

BID SUBMITTAL FORM
Alabama County Joint Bid Program
Heavy Equipment – BID ITEM: MEDIUM DUTY BACKHOE

Company Name: WARRIOR TRACTOR & EQUIPMENT COMPANY, INC.
Address: 6801 MCFARLAND BLVD W
NORTHPORT, AL 35476
Bid Submitted by: DAVID SCHAFER
(Name of company representative)
Title: DISTRICT SALES MANAGER E-mail address: DSCHAFER@WARRIORTRACTOR.COM
Phone: 205-339-0300 Fax: 205-333-0101

By submitting this bid, we agree:

Initials

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

That the bid price will be honored for all counties for the period from January 1, 2022 to December 31, 2022.

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

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

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

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

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

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

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

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

DS

DS

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DS

Total Bid Price for Standard Machine: \$ 91,376.00
(Total Bid Price for Standard Machine Includes Freight Preparation, Delivery and Standard Warranty Costs) *

Freight Preparation and Delivery: \$ 4,551.00
(Included in Standard Machine Bid Price)

Manufacturer's Suggested Retail Price for Standard Machine: \$ 146,215.00

Equipment Model #: JOHN DEERE 310SL

Description: BACKHOE

Signature of company representative submitting bid: 

Title: DISTRICT SALES MANAGER

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

BID SUBMITTAL FORM: OPTION COST SHEET

By submitting this bid, we agree:

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

1018

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

1018

Equipment Model #: JOHN DEERE 310SL

Description: BACKHOE

Signature of company representative submitting bid: 

Title: DISTRICT 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.

BID SPECIFICATION FOR MEDIUM DUTY BACKHOE

GENERAL

These specifications shall be construed as the minimum acceptable standards for a medium duty loader/backhoe. 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 medium duty loader/backhoe must be new current production model and shall meet all EPA and other applicable standards at the time of manufacture.

The use of specific names and numbers in the specifications is not intended to restrict the bidder or any seller or manufacturer but is solely for the purpose of indicating the type, size, and quality of equipment considered best adapted to the uses of counties participating in the 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 will be provided with one (1) copy of the operator's manual(s) and one (1) copy of the current parts manual(s). 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 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 that it can affect repairs to its machine.

WARRANTY

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

Yes ☒ No ☐

Page#

or

Attachment ☒

ENGINE

Four Cylinder, four stroke cycle, minimum 268 cubic inch diesel engine, capable of developing a minimum of 93 NET flywheel horsepower with turbo charger.

Yes X No
Page # 18

Engine must be designed and built by the machine manufacturer.

Yes X No
Page # 18

STARTING SYSTEM

Shall be equipped with a 12-volt electrical system, heavy duty starting motor.

Yes X No
Page # 19

TRANSMISSION

Power shuttle transmission.

Yes X No
Page # 18

Minimum of 4 speeds forward and 3 reverse speeds.

Yes X No
Page # 18

Minimum Travel Speed: 25 mph

* 24.9 mph *

Yes No X
Page # 18

CONTROLS AND HYDRAULICS

Full hydraulic two (2) lever controls with load sensing hydraulic system.

Yes X No
Page # 18

Min. backhoe hydraulic flow 42 gpm with Axial-Piston pump.

Yes X No
Page # 18

FRONT END LOADER

Loader Bucket -- 1.20 min. cubic yard heavy duty

Yes X No
Page # 21

Loader Breakout Force (lbs.) -- 11,100 lbs.

Yes X No
Page # 21

Loader Lift Capacity Max. Height -- 7,200 lbs.

Yes X No
Page # 21

BACKHOE -- TWO LEVER CONTROL SYSTEM (FIXED LENGTH DIPPER STICK)

Backhoe Bucket -- 24"- General Purpose

Yes X No
Page # ATTACH

Bucket Breakout Force (lbs.) -- 14,400 lbs.

Yes X No
Page # 20

Backhoe Stick Digging Force (lbs.) -- 9,500 lbs.

* 8,229 lbs *

Yes No X
Page # 20

Backhoe Maximum Digging Depth -- 14 ft. 2 in.

Yes X No
Page # 20

Boom Lift @ 12 ft. (lbs.) – 2,800 lbs.

Yes X No
Page # 21

BRAKES

Service Brakes – Hydraulic Wet Disk

Yes X No
Page # 18

Parking Brake

Yes X No
Page # 18

FRONT AXLE

Standard 2-wheel drive

Yes X No
Page # ATTACH

TIRES AND OUTRIGGERS

Reversible type for use on both paved and non-paved surfaces.

Yes X No
Page # 38

Minimum 19.5L-24/10 PR Rear Tires and Wheels.

Yes X No
Page # 19

Minimum 12.5/80-18/10PR Front Tires and Wheels.

Yes X No
Page # 19

FUEL TANK

Minimum Capacity -- 34 Gallons

Yes X No
Page # 19

OPEN ROPS CANOPY

Yes X No
Page # ATTACH

OIL ANALYSIS

To be included at no cost of the duration of the warranty period selected at intervals recommended by the manufacturer's warranty and maintenance schedule.

Yes X No
Page # ATTACH

WEIGHT (STANDARD OPERATING)

The factory specified operating weight only. No additional weights may be added for the purpose of meeting these specifications. Minimum 16,000 pounds SAE standard with 2-wheel drive and ROPS canopy.

* 15,872 pounds *

Yes X No X
Page # 19

SAFETY DEVICES

Include a fire extinguisher that meets current minimum OSHA requirements complete with
Mounting hardware installed on the machine.

Yes X No
Page # ATTACH

STANDARD WARRANTY FOR NEW JOHN DEERE CONSTRUCTION, COMPACT CONSTRUCTION (CCE) FORESTRY, AND UTILITY PRODUCTS – US & Canada

- **Construction & Forestry Products:** 12 months/unlimited hours (whichever occurs first) Full Machine Standard Warranty
- **Compact Construction Equipment (CCE) Products:** 24 months or 2000 hours (whichever occurs first) Full Machine Standard Warranty
- **C&E Series Pull-Type Scrapers:** 6 months Full Machine Standard Warranty
- **DC & DE Pull-Type Scrapers:** 12 months Full Machine Standard Warranty
- **Scraper Tractors:** 24 Months or 2000 Hours (whichever occurs first) Full Machine Standard Warranty
- **Forestry Attachments:** 12 Months or 2000 Hours (whichever occurs first) Full Machine Standard Warranty

The "Standard Warranty" is part of the warranty protection package available from John Deere Construction & Forestry Company (John Deere Limited in Canada) ("John Deere") to purchasers of new John Deere products ("product"):

STANDARD Warranty is John Deere's standard new product warranty, described in this document, provided at no additional charge to the purchaser.

EXTENDED Warranty is a separate repair contract made available by John Deere for purchasers who wish to complement their Standard Warranty coverage. Complete Extended Warranty details, including coverage options and limitations, are set forth in the Application for Extended Warranty, which is available from authorized John Deere dealers.

STRUCTURAL Warranty applies to certain structural components as listed below and as described in this document.

FACTORY-INSTALLED UNDERCARRIAGE Warranty applies to certain undercarriage components as listed below and as described in this document.

A. STANDARD WARRANTY - GENERAL PROVISIONS

John Deere will repair or replace, at its option, any parts (except those specified below) of a new John Deere product that, as delivered to the original retail purchaser(s), are defective in material or workmanship. Performance of this warranty will be free of charge for parts and labor, except as otherwise stated below. Standard Warranty applies only to purchases from John Deere and authorized John Deere dealers and, except as otherwise provided in the next sentence and section L below, is extended only to the original retail purchaser of the product. Remaining Standard Warranty applicable to a used John Deere product is transferred to a subsequent purchaser of the product only if the subsequent purchaser requests a transfer from an authorized John Deere dealer before the product's Standard Warranty expires. Coverage begins on the date of delivery of the product to the original retail purchaser. For purposes of this warranty, a product that has been rented, used for demonstration purposes for 150 or more hours, or otherwise used prior to its original retail purchase has been "used" for the total duration of such use. Warranty statements required by law covering engine emissions-related parts and components are found on a separate written warranty certificate provided to the purchaser at the time of the original retail purchase.

B. WHAT IS COVERED BY STANDARD WARRANTY -

All parts of a new John Deere product (except those noted in Sections D and E below) are covered during the Standard Warranty period set out above.

C. EXCLUSIVE REMEDY -

The repair or replacement of covered parts or components that are defective, as provided in Sections A, B, D.2 and D.3 herein, shall be the purchaser's exclusive remedy for any defect in the product. However, if after repeated attempts such repair or replacement fails to correct the performance problem caused by the defect, the purchaser's sole remedy shall be a refund of the amount paid for the product (in exchange for a return of the product), excluding any transportation charges, license fees, taxes and insurance premiums, and less a reasonable allowance for use of the product prior to its return. In no event will the dealer, John Deere or any company affiliated with John Deere be liable for any incidental or consequential damages, including but not limited to loss of profits, rental of substitute equipment or other commercial loss. Correction of defects in the manner provided above shall constitute fulfillment of all liabilities of the Dealer, John Deere, or any company affiliated with John Deere to the purchaser or any other person, whether based upon contract, tort, strict liability, or otherwise. This limitation does not apply to claims for personal injury.

D. ITEMS COVERED SEPARATELY -

1. Standard Warranty does not apply to batteries, radios, tires, cameras, or to Cummins, MTU or Detroit Diesel Engines installed in John Deere products, which are covered by separate written warranties.
2. Factory-Installed Undercarriage Warranty covers all non-rubberized factory-installed undercarriage wear components for 3 years or 4,000 hours from the date of delivery to the original retail purchaser, whichever occurs first (unless terminated earlier under Section F, below). For purposes of this warranty, a product that has been rented, used for demonstration purposes for 150 or more hours, or otherwise used prior to its original retail purchase has been "used" for the total duration of such use. In addition to the items listed in section E below, Factory-Installed Undercarriage Warranty does not cover: failures due to wear, machine application, maintenance practices, or improper machine configuration; removal and installation labor; transportation or hauling costs; unapproved parts; non-wear items; and rubberized undercarriage components such as rubber tracks. Warranty claims will be pro-rated based upon wear of the failed component and whether track shoe width is approved by John Deere. Factory-Installed Undercarriage Warranty does not apply to Scraper Tractors.
3. StructurALL Warranty for new John Deere Products (except Compact Excavators & Loaders, Skid-Steer Loaders, Compact Track Loaders, Scraper Tractors, Pull-Type Scrapers, and Forestry Attachments, which are not eligible for StructurALL Warranty) begins at the date of delivery to the original retail purchaser and ends (unless terminated earlier under Section F, below) after three (3) years, or 10,000 hours (whichever occurs first). For purposes of this warranty, a product that has been rented, used for demonstration purposes for 150 or more hours, or otherwise used prior to its original retail purchase has been "used" for the total duration of such use. **StructurALL Warranty applies only to the following structural components listed below as installed on the product at the time of original manufacture.** If a particular component is not listed below it is not covered by StructurALL Warranty.

Arm; Articulation Joint (incl. pins & bushings); Bin Frame; Boom; Carbody; C-Frame*; Circle Frame; Coupler (John Deere built ONLY); Dipperstick; Draft Frame; Engine Frame; Equipment Frame; Grapple Arch and Grapple Boom; Loader Arm; Loader Frame; Mainframe; Moldboard Lift Arm; NeverGrease™ Pin Joints [Includes steering pin and bushing joints (standard equipment), roller elements (roller bearings) in bucket to boom joints and sliding elements (bushing) for boom and linkage joints (optional equipment)]; Rollover Protection Structure (ROPS); Side Frame; Swing Frame; Track Frame; Undercarriage Frame; X-Frame; Z-bar loader linkage (including bell crank and bucket driver link); Specialty booms and arms marketed as "heavy duty" by John Deere.

Items Covered by StructurALL for Cut-to-Length Forestry Machines: Front frame (welded assembly); Rear frame (welded assembly); Crane king post with basement; Middle joint frame; Cabin swing frame; Main Boom

StructurALL Warranty does not apply to:

1. Any product used primarily in extreme duty or severe duty applications such as but not limited to: demolition and wrecking, chemical plant (including fertilizer plants), salt mines, steel mill, land fill and transfer stations, scrap handling, scarifying and other applications that are similarly destructive or similarly heavy duty except specialty booms and arms as stated in Section D.3 above.
2. C-Frames on Crawlers equipped with root rakes or used in forestry applications unless equipped with an "extreme duty" reinforcement package.
3. Cut-to-Length Forestry Heads and Slash Bundler Units.
4. Crawlers equipped with optional side booms.
5. Cut-to-Length Forestry, Excavator, and Log Loader swing bearings.
6. Motor Graders equipped with front- or rear-mounted snow wings.

E. ITEMS NOT COVERED -

John Deere is NOT responsible for the following:

1. Freight
2. Adjustments to compensate for wear, for periodic maintenance or adjustments that result from normal wear and tear.
3. Damage caused by unapproved adjustments (electronic or mechanical) to machine or machine components outside of published specifications including but not limited to engine, hydraulic components and relief valves.
4. Program updates, calibrations, and pressure adjustments.
5. Additional Labor Time - Above Dealer Labor Rate
6. Additional Cleaning - Above Dealer Labor Rate
7. Rental Fees
8. Depreciation or damage caused by normal wear or application, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, lack of proper protection during storage, vandalism, negligence, collision, or other accidents.
9. Premiums charged for Overtime Labor
10. Transportation to and from the dealership.
11. Travel time, mileage, or service calls by the dealer.
12. Non-John Deere components or modifications, Rotobec grapples, and attachments installed aftermarket.
13. Shop supplies and maintenance items such as, but not limited to: filters, fuels, oil, hydraulic fluid, lubricants, coolants, conditioners, shop towels, cleaners and degreasers.
14. Torn, cut, or worn hoses.
15. Wear items, such as, but not limited to: body liner, belts, blades, bulbs, lubricated joints (including pins and bushings), dry brakes, brake linings, dry clutch linings, saw blades, chains, skidder grapple shocks, color marking nozzles, and articulation bumpers.
16. Items such as cutting-edge parts, delimbing knives, bucket teeth and rubber track are not warranted for depreciation or damage caused by normal wear, lack of proper maintenance, misuse, failure to follow operating instructions, the elements or accident.
17. Any defect in a non-covered component, or damage to or failure of a covered component caused by a defect in a non-covered component.
18. Secondary damage which occurs from continued operation of a product after recognition of the occurrence of a failure.
19. Parts supplied by or repairs, maintenance or modifications performed by someone other than an authorized John Deere dealer, including any damage caused by such use of parts, repairs, maintenance, or modifications not performed by an authorized John Deere dealer.
20. Topping off fluids when fluid levels fall in the range between low and full
21. Parts/Kits not ordered on machine and installed aftermarket. These parts will be covered by any applicable parts warranty.
22. Attachments installed aftermarket – i.e., Winch not installed at factory.
23. Custom options installed outside the factory – i.e., G.R. Manufacturing option packages.
24. Used Products (except as otherwise provided in section L below).

F. TERMINATION OF WARRANTY-

John Deere is relieved of its obligations under Standard Warranty, StructurALL Warranty, Factory-Installed Undercarriage Warranty and/or Extended Warranty if:

1. The product is modified or altered in ways not approved by John Deere; or
2. Any unapproved or improperly sized attachment is installed on the product. Approval and attachment size shall be at John Deere's sole discretion. (Consult dealer prior to installing attachments or product modification).
3. The product is moved outside the US and/or Canada.

G. PARTS REPLACED UNDER WARRANTY -

Only new or remanufactured parts or components furnished or approved by John Deere, will be used if John Deere elects to repair the product. If any such part or component is defective in material or workmanship when installed in the product, John Deere will repair or replace, as it elects, such defective part or component, provided the defect is reported to an authorized John Deere dealer within 90 days of installation or before expiration of the applicable Standard Warranty, Factory-Installed Undercarriage Warranty and/or StructurALL Warranty whichever is later.

H. TELEMATICS

NOTICE: Products may be equipped with telematics hardware and software ("Telematics") that transmit data to John Deere/ Dealer. Purchaser may deactivate Telematics at www.jdlink.com.

Notwithstanding Purchaser's right, title or interest in the Products, Purchaser agrees that John Deere and Dealer (their affiliates, successors and assigns), without further notice to Purchaser have the right to:

1. Access, use, collect and disclose any data generated by, collected by, or stored in, Products or any hardware or devices interfacing with Products ("Machine Data");
2. Access Machine Data directly through data reporting devices integrated within, or attached to, Products, including Telematics ("Data Reporting Systems"); and
3. Update the Data Reporting Systems software from time to time. Machine Data will only be used in accordance with John Deere's Machine Data Policy, located at www.JohnDeere.com/MachineDataPolicy.

I. OBTAINING WARRANTY SERVICE -

To obtain warranty service, the purchaser must request warranty service from a John Deere dealer authorized to sell the product to be serviced. When making such a request, the purchaser must present evidence of the product's delivery date, make the product available at the dealer's place of business, and inform the dealer in what way the purchaser believes the product to be defective. Standard Warranty, Factory-Installed Undercarriage Warranty and/or StructurALL Warranty repairs may be made in the field if the purchaser and servicing dealer so desire. However, John Deere will not be responsible for any charges (such as dealer travel time, mileage or extra labor) that would not have been incurred had the product been repaired at the dealer's place of business.

J. NO IMPLIED WARRANTY, CONDITIONS OR OTHER REPRESENTATION -

Where permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations, conditions or promises, express or implied, as to the quality, performance, or freedom from defect of its products, other than those set forth in this document and **NO IMPLIED WARRANTY OF MERCHANTABILITY, CONDITIONS OR FITNESS IS MADE.**

K. NO DEALER WARRANTY -

The selling dealer makes no warranty of its own on any item covered by this warranty and makes no warranty on other items unless the dealer delivers to the purchaser a separate written warranty certificate specifically warranting the item. **The dealer has no authority to make any representation or promise on behalf of John Deere, or to modify the terms or limitations of this warranty in any way.**

L. USED JOHN DEERE PRODUCTS ONLY -

John Deere will transfer remaining Standard Warranty, Factory-Installed Undercarriage Warranty and/or StructurALL Warranty to the purchaser of a used John Deere construction and/or forestry product that has been used for less than the full warranty period provided at the product's original retail purchase. This transfer is not effective until change of ownership is registered by a John Deere dealer. **ALL THE TERMS, INCLUDING LIMITATIONS AND EXCLUSIONS, OF THE JOHN DEERE STANDARD WARRANTY, FACTORY-INSTALLED UNDERCARRIAGE WARRANTY, AND/OR STRUCTURALL WARRANTY ORIGINALLY PROVIDED FOR THE PRODUCT REMAIN IN EFFECT AND APPLICABLE.**

L-SERIES
BACKHOES



JOHN DEERE

310L EP / 310L / 310SL / 310SL HL / 315SL / 410L / 710L

A John Deere backhoe loader is shown in action, digging a trench in a construction site. The machine is yellow and black, with the John Deere logo visible on the boom and side. A worker in a yellow safety vest is visible in the cab. The background shows a clear blue sky and distant hills.

LIFT MORE
AND MULTITASK



THE **L-SERIES**

**LOOKING FOR MORE
RELIABILITY AND PRODUCTIVITY?**

**WE'VE GOT
YOUR BACKHO
AND YOUR**



RELIABLE



PRODUCTIVE

DEERE

E.
BACK.



UP TO
15%
MORE
CRANING
CAPACITY
FOR THE 310SL
WITH LIFT MODE

WHEN WE NEED REAL-WORLD FEEDBACK,
WE ASK CUSTOMERS LIKE YOU.

Our trusted Customer Advocate Groups (CAGs) provide us with invaluable input from owners and operators — the ones just like you who know what customers really need.

And we listen. Our economically priced, rental-friendly 310L EP — with four-speed synchromesh manual transmission — and newly redesigned 310SL — with closed-center, pressure-compensated load-sensing (PCLS) hydraulics that boost productivity, machine control, and craning capacity — are just the latest examples of how we deliver the machines and features to help your operation succeed in the working world.

GET MORE DONE WITH ONE

MULTIFUNCTION VERSATILITY, EXCEPTIONAL CAPABILITY.

Why run two machines when one will do? Whether you're loading trucks, busting up blacktop, placing pipe, digging trenches, or moving materials, an L-Series Backhoe is more than up to the task. Building upon our highly productive K-Series Backhoes, the L-Series features additional backhoe lift capability and PCLS hydraulics (on the 310SL, 310SL HL, 410L, and 710L), for superb multifunction performance. The result: our most versatile backhoes ever.

Proven engine technology

You can feel confident in the reliability, performance, and fuel efficiency of the 310L EP's proven Yanmar 3.3L engine. This EPA Interim Tier 4 (IT4)-equivalent diesel complies with EPA Final Tier 4 (FT4)/EU Stage IV emissions regulations without the need for aftertreatment components, minimizing machine complexity and the number of parts needed to maintain your fleet.

Powerful FT4 engines

Rugged FT4/Stage IV John Deere PowerTech™ EWL 4045 engine on the 310L, 310SL, 310SL HL, 315SL, and 410L boosts power, torque, and reliability compared to previous models. Simple two-valve cylinder-head, wet-sleeve design with replaceable cylinder liners provides uniform cooling and aids in reducing oil breakdown and ring wear. Filter locations have been redesigned and improved over earlier models.

Multifunction hydraulics

PCLS hydraulics on the 310SL, 310SL HL, 410L, and 710L supply superb multifunction capability at all engine-rpm speeds.

Control the ride and the load

Auto ride control eliminates the need to manually turn the feature on and off during load and carry applications, enhancing the operator's ease of use. When activated, front loader cylinders function as a shock absorber, smoothing the ride over rough terrain and reducing material spillage. On/Off functionality is controlled by ground speed and can be adjusted by the operator in the cab's display monitor.

Set it and go to work

When enabled on the sealed-switch module, AutoShift (standard on 310SL, 310SL HL, 315SL, 410L, and 710L) automatically shifts the PowerShift™ transmission to the appropriate gear. Simply set the control lever to the highest gear desired, and the transmission will optimally shift based on engine rpm and ground speed.

True four-wheel drive on command

Limited-slip mechanical-front-wheel drive (MFWD) (not available on 310L EP) delivers surefooted traction in any ground condition. Engage momentary MFWD "on the fly" with the touch of a button on the loader control.

Make the shift

New powered sideshift option for the 315SL enables smooth side-by-side shifts in under six seconds, for more precise backhoe repositioning. Its design includes a series of two hydraulic cylinders used to smoothly shift the backhoe, eliminating the need for a chain-drive or pulley system. It's easily unlocked and controlled via the combination in-cab switch on the main control panel.

Powered sideshift option allows operators to take full advantage of the 315SL's narrow footprint with vertical stabilizers. This is particularly valuable in applications such as street repair; underground utility work in congested urban areas; constructing square trench boxes; and digging next to buildings, walls, or other structures.



Not all features described are available for all models or configurations. Please review the Additional Equipment section and consult with your local dealer for the latest standard and optional offerings.

A yellow Deere excavator is shown in profile, lifting a large, dark, cylindrical pipe horizontally. The pipe is suspended in the air, supported by the excavator's bucket. In the foreground, several other similar pipes are stacked horizontally. The background shows a clear blue sky and a dry, brown landscape. The excavator has "DEERE" written on its side.

STANDOUT FEATURE

***BIG LIFT.
SMALL
FOOTPRINT.***

HEAVY-LIFT BACKHOES

Managing an expanding workload and multiple tasks doesn't have to mean moving up to a larger backhoe. Boasting significantly more lifting capability than previous models, along with pressure-compensated load-sensing (PCLS) hydraulics, our 310SL, 310SL HL, 410L, and 710L are surprisingly adept — and may be the perfect addition to your equipment lineup.



See what you can do now

Now with PCLS hydraulics, the 310SL features provide increased productivity and smooth multifunction control, with increased cycle times improving trenching productivity by 16 percent over the prior 310SL design. Trenching operation can be conducted at a lower engine rpm, reducing fuel consumption and jobsite noise.

More lift capacity at the push of a button

Lift mode on the 310SL, 310SL HL, 410L, and 710L provides an additional boost of 10 to 15 percent. Simply push a button on the sealed-switch module to set engine rpm at 1,400 and maximize hydraulic pressure for increased lifting capability.



The choice is yours

The 310SL and 310SL HL deliver all the advantages of PCLS hydraulics in the 14-foot digging-depth category, enabling operator efficiency and productivity through improved multifunction control. For additional performance, the 310SL HL has up to 25-percent-more rear-crane capacity and 10 more net horsepower.

Control in close quarters

Standard on the 310SL, 310SL HL, 410L, and 710L, precision mode reduces the speed of hydraulic backhoe functions without sacrificing lift performance, for close work around underground utilities or jobsite obstacles, or when lifting. This control-enhancing feature is especially useful for less experienced operators or new trainees.





*PILOT TOWERS
OPTIMIZE LEGROOM
& SPACE TO ROTATE*

CONTROL AT YOUR FINGERTIPS

MAXIMUM PRODUCTIVITY IS CLOSE AT HAND.

Increased productivity is within easy reach in an L-Series Backhoe. Loader-control grip and pilot controllers provide effortless, fingertip operation of the backhoe and loader, while other machine functions are conveniently located on the steering column.



CLEAR SIGHTLINES TO FRONT LOADER BUCKET

Extend your workday

LED lighting kit brings things into focus when your workday goes long. For enhanced trenching visibility, boom-light field kit for the 310SL, 310SL HL, and 410L includes two LED floodlights mounted to each side of the boom.

Take it easy

Enhanced "palm-on-top" loader-control grip is comfortable and easy to use. Redesigned loader-lever linkage reduces resistance and improves its throw and feel, decreasing lever travel by up to 15 percent.

Steering column controls

Exterior lights, wipers, and turn signals are conveniently located on the multifunction lever on the steering column — just like the family SUV — helping operators keep their eyes on the job at hand.

Excellent view to front loader bucket

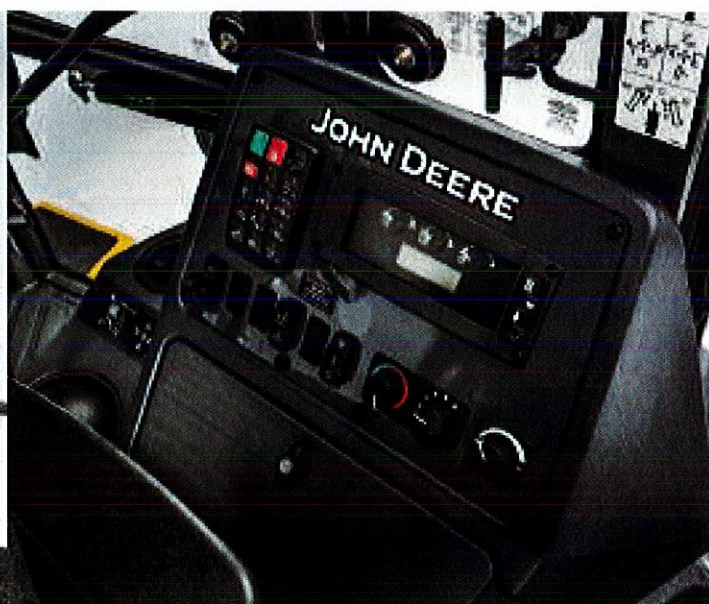
Clear sightlines to the loader bucket corners have been maintained over the sloped hood, even with the addition of the aftertreatment components needed to meet FT4/Stage IV compliance.

