	4.7 3.9	10,400 8,630	6.9 7.6	22.3 24.8		
Arm: Shoe:	2.5m (8'2")	7.5 6.0	20 15 10	*5.7 6.0	12,850	3.9	8,370					*5.6 *5.7 5.4	12,350 12,530 11,970	4.7 3.9 3.5	10,400 8,630 7,790	6.9 7.6 8.0	22.3 24.8 26.2		
Arm: Shoe:	2.5m (8'2") 800mm (32")	7.5 6.0 4.5	20 15		12,850 12,610		8,140					*5.6 *5.7 5.4 5.3	12,350 12,530 11,970 11,580	4.7 3.9 3.5 3.4	10,400 8,630 7,790 7,490	6.9 7.6 8.0 8.1	22.3 24.8 26.2 26.5		
Arm: Shoe:	2.5m (8'2") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0	20 15 10 5 0	6.0		3.9						*5.6 *5.7 5.4 5.3 5.4	*12,350 *12,530 11,970 11,580 11,890	4.7 3.9 3.5 3.4 3.5	10,400 8,630 7,790 7,490 7,650	6.9 7.6 8.0 8.1 7.9	22.3 24.8 26.2 26.5 25.8		
Arm: Shoe:	2.5m (8'2") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5	20 15 10 5 0 -5	6.0 5.9	12,610	3.9 3.8	8,140					*5.6 *5.7 5.4 5.3 5.4 5.9	*12,350 *12,530 11,970 11,580 11,890 13,090	4.7 3.9 3.5 3.4 3.5 3.8	10,400 8,630 7,790 7,490 7,650 8,380	6.9 7.6 8.0 8.1 7.9 7.4	22.3 24.8 26.2 26.5 25.8 24.1		
Arm: Shoe:	2.5m (8'2") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0	20 15 10 5 0 -5 -10	6.0 5.9	12,610	3.9 3.8	8,140					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470	4.7 3.9 3.5 3.4 3.5 3.8 4.6	10,400 8,630 7,790 7,490 7,650 8,380 10,180	6.9 7.6 8.0 8.1 7.9 7.4 6.5	22.3 24.8 26.2 26.5 25.8 24.1 21.1		
Arm: Shoe: CWT:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb)	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5	20 15 10 5 0 -5 -10 -15	6.0 5.9	12,610	3.9 3.8	8,140					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.2	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470 *15,750	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0	22.3 24.8 26.2 26.5 25.8 24.1 21.1 16.0		
Arm: Shoe: CWT: Boom:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8")	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5	20 15 10 5 0 -5 -10 -15 25	6.0 5.9	12,610	3.9 3.8	8,140					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.2 *4.9	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470 *15,750 *10,930	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 *4.9	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 10,930	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2	22.3 24.8 26.2 26.5 25.8 24.1 21.1 16.0 19.9		
Arm: Shoe: CWT: Boom: Arm:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6")	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0	20 15 10 5 0 -5 -10 -15 25 20	6.0 5.9 5.8	12,610 12,450	3.9 3.8 3.7	8,140 7,990					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.0 *7.2 *4.9 *4.6	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470 *15,750 *10,930 *10,120	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 '4.9 4.2	10,400 8,630 7,790 7,650 8,380 10,180 15,530 *10,930 9,480	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3	22.3 24.8 26.2 26.5 25.8 24.1 21.1 16.0 19.9 23.8		
Arm: Shoe: CWT: Boom: Arm: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32")	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5	20 15 10 5 -5 -10 -15 25 20 15	6.0 5.9 5.8	12,610 12,450 *11,760	3.9 3.8 3.7 4.0	8,140 7,990 8,670					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.0 *7.2 *4.9 *4.6 *4.5	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470 *15,750 *10,930 *10,120 *9,950	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 •4.9 4.2 3.6	10,400 8,630 7,790 7,650 8,380 10,180 15,530 *10,930 9,480 8,020	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2		
