


RECEIVED

2020 DEC -8 PM 1:09


WV PURCHASING  
DIVISION

**VENDOR:** Leslie Equipment Co. **Class 352**

Item No.	Description:	Model & Part Number Being Bid	Estimated Quantity	Unit Price	Item Total Cost
1	Four wheel drive John Deere Loader/Backhoe	310 SL	10	\$ 73,839. <sup>00</sup>	\$ 738,390. <sup>00</sup>
<b>Total Bid Cost</b>					\$ 738,390. <sup>00</sup>

**Bid Will Be Awarded To The Lowest Overall Bid Total For All Items**

**Vendor Information**

<b>Company Name:</b>	Leslie Equipment Co.
<b>Contact Manager:</b>	Paul Daniels
<b>Address:</b>	19 Goff Crossing Drive Cross Lanes WV 25313
<b>Phone:</b>	304-204-1818
<b>Fax:</b>	304-204-1811
<b>E-mail:</b>	daniels.paul@lec1.com
<b>Signature:</b>	

STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

**CONSTRUCTION CONTRACTS:** Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

**ALL CONTRACTS:** Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

**EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

**DEFINITIONS:**

**"Debt"** means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

**"Employer default"** means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

**"Related party"** means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

**AFFIRMATION:** By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code §61-5-3*) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: Leslie Equipment Co.

Authorized Signature: [Signature] Date: 11-23-2020

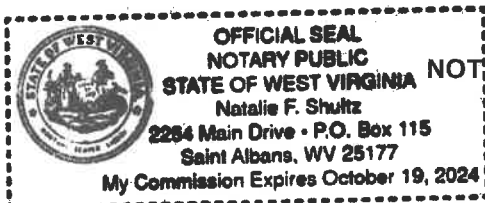
State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 7<sup>th</sup> day of December, 2020.

My Commission expires October 19, 2024

AFFIX SEAL HERE



NOTARY PUBLIC

[Signature]

West Virginia Ethics Commission  
**Disclosure of Interested Parties to Contracts**

(Required by W. Va. Code § 6D-1-2)

Name of Contracting Business Entity: Leslie Equipment Co. Address: 19 Goff Crossing Drive  
Cross Lanes WV 25313

Name of Authorized Agent: Paul Daniels Address: 19 Goff Crossing Drive Cross Lanes WV  
25313

Contract Number: NOT 2100000047 Contract Description: 4 Wheel Drive loader/Backhoe

Governmental agency awarding contract: \_\_\_\_\_

Check here if this is a Supplemental Disclosure

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below (attach additional pages if necessary):

**1. Subcontractors or other entities performing work or service under the Contract**

Check here if none, otherwise list entity/individual names below.

**2. Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**

Check here if none, otherwise list entity/individual names below.

John D Leslie

**3. Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**

Check here if none, otherwise list entity/individual names below.

Signature: 

Date Signed: 11-23-2020

**Notary Verification**

State of West Virginia, County of Kanawha:

I, Paul Daniels, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 7<sup>th</sup> day of December 2020.

Natalie F. Shultz

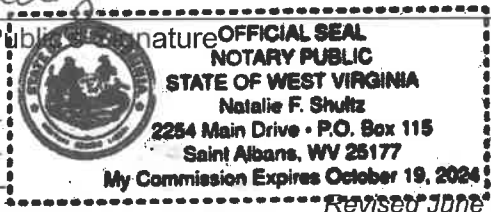
Notary Public Signature

**To be completed by State Agency:**

Date Received by State Agency: \_\_\_\_\_

Date submitted to Ethics Commission: \_\_\_\_\_

Governmental agency submitting Disclosure: \_\_\_\_\_





Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Centralized Request for Quote  
 Equipment

<b>Proc Folder:</b> 789505			<b>Reason for Modification:</b> Addendum No.3 - Vendor Questions and response
<b>Doc Description:</b> ADDENDUM NO.3 Class 352 4 Wheel Drive Loader/Backhoe			
<b>Proc Type:</b> Central Master Agreement			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2020-12-01	2020-12-08 13:30	CRFQ 0803 DOT2100000047	4

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:**

**Vendor Name:** *Leslie Equipment Co.*

**Address:** *19 Goff Crossing Drive*

**Street:**


**City:** *Cross Lane S*

**State:** *WV*                      **Country:** *us*                      **Zip:** *25313*

**Principal Contact:** *Paul Daniels*

**Vendor Contact Phone:** *304-204-1818*                      **Extension:**

**FOR INFORMATION CONTACT THE BUYER**  
 John W Estep  
 304-558-2566  
 john.w.estep@wv.gov

**Vendor Signature X**                       **FEIN#** *55-0493180*                      **DATE** *12-1-2020*

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION****ADDENDUM NO.3**

Addendum No.3 issued to publish and distribute the attached information to the Vendor Community.

**REQUEST FOR QUOTATION**

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Division of Highways to establish an open-end contract for an Four Wheel Drive Loader with Backhoe. Per the bid requirements, specifications, terms and conditions attached to this solicitation.

INVOICE TO	SHIP TO
DIVISION OF HIGHWAYS EQUIPMENT DIVISION RT 33 83 BRUSHY ROAD CROSSING, PO BOX 610 BUCKHANNON WV 26201 US	DIVISION OF HIGHWAYS EQUIPMENT DIVISION 83 BRUSHY FORK RD CROSSING BUCKHANNON WV 26201 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	class 352 4 wheel drive loader/backhoe	10.00000	EA	\$ 73,839	\$ 738,390 <sup>00</sup>

Comm Code	Manufacturer	Specification	Model #
22101509	John Deere	4 Wheel Drive Loader/Backhoe	3105L

**Extended Description:**

Class 352 4 wheel drive loader/backhoe

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	Pre-Bid Meeting at 10:00am	2020-11-12
2	Tech Questions by 10:00am	2020-11-17

	Document Phase	Document Description	Page
DOT210000047	Draft	ADDENDUM NO.3 Class 352 4 Wheel Drive Loader/Backhoe	3

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

# SOLICITATION NUMBER: CRFQ DOT2100000047

## Addendum Number: 3

The purpose of this addendum is to modify the solicitation identified as CRFQ DOT2100000047 ("Solicitation") to reflect the change(s) identified and described below.

### Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other-

### Additional Documentation:

1. Bid Opening remains 12/08/20 at 1:30pm

### Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

**ADDENDUM FOR PRE-BID**

**CRFQ 0803 DOT2100000047**

**4 Wheel Drive Loader/Backhoe**

**The original language in contract will be listed first with question and answer to follow below.**

**1. 3.1.2.3 SAE Net Horsepower shall be 95 net minimum**

**Question # 1: We would like to request to lower it to 93 hp net minimum.**

**Question # 2: Can the HP be reduced to net 92 minimum.**

**Answer: Question 1. No. Leave as written**

**2. 3.1.3.1 Transmission speeds shall be four (4) forward fully synchronized; four (4) reverse minimum.**

**Question: Will you accept 5 forward/3 reverse?**

**Answer: Will accept either**

**3. 3.1.3.3 Shall have foot operated automatic release, rear axle differential lock engageable under full engine RPM required.**

**Question # 1: Caterpillar has moved the differential lock from a foot operated pedal to a button on the loader joystick. This brings controllability to the operator's fingertips. We would like to request changing the spec to allow foot or joystick operated differential lock.**

**Question # 2: Can the diff lock button be on the control lever? (Cat's diff lock is not on the floor anymore)**

**Answer: Will accept either**

**4. 3.1.7.3 Shall be equipped with two batteries and shall be maintenance free type and provide a cold-crank amps of 850 (minimum) each at zero degrees.**

**Question: Our unit comes standard with one battery that provides a cold-crank amps of 880 at zero degrees. That is what the manufacturer deems necessary for this machine. We would like to request that you allow one battery as long as it meets the cold-crank amp requirement.**



**Answer: No. Leave as written**

**5. 3.1.9.6 Unit shall provide front and rear windshield wipers with washers.**

**Question: Will you accept front and rear wiper/washer on front only?**

**Answer: Will accept either**

**6. 3.1.11.12 Unit shall have left and right side and inside rear-view mirrors.**

**Question: Will you accept left and right side exterior mirrors for better view then the inside request?**

**Answer: Unit shall have exterior left, right and interior rear-view mirrors.**

**7. 3.1.16.1 Unit shall have a digging depth of at least 14 feet 4 inches minimum.**

**Question: Will you accept 14 feet 3 inches?**

**Answer: No. Leave as written**

**8. 3.1.16.5 Provisions shall be made for quick-coupling hydraulic tools, (i.e. road breakers, jack hammers, etc.) to the unit hydraulic system.**

**Question # 1: We just want to clarify that you are requesting that the backhoe have a pin grabber type quick coupler.**

**Question # 2: Are you looking to have a quick coupler included?**

**Answer: Unit bid shall have a backhoe bucket quick coupler and hydraulic quick coupler fittings for quick hammer attachments.**

**9. 3.1.17.1 Shall have an operating weight of 19,000 pounds minimum exclusive of tire ballast and/or counterweights.**

**Question # 1: We would like to ask DOH to revisit this spec. As it's written, we don't think any of the manufacturers will meet this, even the Case 580 Super N that the spec is written around (according to their spec, the 580 Super N is 19,067 pounds with a 4-in-1 bucket and e-stick which weren't specified by DOH, as well as having their "big front counterweight"). If left as written to exclude the**

tire ballast and counterweights, we would ask that the minimum weight be reduced to 17,800 pounds.

**Question # 2:** Will you accept 16,937 excluding counterweights?

**Answer:** WVDOH will change to read operating weight shall be minimum 17,500 pounds

**10. 3.1.19.1** Unit shall have a minimum one-year unlimited hour full parts and service coverage.

**Question:** Will you accept a minimum one-year unlimited hour full parts and labor coverage?

**Answer:** Will accept

**11. 3.1.19.2** Unit shall have a minimum two-year 2000 hour parts and service engine warranty.

**Question:** Will you accept a minimum two-year 2000 hour parts and labor engine warranty?

**Answer:** Will accept

**12. 6.1 Delivery Time:** A completed pilot model for inspection must be provided within 30 working day(s) after receipt of the pilot model order, by the successful vendor. Vendor shall deliver standard orders within 90 working days after orders are received Working day is defined as any week day, Monday thru Friday, excluding Federal and State Holidays. Vendor shall ship all orders until a minimum delivery quantity is met.

**Question # 1:** Due to current supply chain constraints related to Covid-19, we would like to request that the delivery requirements be extended to 120 days for the pilot model and 150 days for the standard delivery orders.

**Question # 2:** Can the pilot machine delivery be 90 days or more. (vs 30) and delivery of the final 9 units, could be more than 90 days.

**Answer:** WVDOH will change to read provide the pilot within 120 days and the remaining order 150 days.

**13. Question: When referring to "standard" boom, does that mean a extendable boom?**

**Answer: No. extendable boom will not be accepted.**

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CRFQ DOT210000047**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input type="checkbox"/> Addendum No. 1            | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2            | <input type="checkbox"/> Addendum No. 7  |
| <input checked="" type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

\_\_\_\_\_  
*Leslie Equipment Co.*  
Company

\_\_\_\_\_  
*[Signature]*  
Authorized Signature

\_\_\_\_\_  
*10-1-2020*  
Date

**NOTE:** This addendum acknowledgment should be submitted with the bid to expedite document processing.



Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Centralized Request for Quote  
 Equipment

<b>Proc Folder:</b> 789505			<b>Reason for Modification:</b> Addendum No.2 to change Bid Opening Date
<b>Doc Description:</b> ADDENDUM NO.2 Class 352 4 Wheel Drive Loader/Backhoe			
<b>Proc Type:</b> Central Master Agreement			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2020-11-20	2020-12-08 13:30	CRFQ 0803 DOT2100000047	3

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

Vendor Customer Code:  
 Vendor Name: *Leslie Equipment Co*  
 Address:  
 Street: *19 Goff Crossing Drive*  
 City: *Cross Lanes*  
 State: *WV* Country: *US* Zip: *25313*  
 Principal Contact: *Paul Daniels*  
 Vendor Contact Phone: *304-204-1818* Extension:

**FOR INFORMATION CONTACT THE BUYER**  
 John W Estep  
 304-558-2566  
 john.w.estep@wv.gov

Vendor Signature X  FEIN# *55-0493180* DATE *11-23-2020*

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION****ADDENDUM NO.2**

Addendum No.2 issued to publish and distribute the attached information to the Vendor Community.

**REQUEST FOR QUOTATION**

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Division of Highways to establish an open-end contract for an Four Wheel Drive Loader with Backhoe. Per the bid requirements, specifications, terms and conditions attached to this solicitation.