Fatigue-beating comfort

L-Series Backhoes are loaded with creature comforts, including efficient HVAC system, adjustable mechanical or air-suspension seat, and optional premium radio with Bluetooth® and auxiliary input.

Have a seat — your way

Two seat options are available from the factory to maximize comfort and productivity. A heated, air-suspension seat helps keep the operator warm and comfortable even on the coldest days. An air-suspension seat smoothes the ride for open-canopy configurations.



UNSURPASSED RELIABILITY

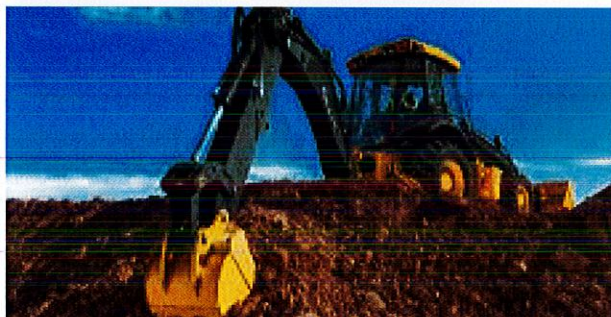
WON'T BACK DOWN. OR LET YOU DOWN.

Built with state-of-the-art tools and technology by a quality-conscious workforce at our world-class facility in Dubuque, Iowa, U.S.A., L-Series Backhoes deliver superb reliability and uptime. When you know how they're built, you'll see how tough they are.



4WD

OPTION AT YOUR
COMMAND



Your bucket list

Our multipurpose buckets have been enhanced to boost durability. New clamshell design features tilt-free dumping, a reinforced third cutting edge, and improved hinge profile for minimized material spillage compared to previous offerings.

Bias and radial tire options

Choose from a variety of factory-installed tire options, for the traction, performance, and long service life your specific application requires. On mechanical-front-wheel drive (MFWD)-equipped models, the machine will automatically disable MFWD in fourth and fifth gears to reduce tire wear.

Maintenance-free batteries

Standard maintenance-free batteries reduce periodic servicing, improve cold-starting reliability, and lengthen battery life.

Diff-lock protection

Enabled through the monitor, differential-lock protection prevents engagement at high travel speeds and the resulting wear and tear on axle components.

Quick, clean filter changes

Vertical spin-on engine, transmission, and hydraulic filters and quick-release fuel filters allow fast, clean changes. Standard heavy-duty transmission oil filter enhances reliability over standard-duty filter. Diesel exhaust fluid (DEF) filter has been relocated from the tank, improving access and extending the change interval.

Put the brakes on

When MFWD braking is enabled through the monitor and the brakes are applied, the machine automatically activates MFWD, slowing the machine down faster and extending service-brake life.

Premium hydraulic oil

L-Series Backhoes come factory-filled with Hydrau™ premium all-season, anti-wear hydraulic oil specifically designed for construction equipment. For cold weather, opt for Hydrau™ XR, which offers all-season protection from -40 to 40 deg. C (-40 to 104 deg. F).

Protect your investment

Machine-security system with touchpad passcode safeguards against unauthorized operation.

Get connected

Customer-inspired backhoe hydraulic quick-coupler option helps expand jobsite capabilities. When equipped, both front loader and rear backhoe hydraulic couplers are conveniently controlled, based on seat position, by a single button on the sealed-switch module.



THE 710L



21' 9"

MAXIMUM DIGGING DEPTH
(WITH OPTIONAL EXTENDABLE DIPPERSTICK)



UP TO **10%**
INCREASE IN BACKHOE
LIFT CAPACITY
(WITH LIFT MODE ACTIVATED)



13%
MORE HORSE-
POWER THAN
PREVIOUS MODEL

EASY MAINTENANCE

KEEP THE PEACE. AND YOUR PEACE OF MIND.

Save fuel with economy mode

Standard economy mode can be configured separately between loader and backhoe functions. Activate economy mode for backhoe functions while retaining full power for loader functions. This helps maximize fuel usage in lighter-work applications with minimal effect on machine performance.

Improved diagnostics

State-of-the-art multi-language monitor clearly displays machine diagnostics. Operators can quickly and easily program a multitude of time-specific functions such as auto shutdown and auto-idle.

DEF concentration sensor

Diesel exhaust fluid (DEF) concentration sensor measures fluid in the DEF tank and issues an alert of potential engine derate.



Minimize downtime and expense

Same-side ground-level service points speed daily checks and fills. Other commonsense features such as quick-change filters, extended service intervals, simple-to-read sight gauges, and easy-access grease zerks help increase uptime and lower daily operating costs.

Coolers allow easy cleanout

Hinged, stacked-assembly coolers tilt away from the radiator for convenient core cleanout.

Quiet, fuel-efficient fan

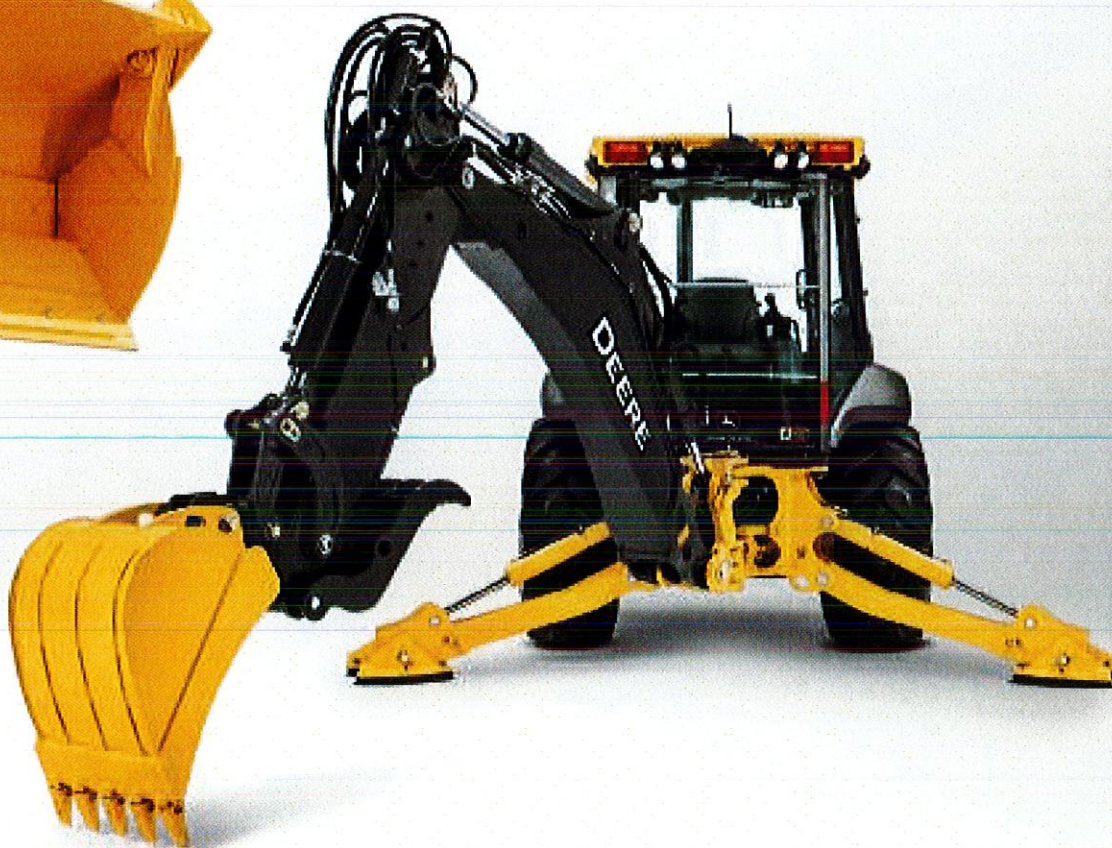
Variable-speed electronically controlled fan automatically speeds up or slows down, operating only as needed to keep things cool. Conserves power and fuel, while reducing noise.

Save fuel and reduce noise

Auto-idle decreases engine speed when hydraulics aren't in use, to help maintain quiet working conditions and conserve precious fuel. Auto shutdown turns off the engine after an operator-selected period of inactivity, further keeping noise and fuel consumption down.

Reliable engine technology

310L EP IT4-equivalent Yanmar engine requires no aftertreatment. PowerTech EWL FT4/Stage IV engine on the 310L, 310SL, 310SL HL, 315SL, and 410L features a diesel oxidation catalyst (DOC) and a selective catalytic reduction (SCR) system. PowerTech Plus FT4/Stage IV engine on the 710L has a DOC and an SCR system, and it also requires a diesel particulate filter (DPF).



Get valuable insight with

JOHN DEERE WORKSIGHT™

The John Deere WorkSight suite of construction technology delivers **Productivity Solutions** to help you get more done, more efficiently. The in-base, five-year JDLink™ telematics subscription provides machine location, utilization data, and alerts to help you maximize productivity and efficiency. Other productivity solutions include grade-management options for multiple machine forms and payload weighing for wheel loaders and articulated dump trucks.

To maximize uptime and lower costs, JDLink telematics also enables **John Deere Connected Support™**. John Deere's centralized Machine Health Monitoring Center analyzes data from thousands of connected machines, identifies trends, and develops recommended actions, called Expert Alerts, to help prevent downtime. Dealers use Expert Alerts to proactively address conditions that may otherwise likely lead to downtime. Your dealer can also monitor machine health and leverage remote diagnostics and programming capability to further diagnose problems and even update machine software without a time-consuming trip to the jobsite.



310L EP / 310L SPECIFICATIONS

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Engine	310L EP		310L	
Manufacturer and Model	Yanmar 4TNV98CT turbocharged		John Deere PowerTech™ EWL 4045HL050 turbocharged	
Non-Road Emission Standard	EPA Interim Tier 4 equivalent, EPA Final Tier 4 compliant		EPA Final Tier 4/EU Stage IV	
Displacement	3.3 L (203 cu. in.)		4.5 L (276 cu. in.)	
Gross Peak Power	53 kW (72 hp) at 2,100 rpm		76 kW (102 hp) at 1,600 rpm	
Net Peak Power (ISO 9249)	52 kW (69 hp) at 2,100 rpm		75 kW (100 hp) at 1,600 rpm	
Net Peak Torque (ISO 9249)	272 Nm (200 lb.-ft.) at 1,800 rpm		459 Nm (339 lb.-ft.) at 1,500 rpm	
Net Torque Rise	29%		51%	
Lubrication	Pressure system with spin-on filter and cooler		Pressure system with spin-on filter and cooler	
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		Dual-stage dry type with safety element and evacuator valve	
Cooling				
Fan Type	Viscous variable-rate (temperature controlled) cooling fan standard		Electronically controlled, variable rate, suction-type cooling fan	
Engine Coolant Rating	-40 deg. C (-40 deg. F)		-40 deg. C (-40 deg. F)	
Engine Oil Cooler	Oil to water		Oil to water	
Powertrain				
Transmission	4-speed manual-range gear-selection transmission with synchronizers; electric clutch cutoff on loader lever and manual-range gear-selection lever		4-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever	
Torque Converter	Single stage, dual phase with 3.01:1 stall ratio, 300 mm (11.8 in.)		Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11.0 in.)	
Maximum Travel Speeds with Standard Engine, Measured with 19.5L-24 Rear Tires	Forward	Reverse	Forward	Reverse
Gear 1	5.7 km/h (3.5 mph)	5.7 km/h (3.5 mph)	5.4 km/h (3.4 mph)	6.8 km/h (4.2 mph)
Gear 2	9.3 km/h (5.8 mph)	9.3 km/h (5.8 mph)	9.9 km/h (6.2 mph)	12.5 km/h (7.8 mph)
Gear 3	20.4 km/h (12.7 mph)	20.4 km/h (12.7 mph)	20.4 km/h (12.7 mph)	—
Gear 4	38.0 km/h (23.6 mph)	38.0 km/h (23.6 mph)	36.7 km/h (22.8 mph)	—
Axles				
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		22 deg.	
Axle Ratings	Front	Rear	Front	Rear
SAE J43	5000 kg (11,000 lb.)	6000 kg (13,200 lb.)	5000 kg (11,000 lb.)	6000 kg (13,200 lb.)
Dynamic	7500 kg (16,500 lb.)	8000 kg (17,600 lb.)	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)
Static	23 500 kg (51,800 lb.)	23 500 kg (51,800 lb.)	24 500 kg (54,000 lb.)	26 500 kg (58,400 lb.)
Ultimate	39 500 kg (87,100 lb.)	39 500 kg (87,100 lb.)	41 500 kg (91,500 lb.)	41 500 kg (91,500 lb.)
Differentials				
Mechanical-Front-Wheel-Drive (MFWD) Axle	Open		Open – standard; automatic, limited-slip traction control – custom or optional	
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock		Foot actuated, hydraulically engaged 100% mechanical lock	
Steering (ISO 5010)	Hydrostatic power steering and emergency steering		Hydrostatic power steering and emergency steering	
Axle	MFWD	Non-Powered Front	MFWD	Non-Powered Front
Curb-Turning Radius				
With Brakes	3.38 m (11 ft. 1 in.)	3.39 m (11 ft. 1 in.)	3.45 m (11 ft. 4 in.)	3.43 m (11 ft. 3 in.)
Without Brakes	3.79 m (12 ft. 5 in.)	3.80 m (12 ft. 6 in.)	3.96 m (13 ft. 0 in.)	3.90 m (12 ft. 10 in.)
Bucket-Clearance Circle				
With Brakes	9.72 m (31 ft. 11 in.)	9.73 m (31 ft. 11 in.)	9.86 m (32 ft. 4 in.)	9.80 m (32 ft. 2 in.)
Without Brakes	10.32 m (33 ft. 10 in.)	10.34 m (33 ft. 11 in.)	10.61 m (34 ft. 10 in.)	10.48 m (34 ft. 5 in.)
Steering Wheel Turns (lock to lock)	2.7	3.2	2.7	3.2
MFWD and Rear Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears			
Brakes (ISO 3450)				
Service	Power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing			
Parking	Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control			
Hydraulics				
Main Pump	Open-center system; axial-piston pump		Open-center system; single-gear pump	
Pump Flow at 2,200 rpm				
Backhoe	124 L/m (32.8 gpm)		106 L/m (28 gpm)	
Loader	114 L/m (30.1 gpm)		106 L/m (28 gpm)	
System Relief Pressure				
Backhoe	24 993 kPa (3,625 psi)		24 993 kPa (3,625 psi)	
Loader	22 063 kPa (3,200 psi)		22 063 kPa (3,200 psi)	
Controls				
Backhoe	2-lever mechanical standard; pilot controls with pattern select and manual and/or electric auxiliary functions optional; field kits available for additional mechanical-control options			
Loader	Single-lever control with electric clutch cutoff switch and MFWD (momentary) standard; single-lever control with electric clutch cutoff switch, electrohydraulic (EH) proportional auxiliary roller, MFWD (momentary), and transmission quick-shift optional		Single-lever control with electric clutch cutoff switch standard; manual auxiliary function (2nd lever), single-lever control with electric clutch cutoff and EH proportional auxiliary control optional	

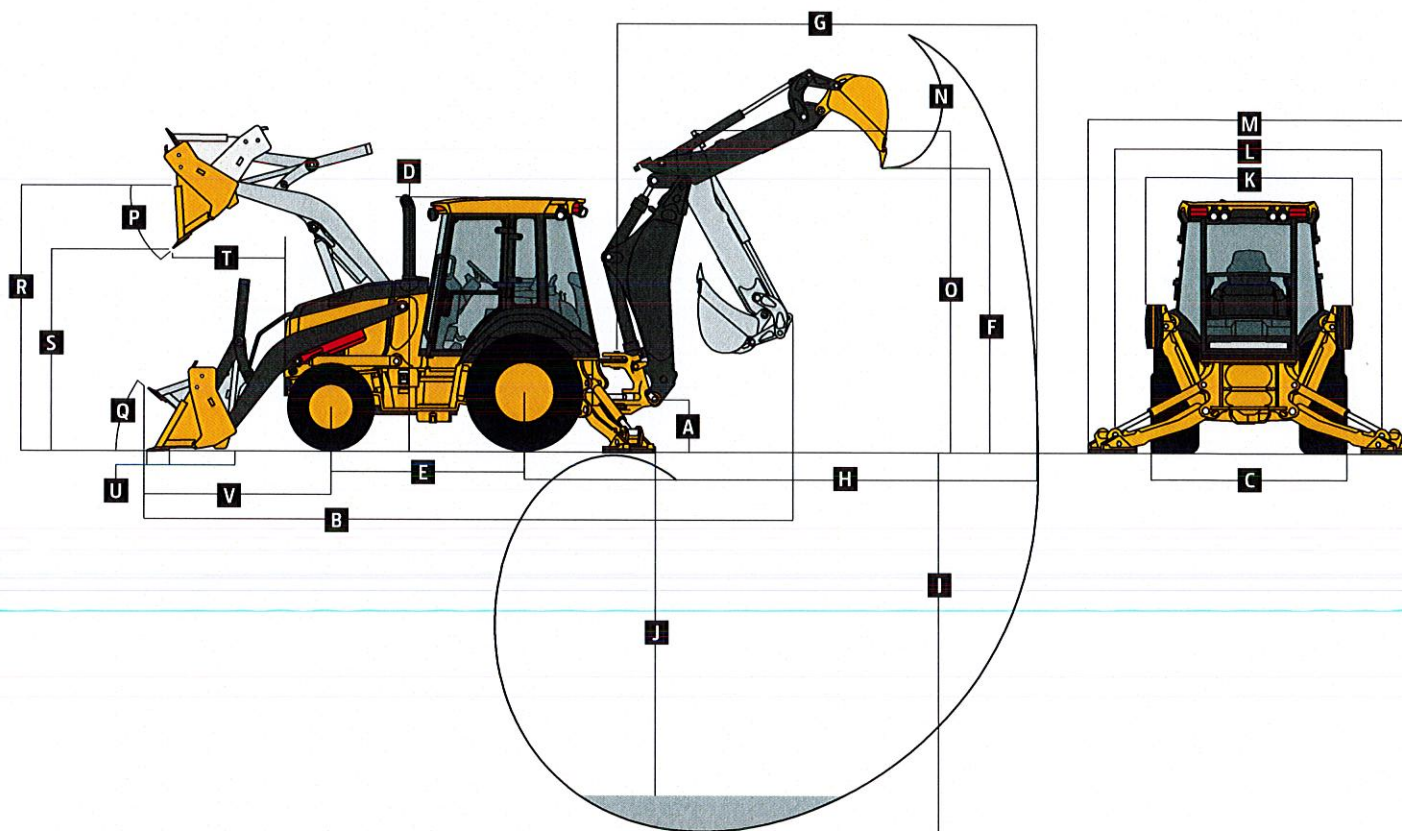
310L EP / 310L SPECIFICATIONS



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Cylinders		310L EP			310L		
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins							
		<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>	<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>
Loader Boom (2)		80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)	80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)
Loader Bucket (1)		90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)		110 mm (4.33 in.)	56 mm (2.20 in.)	821 mm (32.32 in.)	110 mm (4.33 in.)	56 mm (2.20 in.)	821 mm (32.32 in.)
Backhoe Crowd (1)		110 mm (4.33 in.)	63 mm (2.48 in.)	553 mm (21.77 in.)	110 mm (4.33 in.)	63 mm (2.48 in.)	553 mm (21.77 in.)
Backhoe Bucket (1)		80 mm (3.15 in.)	50 mm (1.97 in.)	892 mm (35.12 in.)	80 mm (3.15 in.)	50 mm (1.97 in.)	892 mm (35.12 in.)
Backhoe Swing (2)		80 mm (3.15 in.)	45 mm (1.77 in.)	310 mm (12.20 in.)	80 mm (3.15 in.)	45 mm (1.77 in.)	310 mm (12.20 in.)
Backhoe Extendable Dipperstick (1)		63 mm (2.48 in.)	32 mm (1.26 in.)	1062 mm (41.81 in.)	63 mm (2.48 in.)	32 mm (1.26 in.)	1062 mm (41.81 in.)
Backhoe Stabilizer, Standard (2)		80 mm (3.15 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)	80 mm (3.15 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Non-Powered Axle (1)		57 mm (2.24 in.)	35 mm (1.38 in.)	221 mm (8.69 in.)	70 mm (2.76 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
MFWD (1)		63 mm (2.48 in.)	38 mm (1.50 in.)	237 mm (9.33 in.)	65 mm (2.56 in.)	40 mm (1.57 in.)	210 mm (8.27 in.)
Electrical							
Voltage		12 volt			12 volt		
Alternator Rating		130 amp			145 amp		
Lights		4 halogen: 2 front and 2 rear (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop- and taillights and 2 rear reflectors; factory-installed option for 2 LED spotlights and 2 LED floodlights in lieu of the standard halogen light package			10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop- and taillights; and 2 rear reflectors; factory-installed option for 2 LED spotlights and 8 LED floodlights in lieu of standard halogen light package		
Operator Station							
Type (ISO 3471)		Canopy, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional fully enclosed cab			Canopy, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional quarter cab (front glass only) and fully enclosed cab		
Tires/Wheels							
		<i>Front</i>	<i>Rear</i>		<i>Front</i>	<i>Rear</i>	
Non-Powered Front Axle		14.5/75-16.1 F3 (16)	19.5L-24 R4 (12)		12.5/80-18 F3 (12)	19.5L-24 R4 (12)	
		—	—		14.5/75-16.1 F3 (16)	19.5L-24 R4 (12)	
With MFWD		12-16.5 NHS (12)	19.5L-24 R4 (12)		12-16.5 NHS (12)	19.5L-24 R4 (12)	
		—	—		12.5/80-18 I3 (12)	19.5L-24 R4 (10)	
		—	—		12.5/80-18 R4 (10)	19.5L-24 R4 (12)	
		—	—		12.5/80-18 I3 (12)	21L-24 R4 (12)	
		—	—		12.5/80-18 R4 (10)	21L-24 R4 (12)	
		—	—		340/80R18 XMCL	500/70R24 XMCL	
		—	—		340/80R18 550	500/70R24 550	
		—	—		340/80R18 580	500/70R24 580	
Serviceability							
Refill Capacities							
Cooling System							
Cab		19.5 L (20.6 qt.)			27.5 L (29.1 qt.)		
Canopy		17.9 L (18.9 qt.)			25.7 L (27.2 qt.)		
Rear Axle					18 L (19 qt.)		
Axle Differential Housing		14.5 L (15.3 qt.)			—		
Planetary (each)		1.5 L (1.6 qt.)			—		
Engine Oil (including vertical spin-on filter)		10.5 L (11.1 qt.)			13 L (13.7 qt.)		
Torque Converter and Transmission		18 L (19 qt.)			15.1 L (16 qt.)		
Fuel Tank (with ground-level fueling)		128.7 L (34 gal.)			128.7 L (34 gal.)		
Diesel Exhaust Fluid (DEF) Tank		—			13.7 L (3.6 gal.)		
Hydraulic System		126.8 L (33.5 gal.)			126.8 L (33.5 gal.)		
Hydraulic Reservoir		45 L (11.9 gal.)			45 L (11.9 gal.)		
MFWD Housing							
Axle		7.5 L (7.9 qt.)			6.5 L (6.9 qt.)		
Planetary (each)		0.8 L (0.8 qt.)			0.9 L (1 qt.)		
Operating Weights							
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and Bumper		6270 kg (13,822 lb.)			6654 kg (14,669 lb.)		
Typical with Cab, Extendable Dipperstick, MFWD, and 204-kg (450 lb.) Counterweight		7038 kg (15,516 lb.)			7311 kg (16,119 lb.)		
Optional Components (weight difference between base equipment and option)							
Cab		263 kg (580 lb.)			263 kg (580 lb.)		
MFWD with Tires		111 kg (244 lb.)			168 kg (370 lb.)		
Extendable Dipperstick		191 kg (420 lb.)			191 kg (420 lb.)		
Front Loader Coupler		257 kg (566 lb.)			257 kg (566 lb.)		
Backhoe Bucket Coupler		59 kg (130 lb.)			59 kg (130 lb.)		

Overall Dimensions		310L EP	310L
A	Ground Clearance, Minimum	318 mm (13 in.)	293 mm (12 in.)
B	Overall Length, Transport	7.24 m (23 ft. 9 in.)	7.24 m (23 ft. 9 in.)
C	Width Over Tires	2.20 m (7 ft. 3 in.)	2.20 m (7 ft. 3 in.)
D	Height to Top of ROPS/Cab	2.81 m (9 ft. 3 in.)	2.81 m (9 ft. 3 in.)
E	Length from Axle to Axle		
	Non-Powered Front Axle	2.16 m (7 ft. 1 in.)	2.16 m (7 ft. 1 in.)
	MFWD Axle	2.19 m (7 ft. 2 in.)	2.19 m (7 ft. 2 in.)



Backhoe Dimensions and Performance		310L EP			310L		
Backhoe specifications are with 610-mm x 0.18-m³ (24 in. x 6.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.							
Bucket Range		305–762 mm (12–30 in.)					
Digging Force							
Bucket Cylinder		48.2 kN (10,844 lb.)					
Crowd Cylinder		31.1 kN (6,992 lb.)					
Swing Arc		180 deg.					
Operator Control		2 levers					
		With Optional Extendable Dipperstick			With Optional Extendable Dipperstick		
		With Standard Backhoe			With Standard Backhoe		
F	Loading Height, Truck Loading Position	3.48 m (11 ft. 5 in.)	Retracted 3.57 m (11 ft. 8 in.)	Extended 4.23 m (13 ft. 10 in.)	3.38 m (11 ft. 1 in.)	Retracted 3.46 m (11 ft. 4 in.)	Extended 4.12 m (13 ft. 6 in.)
G	Reach from Center of Swing Pivot	5.42 m (17 ft. 10 in.)	5.49 m (18 ft. 0 in.)	6.51 m (21 ft. 4 in.)	5.42 m (17 ft. 9 in.)	5.49 m (18 ft. 0 in.)	6.51 m (21 ft. 4 in.)
H	Reach from Center of Rear Axle	6.49 m (21 ft. 3 in.)	6.55 m (21 ft. 6 in.)	7.57 m (24 ft. 10 in.)	6.49 m (21 ft. 3 in.)	6.55 m (21 ft. 6 in.)	7.57 m (24 ft. 10 in.)
I	Digging Depth (SAE maximum)	4.16 m (13 ft. 8 in.)	4.23 m (13 ft. 11 in.)	5.29 m (17 ft. 4 in.)	4.30 m (14 ft. 1 in.)	4.38 m (14 ft. 4 in.)	5.43 m (17 ft. 10 in.)
J	Digging Depth (SAE)						
	610-mm (2 ft.) Flat Bottom	4.13 m (13 ft. 6 in.)	4.20 m (13 ft. 9 in.)	5.26 m (17 ft. 3 in.)	4.27 m (14 ft. 0 in.)	4.34 m (14 ft. 3 in.)	5.40 m (17 ft. 9 in.)
	2440-mm (8 ft.) Flat Bottom	3.79 m (12 ft. 5 in.)	3.86 m (12 ft. 8 in.)	5.01 m (16 ft. 5 in.)	3.93 m (12 ft. 11 in.)	4.01 m (13 ft. 2 in.)	5.15 m (16 ft. 11 in.)
K	Stabilizer Width, Transport	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)
L	Stabilizer Spread, Operating	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)
M	Stabilizer Overall Width, Operating	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)
N	Bucket Rotation	190 deg.	190 deg.	190 deg.	190 deg.	190 deg.	190 deg.
O	Transport Height	3.49 m (11 ft. 5 in.)	3.49 m (11 ft. 5 in.)	3.49 m (11 ft. 5 in.)	3.39 m (11 ft. 1 in.)	3.39 m (11 ft. 1 in.)	3.39 m (11 ft. 1 in.)
Loader Dimensions and Performance							
P	Bucket Dump Angle, Maximum	45 deg.			45 deg.		
Q	Rollback Angle at Ground Level	40 deg.			40 deg.		

