

**BID SUBMITTAL FORM**  
**Alabama County Joint Bid Program**  
**BID ITEM – 3 CY WHEEL LOADER - OPTION C**

Company Name: Cowin Equipment Company Inc

Address: 4325 Northern Boulevard  
Montgomery Al 36110

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

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

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

By submitting this bid, we agree:

Initials

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

JE

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

JE

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

JE

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

JE

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

JE

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

JE

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

JE

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

JE

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

JE

### 3 CY WHEEL LOADER - OPTION C

Total Bid Price for Standard Machine: \$ 179,867<sup>00</sup>  
(Total Bid Price for Standard Machine Includes Freight Preparation, Delivery and Standard Warranty Costs)\*

Freight Preparation and Delivery: \$ 1,500<sup>00</sup>  
(Included in Standard Machine Bid Price)

Manufacturer's Suggested Retail Price for Standard Machine: \$ 225,349<sup>00</sup>

Equipment Model #: Volvo L70H

Description: 3CY Wheel Loader

Signature of company representative submitting bid: John Edwards

Title: Governmental Sales Manager

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

**BID SUBMITTAL FORM: OPTION COST SHEET  
3 CY WHEEL LOADER - OPTION C**

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\*

9%

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

9%

Equipment Model #: Volvo L70H

Description: 3CY Wheel Loader

Signature of company representative submitting bid: John Edwards

Title: Governmental Sales Manager

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

# INVITATION TO BID HEAVY EQUIPMENT

## NOTICE OF BID OPENING

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

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

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

## NOTICE OF BID OPENING PROCEDURES

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

## THE INVITATION PACKAGE

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

## **PREPARING AND SUBMITTING BIDS**

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

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

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

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

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

All bids should be mailed or hand-delivered to:

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

## **BID SPECIFICATIONS**

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

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

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

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

## **ACQUISITION AND FINANCING OPTIONS**

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

## **BIDDER QUALIFICATIONS**

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

## **BID AWARD**

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

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

### **CONTACT REGARDING BIDS AND INVITATION**

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

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

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

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

**OR**

**Patrick McDougald**  
**E-mail: [barbeng@bellsouth.net](mailto:barbeng@bellsouth.net)**

**BID SPECIFICATIONS  
FOR  
3 CY WHEEL LOADER - OPTION C**

**GENERAL**

These specifications shall be construed as the minimum acceptable standards for a 3-yard wheel loader. 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 manufacturer's equipment. The wheel loader must be a new current production model and shall meet all EPA and other applicable standards at the time of manufacturer.

The use of specific names and numbers in the specification 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 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 bid price 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) copy of the 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 bid. If 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 on its machine.

**WARRANTY**

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

Yes  No  
Page # \_\_\_\_\_ or  
Attachment



**DUMP CLEARANCE**

The wheel loader dump clearance shall be no less than 10' 4" at full height and 45 degree dump angle with a double arm Z bar configuration

Yes  No   
Page # 19

**STEERING**

The wheel loader shall have a 40-degree full turn articulation steering angle both right and left of center.

Yes  No   
Page # 19

**OPERATOR STATION**

Cab shall be designed and built by the loader manufacturer.

Yes  No   
Page # 25

Cab shall be enclosed and equipped with heater, air conditioner

Yes  No   
Page # 26

Loader shall meet ROPS/FOPS regulations standard in North America.

Yes  No   
Page # 25

Loader shall have easy to read gauges, gear selection, direction and RPM readings.

Yes  No   
Page # 9, 24

Loader shall have a standard hydraulic joystick which controls both lift and tilt functions. A remote transmission control switch on joystick to be standard.

Yes  No   
Page # 25

Loader shall have fully adjustable, air suspension seat.  
Loader shall be equipped with a Fire Extinguisher

Yes  No   
Page # 26

Loader shall have retractable 3" seat belt.

Yes  No   
Page # 26

### **POWERTRAIN**

Engine must have a minimum of **six (6)** cylinders and turbocharged and **designed and manufactured by machine manufacturer.**

Yes  No   
Page # 16

The loader shall be equipped with crankcase and powertrain guards.

Yes  No   
Page # 26

All powertrain components shall be designed and built by loader manufacturer.

Yes  No   
Page # 16, 17

The engine shall have a minimum net HP of **170** at 1800 RPM with a minimum displacement of **348** cubic inches and **629** lbs./ft. torque.

Yes  No   
Page # 16

The engine shall meet all Tier 4/final emission requirements

Yes  No   
Page # 16

Loader shall have electronic module to control engine timing and monitoring of vital engine systems.

Yes  No   
Page # 16

Loader shall have fixed front axle with locking differential and oscillating rear axle ( $\pm 13^\circ$ ) with open differential.

Yes  No   
Page # 17

Loader shall have fully enclosed, adjustment free oil-disc brakes.

Yes  No   
Page # 17

Unit shall be equipped with 20.5 R25 L3 XHA tires.

Yes  No   
Page # 17

Loader shall have powershift transmission designed and built by manufacturer.  
The loader shall have at minimum 4-forward/4 reverse with a minimum travel speed forward of 28 mph and reverse of 28 mph.

Yes  No   
Page # 17

Loader shall have computer-controlled modulation for smoother shifting.

Yes  No   
Page # 17

Loader shall have manual shifting as well as auto shifting options. Auto shift will have full throttle (aggressive operation) and variable shift (economy mode) options.

Yes  No   
Page # 17

**INSTRUMENTATION**

The wheel loader shall include the following gauges: hour meter, fuel, transmission or torque converter oil temperature and engine coolant temperature.

Yes  No   
Page # 17

The wheel loader shall also include the following indicator lights: battery charge, engine oil pressure, low coolant level, parking brake warning, and low brake pressure.

Yes  No   
Page # 17, 24

**HYDRAULIC SYSTEM:**

Shall have a minimum flow of 40 gallons/minute.

Yes  No   
Page # 18

**WORK TOOLS**

Bucket shall be designed and built by the loader manufacturer.

Yes  No   
Page # 27

Bucket shall be in 3.0 CYD capacity (with bolt-on cutting edges and teeth).

Yes  No   
Page # 22

**SERVICEABILITY**

All daily service points shall be accessible from the ground level and shall have sight gauges for radiator coolant, hydraulic oil and transmission oil.

All filters shall be vertically mounted and spin-on for ease of service and to prevent spilling during service.

Yes  No   
Page # 14, 24

**GENERAL**

Unit shall be equipped with vandalism protection with locking service ports, cushioned steering stops, front fenders, and toolbox in addition to all other Standard equipment

Yes  No   
Page # 25

**OPERATING WEIGHT AND LIFT CAPACITIES**

Unit shall be minimum of **30,800** lbs. operating and proper ballasting for **3.0** cubic yard bucket and 20.5-25 radial (L-3) tires.

Yes  No   
Page # 22

Straight static tipping load shall be a minimum of **21,450** lbs.

Yes  No   
Page # 22

Full turn (40°) static tipping load shall be a minimum of **18,500** lbs.

Yes  No   
Page # 22

Breakout force shall be a minimum of **19,700** lbs.

Yes  No   
Page # 22

**Model: Volvo L70H, Wheel Loader**

Description	Article	MSRP
Volvo L70H, Wheel Loader	L70H	\$193,677
20.5R25* Bridgestone VJT	WL20011	\$13,465
4-Rims (3pc) for 20.5 or 600 tires	WL21004	\$3,244
Engine D6J (Tier 4F) US	WL32017	\$0
Fuel fill strainer	WL30007	\$0
Delayed Engine Shutdown	WL30024	\$147
Reversible cooling fan	WL37001	\$977
Rimpull	WL39501	\$0
Volvo Airsusp, Heated, 2pt, 3" belt	WL41010	\$1,613
Air conditioning with ACC (automatic climate control)	WL42001	\$5,184
Steering knob	WL45001	\$0
Sliding window in door	WL45003	\$0
ACC Fahrenheit decal only	WL45004	\$0
Universal key	WL45005	\$0
Secondary steering, electric	WL45019	\$0
Lunch box holder	WL45023	\$0
Anchorage manual	WL45027	\$0
Co-pilot incl Camera	WL45057	\$0
Operator Coaching Start	WL88201	\$0
LOTO, Lock out tag out	WL53009	\$0
Back up alarm	WL54001	\$0
EL Hydraulic 2 functions	WL61027	\$1,635
Max Boom Height	WL65013	\$0
Oil sampling ports	WL71002	\$238
Footsteps front frame	WL71005	\$232
Footstep, right side	WL71009	\$0
Boom Suspension System (" Ride Control" . Includes single acting lift system.)	WL80001	\$4,937
Decals, English/Spanish	WL83004	\$0
Cover plates, rear frame	WL86013	\$0
Frame, life time warranty	WL86041	\$0
CareTrack Connectivity 4 yr Subscription	WL88010	\$0
CareTrack, GSM/Satellite	WL88018	\$0
De-activate SAT	WL88020	\$0
<b>TOTAL PRICE STANDARD SPECIFICATION</b>		<b>\$225,349</b>

# VOLVO

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

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

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

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

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

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

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

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

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

## **Warranty – Disclaimers – Limitations**

### **LIMITATIONS OF LIABILITY AND DAMAGES**

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

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

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

### **ALLOCATION OF RISK**

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

### **STATUTE OF LIMITATIONS**

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



V O L V O



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



Volvo Wheel Loaders 11.0-17.3 t / 24,250-38,140 lb 164-184 hp

**L60H, L70H, L90H**

Volvo Construction Equipment



# Welcome to our world

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

Welcome to the world of Volvo Construction Equipment – we think you're going to like it here.

## **Working harder, working smarter**

For over 180 years Volvo has been a pioneer in the design and manufacture of machines which set the standard for efficiency, performance and uptime. Across our range of excavators, wheel loaders and haulers, our reputation for engineering excellence is unrivalled, which means whatever your operation or application, we can provide a total fleet solution to help you succeed.

Building on our proud history, the Volvo Concept Lab continues to create cutting-edge ideas and innovative concepts, to ensure we offer customers machines which work harder and smarter long into the future.



## Solutions for you

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

### Designed for your business

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

### There when you need us

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

 <b>Fuel Efficiency Services</b>	 <b>Productivity Services</b>	 <b>Safety Services</b>
 <b>Financial Services</b>	 <b>Uptime Services</b>	 <b>Rental Services</b>
 <b>Volvo Attachments</b>	 <b>Genuine Volvo Parts</b>	 <b>New life Services</b>

# BUILDING TOMORROW

# Multitude of talents

Say hello to the latest additions to the H-Series wheel loaders: the upgraded L60H, L70H and L90H. Built on the established H-Series design, the next-generation machines are the ultimate all-arounders, offering the high quality performance you'd expect from a Volvo wheel loader, plus a host of features that promote greater versatility and stability to handle your workload.

## Designed to do more

Knock heavy-duty jobs down to size with the H-Series wheel loaders. These robust workhorses offer unshakable stability thanks to the new, optimized loading unit weight and redesigned counterweight. Designed to do more, the well-balanced machines yield up to 3% higher tipping load, so you can tackle a variety of tasks – no matter how demanding.



## Adapt to any application

Get the most out of your machine with a range of purpose-built attachments, including grapples, sweepers, material handling arms, snow plows and more. Because different jobs require different attachments, we can custom build a Volvo attachment to match your specific needs. To unlock the use of multiple attachments, simply engage the third and fourth hydraulic functions.



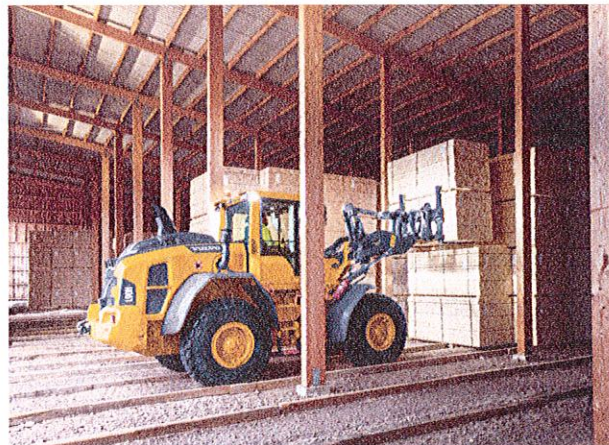
## Fully loaded

Whatever the job, we have the tools to get it done. Volvo offers a full range of Volvo buckets, including general purpose, grading, refuse, light material, and more, to handle everything, from light material to heavy rocks. Built on decades of engineering excellence, Volvo buckets are optimized for Volvo wheel loaders and durably designed for all types of materials and tasks.