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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	class 352 4 wheel drive loader/backhoe	10.00000	EA	<i># 73,839<sup>00</sup></i>	<i># 738,390<sup>00</sup></i>

Comm Code	Manufacturer	Specification	Model #
22101509	<i>John Deere</i>	<i>4 Wheel Drive loader/Backhoe</i>	<i>310 SL</i>

**Extended Description:**

Class 352 4 wheel drive loader/backhoe

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	Pre-Bid Meeting at 10:00am	2020-11-12
2	Tech Questions by 10:00am	2020-11-17

	Document Phase	Document Description	Page
DOT2100000047	Draft	ADDENDUM NO.2 Class 352 4 Wheel Drive Loader/Backhoe	3

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

**SOLICITATION NUMBER: CRFQ DOT2100000047**

**Addendum Number: 2**

The purpose of this addendum is to modify the solicitation identified as CRFQ DOT2100000047 ("Solicitation") to reflect the change(s) identified and described below.

**Applicable Addendum Category:**

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other-

**Additional Documentation:**

1. Bid Opening moves to 12/08/20 at 1:30pm

**Terms and Conditions:**

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.



**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CRFQ DOT2100000047**

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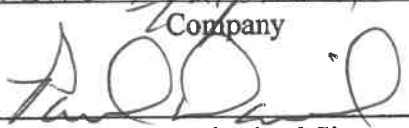
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Leslie Equipment Co.  
Company  
  
Authorized Signature  
11-23-2020  
Date

**NOTE:** This addendum acknowledgement should be submitted with the bid to expedite document processing.



Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Centralized Request for Quote  
 Equipment

<b>Proc Folder:</b> 789505			<b>Reason for Modification:</b>
<b>Doc Description:</b> Class 352 4 Wheel Drive Loader/Backhoe			
<b>Proc Type:</b> Central Master Agreement			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2020-11-05	2020-11-24 13:30	CRFQ 0803 DOT2100000047	1

**BID RECEIVING LOCATION**


BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:**  
**Vendor Name:** *Leslie Equipment Co.*  
**Address:** *19 Goff Crossing Drive*  
**Street:**  
**City:** *Cross Lanes*  
**State:** *WV* **Country:** *us* **Zip:** *25313*  
**Principal Contact:** *Paul Daniels*  
**Vendor Contact Phone:** *304-204-1818* **Extension:**

**FOR INFORMATION CONTACT THE BUYER**

John W Estep  
 (304) 558-7839  
 john.w.estep@wv.gov

**Vendor Signature X**  **FEIN#** *55-0493180* **DATE** *11-23-2020*

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION****REQUEST FOR QUOTATION**

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Division of Highways to establish an open-end contract for an Four Wheel Drive Loader with Backhoe. Per the bid requirements, specifications, terms and conditions attached to this solicitation.

INVOICE TO	SHIP TO
DIVISION OF HIGHWAYS EQUIPMENT DIVISION RT 33 83 BRUSHY ROAD CROSSING, PO BOX 610 BUCKHANNON WV 26201 US	DIVISION OF HIGHWAYS EQUIPMENT DIVISION 83 BRUSHY FORK RD CROSSING BUCKHANNON WV 26201 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
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Comm Code	Manufacturer	Specification	Model #
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**Extended Description:**

Class 352 4 wheel drive loader/backhoe

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	Pre-Bid Meeting at 10:00am	2020-11-12
2	Tech Questions by 10:00am	2020-11-17

	Document Phase	Document Description	Page
DOT2100000047	Final	Class 352 4 Wheel Drive Loader/ Backhoe	3

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

## **INSTRUCTIONS TO VENDORS SUBMITTING BIDS**

**1. REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

**2. MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

**3. PREBID MEETING:** The item identified below shall apply to this Solicitation.

A pre-bid meeting will not be held prior to bid opening

A **MANDATORY PRE-BID** meeting will be held at the following place and time:

November 12, 2020 at 10:00am  
Division of Highways  
Equipment Division  
83 Brushy Fork Rd. Crossing  
Buckhannon, WV 26201

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting  
Revised 01/09/2020

are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

**4. VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: **November 17, 2020 by 10:00am**

Submit Questions to: **John Estep**  
2019 Washington Street, East  
Charleston, WV 25305  
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)  
Email: **john.w.estep@wv.gov**

**5. VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

**6. BID SUBMISSION:** All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:  
Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

SEALED BID:	CLASS 352 4 Wheel Drive Loader/Backhoe or Equal
BUYER:	John Estep
SOLICITATION NO.:	CRFQ 0803 DOT2100000047
BID OPENING DATE:	November 24, 2020
BID OPENING TIME:	1:30 pm
FAX NUMBER:	304-558-3970

Revised 01/09/2020

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to an Expression or Interest or Request for Proposal is not permitted in wvOASIS.

**For Request For Proposal ("RFP") Responses Only:** In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus \_\_\_\_\_ convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

**BID TYPE:** (This only applies to CRFP)

Technical

Cost

**7. BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

**Bid Opening Date and Time:** November 24, 2020 @ 1:30 pm

**Bid Opening Location:** Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

**8. ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

**9. BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

**10. ALTERNATE MODEL OR BRAND:** Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the

equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

**11. EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

**12. COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules § 148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

**13. REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee, if applicable.

**14. UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

**15. PREFERENCE:** Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at:

<http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

**15A. RECIPROCAL PREFERENCE:** The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: <http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

**16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid, in accordance with West Virginia Code § 5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or



minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

**17. WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

**18. ELECTRONIC FILE ACCESS RESTRICTIONS:** Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

**19. NON-RESPONSIBLE:** The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform, or lacks the integrity and reliability to assure good-faith performance.”

**20. ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b.”

**21. YOUR SUBMISSION IS A PUBLIC DOCUMENT:** Vendor’s entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

**DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.**

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled “confidential,” “proprietary,” “trade secret,” “private,” or labeled with any other claim against public disclosure of the documents, to include any “trade secrets” as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

**22. INTERESTED PARTY DISCLOSURE:** West Virginia Code § 6D-1-2 requires that the vendor submit to the Purchasing Division a disclosure of interested parties to the contract for all contracts with an actual or estimated value of at least \$1 Million. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission prior to contract award. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

**23. WITH THE BID REQUIREMENTS:** In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

## **GENERAL TERMS AND CONDITIONS:**

**1. CONTRACTUAL AGREEMENT:** Issuance of a Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

**2. DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

**2.1. "Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

**2.2. "Bid" or "Proposal"** means the vendors submitted response to this solicitation.

**2.3. "Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

**2.4. "Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.

**2.5. "Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.

**2.6. "Award Document"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

**2.7. "Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

**2.8. "State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

**2.9. "Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

**3. CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

**Term Contract**

**Initial Contract Term:** **Initial Contract Term:** This Contract becomes effective on \_\_\_\_\_  
Award and extends for a period of \_\_\_\_\_ One \_\_\_\_\_ year(s).