Arm: Shoe: CWT: Boom:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 3.0	20 15 10 5 0 -5 -10 -15 25 20 15 10	6.0 5.9 5.8 *5.4 *5.4	12,610 12,450 *11,760 *12,560	3.9 3.8 3.7 4.0 3.9	8,140 7,990 8,670 8,450					*5.6 *5.7 5.4 5.3 5.4 *5.9 *7.0 *7.0 *7.2 *4.9 *4.6 *4.5 *4.6	*12,350 *12,530 11,970 11,580 13,090 *15,470 *15,750 *10,930 *10,120 *9,950 *10,220	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 •4.9 4.2 3.6 3.3	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 10,930 9,480 8,020 7,300	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5		
Arm: Shoe: CWT: Boom: Arm: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32")	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 3.0 1.5	20 15 10 5 0 -5 -10 -15 25 20 15 10 5	6.0 5.9 5.8 *5.4 *5.8 5.9	12,610 12,450 *11,760 *12,560 12,670	3.9 3.8 3.7 4.0 3.9 3.8	8,140 7,990 8,670 8,450 8,200					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.0 *7.2 *4.9 *4.6 *4.5 *4.6 4.9	*12,350 *12,530 11,970 11,580 11,890 *15,470 *15,470 *10,930 *10,120 *9,950 *10,220 10,840	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 •4.9 4.2 3.6 3.3 3.2	10,400 8,630 7,790 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,300 7,030	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8		
Arm: Shoe: CWT: Boom: Arm: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 3.0 1.5 0.0	20 15 10 5 0 -5 -10 -15 25 20 15 10 5 0	6.0 5.9 5.8 *5.4 *5.4 *5.8 5.9 5.8	12,610 12,450 *11,760 *12,560 12,670 12,460	3.9 3.8 3.7 4.0 3.9 3.8 3.7	8,140 7,990 8,670 8,450 8,200 8,000					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.0 *7.2 *4.9 *4.6 *4.5 *4.6 4.9 5.0	*12,350 *12,530 11,970 11,580 11,890 11,890 *15,470 *15,470 *10,930 *10,120 *9,950 *10,220 10,840 11,090	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 4.9 4.2 3.6 3.3 3.2 3.2	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 *10,930 *10,930 9,480 8,020 7,300 7,030 7,150	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3	22.3 24.8 26.2 26.5 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8 27.1		
Arm: Shoe: CWT: Boom: Arm: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 3.0 1.5 0.0 -1.5	20 15 10 5 0 -5 -10 -15 25 20 15 10 5 0 -5	6.0 5.9 5.8 *5.4 *5.8 5.9	12,610 12,450 *11,760 *12,560 12,670	3.9 3.8 3.7 4.0 3.9 3.8	8,140 7,990 8,670 8,450 8,200					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.0 *7.2 *4.9 *4.6 *4.5 *4.6 4.9 5.0 5.5	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470 *15,470 *10,930 *10,930 *10,930 *10,220 10,840 11,090 12,060	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 •4.9 4.2 3.6 3.3 3.2 3.2 3.2 3.5	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,300 7,030 7,150 7,750	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8 27.1 25.5		
Arm: Shoe: CWT: Boom: Arm: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 4.5 7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0	20 15 10 5 -5 -10 -15 25 20 15 10 5 0 -5 -10	6.0 5.9 5.8 *5.4 *5.4 *5.8 5.9 5.8	12,610 12,450 *11,760 *12,560 12,670 12,460	3.9 3.8 3.7 4.0 3.9 3.8 3.7	8,140 7,990 8,670 8,450 8,200 8,000					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.0 *7.2 *4.9 *4.6 *4.5 *4.6 4.9 5.0 5.5 5.5 6.5	*12,350 *12,530 11,970 11,580 11,890 *13,090 *15,470 *15,750 *10,930 *10,120 *9,950 *10,220 10,840 11,090 12,060 14,380	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 •4.9 4.2 3.6 3.3 3.2 3.2 3.2 3.5 4.1	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,300 7,030 7,150 7,750 9,180	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8 6.9	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8 27.7 27.5 27.7		