## Made to match

Lift your machine's versatility to the next level with pallet forks, offering high visibility and the advantage of TP linkage and parallel movement. Ideal for pallet and material handling, Volvo forks are heavy-duty in design, allowing the wheel loader to move effortlessly around different work sites, such as yards, warehouses and harbors.



*"Even when the machine was fully turned, it remained stable and showed no indication of tipping over."*

**Test driver Sebastian Alm,**  
Firma Sebastian Alm (Sweden)



## LOADED WITH VERSATILITY

Take on any application with the H-Series wheel loaders, equipped with the Torque Parallel (TP) linkage for ultimate versatility. Not only does the TP linkage offer high breakout, tilt in and lifting forces, it keeps the attachments parallel throughout the lifting range for exceptional load stability and easy bucket filling. Change tools in a matter of seconds with the Volvo attachment bracket.

# Drive down your costs

Get the most out of your investment with a cost-effective solution. At Volvo, we're committed to driving your operating costs down. That's why we've refined the mid-sized H-Series wheel loaders to deliver up to 20% greater fuel efficiency and optimize productivity.

## Productivity up, fuel down

Cut operating costs and propel your machine's productivity with rimpull control. With the power to control the rimpull, the operator can reduce tire wear and prevent wheel spin for effective bucket filling. Select the optimum rimpull to match the application and ground conditions, and experience high productivity at low costs.

## Work smarter

For the best use of engine power in all applications, rely on Smart Control, designed to optimize fuel efficiency and performance. Standard on the mid-sized H-Series wheel loaders, Smart Control ensures the correct torque in all situations for perfect harmony between the engine and hydraulics.



## Do more on and off road

Do more on and off road with an increased top speed of 50km/h (31 mph). Not only is the machine faster, it is also a pleasure to operate thanks to the optional lock-up feature, which improves drive response and incline performance.

## Boost your profitability

Ensure a low total cost of ownership with a host of Productivity Services and Fuel Efficiency Services. From reports, training packages and consultancy solutions, Volvo has you covered – just speak to your dealer for more information.





# UP TO 20% MORE EFFICIENT

Achieve up to 20% greater fuel efficiency thanks to advanced features, such as Eco pedal and the new optional lock-up\* function. The lock-up feature eliminates losses in the torque converter by creating a direct drive between the engine and transmission, which work in harmony with the axles. To improve cycle times and fuel use, customize the lock-up engagement of your machine.

(\*with gear selection engagement, ranging from gears 2-4, 3-4, 4)

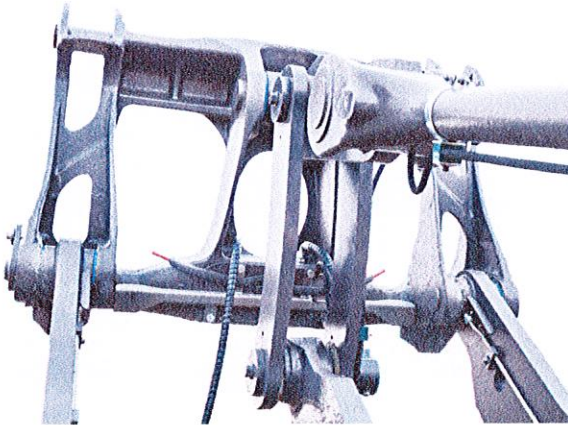
Lock-up is not available on L60H

# Comfortably in control

It's not just the machine that's ready for any challenge. From the comfort and security of the spacious Volvo cab, the operator is primed for a productive work shift.

## Safety as standard

Safe from the inside out, the latest loaders feature anti-slip steps and strategically placed handrails for ease of access, plus an array of seatbelt options, such as the orange three-point seatbelt. The attachment bracket uses a new visual indicator to let you know the attachment is locked and ready to use.



## See more, do more

Experience a clear view of the attachment and jobsite thanks to large expanses of glass, redesigned side mirrors, rear-view camera, as well as optional front camera and radar detect system. The machines also feature orange handrails and steps to stand out against the jobsite, and LED lights, available in various packages.



## Take command

Customize your Volvo and take command of hydraulic functions with electro servo controls\*. From the cab, adjust the detent third function, boom kick-out, return to dig and bucket leveling. Easily change between linear or single lever controls and select from three hydraulic settings to tailor the lever control according to your preferences.

\*Not available on L60H



## Bucket leveling function

Take your productivity to the next level with the bucket leveling function. The new function enhances operator performance by automatically returning the bucket from both dump and carry positions.

Not available on L60H







*"As far as I am concerned Volvo has cornered the market on operator comfort. They do everything they can to make it comfortable for the operator working eight hours day or longer. The heated seats are a real bonus. And with the high tip bucket I can drive on the flat floor and still reach the metering bin."*

**Ron Snell, loader operator,**  
Lycoming County Resource Management Services, Pennsylvania (USA)

# NO COMPROMISE ON COMFORT

Hard work has never felt so easy from the spacious of the Volvo cab, featuring your choice of comfortable operator seat, as well as ergonomic controls. Perform basic configurations using the Contronic key pad panel, and keep an eye on the operation with the information display.

# Load Assist

Optimize your load cycles with Load Assist, powered by Volvo Co-Pilot – the 10" in-cab display. Gain access to a set of smart apps\* and boost the efficiency of your operation.

## Tire Pressure Monitoring System

With the tire pressure monitoring app, you can check the condition of your tires from the comfort of the cab. Providing real-time information on tire pressure and temperature, the system saves time during machine inspections and can prolong tire lifetime.

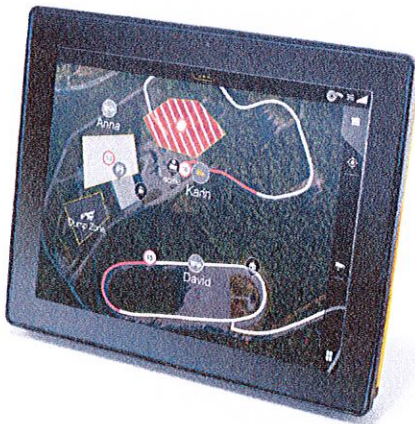


*"I find it really useful. The system will tell me when to activate the Boom Suspension System, when to activate Lock-Up and flag up any changes I need to make to my operating style, like not riding the brakes and the throttle at the same time. It's great for me and would be so helpful for new operators too."*

**Volvo Wheel Loader operator from USA**

## Map

Get accurate machine positioning with Map, a clever app that allows operators to monitor on-site traffic in real-time. Not only does this give operators an improved orientation of the site they are working on, but it allows them to proactively adjust their driving behavior according to traffic conditions.



## Integrated rear-view

Operators benefit from a full view of their surroundings when reversing, thanks to the rear-view camera and optional radar detect system which are now integrated into the Volvo Co-Pilot display.





# OPERATOR COACHING

As machines become more advanced, and with smarter technology, the Operator Coaching app helps to ensure operators are using their Volvo machine to its full potential. The intuitive app provides real-time guidance to operators, helping them understand how their actions influence machine productivity and efficiency, as well as identify areas for improvement or changes in their technique.

# Ultimate all-rounder

## Loaded with versatility

- Torque Parallel linkage
- Volvo attachment bracket
- Range of purpose-built attachments
- Optional custom-built attachment
- 3rd and 4th hydraulic functions
- Tailored Application packages

## Keep it moving

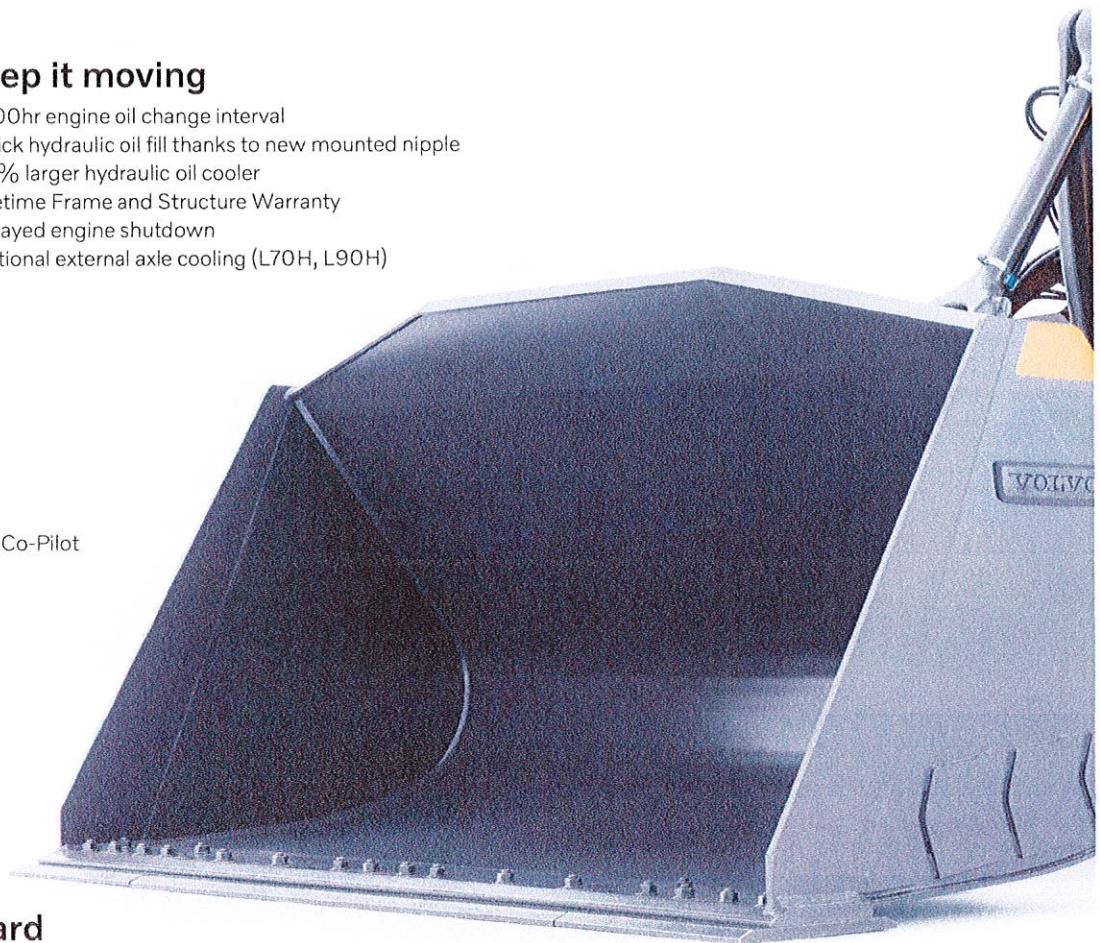
- 1000hr engine oil change interval
- Quick hydraulic oil fill thanks to new mounted nipple
- 50% larger hydraulic oil cooler
- Lifetime Frame and Structure Warranty
- Delayed engine shutdown
- Optional external axle cooling (L70H, L90H)

## Volvo Services

- Load Assist, powered by Volvo Co-Pilot
- Operator training
- ActiveCare Direct
- Genuine Volvo Parts

## Safety as standard

- Anti-slip steps and strategically placed handrails
- Orange three-point seatbelt
- Redesigned side mirrors
- Rear-view camera
- Optional radar detect system
- Optional external seatbelt indicator light



## Designed to do more

- Optimized loading unit weight, heavy-duty counterweight for greater stability
- Higher tipping load: 1.7% for L60H, 1.6% for L70H, 3.4% for L90H
- L90H: increased lifting height by 75 mm (3 in)
- Electro-servo controls
- Bucket leveling function
- Choice of three hydraulic response modes: active, normal, soft.