**Renewal Term:** This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to \_\_\_\_\_ Three \_\_\_\_\_ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

**Alternate Renewal Term** – This contract may be renewed for \_\_\_\_\_  
successive \_\_\_\_\_ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

**Delivery Order Limitations:** In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

**Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within \_\_\_\_\_ days.

**Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within \_\_\_\_\_ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that maintenance, monitoring, or warranty services will be provided for \_\_\_\_\_ year(s) thereafter.

**One Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

**Other:** See attached.

**4. NOTICE TO PROCEED:** Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Award Document will be considered notice to proceed.

**5. QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

**Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

**Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

**Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

**One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

**6. EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

**7. REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

**BID BOND (Construction Only):** Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

**PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award.

**LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

**MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

**LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

**8. INSURANCE:** The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed in this section.

Vendor must maintain:

**Commercial General Liability Insurance** in at least an amount of: \$1,000,000.00 per occurrence.

**Automobile Liability Insurance** in at least an amount of: \$1,000,000.00 per occurrence.

**Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: \_\_\_\_\_ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

**Commercial Crime and Third Party Fidelity Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Cyber Liability Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

**Pollution Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Aircraft Liability** in an amount of: \_\_\_\_\_ per occurrence.

**\*\*\*Please make insurance certificate to read as follows:  
State of WV, 1900 Kanawha Blvd E, Bldg 5, Charleston, WV 25305**

**\*\*\*State of WV must be listed as additional insured.**

Notwithstanding anything contained in this section to the contrary, the Director of the Purchasing Division reserves the right to waive the requirement that the State be named as an additional insured on one or more of the Vendor's insurance policies if the Director finds that doing so is in the State's best interest.

**9. WORKERS' COMPENSATION INSURANCE:** The apparent successful Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

**10. [Reserved]**

**11. LIQUIDATED DAMAGES:** This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

\_\_\_\_\_ for \_\_\_\_\_

Liquidated Damages Contained in the Specifications

**12. ACCEPTANCE:** Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

**13. PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

**14. PAYMENT IN ARREARS:** Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears.

**15. PAYMENT METHODS:** Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)



**16. TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

**17. ADDITIONAL FEES:** Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

**18. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

**19. CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

**20. TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.

**21. APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.

**22. COMPLIANCE WITH LAWS:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

**SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

**23. ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

**24. MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

**25. WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

**26. SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

**27. ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

**28. WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

**29. STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

**30. PRIVACY, SECURITY, AND CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.

**31. YOUR SUBMISSION IS A PUBLIC DOCUMENT:** Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

**DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.**

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

**32. LICENSING:** In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

**SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

**33. ANTITRUST:** In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

**34. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

**35. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

**36. INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

**37. PURCHASING AFFIDAVIT:** In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State, Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Purchasing Division affirming under oath that it is not in default on any monetary obligation owed to the state or a political subdivision of the state.

**38. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts (“Other Government Entities”), provided that both the Other Government Entity and the Vendor agree. Any extension of this Contract to the aforementioned Other Government Entities must be on the same prices, terms, and conditions as those offered and agreed to in this Contract, provided that such extension is in compliance with the applicable laws, rules, and ordinances of the Other Government Entity. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.

**39. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

**40. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at [purchasing.requisitions@wv.gov](mailto:purchasing.requisitions@wv.gov).

**41. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision. The State reserves the right to prohibit a service provider’s employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Revised 01/09/2020

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

**42. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS:** Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
- c. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- d. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

**43. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL:** In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a

“substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

**44. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE;** W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-award interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

**45. PROHIBITION AGAINST USED OR REFURBISHED:** Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Paul Daniels Sales Rep  
(Name, Title)  
Paul Daniels Sales Rep.  
(Printed Name and Title)  
19 Goff Crossing Drive Cross Lanes WV 25313  
(Address)  
304-204-1818 304-204-1811  
(Phone Number) / (Fax Number)  
daniels.paul@lec1.com  
(email address)

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Leslie Equipment Co.  
(Company)  
Paul Daniels Sales Rep.  
(Authorized Signature) (Representative Name, Title)  
Paul Daniels Sales Rep.  
(Printed Name and Title of Authorized Representative)  
11-23-2020  
(Date)  
304-204-1818 304-204-1811  
(Phone Number) (Fax Number)



REQUEST FOR QUOTATION  
Class 352 Four Wheel Drive Case 580 Super N Loader With Backhoe or Equal

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Division of Highways to establish an open-end contract for an Four Wheel Drive Loader with Backhoe.
  
2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
  - 2.1 **“Contract Item” or “Contract Items”** means the list of items identified in Section 3.1 below and on the Pricing Pages.
  
  - 2.2 **“Pricing Pages”** means the schedule of prices, estimated order quantity, and totals contained in wvOASIS or attached hereto as Exhibit A, and used to evaluate the Solicitation responses.
  
  - 2.3 **“Solicitation”** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
  
  - 2.4 **“WVDOH”** means West Virginia Division of Highways.
  
  - 2.5 **“4WD”** means Four Wheel Drive.
  
  - 2.6 **“SAE”** means Society of Automotive Engineers.
  
  - 2.7 **“MPH”** means miles per hour.
  
  - 2.8 **“RPM”** means revolutions per minute.
  
  - 2.9 **“GPM”** means gallons per minute.
  
  - 2.10 **“F”** means Fahrenheit.
  
  - 2.11 **“ROPS”** means rollover protection system.
  
  - 2.12 **“FOPS”** means fall over protection system.
  
  - 2.13 **“SMV”** means slow moving vehicle.
  
  - 2.14 **“G.P.”** means general purpose.
  
  - 2.15 **“C.Y.”** means cubic yard.

**REQUEST FOR QUOTATION**  
**Class 352 Four Wheel Drive Case 580 Super N Loader With Backhoe or Equal**

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**3. GENERAL REQUIREMENTS:**

**3.1 Contract Items and Mandatory Requirements:** Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below.

**3.1.1** The unit specified herein and offered shall be manufactured on or after January 1, 2021 and will be clearly identified and marked with date of manufacture.