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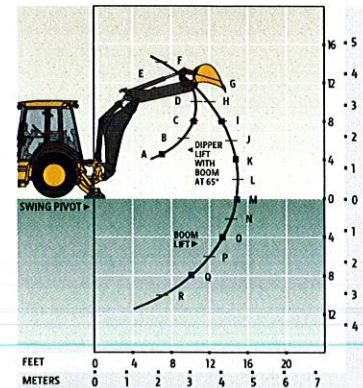
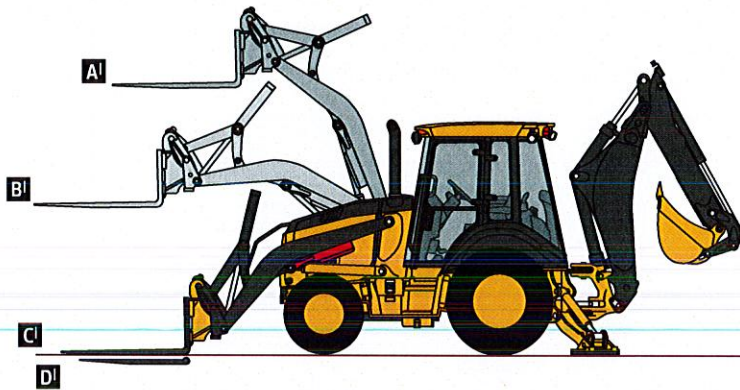
310L EP / 310L

Loader Dimensions and Performance (continued)

	310L EP				310L			
	Heavy-duty	Heavy-duty	Heavy-duty long lip	Multipurpose	Heavy-duty	Heavy-duty	Heavy-duty long lip	Multipurpose
Bucket Capacity	0.77 m ³ (1.00 cu. yd.)	0.86 m ³ (1.12 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	0.77 m ³ (1.00 cu. yd.)	0.86 m ³ (1.12 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	0.96 m ³ (1.25 cu. yd.)
Width	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)	2184 mm (86 in.)
Weight	363 kg (800 lb.)	390 kg (860 lb.)	405 kg (892 lb.)	794 kg (1,750 lb.)	363 kg (800 lb.)	390 kg (860 lb.)	405 kg (892 lb.)	794 kg (1,750 lb.)
Breakout Force	41.9 kN (9,410 lb.)	42.5 kN (9,564 lb.)	40.2 kN (9,028 lb.)	36.7 kN (8,248 lb.)	41.6 kN (9,361 lb.)	42.3 kN (9,512 lb.)	40.0 kN (8,983 lb.)	37.0 kN (8,321 lb.)
Lift Capacity, Full Height	2922 kg (6,443 lb.)	2998 kg (6,610 lb.)	2793 kg (6,157 lb.)	2302 kg (5,075 lb.)	2919 kg (6,435 lb.)	2995 kg (6,602 lb.)	2760 kg (6,085 lb.)	2427 kg (5,352 lb.)
R Height to Bucket Hinge Pin, Maximum	3.51 m (11 ft. 6 in.)	3.51 m (11 ft. 6 in.)	3.51 m (11 ft. 6 in.)	3.51 m (11 ft. 6 in.)	3.48 m (11 ft. 5 in.)	3.48 m (11 ft. 5 in.)	3.48 m (11 ft. 5 in.)	3.48 m (11 ft. 5 in.)
S Dump Clearance, Bucket at 45 deg.	2.77 m (9 ft. 1 in.)	2.80 m (9 ft. 2 in.)	2.71 m (8 ft. 11 in.)	2.68 m (8 ft. 9 in.)	2.74 m (9 ft. 0 in.)	2.78 m (9 ft. 1 in.)	2.68 m (8 ft. 9 in.)	2.68 m (8 ft. 9 in.)
T Reach at Full Height, Bucket at 45 deg.	699 mm (27.5 in.)	664 mm (26.1 in.)	790 mm (31.1 in.)	735 mm (29.0 in.)	702 mm (27.7 in.)	667 mm (26.3 in.)	793 mm (31.2 in.)	705 mm (27.8 in.)
U Digging Depth Below Ground, Bucket Level	41 mm (1.6 in.)	41 mm (1.6 in.)	21 mm (0.8 in.)	81 mm (3.2 in.)	70 mm (2.8 in.)	71 mm (2.8 in.)	51 mm (2.0 in.)	111 mm (4.4 in.)
V Length from Front Axle Centerline to Bucket Cutting Edge	2.01 m (6 ft. 7 in.)	1.96 m (6 ft. 5 in.)	2.10 m (6 ft. 11 in.)	2.13 m (7 ft. 0 in.)	2.02 m (6 ft. 8 in.)	1.97 m (6 ft. 6 in.)	2.12 m (6 ft. 11 in.)	2.10 m (6 ft. 11 in.)

Lift Capacity with Quick-Coupler Forks

Hydraulic Capacity	1219-mm (48 in.) Tines	1524-mm (60 in.) Tines	1219-mm (48 in.) Tines	1524-mm (60 in.) Tines
A ¹ Maximum Height	1737 kg (3,829 lb.)	1616 kg (3,563 lb.)	1711 kg (3,772 lb.)	1592 kg (3,510 lb.)
B ¹ Maximum Reach	2703 kg (5,959 lb.)	2542 kg (5,605 lb.)	2690 kg (5,931 lb.)	2530 kg (5,578 lb.)
C ¹ At Ground Line	3449 kg (7,603 lb.)	3248 kg (7,160 lb.)	3393 kg (7,480 lb.)	3203 kg (7,061 lb.)
D ¹ Below Ground Line	156 mm (6.1 in.)	155 mm (6.1 in.)	185 mm (7.3 in.)	185 mm (7.3 in.)



With Standard Dipperstick

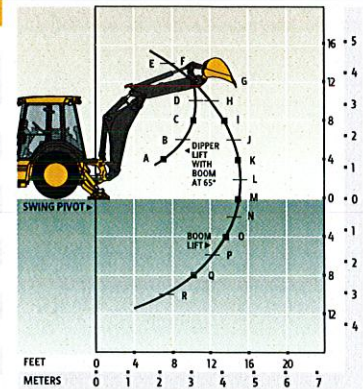
Lift Capacities

Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

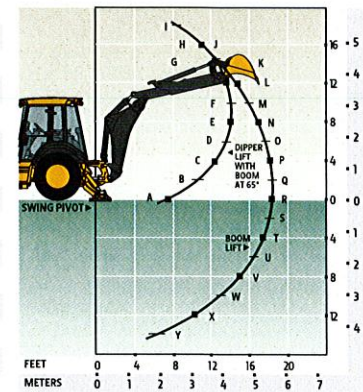
	With Standard Dipperstick		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended	
	310L EP	310L	310L EP	310L	310L EP	310L
A	3721 kg (8,204 lb.)	3593 kg (7,921 lb.)	4089 kg (9,015 lb.)	3846 kg (8,478 lb.)	2878 kg (6,346 lb.) ¹	3180 kg (7,011 lb.) ¹
B	2713 kg (5,980 lb.)	2686 kg (5,922 lb.)	2466 kg (5,437 lb.)	2444 kg (5,388 lb.)	2245 kg (4,950 lb.)	2090 kg (4,607 lb.)
C	2370 kg (5,226 lb.)	2363 kg (5,210 lb.)	2171 kg (4,786 lb.)	2165 kg (4,773 lb.)	1790 kg (3,947 lb.)	1696 kg (3,740 lb.)
D	2317 kg (5,109 lb.)	2319 kg (5,114 lb.)	2124 kg (4,683 lb.)	2126 kg (4,688 lb.)	1607 kg (3,543 lb.)	1533 kg (3,380 lb.)
E	2150 kg (4,739 lb.)	2117 kg (4,666 lb.)	1950 kg (4,299 lb.)	1920 kg (4,232 lb.)	1528 kg (3,369 lb.)	1465 kg (3,229 lb.)
F	1682 kg (3,708 lb.)	1680 kg (3,704 lb.)	1489 kg (3,283 lb.)	1488 kg (3,280 lb.)	1475 kg (3,251 lb.)	1457 kg (3,212 lb.)
G	1655 kg (3,648 lb.)	1657 kg (3,653 lb.)	1467 kg (3,234 lb.)	1469 kg (3,239 lb.)	1322 kg (2,915 lb.)	1303 kg (2,873 lb.)
H	1590 kg (3,506 lb.)	1593 kg (3,513 lb.)	1409 kg (3,106 lb.)	1412 kg (3,112 lb.)	1080 kg (2,380 lb.)	1046 kg (2,307 lb.)
I	1523 kg (3,358 lb.)	1526 kg (3,365 lb.)	1347 kg (2,969 lb.)	1349 kg (2,975 lb.)	883 kg (1,946 lb.)	—
J	1459 kg (3,217 lb.)	1462 kg (3,223 lb.)	1286 kg (2,836 lb.)	1289 kg (2,841 lb.)	1057 kg (2,331 lb.)	992 kg (2,188 lb.)
K	1400 kg (3,086 lb.)	1402 kg (3,091 lb.)	1230 kg (2,711 lb.)	1232 kg (2,716 lb.)	1080 kg (2,381 lb.)	1043 kg (2,299 lb.)
L	1345 kg (2,965 lb.)	1347 kg (2,970 lb.)	1177 kg (2,595 lb.)	1179 kg (2,600 lb.)	1070 kg (2,359 lb.)	1047 kg (2,309 lb.)
M	1295 kg (2,855 lb.)	1297 kg (2,859 lb.)	1129 kg (2,489 lb.)	1131 kg (2,493 lb.)	1049 kg (2,312 lb.)	1035 kg (2,281 lb.)
N	1249 kg (2,754 lb.)	1251 kg (2,758 lb.)	1084 kg (2,391 lb.)	1086 kg (2,395 lb.)	1023 kg (2,255 lb.)	1016 kg (2,239 lb.)
O	1207 kg (2,662 lb.)	1209 kg (2,666 lb.)	1044 kg (2,302 lb.)	1046 kg (2,306 lb.)	996 kg (2,195 lb.)	993 kg (2,190 lb.)
P	1171 kg (2,581 lb.)	1172 kg (2,584 lb.)	1008 kg (2,222 lb.)	1010 kg (2,226 lb.)	968 kg (2,135 lb.)	970 kg (2,139 lb.)
Q	1140 kg (2,514 lb.)	1142 kg (2,517 lb.)	978 kg (2,156 lb.)	979 kg (2,159 lb.)	942 kg (2,077 lb.)	948 kg (2,089 lb.)
R	1131 kg (2,494 lb.)	1130 kg (2,492 lb.)	966 kg (2,129 lb.)	965 kg (2,128 lb.)	918 kg (2,023 lb.)	926 kg (2,041 lb.)
S	—	—	—	—	895 kg (1,972 lb.)	906 kg (1,997 lb.)
T	—	—	—	—	874 kg (1,926 lb.)	888 kg (1,958 lb.)
U	—	—	—	—	856 kg (1,886 lb.)	873 kg (1,925 lb.)
V	—	—	—	—	842 kg (1,855 lb.)	863 kg (1,903 lb.)
W	—	—	—	—	834 kg (1,840 lb.)	861 kg (1,899 lb.)
X	—	—	—	—	844 kg (1,860 lb.)	879 kg (1,937 lb.)
Y	—	—	—	—	955 kg (2,105 lb.)	997 kg (2,198 lb.)

¹Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.

²Reach of 305 mm (12 in.) for the 310L EP and 152 mm (6 in.) for the 310L.



With Extendable Dipperstick, Retracted



With Extendable Dipperstick, Extended



310SL SPECIFICATIONS

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Engine		310SL
Manufacturer and Model	John Deere PowerTech™ EWL 4045HL050 turbocharged	
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV	
Displacement	4.5 L (276 cu. in.)	
Gross Peak Power	78 kW (105 hp) at 1,600 rpm	
Net Peak Power (ISO 9249)	77 kW (103 hp) at 1,600 rpm	
Net Peak Torque (ISO 9249)	459 Nm (339 lb.-ft.) at 1,600 rpm	
Net Torque Rise	43%	
Lubrication	Pressure system with spin-on filter and cooler	
Air Cleaner	Dual-stage dry type with safety element and evacuator valve	
Cooling		
Fan Type	Electronically controlled, variable-rate, suction-type cooling fan	
Engine Coolant Rating	−40 deg. C (−40 deg. F)	
Engine Oil Cooler	Oil to water	
Powertrain		
Transmission	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift	
Torque Converter	Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11 in.)	
Maximum Travel Speeds with Standard Engine, Measured with 19.5L-24 Rear Tires	Forward	Reverse
Gear 1	5.3 km/h (3.3 mph)	6.8 km/h (4.2 mph)
Gear 2	9.9 km/h (6.2 mph)	12.5 km/h (7.8 mph)
Gear 3	20.4 km/h (12.7 mph)	20.1 km/h (12.5 mph)
Gear 4	37.1 km/h (23.1 mph)	—
Gear 5	40.0 km/h (24.9 mph)	—
Axles		
Axle Oscillation, Stop to Stop, Front Axle	22 deg.	
Axle Ratings	Front	Rear
SAE J43	5500 kg (12,100 lb.)	7000 kg (15,400 lb.)
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)
Static	26 500 kg (58,400 lb.)	26 500 kg (58,400 lb.)
Ultimate	44 000 kg (97,000 lb.)	44 000 kg (97,000 lb.)
Differentials		
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control	
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock	
Steering (ISO 5010)		
Axle	MFWD	Non-Powered Front
Curb-Turning Radius		
With Brakes	3.52 m (11 ft. 7 in.)	3.56 m (11 ft. 8 in.)
Without Brakes	4.02 m (13 ft. 2 in.)	4.17 m (13 ft. 8 in.)
Bucket-Clearance Circle		
With Brakes	10.05 m (33 ft. 0 in.)	10.22 m (33 ft. 6 in.)
Without Brakes	10.81 m (35 ft. 6 in.)	11.13 m (36 ft. 6 in.)
Steering Wheel Turns (lock to lock)	2.6 to 3.6	3.2
MFWD Axle		
	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears	
Rear Axle		
	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears	
Brakes (ISO 3450)		
Service	Power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing	
Parking	Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control	
Hydraulics		
Main Pump	Pressure compensated load sensing (PCLS), axial-piston pump	
Pump Flow at 2,200 rpm, Backhoe and Loader	159 L/m (42 gpm)	
System Relief Pressure		
Backhoe	24 993 kPa (3,625 psi)	
Lift Mode	27 579 kPa (4,000 psi)	
Loader	24 993 kPa (3,625 psi)	
Controls		
Backhoe	2-lever mechanical standard; pilot controls with pattern select and auxiliary functions optional; field kits available for additional mechanical control options	
Loader	Single-lever control with electric clutch cutoff switch and MFWD (momentary) standard; single-lever control with electric clutch cutoff switch, electrohydraulic (EH) proportional auxiliary roller, MFWD (momentary), and transmission quick-shift optional	

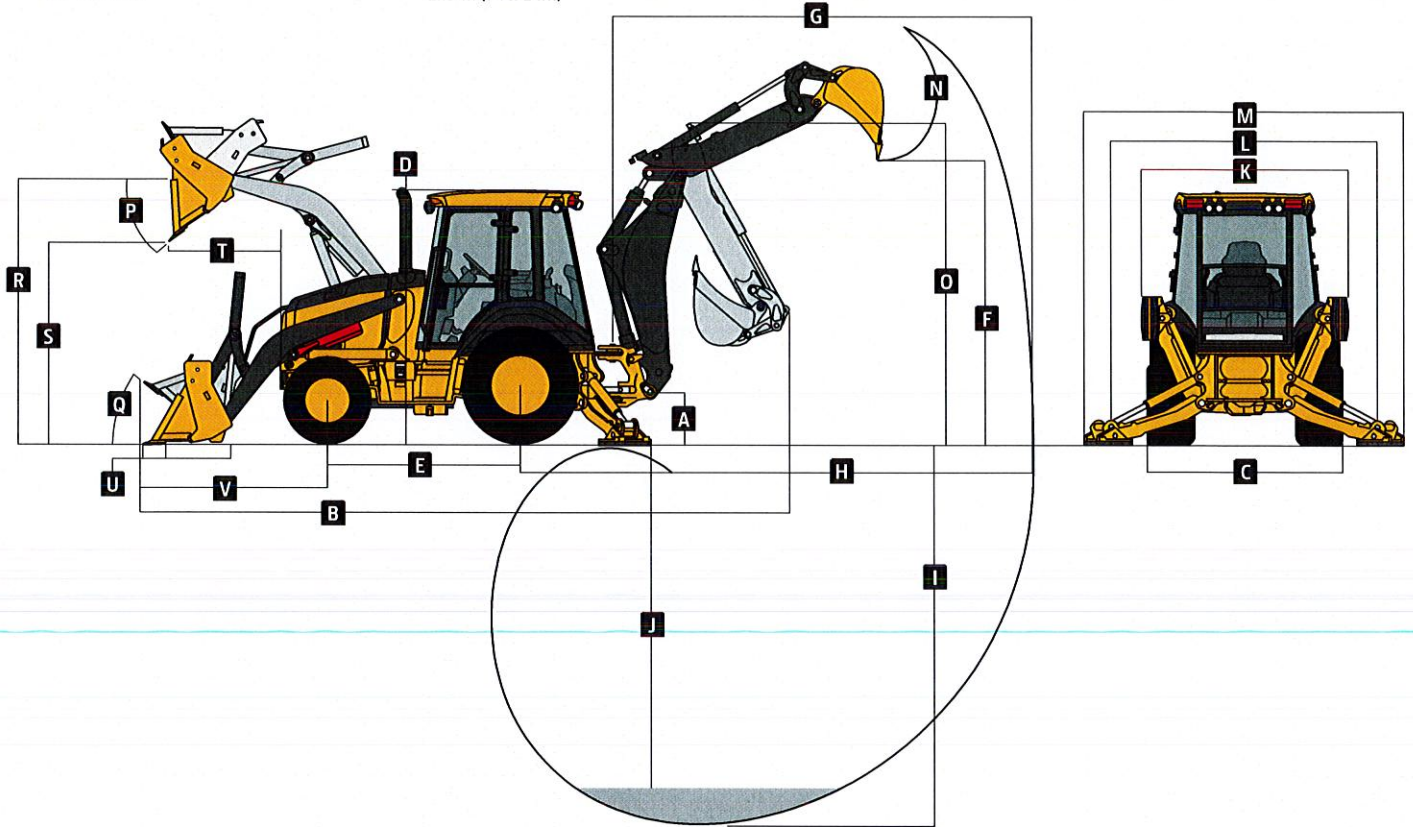
310SL SPECIFICATIONS



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Cylinders		310SL	
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins			
	Bore	Rod Diameter	Stroke
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	789 mm (31.08 in.)
Loader Bucket (1)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)	120 mm (4.72 in.)	56 mm (2.20 in.)	794 mm (31.26 in.)
Backhoe Crowd (1)	115 mm (4.53 in.)	63 mm (2.48 in.)	602.5 mm (23.72 in.)
Backhoe Bucket (1)	90 mm (3.54 in.)	56 mm (2.20 in.)	810 mm (31.89 in.)
Heavy-Duty Option	100 mm (3.94 in.)	63 mm (2.48 in.)	810 mm (31.89 in.)
Backhoe Swing (2)	90 mm (3.54 in.)	50 mm (1.97 in.)	278 mm (10.94 in.)
Backhoe Extendable Dipperstick (1)	70 mm (2.76 in.)	40 mm (1.57 in.)	1062 mm (41.81 in.)
Backhoe Stabilizer (2)			
Standard	90 mm (3.54 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Extended Optional	100 mm (3.94 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Non-Powered Axle (1)	70 mm (2.76 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
MFWD (1)	65 mm (2.56 in.)	40 mm (1.57 in.)	210 mm (8.27 in.)
Electrical			
Voltage	12 volt		
Alternator Rating	145 amp		
Lights	10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop and taillights; and 2 rear reflectors; factory-installed option for 2 LED spotlights and 8 LED floodlights in lieu of standard halogen light package		
Operator Station			
Type (ISO 3471)	Fully enclosed cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional quarter cab (front glass only) and canopy		
Tires/Wheels			
	Front	Rear	
Non-Powered Front Axle	12.5/80-18 F3 (12)	19.5L-24 R4 (12)	
	14.5/75-16.1 F3 (16)	19.5L-24 R4 (12)	
With MFWD	12.5/80-18 I3 (12)	19.5L-24 R4 (10)	
	12.5/80-18 R4 (10)	19.5L-24 R4 (12)	
	12.5/80-18 I3 (12)	21L-24 R4 (12)	
	12.5/80-18 R4 (10)	21L-24 R4 (12)	
	340/80R18 XMCL	500/70R24 XMCL	
	340/80R18 550	500/70R24 550	
	340/80R18 580	500/70R24 580	
Serviceability			
Refill Capacities			
Cooling System			
Cab	27.5 L (29.1 qt.)		
Canopy	25.7 L (27.2 qt.)		
Rear Axle	18 L (19 qt.)		
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)		
Torque Converter and Transmission	15.1 L (16 qt.)		
Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)		
Diesel Exhaust Fluid (DEF) Tank	13.7 L (3.6 gal.)		
Hydraulic System	126.8 L (33.5 gal.)		
Hydraulic Reservoir	45 L (11.9 gal.)		
MFWD Housing			
Axle	6.5 L (6.9 qt.)		
Planetary (each)	0.9 L (1 qt.)		
Operating Weights			
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and Bumper	7199 kg (15,872 lb.)		
Typical with Cab, Extendable Dipperstick, and 340-kg (750 lb.) Counterweight	8025 kg (17,692 lb.)		
Optional Components (weight difference between base equipment and option)			
Cab	263 kg (580 lb.)		
MFWD with Tires	220 kg (485 lb.)		
Extendable Dipperstick	222 kg (490 lb.)		
Front Loader Coupler	257 kg (566 lb.)		
Backhoe Bucket Coupler	63 kg (138 lb.)		

Overall Dimensions		310SL
A	Ground Clearance, Minimum	330 mm (13 in.)
B	Overall Length, Transport	7.28 m (23 ft. 11 in.)
C	Width Over Tires	2.20 m (7 ft. 3 in.)
D	Height to Top of ROPS/Cab	2.79 m (9 ft. 2 in.)
E	Length from Axle to Axle	
	Non-Powered Front Axle	2.16 m (7 ft. 1 in.)
	MFWD Axle	2.19 m (7 ft. 2 in.)



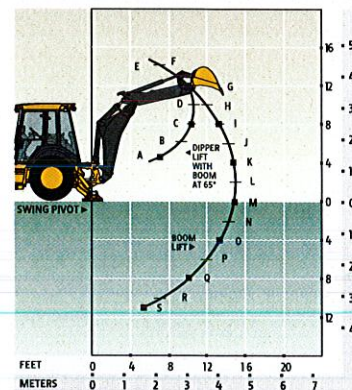
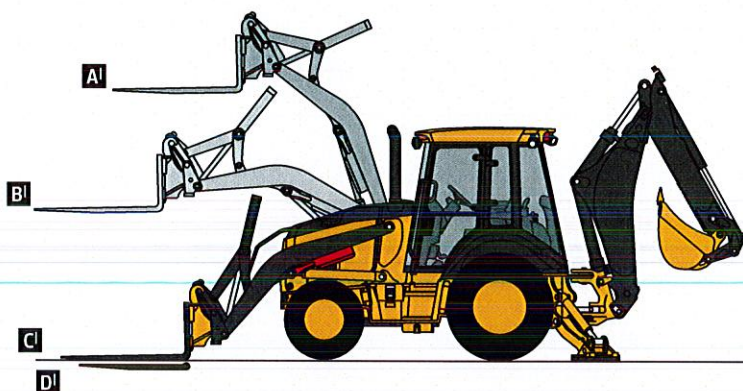
Backhoe Dimensions and Performance

Backhoe specifications are with 610-mm x 0.21-m³ (24 in. x 7.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.

Bucket Range	305–762 mm (12–30 in.)		
Digging Force			
Bucket Cylinder	55.0 kN (12,356 lb.)		
Lift Mode	60.6 kN (13,634 lb.)		
With Heavy-Duty Cylinder Option	67.8 kN (15,254 lb.)		
Lift Mode	74.9 kN (16832 lb.)		
Crowd Cylinder	36.6 kN (8,229 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		
		<i>With Optional Extendable Dipperstick</i>	
	<i>With Standard Backhoe</i>	<i>Retracted</i>	<i>Extended</i>
F	Loading Height, Truck Loading Position	3.42 m (11 ft. 3 in.)	4.16 m (13 ft. 8 in.)
G	Reach from Center of Swing Pivot	5.52 m (18 ft. 1 in.)	6.62 m (21 ft. 9 in.)
H	Reach from Center of Rear Axle	6.58 m (21 ft. 7 in.)	7.68 m (25 ft. 2 in.)
I	Digging Depth (SAE maximum)	4.35 m (14 ft. 3 in.)	5.55 m (18 ft. 2 in.)
J	Digging Depth (SAE)		
	610-mm (2 ft.) Flat Bottom	4.32 m (14 ft. 2 in.)	5.51 m (18 ft. 1 in.)
	2440-mm (8 ft.) Flat Bottom	3.99 m (13 ft. 1 in.)	5.25 m (17 ft. 3 in.)
K	Stabilizer Width, Transport	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)
L	Stabilizer Spread, Operating		
	Standard Stabilizers	3.10 m (10 ft. 2 in.)	3.10 m (10 ft. 2 in.)
	Extended Stabilizers	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
M	Stabilizer Overall Width, Operating		
	Standard Stabilizers	3.53 m (11 ft. 7 in.)	3.53 m (11 ft. 7 in.)
	Extended Stabilizers	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)
N	Bucket Rotation	190 deg.	190 deg.
O	Transport Height	3.48 m (11 ft. 5 in.)	3.49 m (11 ft. 5 in.)