## Up to 20% more efficient

- Optional lock-up converter with gear selection (L70H, L90H)
- Increased top speed of 50km/h (31 mph) with lock-up feature
- Rimpull control
- Smart Control
- Smooth Control
- Eco pedal



## Greater access

- Cooler installation slides out for easier cleaning
- Repositioned fill spouts for transmission and engine oil
- Ground-level access to service points
- Electronically-operated engine hood

# Keep your machine moving

The latest generation Volvo L60H, L70H and L90H wheel loaders extends their already legendary status by offering an upgraded portfolio of uptime-enhancing features. From simplified serviceability to proactive dealer support, you have access to everything you need to keep your machine up and moving.

## Keep it cool

Count on Volvo to keep up. The improved hydraulic cooling capacity regulates the component temperature, for greater machine utilization when using attachments that are demanding on the hydraulics, and longer hydraulic component life. This, plus the external axle cooling option – ideal for tough applications – doubles the axle oil change intervals for higher uptime and lower maintenance costs.



## Greater access

To keep uptime high, the H-Series wheel loaders are equipped with an engine cover that opens electronically, allowing ground-level access to the service points, including the radiator. For swift and easy cleaning, the new cooler installation now slides out. Safely fill the transmission and engine oil thanks to newly repositioned fill spouts, and get back to work without delay.



## Delayed engine shutdown

Reduce the wear on your engine with the new delayed engine shutdown feature. The function shuts off the machine when the turbo has cooled down to the ideal temperature. Not only does the feature reduce component wear, it can also be scheduled by the operator to activate automatically for added convenience.



## Here to support you

Maintain productivity with our range of Genuine Volvo Parts – all backed by Volvo warranty – with 24-hour parts delivery guaranteed. Maximize machine uptime and reduce repair costs with ActiveCare Direct. The intelligent service from Volvo provides around the clock machine monitoring, as well as customer reports, which suggests ways to optimize efficient machine use and help you take preventative maintenance actions.





# DURABLE BY DESIGN

Built by Volvo, for Volvo, you can count on the proven design of the latest wheel loaders to meet the demands of tough job sites. Renowned for their reliability, the next-generation H-Series wheel loaders offer a Lifetime Frame and Structure Warranty, including the front frame, rear frame, articulation joint and loader arms.

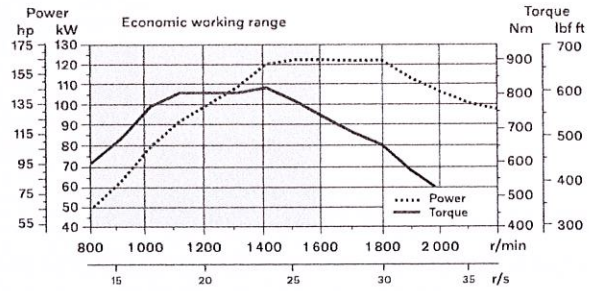
# Volvo L60H, L70H, L90H in detail

## Engine

6-cylinder, 6 liters inline turbocharged diesel engine with an advanced fuel injection system with the common rail. Fuel is distributed under high pressure from a high-pressure accumulator, the rail. One belt driven high pressure pump deliver the fuel to the rail and then further on via high-pressure pipes to the electronically operated fuel injectors. Engine meets Tier 4f / EU Stage 5 emission legislation.

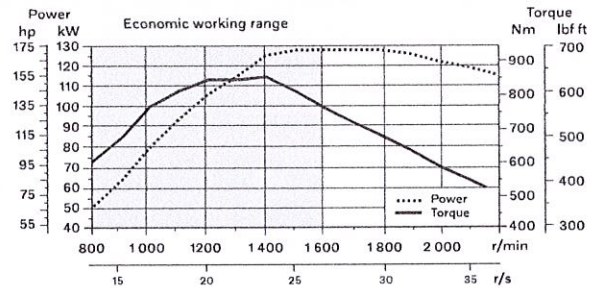
## L60H

Engine	Volvo	D6J
Max. power at	r/min (r/s)	1,500 - 1,800 (25 - 30)
SAE J1995 gross	kW (hp)	122 (164)
ISO 9249, SAE J1349 net	kW (hp)	122 (164)
Max. torque at	r/min (r/s)	1,400 (23)
SAE J1995 gross	Nm (ft lbf)	820 (605)
ISO 9249, SAE J1349 net	Nm (ft lbf)	820 (605)
Economic working range	r/min (r/s)	800 - 1,600 (13.3 - 26.7)
Displacement	l (in <sup>3</sup> )	5.7 (348)



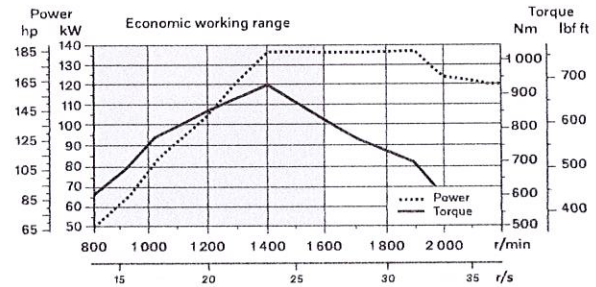
## L70H

Engine	Volvo	D6J
Max. power at	r/min (r/s)	1,500 - 1,800 (23.3 - 28.3)
SAE J1995 gross	kW (hp)	127 (170)
ISO 9249, SAE J1349 net	kW (hp)	127 (170)
Max. torque at	r/min (r/s)	1,400 (23.3)
SAE J1995 gross	Nm (ft lbf)	853 (629)
ISO 9249, SAE J1349 net	Nm (ft lbf)	853 (629)
Economic working range	r/min (r/s)	800 - 1,600 (13.3 - 26.8)
Displacement	l (in <sup>3</sup> )	5.7 (348)



## L90H

Engine	Volvo	D6J
Max. power at	r/min (r/s)	1,400 - 1,900 (23.3 - 31.7)
SAE J1995 gross	kW (hp)	137 (184)
ISO 9249, SAE J1349 net	kW (hp)	137 (184)
Max. torque at	r/min (r/s)	1,400 (23.3)
SAE J1995 gross	Nm (ft lbf)	934 (689)
ISO 9249, SAE J1349 net	Nm (ft lbf)	934 (689)
Economic working range	r/min (r/s)	800 - 1,600 (13.3 - 26.7)
Displacement	l (in <sup>3</sup> )	5.7 (348)





**Drivetrain****Torque converter:** Single-stage**Transmission:** Volvo countershaft transmission with single lever control. Fast and smooth shifting of gears with Pulse Width Modulation (PWM) valve.**Transmission:** Volvo Automatic Power Shift (APS) gear shifting system with fully automatic shifting 1-4 and mode selector with 4 different gear shifting programs, including AUTO mode. Also equipped with Rimpull control to avoid wheel spin and optimize bucket filling.**Axles:** Volvo fully floating axle shafts with planetary hub reductions and cast steel axle housing. Fixed front axle and oscillating rear axle. 100% differential lock on the front axle.**L60H**

Transmission	Volvo	HTE 125C
Torque multiplication, stall ratio		2.5:1
Maximum speed		
1st gear	km/h (mi/h)	Converter 7.5 (Converter 4.6)
2nd gear	km/h (mi/h)	Converter 15 (Converter 9.3)
3rd gear	km/h (mi/h)	Converter 28 (Converter 17.4)
4th gear	km/h (mi/h)	Converter 46 (Converter 28.5)
4th gear:	Shown in speedometer and limited by ECU	
Measured with tires		20.5R25
Front axle/rear axle		AWB 15/AWB 15
Rear axle oscillation	± °	13
Ground clearance	mm (in)	470 (18.5)
at oscillation	°	13

**L70H**

Transmission	Volvo	HTE 125C Non Lock-up / HTE 125 Lock-up
Torque multiplication, stall ratio		2.5:1 Non Lock-up / 2.59:1 Lock-up
Maximum speed		
1st gear	km/h (mi/h)	Converter 7.5 / Lock-up 7.5 (Converter 4.6 / Lock-up 4.6)
2nd gear	km/h (mi/h)	Converter 15 / Lock-up 15 (Converter 9.3 / Lock-up 9.3)
3rd gear	km/h (mi/h)	Converter 29 / Lock-up 30 (Converter 17.4 / Lock-up 18.0)
4th gear	km/h (mi/h)	Converter 46 / Lock-up 50 (Converter 28.5 / Lock-up 31.1)
4th gear:	Shown in speedometer and limited by ECU	
Measured with tires		20.5R25
Front axle/rear axle		AWB 25/AWB 20
Rear axle oscillation	± °	13
Ground clearance	mm (in)	470 (18.5)
at oscillation	°	13

**L90H**

Transmission	Volvo	HTE 125C Non Lock-up / HTE 125 Lock-up
Torque multiplication, stall ratio		2.5:1 Non Lock-up / 2.59:1 Lock-up
Maximum speed		
1st gear	km/h (mi/h)	Converter 6.5 / Lock-up 6.5 (Converter 4.0 / Lock-up 4.0)
2nd gear	km/h (mi/h)	Converter 14 / Lock-up 14 (Converter 8.6 / Lock-up 8.6)
3rd gear	km/h (mi/h)	Converter 26 / Lock-up 27 (Converter 16.2 / Lock-up 16.8)
4th gear	km/h (mi/h)	Converter 46 / Lock-up 50 (Converter 28.5 / Lock-up 31.1)
4th gear:	Shown in speedometer and limited by ECU	
Measured with tires		20.5R25
Front axle/rear axle		AWB 25/AWB 20
Rear axle oscillation	± °	13
Ground clearance	mm (in)	470 (18.5)
at oscillation	°	13

**Electrical system**

Contronic electrical system with central warning light and buzzer for following functions: - Serious engine fault, Low steering system pressure, Over speed warning engine, Interruption in communication (computer fault), Central warning light and buzzer with the gear engaged for the following functions: Low engine oil pressure, High engine oil temperature, High charge air temperature, Low coolant level, High coolant temperature, High crank case pressure, Low transmission oil pressure, High transmission oil temperature, Low brake pressure, Engaged parking brake, Fault on brake charging, Low hydraulic oil level, High hydraulic oil temperature, Overspeeding in engaged gear, High brake cooling oil temperature front and rear axles, etc.

		L60H	L70H	L90H
Batteries	V	2 x 12	2 x 12	2 x 12
Battery capacity	Ah	2 x 110	2 x 110	2 x 110
Cold cranking capacity, approx	A	1,000	1,000	1,000
Alternator rating	W/A	3 135/80	3 135/80	3 135/80
Starter motor output	kW	5.5	5.5	5.5

**Brake system**

**Service brake:** Volvo dual-circuit system with outboard mounted, hydraulically operated, fully sealed and circulating oil cooled wet disc brakes. Four operator selectable transmission disengagement settings while braking.

**Parking brake:** Dry disc brake mounted on the transmission output shaft. Applied by spring force, electro-hydraulically released with a switch on the instrument panel.

**Secondary brake:** Dual brake circuits with rechargeable accumulators.

**Standard:** The brake system complies with the requirements of ISO 3450, 71/320/EEC

		L60H	L70H	L90H
Number of brake discs per wheel		1	1	1
Accumulators	l (gal)	3 x 0.5 (3 x 0.13)	2 x 0.5+1 x 1.0 (2 x 0.13 + 1 x 0.26)	2 x 0.5+1 x 1.0 (2 x 0.13 + 1 x 0.26)
Accumulators for parking brake	l (gal)	1 x 0.5 (1 x 0.13)	1 x 1.0 (1 x 0.26)	1 x 1.0 (1 x 0.26)

# Volvo L60H, L70H, L90H in detail

## Cab

**Instrumentation:** All important information is centrally located in the operator's field of vision. Display for Contronic monitoring system.

**Heater and defroster:** Heater coil with filtered fresh air and fan with auto and 11 manual speed settings. Defroster vents for all window areas.

**Operator's seat:** Operator's seat with adjustable air suspension and retractable seatbelt. The seat is mounted on a bracket on the rear cab wall and floor. The forces from the retractable seatbelt are absorbed by the seat rails.