Arm: Shoe: CWT: Boom: Arm: Shoe: CWT:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg (9,260lb)	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5	20 15 10 5 0 -10 -15 25 20 15 10 5 0 -5 -10 -15 10 -5 -10 -15 -15 -15 -15 -15 -15 -15 -15	6.0 5.9 5.8 *5.4 *5.4 *5.8 5.9 5.8	12,610 12,450 *11,760 *12,560 12,670 12,460	3.9 3.8 3.7 4.0 3.9 3.8 3.7	8,140 7,990 8,670 8,450 8,200 8,000					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.0 *7.2 *4.9 *4.6 *4.5 *4.6 4.9 5.0 5.5 6.5 *6.9	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470 *15,470 *15,750 *10,930 *10,120 *9,950 *10,220 10,840 11,090 12,060 14,380 *15,270	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 •4.9 4.2 3.6 3.3 3.2 3.2 3.2 3.5 4.1 5.7	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,030 7,030 7,030 7,750 9,180 12,930	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8 6.9 5.6	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8 27.1 25.5 27.1 25.5 22.7 18.0		
Arm: Shoe: CWT: Boom: Arm: Shoe: CWT: Boom:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8")	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5	20 15 10 5 0 -5 -10 -5 25 20 15 10 5 0 -5 -10 -5 -10 -15 25	6.0 5.9 5.8 *5.4 *5.8 5.9 5.8 5.8	12,610 12,450 *11,760 *12,560 12,670 12,460 12,400	3.9 3.8 3.7 4.0 3.9 3.8 3.7 3.7	8,140 7,990 8,670 8,450 8,200 8,000 7,950					*5.6 *5.7 5.4 5.3 5.4 *5.9 *7.0 *7.0 *7.2 *4.9 *4.6 *4.5 *4.6 4.9 5.0 5.5 6.5 *6.9 *4.9	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470 *15,470 *10,930 *10,120 *9,950 *10,220 10,840 11,090 12,060 14,380 *15,270 *10,920	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 3.4 4.9 4.2 3.6 3.2 3.2 3.2 3.5 4.1 5.7 4.5	10,400 8,630 7,790 7,490 7,650 8,380 10,180 11,5530 10,180 11,5530 10,930 9,480 8,020 7,300 7,300 7,300 7,300 7,300 7,150 7,750 9,180 12,930 10,160	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8 6.9 5.6 7.1	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8 27.5 27.8 27.1 25.5 22.7 18.0 23.0		
Arm: Shoe: CWT: Boom: Arm: Shoe: CWT: Boom: Arm:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 3.5m (11'6")	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 3.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0	20 15 10 5 0 -5 -10 -5 25 20 15 10 5 0 -5 -10 5 -10 5 -10 5 25 20	6.0 5.9 5.8 *5.4 *5.8 5.9 5.8 5.8 5.8	12,610 12,450 11,760 12,560 12,670 12,460 12,400	3.9 3.8 3.7 4.0 3.9 3.8 3.7 3.7 4.2	8,140 7,990 8,670 8,450 8,200 8,000 7,950 7,950					*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.0 *4.9 *4.6 *4.5 *4.6 5.0 5.5 *6.9 *4.9 *4.9	*12,350 *12,530 11,970 11,580 11,890 13,090 *15,470 *15,750 *10,930 *10,120 *9,950 *10,220 10,840 11,090 12,060 *15,270 *10,920 *10,800	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 4.0 4.2 3.6 3.3 3.2 3.5 3.2 3.5 4.1 5.7 4.5 3.6	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 10,180 8,020 7,300 7,300 7,300 7,300 7,150 7,750 9,180 9,180 12,930 10,160 8,060	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8 6.9 5.6 7.1 8.1	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8 27.1 25.5 2.7 8 27.1 25.5 2.7 18.0 23.0 26.5		