Loader Dimensions and Performance		310SL			
P	Bucket Dump Angle, Maximum	45 deg.			
Q	Rollback Angle at Ground Level	40 deg.			
		Heavy-duty	Heavy-duty long lip	Heavy-duty	Multipurpose
	Bucket Capacity	0.86 m ³ (1.12 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	1.00 m ³ (1.31 cu. yd.)	1.00 m ³ (1.31 cu. yd.)
	Width	2184 mm (86 in.)	2184 mm (86 in.)	2337 mm (92 in.)	2337 mm (92 in.)
	Weight	390 kg (860 lb.)	405 kg (892 lb.)	521 kg (1,148 lb.)	863 kg (1,902 lb.)
	Breakout Force	49.2 kN (11,052 lb.)	46.4 kN (10,442 lb.)	46.9 kN (10,541 lb.)	43.2 kN (9,722 lb.)
	Lift Capacity, Full Height	3492 kg (7,698 lb.)	3224 kg (7,108 lb.)	3352 kg (7,390 lb.)	2862 kg (6,309 lb.)
R	Height to Bucket Hinge Pin, Maximum	3.47 m (11 ft. 5 in.)	3.47 m (11 ft. 5 in.)	3.47 m (11 ft. 5 in.)	3.47 m (11 ft. 5 in.)
S	Dump Clearance, Bucket at 45 deg.	2.76 m (9 ft. 1 in.)	2.66 m (8 ft. 9 in.)	2.70 m (8 ft. 10 in.)	2.67 m (8 ft. 9 in.)
T	Reach at Full Height, Bucket at 45 deg.	678 mm (26.7 in.)	804 mm (31.7 in.)	675 mm (26.6 in.)	716 mm (28.2 in.)
U	Digging Depth Below Ground, Bucket Level	83 mm (3.3 in.)	64 mm (2.5 in.)	128 mm (5.0 in.)	124 mm (4.9 in.)
V	Length from Front Axle Centerline to Bucket Cutting Edge	1.96 m (6 ft. 5 in.)	2.10 m (6 ft. 11 in.)	2.03 m (6 ft. 8 in.)	2.08 m (6 ft. 10 in.)

Lift Capacity with Quick-Coupler Forks		1219-mm (48 in.) Tines		1524-mm (60 in.) Tines	
Hydraulic Capacity		1219-mm (48 in.) Tines		1524-mm (60 in.) Tines	
A ¹	Maximum Height	2067 kg (4,558 lb.)		1932 kg (4,260 lb.)	
B ¹	Maximum Reach	3183 kg (7,017 lb.)		3001 kg (6,617 lb.)	
C ¹	At Ground Line	4020 kg (8,863 lb.)		3768 kg (8,306 lb.)	
D ¹	Below Ground Line	198 mm (7.8 in.)		198 mm (7.8 in.)	



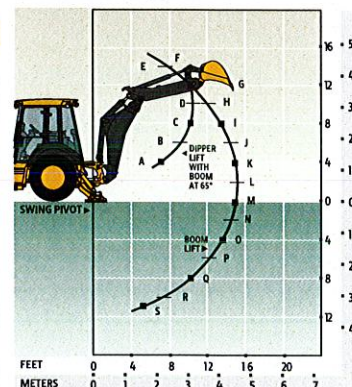
With Standard Dipperstick

Lift Capacities

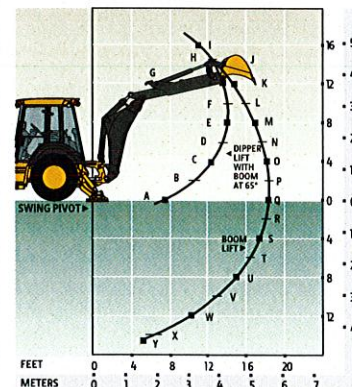
Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

With Standard Dipperstick		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended	
Standard Lift	Lift Mode	Standard Lift	Lift Mode	Standard Lift	Lift Mode
A	4782 kg (10,543 lb.)	4858 kg (10,710 lb.)	4604 kg (10,151 lb.)	3554 kg (7,834 lb.)	3946 kg (8,699 lb.)
B	3673 kg (8,097 lb.)	3673 kg (8,097 lb.)	3251 kg (7,166 lb.)	2480 kg (5,468 lb.)	2758 kg (6,081 lb.)
C	3236 kg (7,135 lb.)	3236 kg (7,135 lb.)	2913 kg (6,423 lb.)	2156 kg (4,753 lb.)	2399 kg (5,290 lb.)
D	3168 kg (6,985 lb.)	3168 kg (6,985 lb.)	2859 kg (6,302 lb.)	2012 kg (4,436 lb.)	2185 kg (4,817 lb.)
E	3038 kg (6,698 lb.)	3364 kg (7,415 lb.)	2619 kg (5,775 lb.)	1918 kg (4,228 lb.)	2087 kg (4,601 lb.)
F	1839 kg (4,054 lb.)	2051 kg (4,522 lb.)	1488 kg (3,281 lb.)	1830 kg (4,034 lb.)	2038 kg (4,493 lb.)
G	1936 kg (4,269 lb.)	2165 kg (4,773 lb.)	1635 kg (3,604 lb.)	1715 kg (3,782 lb.)	1912 kg (4,214 lb.)
H	1918 kg (4,228 lb.)	2147 kg (4,734 lb.)	1652 kg (3,643 lb.)	1869 kg (4,120 lb.)	1525 kg (3,362 lb.)
I	1873 kg (4,128 lb.)	2099 kg (4,628 lb.)	1633 kg (3,599 lb.)	1850 kg (4,078 lb.)	1059 kg (2,334 lb.)
J	1820 kg (4,013 lb.)	2043 kg (4,504 lb.)	1599 kg (3,526 lb.)	1815 kg (4,001 lb.)	1187 kg (2,616 lb.)
K	1768 kg (3,897 lb.)	1986 kg (4,379 lb.)	1562 kg (3,443 lb.)	1775 kg (3,913 lb.)	1236 kg (2,726 lb.)
L	1717 kg (3,786 lb.)	1932 kg (4,259 lb.)	1524 kg (3,360 lb.)	1735 kg (3,825 lb.)	1253 kg (2,763 lb.)
M	1671 kg (3,685 lb.)	1882 kg (4,150 lb.)	1489 kg (3,283 lb.)	1698 kg (3,743 lb.)	1254 kg (2,765 lb.)
N	1630 kg (3,594 lb.)	1838 kg (4,053 lb.)	1458 kg (3,214 lb.)	1665 kg (3,671 lb.)	1247 kg (2,749 lb.)
O	1596 kg (3,518 lb.)	1802 kg (3,972 lb.)	1443 kg (3,160 lb.)	1640 kg (3,615 lb.)	1236 kg (2,724 lb.)
P	1571 kg (3,463 lb.)	1776 kg (3,916 lb.)	1419 kg (3,128 lb.)	1626 kg (3,585 lb.)	1223 kg (2,696 lb.)
Q	1563 kg (3,447 lb.)	1771 kg (3,904 lb.)	1424 kg (3,140 lb.)	1635 kg (3,605 lb.)	1210 kg (2,667 lb.)
R	1609 kg (3,547 lb.)	1827 kg (4,027 lb.)	1486 kg (3,276 lb.)	1710 kg (3,769 lb.)	1198 kg (2,642 lb.)
S	1735 kg (3,824 lb.)	1975 kg (4,353 lb.)	1604 kg (3,537 lb.)	1849 kg (4,076 lb.)	1190 kg (2,622 lb.)
T	—	—	—	—	1186 kg (2,614 lb.)
U	—	—	—	—	1190 kg (2,623 lb.)
V	—	—	—	—	1208 kg (2,664 lb.)
W	—	—	—	—	1261 kg (2,780 lb.)
X	—	—	—	—	1446 kg (3,188 lb.)
Y	—	—	—	—	1986 kg (4,377 lb.)

*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.



With Extendable Dipperstick, Retracted



With Extendable Dipperstick, Extended



310SL HL SPECIFICATIONS

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Engine		310SL HL	
Manufacturer and Model	John Deere PowerTech™ EWL 4045HL050 turbocharged		
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV		
Displacement	4.5 L (276 cu. in.)		
Gross Peak Power	86 kW (115 hp) at 1,900 rpm		
Net Peak Power (ISO 9249)	84 kW (113 hp) at 1,900 rpm		
Net Peak Torque (ISO 9249)	459 Nm (339 lb.-ft.) at 1,600 rpm		
Net Torque Rise	30%		
Lubrication	Pressure system with spin-on filter and cooler		
Air Cleaner	Dual-stage dry type with safety element and evacuator valve		
Cooling			
Fan Type	Electronically controlled, variable rate, suction-type cooling fan		
Engine Coolant Rating	-40 deg. C (-40 deg. F)		
Engine Oil Cooler	Oil to water		
Powertrain			
Transmission	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift		
Torque Converter	Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11 in.)		
Maximum Travel Speeds with Standard Engine, Measured with 21L-24 Rear Tires	Forward	Reverse	
Gear 1	5.6 km/h (3.5 mph)	7.1 km/h (4.4 mph)	
Gear 2	10.2 km/h (6.3 mph)	12.9 km/h (8.0 mph)	
Gear 3	21.1 km/h (13.1 mph)	20.8 km/h (12.9 mph)	
Gear 4	38.4 km/h (23.9 mph)	—	
Gear 5	40.0 km/h (24.9 mph)	—	
Axles			
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		
Axle Ratings	Front	Rear	
SAE J43	5500 kg (12,100 lb.)	7000 kg (15,400 lb.)	
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)	
Static	26 500 kg (58,400 lb.)	26 500 kg (58,400 lb.)	
Ultimate	43 500 kg (95,900 lb.)	43 500 kg (95,900 lb.)	
Differentials			
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control		
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock		
Steering (ISO 5010)	Hydrostatic power steering and emergency steering		
Axle	MFWD	Non-Powered Front	
Curb-Turning Radius			
With Brakes	3.53 m (11 ft. 7 in.)	3.45 m (11 ft. 4 in.)	
Without Brakes	4.02 m (13 ft. 2 in.)	3.90 m (12 ft. 10 in.)	
Bucket-Clearance Circle			
With Brakes	10.09 m (33 ft. 1 in.)	10.02 m (32 ft. 10 in.)	
Without Brakes	10.83 m (35 ft. 6 in.)	10.69 m (35 ft. 1 in.)	
Steering Wheel Turns (lock to lock)	2.6 to 3.6	3.1 to 4.3	
MFWD Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears		
Rear Axle	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears		
Brakes (ISO 3450)			
Service	Power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing		
Parking	Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control		
Hydraulics			
Main Pump	Pressure compensated load sensing (PCLS), axial-piston pump		
Pump Flow at 2,200 rpm, Backhoe and Loader	159 L/m (42 gpm)		
System Relief Pressure			
Backhoe	24 993 kPa (3,625 psi)		
Lift Mode	27 579 kPa (4,000 psi)		
Loader	24 993 kPa (3,625 psi)		
Controls			
Backhoe	Pilot controls with pattern select standard; electrohydraulic (EH) auxiliary functions optional		
Loader	Single-lever control with electric clutch cutoff switch and momentary MFWD standard; single-lever control with electric clutch cutoff switch, EH proportional auxiliary roller, and transmission quick-shift optional		

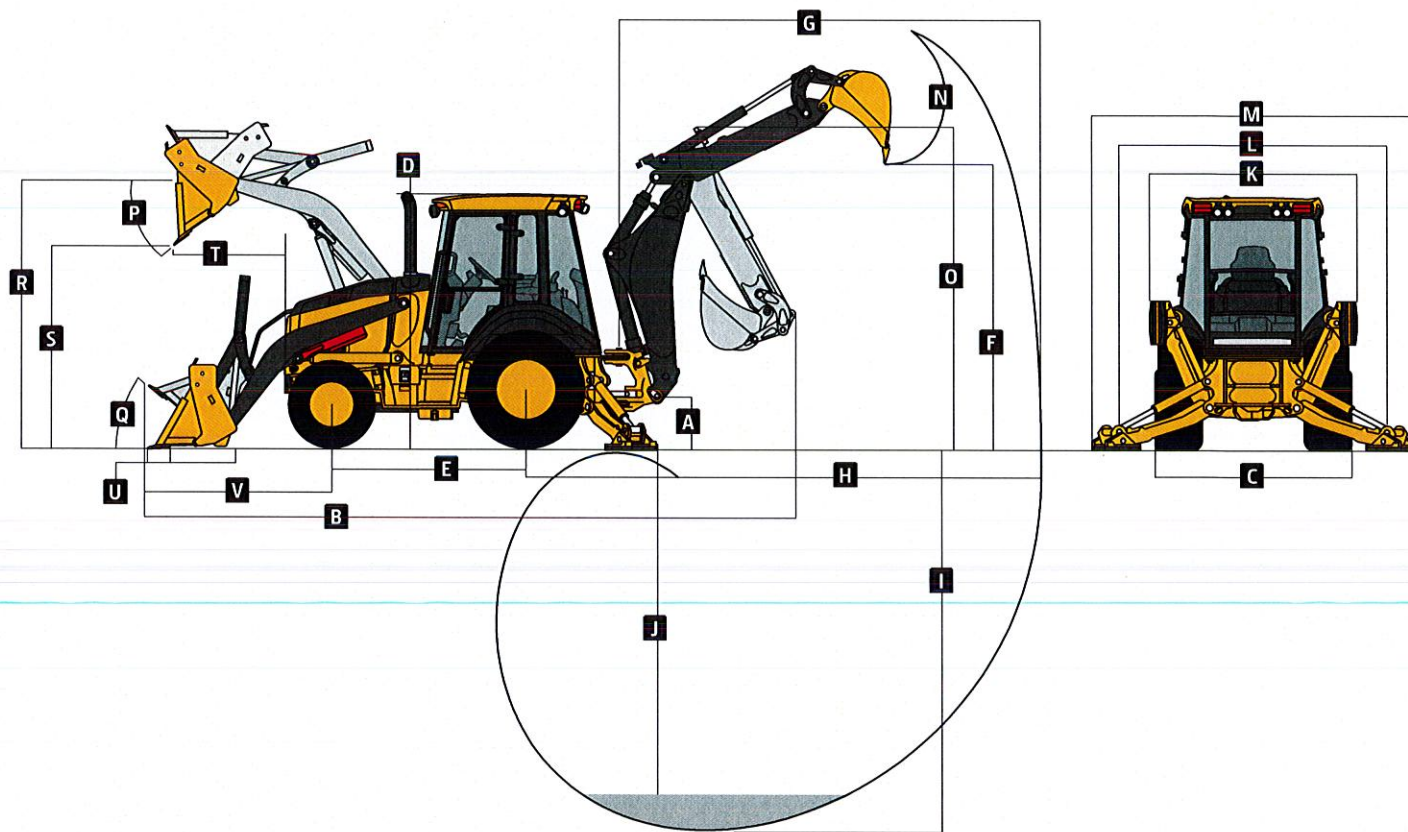
310SL HL SPECIFICATIONS



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Cylinders		310SL HL	
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins			
	Bore	Rod Diameter	Stroke
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)
Loader Bucket (1)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)	125 mm (4.92 in.)	63 mm (2.48 in.)	887 mm (34.92 in.)
Backhoe Crowd (1)	120 mm (4.72 in.)	63 mm (2.48 in.)	591 mm (23.27 in.)
Backhoe Bucket (1)	90 mm (3.54 in.)	56 mm (2.20 in.)	810 mm (31.89 in.)
Heavy-Duty Option	100 mm (3.94 in.)	63 mm (2.48 in.)	810 mm (31.89 in.)
Backhoe Swing (2)	90 mm (3.54 in.)	50 mm (1.97 in.)	278 mm (10.94 in.)
Backhoe Extendable Dipperstick (1)	80 mm (3.15 in.)	45 mm (1.77 in.)	1062 mm (41.81 in.)
Backhoe Stabilizer, Extended (2)	100 mm (3.94 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Non-Powered Axle (1)	70 mm (2.76 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
MFWD (1)	65 mm (2.56 in.)	40 mm (1.57 in.)	210 mm (8.27 in.)
Electrical			
Voltage	12 volt		
Alternator Rating	145 amp		
Lights	10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop and taillights; and 2 rear reflectors; factory-installed option for 2 LED spotlights and 8 LED floodlights in lieu of standard halogen light package		
Operator Station			
Type (ISO 3471)	Fully enclosed cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional canopy		
Tires/Wheels			
	Front	Rear	
Non-Powered Front Axle	12.5/80-18 F3 (12)	19.5L-24 R4 (12)	
With MFWD	12.5/80-18 I3 (12)	19.5L-24 R4 (10)	
	12.5/80-18 R4 (10)	19.5L-24 R4 (12)	
	12.5/80-18 I3 (12)	21L-24 R4 (12)	
	12.5/80-18 R4 (10)	21L-24 R4 (12)	
	340/80R18 XMCL	500/70R24 XMCL	
	340/80R18 550	500/70R24 550	
	340/80R18 580	500/70R24 580	
Serviceability			
Refill Capacities			
Cooling System			
Cab	27.5 L (29.1 qt.)		
Canopy	25.7 L (27.2 qt.)		
Rear Axle	18 L (19 qt.)		
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)		
Torque Converter and Transmission	15.1 L (16 qt.)		
Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)		
Diesel Exhaust Fluid (DEF) Tank	13.7 L (3.6 gal.)		
Hydraulic System	126.8 L (33.5 gal.)		
Hydraulic Reservoir	45 L (11.9 gal.)		
MFWD Housing			
Axle	6.5 L (6.9 qt.)		
Planetary (each)	0.9 L (1 qt.)		
Operating Weights			
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and Standard Bumper	7516 kg (16,571 lb.)		
Typical with Cab, Extendable Dipperstick, and 454-kg (1,000 lb.) Counterweight	8495 kg (18,729 lb.)		
Optional Components (weight difference between base equipment and option)			
Cab	263 kg (580 lb.)		
MFWD with Tires	110 kg (242 lb.)		
Extendable Dipperstick	271 kg (578 lb.)		
Front Loader Coupler	257 kg (566 lb.)		
Backhoe Bucket Coupler	64 kg (141 lb.)		

Overall Dimensions		310SL HL
A	Ground Clearance, Minimum	310 mm (12 in.)
B	Overall Length, Transport	7.37 m (24 ft. 2 in.)
C	Width Over Tires	2.34 m (7 ft. 8 in.)
D	Height to Top of ROPS/Cab	2.81 m (9 ft. 3 in.)
E	Length from Axle to Axle	
	Non-Powered Front Axle	2.16 m (7 ft. 1 in.)
	MFWD Axle	2.19 m (7 ft. 2 in.)



Backhoe Dimensions and Performance

Backhoe specifications are with 610-mm x 0.21-m³ (24 in. x 7.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.

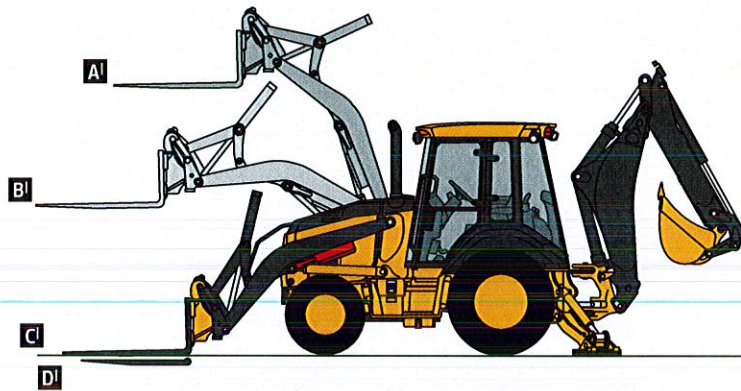
Bucket Range	305–610 mm (12–24 in.)		
Digging Force			
Bucket Cylinder	69.9 kN (15,723 lb.)		
Lift Mode	77.2 kN (17,349 lb.)		
Crowd Cylinder	38.2 kN (8,581 lb.)		
Lift Mode	42.1 kN (9,468 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		
	<i>With Standard Backhoe</i>	<i>With Optional Extendable Dipperstick</i>	
		<i>Retracted</i>	<i>Extended</i>
F Loading Height, Truck Loading Position	3.63 m (11 ft. 11 in.)	3.62 m (11 ft. 10 in.)	4.24 m (13 ft. 11 in.)
G Reach from Center of Swing Pivot	5.68 m (18 ft. 8 in.)	5.62 m (18 ft. 5 in.)	6.61 m (21 ft. 8 in.)
H Reach from Center of Rear Axle	6.74 m (22 ft. 1 in.)	6.68 m (21 ft. 11 in.)	7.67 m (25 ft. 2 in.)
I Digging Depth (SAE maximum)	4.59 m (15 ft. 1 in.)	4.53 m (14 ft. 10 in.)	5.53 m (18 ft. 2 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.55 m (14 ft. 11 in.)	4.49 m (14 ft. 9 in.)	5.50 m (18 ft. 0 in.)
2440-mm (8 ft.) Flat Bottom	4.25 m (13 ft. 11 in.)	4.18 m (13 ft. 8 in.)	5.28 m (17 ft. 4 in.)
K Stabilizer Width, Transport	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)	2.18 m (7 ft. 2 in.)
L Stabilizer Spread, Operating	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
M Stabilizer Overall Width, Operating	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	3.56 m (11 ft. 8 in.)	3.56 m (11 ft. 8 in.)	3.56 m (11 ft. 8 in.)

Loader Dimensions and Performance

P	Bucket Dump Angle, Maximum	45 deg.
Q	Rollback Angle at Ground Level	40 deg.

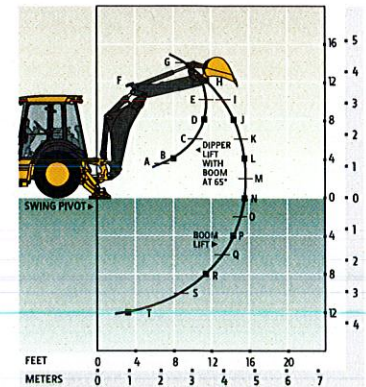
Loader Dimensions and Performance (continued)				
	Heavy-duty	Heavy-duty long lip	Heavy-duty	Multipurpose
Bucket Capacity	0.86 m ³ (1.12 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	1.00 m ³ (1.31 cu. yd.)	1.00 m ³ (1.31 cu. yd.)
Width	2184 mm (86 in.)	2184 mm (86 in.)	2346 mm (92 in.)	2346 mm (92 in.)
Weight	390 kg (860 lb.)	405 kg (892 lb.)	521 kg (1,148 lb.)	863 kg (1,902 lb.)
Breakout Force	49.4 kN (11,116 lb.)	46.7 kN (10,503 lb.)	47.1 kN (10,598 lb.)	43.5 kN (9,778 lb.)
Lift Capacity, Full Height	3425 kg (7,552 lb.)	3166 kg (6,980 lb.)	3286 kg (7,244 lb.)	2801 kg (6,175 lb.)
R Height to Bucket Hinge Pin, Maximum	3.46 m (11 ft. 4 in.)	3.46 m (11 ft. 4 in.)	3.46 m (11 ft. 4 in.)	3.46 m (11 ft. 4 in.)
S Dump Clearance, Bucket at 45 deg.	2.75 m (9 ft. 0 in.)	2.65 m (8 ft. 8 in.)	2.69 m (8 ft. 10 in.)	2.66 m (8 ft. 9 in.)
T Reach at Full Height, Bucket at 45 deg.	724 mm (28.5 in.)	850 mm (33.5 in.)	720 mm (28.3 in.)	762 mm (30.0 in.)
U Digging Depth Below Ground, Bucket Level	101 mm (4.0 in.)	81 mm (3.2 in.)	145 mm (5.7 in.)	141 mm (5.6 in.)
V Length from Front Axle Centerline to Bucket Cutting Edge	1.97 m (6 ft. 5 in.)	2.11 m (6 ft. 11 in.)	2.04 m (6 ft. 8 in.)	2.09 m (6 ft. 10 in.)

Lift Capacity with Quick-Coupler Forks		
Hydraulic Capacity	1219-mm (48 in.) Tines	1524-mm (60 in.) Tines
A ¹ Maximum Height	2028 kg (4,472 lb.)	1896 kg (4,180 lb.)
B ¹ Maximum Reach	3163 kg (6,974 lb.)	2982 kg (6,575 lb.)
C ¹ At Ground Line	3997 kg (8,812 lb.)	3781 kg (8,335 lb.)
D ¹ Below Ground Line	216 mm (8.5 in.)	216 mm (8.5 in.)