**Standards:** The cab is tested and approved according to ROPS (ISO 3471), FOPS (ISO 3449). The cab meets with requirements according to ISO 6055 (Operator overhead protection - Industrial trucks) and SAE J386 (Operator Restraint System).

		L60H	L70H	L90H
Emergency exit: Use emergency hammer to break window				
Ventilation	m <sup>3</sup> /min (yd <sup>3</sup> /min)	9 (11.8)	9 (11.8)	9 (11.8)
Heating capacity	kW	16	16	16

## Sound Level

		L60H	L70H	L90H
Sound pressure level in cab according to ISO 6396				
L <sub>pA</sub>	dB	68	68	68
External sound level according to ISO 6395 and EU Noise Directive 2000/14/EC				
L <sub>WA</sub>	dB	104	105	105

## Lift Arm System

Torque parallel linkage (TP-linkage) with high breakout torque and parallel lift-arm action.

		L60H	L70H	L90H
Lift cylinders		2	2	2
Cylinder bore	mm (in)	110 (4.3)	110 (4.3)	120 (4.7)
Piston rod diameter	mm (in)	70 (2.8)	70 (2.8)	70 (2.8)
Stroke	mm (in)	665 (26.2)	756 (29.8)	744 (28.9)
Tilt cylinder		1	1	1
Cylinder bore	mm (in)	150 (5.9)	160 (6.3)	180 (7.1)
Piston rod diameter	mm (in)	80 (3.1)	90 (3.5)	90 (3.5)
Stroke	mm (in)	444 (17.5)	432 (17)	430 (16.9)

## Steering System

**System supply:** The steering system has priority feed from a load-sensing axial piston pump with variable displacement.

**Steering cylinders:** Two double-acting cylinders.

		L60H	L70H	L90H
Steering cylinders		2	2	2
Cylinder bore	mm (in)	70 (2.8)	70 (2.8)	80 (3.1)
Rod diameter	mm (in)	45 (1.8)	45 (1.8)	50 (2)
Stroke	mm (in)	386 (15.2)	386 (15.2)	345 (13.6)
Working pressure	MPa (bar)	21 (210)	21 (210)	21 (210)
Maximum flow	l/min (gal/min)	60 (15.9)	60 (15.9)	60 (15.9)
Maximum articulation	± °	40	40	40

## Hydraulic system

Closed center load sensing hydraulic system with non pressurised hydraulic tank and pilot operated control valves.

**System supply:** Variable displacement axial piston pump supply the hydraulic system.

**Valves:** The central valve distributes pressure and flow out to the cooling fan, steering, brake, pilot and hydraulic system. Steering system gets priority over others.

**Lift function:** The valve has four positions; raise, hold, lower and float position. Automatic boom kickout position can be set to any position between maximum reach and full lifting height.

**Tilt function:** The valve has three functions; rollback, hold and dump. Automatic tilt out/tilt in can be adjusted to the desired bucket angle.

**Cylinders:** Double-acting cylinders for all functions.

**Filter:** Full flow filtration through 10 micron (absolute) filter cartridge.

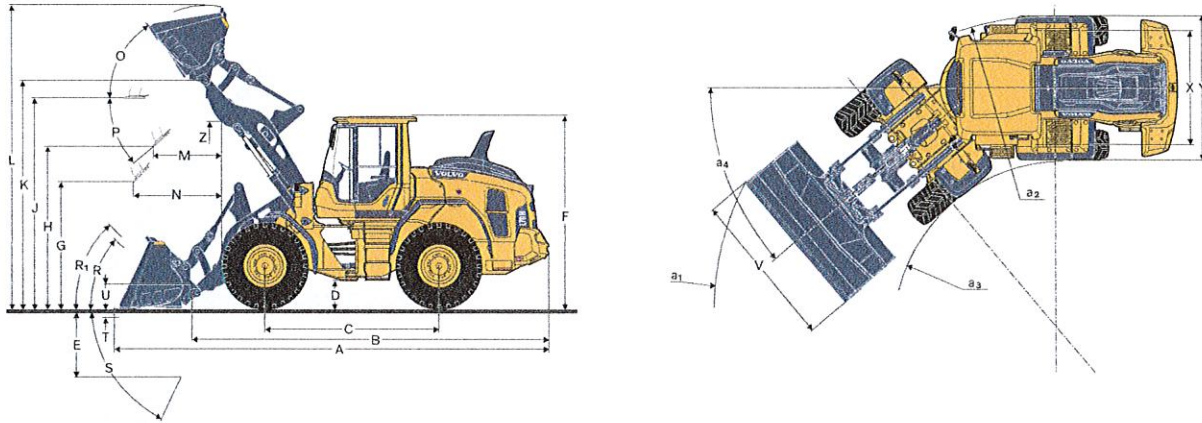
		L60H	L70H	L90H
Working pressure maximum, pump 2 for steering-, brake-, pilot- and working hydraulic system				
	MPa (bar)	26 (260)	26 (260)	31 (310)
Flow	l/min (gal/min)	145 (38.3)	154 (40.7)	171 (45.2)
at	MPa (bar)	10 (100)	10 (100)	10 (100)
engine speed	r/min (r/s)	1,900 (31.7)	1,900 (31.7)	1,900 (31.7)
Working pressure maximum, pump 3 for brake- and cooling fan system				
	MPa (bar)	21 (210)	21 (210)	21 (210)
Flow	l/min (gal/min)	33 (8.7)	33 (8.7)	33 (8.7)
at	MPa (bar)	10 (100)	10 (100)	10 (100)
engine speed	r/min (r/s)	1,900 (31.7)	1,900 (31.7)	1,900 (31.7)
Pilot system, working pressure	MPa (bar)	3.5 (35)	3.5 (35)	3.5 (35)
<b>Cycle times</b>				
Lift	s	5.4	5.5	5.7
Tilt	s	1.9	2.1	2.3
Lower, empty	s	2.7	2.9	4
Total cycle time	s	10	10.5	12

## Service Refill

**Service accessibility:** Large, electrically operated easy-to-open hood covering whole engine compartment. Fluid filters and component breather air filters are located from ground level access and promote long service intervals. Machine contronics have possibility to monitor, log and analyze data to facilitate troubleshooting. A quick-fit adapter on the hydraulic tank provides faster hydraulic oil fill.

		L60H	L70H	L90H
Fuel tank	l (gal)	222 (58.6)	222 (58.6)	222 (58.6)
DEF/AdBlue® tank	l (gal)	20 (5.3)	20 (5.3)	20 (5.3)
Engine coolant	l (gal)	30 (7.9)	30 (7.9)	30 (7.9)
Hydraulic oil tank	l (gal)	90 (23.8)	90 (23.8)	90 (23.8)
Transmission oil (non lock-up)	l (gal)	21 (5.5)	21 (5.5)	21 (5.5)
Transmission oil (lock-up)	l (gal)	22 (5.8)	22 (5.8)	22 (5.8)
Engine oil	l (gal)	20 (5.2)	20 (5.2)	20 (5.2)
Axle oil front	l (gal)	25 (6.6)	35 (9.2)	35 (9.2)
Axle oil rear	l (gal)	25 (6.6)	27 (7.1)	27 (7.1)

# Specifications



## Tires 20.5 R25 L3

			L60H		L70H		L90H		L60H		L70H		L90H	
			Standard boom						Long boom					
B	mm	ft in	6,010	19'9"	6,080	19'11"	6,170	20'3"	6,520	21'5"	6,560	21'6"	6,600	21'8"
C	mm	ft in	3,000	9'10"	3,000	9'10"	3,050	10'0"	3,000	9'10"	3,000	9'10"	3,050	10'0"
D	mm	ft in	440	1'5"	450	1'6"	450	1'6"	430	1'5"	450	1'6"	440	1'5"
F	mm	ft in	3,270	10'9"	3,280	10'9"	3,280	10'9"	3,270	10'9"	3,280	10'9"	3,280	10'9"
G	mm	ft in	2,133	7'0"	2,134	7'0"	2,132	7'0"	2,134	7'0"	2,134	7'0"	2,132	7'0"
J	mm	ft in	3,550	11'8"	3,580	11'9"	3,730	12'3"	4,080	13'5"	4,050	13'3"	4,140	13'7"
K	mm	ft in	3,870	12'8"	3,870	12'8"	4,040	13'3"	4,380	14'4"	4,350	14'3"	4,460	14'8"
O	°			56		56		57		56		52		58
P <sub>max</sub>	°			45		46		45		42		45		44
R	°			43		43		44		45		44		47
R <sub>1</sub> *	°			46		48		49		50		49		53
S	°			79		68		67		79		73		65
T	mm	ft in	123	0'5"	106	0'4"	112	0'4"	150	0'6"	112	0'4"	123	0'5"
U	mm	ft in	410	1'4"	450	1'6"	480	1'7"	590	1'11"	500	1'8"	570	1'10"
X	mm	ft in	1,900	6'3"	1,930	6'4"	1,960	6'5"	1,900	6'3"	1,930	6'4"	1,960	6'5"
Y	mm	ft in	2,430	7'12"	2,460	8'1"	2,490	8'2"	2,430	7'12"	2,460	8'1"	2,490	8'2"
Z	mm	ft in	3,210	10'6"	3,160	10'4"	3,460	11'4"	3,590	11'9"	3,500	11'6"	3,910	12'10"
a <sub>2</sub>	mm	ft in	5,340	17'6"	5,350	17'7"	5,430	17'10"	5,340	17'6"	5,350	17'7"	5,430	17'10"
a <sub>3</sub>	mm	ft in	2,900	9'6"	2,890	9'6"	2,940	9'8"	2,900	9'6"	2,890	9'6"	2,940	9'8"
a <sub>4</sub>	±°			40		40		40		40		40		40

\* Carry position SAE

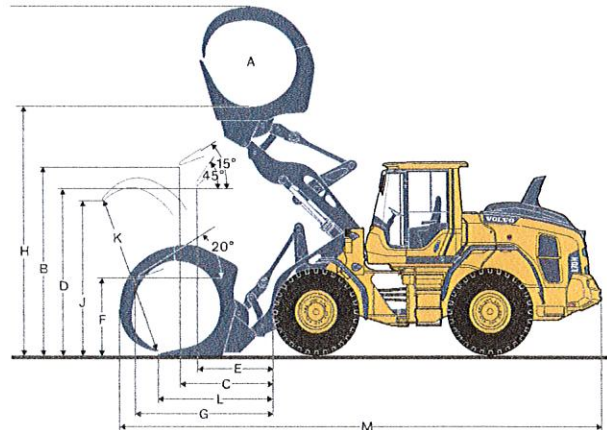
Calculated with additional protective guarding

Where applicable, specifications and dimensions are according to ISO 7131, SAE J732, ISO 7546, SAE J742, ISO 14397, SAE J818

## Tires: 20.5R25 L3

		L60H		L70H		L90H	
SAE-Load	kg lb	3,450	7,606	3,990	8,796	4,600	10,141
Operating weight without load*	kg lb	12,883	28,402	14,585	32,154	16,645	36,696
Grapple sales code		WLA82194		WLA80153		WLA80832	
A	m <sup>2</sup> yd <sup>2</sup>	1.3	1.6	1.5	1.8	2.4	2.9
B	mm ft in	3,412	11'2"	3,380	11'1"	3,487	11'5"
C	mm ft in	1,483	4'10"	1,594	5'3"	1,703	5'7"
D	mm ft in	2,929	9'7"	2,870	9'5"	2,865	9'5"
E	mm ft in	1,175	3'10"	1,265	4'2"	1,319	4'4"
F	mm ft in	1,532	5'0"	1,502	4'11"	1,441	4'9"
G	mm ft in	2,350	7'9"	2,442	8'0"	2,740	8'12"
H	mm ft in	4,333	14'3"	4,378	14'4"	4,613	15'2"
I	mm ft in	5,878	19'3"	6,027	19'9"	6,664	21'10"
J	mm ft in	1,997	6'7"	2,141	7'0"	2,786	9'2"
K	mm ft in	2,080	6'10"	2,365	7'9"	2,990	9'10"
L	mm ft in	1,709	5'7"	1,800	5'11"	2,131	6'12"
M	mm ft in	7,861	25'9"	7,996	26'3"	8,469	27'9"