Arm: Shoe: CWT: Boom: Arm: Shoe: CWT: Boom: Arm: Shoe: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 3.5m (11'6") 800mm (32")	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 7.5 6.0 4.5	20 15 10 5 0 -5 -10 -15 25 20 15 10 5 0 -5 -10 -15 25 20 15	6.0 5.9 5.8 *5.4 *5.8 5.9 5.8 5.8 5.8 5.8 *4.7 *4.8	12,610 12,450 *11,760 *12,560 12,670 12,460 12,400 *10,360 *10,550	3.9 3.8 3.7 4.0 3.9 3.8 3.7 3.7 3.7 4.2 4.1	8,140 7,990 8,670 8,450 8,200 8,000 7,950 8,940 8,820	46		30		*5.6 *5.7 5.4 5.3 5.4 5.9 *0.0 *0.0 *0.0 *0.0 *0.0 *0.0 *0.0 *0	*12,350 *12,530 11,570 11,580 11,890 *13,090 *10,130 *10,120 *9,950 *10,220 *10,220 *10,220 *10,220 *10,220 *13,270 *10,920 *10,800 *10,800	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 4.0 4.2 3.6 3.3 3.2 3.5 3.2 3.5 4.1 5.7 4.5 3.6 3.2	10,400 8,630 7,790 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,300 7,030 7,030 7,150 7,750 9,180 12,930 10,160 8,060 7,000	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8 6.9 5.6 7.1 8.1 8.8	22.3 24.8 26.2 25.5 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8 27.1 25.5 27.7 18.0 23.0 23.0 26.5 28.6		
Arm: Shoe: CWT: Boom: Arm: Shoe: CWT: Boom: Arm: Shoe: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 3.5m (11'6") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 7.5 6.0 -1.5 -3.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 3.0 -4.5 3.0	20 15 10 5 0 -5 -10 -15 25 20 15 10 -5 -10 -15 25 20 -15 20 15 10 -15 20 15 10 -15 20 15 10 -15 20 -15 -15 -10 -15 -15 -10 -15 -15 -15 -15 -15 -15 -15 -15	6.0 5.9 5.8 *5.4 *5.8 5.9 5.8 5.8 5.8 5.8 5.8 *4.7 *4.8 *5.2	12,610 12,450 *11,760 *12,560 12,670 12,460 12,400 *10,360 *10,550 *11,410	3.9 3.8 3.7 4.0 3.9 3.8 3.7 3.7 4.2 4.1 4.0	8,140 7,990 8,670 8,450 8,200 8,000 7,950 8,940 8,820 8,820 8,820 8,560	4.6	9680	3.0	6270	*5.6 *5.7 5.4 5.3 5.4 5.9 *7.0 *7.2 *4.9 *4.6 *4.5 *4.6 *4.9 5.0 5.5 6.5 6.5 *6.9 *4.9 *4.9 *4.9	*12,350 *12,530 11,570 11,580 11,890 *15,470 *15,470 *15,750 *10,930 *10,220 *0,950 *10,220 *10,220 *1,090 *15,270 *10,920 *10,670 9,900	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 4.0 4.2 3.6 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	10,400 8,630 7,790 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,300 7,030 7,030 7,150 7,750 9,180 12,930 10,160 8,060 7,000 6,450	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 8.3 7.8 6.9 5.6 7.1 8.1 8.8 9.1	22.3 24.8 26.2 25.5 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.8 27.5 27.8 27.1 25.5 27.8 27.1 25.5 27.7 18.0 26.5 28.6 29.8		
Arm: Shoe: CWT: Boom: Arm: Shoe: CWT: Boom: Arm: Shoe: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 3.5m (11'6") 800mm (32")	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 7.5 6.0 -4.5 7.5 6.0 -4.5 7.5 6.0 4.5 7.5 6.0 4.5 7.5 6.0 1.5 7.5 6.0 1.5 7.5 6.0 1.5 7.5 6.0 1.5 7.5 6.0 1.5 7.5 7.5 6.0 1.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7	20 15 10 5 0 -5 -10 -15 20 15 0 -5 -10 -15 20 -15 20 -15 20 15 10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5	6.0 5.9 5.8 *5.4 *5.8 5.9 5.8 5.8 5.8 *4.7 *4.8 *5.2 *5.7	12,610 12,450 *11,760 *12,560 12,670 12,460 12,400 *10,550 *11,410 *12,500	3.9 3.8 3.7 4.0 3.9 3.8 3.7 3.7 3.7 4.2 4.1 4.0 3.8	8,140 7,990 8,670 8,450 8,200 8,000 7,950 8,940 8,820 8,820 8,820 8,560 8,250	4.6 4.5	9,680	3.0 2.9	6,270	*5.6 *5.7 5.4 5.3 5.4 5.9 *7.2 *4.9 *4.6 *4.5 *4.6 *4.9 5.0 5.5 6.5 *6.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4	*12,350 *12,530 11,970 11,580 11,890 *15,470 *15,470 *15,470 *15,750 *10,930 *10,120 *9,950 *10,220 10,840 *15,270 *10,920 *10,800 9,900 9,640	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 4.9 4.2 3.6 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,300 7,300 7,300 7,150 7,750 9,180 12,930 10,160 8,060 6,450 6,450 6,250	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8 6.9 5.6 9.5 5.0 8.4 8.4 8.5 8.3 7.8 6.9 5.0 8.4 8.4 8.5 8.3 7.8 9.5 8.4 9.5 8.4 8.4 8.4 8.5 8.4 8.4 8.5 8.4 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5	22.3 24.8 26.2 25.5 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.8 27.1 25.5 27.8 27.1 25.5 27.7 18.0 23.0 26.5 28.6 29.8 30.1		