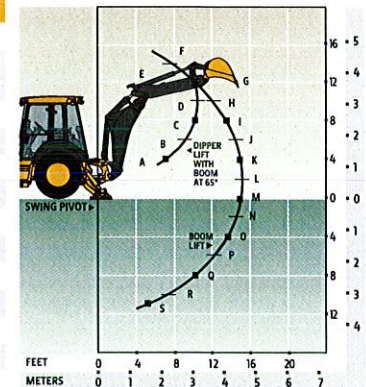


Lift Capacities					
Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.					
With Standard Dipperstick		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended	
Standard Lift	Lift Mode	Standard Lift	Lift Mode	Standard Lift	Lift Mode
A	5625 kg (12,402 lb.)	5625 kg (12,402 lb.)	5350 kg (11,795 lb.)	4082 kg (8,999 lb.)	4537 kg (10,003 lb.)
B	4697 kg (10,356 lb.)	4697 kg (10,356 lb.)	3613 kg (7,966 lb.)	2709 kg (5,972 lb.)	3018 kg (6,653 lb.)
C	3547 kg (7,819 lb.)	3547 kg (7,819 lb.)	3204 kg (7,064 lb.)	2366 kg (5,216 lb.)	2638 kg (5,817 lb.)
D	3220 kg (7,098 lb.)	3220 kg (7,098 lb.)	3122 kg (6,883 lb.)	2231 kg (4,918 lb.)	2412 kg (5,317 lb.)
E	3164 kg (6,976 lb.)	3164 kg (6,976 lb.)	3117 kg (6,871 lb.)	2153 kg (4,747 lb.)	2295 kg (5,059 lb.)
F	3095 kg (6,823 lb.)	3327 kg (7,336 lb.)	1317 kg (2,903 lb.)	2088 kg (4,604 lb.)	2268 kg (5,000 lb.)
G	1472 kg (3,244 lb.)	1645 kg (3,627 lb.)	1649 kg (3,636 lb.)	1871 kg (4,125 lb.)	2004 kg (4,418 lb.)
H	1801 kg (3,971 lb.)	2016 kg (4,445 lb.)	1744 kg (3,845 lb.)	1980 kg (4,365 lb.)	1851 kg (4,080 lb.)
I	1907 kg (4,204 lb.)	2136 kg (4,710 lb.)	1767 kg (3,896 lb.)	2008 kg (4,428 lb.)	904 kg (1,992 lb.)
J	1940 kg (4,278 lb.)	2176 kg (4,798 lb.)	1761 kg (3,883 lb.)	2004 kg (4,418 lb.)	1152 kg (2,540 lb.)
K	1944 kg (4,285 lb.)	2182 kg (4,810 lb.)	1743 kg (3,843 lb.)	1986 kg (4,378 lb.)	1267 kg (2,793 lb.)
L	1933 kg (4,262 lb.)	2172 kg (4,789 lb.)	1720 kg (3,792 lb.)	1962 kg (4,326 lb.)	1326 kg (2,923 lb.)
M	1918 kg (4,228 lb.)	2156 kg (4,754 lb.)	1698 kg (3,743 lb.)	1939 kg (4,275 lb.)	1356 kg (2,989 lb.)
N	1902 kg (4,192 lb.)	2140 kg (4,719 lb.)	1679 kg (3,702 lb.)	1921 kg (4,235 lb.)	1370 kg (3,021 lb.)
O	1889 kg (4,166 lb.)	2129 kg (4,693 lb.)	1669 kg (3,680 lb.)	1912 kg (4,215 lb.)	1376 kg (3,033 lb.)
P	1886 kg (4,157 lb.)	2126 kg (4,688 lb.)	1674 kg (3,691 lb.)	1920 kg (4,234 lb.)	1377 kg (3,035 lb.)
Q	1897 kg (4,183 lb.)	2142 kg (4,722 lb.)	1711 kg (3,773 lb.)	1965 kg (4,333 lb.)	1376 kg (3,034 lb.)
R	1941 kg (4,279 lb.)	2194 kg (4,836 lb.)	1843 kg (4,064 lb.)	2119 kg (4,671 lb.)	1376 kg (3,034 lb.)
S	2077 kg (4,578 lb.)	2350 kg (5,181 lb.)	2057 kg (4,535 lb.)	2365 kg (5,213 lb.)	1380 kg (3,042 lb.)
T	3270 kg (7,210 lb.)	8176 kg (3,709 lb.)	—	—	1390 kg (3,065 lb.)
U	—	—	—	—	1412 kg (3,113 lb.)
V	—	—	—	—	1457 kg (3,212 lb.)
W	—	—	—	—	1556 kg (3,430 lb.)
X	—	—	—	—	1873 kg (4,130 lb.)
Y	—	—	—	—	2846 kg (6,274 lb.)

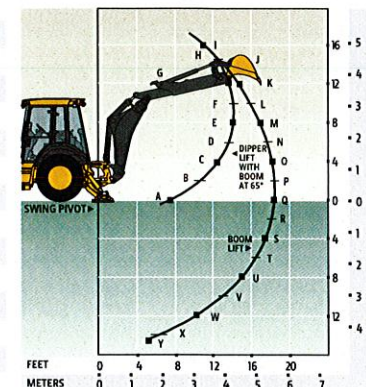
*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.



With Standard Dipperstick



With Extendable Dipperstick, Retracted



With Extendable Dipperstick, Extended



315SL SPECIFICATIONS

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Engine		315SL
Manufacturer and Model	John Deere PowerTech™ EWL 4045HLO50 turbocharged	
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV	
Displacement	4.5 L (276 cu. in.)	
Gross Peak Power	78 kW (105 hp) at 1,600 rpm	
Net Peak Power (ISO 9249)	77 kW (103 hp) at 1,600 rpm	
Net Peak Torque (ISO 9249)	459 Nm (339 lb.-ft.) at 1,600 rpm	
Net Torque Rise	43%	
Lubrication	Pressure system with spin-on filter and cooler	
Air Cleaner	Dual-stage dry type with safety element and evacuator valve	
Cooling		
Fan Type	Electronically controlled, variable-rate, suction-type cooling fan	
Engine Coolant Rating	-40 deg. C (-40 deg. F)	
Engine Oil Cooler	Oil to water	
Powertrain		
Transmission	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift	
Torque Converter	Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11 in.)	
Maximum Travel Speeds with Standard Engine, Measured with 16.9-28 Rear Tires	Forward	Reverse
Gear 1	5.7 km/h (3.5 mph)	7.3 km/h (4.5 mph)
Gear 2	10.6 km/h (6.6 mph)	13.4 km/h (8.3 mph)
Gear 3	21.8 km/h (13.5 mph)	21.5 km/h (13.4 mph)
Gear 4	39.7 km/h (24.7 mph)	—
Gear 5	40.0 km/h (24.9 mph)	—
Axles		
Axle Oscillation, Stop to Stop, Front Axle	22 deg.	
Axle Ratings	Front	Rear
SAE J43	5500 kg (12,100 lb.)	7500 kg (16,500 lb.)
Dynamic	9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)
Static	26 000 kg (57,300 lb.)	26 500 kg (58,400 lb.)
Ultimate	42 500 kg (93,700 lb.)	42 500 kg (93,700 lb.)
Differentials		
Mechanical-Front-Wheel-Drive (MFWD) Axle	Open – standard; automatic, limited-slip traction control – custom or optional	
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock	
Steering (ISO 5010)	Hydrostatic power steering and emergency steering	
Axle	MFWD	Non-Powered Front
Curb-Turning Radius		
With Brakes	3.53 m (11 ft. 7 in.)	3.45 m (11 ft. 4 in.)
Without Brakes	4.02 m (13 ft. 2 in.)	3.90 m (12 ft. 10 in.)
Bucket-Clearance Circle		
With Brakes	10.10 m (33 ft. 2 in.)	10.04 m (32 ft. 11 in.)
Without Brakes	10.84 m (35 ft. 7 in.)	10.70 m (35 ft. 1 in.)
Steering Wheel Turns (lock to lock)	3.6	4.3
MFWD Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears	
Rear Axle	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears	
Brakes (ISO 3450)		
Service	Power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing	
Parking	Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control	
Hydraulics		
Main Pump	Open-center system; tandem gear pump with unloader	
Pump Flow at 2,200 rpm		
Backhoe	136 L/m (36 gpm)	
Loader	106 L/m (28 gpm)	
System Relief Pressure, Backhoe and Loader	24 993 kPa (3,625 psi)	
Controls		
Backhoe	2-lever mechanical standard, pilot controls with pattern select and manual and/or electric auxiliary functions optional	
Loader	Single-lever control with electric clutch cutoff switch standard; manual auxiliary function (2nd lever), single-lever control with electric clutch cutoff switch, electrohydraulic (EH) proportional auxiliary roller, MWFD (momentary), and transmission quick-shift optional	

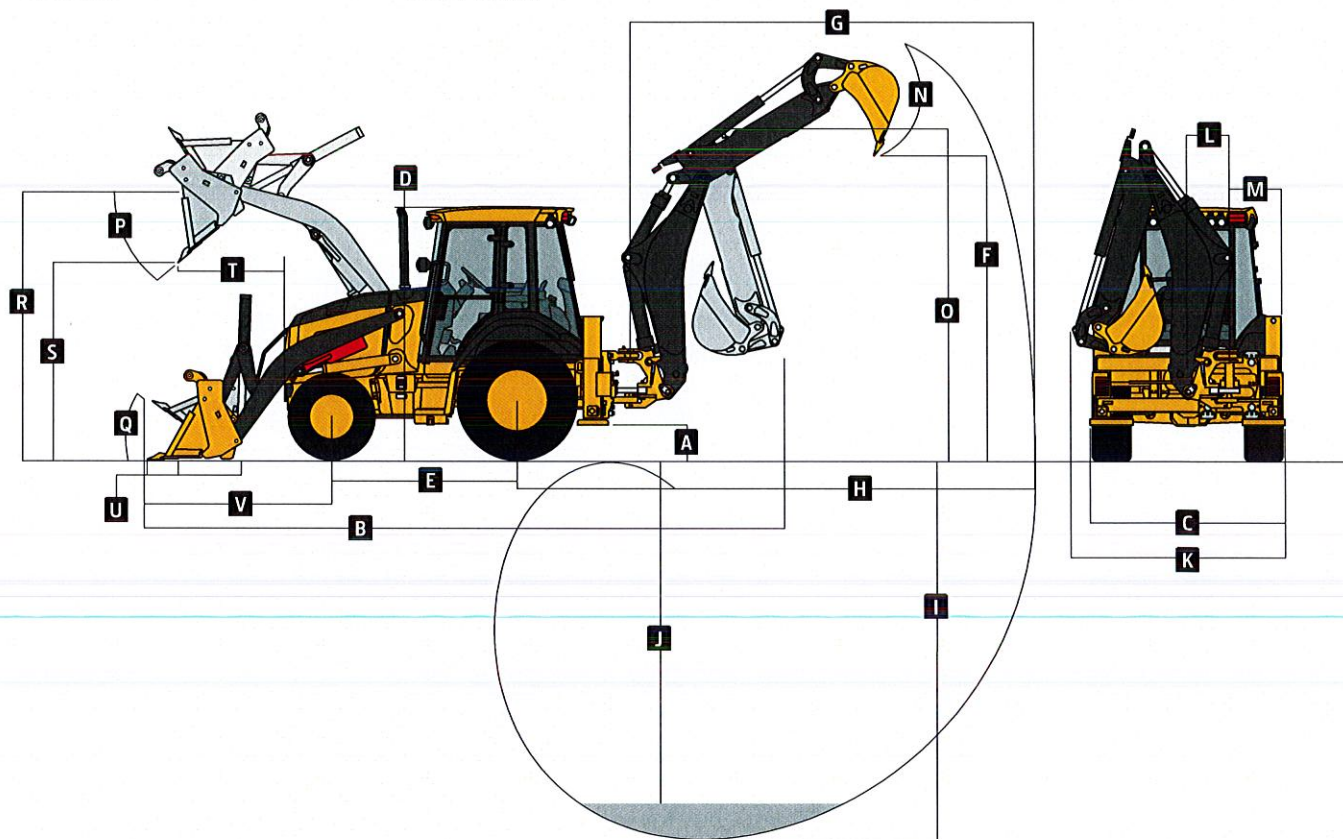
315SL SPECIFICATIONS



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Cylinders		315SL	
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins			
	Bore	Rod Diameter	Stroke
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)
Loader Bucket (1)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)	120 mm (4.72 in.)	56 mm (2.20 in.)	795 mm (31.30 in.)
Backhoe Crowd (1)	115 mm (4.53 in.)	63 mm (2.48 in.)	622 mm (24.47 in.)
Backhoe Bucket (1)	90 mm (3.54 in.)	56 mm (2.20 in.)	810 mm (31.89 in.)
Heavy-Duty Option	100 mm (3.94 in.)	63 mm (2.48 in.)	810 mm (31.89 in.)
Backhoe Swing (2)	90 mm (3.54 in.)	50 mm (1.97 in.)	278 mm (10.94 in.)
Backhoe Extendable Dipperstick (1)	70 mm (2.76 in.)	40 mm (1.57 in.)	1062 mm (41.81 in.)
Backhoe Stabilizer, Standard (2)	70 mm (2.76 in.)	45 mm (1.77 in.)	716 mm (28.19 in.)
Non-Powered Axle (1)	70 mm (2.76 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
MFWD (1)	65 mm (2.56 in.)	40 mm (1.57 in.)	210 mm (8.27 in.)
Electrical			
Voltage	12 volt		
Alternator Rating	145 amp		
Lights	10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop and taillights; and 2 rear reflectors; front drive lamps with 55/60-watt halogen, plate lamp, reverse lamp, and front marker lamps; factory-installed option for 2 LED spotlights and 8 LED floodlights in lieu of standard halogen light package		
Operator Station			
Type (ISO 3471)	Fully enclosed cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional canopy		
Tires/Wheels			
	Front	Rear	
Non-Powered Front Axle	12.5/80-18 F3 (12)	19.5L-24 R4 (12)	
	14.5/75-16.1 F3 (16)	19.5L-24 R4 (12)	
With MFWD	12.5/80-18 F3 (12)	16.9L-28 R4 (12)	
	12.5/80-18 I3 (12)	19.5L-24 R4 (10)	
	12.5/80-18 R4 (10)	19.5L-24 R4 (12)	
	12.5/80-18 I3 (12)	21L-24 R4 (12)	
	12.5/80-18 R4 (10)	21L-24 R4 (12)	
	12.5/80-18 R4 (10)	16.9L-28 R4 (12)	
	340/80R18 XMCL	500/70R24 XMCL	
	340/80R18 550	550/70R24 550	
	340/80R18 580	500/70R24 580	
340/80R18 550	440/80R28 550		
Serviceability			
Refill Capacities			
Cooling System			
Cab	27.5 L (29.1 qt.)		
Canopy	25.7 L (27.2 qt.)		
Rear Axle	18 L (19 qt.)		
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)		
Torque Converter and Transmission	15.1 L (16 qt.)		
Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)		
Diesel Exhaust Fluid (DEF) Tank	13.7 L (3.6 gal.)		
Hydraulic System	126.8 L (33.5 gal.)		
Hydraulic Reservoir	45 L (11.9 gal.)		
MFWD Housing			
Axle	6.5 L (6.9 qt.)		
Planetary (each)	0.9 L (1 qt.)		
Operating Weights			
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and Bumper	7962 kg (17,554 lb.)		
Typical with Extendable Dipperstick and 204-kg (450 lb.) Counterweight	8389 kg (18,494 lb.)		
Optional Components (weight difference between base equipment and option)			
MFWD with Tires	220 kg (485 lb.)		
Cab	263 kg (580 lb.)		
Extendable Dipperstick	222 kg (490 lb.)		

Overall Dimensions		315SL
A	Ground Clearance, Minimum	351 mm (14 in.)
B	Overall Length, Transport	5.96 m (19 ft. 7 in.)
C	Stabilizer Spread	2.26 m (7 ft. 5 in.)
D	Height to Top of ROPS/Cab	2.84 m (9 ft. 4 in.)
E	Length from Axle to Axle	
	Non-Powered Front Axle	2.16 m (7 ft. 1 in.)
	MFWD Axle	2.19 m (7 ft. 2 in.)



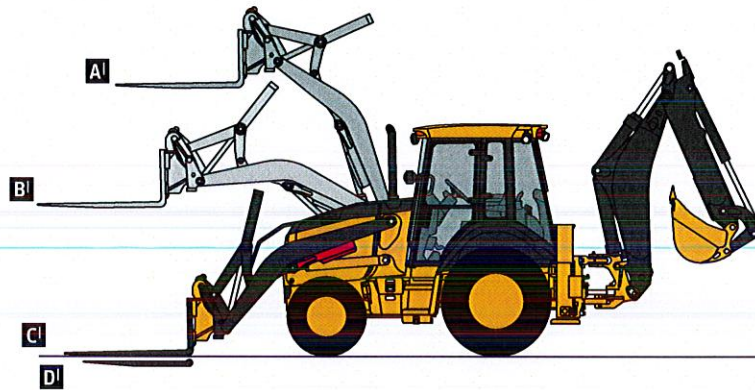
Backhoe Dimensions and Performance			
Backhoe specifications are with 610-mm x 0.21-m ³ (24 in. x 7.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.			
Bucket Range	305–762 mm (12–30 in.)		
Digging Force			
Bucket Cylinder	55.0 kN (12,361 lb.)		
With Heavy-Duty Cylinder Option	67.9 kN (15,260 lb.)		
Crowd Cylinder	36.6 kN (8,231 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		
	With Standard Backhoe	With Optional Extendable Dipperstick	
		Retracted	Extended
F Loading Height, Truck Loading Position	3.65 m (12 ft. 0 in.)	3.77 m (12 ft. 5 in.)	4.39 m (14 ft. 5 in.)
G Reach from Center of Swing Pivot	5.44 m (17 ft. 10 in.)	5.61 m (18 ft. 5 in.)	6.62 m (21 ft. 9 in.)
H Reach from Center of Rear Axle	6.80 m (22 ft. 4 in.)	6.98 m (22 ft. 11 in.)	7.98 m (26 ft. 2 in.)
I Digging Depth (SAE maximum)	4.08 m (13 ft. 5 in.)	4.24 m (13 ft. 11 in.)	5.29 m (17 ft. 4 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.03 m (13 ft. 3 in.)	4.20 m (13 ft. 9 in.)	5.26 m (17 ft. 3 in.)
2440-mm (8 ft.) Flat Bottom	3.68 m (12 ft. 1 in.)	3.87 m (12 ft. 8 in.)	5.00 m (16 ft. 5 in.)
K Overall Width (less loader bucket)	2.43 m (8 ft. 0 in.)	2.41 m (7 ft. 11 in.)	—
L Side-Shift from Tractor Centerline	537 mm (21 in.)	537 mm (21 in.)	537 mm (21 in.)
M Wall to Swing Centerline	604 mm (24 in.)	604 mm (24 in.)	604 mm (24 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	3.71 m (12 ft. 2 in.)	3.72 m (12 ft. 3 in.)	3.72 m (12 ft. 3 in.)

Loader Dimensions and Performance

P Bucket Dump Angle, Maximum	45 deg.			
Q Rollback Angle at Ground Level	40 deg.			
	<i>Heavy-duty</i>	<i>Heavy-duty</i>	<i>Multipurpose</i>	<i>Multipurpose</i>
Bucket Capacity	0.77 m ³ (1.00 cu. yd.)	1.00 m ³ (1.31 cu. yd.)	0.96 m ³ (1.25 cu. yd.)	1.00 m ³ (1.31 cu. yd.)
Width	2184 mm (86 in.)	2337 mm (92 in.)	2184 mm (86 in.)	2337 mm (92 in.)
Weight	363 kg (800 lb.)	521 kg (1,148 lb.)	794 kg (1,750 lb.)	863 kg (1,902 lb.)
Breakout Force	49.2 kN (11,060 lb.)	47.2 kN (10,608 lb.)	43.9 kN (9,863 lb.)	43.5 kN (9,788 lb.)
Lift Capacity, Full Height	3456 kg (7,619 lb.)	3277 kg (7,225 lb.)	2833 kg (6,246 lb.)	2792 kg (6,156 lb.)
R Height to Bucket Hinge Pin, Maximum	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
S Dump Clearance, Bucket at 45 deg.	2.75 m (9 ft. 0 in.)	2.69 m (8 ft. 10 in.)	2.65 m (8 ft. 8 in.)	2.65 m (8 ft. 8 in.)
T Reach at Full Height, Bucket at 45 deg.	743 mm (29.2 in.)	726 mm (28.6 in.)	768 mm (30.2 in.)	768 mm (30.2 in.)
U Digging Depth Below Ground, Bucket Level	89 mm (3.5 in.)	146 mm (5.8 in.)	142 mm (5.6 in.)	142 mm (5.6 in.)
V Length from Front Axle Centerline to Bucket Cutting Edge	1.97 m (6 ft. 6 in.)	2.05 m (6 ft. 9 in.)	2.10 m (6 ft. 11 in.)	2.10 m (6 ft. 11 in.)

Lift Capacity with Quick-Coupler Forks

Hydraulic Capacity	1219-mm (48 in.) Tines	1524-mm (60 in.) Tines
A Maximum Height	2023 kg (4,459 lb.)	1891 kg (4,168 lb.)
B Maximum Reach	3160 kg (6,967 lb.)	2979 kg (6,568 lb.)
C At Ground Line	4000 kg (8,818 lb.)	3783 kg (8,340 lb.)
D Below Ground Line	216 mm (8.5 in.)	216 mm (8.5 in.)

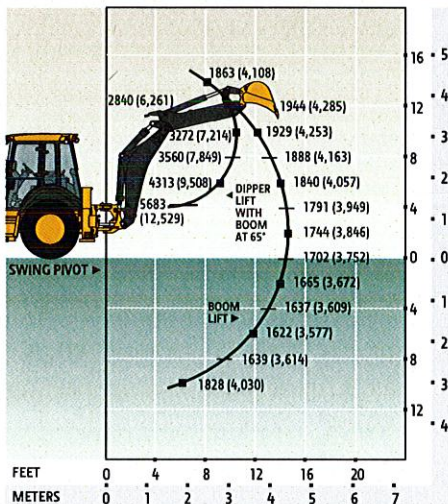


Lift Capacities

Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

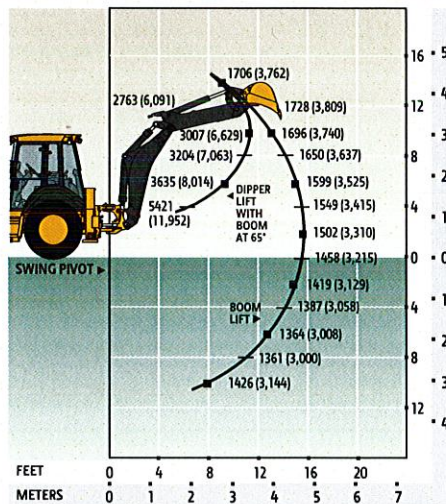
STANDARD LIFT

With Standard Dipperstick



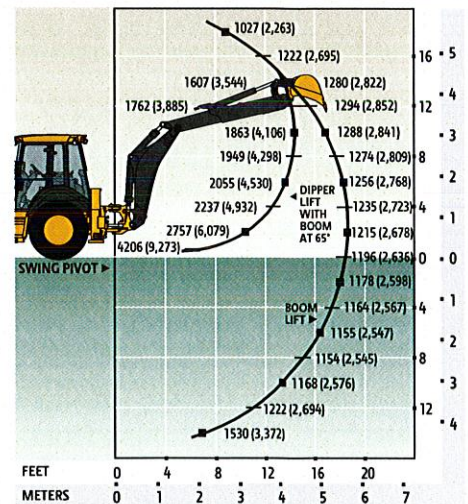
STANDARD LIFT

With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted



STANDARD LIFT

With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended



*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.



410L

SPECIFICATIONS

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Engine		410L	
Manufacturer and Model		John Deere PowerTech™ EWL 4045HL050 turbocharged	
Non-Road Emission Standard		EPA Final Tier 4/EU Stage IV	
Displacement		4.5 L (276 cu. in.)	
Gross Peak Power		88 kW (118 hp) at 1,900 rpm	
Net Peak Power (ISO 9249)		87 kW (116 hp) at 1,900 rpm	
Net Peak Torque (ISO 9249)		459 Nm (339 lb.-ft.) at 1,600 rpm	
Net Torque Rise		26%	
Lubrication		Pressure system with spin-on filter and cooler	
Air Cleaner		Dual-stage dry type with safety element and evacuator valve	
Cooling			
Fan Type		Electronically controlled, variable rate, suction-type cooling fan	
Engine Coolant Rating		-40 deg. C (-40 deg. F)	
Engine Oil Cooler		Oil to water	
Powertrain			
Transmission		5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift	
Torque Converter		Single stage, dual phase with 2.63:1 stall ratio, 280 mm (11 in.)	
Maximum Travel Speeds with Standard Engine, Measured with 21L-24 Rear Tires		<i>Forward</i>	<i>Reverse</i>
Gear 1		5.6 km/h (3.5 mph)	7.0 km/h (4.3 mph)
Gear 2		10.2 km/h (6.3 mph)	12.9 km/h (8.0 mph)
Gear 3		21.1 km/h (13.1 mph)	20.8 km/h (12.9 mph)
Gear 4		38.4 km/h (23.9 mph)	—
Gear 5		40.0 km/h (24.9 mph)	—
Axles			
Axle Oscillation, Stop to Stop, Front Axle		22 deg.	
Axle Ratings		<i>Front</i>	<i>Rear</i>
SAE J43		6500 kg (14,300 lb.)	7500 kg (16,500 lb.)
Dynamic		9000 kg (19,800 lb.)	10 000 kg (22,000 lb.)
Static		26 500 kg (58,400 lb.)	26 500 kg (58,400 lb.)
Ultimate		43 500 kg (95,900 lb.)	43 500 kg (95,900 lb.)
Differentials			
Mechanical-Front-Wheel-Drive (MFWD) Axle		Automatic, limited-slip traction control	
Rear Axle		Foot actuated, hydraulically engaged 100% mechanical lock	
Steering (ISO 5010)		Hydrostatic power steering and emergency steering	
Axle		<i>MFWD</i>	<i>Non-Powered Front</i>
Curb-Turning Radius			
With Brakes		3.53 m (11 ft. 7 in.)	3.45 m (11 ft. 4 in.)
Without Brakes		4.02 m (13 ft. 2 in.)	3.90 m (12 ft. 10 in.)
Bucket-Clearance Circle			
With Brakes		10.20 m (33 ft. 6 in.)	10.13 m (33 ft. 3 in.)
Without Brakes		10.93 m (35 ft. 10 in.)	10.80 m (35 ft. 5 in.)
Steering Wheel Turns (lock to lock, flow amplified)		2.6 to 3.6	3.1 to 4.3
MFWD Axle		Heavy duty, outboard planetary final drives distribute shock loads over 3 gears	
Rear Axle		Heavy duty, outboard planetary final drives distribute shock loads over 4 gears	
Brakes (ISO 3450)			
Service		Power assisted, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing	
Parking		Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control	
Hydraulics			
Main Pump		Pressure compensated load sensing (PCLS), axial-piston pump	
Pump Flow at 2,200 rpm, Backhoe and Loader		159 L/m (42 gpm)	
System Relief Pressure			
Backhoe		24 993 kPa (3,625 psi)	
Lift Mode		27 579 kPa (4,000 psi)	
Loader		24 993 kPa (3,625 psi)	
Controls			
Backhoe		2-lever mechanical standard; pilot controls with pattern select and auxiliary functions optional; field kits available for additional mechanical-control options	