\* Calculated with additional protective guarding



# Specifications

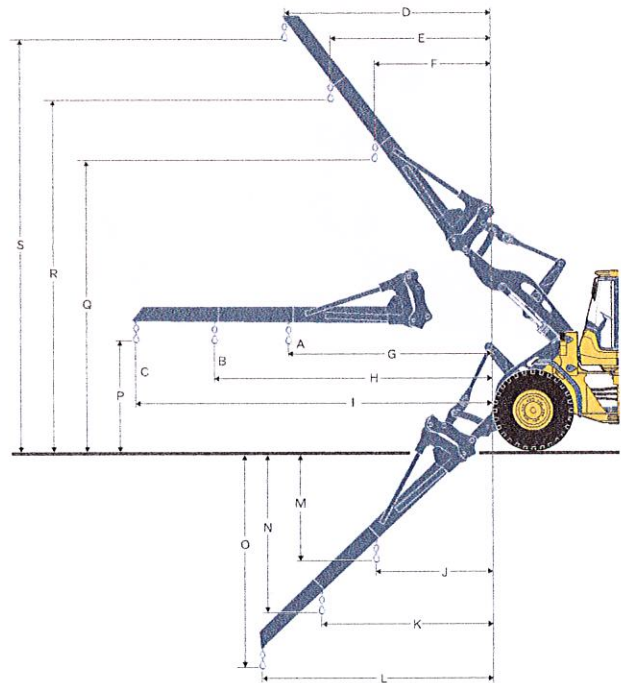
Tires: 20.5R25 L3

		L60H	L70H	L90H
Material handling arm sales code		92007	92007	92008
A*	kg lb	1,800 3,968	2,150 4,740	2,760 6,085
B*	kg lb	1,400 3,086	1,710 3,770	2,130 4,696
C*	kg lb	1,150 2,535	1,400 3,086	1,740 3,836
Static tipping load, straight		kg lb	kg lb	kg lb
35deg. Turn at full turn	kg lb	2,910 6,415	3,222 7,103	3,834 8,453
D	mm ft in	2,592 8'6"	2,716 8'11"	2,486 8'2"
E	mm ft in	2,002 6'7"	2,106 6'11"	1,894 6'3"
F	mm ft in	1,465 4'10"	1,549 5'1"	1,301 4'3"
G	mm ft in	3,270 10'9"	3,323 10'11"	3,253 10'8"
H	mm ft in	4,305 14'1"	4,358 14'4"	4,387 14'5"
I	mm ft in	5,439 17'10"	5,492 18'0"	5,520 18'1"
J	mm ft in	905 2'12"	1,269 4'2"	1,339 4'5"
K	mm ft in	1,227 4'0"	1,744 5'9"	1,889 6'2"
L	mm ft in	1,580 5'2"	2,266 7'5"	2,439 8'0"
M	mm ft in	2,258 7'5"	2,176 7'2"	2,051 6'9"
N	mm ft in	3,241 10'8"	3,095 10'2"	3,043 9'12"
O	mm ft in	4,319 14'2"	4,102 13'5"	4,034 13'3"
P	mm ft in	1,512 5'0"	1,523 5'0"	1,520 5'0"
Q	mm ft in	5,286 17'4"	5,302 17'5"	5,403 17'9"
R	mm ft in	6,171 20'3"	6,174 20'3"	6,370 20'11"
S	mm ft in	7,139 23'5"	7,129 23'5"	7,336 24'1"
Operating weight without load		kg lb	kg lb	kg lb
		11,885 26,202	13,451 29,654	14,833 32,701

\* Op. load at full turn + tipping position

Tipping loads calculated for max. arm length

\*\*Calculated with additional protective guarding

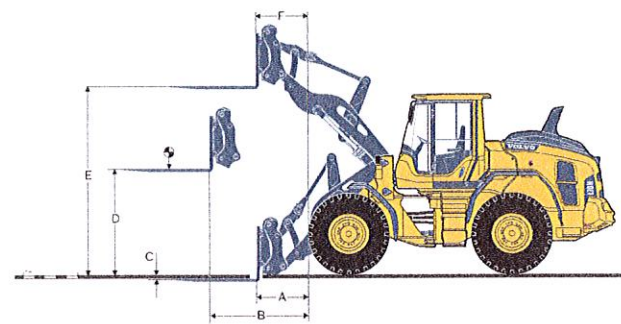


Tires: 20.5R25 L3

		L60H	L70H	L90H
Fork frame sales code		83768	83768	83770
Fork tines sales code (R/L)		80042/80043	80042/80044	80106/80107
Static tipping load, straight		kg lb	kg lb	kg lb
35deg. Turn at full turn	kg lb	6,230 13,735	6,809 15,011	7,947 17,520
at load center distance*	mm ft in	600 2'0"	600 2'0"	600 2'0"
A	mm ft in	798 2'7"	841 2'9"	932 3'1"
B	mm ft in	1,567 5'2"	1,616 5'4"	1,679 5'6"
C	mm ft in	-38 -1'11"	-52 -1'10"	-4 -1'12"
D	mm ft in	1,831 6'0"	1,859 6'1"	1,800 5'11"
E	mm ft in	3,713 12'2"	3,736 12'3"	3,841 12'7"
F	mm ft in	700 2'4"	767 2'6"	641 2'1"
Operating weight without load		kg lb	kg lb	kg lb
		11,965 26,378	13,531 29,831	14,928 32,911

\* Firm and level ground

\*\*Calculated with additional protective guarding



# Volvo L60H Specifications

L60H* MICH 20.5R25 XHA2 L3	General purpose										Grading		Light material		LongBoom**										
	WLA86398	WLA86423	WLA86401	WLA86405	WLA86410	WLA86411	WLA92476	WLA92564	WLA92565	WLA86410	1.9 m³ (2.5 yd³) HD STE H BOE	2.0 m³ (2.6 yd³) STE H T	2.1 m³ (2.7 yd³) HD STE H BOE	2.3 m³ (3.0 yd³) HD STE H BOE	2.1 m³ (2.7 yd³) HD STE P BOE	2.3 m³ (3.0 yd³) HD STE P BOE	1.7 m³ (2.2 yd³) GRB H BOE	3.1 m³ (4.1 yd³) LM H BOE	5 m³ (6.5 yd³) LM H BOE	2.1 m³ (2.7 yd³) HD STE P BOE					
Volume, heaped ISO/SAE	m³	1.9	2.0	2.1	2.3	2.1	2.3	3.0	1.7	3.1	5.0	2.1	2.7	2.0	2.7	2.3	3.0	1.9	2.4	3.4	4.5	5.5	7.2	2.3	3.0
Volume at 110% fill factor	m³ yd³	2.0	2.7	2.2	2.9	2.3	3.0	2.5	3.3	1.9	2.4	3.4	4.5	5.5	7.2	2.3	3.0	2.0	2.7	2.2	2.9	2.3	3.0	2.5	3.3
Static tipping load, straight	kg lb	8,940	19,710	9,028	19,910	8,831	19,470	8,770	19,330	9,310	20,520	9,230	20,340	7,740	17,060	8,450	18,640	8,450	18,640	8,450	18,640	-1,640	-3,600		
at 35° turn	kg lb	7,996	17,630	8,079	17,810	7,887	17,390	7,830	17,260	8,340	18,400	8,270	18,230	6,920	15,260	7,540	16,630	7,510	16,570	7,510	16,570	-1,500	-3,320		
at full turn	kg lb	7,718	17,020	7,800	17,200	7,609	16,780	7,550	16,650	8,060	17,770	7,990	17,610	6,680	14,730	7,280	16,040	7,240	15,960	7,240	15,960	-1,470	-3,230		
Breakout force	kN lbf	81.8	18,400	82.8	18,610	80.4	18,090	75.0	16,870	84.8	19,060	80.9	18,190	60.1	13,500	61.7	13,870	53.7	12,080	53.7	12,080	+8.8	+1,980		
A	mm ft in	7,316	24'	7,520	24' 8"	7,338	24' 1"	7,430	24' 5"	7,270	23' 10"	7,330	24' 1"	7,650	25' 1"	7,680	25' 2"	7,900	25' 11"	7,900	25' 11"	+520	+1' 9"		
E	mm ft in	1,116	3' 8"	1,302	4' 3"	1,136	3' 9"	1,220	4'	1,070	3' 6"	1,130	3' 8"	1,400	4' 7"	1,470	4' 10"	1,700	5' 7"	1,700	5' 7"	+40	+2"		
H	mm ft in	2,836	9' 4"	2,705	8' 10"	2,811	9' 3"	2,760	9' 1"	2,850	9' 4"	2,810	9' 3"	2,520	8' 3"	2,580	8' 6"	2,440	8' 0"	2,440	8' 0"	+530	+1' 9"		
L	mm ft in	5,032	16' 6"	5,084	16' 8"	5,069	16' 8"	5,180	17' 0"	5,060	16' 7"	5,120	16' 10"	4,530	14' 10"	5,290	17' 4"	5,490	18' 0"	5,490	18' 0"	+510	+1' 8"		
M	mm ft in	1,054	3' 5"	1,192	3' 11"	1,056	3' 6"	1,130	3' 9"	1,000	3' 3"	1,040	3' 5"	1,130	3' 8"	1,320	4' 4"	1,500	4' 11"	1,500	4' 11"	+40	0'		
N	mm ft in	1,578	5' 2"	1,632	5' 4"	1,584	5' 2"	1,610	5' 3"	1,560	5' 2"	1,580	5' 2"	1,490	4' 11"	1,630	5' 4"	1,670	5' 6"	1,670	5' 6"	+150	+1' 5"		
V	mm in	2,500	98"	2,500	98"	2,650	104"	2,500	98"	2,500	98"	2,500	98"	2,500	98"	2,500	98"	2,550	100"	2,650	104"	0	0		
a <sub>1</sub> clearance circle	mm ft in	11,569	37' 11"	11,665	38' 3"	11,719	38' 5"	11,620	38' 2"	11,580	38'	11,600	38' 1"	11,970	39' 3"	11,840	38' 10"	12,060	39' 7"	12,060	39' 7"	+430	+1' 5"		
Operating weight	kg lb	12,299	27,120	12,270	27,060	12,388	27,320	12,400	27,350	12,070	26,620	12,110	26,700	12,250	27,000	12,440	27,420	12,720	28,060	12,720	28,060	+340	+750		

\*Calculated with additional protective guarding. (WLA86009, WLA86010)

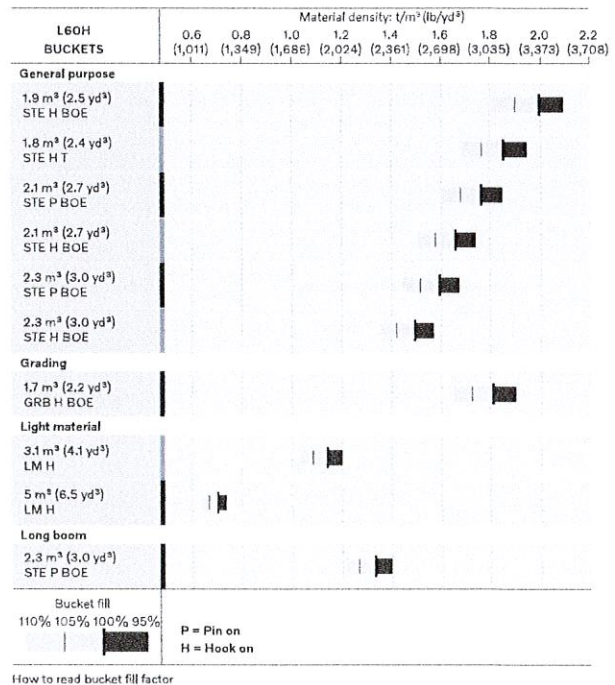
\*\*Calculated with logging counterweight.

Note: This only applies to genuine Volvo attachments.