Arm: Shoe: CWT: Boom: Arm: Shoe: CWT: Boom: Arm: Shoe: Shoe:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 3.5m (11'6") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -1.5 -3.0 -4.5 3.0 1.5 6.0 4.5 3.0 1.5 0.0 0 -1.5 0.0 0 -1.5 0.0 0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 -1.5 0.0 0.0 -1.5 0.0 0.0 -1.5 0.0 0.0 -1.5 0.0 0.0 0.0 -1.5 0.0 0.0 0.0 -1.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	20 15 10 5 0 -5 -10 15 20 15 0 -5 -5 -0 -15 20 -15 20 -15 20 -5 -10 -5 -10 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -0 -0 -5 -0 -5 -0 -5 -0 -5 -0 -0 -5 -0 -5 -0 -5 -0 -5 -0 -5 -5 -0 -5 -5 -0 -5 -5 -0 -5 -5 -5 -0 -5 -5 -0 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5	6.0 5.9 5.8 *5.4 *5.8 5.9 5.8 5.8 5.8 *4.7 *4.8 *5.2 *5.7 5.8	12,610 12,450 '11,760 '12,560 12,670 12,460 12,400 '10,550 '11,410 '12,500 12,460	3.9 3.8 3.7 4.0 3.9 3.8 3.7 3.7 4.2 4.1 4.0 3.8 3.7	8,140 7,990 8,670 8,450 8,200 8,000 7,950 8,940 8,820 8,560 8,560 8,560 8,250 8,000		9,680		6,270	*5.6 *5.7 5.4 5.3 5.4 5.9 *5.9 *0.0 *7.0 *4.9 *4.6 5.0 5.5 *6.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4	*12,350 *12,530 11,970 11,580 11,890 *15,470 *15,470 *15,750 *10,930 *10,120 *9,950 *10,220 10,840 12,060 14,380 *15,270 *10,920 *10,920 *10,800 10,670 9,960 9,820	4,7 3,9 3,5 3,4 3,5 3,8 4,6 6,8 4,9 4,2 3,6 3,3 3,2 3,5 3,2 3,5 4,1 5,7 4,5 3,6 3,2 2,9 2,8 2,9	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,300 7,150 7,750 9,180 12,930 10,160 8,060 7,000 6,450 6,250 6,340	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8 6.9 5.6 7.1 8.8 9.1 9.2 9.0	22.3 24.8 26.2 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.5 27.5 27.5 27.7 18.0 23.0 26.5 28.6 29.8 30.1 29.5		
Arm: Shoe: CWT: Boom: Arm: Shoe: CWT:	2.5m (8'2") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 2.9m (9'6") 800mm (32") 4,200kg (9,260lb) 5.7m (18'8") 3.5m (11'6") 800mm (32") 4,200kg	7.5 6.0 4.5 3.0 1.5 0.0 -1.5 -3.0 -4.5 7.5 6.0 4.5 7.5 6.0 -4.5 7.5 6.0 -4.5 7.5 6.0 4.5 7.5 6.0 4.5 7.5 6.0 1.5 7.5 6.0 1.5 7.5 6.0 1.5 7.5 6.0 1.5 7.5 6.0 1.5 7.5 7.5 6.0 1.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7	20 15 10 5 0 -5 -10 -15 20 15 0 -5 -10 -15 20 -15 20 -15 20 15 10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5	6.0 5.9 5.8 *5.4 *5.8 5.9 5.8 5.8 5.8 *4.7 *4.8 *5.2 *5.7	12,610 12,450 *11,760 *12,560 12,670 12,460 12,400 *10,550 *11,410 *12,500	3.9 3.8 3.7 4.0 3.9 3.8 3.7 3.7 3.7 4.2 4.1 4.0 3.8	8,140 7,990 8,670 8,450 8,200 8,000 7,950 8,940 8,820 8,820 8,820 8,560 8,250		9,680		6,270	*5.6 *5.7 5.4 5.3 5.4 5.9 *7.2 *4.9 *4.6 *4.5 *4.6 *4.9 5.0 5.5 6.5 *6.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4.9 *4	*12,350 *12,530 11,970 11,580 11,890 *15,470 *15,470 *15,470 *15,750 *10,930 *10,120 *9,950 *10,220 10,840 *15,270 *10,920 *10,800 9,900 9,640	4.7 3.9 3.5 3.4 3.5 3.8 4.6 6.8 4.9 4.2 3.6 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	10,400 8,630 7,790 7,490 7,650 8,380 10,180 15,530 *10,930 9,480 8,020 7,300 7,300 7,300 7,150 7,750 9,180 12,930 10,160 8,060 6,450 6,450 6,250	6.9 7.6 8.0 8.1 7.9 7.4 6.5 5.0 6.2 7.3 8.0 8.4 8.5 8.3 7.8 6.9 5.6 9.5 5.0 8.4 8.4 8.5 8.3 7.8 6.9 5.0 8.4 8.4 8.5 8.3 7.8 9.5 8.4 9.5 8.4 8.4 8.4 8.5 8.4 8.4 8.5 8.4 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5	22.3 24.8 26.2 25.5 25.8 24.1 21.1 16.0 19.9 23.8 26.2 27.8 27.1 25.5 27.8 27.1 25.5 27.7 18.0 23.0 26.5 28.6 29.8 30.1		