410L

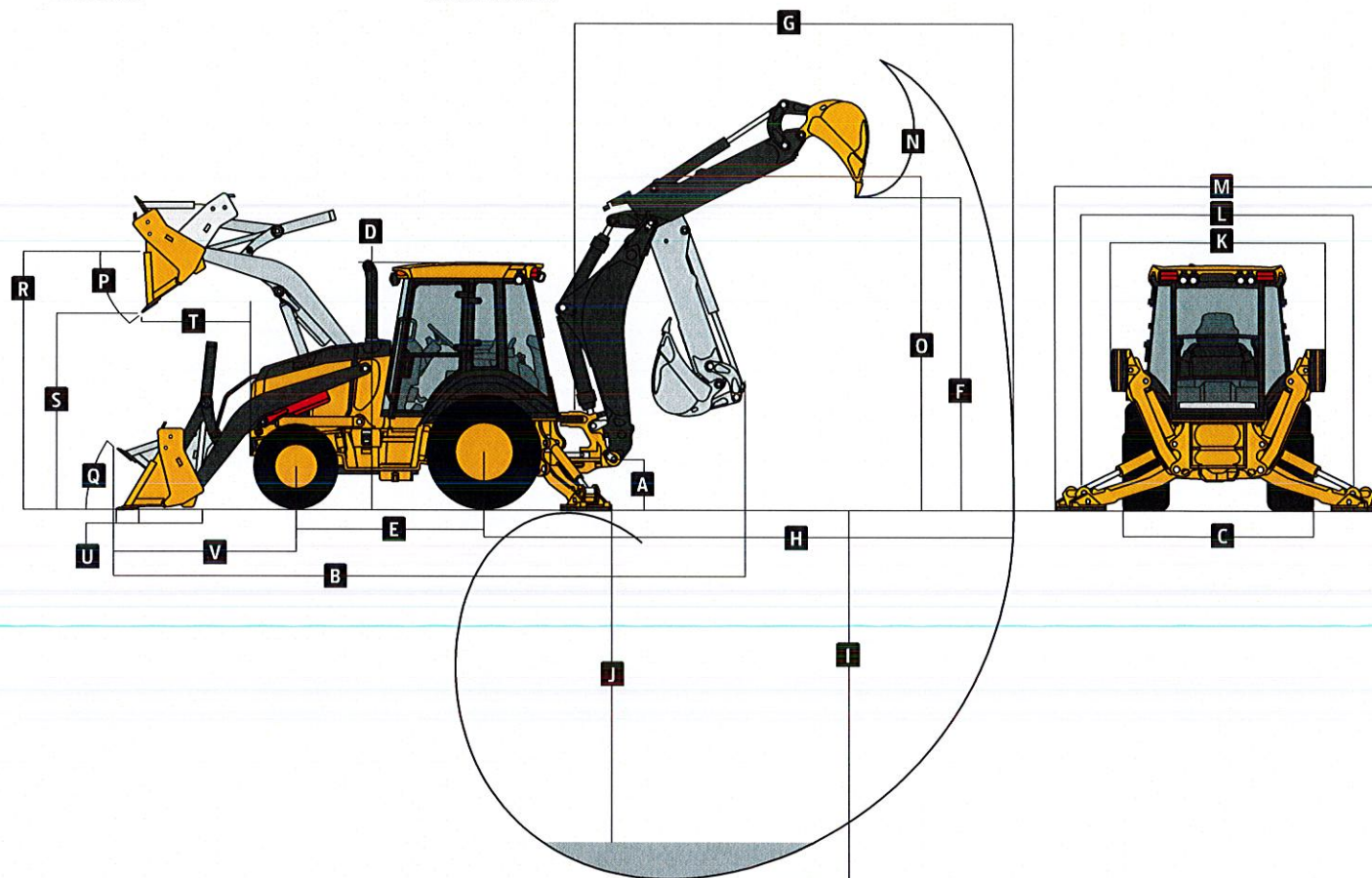
SPECIFICATIONS



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Hydraulics (continued)		410L	
Controls (continued)			
Loader	Single-lever control with electric clutch cutoff, momentary MFWD, transmission quick-shift, and electrohydraulic (EH) auxiliary loader control optional		
Cylinders			
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins			
	Bore	Rod Diameter	Stroke
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	790 mm (31.10 in.)
Loader Bucket (1)	90 mm (3.54 in.)	50 mm (1.97 in.)	744 mm (29.29 in.)
Backhoe Boom (1)	140 mm (5.51 in.)	70 mm (2.76 in.)	897 mm (35.31 in.)
Backhoe Crowd (1)	120 mm (4.72 in.)	63 mm (2.48 in.)	727 mm (28.62 in.)
Backhoe Bucket (1)	100 mm (3.94 in.)	63 mm (2.48 in.)	810 mm (31.89 in.)
Backhoe Swing (2)	90 mm (3.54 in.)	50 mm (1.97 in.)	278 mm (10.94 in.)
Backhoe Extendable Dipperstick (1)	80 mm (3.15 in.)	45 mm (1.77 in.)	1214 mm (47.78 in.)
Backhoe Stabilizer, Extended (2)	100 mm (3.94 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
Non-Powered Axle (1)	70 mm (2.76 in.)	42 mm (1.65 in.)	210 mm (8.27 in.)
MFWD (1)	65 mm (2.56 in.)	40 mm (1.57 in.)	210 mm (8.27 in.)
Electrical			
Voltage	12 volt		
Alternator Rating	145 amp		
Lights	10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop and taillights; and 2 rear reflectors; factory-installed option for 2 LED spotlights and 8 LED floodlights in lieu of standard halogen light package		
Operator Station			
Type (ISO 3471)	Fully enclosed cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional canopy		
Tires/Wheels			
	Front	Rear	
Non-Powered Front Axle	12.5/80-18 F3 (12)	21L-24 R4 (12)	
	14.5/75-16.1 F3 (16)	21L-24 R4 (12)	
With MFWD	12.5/80-18 R4 (10)	21L-24 R4 (12)	
	12.5/80-18 I3 (12)	21L-24 R4 (12)	
	340/80R18 XMCL	500/70R24 XMCL	
	340/80R18 550	500/70R24 550	
	340/80R18 580	500/70R24 580	
Serviceability			
Refill Capacities			
Cooling System			
Cab	27.5 L (29.1 qt.)		
Canopy	25.7 L (27.2 qt.)		
Rear Axle	18 L (19 qt.)		
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)		
Torque Converter and Transmission	15.1 L (16 qt.)		
Fuel Tank (with ground-level fueling)	128.7 L (34 gal.)		
Diesel Exhaust Fluid (DEF) Tank	13.7 L (3.6 gal.)		
Hydraulic System	126.8 L (33.5 gal.)		
Hydraulic Reservoir	45 L (11.9 gal.)		
MFWD Housing			
Axle	6.5 L (6.9 qt.)		
Planetary (each)	0.9 L (1 qt.)		
Operating Weights			
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and 340-kg (750 lb.) Counterweight	8068 kg (17,786 lb.)		
Typical with Cab, Extendable Dipperstick, and 567-kg (1,250 lb.) Counterweight	8828 kg (19,463 lb.)		
Optional Components (weight difference between base equipment and option)			
Cab	263 kg (580 lb.)		
MFWD with Tires	110 kg (242 lb.)		
Extendable Dipperstick	271 kg (597 lb.)		
Front Loader Coupler	257 kg (566 lb.)		
Backhoe Bucket Coupler	64 kg (141 lb.)		

Overall Dimensions		410L
A	Ground Clearance, Minimum	334 mm (13 in.)
B	Overall Length, Transport	7.43 m (24 ft. 5 in.)
C	Width Over Tires	2.34 m (7 ft. 8 in.)
D	Height to Top of ROPS/Cab	2.87 m (9 ft. 5 in.)
E	Length from Axle to Axle	
	Non-Powered Front Axle	2.16 m (7 ft. 1 in.)
	MFWD Axle	2.19 m (7 ft. 2 in.)



Backhoe Dimensions and Performance

Backhoe specifications are with 610-mm x 0.21-m³ (24 in. x 7.5 cu. ft.) bucket; dipper lift specs are with a boom angle of 60 deg.

Bucket Range	305–762 mm (12–30 in.)		
Digging Force			
Bucket Cylinder	69.9 kN (15,723 lb.)		
Lift Mode	77.2 kN (17,350 lb.)		
Crowd Cylinder	44.1 kN (9,907 lb.)		
Lift Mode	48.6 kN (10,932 lb.)		
Swing Arc	180 deg.		
Operator Control	2 levers		
	<i>With Standard Backhoe</i>	<i>With Optional Extendable Dipperstick</i>	
		<i>Retracted</i>	<i>Extended</i>
F Loading Height, Truck Loading Position	3.97 m (13 ft. 0 in.)	4.01 m (13 ft. 2 in.)	4.72 m (15 ft. 6 in.)
G Reach from Center of Swing Pivot	6.02 m (19 ft. 9 in.)	6.02 m (19 ft. 9 in.)	7.14 m (23 ft. 5 in.)
H Reach from Center of Rear Axle	7.14 m (23 ft. 5 in.)	7.14 m (23 ft. 5 in.)	8.26 m (27 ft. 1 in.)
I Digging Depth (SAE maximum)	4.85 m (15 ft. 11 in.)	4.85 m (15 ft. 11 in.)	6.00 m (19 ft. 8 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	4.80 m (15 ft. 9 in.)	4.80 m (15 ft. 9 in.)	5.97 m (19 ft. 7 in.)
2440-mm (8 ft.) Flat Bottom	4.49 m (14 ft. 9 in.)	4.49 m (14 ft. 9 in.)	5.75 m (18 ft. 10 in.)
K Stabilizer Width, Transport	2.35 m (7 ft. 9 in.)	2.35 m (7 ft. 9 in.)	2.35 m (7 ft. 9 in.)
L Stabilizer Spread, Operating	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)	3.45 m (11 ft. 4 in.)
M Stabilizer Overall Width, Operating	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)	4.03 m (13 ft. 3 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	3.91 m (12 ft. 10 in.)	3.91 m (12 ft. 10 in.)	3.91 m (12 ft. 10 in.)

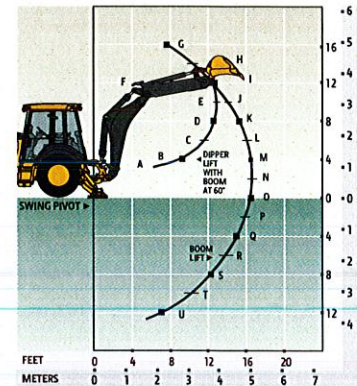
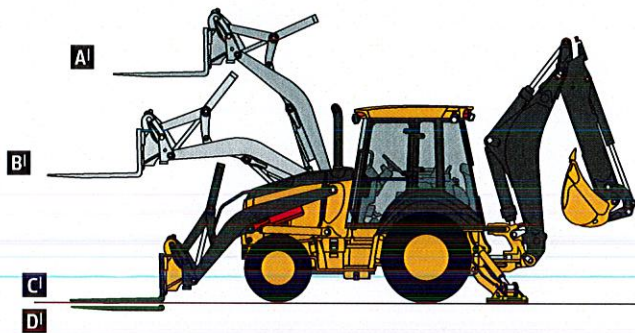
Loader Dimensions and Performance

410L

P Bucket Dump Angle, Maximum	45 deg.		
Q Rollback Angle at Ground Level	40 deg.		
	<i>Heavy-duty</i>	<i>Heavy-duty</i>	<i>Multipurpose</i>
Bucket Capacity	1.00 m ³ (1.31 cu. yd.)	1.15 m ³ (1.50 cu. yd.)	1.00 m ³ (1.31 cu. yd.)
Width	2346 mm (92 in.)	2394 mm (94 in.)	2346 mm (92 in.)
Weight	521 kg (1,148 lb.)	548 kg (1,208 lb.)	863 kg (1,902 lb.)
Breakout Force	47.3 kN (10,645 lb.)	46.1 kN (10,361 lb.)	43.7 kN (9,824 lb.)
Lift Capacity, Full Height	3271 kg (7,211 lb.)	3160 kg (6,967 lb.)	2787 kg (6,144 lb.)
R Height to Bucket Hinge Pin, Maximum	3.47 m (11 ft. 4 in.)	3.47 m (11 ft. 4 in.)	3.47 m (11 ft. 4 in.)
S Dump Clearance, Bucket at 45 deg.	2.70 m (8 ft. 10 in.)	2.66 m (8 ft. 9 in.)	2.67 m (8 ft. 9 in.)
T Reach at Full Height, Bucket at 45 deg.	730 mm (28.7 in.)	772 mm (30.4 in.)	772 mm (30.4 in.)
U Digging Depth Below Ground, Bucket Level	135 mm (5.3 in.)	135 mm (5.3 in.)	131 mm (5.1 in.)
V Length from Front Axle Centerline to Bucket Cutting Edge	2.03 m (6 ft. 8 in.)	2.09 m (6 ft. 10 in.)	2.08 m (6 ft. 10 in.)

Lift Capacity with Quick-Coupler Forks

	<i>Hydraulic Capacity</i>	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>
A' Maximum Height		2019 kg (4,452 lb.)	1887 kg (4,161 lb.)
B' Maximum Reach		3158 kg (6,963 lb.)	2978 kg (6,565 lb.)
C' At Ground Line		4009 kg (8,839 lb.)	3792 kg (8,360 lb.)
D' Below Ground Line		206 mm (8.1 in.)	206 mm (8.1 in.)



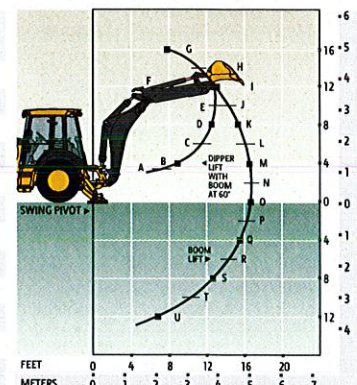
With Standard Dipperstick

Lift Capacities

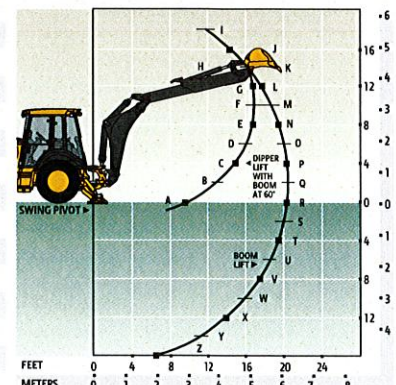
Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

With Standard Dipperstick		With 1.21-m (4 ft. 0 in.) Extendable Dipperstick, Retracted		With 1.21-m (4 ft. 0 in.) Extendable Dipperstick, Extended	
Standard Lift	Lift Mode	Standard Lift	Lift Mode	Standard Lift	Lift Mode
A 7747 kg (17,080 lb.)	7747 kg (17,080 lb.)	7508 kg (16,553 lb.)	7508 kg (16,553 lb.)	4957 kg (10,928 lb.)	5327 kg (11,743 lb.)
B 6041 kg (13,318 lb.)	6041 kg (13,318 lb.)	5826 kg (12,845 lb.)	5826 kg (12,845 lb.)	3141 kg (6,924 lb.)	3492 kg (7,698 lb.)
C 4469 kg (9,852 lb.)	4469 kg (9,852 lb.)	4277 kg (9,429 lb.)	4277 kg (9,429 lb.)	2729 kg (6,015 lb.)	3036 kg (6,693 lb.)
D 4024 kg (8,871 lb.)	4024 kg (8,871 lb.)	3838 kg (8,461 lb.)	3838 kg (8,461 lb.)	2513 kg (5,541 lb.)	2798 kg (6,169 lb.)
E 3745 kg (8,256 lb.)	3899 kg (8,596 lb.)	3621 kg (7,983 lb.)	3714 kg (8,189 lb.)	2358 kg (5,199 lb.)	2626 kg (5,790 lb.)
F 3305 kg (7,285 lb.)	3662 kg (8,074 lb.)	3180 kg (7,010 lb.)	3537 kg (7,798 lb.)	2212 kg (4,876 lb.)	2464 kg (5,433 lb.)
G 1641 kg (3,617 lb.)	1828 kg (4,029 lb.)	1481 kg (3,265 lb.)	1668 kg (3,677 lb.)	2037 kg (4,492 lb.)	2271 kg (5,008 lb.)
H 2125 kg (4,685 lb.)	2374 kg (5,234 lb.)	1943 kg (4,284 lb.)	2192 kg (4,833 lb.)	1788 kg (3,942 lb.)	1996 kg (4,401 lb.)
I 2252 kg (4,965 lb.)	2519 kg (5,554 lb.)	2061 kg (4,544 lb.)	2328 kg (5,133 lb.)	1091 kg (2,406 lb.)	1235 kg (2,722 lb.)
J 2287 kg (5,042 lb.)	2561 kg (5,646 lb.)	2090 kg (4,608 lb.)	2364 kg (5,212 lb.)	1355 kg (2,988 lb.)	1533 kg (3,381 lb.)
K 2286 kg (5,039 lb.)	2562 kg (5,648 lb.)	2084 kg (4,595 lb.)	2361 kg (5,204 lb.)	1479 kg (3,260 lb.)	1674 kg (3,690 lb.)
L 2268 kg (4,999 lb.)	2544 kg (5,609 lb.)	2063 kg (4,547 lb.)	2339 kg (5,157 lb.)	1543 kg (3,402 lb.)	1748 kg (3,854 lb.)
M 2243 kg (4,944 lb.)	2518 kg (5,551 lb.)	2034 kg (4,485 lb.)	2310 kg (5,092 lb.)	1577 kg (3,477 lb.)	1788 kg (3,943 lb.)
N 2215 kg (4,884 lb.)	2490 kg (5,489 lb.)	2004 kg (4,418 lb.)	2278 kg (5,023 lb.)	1594 kg (3,514 lb.)	1809 kg (3,988 lb.)
O 2189 kg (4,827 lb.)	2463 kg (5,429 lb.)	1975 kg (4,354 lb.)	2248 kg (4,956 lb.)	1601 kg (3,529 lb.)	1818 kg (4,009 lb.)
P 2167 kg (4,778 lb.)	2440 kg (5,380 lb.)	1949 kg (4,298 lb.)	2222 kg (4,899 lb.)	1602 kg (3,531 lb.)	1821 kg (4,015 lb.)
Q 2153 kg (4,746 lb.)	2426 kg (5,349 lb.)	1931 kg (4,257 lb.)	2204 kg (4,860 lb.)	1599 kg (3,526 lb.)	1820 kg (4,013 lb.)
R 2150 kg (4,741 lb.)	2426 kg (5,348 lb.)	1924 kg (4,242 lb.)	2200 kg (4,849 lb.)	1596 kg (3,519 lb.)	1818 kg (4,009 lb.)
S 2171 kg (4,786 lb.)	2452 kg (5,406 lb.)	1938 kg (4,274 lb.)	2220 kg (4,893 lb.)	1594 kg (3,514 lb.)	1818 kg (4,007 lb.)
T 2247 kg (4,953 lb.)	2541 kg (5,603 lb.)	2004 kg (4,418 lb.)	2299 kg (5,068 lb.)	1594 kg (3,515 lb.)	1820 kg (4,013 lb.)
U 2578 kg (5,684 lb.)	2923 kg (6,444 lb.)	2306 kg (5,084 lb.)	2651 kg (5,844 lb.)	1600 kg (3,527 lb.)	1828 kg (4,031 lb.)
V —	—	—	—	1614 kg (3,558 lb.)	1847 kg (4,071 lb.)
W —	—	—	—	1643 kg (3,623 lb.)	1882 kg (4,150 lb.)
X —	—	—	—	1703 kg (3,755 lb.)	1953 kg (4,306 lb.)
Y —	—	—	—	1843 kg (4,064 lb.)	2116 kg (4,665 lb.)
Z —	—	—	—	2465 kg (5,435 lb.)	2832 kg (6,245 lb.)

*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.



With Extendable Dipperstick, Retracted



With Extendable Dipperstick, Extended



710L SPECIFICATIONS

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Engine		710L
Manufacturer and Model	John Deere PowerTech™ Plus 4045HT084 series turbocharged	
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV	
Displacement	4.5 L (276 cu. in.)	
Gross Peak Power	112 kW (150 hp) at 2,240 rpm	
Net Peak Power (ISO 9249)	110 kW (148 hp) at 2,240 rpm	
Net Peak Torque (ISO 9249)	570 Nm (420 lb.-ft.) at 1,400 rpm	
Net Torque Rise	20%	
Lubrication	Pressure system with spin-on filter and cooler	
Air Cleaner	Dual-stage dry type with safety element and evacuator valve	
Cooling		
Fan Type	Electronically controlled, variable rate, suction-type cooling fan	
Engine Coolant Rating	-40 deg. C (-40 deg. F)	
Engine Oil Cooler	Oil to water	
Powertrain		
Transmission	4-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift	
Torque Converter	Single stage, dual phase with 1.92:1 stall ratio, 280 mm (11 in.)	
Maximum Travel Speeds with Standard Engine with Mechanical-Front-Wheel Drive (MFWD), Measured with 21L-28 Rear Tires	Forward	Reverse
Gear 1	6.0 km/h (3.7 mph)	6.7 km/h (4.2 mph)
Gear 2	10.0 km/h (6.2 mph)	11.2 km/h (7.0 mph)
Gear 3	24.6 km/h (15.3 mph)	27.4 km/h (17.0 mph)
Gear 4	36.9 km/h (22.9 mph)	—
Axles		
Axle Oscillation, Stop to Stop, Front Axle	18 deg.	
Axle Ratings	Front	Rear
SAE J43	9000 kg (19,800 lb.)	11 500 kg (25,400 lb.)
Dynamic	12 500 kg (27,600 lb.)	14 000 kg (30,900 lb.)
Static	30 500 kg (67,200 lb.)	31 000 kg (68,300 lb.)
Ultimate	45 000 kg (99,200 lb.)	45 000 kg (99,200 lb.)
Differentials		
MFWD Axle	Automatic, limited-slip traction control	
Rear Axle	Foot actuated, hydraulically engaged mechanical lock	
Steering (ISO 5010)		
Axle	MFWD	Non-Powered Front
Curb-Turning Radius		
With Brakes	3.99 m (13 ft. 1 in.)	3.98 m (13 ft. 1 in.)
Without Brakes	4.58 m (15 ft. 0 in.)	4.57 m (15 ft. 0 in.)
Bucket-Clearance Circle		
With Brakes	11.42 m (37 ft. 6 in.)	11.43 m (37 ft. 6 in.)
Without Brakes	12.30 m (40 ft. 4 in.)	12.31 m (40 ft. 5 in.)
Steering Wheel Turns (lock to lock, flow amplified)	2.7 to 4.4	2.9 to 4.7
MFWD Axle	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears	
Rear Axle	Heavy duty, inboard planetary final drives distribute shock loads over 3 gears	
Brakes (ISO 3450)		
Service	Full power, hydraulic wet disc, mounted inboard, self-adjusting and self-equalizing	
Parking	Spring applied, hydraulically released, wet, multi-disc, independent of service brakes with electric switch control	
Hydraulics		
Main Pump	Pressure compensated load sensing (PCLS), axial-piston pump	
Pump Flow at 2,200 rpm, Backhoe and Loader	197 L/m (52 gpm)	
System Relief Pressure, Backhoe and Loader		
Backhoe	24 993 kPa (3,625 psi)	
Lift Mode	26 890 kPa (3,900 psi)	
Loader	24 993 kPa (3,625 psi)	

710L SPECIFICATIONS



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Hydraulics (continued)

710L

Controls

Backhoe	Pilot controls with pattern select standard; electrohydraulic (EH) auxiliary functions optional
Loader	Single-lever control with electric clutch cutoff, momentary MFWD, transmission quick-shift, and EH auxiliary loader control optional

Cylinders

Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins

	Bore	Rod Diameter	Stroke
Loader Boom (2)	100 mm (3.94 in.)	56 mm (2.20 in.)	805 mm (31.69 in.)
Loader Bucket (1)	110 mm (4.33 in.)	56 mm (2.20 in.)	672 mm (26.44 in.)
Backhoe Boom (1)	160 mm (6.30 in.)	95 mm (3.74 in.)	944 mm (37.17 in.)
Backhoe Crowd (1)	140 mm (5.51 in.)	85 mm (3.35 in.)	792 mm (31.16 in.)
Backhoe Bucket (1)	110 mm (4.33 in.)	70 mm (2.76 in.)	939 mm (36.97 in.)
Backhoe Swing (2)	110 mm (4.33 in.)	56 mm (2.20 in.)	308 mm (12.13 in.)
Backhoe Extendable Dipperstick (1)	80 mm (3.15 in.)	45 mm (1.77 in.)	1372 mm (54.00 in.)
Backhoe Stabilizer, Extended (2)	115 mm (4.53 in.)	63 mm (2.48 in.)	588 mm (23.15 in.)
Non-Powered Axle (1)	75 mm (2.95 in.)	45 mm (1.77 in.)	240 mm (9.45 in.)
MFWD (1)	75 mm (2.95 in.)	50 mm (1.97 in.)	260 mm (10.24 in.)

Electrical

Voltage	12 volt
Alternator Rating	160 amp (cab)
Lights	10 halogen: 4 front, 4 rear, and 2 side docking (32,500 candlepower each); turn signals and flashers: 2 front and 2 rear; stop and taillights; and 2 rear reflectors; factory-installed option for 2 LED spotlights and 8 LED floodlights in lieu of standard halogen light package

Operator Station

Type (ISO 3471)	Fully enclosed cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional canopy
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Tires/Wheels

	Front	Rear
Non-Powered Front Axle	12.5/80-18 F3 (16)	21L-28 R4 (18)
	14.5/75-16.1 F3 (16)	20.5-25 L-3 (20)
With MFWD	15-19.5 R4 (12)	21L-28 R4 (18)
	15-19.5 R4 (12)	20.5-25 L-3 (20)

Serviceability

Refill Capacities

Cooling System	
Cab	28.4 L (30 qt.)
Canopy	26.4 L (27.9 qt.)
Rear Axle	25 L (26.4 qt.)
Engine Oil (including vertical spin-on filter)	13 L (13.7 qt.)
Torque Converter and Transmission	15.1 L (16 qt.)
Fuel Tank (with ground-level fueling)	174.1 L (46 gal.)
Diesel Exhaust Fluid (DEF) Tank	13.7 L (3.6 gal.)
Hydraulic System	174.1 L (46 gal.)
Hydraulic Reservoir	50.1 L (13.2 gal.)
MFWD Housing	
Axle	15 L (15.9 qt.)
Planetary (each)	2.2 L (2.3 qt.)