## Bucket Selection Chart

The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration. Example: Sand and gravel. Fill factor ~ 105%. Density 1.5 t/m³ (2,530 lb/yd³). Result: The 2.1 m³ (2.8 yd³) bucket carries 2.2 m³ (2.9 yd³). For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %	Material density		ISO/SAE bucket volume		Actual volume	
		t/m³	lb/yd³	m³	yd³	m³	yd³
Earth/Clay	~ 110	~ 1.55	~ 2,610	1.9	2.5	2.1	2.8
		~ 1.40	~ 2,360	2.1	2.8	2.3	3.0
		~ 1.30	~ 2,190	2.3	3.0	2.5	3.3
Sand/Gravel	~ 105	~ 1.65	~ 2,780	1.9	2.5	2.0	2.6
		~ 1.50	~ 2,530	2.1	2.8	2.2	2.9
		~ 1.35	~ 2,280	2.3	3.0	2.1	2.8
Aggregate	~ 100	~ 1.75	~ 2,950	1.9	2.5	1.9	2.5
		~ 1.55	~ 2,610	2.1	2.8	2.1	2.8
		~ 1.55	~ 2,610	2.3	3.0	2.3	3.0
Rock	≤ 100	~ 1.70	~ 2,870	1.7	2.2	1.7	2.2



## Supplemental Operating Data

Tires 20.5 R25 L3	Standard boom				Long boom	
	17.5 R25 L2	20.5 R25 L2	600/65 R25 L3	600/65 R25 L3	600/65 R25 L3	600/65 R25 L3
Width over tires	mm in	-130 -5.1	+8 +0.3	+96 +3.8	+96 +3.8	+96 +3.8
Ground clearance	mm in	-68 -2.7	-10 -0.4	-30 -1.2	-22 -0.9	-22 -0.9
Tipping load, full turn	kg lb	-337 -743	-166 -366	-72 -159	0	0
Operating weight	kg lb	-544 -1,199	-112 -247	+8 +18	+3	+7

Calculated with 2.3 m³ (3.0 yd³) STE P BOE, additional protective guarding

# Volvo L70H Specifications

L70H* MICH 20.5R25 XHA2 L3	General purpose										Grading		Light material		LongBoom**	
	WLA87535	WLA86405	WLA86401	WLA86404	WLA86407	WLA86413	WLA92477	WLA80562	WLA80634	WLA86413						
	2.3 m <sup>3</sup> (3.0 yd <sup>3</sup> ) STE H BOE	2.2 m <sup>3</sup> (2.9 yd <sup>3</sup> ) HD STE H T	2.0 m <sup>3</sup> (2.6 yd <sup>3</sup> ) HD STE H BOE	2.2 m <sup>3</sup> (2.9 yd <sup>3</sup> ) HD STE H BOE	2.3 m <sup>3</sup> (3.0 yd <sup>3</sup> ) HD STE H BOE	2.2 m <sup>3</sup> (2.9 yd <sup>3</sup> ) HD STE P BOE	2.2 m <sup>3</sup> (2.9 yd <sup>3</sup> ) GRB H BOE	3.4 m <sup>3</sup> (4.4 yd <sup>3</sup> ) LM H	6.4 m <sup>3</sup> (8.4 yd <sup>3</sup> ) LM H	2.2 m <sup>3</sup> (2.9 yd <sup>3</sup> ) HD STE P BOE						
Volume, heaped ISO/SAE	m <sup>3</sup> yd <sup>3</sup>	2.3 3.0	2.2 2.9	2.0 2.6	2.2 2.9	2.3 3.0	2.2 2.9	2.2 2.9	3.4 4.4	6.4 8.4	2.2 2.9					
Volume at 110% fill factor	m <sup>3</sup> yd <sup>3</sup>	2.5 3.3	2.4 3.2	2.2 2.9	2.4 3.2	2.5 3.3	2.4 3.2	2.4 3.2	3.7 4.9	7.0 9.2	2.4 3.2					
Static tipping load, straight	kg lb	9,740 21,480	9,840 21,710	9,770 21,550	9,710 21,410	9,670 21,320	10,310 22,730	7,920 17,470	9,253 20,400	8,830 19,460	-1,550 -3,400					
at 35° turn	kg lb	8,710 19,200	8,810 19,420	8,740 19,270	8,680 19,130	8,640 19,050	9,240 20,370	7,040 15,530	8,246 18,180	7,790 17,180	-1,430 -3,140					
at full turn	kg lb	8,400 18,530	8,500 18,740	8,430 18,590	8,370 18,460	8,340 18,380	8,920 19,680	6,780 14,950	7,949 17,530	7,490 16,510	-1,390 -3,070					
Breakout force	kN lbf	878 19,740	913 20,520	928 20,860	885 20,110	876 19,690	987 22,200	627 14,090	717 16,130	53.9 12,110	-1.8 -410					
A	mm ft in	7,510 24'8"	7,700 25'3"	7,440 24'5"	7,490 24'7"	7,520 24'8"	7,370 24'2"	7,950 26'1"	7,776 25'6"	8,330 27'4"	+470 +1'7"					
E	mm ft in	1,210 4'0"	1,360 4'6"	1,140 3'9"	1,190 3'11"	1,210 4'0"	1,080 3'6"	1,670 5'6"	1,466 4'10"	1,960 6'5"	+20 +0'11"					
H	mm ft in	2,740 9'0"	2,620 8'7"	2,790 9'2"	2,760 9'0"	2,740 9'0"	2,830 9'3"	2,360 7'9"	2,531 8'4"	2,160 7'1"	+490 +1'8"					
L	mm ft in	5,170 16'11"	5,220 17'1"	5,110 16'9"	5,170 17'0"	5,200 17'1"	5,100 16'9"	4,720 15'6"	5,455 17'11"	5,790 19'0"	+470 +1'6"					
M	mm ft in	1,160 3'10"	1,270 4'2"	1,110 3'8"	1,140 3'9"	1,160 3'10"	1,060 3'6"	1,350 4'5"	1,339 4'5"	1,720 5'8"	+20 +0'11"					
N	mm ft in	1,660 5'5"	1,690 5'7"	1,640 5'4"	1,650 5'5"	1,660 5'5"	1,610 5'3"	1,570 5'2"	1,680 5'6"	1,720 5'8"	+390 +1'4"					
V	mm in	2,650 104"	2,500 98"	2,650 104"	2,650 104"	2,650 104"	2,650 104"	2,650 104"	2,650 104"	2,750 108"	0 0"					
a <sub>1</sub> clearance circle	mm ft in	11,800 38'8"	11,750 38'7"	11,760 38'7"	11,790 38'8"	11,800 38'8"	11,740 38'6"	12,320 40'5"	11,980 39'4"	12,410 40'9"	+370 +1'3"					
Operating weight	kg lb	13,950 30,760	13,920 30,700	13,950 30,770	13,990 30,840	14,000 30,880	13,720 30,260	14,240 31,400	14,193 31,290	14,730 32,490	+510 +1,120					

\*Calculated with additional protective guarding. (WL86009,WL86010)

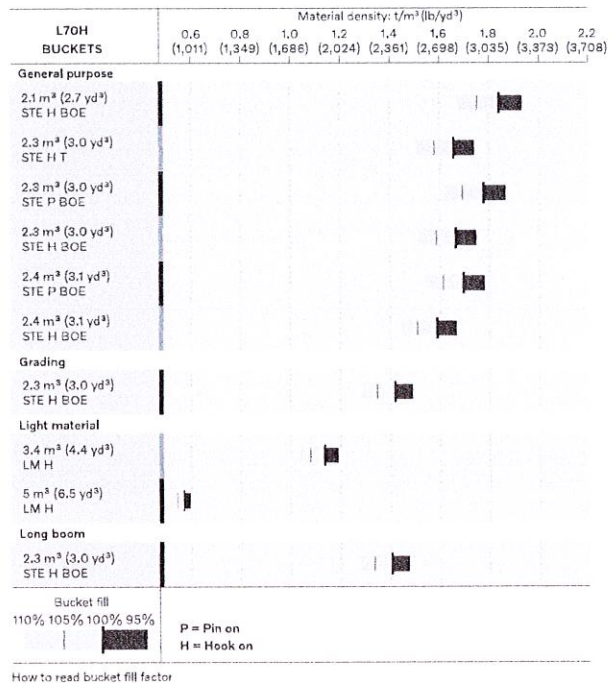
\*\*Calculated with logging counterweight.

Note: This only applies to genuine Volvo attachments.

## Bucket Selection Chart

The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration. Example: Sand and gravel. Fill factor ~ 105%. Density 1.55 t/m<sup>3</sup> (2,610 lb/yd<sup>3</sup>). Result: The 2.6 m<sup>3</sup> (3.4 yd<sup>3</sup>) bucket carries 2.7 m<sup>3</sup> (3.5 yd<sup>3</sup>). For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %	Material density		ISO/SAE bucket volume		Actual volume	
		t/m <sup>3</sup>	lb/yd <sup>3</sup>	m <sup>3</sup>	yd <sup>3</sup>	m <sup>3</sup>	yd <sup>3</sup>
Earth/Clay	~ 110	~ 1.55	~ 2,610	2.5	3.3	2.7	3.5
		~ 1.45	~ 2,440	2.6	3.4	2.9	3.8
		~ 1.40	~ 2,360	2.8	3.7	3.1	4.0
Sand/Gravel	~ 105	~ 1.65	~ 2,780	2.5	3.3	2.6	3.4
		~ 1.55	~ 2,610	2.6	3.4	2.7	3.5
		~ 1.50	~ 2,530	2.8	3.7	2.9	3.7
Aggregate	~ 100	~ 1.75	~ 2,950	2.5	3.3	2.5	3.3
		~ 1.65	~ 2,780	2.6	3.4	2.6	3.4
		~ 1.60	~ 2,700	2.8	3.4	2.8	3.7
Rock	≤ 100	~ 1.80	~ 3,030	2.2	2.9	2.2	2.9



## Supplemental Operating Data

Tires 20.5 R25 L3	Standard boom				Long boom			
	20.5 R25 L2		600/65 R25 L3		600/65 R25 L3		600/65 R25 L3	
Width over tires	mm ft in	+8 0.3	+96 3.8	+96 3.8	+96 3.8			
Ground clearance	mm ft in	-8 -0.3	-32 -1.3	-24 -0.9	-24 -0.9			
Tipping load, full turn	kg lb	-62 -137	-39 -86	+9 +20	+9 +20			
Operating weight	kg lb	-113 -249	+7 +15	+4 +9	+4 +9			

Calculated with 2.3 m<sup>3</sup> (3.0 yd<sup>3</sup>) STE H BOE, additional protective guarding