**3.1.2** Vendor must certify that unit offered will meet or exceed the "Occupational Safety and Health Act of 1970" or subsequent changes that are in effect at the time of manufacture of the unit, please see Exhibit C.

**3.1.3** Unit shall be of Manufacturers 4WD (FOUR Wheel Drive) design and shall provide engage and disengage selection accessible from operator's station.

**3.1.4** Manufacturer shall make available for purchase factory diagnostic software to aid in machine repair.

**3.1.2 ENGINE**

**3.1.2.1** Shall be diesel fueled, and water cooled

**3.1.2.2** Shall have a minimum of four (4) cylinders.

**3.1.2.3** SAE Net Horsepower shall be 95 net minimum

**3.1.2.4** Engine shall be Tier 4 Final Compliant.

**3.1.3 TRANSMISSION**

**3.1.3.1** Transmission speeds shall be four (4) forward fully synchronized; four (4) reverse minimum.

**3.1.3.2** Shall have minimum top travel speed up to 20 MPH.

**3.1.3.3** Shall have foot operated automatic release, rear axle differential lock engageable under full engine RPM required.

**REQUEST FOR QUOTATION**  
**Class 352 Four Wheel Drive Case 580 Super N Loader With Backhoe or Equal**

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**3.1.4 STEERING**

**3.1.4.1** Shall have full power steering with emergency dead engine steering capability.

**3.1.5 BRAKES**

**3.1.5.1** Service brakes shall be 2-wheel minimum, wet disk type, sealed and fully enclosed to allow operating in water, mud, snow, and other adverse conditions without encountering brake loss or fade.

**3.1.5.2** Service brakes shall be pressure lubricated and cooled.

**3.1.5.3** Service brakes shall be self- adjusting type.

**3.1.5.4** Service brakes shall be self- equalizing.

**3.1.5.5** The parking/secondary brake system shall be independent of service brakes and of sufficient design to hold weight of machine on incline.

**3.1.5.6** The parking brake system shall be equipped with a warning light and/or audible alarm.

**3.1.6 HYDRAULIC SYSTEM**

**3.1.6.1** The hydraulic system shall be the manufacturers standard. The system shall incorporate a suction strainer and a replaceable return line filter.

**3.1.6.2** Hydraulic system shall provide a minimum flow of 40 GPM at a minimum of 2200 RPM to the backhoe and adequate cooling for hydraulic tools and attachments.

**3.1.6.3** Backhoe stabilizer hydraulic lock-outs shall be provided in both the working and transport positions.

**3.1.6.4** Shall have dual flow auxiliary valve with thumb operated control for operation of hydraulic driven attachments and machine mounted rock breakers, augers.

**REQUEST FOR QUOTATION**  
**Class 352 Four Wheel Drive Case 580 Super N Loader With Backhoe or Equal**

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**3.1.7 ELECTRICAL SYSTEM**

**3.1.7.1** Shall have Manufacturers standard 12 or 24 volt electrical system.

**3.1.7.2** Alternator shall be 150 AMPS minimum.

**3.1.7.3** Shall be equipped with two batteries and shall be maintenance free type and provide a cold-crank amps of 850 (minimum) each at zero degrees.

**3.1.8 COOLING SYSTEM**

**3.1.8.1** The system shall be filled with permanent extended life anti-freeze solution rated to a minus 30 degrees F minimum.

**3.1.9 OPERATORS STATION**

**3.1.9.1** Cab shall be fully enclosed SAE ROPS/FOPS certified.

**3.1.9.2** Cab must be isolation mounted.

**3.1.9.3** Air ride cloth seat shall be heated deluxe cushioned with swing around type operator's seat. Shall be fully adjustable, damped and must include manufacturers' seat belt with retractor feature.

**3.1.9.4** Tinted safety glass shall be provided at all locations.

**3.1.9.5** Cab doors shall be lockable and keyed alike.

**3.1.9.6** Unit shall provide front and rear windshield wipers with washers.

**3.1.9.7** Manufacturers highest capacity heater/defroster shall be provided.

**3.1.9.8** Unit shall be equipped with manufacturer air conditioning.

**3.1.9.9** Unit cab shall have a maximum operating decibel level of 73 decibel.

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**3.1.10 INSTRUMENTS**

**3.1.10.1** Unit shall have lighted gauges and/or monitoring system to include:

- A. Transmission Temperature
- B. Engine Coolant Temperature
- C. Engine Oil Pressure
- D. Hydraulic Filter Restriction
- E. Air Cleaner Restriction
- F. Fuel Gauge
- G. Volt/Amp Gauge
- H. Hour Meter (shall be engine controlled, not key switch)

**3.1.10.2** Engine coolant temperature and engine oil pressure and parking brake system to include audible or visual warning systems.

**3.1.11 ACCESSORIES**

**3.1.11.1** Locking type toolbox shall be large enough to store standard size hand operated grease gun and any special tools required by manufacturer.

**3.1.11.2** OSHA approved back-up alarm.

**3.1.11.3** Horn

**3.1.11.4** Hand and foot controlled throttle.

**3.1.11.5** Muffler with rain proof exhaust.

**3.1.11.6** Lockable engine service door and keyed same as cab door(s).

**3.1.11.7** Slow moving vehicle safety triangle.

**3.1.11.8** Non slip type mounting steps and safety handholds.

**3.1.11.9** Backhoe boom transport locks.

**3.1.11.10** One (1) complete set of filter elements for unit shall be provided.

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**3.1.11.11** Unit shall have Class 1 LED low profile rotating warning beacon.

**3.1.11.12** Unit shall have left and right side and inside rear-view mirrors.

**3.1.11.13** Unit shall have locking DEF and fuel covers.

**3.1.12 LIGHTING**

**3.1.12.1** Unit shall have a minimum of four (4) front LED and four (4) rear LED work/driving lights switched and identified at operator's station.