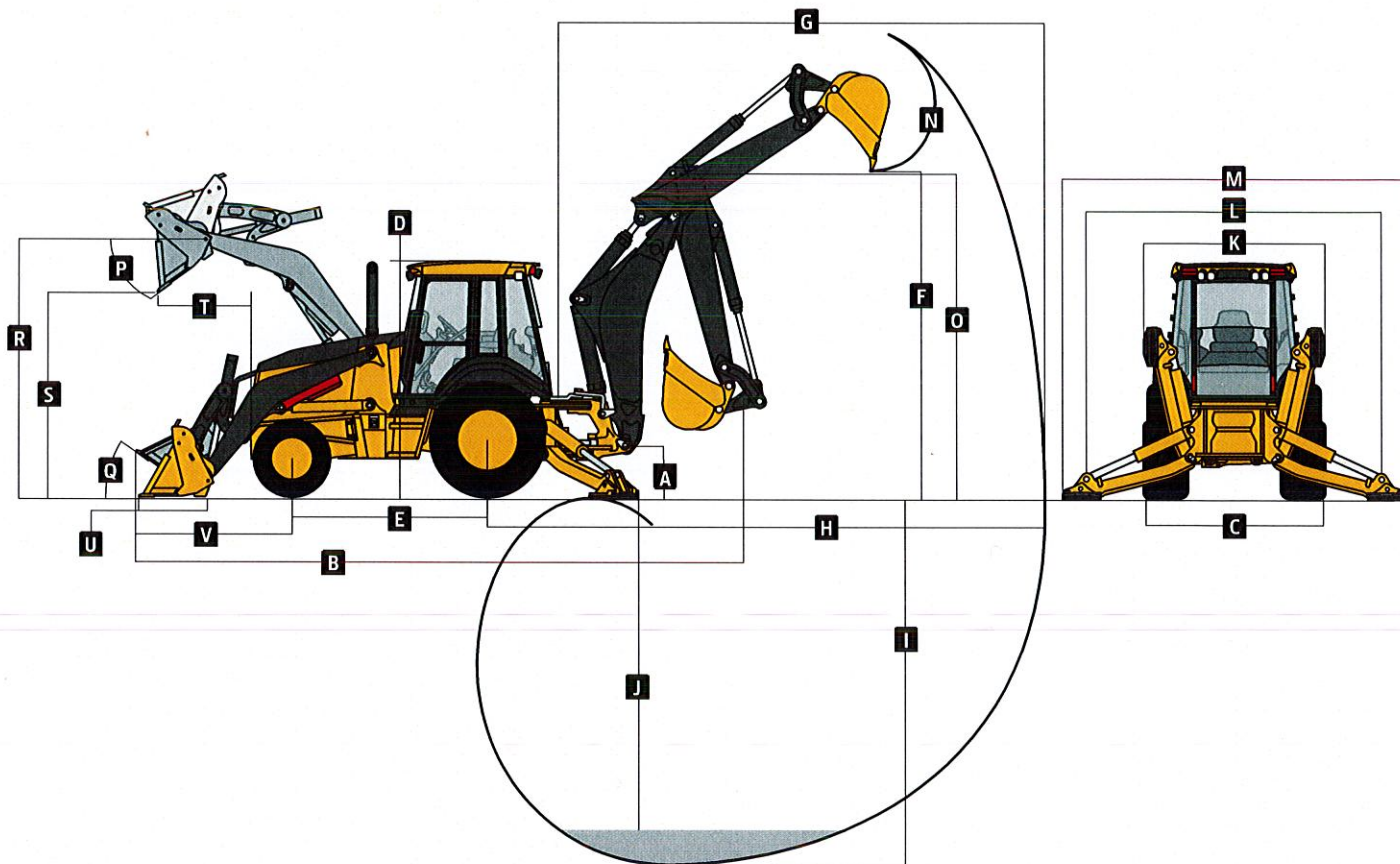
Operating Weights

With Full Fuel Tank, 79-kg (175 lb.) Operator, and Standard Equipment	11 607 kg (25,588 lb.)
Typical with Cab, MFWD, Extendable Dipperstick, and 680-kg (1,500 lb.) Counterweight	12 262 kg (27,033 lb.)

Optional Components (weight difference between base equipment and option)

Cab	293 kg (645 lb.)
MFWD with Tires	373 kg (822 lb.)
Extendable Dipperstick	318 kg (700 lb.)
Front Loader Coupler	363 kg (800 lb.)

Overall Dimensions		710L
A	Ground Clearance, Minimum	356 mm (14 in.)
B	Overall Length, Transport	8.23 m (27 ft. 0 in.)
C	Width Over Tires	2.37 m (7 ft. 9 in.)
D	Height to Top of ROPS/Cab	2.97 m (9 ft. 9 in.)
E	Length from Axle to Axle	
	Non-Powered Front Axle	2.58 m (8 ft. 5 in.)
	MFWD Axle	2.55 m (8 ft. 4 in.)



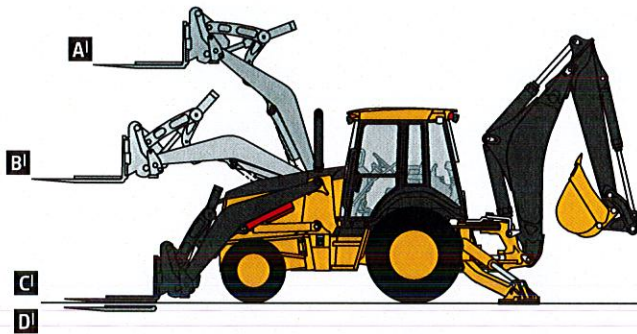
Backhoe Dimensions and Performance			
Backhoe specifications are with 610-mm x 0.31-m³ (24 in. x 11 cu. ft.) bucket; dipper lift specs are with a boom angle of 65 deg.			
Bucket Range	610–914 mm (24–36 in.)		
Digging Force			
Bucket Cylinder	78.4 kN (17,622 lb.)		
Lift Mode	84.3 kN (18,959 lb.)		
Crowd Cylinder	53.4 kN (11,999 lb.)		
Lift Mode	57.4 kN (12,910 lb.)		
Swing Arc	180 deg.		
Operator Control	Pilot control		
	With Standard Backhoe	With Optional Extendable Dipperstick	
		Retracted	Extended
F Loading Height, Truck Loading Position	4.45 m (14 ft. 7 in.)	4.49 m (14 ft. 9 in.)	5.35 m (17 ft. 6 in.)
G Reach from Center of Swing Pivot	6.84 m (22 ft. 5 in.)	6.84 m (22 ft. 5 in.)	8.15 m (26 ft. 9 in.)
H Reach from Center of Rear Axle	8.11 m (26 ft. 7 in.)	8.11 m (26 ft. 7 in.)	9.42 m (30 ft. 11 in.)
I Digging Depth (SAE maximum)	5.26 m (17 ft. 3 in.)	5.26 m (17 ft. 3 in.)	6.63 m (21 ft. 9 in.)
J Digging Depth (SAE)			
610-mm (2 ft.) Flat Bottom	5.25 m (17 ft. 3 in.)	5.25 m (17 ft. 2 in.)	6.62 m (21 ft. 8 in.)
2440-mm (8 ft.) Flat Bottom	4.96 m (16 ft. 3 in.)	4.96 m (16 ft. 3 in.)	6.40 m (21 ft. 0 in.)
K Stabilizer Width, Transport	2.41 m (7 ft. 11 in.)	2.41 m (7 ft. 11 in.)	2.41 m (7 ft. 11 in.)
L Stabilizer Spread, Operating	3.99 m (13 ft. 1 in.)	3.99 m (13 ft. 1 in.)	3.99 m (13 ft. 1 in.)
M Stabilizer Overall Width, Operating	4.65 m (15 ft. 3 in.)	4.65 m (15 ft. 3 in.)	4.65 m (15 ft. 3 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
O Transport Height	4.23 m (13 ft. 10 in.)	4.23 m (13 ft. 10 in.)	4.23 m (13 ft. 10 in.)
Loader Dimensions and Performance			
P Bucket Dump Angle, Maximum	45 deg.		
Q Rollback Angle at Ground Level	40 deg.		

Loader Dimensions and Performance (continued) 710L

	Standard-duty	Standard-duty	Multipurpose
Bucket Capacity	1.24 m ³ (1.62 cu. yd.)	1.43 m ³ (1.87 cu. yd.)	1.00 m ³ (1.31 cu. yd.)
Width	2464 mm (97 in.)	2464 mm (97 in.)	2451 mm (96 in.)
Weight	830 kg (1,830 lb.)	866 kg (1,909 lb.)	995 kg (2,193 lb.)
Breakout Force	73.6 kN (16,539 lb.)	70.5 kN (15,853 lb.)	73.3 kN (16,474 lb.)
Lift Capacity, Full Height	4475 kg (9,866 lb.)	4239 kg (9,346 lb.)	4081 kg (8,998 lb.)
R Height to Bucket Hinge Pin, Maximum	3.73 m (12 ft. 3 in.)	3.73 m (12 ft. 3 in.)	3.73 m (12 ft. 3 in.)
S Dump Clearance, Bucket at 45 deg.	2.89 m (9 ft. 6 in.)	2.81 m (9 ft. 3 in.)	2.92 m (9 ft. 7 in.)
T Reach at Full Height, Bucket at 45 deg.	768 mm (30.2 in.)	849 mm (33.4 in.)	763 mm (30 in.)
U Digging Depth Below Ground, Bucket Level	157 mm (6.2 in.)	157 mm (6.2 in.)	141 mm (5.5 in.)
V Length from Front Axle Centerline to Bucket Cutting Edge	2.14 m (7 ft. 0 in.)	2.26 m (7 ft. 5 in.)	2.11 m (6 ft. 11 in.)

Lift Capacity with Quick-Coupler Forks

Hydraulic Capacity	1219-mm (48 in.) Tines
A ¹ Maximum Height	2632 kg (5,803 lb.)
B ¹ Maximum Reach	4378 kg (9,651 lb.)
C ¹ At Ground Line	6057 kg (13,353 lb.)
D ¹ Below Ground Line	140 mm (5.5 in.)

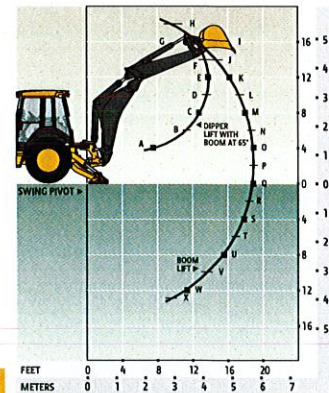


Lift Capacities

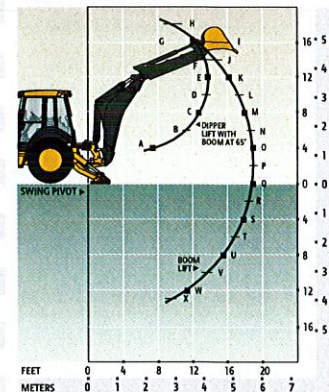
Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

With Standard Dipperstick		With 1.37-m (4 ft. 6 in.) Extendable Dipperstick, Retracted		With 1.37-m (4 ft. 6 in.) Extendable Dipperstick, Extended	
Standard Lift	Lift Mode	Standard Lift	Lift Mode	Standard Lift	Lift Mode
A	9519 kg (20,986 lb.)	9519 kg (20,986 lb.)	9343 kg (20,597 lb.)	5431 kg (11,973 lb.)	5878 kg (12,958 lb.)
B	5244 kg (11,561 lb.)	5506 kg (12,140 lb.)	5109 kg (11,262 lb.)	3397 kg (7,488 lb.)	3685 kg (8,123 lb.)
C	4492 kg (9,903 lb.)	4732 kg (10,432 lb.)	4344 kg (9,578 lb.)	2914 kg (6,425 lb.)	3,165 kg (6,977 lb.)
D	4087 kg (9,010 lb.)	4419 kg (9,743 lb.)	3932 kg (8,669 lb.)	2659 kg (5,862 lb.)	2889 kg (6,370 lb.)
E	3718 kg (8,197 lb.)	4022 kg (8,866 lb.)	3557 kg (7,843 lb.)	2479 kg (5,466 lb.)	2695 kg (5,942 lb.)
F	3219 kg (7,096 lb.)	3483 kg (7,679 lb.)	3050 kg (6,724 lb.)	2324 kg (5,123 lb.)	2527 kg (5,572 lb.)
G	2304 kg (5,079 lb.)	2497 kg (5,505 lb.)	2122 kg (4,679 lb.)	2314 kg (5,102 lb.)	2164 kg (4,771 lb.)
H	2500 kg (5,512 lb.)	2717 kg (5,990 lb.)	2291 kg (5,052 lb.)	2508 kg (5,530 lb.)	1974 kg (4,351 lb.)
I	2572 kg (5,670 lb.)	2805 kg (6,184 lb.)	2348 kg (5,177 lb.)	2581 kg (5,691 lb.)	1719 kg (3,790 lb.)
J	2532 kg (5,581 lb.)	2766 kg (6,099 lb.)	2301 kg (5,073 lb.)	2536 kg (5,590 lb.)	1340 kg (2,954 lb.)
K	2465 kg (5,434 lb.)	2697 kg (5,947 lb.)	2230 kg (4,916 lb.)	2462 kg (5,428 lb.)	1625 kg (3,583 lb.)
L	2391 kg (5,271 lb.)	2620 kg (5,776 lb.)	2152 kg (4,744 lb.)	2381 kg (5,250 lb.)	1679 kg (3,701 lb.)
M	2316 kg (5,105 lb.)	2541 kg (5,602 lb.)	2074 kg (4,573 lb.)	2300 kg (5,070 lb.)	1685 kg (3,714 lb.)
N	2243 kg (4,945 lb.)	2464 kg (5,433 lb.)	1999 kg (4,407 lb.)	2220 kg (4,895 lb.)	1669 kg (3,680 lb.)
O	2173 kg (4,791 lb.)	2391 kg (5,271 lb.)	1927 kg (4,248 lb.)	2145 kg (4,728 lb.)	1644 kg (3,624 lb.)
P	2107 kg (4,646 lb.)	2321 kg (5,118 lb.)	1859 kg (4,098 lb.)	2073 kg (4,570 lb.)	1613 kg (3,556 lb.)
Q	2045 kg (4,509 lb.)	2256 kg (4,974 lb.)	1794 kg (3,956 lb.)	2005 kg (4,421 lb.)	1579 kg (3,482 lb.)
R	1987 kg (4,381 lb.)	2195 kg (4,840 lb.)	1734 kg (3,823 lb.)	1942 kg (4,282 lb.)	1545 kg (3,406 lb.)
S	1934 kg (4,263 lb.)	2139 kg (4,716 lb.)	1678 kg (3,698 lb.)	1883 kg (4,152 lb.)	1511 kg (3,331 lb.)
T	1884 kg (4,154 lb.)	2088 kg (4,604 lb.)	1625 kg (3,583 lb.)	1829 kg (4,033 lb.)	1477 kg (3,257 lb.)
U	1841 kg (4,058 lb.)	2044 kg (4,506 lb.)	1578 kg (3,479 lb.)	1781 kg (3,927 lb.)	1445 kg (3,185 lb.)
V	1805 kg (3,979 lb.)	2009 kg (4,429 lb.)	1537 kg (3,388 lb.)	1741 kg (3,838 lb.)	1414 kg (3,117 lb.)
W	1786 kg (3,937 lb.)	1995 kg (4,397 lb.)	1509 kg (3,327 lb.)	1718 kg (3,787 lb.)	1385 kg (3,054 lb.)
X	1794 kg (3,954 lb.)	2009 kg (4,429 lb.)	1508 kg (3,325 lb.)	1723 kg (3,799 lb.)	1359 kg (2,995 lb.)
Y	—	—	—	—	1335 kg (2,943 lb.)
Z	—	—	—	—	1316 kg (2,900 lb.)
a	—	—	—	—	1302 kg (2,871 lb.)
b	—	—	—	—	1299 kg (2,865 lb.)
c	—	—	—	—	1322 kg (2,914 lb.)
d	—	—	—	—	1453 kg (3,202 lb.)

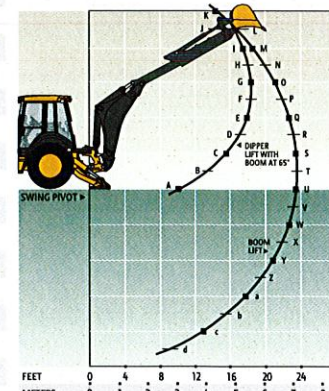
*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.



With Standard Dipperstick



With Extendable Dipperstick, Retracted



With Extendable Dipperstick, Extended

Additional equipment

Key: ● Standard ▲ Optional or special See your John Deere dealer for further information.

310L EP	310L	310SL	HL	315SL	410L	710L	Engine
●	●	●	●	●	●	●	Coolant recovery tank with low-level indicator
●	●	●	●	●	●	●	Foldout, hinged cooling system
●	●	●	●	●	●	●	Serpentine belt with automatic belt tensioner
●							Viscous variable-rate cooling fan
	●	●	●	●	●	●	Electronically controlled, variable-rate suction-type cooling fan
	●	●	●	●	●	●	Self-cleaning exhaust aftertreatment system
▲	▲	▲	▲	▲	▲	▲	Chrome exhaust extension
	●	●	●	●	●	●	Grid heat
●						●	Glow plugs
▲	▲	▲	▲	▲	▲	▲	1,000-watt electric engine coolant heater
●	●	●	●	●	●	●	Electronic fuel lift pump
							Powertrain
●							4-speed manual synchromesh transmission
	●					●	PowerShift™ transmission: Torque converter with twist-grip Transmission Control Lever (TCL) and neutral safety switch interlock (1st through 4th gears)
		●	●	●	●		PowerShift transmission: Torque converter with twist-grip TCL and neutral safety switch interlock (1st through 5th gears)
		●	●	●	●	●	5th-gear overdrive
●	●	●	●	●	●	●	AutoShift transmission
▲	▲	▲	●	▲	▲	▲	Transmission oil cooler
●	●	●	●	●	●	●	Differential lock, electric foot actuated, protection on/off (software enabled)
			●			●	Differential lock, electric foot actuated
●	●	●	●	●	●	●	Auto shutdown
●	●	●	●	●	●	●	Planetary final drives
●	●	●	●	●	●	●	Power-assisted hydraulic service brakes (conform to ISO 3450): Inboard, wet multi-disc, self-adjusting and self-equalizing
●	●	●	●	●	●	●	Parking/emergency brake with electric switch control (conforms to ISO 3450): Spring applied, hydraulically released wet multi-disc / Independent of service brakes
●	●	●	●	●	●	●	Hydrostatic power steering with emergency manual mode
▲	▲	▲	▲	▲	▲	▲	Non-powered front axle
●	●						MFWD with open differential: Electric on/off control / Sealed axle (310L only)
	▲	●	●	●	●	●	MFWD with traction-control limited-slip differential: Electric on/off control / Sealed axle
	●	●	●	●	●	●	Automatic MFWD braking
▲	▲	▲	▲	▲	▲	▲	MFWD driveshaft guard
							Backhoe
		●	●		●	●	Lift mode
		●	●		●	●	Precision mode
				●			Standard dipperstick digging depth
●							4.08 m (13 ft. 5 in.)
							4.16 m (13 ft. 8 in.)

310L EP	310L	310SL	HL	315SL	410L	710L	Backhoe (continued)
	●						Standard dipperstick digging depth (cont.)
		●					4.30 m (14 ft. 1 in.)
			●				4.35 m (14 ft. 3 in.)
				●			4.59 m (15 ft. 1 in.)
					●		4.85 m (15 ft. 11 in.)
						●	5.26 m (17 ft. 3 in.)
▲	▲	▲	▲	▲			Extendable dipperstick extension
					▲		1.06 m (3 ft. 6 in.)
						▲	1.21 m (4 ft. 0 in.)
							1.37 m (4 ft. 6 in.)
●	●	●		●	●		Heavy-duty (HD) backhoe bucket cylinder
▲	▲	▲		▲	▲	●	ISO (Deere) 2-lever mechanical backhoe controls
●	●	●	●	●	●	●	2-lever pilot controls with pattern-selection feature
●	●	●	●	●	●	●	Backhoe transport lock lever
●	●	●	●	●	●	●	Swing lock pin stored in operator's station
			▲	●	●	●	Stabilizers with 2-direction anti-drift valves
			▲	▲	▲		Extended (long) stabilizers with reversible pads
▲	▲	▲	▲	▲	▲		Severe-duty backhoe bucket with lift loops
▲	▲	▲	▲	▲	▲	▲	Backhoe couplers for John Deere, Case, and Cat buckets
▲	▲	▲	▲	▲	▲	▲	Auxiliary backhoe valve with 1-way flow for hammers and compactors with plumbing
▲	▲	▲	▲		▲	▲	Auxiliary backhoe valve with 1- and 2-way flow for swinglers, thumbs, augers, etc. (plumbing not included)
▲	▲	▲	▲		▲		Hydraulic thumb
			▲	▲	▲	▲	Rear hydraulic coupler
			▲	▲	▲	▲	Spring-type coupler
							Loader¹
●	●	●	●	●	●	●	Loader bucket anti-spill (rollback)
●	●	●	●	●	●	●	Return-to-dig feature
●	●	●	●	●	●	●	Single-lever control with electric clutch disconnect
●	●	●	●	●	●	●	Bucket-level indicator
●	●	●	●	●	●	●	Loader boom service lock
		●	●	●	●	●	Loader valve with integrated anti-drift checks for hydraulic cylinders controlling loader boom up and bucket dump
▲	▲	▲	▲	▲	▲	▲	Auxiliary loader hydraulics with single control lever with EH auxiliary control (MFWD and clutch disconnect)
▲	▲	▲	▲	▲	▲	▲	Hydraulic coupler for buckets, forks, etc.
▲	▲						Standard ride control
		▲	▲	▲	▲	●	Auto ride control
							Hydraulic System
●							124-L/m (32.8 gpm) backhoe flow,
	●						114-L/m (30.1 gpm) loader flow
							106-L/m (28 gpm) single-gear pump, open-center system
				●			136-L/m (36 gpm) tandem-gear pump, open-center system

¹See dealer for range of HD, multipurpose, and coupler buckets and forks.

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Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan at test conditions specified per ISO 9249. No derating is required up to 1500-mm (5,000 ft.) altitude for the 310L EP. Specifications and design are subject to change without notice. Wherever applicable, specifications are in accordance with ISO standards. Except where otherwise noted, these specifications are based on 310L EP and 310L units with 19.5L-24-in. 12PR (R4) tubeless rear and 12-16.5 12PR (F3) front tires, and 0.86-m³ (1.12 cu. yd.) loader buckets; a 310SL unit with 19.5L-24-in. 12PR (R4) tubeless rear and 12.5-80/18 10PR (R4) front tires, and 1.00-m³ (1.31 cu. yd.) loader bucket; a 310SL HL unit with lift mode, 19.5L-24-in. 12 PR (R4) tubeless rear and 12.5-80-18 12PR (R4) front tires, and 1.00-m³ (1.31 cu. yd.) loader bucket; a 315SL unit with 16.9L-28 R4 (I2) tubeless rear and 12.5-80-18 10PR (R4) front tires, and 1.00-m³ (1.31 cu. yd.) loader bucket; a 410L unit with 21L-24-in. 12PR (R4) tubeless rear and 12.5-80-18 10PR (R4) front tires, and 1.15-m³ (1.5 cu. yd.) loader bucket; and a 710L unit with 21L-28-in. 18PR (R4) tubeless rear and 15-19.5-in. 12PR (R4) front tires, and 1.24-m³ (1.62 cu. yd.) loader bucket.

Additional equipment (continued)

Key: ● Standard ▲ Optional or special

See your John Deere dealer for further information.

310L EP	310L	310SL	HL	315SL	410L	710L	Hydraulic System (continued)
	●	●			●		159-L/m (42 gpm) axial-piston pump, pressure-compensated load-sensing (PCLS) system
					●		197-L/m (52 gpm) axial-piston pump, PCLS system
		●	●	●	●	●	Auto-idle
	●	●	●	●	●	●	Economy mode
●	●	●	●	●	●	●	Dedicated hydraulic reservoir
							Electrical System
●	●	●	●	●	●	●	12-volt system
●							130-amp alternator
	●	●	●	●	●		145-amp alternator
						●	160-amp alternator
●	●	●	●	●	●		Single battery with 180-min. reserve capacity and 925 CCA
▲	▲	▲	▲	▲	▲	●	Dual batteries with 360-min. reserve capacity and 1,850 CCA
▲	▲	▲	▲	▲	▲	▲	Remote jump posts and battery disconnect
							Lights
●							Halogen lights (4), 32,500 candlepower each (2 front and 2 rear)
	●	●	●	●	●	●	Halogen lights (10), 32,500 candlepower each (4 front driving/working, 4 rear working, and 2 side docking)
●	●	●	●	●	●	●	Turn signal/flashing (2 front and 2 rear)
●	●	●	●	●	●	●	Rear stop and tail (2)
▲	▲	▲	▲	▲	▲	▲	LED light package
		▲	▲		▲		Boom-light field kit (2 LED floods)
							Operator's Station
●	●	●	●	●	●	●	Modular-design ROPS/FOPS (Level 2) canopy with molded roof (meets ISO 3449 and ISO 3471/SAE J1040): Isolation mounted
●	●	●	●	●	●	●	Molded floor mats (with pilot controls only)
●	●	●	●	●	●	●	12-volt outlet
●	●	●	●	●	●	●	Lockable right-side storage
▲	▲	▲	▲	▲	▲	▲	Lockable left-hand storage with cup holders
▲	▲	▲	▲	▲	▲	▲	Interior front-view mirror
▲	▲	▲	▲	▲	▲	▲	Outside rearview mirrors
●	●	●	●	●	●	●	Rotary-dial hand throttle
●	●	●	●	●	●	●	Suspended foot throttle
●							Mechanical-suspension seat, vinyl cover
	●	●	●	●	●	●	Mechanical-suspension seat, cloth cover
▲	▲	▲	▲	▲	▲	▲	Air-suspension heated seat (with cab only)
▲	▲	▲	▲	▲	▲	▲	Air-suspension vinyl seat
●	●						Key start switch with electric fuel shutoff
●	●	●	●	●	●	●	Tilt steering, infinitely adjustable (with cab only)
▲	▲	▲	▲		▲	▲	Tilt steering, infinitely adjustable (with canopy and quarter cab)
		●	●	●	●	●	Keyless start
▲	▲	●	●	●	●	●	Machine security (enabled through monitor)
●	●	●	●	●	●	●	Digital display of engine hours, engine rpm, and system voltage
	●	●	●	●	●	●	Sealed-switch module (SSM)

310L EP	310L	310SL	HL	315SL	410L	710L	Operator's Station (continued)
		●	●	●	●	●	Multi-function lever: Turn signals / Windshield wipers / Some light functionality
●	●	●	●	●	●	●	Monitor system with audible and visual warnings: Engine air restriction / Low alternator voltage / Engine oil pressure / Hydraulic filter restriction / Parking brake on/off / Aftertreatment temperature / Transmission fluid temperature / Fuel / Hour meter / Machine diagnostic information via 4-push-button/LCD operator interface
●	●	●	●	●	●	●	Canopy: Mechanical-suspension deluxe vinyl swivel seat with lumbar adjustment and armrests (fully adjustable)
	▲	▲					Quarter Cab: Mechanical-suspension deluxe vinyl swivel seat with lumbar adjustment and armrests (fully adjustable), front windshield, and windshield wiper (1 front)
▲	▲	▲	▲	▲	▲	▲	Cab with Dual Doors and A/C: Mechanical-suspension deluxe fabric swivel seat with lumbar adjustment / Headliner, dome light, left and right cab doors, tinted safety glass, windshield wipers (1 rear and 1 front), front windshield washer, fresh-air intake, and heater/defroster/pressurizer (11.7-kW [40,000 Btu/h] heater) / A/C (7.6-kW [26,000 Btu/h] output and CFC-free R134a refrigerant)
▲	▲	▲	▲	▲	▲	▲	AM/FM/weather-band (WB) radio (with cab only)
▲	▲	▲	▲	▲	▲	▲	Premium radio package (with cab only; includes additional 12-volt and USB outlets)
							Overall Vehicle
●	●	●	●	●	●	●	1-piece unitized construction mainframe
●	●	●	●	●	●	●	Vehicle tie-downs (2 front and 2 rear)
●	●	●	●	●	●	●	Remote grease bank for front axle
●	●	●	●	●	●	●	Front bumper cover
▲	▲	▲	▲	▲	▲	▲	HD front bumper
▲	▲	▲	▲	▲	▲	●	Front counterweight – 204 kg (450 lb.), 272 kg (600 lb.), 340 kg (750 lb.), 454 kg (1,000 lb.), 567 kg (1,250 lb.), or 680 kg (1,500 lb.)
▲	▲	▲	▲	▲	▲		Rubber grille bumpers
●	●	●	●	●	●		Fuel tank, 128.71 L (34 gal.), ground-level fueling
						●	Fuel tank, 174.1 L (46 gal.), ground-level fueling
●	●	●	●	●	●	●	2-position easy-tilt hood
●	●	●	●	●	●	●	Extended grille frame
▲	●	●	●	●	●	●	Toolbox with padlock hasp
●	●	●	●	●	●	●	Vandal protection for locking monitor, engine hood, toolbox, hydraulic reservoir, and fuel tank
●	●	●	●	●	●	●	Reverse warning alarm
●	●	●	●	●	●	●	Dent-resistant full-coverage rear fenders
▲	▲	▲	▲	▲	▲	▲	Backhoe boom-protection plate
▲	●	●	●	●	●	●	JDLink™ wireless communication system (available in specific countries; see your dealer for details)
▲	▲	▲	▲	▲	▲		HD front grille screen
▲	▲	▲	▲	▲	▲	▲	HD stabilizer pads

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan at test conditions specified per ISO 9249. No derating is required up to 1500-mm (5,000 ft.) altitude for the 310L EP. Specifications and design are subject to change without notice. Wherever applicable, specifications are in accordance with ISO standards. Except where otherwise noted, these specifications are based on 310L EP and 310L units with 19.5L-24-in. 12PR (R4) tubeless rear and 12-16.5 12PR (F3) front tires, and 0.86-m³ (1.12 cu. yd.) loader buckets; a 310SL unit with 19.5L-24-in. 12PR (R4) tubeless rear and 12.5-80/18 10PR (R4) front tires, and 1.00-m³ (1.31 cu. yd.) loader bucket; a 310SL HL unit with lift mode, 19.5L-24-in. 12 PR (R4) tubeless rear and 12.5/80-18 12PR (R4) front tires, and 1.00-m³ (1.31 cu. yd.) loader bucket; a 315SL unit with 16.9L-28 R4 (I2) tubeless rear and 12.5-80-18 10PR (R4) front tires, and 1.00-m³ (1.31 cu. yd.) loader bucket; a 410L unit with 21L-24-in. 12PR (R4) tubeless rear and 12.5/80-18 10PR (R4) front tires, and 1.15-m³ (1.5 cu. yd.) loader bucket; and a 710L unit with 21L-28-in. 18PR (R4) tubeless rear and 15-19.5-in. 12PR (R4) front tires, and 1.24-m³ (1.62 cu. yd.) loader bucket.