# Volvo L90H Specifications

L90H* MICH 20.5R25 XHA2 L3	General purpose										Grading		Light material		LongBoom**	
	WLA86299	WLA86303	WLA86319	WLA86304	WLA86320	WLA86331	WLA85404	WLA92687	WLA92683	WLA86319						
	2.3 m <sup>3</sup> (3.0 yd <sup>3</sup> ) HD STE H BOE	2.6 m <sup>3</sup> (3.4 yd <sup>3</sup> ) HD STE H T	2.7 m <sup>3</sup> (3.5 yd <sup>3</sup> ) HD STE P BOE	2.8 m <sup>3</sup> (3.7 yd <sup>3</sup> ) HD STE H BOE	2.8 m <sup>3</sup> (3.7 yd <sup>3</sup> ) HD STE P BOE	2.8 m <sup>3</sup> (3.7 yd <sup>3</sup> ) STE H BOE	2.8 m <sup>3</sup> (3.7 yd <sup>3</sup> ) GRB H BOE	4.1 m <sup>3</sup> (5.4 yd <sup>3</sup> ) LM H	7.0 m <sup>3</sup> (9.2 yd <sup>3</sup> ) LM H	2.7 m <sup>3</sup> (3.5 yd <sup>3</sup> ) HD STE P BOE						
Volume, heaped ISO/SAE	m <sup>3</sup> yd <sup>3</sup>	2.3 3.0	2.6 3.4	2.7 3.5	2.8 3.7	2.8 3.7	2.8 3.7	2.8 3.7	4.1 5.4	7.0 9.2	2.7 3.5					
Volume at 110% fill factor	m <sup>3</sup> yd <sup>3</sup>	2.5 3.3	2.9 3.7	3.0 3.9	3.1 4.0	3.1 4.0	3.1 4.0	3.1 4.0	4.5 5.9	7.7 10.1	3.0 3.9					
Static tipping load, straight	kg lb	11,520 25,390	11,610 25,610	11,970 26,390	11,320 24,960	11,930 26,310	11,430 25,200	9,250 20,390	10,810 23,840	10,530 23,210	-110 -2,440					
at 35° turn	kg lb	10,220 22,540	10,310 22,740	10,640 23,450	10,030 22,120	10,600 23,380	10,140 22,360	8,170 18,020	9,550 21,060	9,250 20,390	-1,030 -2,260					
at full turn	kg lb	9,940 21,700	9,930 21,890	10,240 22,590	9,650 21,290	10,210 22,510	9,760 21,530	7,860 17,330	9,180 20,230	8,870 19,550	-1,000 -2,220					
Breakout force	kN lbf	138.8 31,030	135.9 30,560	140.1 31,510	126.4 28,430	137.6 30,940	126.4 28,430	92.2 20,730	100.6 22,610	87.0 19,560	+1.8 +410					
A	mm ft in	7,560 24'10"	7,850 25'9"	7,560 24'10"	7,690 25'3"	7,580 24'11"	7,690 25'3"	8,170 26'10"	8,040 26'5"	8,350 27'5"	+410 +1'4"					
E	mm ft in	1,170 3'10"	1,410 4'8"	1,160 3'9"	1,280 4'2"	1,180 3'10"	1,280 4'2"	1,760 5'9"	1,590 5'3"	1,860 6'1"	-10 0"					
H	mm ft in	2,910 9'7"	2,730 8'11"	2,920 9'7"	2,830 9'4"	2,910 9'7"	2,830 9'4"	2,400 7'11"	2,610 8'7"	2,410 7'11"	+420 +1'4"					
L	mm ft in	5,310 17'5"	5,420 17'10"	5,360 17'7"	5,450 17'11"	5,390 17'8"	5,420 17'10"	4,900 16'1"	5,640 18'6"	5,840 19'2"	+420 +1'4"					
M	mm ft in	970 3'2"	1,170 3'10"	970 3'2"	1,070 3'6"	990 3'3"	1,070 3'6"	1,200 3'11"	1,350 4'5"	1,550 5'1"	-70 -3"					
N	mm ft in	1,660 5'5"	1,730 5'8"	1,650 5'5"	1,700 5'7"	1,660 5'5"	1,700 5'7"	1,520 5'0"	1,710 5'7"	1,700 5'7"	+360 +1'2"					
V	mm in	2,650 108"	2,750 108"	2,750 108"	2,750 108"	2,750 108"	2,750 108"	2,880 113"	2,750 108"	3,000 118"	0 0"					
a1 clearance circle	mm ft in	12,040 39'6"	12,180 40'	12,040 39'6"	12,100 39'8"	12,050 39'6"	12,100 39'8"	12,770 41'11"	12,300 40'4"	12,700 41'8"	+300 +1'0"					
Operating weight	kg lb	15,470 34,110	15,460 34,080	15,330 33,810	15,580 34,350	15,350 33,850	15,490 34,160	15,680 34,620	15,840 34,920	16,270 35,870	+790 +1,730					

\*Calculated with additional protective guarding. (WL86009,WL86010)

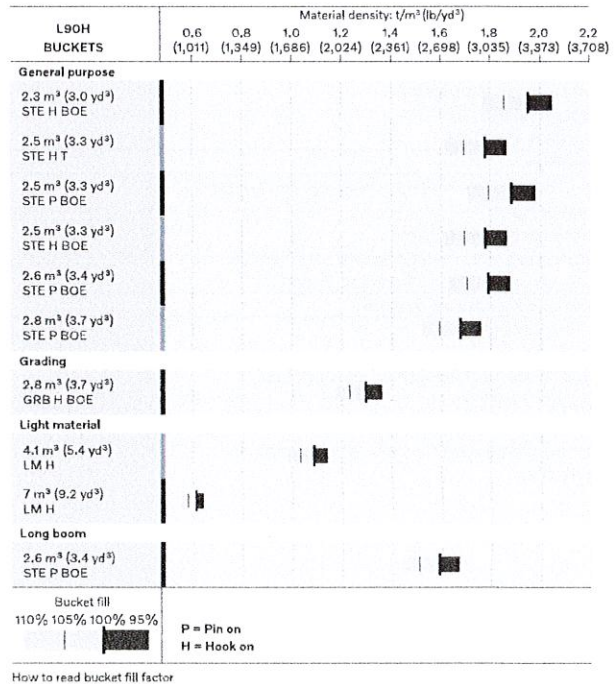
\*\*Calculated with logging counterweight.

Note: This only applies to genuine Volvo attachments.

## Bucket Selection Chart

The chosen bucket is determined by the density of the material and the expected bucket fill factor. The actual bucket volume is often larger than the rated capacity, due to the features of the TP linkage, including an open bucket design, good rollback angles in all positions and good bucket filling performance. The example represents a standard boom configuration. Example: Sand and gravel. Fill factor ~ 105%. Density 1.55 t/m<sup>3</sup> (2,610 lb/yd<sup>3</sup>). Result: The 2.6m<sup>3</sup> (3.4yd<sup>3</sup>) bucket carries 2.7m<sup>3</sup> (3.5 yd<sup>3</sup>). For optimum stability always consult the bucket selection chart.

Material	Bucket fill, %	Material density		ISO/SAE bucket volume		Actual volume	
		t/m <sup>3</sup>	lb/yd <sup>3</sup>	m <sup>3</sup>	yd <sup>3</sup>	m <sup>3</sup>	yd <sup>3</sup>
Earth/Clay	~ 110	~ 1.55	~ 2,610	2.5	3.3	2.7	3.5
		~ 1.45	~ 2,440	2.6	3.4	2.9	3.8
		~ 1.40	~ 2,360	2.8	3.7	3.1	4.0
Sand/Gravel	~ 105	~ 1.65	~ 2,780	2.5	3.3	2.6	3.4
		~ 1.55	~ 2,610	2.6	3.4	2.7	3.5
		~ 1.50	~ 2,530	2.8	3.7	2.9	3.7
Aggregate	~ 100	~ 1.75	~ 2,950	2.5	3.3	2.5	3.3
		~ 1.65	~ 2,780	2.6	3.4	2.6	3.4
		~ 1.60	~ 2,700	2.8	3.7	2.8	3.7
Rock	≤100	~ 1.80	~ 3,030	2.2	2.9	2.2	2.9



## Supplemental Operating Data

Tires 20.5 R25 L3	Standard boom				Long boom			
	20.5 R25 L2		650/65 R25 L3		650/65 R25 L3		650/65 R25 L3	
Width over tires	mm ft in	+4	+0.2	+164	+6.5	+164	+6.5	
Ground clearance	mm ft in	-8	-0.3	-4	-0.2	+12	+0.5	
Tipping load, full turn	kg lb	-70	-154	+315	+694	+287	+633	
Operating weight	kg lb	-111	-245	+545	+1,202	+543	+1,197	

Calculated with 2.6 m<sup>3</sup> (3.4 yd<sup>3</sup>) STE P BOE, additional protective guarding

# Equipment

STANDARD EQUIPMENT	L60H	L70H	L90H
<b>Engine</b>			
Exhaust after-treatment system	•	•	•
3-stage air cleaner, pre-cleaner, primary and secondary filter	•	•	•
Indicator glass for coolant level	•	•	•
Preheating of induction air	•	•	•
Fuel pre-filter with water trap	•	•	•
Fuel filter	•	•	•
Crank case breather oil trap	•	•	•
Exhaust heat ventilation	•	•	•
<b>Tires</b>			
20.5R25	•	•	•
<b>Drivetrain</b>			
Automatic Power Shift	•	•	•
Fully automatic gear shifting, 1-4	•	•	•
PWM-controlled gear shifting	•	•	•
Forward and reverse switch by hydraulic lever console	•	•	•
Rimpull control	•	•	•
Indicator glass for transmission oil level	•	•	•
Differentials: Front, 100% hydraulic diff lock. Rear, conventional	•	•	•
<b>Electrical system</b>			
24 V, pre-wired for optional accessories	•	•	•
Alternator 80A/3135W	•	•	•
Battery disconnect switch	•	•	•
Maintenance-free batteries	•	•	•
Battery box, steel	•	•	•
Fuel gauge	•	•	•
Electric horn	•	•	•
<b>Instrument cluster:</b>			
Fuel level	•	•	•
Diesel Exhaust Fluid/AdBlue level	•	•	•
Transmission temperature	•	•	•
Coolant temperature	•	•	•
Instrument lighting	•	•	•
<b>Lighting:</b>			
Twin halogen front headlights with high and low beams	•	•	•
Parking lights	•	•	•
Double brake and tail lights	•	•	•
Turn signals with flashing hazard light function	•	•	•
Halogen work lights (2 front and 2 rear)	•	•	•
<b>Contronic monitoring system</b>			
Contronic display	•	•	•
Fuel consumption	•	•	•
Diesel Exhaust Fluid/AdBlue consumption	•	•	•
Ambient temperature	•	•	•
Clock	•	•	•
Test function for warning and indicator lights	•	•	•
Brake test	•	•	•

STANDARD EQUIPMENT	L60H	L70H	L90H
<b>Warning and indicator lights:</b>			
Battery charging	•	•	•
Parking brake	•	•	•
<b>Warning and display message:</b>			
Regeneration	•	•	•
Engine coolant temperature	•	•	•
Charge air temperature	•	•	•
Engine oil temperature	•	•	•
Engine oil pressure	•	•	•
Transmission oil temperature	•	•	•
Transmission oil pressure	•	•	•
Hydraulic oil temperature	•	•	•
Brake pressure	•	•	•
Parking brake applied	•	•	•
Brake charging	•	•	•
Overspeed at direction change	•	•	•
Axle oil temperature	•	•	•
Steering pressure	•	•	•
Crank case pressure	•	•	•
Attachment lock open	•	•	•
<b>Level warnings:</b>			
Fuel level	•	•	•
Diesel Exhaust Fluid/AdBlue level	•	•	•
Engine coolant level	•	•	•
Transmission oil level	•	•	•
Hydraulic oil level	•	•	•
Washer fluid level	•	•	•
<b>Engine torque reduction in case of malfunction indication:</b>			
High engine coolant temperature	•	•	•
High engine oil temperature	•	•	•
Low engine oil pressure	•	•	•
High crank case pressure	•	•	•
High charge air temperature	•	•	•
<b>Engine shutdown to idle in case of malfunction indication:</b>			
High transmission oil temperature	•	•	•
Slip in transmission clutches	•	•	•
Key pad, background lit	•	•	•
Start interlock when gear is engaged	•	•	•
<b>Hydraulic system</b>			
Main valve, double acting 2-spool with hydraulic pilots	•	•	•
Variable displacement axial piston pumps (2) for:			
Working hydraulics, pilot hydraulics, steering system, brakes	•	•	•
Cooling fan, brakes	•	•	•
Hydraulic control levers	•	•	•
Mechanical hydraulic lever lock	•	•	•
Automatic boom kick-out	•	•	•
Automatic bucket positioner	•	•	•
Double acting hydraulic cylinders	•	•	•
Indicator glass for hydraulic oil level	•	•	•
Hydraulic oil cooler	•	•	•
<b>Brake system</b>			
Dual brake circuits	•	•	•
Dual brake pedals	•	•	•
Secondary brake system	•	•	•
Parking brake, electrical-hydraulic	•	•	•
Brake wear indicators	•	•	•
Outboard mounted circulating oil cooled wet disc brakes on all four wheels	•	•	•