**3.1.12.2** Shall have two (2) combination stop/tail lights.

**3.1.12.3** Shall have two (2) side LED work lights switched and identified at operator's station.

**3.1.12.4** Shall have two (2) front and two (2) rear turn and flashing lights.

**3.1.12.5** Shall have Cab dome light.

**3.1.13 TIRES**

**3.1.13.1** Tires shall be manufacturers standard for model bid.

**3.1.14 VEHICLE FRAME**

**3.1.14.1** Unit shall feature a single piece weldment, full length unitized main frame.

**3.1.15 LOADER**

**3.1.15.1** Loader shall be self-leveling.

**3.1.15.2** Unit shall be equipped with automatic return-to-dig feature.

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**3.1.15.3** Unit shall provide a G.P. bucket rated at 1.3 C.Y. SAE minimum heaped capacity and a width of 92 inches minimum with bolt on cutting.

**3.1.15.4** Shall have breakout force of 10,500 pounds minimum.

**3.1.15.5** Shall have a loader lift rating of 7,000 pounds minimum to full height.

**3.1.15.6** Shall have dumping clearance at full height and 40 degrees, 103 inches minimum.

**3.1.15.7** Bucket shall rollback at ground 35 degrees minimum.

**3.1.16 BACKHOE**

**3.1.16.1** Unit shall have a digging depth of at least 14 feet 4 inches minimum.

**3.1.16.2** Backhoe lifting capacity shall be 3,500 pounds minimum to 8 foot lift height minimum through the full 180 degrees swing arc.

**3.1.16.3** Shall have a backhoe bucket cylinder digging force of 14,000 pounds minimum.

**3.1.16.4** Bucket shall be manufacturers standard 24 inches with hardened/replaceable teeth.

**3.1.16.5** Provisions shall be made for quick-coupling hydraulic tools, (i.e. road breakers, jack hammers, etc.) to the unit hydraulic system.

**3.1.16.6** Unit shall be capable of operating backhoe and hydraulic tools simultaneously.

**3.1.16.7** Unit shall have in-cab switchable "excavator to backhoe" control pattern change.

**3.1.16.8** Unit shall have pilot operated backhoe controls.

**3.1.16.9** Unit shall have flip over type rubber/steel cleated stabilizer pads.

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**3.1.17 OPERATING WEIGHT**

**3.1.17.1** Shall have an operating weight of 19,000 pounds minimum exclusive of tire ballast and/or counterweights.

**3.1.18 PAINT**

**3.1.18.1** The loader shall be painted manufacturers standard.

**3.1.19 Warranty**

**3.1.19.1** Unit shall have a minimum one-year unlimited hour full parts and service coverage.

**3.1.19.2** Unit bid shall have a minimum two-year 2000 hour parts and service engine warranty.

**3.1.20 Operating and Service Manuals and Parts Lists:**

**3.1.20.1** An operator's manual must be included with each unit upon delivery. A "line sheet" (if applicable) and the "Equipment Preventative Maintenance Questionnaire", (Exhibit "B") must be with pilot unit upon delivery. Attn: Todd Campbell. There must be 12 service/shop/maintenance manuals and 14 parts manuals; USB storage drive is preferred in lieu of parts manuals. Manuals and USB storage drive shall be delivered upon completion of delivery of total units. Failure to do so will delay payment.

**3.1.21 Training:**

**3.1.21.1** Manufacturers and/or dealers will be required to stage a thorough seminar about Preventative Maintenance, Operator, and Mechanic training. To keep operators and mechanics updated, the successful vendor shall conduct a training session covering the operation, maintenance, troubleshooting with unit being purchased.



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**3.1.22 Preventative Maintenance & Operator Procedures:**

**3.1.22.1 Manufacturers** and/or dealers will be required to submit to the Equipment Division, in addition to the operating and service manuals, booklets and pamphlets explaining the Preventative Maintenance and Operator Procedures to be used by the operators of this equipment, and must include such things as daily prestart inspection procedure, service schedule, and routine maintenance required, safety precautions, etc. The successful vendor shall furnish all training aids; i.e. videos, projectors as required in conducting the training.

**4.CONTRACT AWARD:**

**4.1 Contract Award:** The Contract is intended to provide Agencies with a purchase price for the Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

**4.2 Pricing Page:** Vendor should complete the Pricing Page (Exhibit A) by completing the Year, Make, Model, and inserting quoted unit price. Vendor should complete the Pricing Page in full as failure to complete the Pricing Page in its entirety may result in Vendor's bid being disqualified.

The Pricing Page contains a list of the Contract Items and purchase volume. The purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

Vendor should electronically enter the information into the Pricing Page through WV OASIS, if available, or as an electronic document. In most cases, the Vendor can request an electronic copy of the Pricing Pages for bid purposes by sending an email request to the following address:  
[John.W.Estep@wv.gov](mailto:John.W.Estep@wv.gov).

**5. PAYMENT:**

**5.1 Payment:** Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

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**6. DELIVERY AND RETURN:**

**6.1 Delivery Time:** A completed pilot model for inspection must be provided within 30 working day(s) after receipt of the pilot model order, by the successful vendor. Vendor shall deliver standard orders within 90 working days after orders are received. Working day is defined as any week day, Monday thru Friday, excluding Federal and State Holidays. Vendor shall ship all orders until a minimum delivery quantity is met.

**6.2 Late Delivery:** The Agency placing the order under this Contract must be notified in writing if orders will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from a third party.

Any Agency seeking to obtain items from a third party under this provision must first obtain approval of the Purchasing Division.

**6.3 Delivery Payment/Risk of Loss:** Standard order delivery shall be F.O.B. Destination to the Agency's location. Vendor shall include the cost of standard order delivery charges in its bid pricing/discount and is not permitted to charge the Agency separately for such delivery. The Agency will pay delivery charges on all emergency orders provided that Vendor invoices those delivery costs as a separate charge with the original freight bill attached to the invoice.

**6.4 Condition of Unit(s) Upon Delivery:** All units must arrive at the prescribed delivery point having been completely pre-serviced with oil, lubricants, and coolant. All prescribed precautions pertaining to first operations and break-in of the unit are to be posted conspicuously on the unit for ready observance by the operator.

**6.5 Delivery Point:** Delivery point of the completed representative unit will be the WVDOH, Equipment Division, Rt. 33 and Brushy Fork Road, Buckhannon, WV 26201.

**7. VENDOR DEFAULT:**

**7.1** The following shall be considered a vendor default under this Contract.

**7.1.1** Failure to provide Contract Items in accordance with the requirements contained herein.

**7.1.2** Failure to comply with other specifications and requirements contained herein.

**REQUEST FOR QUOTATION**  
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7.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

7.1.4 Failure to remedy deficient performance upon request.

7.2 The following remedies shall be available to Agency upon default.

7.2.1 Immediate cancellation of the Contract.

7.2.2 Immediate cancellation of one or more release orders issued under this Contract.

7.2.3 Any other remedies available in law or equity.

**8. MISCELLANEOUS:**

8.1 **No Substitutions:** Vendor shall supply only Contract Items submitted in Response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.