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

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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.

		relate	ifting hook related to ground level		6.0m	(20')			7.5m	(25')		9.0m (30')				10.5m (35')			
				Alc	ong UC	Acro	oss UC	Alo	ng UC	Acro	ss UC	Alor	ng UC	Acro	oss UC	Alor	ng UC	Acro	oss UC
		m	in	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb	t	lb
	8.85m (29'0")	an appropriate the	40														10 5 0 0		10.50
Arm:	6.25m (20'6")	 A solution of the second second	35														*3,530		*3,53
Shoe:	800mm (32")	9.0	30														*4,750		•4,75
CWT:	5 000kg	7.5	25													*2.2	*4,910	*2.2	'4,91
	(11 030lb)	6.0	20									10.0	10 1 10	10.0	10110	*2.4	•5,240	*2.4	-5,24
		4.5	15			0.1988		Real Provide			利益的民族的	*2.8	*6,140	*2.8	*6,140	*2.6	*5,700	2.5	5,45
		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	5,14
		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	4,83
		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	4,54
		-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	4,31
		-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	4,16
		-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	4,09
		-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	4,11
		-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	4,27
		-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		Pars Bi	a la constante			1250173	a server	1.8.1	N. S.
		Lifting hook related to ground		(12.0m (40')			13.5m (45')				Max. reach								
		lev	/el	Alc	ong UC	Acro	oss UC	Alo	ng UC		oss UC		ng UC		oss 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		
		Proceedings.	-20	*2.4	*3,580	1.6	3,460					*1.6	*3,490	1.6	3,460	12.3	40.0		
		-6.0	-20	6.17															
		-6.0 -7.5	-20	2.7								*2.0	·4,590	1.8	4,100	11.2	36.3		
		1003053007511		2.4								*2.0 *3.0	*6,990	1.8	4,100	9.7	36.3 31.2		