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DKALBHL Litho in U.S.A. (20-10)

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

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

ARTICLE II

FUNCTIONS TO BE PERFORMED

A. RESPONSIBILITIES OF SSA

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

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by the Privacy Act (5 U.S.C. § 552a), the Social Security Act (42 U.S.C. 1306(a)), and SSA regulations (20 CFR Part 401).

4. SSA agrees to provide a means of automated verification that is designed (in conjunction with DHS's automated system if necessary) to provide confirmation or tentative nonconfirmation of U.S. citizens' employment eligibility within 3 Federal Government work days of the initial inquiry.

5. SSA agrees to provide a means of secondary verification (including updating SSA records as may be necessary) for employees who contest SSA tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of U.S. citizens' employment eligibility and accuracy of SSA records for both citizens and non-citizens within 10 Federal Government work days of the date of referral to SSA, unless SSA determines that more than 10 days may be necessary. In such cases, SSA will provide additional verification instructions.

B. RESPONSIBILITIES OF DHS

1. After SSA verifies the accuracy of SSA records for employees through E-Verify, DHS agrees to provide the Employer access to selected data from DHS's database to enable the Employer to conduct, to the extent authorized by this MOU:

- Automated verification checks on employees by electronic means, and
- Photo verification checks (when available) on employees.

2. DHS agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. DHS agrees to provide the Employer names, titles, addresses, and telephone numbers of DHS representatives to be contacted during the E-Verify process.

3. DHS agrees to make available to the Employer at the E-Verify Web site and on the E-Verify Web browser, instructional materials on E-Verify policies, procedures and requirements for both SSA and DHS, including restrictions on the use of E-Verify. DHS agrees to provide training materials on E-Verify.

4. DHS agrees to provide to the Employer a notice, which indicates the Employer's participation in the E-Verify program. DHS also agrees to provide to the Employer anti-discrimination notices issued by the Office of Special Counsel for Immigration-Related Unfair Employment Practices (OSC), Civil Rights Division, U.S. Department of Justice.

5. DHS agrees to issue the Employer a user identification number and password that permits the Employer to verify information provided by employees with DHS's database.

6. DHS agrees to safeguard the information provided to DHS by the Employer, and to limit access to such information to individuals responsible for the verification of employees' employment eligibility and for evaluation of the E-Verify program, or to such other persons or entities as may be authorized by applicable law. Information will be used only to verify the accuracy of Social Security Numbers and employment eligibility, to enforce the Immigration and

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Nationality Act (INA) and Federal criminal laws, and to administer Federal contracting requirements.

7. DHS agrees to provide a means of automated verification that is designed (in conjunction with SSA verification procedures) to provide confirmation or tentative nonconfirmation of employees' employment eligibility within 3 Federal Government work days of the initial inquiry.

8. DHS agrees to provide a means of secondary verification (including updating DHS records as may be necessary) for employees who contest DHS tentative nonconfirmations and photo non-match tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of the employees' employment eligibility within 10 Federal Government work days of the date of referral to DHS, unless DHS determines that more than 10 days may be necessary. In such cases, DHS will provide additional verification instructions.

C. RESPONSIBILITIES OF THE EMPLOYER

1. The Employer agrees to display the notices supplied by DHS in a prominent place that is clearly visible to prospective employees and all employees who are to be verified through the system.

2. The Employer agrees to provide to the SSA and DHS the names, titles, addresses, and telephone numbers of the Employer representatives to be contacted regarding E-Verify.

3. The Employer agrees to become familiar with and comply with the most recent version of the E-Verify User Manual.

4. The Employer agrees that any Employer Representative who will perform employment verification queries will complete the E-Verify Tutorial before that individual initiates any queries.

A. The Employer agrees that all Employer representatives will take the refresher tutorials initiated by the E-Verify program as a condition of continued use of E-Verify.

B. Failure to complete a refresher tutorial will prevent the Employer from continued use of the program.

5. The Employer agrees to comply with current Form I-9 procedures, with two exceptions:

- If an employee presents a "List B" identity document, the Employer agrees to only accept "List B" documents that contain a photo. (List B documents identified in 8 C.F.R. § 274a.2(b)(1)(B)) can be presented during the Form I-9 process to establish identity.) If an employee objects to the photo requirement for religious reasons, the Employer should contact E-Verify at 888-454-4218.

- If an employee presents a DHS Form I-551 (Permanent Resident Card) or Form I-766 (Employment Authorization Document) to complete the Form I-9, the Employer agrees to make a photocopy of the document and to retain the photocopy with the employee's Form I-9. The photocopy must be of sufficient quality to allow for verification of the photo

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and written information. The employer will use the photocopy to verify the photo and to assist DHS with its review of photo non-matches that are contested by employees. Note that employees retain the right to present any List A, or List B and List C, documentation to complete the Form I-9. DHS may in the future designate other documents that activate the photo screening tool.

6. The Employer understands that participation in E-Verify does not exempt the Employer from the responsibility to complete, retain, and make available for inspection Forms I-9 that relate to its employees, or from other requirements of applicable regulations or laws, including the obligation to comply with the antidiscrimination requirements of section 274B of the INA with respect to Form I-9 procedures, except for the following modified requirements applicable by reason of the Employer's participation in E-Verify: (1) identity documents must have photos, as described in paragraph 5 above; (2) a rebuttable presumption is established that the Employer has not violated section 274A(a)(1)(A) of the Immigration and Nationality Act (INA) with respect to the hiring of any individual if it obtains confirmation of the identity and employment eligibility of the individual in good faith compliance with the terms and conditions of E-Verify; (3) the Employer must notify DHS if it continues to employ any employee after receiving a final nonconfirmation, and is subject to a civil money penalty between \$550 and \$1,100 for each failure to notify DHS of continued employment following a final nonconfirmation; (4) the Employer is subject to a rebuttable presumption that it has knowingly employed an unauthorized alien in violation of section 274A(a)(1)(A) if the Employer continues to employ an employee after receiving a final nonconfirmation; and (5) no person or entity participating in E-Verify is civilly or criminally liable under any law for any action taken in good faith based on information provided through the confirmation system. DHS reserves the right to conduct Form I-9 and E-Verify system compliance inspections during the course of E-Verify, as well as to conduct any other enforcement activity authorized by law.

7. The Employer agrees to initiate E-Verify verification procedures for new employees within 3 Employer business days after each employee has been hired (but after the Form I-9 has been completed), and to complete as many (but only as many) steps of the E-Verify process as are necessary according to the E-Verify User Manual, or in the case of Federal contractors with the FAR E-Verify clause, the E-Verify User Manual for Federal Contractors. The Employer is prohibited from initiating verification procedures before the employee has been hired and the Form I-9 completed. If the automated system to be queried is temporarily unavailable, the 3-day time period is extended until it is again operational in order to accommodate the Employer's attempting, in good faith, to make inquiries during the period of unavailability. Employers may initiate verification by notating the Form I-9 in circumstances where the employee has applied for a Social Security Number (SSN) from the SSA and is waiting to receive the SSN, provided that the Employer performs an E-Verify employment verification query using the employee's SSN as soon as the SSN becomes available.

8. The Employer agrees not to use E-Verify procedures for pre-employment screening of job applicants, in support of any unlawful employment practice, or for any other use not authorized by this MOU. Employers must use E-Verify for all new employees, unless an Employer is a Federal contractor that qualifies for the exceptions described in Article II.D.1.c. Except as provided in Article II.D, the Employer will not verify selectively and will not verify employees hired before the effective date of this MOU. The Employer understands that if the Employer

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uses the E-Verify system for any purpose other than as authorized by this MOU, the Employer may be subject to appropriate legal action and termination of its access to SSA and DHS information pursuant to this MOU.

9. The Employer agrees to follow appropriate procedures (see Article III. below) regarding tentative nonconfirmations, including notifying employees in private of the finding and providing them written notice of the findings, providing written referral instructions to employees, allowing employees to contest the finding, and not taking adverse action against employees if they choose to contest the finding. Further, when employees contest a tentative nonconfirmation based upon a photo non-match, the Employer is required to take affirmative steps (see Article III.B. below) to contact DHS with information necessary to resolve the challenge.

10. The Employer agrees not to take any adverse action against an employee based upon the employee's perceived employment eligibility status while SSA or DHS is processing the verification request unless the Employer obtains knowledge (as defined in 8 C.F.R. § 274a.1(l)) that the employee is not work authorized. The Employer understands that an initial inability of the SSA or DHS automated verification system to verify work authorization, a tentative nonconfirmation, a case in continuance (indicating the need for additional time for the government to resolve a case), or the finding of a photo non-match, does not establish, and should not be interpreted as evidence, that the employee is not work authorized. In any of the cases listed above, the employee must be provided a full and fair opportunity to contest the finding, and if he or she does so, the employee may not be terminated or suffer any adverse employment consequences based upon the employee's perceived employment eligibility status (including denying, reducing, or extending work hours, delaying or preventing training, requiring an employee to work in poorer conditions, refusing to assign the employee to a Federal contract or other assignment, or otherwise subjecting an employee to any assumption that he or she is unauthorized to work) until and unless secondary verification by SSA or DHS has been completed and a final nonconfirmation has been issued. If the employee does not choose to contest a tentative nonconfirmation or a photo non-match or if a secondary verification is completed and a final nonconfirmation is issued, then the Employer can find the employee is not work authorized and terminate the employee's employment. Employers or employees with questions about a final nonconfirmation may call E-Verify at 1-888-464-4218 or OSC at 1-800-255-8155 or 1-800-237-2515 (TDD).

11. The Employer agrees to comply with Title VII of the Civil Rights Act of 1964 and section 274B of the INA, as applicable, by not discriminating unlawfully against any individual in hiring, firing, or recruitment or referral practices because of his or her national origin or, in the case of a protected individual as defined in section 274B(a)(3) of the INA, because of his or her citizenship status. The Employer understands that such illegal practices can include selective verification or use of E-Verify except as provided in part D below, or discharging or refusing to hire employees because they appear or sound "foreign" or have received tentative nonconfirmations. The Employer further understands that any violation of the unfair immigration-related employment practices provisions in section 274B of the INA could subject the Employer to civil penalties, back pay awards, and other sanctions, and violations of Title VII could subject the Employer to back pay awards, compensatory and punitive damages. Violations of either section 274B of the INA or Title VII may also lead to the termination of its participation in E-

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Verify. If the Employer has any questions relating to the anti-discrimination provision, it should contact OSC at 1-800-255-8155 or 1-800-237-2515 (TDD).

12. The Employer agrees to record the case verification number on the employee's Form I-9 or to print the screen containing the case verification number and attach it to the employee's Form I-9.

13. The Employer agrees that it will use the information it receives from SSA or DHS pursuant to E-Verify and this MOU only to confirm the employment eligibility of employees as authorized by this MOU. The Employer agrees that it will safeguard this information, and means of access to it (such as PINS and passwords) to ensure that it is not used for any other purpose and as necessary to protect its confidentiality, including ensuring that it is not disseminated to any person other than employees of the Employer who are authorized to perform the Employer's responsibilities under this MOU, except for such dissemination as may be authorized in advance by SSA or DHS for legitimate purposes.

14. The Employer acknowledges that the information which it receives from SSA is governed by the Privacy Act (5 U.S.C. § 552a(i)(1) and (3)) and the Social Security Act (42 U.S.C. 1306(a)), and that any person who obtains this information under false pretenses or uses it for any purpose other than as provided for in this MOU may be subject to criminal penalties.

15. The Employer agrees to cooperate with DHS and SSA in their compliance monitoring and evaluation of E-Verify, including by permitting DHS and SSA, upon reasonable notice, to review Forms I-9 and other employment records and to interview it and its employees regarding the Employer's use of E-Verify, and to respond in a timely and accurate manner to DHS requests for information relating to their participation in E-Verify.

D. RESPONSIBILITIES OF FEDERAL CONTRACTORS WITH THE FAR E-VERIFY CLAUSE

1. The Employer understands that if it is a subject to the employment verification terms in Subpart 22.18 of the FAR, it must verify the employment eligibility of any existing employee assigned to the contract and all new hires, as discussed in the Supplemental Guide for Federal Contractors. Once an employee has been verified through E-Verify by the Employer, the Employer may not reverify the employee through E-Verify.

a. Federal contractors with the FAR E-Verify clause agree to become familiar with and comply with the most recent versions of the E-Verify User Manual for Federal Contractors and the E-Verify Supplemental Guide for Federal Contractors.

b. Federal contractors with the FAR E-Verify clause agree to complete a tutorial for Federal contractors with the FAR E-Verify clause.

c. Federal contractors with the FAR E-Verify clause not enrolled at the time of contract award: An Employer that is not enrolled in E-Verify at the time of a contract award must enroll as a Federal contractor with the FAR E-Verify clause in E-Verify within 30 calendar days of contract award and, within 90 days of enrollment, begin to use E-Verify to initiate verification of employment eligibility of new hires of the Employer who are working in the United States,

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whether or not assigned to the contract. Once the Employer begins verifying new hires, such verification of new hires must be initiated within 3 business days after the date of hire. Once enrolled in E-Verify as a Federal contractor with the FAR E-Verify clause, the Employer must initiate verification of employees assigned to the contract within 90 calendar days from the time of enrollment in the system and after the date and selecting which employees will be verified in E-Verify or within 30 days of an employee's assignment to the contract, whichever date is later.

d. Employers that are already enrolled in E-Verify at the time of a contract award but are not enrolled in the system as a Federal contractor with the FAR E-Verify clause: Employers enrolled in E-Verify for 90 days or more at the time of a contract award must use E-Verify to initiate verification of employment eligibility for new hires of the Employer who are working in the United States, whether or not assigned to the contract, within 3 business days after the date of hire. Employers enrolled in E-Verify as other than a Federal contractor with the FAR E-Verify clause, must update E-Verify to indicate that they are a Federal contractor with the FAR E-Verify clause within 30 days after assignment to the contract. If the Employer is enrolled in E-Verify for 90 calendar days or less at the time of contract award, the Employer must, within 90 days of enrollment, begin to use E-Verify to initiate verification of new hires of the contractor who are working in the United States, whether or not assigned to the contract. Such verification of new hires must be initiated within 3 business days after the date of hire. An Employer enrolled as a Federal contractor with the FAR E-Verify clause in E-Verify must initiate verification of each employee assigned to the contract within 90 calendar days after date of contract award or within 30 days after assignment to the contract, whichever is later.

e. Institutions of higher education, State, local and tribal governments and sureties: Federal contractors with the FAR E-Verify clause that are institutions of higher education (as defined at 20 U.S.C. 1001(a)), State or local governments, governments of Federally recognized Indian tribes, or sureties performing under a takeover agreement entered into with a Federal agency pursuant to a performance bond may choose to only verify new and existing employees assigned to the Federal contract. Such Federal contractors with the FAR E-Verify clause may, however, elect to verify all new hires, and/or all existing employees hired after November 6, 1986. The provisions of Article II.D, paragraphs 1.a and 1.b of this MOU providing timeframes for initiating employment verification of employees assigned to a contract apply to such institutions of higher education, State, local and tribal governments, and sureties.

f. Verification of all employees: Upon enrollment, Employers who are Federal contractors with the FAR E-Verify clause may elect to verify employment eligibility of all existing employees working in the United States who were hired after November 6, 1986, instead of verifying only new employees and those existing employees assigned to a covered Federal contract. After enrollment, Employers must elect to do so only in the manner designated by DHS and initiate E-Verify verification of all existing employees within 180 days after the election.

g. Form I-9 procedures for existing employees of Federal contractors with the FAR E-Verify clause: Federal contractors with the FAR E-Verify clause may choose to complete new Forms I-9 for all existing employees other than those that are completely exempt from this process. Federal contractors with the FAR E-Verify clause may also update previously completed Forms I-9 to initiate E-Verify verification of existing employees who are not completely exempt as long as that Form I-9 is complete (including the SSN), complies with

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Article II.C.5, the employee's work authorization has not expired, and the Employer has reviewed the information reflected in the Form I-9 either in person or in communications with the employee to ensure that the employee's stated basis in section 1 of the Form I-9 for work authorization has not changed (including, but not limited to, a lawful permanent resident alien having become a naturalized U.S. citizen). If the Employer is unable to determine that the Form I-9 complies with Article II.C.5, if the employee's basis for work authorization as attested in section 1 has expired or changed, or if the Form I-9 contains no SSN or is otherwise incomplete, the Employer shall complete a new I-9 consistent with Article II.C.5, or update the previous I-9 to provide the necessary information. If section 1 of the Form I-9 is otherwise valid and up-to-date and the form otherwise complies with Article II.C.5, but reflects documentation (such as a U.S. passport or Form I-551) that expired subsequent to completion of the Form I-9, the Employer shall not require the production of additional documentation, or use the photo screening tool described in Article II.C.5, subject to any additional or superseding instructions that may be provided on this subject in the Supplemental Guide for Federal Contractors. Nothing in this section shall be construed to require a second verification using E-Verify of any assigned employee who has previously been verified as a newly hired employee under this MOU, or to authorize verification of any existing employee by any Employer that is not a Federal contractor with the FAR E-Verify clause.

2. The Employer understands that if it is a Federal contractor with the FAR E-Verify clause, its compliance with this MOU is a performance requirement under the terms of the Federal contract or subcontract, and the Employer consents to the release of information relating to compliance with its verification responsibilities under this MOU to contracting officers or other officials authorized to review the Employer's compliance with Federal contracting requirements.

ARTICLE III

REFERRAL OF INDIVIDUALS TO SSA AND DHS

A. REFERRAL TO SSA

1. If the Employer receives a tentative nonconfirmation issued by SSA, the Employer must print the notice as directed by the E-Verify system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation. The Employer must review the tentative nonconfirmation with the employee in private.

2. The Employer will refer employees to SSA field offices only as directed by the automated system based on a tentative nonconfirmation, and only after the Employer records the case verification number, reviews the input to detect any transaction errors, and determines that the employee contests the tentative nonconfirmation. The Employer will transmit the Social Security Number to SSA for verification again if this review indicates a need to do so. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

3. If the employee contests an SSA tentative nonconfirmation, the Employer will provide the employee with a system-generated referral letter and instruct the employee to visit an SSA office within 8 Federal Government work days. SSA will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it

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determines that more than 10 days is necessary. The Employer agrees to check the E-Verify system regularly for case updates.

4. The Employer agrees not to ask the employee to obtain a printout from the Social Security Number database (the Numident) or other written verification of the Social Security Number from the SSA.

B. REFERRAL TO DHS

1. If the Employer receives a tentative nonconfirmation issued by DHS, the Employer must print the tentative nonconfirmation notice as directed by the E-Verify system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation. The Employer must review the tentative nonconfirmation with the employee in private.

2. If the Employer finds a photo non-match for an employee who provides a document for which the automated system has transmitted a photo, the employer must print the photo non-match tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the finding. The Employer must review the tentative nonconfirmation with the employee in private.

3. The Employer agrees to refer individuals to DHS only when the employee chooses to contest a tentative nonconfirmation received from DHS automated verification process or when the Employer issues a tentative nonconfirmation based upon a photo non-match. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

4. If the employee contests a tentative nonconfirmation issued by DHS, the Employer will provide the employee with a referral letter and instruct the employee to contact DHS through its toll-free hotline (as found on the referral letter) within 8 Federal Government work days.

5. If the employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will provide the employee with a referral letter to DHS. DHS will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary. The Employer agrees to check the E-Verify system regularly for case updates.

6. The Employer agrees that if an employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will send a copy of the employee's Form I-551 or Form I-766 to DHS for review by:

- Scanning and uploading the document, or
- Sending a photocopy of the document by an express mail account (paid for at employer expense).

7. If the Employer determines that there is a photo non-match when comparing the photocopied List B document described in Article II.C.5 with the image generated in E-Verify, the Employer must forward the employee's documentation to DHS using one of the means described in the preceding paragraph, and allow DHS to resolve the case.

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ARTICLE IV

SERVICE PROVISIONS

SSA and DHS will not charge the Employer for verification services performed under this MOU. The Employer is responsible for providing equipment needed to make inquiries. To access E-Verify, an Employer will need a personal computer with Internet access.

ARTICLE V

PARTIES

A. This MOU is effective upon the signature of all parties, and shall continue in effect for as long as the SSA and DHS conduct the E-Verify program unless modified in writing by the mutual consent of all parties, or terminated by any party upon 30 days prior written notice to the others. Any and all system enhancements to the E-Verify program by DHS or SSA, including but not limited to the E-Verify checking against additional data sources and instituting new verification procedures, will be covered under this MOU and will not cause the need for a supplemental MOU that outlines these changes. DHS agrees to train employers on all changes made to E-Verify through the use of mandatory refresher tutorials and updates to the E-Verify User Manual, the E-Verify User Manual for Federal Contractors or the E-Verify Supplemental Guide for Federal Contractors. Even without changes to E-Verify, DHS reserves the right to require employers to take mandatory refresher tutorials. An Employer that is a Federal contractor with the FAR E-Verify clause may terminate this MOU when the Federal contract that requires its participation in E-Verify is terminated or completed. In such a circumstance, the Federal contractor with the FAR E-Verify clause must provide written notice to DHS. If an Employer that is a Federal contractor with the FAR E-Verify clause fails to provide such notice, that Employer will remain a participant in the E-Verify program, will remain bound by the terms of this MOU that apply to participants that are not Federal contractors with the FAR E-Verify clause, and will be required to use the E-Verify procedures to verify the employment eligibility of all newly hired employees.

B. Notwithstanding Article V, part A of this MOU, DHS may terminate this MOU if deemed necessary because of the requirements of law or policy, or upon a determination by SSA or DHS that there has been a breach of system integrity or security by the Employer, or a failure on the part of the Employer to comply with established procedures or legal requirements. The Employer understands that if it is a Federal contractor with the FAR E-Verify clause, termination of this MOU by any party for any reason may negatively affect its performance of its contractual responsibilities.

C. Some or all SSA and DHS responsibilities under this MOU may be performed by contractor(s), and SSA and DHS may adjust verification responsibilities between each other as they may determine necessary. By separate agreement with DHS, SSA has agreed to perform its responsibilities as described in this MOU.

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D. Nothing in this MOU is intended, or should be construed, to create any right or benefit, substantive or procedural, enforceable at law by any third party against the United States, its agencies, officers, or employees, or against the Employer, its agents, officers, or employees.

E. Each party shall be solely responsible for defending any claim or action against it arising out of or related to E-Verify or this MOU, whether civil or criminal, and for any liability wherefrom, including (but not limited to) any dispute between the Employer and any other person or entity regarding the applicability of Section 403(d) of IIRIRA to any action taken or allegedly taken by the Employer.

F. The Employer understands that the fact of its participation in E-Verify is not confidential information and may be disclosed as authorized or required by law and DHS or SSA policy, including but not limited to, Congressional oversight, E-Verify publicity and media inquiries, determinations of compliance with Federal contractual requirements, and responses to inquiries under the Freedom of Information Act (FOIA).

G. The foregoing constitutes the full agreement on this subject between DHS and the Employer.

H. The individuals whose signatures appear below represent that they are authorized to enter into this MOU on behalf of the Employer and DHS respectively.



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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 **Warrior Tractor & Equipment Co., Inc.**

Stanley McCracken

Name (Please Type or Print)

Title

Electronically Signed

03/01/2012

Signature

Date

Department of Homeland Security – Verification Division

USCIS Verification Division

Name (Please Type or Print)

Title

Electronically Signed

03/01/2012

Signature

Date

Information Required for the E-Verify Program

Information relating to your Company:

Company Name:	Warrior Tractor & Equipment Co., Inc.
Company Facility Address:	6801 McFarland Blvd
	Northport, AL 35476
Company Alternate Address:	P O Box 412
	Northport, AL 35476
County or Parish:	TUSCALOOSA
Employer Identification Number:	630588737



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North American Industry Classification Systems Code:	423
Administrator:	Warrior Tractor and Equipment Co., Inc.
Number of Employees:	100 to 499
Number of Sites Verified for:	1
Are you verifying for more than 1 site? If yes, please provide the number of sites verified for in each State:	
<ul style="list-style-type: none">• ALABAMA 1 site(s)	

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

Name:	Stanley N McCracken		
Telephone Number:	(205) 339 - 0300	Fax Number:	(205) 333 - 0101
E-mail Address:	wte024@warriortractor.com		