8.2 **Reports:** Vendor shall provide quarterly reports and annual summaries to the Agency showing the Agency's items purchased, quantities of items purchased, and total dollar value of the items purchased. Vendor shall also provide reports, upon request, showing the items purchased during the term of this Contract, the quantity purchased for each of those items, and the total value of purchases for each of those items. Failure to supply such reports may be grounds for cancellation of this Contract.

8.3 **Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

**Contract Manager:** Paul Daniels  
**Telephone Number:** 304-204-1818  
**Fax Number:** 304-204-1811  
**Email Address:** danielspaul@lee1.com



Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Centralized Request for Quote  
 Equipment

**Proc Folder:** 789505  
**Doc Description:** ADDENDUM NO.1 Class 352 4 Wheel Drive Loader/Backhoe  
**Reason for Modification:** Addendum No.1 to add Pre-bid Sign in Sheet  
**Proc Type:** Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-11-17	2020-11-24 13:30	CRFQ 0803 DOT2100000047	2

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:**  
**Vendor Name:** *Leslie Equipment Co.*  
**Address:**  
**Street:** *19 Goff Crossing Drive*  
**City:** *Cross Lanes*  
**State:** *WV* **Country:** *U.S* **Zip:** *25313*  
**Principal Contact:** *Paul Daniels*  
**Vendor Contact Phone:** *304-204-1818* **Extension:**

**FOR INFORMATION CONTACT THE BUYER**

John W Estep  
 304-558-2566  
 john.w.estep@wv.gov

**Vendor Signature X** *[Signature]* **FEIN#** *55-0493180* **DATE** *11-23-2020*

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION****ADDENDUM NO.1**

Addendum No.1 issued to publish and distribute the attached information to the Vendor Community.

**REQUEST FOR QUOTATION**

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Division of Highways to establish an open-end contract for an Four Wheel Drive Loader with Backhoe. Per the bid requirements, specifications, terms and conditions attached to this solicitation.

INVOICE TO	SHIP TO
DIVISION OF HIGHWAYS EQUIPMENT DIVISION RT 33 83 BRUSHY ROAD CROSSING, PO BOX 610 BUCKHANNON WV 26201 US	DIVISION OF HIGHWAYS EQUIPMENT DIVISION 83 BRUSHY FORK RD CROSSING BUCKHANNON WV 26201 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	class 352 4 wheel drive loader/backhoe	10.00000	EA	# 73,839 <sup>00</sup>	# 738,390 <sup>00</sup>

Comm Code	Manufacturer	Specification	Model #
22101509	John Deere	4 Wheel drive loader/Backhoe	310SL

**Extended Description:**

Class 352 4 wheel drive loader/backhoe

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	Pre-Bid Meeting at 10:00am	2020-11-12
2	Tech Questions by 10:00am	2020-11-17

	Document Phase	Document Description	Page
DOT2100000047	Draft	ADDENDUM NO.1 Class 352 4 Wheel Drive Loader/Backhoe	3

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

# SOLICITATION NUMBER: CRFQ DOT2100000047

## Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as CRFQ DOT2100000047 ("Solicitation") to reflect the change(s) identified and described below.

### Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other-

### Additional Documentation:

1. Attachment of Pre-Bid Sign in Sheets
2. Bid Opening remains 11/24/20 at 1:30pm

### Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CRFO DOT2100000047**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2            | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Leslie Equipment Co.  
Company  
  
Authorized Signature  
11-23-2020  
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.



# Pre-Bid Sign-In Sheet

Solicitation Number: CRFQ 0803 DOT2100000047  
 Date of Pre-Bid Meeting: November 12, 2020  
 Location of Prebid Meeting: Buckhannon, WV Equipment Div.

*Please Note:*

Vendors must sign-in on this sheet to verify attendance at the Pre-Bid meeting.  
 Failure to legibly sign in may be grounds for declaring a vendor ineligible to bid.  
 For further verification, please also provide a business card if possible.

<u>Firm Represented:*</u>	<u>Rep Name (Printed):</u>	<u>Firm Address:</u>	<u>Telephone #:</u>	<u>Fax #:</u>	<u>Email:</u>
WV DOH	Pam Hall	89 Brushy Fork Rd. Cross, Buckhannon, WV	304-471-0139		Pamela.j.hall@wv.gov
WV DOH	Tina Lewis	Charleston WV	304-414-6257		tina.l.lewis@wv.gov
WV DOH	JD Haller	Buckhannon	304-471-0141		JD.S.Haller@wv.gov

**\*One Vendor Per Representative - No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.**

# Pre-Bid Sign-In Sheet

Solicitation Number: CRFQ 0803 DOT2100000047

Date of Pre-Bid Meeting: November 12, 2020

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<u>Firm Represented:*</u>	<u>Rep Name (Printed):</u>	<u>Firm Address:</u>	<u>Telephone #:</u>	<u>Fax #:</u>	<u>Email:</u>
Leslie Equipment	Paul Daniels	19 Coff Crossing Dr. Cross Lanes WV 25213	304-204-1818	304-204-1811	danielspaul@lecl.com
State Equip. of	TERRY LANIER	500 New Golf Rd Cross Lanes WV 25213	304 5398691	304 7764407	terry@stateequipment.com
Leslie Equipment	Bo Kester	2028 William Lane Pleasant Valley WV 26054	304-534-5454	304-534-5888	kesterbo@lecl.com

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Firm Represented:*	Rep Name (Printed):	Firm Address:	Telephone #:	Fax #:	Email:
WEST VIRGINIA TRACER	GARY BRADY	P.O. BOX 473 CHARLESTON WV 25322	304-346-5301	304-346-5305	wtratore@msn.com
Cleveland Brothers Equip.	Josh Hinkle	6286 W. Untrans Memorial Highway Bridgeport, WV 26308	304-641-2060	304-842-6806	jhinkle@clevelandbrothers.com
Boyd Cat	Eric Ramey	PO Box 2427 Charleston WV 25301	304-389-4190		eric.ramey@boydcat.com
Boyd CAT	MATTHEW CONNER	P.O. Box 2427 CHARLESTON, WV 25329	304-543-5406	304-759-6404	matthewconner@boydcat.com

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"Run with the Best"