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 EU (Stage IV)
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
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
Boom and arm holding valves Multi-stage filtering system
Boom and arm holding valves Multi-stage filtering system Boom cylinders (x2)
Boom and arm holding valves Multi-stage filtering system Boom cylinders (x2) Cylinder cushioning
Boom and arm holding valves Multi-stage filtering system Boom cylinders (x2) Cylinder cushioning Cylinder contamination seals
Boom and arm holding valves Multi-stage filtering system Boom cylinders (x2) Cylinder cushioning
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
Boom and arm holding valves Multi-stage filtering system Boom cylinders (x2) Cylinder cushioning Cylinder contamination seals Auxiliary hydraulic valve
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 Frame
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
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 Frame
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 Frame Access way with handrail Tool storage area Punched metal anti-slip plates
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 Frame Access way with handrail Tool storage area Punched metal anti-slip plates Undercover (heavy-duty)
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 Frame Access way with handrail Tool storage area Punched metal anti-slip plates Undercover (heavy-duty) Full height counterweight:
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 Frame Access way with handrail Tool storage area Punched metal anti-slip plates Undercover (heavy-duty)

Cab and interior ROPS (ISO12117-2) certified cab Silicon oil and rubber mounts with spring Ourseiner her her her her her her her her her h
Silicon oil and rubber mounts with spring
1 9
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 Includes Defroster
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
Undercarriage
Undercover
Hydraulic track adjusters
Greased and sealed track link
Track Guard
800 mm (32") shoe with triple grousers
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

Ingine	
Block hea	ater: 120 V
Oil bath p	pre-cleaner
	olant heater, 5 kW
Water se	parator with heater
Auto eng	ne shutdown
Fuel filler	pump: 50 I/min (13.2 gpm), with automatic shut-of
Standard	cooling system by fan clutch (40 deg. C)
lectric	
Extra wor	k lights (Halogen or LED):
Boom-	mounted 1
Cab-m	ounted 3
Counte	rweight-mounted 1
Anti-theft	system
Rotating	warning beacon
Flashing	beacon, LED
Side view	camera
Dig assis	t 2D/In-field/Steelwrist
Volvo sma	art View (VSV)

OPTIONAL EQUIPMENT	
Hydraulic system	Cab and interior
Boom hose rupture valve (HRV) with overload warning device	Cab-mounted falling object protective structure (FOPS)
Arm hose rupture valve (HRV)	Side view camera
Boom float function with HRV	Rain shield
Hydraulic piping:	Smoker kit (ashtray and lighter)
Work tool management system (up to 20 programmable	Safety net for front window
memories)	Lower wiper with intermittent control
Hammer & shear, 1 and 2 pump flow	Cleaning air gun
Slope & rotator (40lpm/11gpm or 60lpm/16gpm)	Anti-vandalism kit
Extra for slope & rotator	Undercarriage
Grapple	Full track guard
Oil leak (drain) line	500mm (20") / 600mm (24") / 600mm HD (24") /
Quick coupler piping	700mm (28") / 900mm (36") shoe with triple grousers
Breaker & shear pressure pre-setting	700 mm (28") shoe with double grousers
Additional return filter	600 mm (24") shoe with single grouser
Volvo hydraulic guick coupler S1, S1 without hook	Digging equipment
Hydraulic oil, biodegradable 46	Boom: 5.7 m (18'8") monoblock, heavy duty
Hydraulic oil, longlife oil 32, 68	Boom: 5.57 m (18'3") 2-piece boom
Cab and interior	Arm: 2.0 m (6'7"), 2.5 m (8'2"), 2.9 m (9'6"), 3.5 m (11'6")
Fabric seat without heater	Linkage with lifting eye
Fabric seat with heater and air suspension	Service
Control joysticks with semi-long	Tool kit, daily maintenance
Control joysticks with 3 switch & 1 propotional	Tool kit, full scale
Falling object guard (FOG)	
Frame-mounted	
Cab-mounted	
Cab-mounted	

Selection of Volvo optional equipment

Auto engine shutdown

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LED lights



Two-piece boom



Fuel fill pump



Diesel coolant heater



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.