STANDARD EQUIPMENT			
	L60H	L70H	L90H
<b>Cab</b>			
ROPS (ISO 3471), FOPS (ISO 3449)	•	•	•
Single key kit door/start	•	•	•
Acoustic inner lining	•	•	•
Cigarette lighter, 24 V power outlet	•	•	•
Lockable door	•	•	•
Cab heating with fresh air inlet and defroster	•	•	•
Fresh air inlet with two filters	•	•	•
Automatic heat control	•	•	•
Floor mat	•	•	•
Dual interior lights	•	•	•
Interior rearview mirrors	•	•	•
Dual exterior rearview mirrors	•	•	•
Sliding window, right side	•	•	•
Tinted safety glass	•	•	•
Retractable seatbelt (SAE J386)	•	•	•
Adjustable steering wheel	•	•	•
Storage compartment	•	•	•
Document pocket	•	•	•
Sun visor	•	•	•
Beverage holder	•	•	•
Windshield washer front and rear	•	•	•
Windshield wipers front and rear	•	•	•
Interval function for front and rear wipers	•	•	•
Foot step, left side (toolbox lockable included)	•	•	•
<b>Service and maintenance</b>			
Engine oil remote drain and fill	•	•	•
Transmission oil remote drain and fill	•	•	•
Sliding hydraulic oil cooler and AC-condenser	•	•	•
Lubrication manifolds, ground accessible	•	•	•
Pressure test ports: transmission and hydraulic, quick connects	•	•	•
Service platforms with anti-slip surfaces	•	•	•
Quick-fit hydraulic oil fill	•	•	•
CareTrack	•	•	•
Telematics, 4-year subscription	•	•	•
Toolbox, lockable	•	•	•
<b>External equipment</b>			
Basic fenders, front and rear	•	•	•
Viscous cab mounts	•	•	•
Rubber engine and transmission mounts	•	•	•
Engine hood, electronically openable	•	•	•
Frame, joint lock	•	•	•
Vandalism lock for engine compartment	•	•	•
Lifting eyes	•	•	•
Tie down eyes	•	•	•
Tow hitch	•	•	•
Counterweight, pre-drilled for optional guards	•	•	•

OPTIONAL EQUIPMENT			
	L60H	L70H	L90H
<b>Engine</b>			
Air pre-cleaner, cyclone type	•	•	•
Air pre-cleaner, oil-bath type	–	–	–
Air pre-cleaner, turbo type	•	•	•
Engine auto shut down	•	•	•
Engine block heater, 120V / 230V	•	•	•
Fuel heater	•	•	•
Fuel fill strainer	•	•	•
Hand throttle control	•	•	•
Max. fan speed, hot climate	•	•	•
Reversible cooling fan	•	•	•
<b>Drivetrain</b>			
Lock-up torque converter	–	•	•
Rear axle with limited slip	•	•	•
Speed limiter, 20 km/h	•	•	•
Speed limiter, 30 km/h	•	•	•
Speed limiter, 40 km/h	•	•	•
<b>Hydraulic system</b>			
Arctic kit: Attachment locking, pilot hoses and hydraulic oil	•	•	•
Attachment bracket, cast, visibility-optimized	•	•	•
Attachment bracket, side-tilting	•	•	•
Separate attachment locking, long boom	•	•	•
Separate attachment locking, standard boom	•	•	•
Single acting lifting function	•	•	•
Boom suspension system	•	•	•
HD load-sensing hydraulics, pump kit included	–	•	–
Hydraulic fluid, biodegradable, Volvo	•	•	•
Hydraulic fluid, fire resistant	•	•	•
Hydraulic fluid, for hot climate	•	•	•
Hydraulic, 3 functions, standard/long boom	–	–	–
Hydraulic, 4 functions, standard/long boom	–	–	–
Detent for 3rd hydraulic function	–	–	–
Adjustable flow for 3rd hydraulic function	–	–	–
Single lever control, 2 functions	–	–	–
Single lever control, 3 functions	–	–	–
Hydraulic, 2 functions Electro-servo, std/long boom	•	•	•
Hydraulic, 3 functions Electro-servo, std/long boom	•	•	•
Hydraulic, 4 functions Electro-servo, std/long boom	•	•	•
Single lever control, 2 funct Electro-servo, std/long boom	•	•	•
Single lever control, 3 funct Electro-servo, std/long boom	•	•	•
Single lever control, 4 funct Electro-servo, std/long boom	•	•	•
<b>Brake system</b>			
Stainless steel, brake lines	–	•	•
Axle oil cooler	–	•	•
Parking brake alarm, audible	•	•	•
<b>Cab</b>			
ACC control panel, with Fahrenheit scale	•	•	•
Anchorage for Operator's manual	•	•	•
Asbestos dust protection filter	•	•	•
Automatic Climate Control, ACC	•	•	•
Automatic Climate Control, ACC, corrosion protection condenser	•	•	•
Cab air pre-cleaner, cyclone type	•	•	•
Carbon filter - cab	•	•	•
Remote door opener	•	•	•
Lunch box holder	•	•	•
Operator's seat, Volvo air-suspended, heavy-duty, high back, heated	•	•	•
Operator's seat, Volvo air-susp, 3-point seatbelt	•	•	•
Operator's seat, ISRI, heated, high back	–	–	–
Operator's seat, ISRI, low back	–	–	–
Operator's seat, Premium Comfort ISRI	•	•	•
Operator's seat, Premium Comfort ISRI 3-point seat belt	•	•	•

# Equipment

## OPTIONAL EQUIPMENT

	L60H	L70H	L90H
Armrest, operator's seat, ISRI, left only	.	.	.
Armrest, operator's seat, Volvo, left	.	.	.
Safety belt, 3" (75mm) width	.	.	.
Safety belt warning	.	.	.
Radio installation kit including 12 volt outlet, left-side	.	.	.
Radio installation kit including 12 volt outlet, right-side	.	.	.
Radio installation kit, 12V, for USA	.	.	.
Radio with AUX, Bluetooth and USB connection	.	.	.
DAB Radio	.	.	.
Subwoofer	.	.	.
Forward view mirror	.	.	.
Rear view mirrors, el.adjusted and heated	.	.	.
Rear view mirrors, long arm right	.	.	.
Rear view mirrors, el.adjusted and heated, long arm right	.	.	.
Steering wheel knob	.	.	.
Sun blinds, rear windows	.	.	.
Sun blinds, side windows	.	.	.
Timer cab heating	.	.	.
Universal door/ignition key	.	.	.
Window, sliding, door	.	.	.
Cab, Hot applications. Roof, steel	.	.	.
Fire extinguisher cab	.	.	.
Outside steel protection cab	.	.	.
Rear view mirrors long arm, cab	.	.	.
Reinforced windshield, flat	.	.	.
<b>Service and maintenance</b>			
Automatic lubrication system	.	.	.
Automatic lubrication system for long boom	.	.	.
Oil sampling valve	.	.	.
Refill pump for automatic lubrication system	-	-	-
Tool kit	.	.	.
Wheel nut wrench kit	.	.	.
<b>Electrical</b>			
Battery disconnect switch, additional in cab	.	.	.
Anti-theft device	.	.	.
Headlights, assym. left	.	.	.
Headlights, assym. right LED	.	.	.
Headlights, assym. left LED	.	.	.
Emergency stop	.	.	.
License plate holder, lighting	.	.	.
Reduced function working lights when reverse gear activated	.	.	.
Side marker lamps	.	.	.
Forward camera, colour	.	.	.
Rear view camera including monitor, colour	.	.	.
Rear view mirrors, long arm, right side	.	.	.
Rearview mirrors, adjustable, el. heated	.	.	.
Reverse alarm	.	.	.
Reverse lights	.	.	.
Reversing warning light	.	.	.
Reverse warning light, strobe lightning	.	.	.
Warning beacon (flasher), LED automatic	.	.	.
Warning beacon (flasher), LED	.	.	.
Seatbelt indicator, external	.	.	.
Working lights, attachments, 1 LED	.	.	.
Warning beacon LED	.	.	.
Warning beacon LED automatic	.	.	.
LED Head Light	.	.	.
LED tail light	.	.	.
LED working lights, attachments	.	.	.
LED working lights on cab, front and rear	.	.	.
LED working lights on cab, front, 2 alt. 4 LED lamps	.	.	.

## OPTIONAL EQUIPMENT

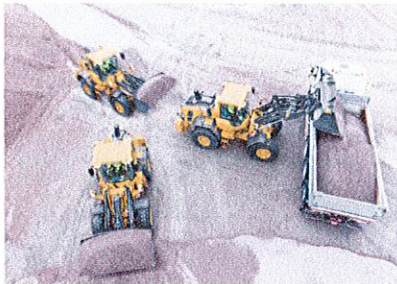
	L60H	L70H	L90H
LED working lights on cab, rear, 2 alt. 4 LED lamps	.	.	.
LED working lights, rear in grille, 2 LED lamps	.	.	.
LED working lights, front above head lamps, 2 LED lamps	.	.	.
LED work lights, side on cab, 4 LED lamps	.	.	.
LED light packages	.	.	.
Working lights halogen, attachments	.	.	.
Working lights on cab halogen, front and rear	.	.	.
Working lights on cab halogen, rear	.	.	.
Co Pilot available	.	.	.
Rearview camera in Co pilot	.	.	.
Max Boom height	.	.	.
Can Bus Interface	.	.	.
Delayed Engine Shutdown	.	.	.
<b>Protective Equipment</b>			
Anti-theft device	.	.	.
Bellyguard front	.	.	.
Bellyguard rear	.	.	.
Boom cylinder hose and tube guards	.	.	.
Cab roof, heavy duty	.	.	.
Center hinge and rear frame guard	.	.	.
Corrosion protection, painting of machine	.	.	.
Cover plate front frame, heavy-duty	.	.	.
Cover plate, under cab	.	.	.
Cover plates rear frame	.	.	.
Guards for front headlights	.	.	.
Grease nipple guards	-	.	.
Guards for radiator grill	.	.	.
Guards for tail lights, heavy-duty	.	.	.
Wheel/axle seal guards	.	.	.
Window guards, side and rear	.	.	.
Windshield guard	.	.	.
<b>Other Equipment</b>			
CareTrack, GSM/Satellite	.	.	.
CE-marking	-	-	-
Comfort Drive Control (CDC)	-	-	-
Comfort Drive Control (CDC) Electro-servo	.	.	.
Secondary steering	.	.	.
Counterweight, logging	.	.	.
Counterweight, signal painted, chevrons	-	-	-
Option for machines without dinitrol	.	.	.
Noise reduction kit, EU excluding decal	.	.	.
Sign, 50 km/h	.	.	.
Sign, slow moving vehicle	.	.	.
<b>External equipment</b>			
Deleted front mudguards	.	.	.
Fire extinguisher	-	-	-
Bracket for fire extinguisher	.	.	.
Fire suppression system	.	.	.
Mudguards, full cover, rear for 80-series tires	.	.	.
Mudflap kit for mudguards, full cover for 80-series tires	.	.	.
Mudguards, full cover, rear and front/rear for 65-series tires	-	-	.
Mudflap kit for mudguards, full cover for 65-series tires	-	-	.
Footsteps front frame	.	.	.
Footsteps, right-hand side	.	.	.
Flexible rear step	.	.	.
Cab ladder, rubber suspended	.	.	.

## OPTIONAL EQUIPMENT

	L60H	L70H	L90H
<b>Tires and Rims</b>			
20.5R25	•	•	•
600/65R25	–	–	–
650/65R25	–	–	–
620/75R26 Agriculture application only	•	•	•
750/65R26 Agriculture application only	•	•	•
<b>Attachments</b>			
Buckets:			
Straight	•	•	•
Spade nose	•	•	•
High tipping	•	•	•
Light material	•	•	•
Grading	•	•	•
Wear parts:			
Bolt-on edge	•	•	•
Bolt-on or weld-on bucket teeth	•	•	•
Segments	•	•	•
Log grapples	•	•	•
Fork equipment	•	•	•
Material handling arm	•	•	•
Snow blade	•	•	•
Broom	•	•	•
Sand spreading bucket	•	•	•
Bale clamp	•	•	•
Drum rotator	•	•	•

## SELECTION OF VOLVO OPTIONAL EQUIPMENT

External axle cooling (L70H, L90H)



Reversing camera with radar detect



Premium seat



Comfort Drive Control



Light packages



Lock-up converter (L70H, L90H)



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.

**V O L V O**