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Volvo Construction Equipment

Instrument panels 85

check message for quick coupler locking confirmation will appear in the IC (Instrument Cluster) and the buzzer sound will continue.

NOTE!

When the attachment is correctly locked in the attachment quick coupler, this has to be confirmed by pressing the upper end of the attachment quick coupler confirmation switch (position 8) on the left instrument panel, see page *35*.

See page 223 for the complete procedure of the attachment quick coupler operation.

12. IC (Instrument Cluster) control keypad

1 Camera button

This button is used to control the camera screen in the IC (Instrument Cluster).

A short press on the camera button shows the camera view with the gauges on top of the screen.

A long press on the camera button will bring up the camera configuration bar.

For detailed information about the camera control, see page 128.

2 HVAC control button

This button is used to control the HVAC system.

For detailed information about this climate control system, see page *117*.

3 Work lights control button

This button is used to control the work lights on the boom, counterweight, cab front and cab rear.

A short press on the work lights button switches on/off the work lights with the latest configuration.

If one of the work lights is activated, this button is illuminated.

Work lights menu

A long press on the work lights button opens the work lights menu on the IC (Instrument Cluster).

Press the arrow right or arrow left button to select the work lights on in clockwise / counter-clockwise order.

Press SELECT to turn the selected working light on/off. If the light is on the icon is yellow.

The selection menu can be closed by pressing ESC on the keypad.

The position where you escape the menu is saved.

4 HVAC auto-mode select button

This button is used to control the HVAC system. See page *117*.

5 Arrow up button

Press this button to scroll between items and adjust each segment on the screen.

6 Defroster select button

This button is used to activate the defroster.



- 1 Camera button
- 2 HVAC control button
- 3 Work lights control button
- 4 HVAC auto-mode select button
- 5 Arrow up button
- 6 Defroster select button
- 7 Arrow left button
- 8 Arrow down button
- 9 Arrow right button
- 10 ESC button
- 11 Select button
- 12 Stabiliser control button





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

VOLVO

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.

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REV. 03/2013

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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 <u>Cowin Equipment Co Inc</u> (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

www.dhs.gov/E-Verify





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.

Employer Cowin Equipment	Co Inc		
Tracy Womack			
Name (Please Type or Print)		Title	
Electronically Signed Signature	*****	02/15/2012 Date	
		Late	
Department of Homeland Secu	rity - Verification	Division	
USCIS Verification Division	1		
Name (Please Type or Print)		Title	
Electronically Signed		02/15/2012	
Signature		Date	
		· · · · · · · · · · · · · · · · · · ·	
Infor	mation Required	d for the E-Verify Program	
Information relating to yo	ur Company:		
Company Nam	e:Cowin Equipment	t Co Inc	
	e.comii Equipileit		
Company Facility Addres	_{S:} 2238 Pinson Valle	y Parkway	
	Birmingham, AL 3	5217	****
Company Alternate Address:	PO Box 10624		
	Birmingham, AL 3	35202	
County or Parish:	JEFFERSON		
Employer Identification Number:	630141942		

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www.dhs.gov/E-Verify

Company ID Number: 475502

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E-VERIFY

CORPORATE COMPANY

If you have any questions, contact E-Verify at 888-464-4218.

INFORMATION REQUIRED FOR E-VERIFY	
Information relating to your Company:	
Company Name:	Cowin Equipment Company Inc
Company Facility Address:	2238 Pinson Valley Parkway Birmingham, AL 35217
County or Parish:	JEFFERSON

Information relating to the Corporate Administrator(s) for your Company on policy questions or operational problems:

Name: Telephone Number: E-mail Address:

Name: Telephone Number: E-mail Address: George Tickle (205) 488 - 3950 gtickle@cowin.com

Tracy Womack (205) 488 - 3959 twomack@cowin.com Fax Number: (205) 841 - 2639 Fax Number: (205) 488 - 3164