**Bo Kesler**

Corporate

2098 Lillian Lane  
Pleasant Valley, WV 26554  
keslerbo@lec1.com  
www.lec1.com



**JOHN DEERE**

Office: 304-534-5454  
Fax: 304-534-5888  
Cell: 304-542-9991

OFFICE (304) 348-5301  
(800) 640-8245



**WEST VIRGINIA  
TRACTOR COMPANY**

CONSTRUCTION, MINING, MUNICIPAL & INDUSTRIAL EQUIPMENT

www.wvtractor.com

**GARY W. GRADY**  
PRESIDENT  
Cell (304) 549-6068

P. O. BOX 473  
214 VIRGINIA ST. W.  
CHAS., WV 25322/25302

wvtractor@msn.com

**BOYD**

**CAT**

**Eric Ramey**  
Regional Sales  
Manager

**Boyd Company**  
3 Park Drive  
Hub Industrial Park  
Nitro, WV 25143  
304.759.6400

304.389.4190 mobile

EricRamey@boydcat.com  
www.boydcat.com

**Cleveland  
Brothers**



**Joshua J. Hinkle**  
Account Manager

**Cleveland Brothers Equipment Co., II**  
Route 76 East  
Bridgeport, WV 26330  
304-842-2222 tel  
304-842-8808 fax  
jhinkle@clevelandbrothers.com  
www.clevelandbrothers.com

mobile: 304-841-2080  
home: 304-268-5232

**State Equipment, Inc.**



**EDDIE ROWAN, JR**  
GENERAL MANAGER

580 NEW GOFF MOUNTAIN RD  
CROSS LANES, WV 25313

CELL: 304-539-8884  
OFFICE: 304-776-4405  
FAX: 304-776-4409  
EMAIL: EDDIE@STATEEQUIPMENT.CO  
WWW.STATEEQUIPMENT.COM

**CASE**

**KOBELCO**

**Kubota**

**SKYTRAK**

**DOOSAN**

**LEGEND  
Beaver**

**WYMANC**

**JOHN DEERE**



"Run with the Best"

**Paul Daniels**

Sales Representative

19 Goff Crossing Drive  
Cross Lanes, WV 25313  
danielspaul@lec1.com  
www.lec1.com



**JOHN DEERE**

Office: 304-204-11  
Fax: 304-204-11  
Cell: 304-542-0

**BOYD**

**CAT**

**Matt Conner**  
Sales Representative  
Construction

**Boyd Company**  
3 Park Drive  
Hub Industrial Park  
Nitro, WV 25143  
304.759.6400

304.543.5406 mobile

MatthewConner@boydcat.com  
www.boydcat.com



Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Centralized Request for Quote  
 Equipment

<b>Proc Folder:</b> 789505			<b>Reason for Modification:</b> Addendum No.1 to add Pre-bid Sign in Sheet
<b>Doc Description:</b> ADDENDUM NO.1 Class 352 4 Wheel Drive Loader/Backhoe			
<b>Proc Type:</b> Central Master Agreement			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2020-11-17	2020-11-24 13:30	CRFQ 0803 DOT2100000047	2

**BID RECEIVING LOCATION**


BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:**  
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**Street:** *19 Goff Crossing Drive*  
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John W Estep  
 304-558-2566  
 john.w.estep@wv.gov

**Vendor Signature X**  **FEIN#** *55-0493180* **DATE** *11-23-2020*

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INVOICE TO	SHIP TO
DIVISION OF HIGHWAYS EQUIPMENT DIVISION RT 33 83 BRUSHY ROAD CROSSING, PO BOX 610 BUCKHANNON WV 26201 US	DIVISION OF HIGHWAYS EQUIPMENT DIVISION 83 BRUSHY FORK RD CROSSING BUCKHANNON WV 26201 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	class 352 4 wheel drive loader/backhoe	10.00000	EA	<i>\$73,839<sup>00</sup></i>	<i>\$738,390<sup>00</sup></i>

Comm Code	Manufacturer	Specification	Model #
22101509	<i>John Deere</i>	<i>4 wheel drive loader/Backhoe</i>	<i>3105L</i>

**Extended Description:**

Class 352 4 wheel drive loader/backhoe

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	Pre-Bid Meeting at 10:00am	2020-11-12
2	Tech Questions by 10:00am	2020-11-17

	Document Phase	Document Description	Page
DOT2100000047	Final	ADDENDUM NO.1 Class 352 4 Wheel Drive Loader/Backhoe	3

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

EXHIBIT B

EQUIPMENT PREVENTATIVE MAINTENANCE QUESTIONNAIRE

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY BY SUCCESSFUL BIDDER OR MANUFACTURER'S TECHNICAL REPRESENTATIVE PRIOR TO DELIVERY TO THE WVDOH.

DESCRIPTION: \_\_\_\_\_ MAKE: \_\_\_\_\_

MODEL: \_\_\_\_\_ YEAR: \_\_\_\_\_ PURCHASE AMOUNT: \_\_\_\_\_

ENGINE: MAKE: \_\_\_\_\_ MODEL: \_\_\_\_\_ FUEL TYPE: \_\_\_\_\_ GALLONS: \_\_\_\_\_

HORSEPOWER: \_\_\_\_\_ CYLINDER: \_\_\_\_\_ ENGINE SERIAL: \_\_\_\_\_

BELTS: DESCRIPTION: \_\_\_\_\_ PART NUMBERS: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

GVW: \_\_\_\_\_ GVWR \_\_\_\_\_ AXLE CAPACITY: FRONT: \_\_\_\_\_ REAR: \_\_\_\_\_

TIRES: FRONT MAKE & SIZE: \_\_\_\_\_

REAR MAKE & SIZE: \_\_\_\_\_

DIMENSIONS OF UNIT: LENGTH: \_\_\_\_\_ WIDTH: \_\_\_\_\_ HEIGHT: \_\_\_\_\_

VENDOR CONTACT PERSON: \_\_\_\_\_ PHONE: \_\_\_\_\_

**PARTS:**

BATTERY MAKE: \_\_\_\_\_ MODEL: \_\_\_\_\_ CCA: \_\_\_\_\_

SPARK PLUGS OR FUEL INJECTORS MAKE: \_\_\_\_\_ PART # \_\_\_\_\_

FUEL PUMP OR INJECTION PUMP MAKE: \_\_\_\_\_ MODEL: \_\_\_\_\_

ALTERNATOR MAKE: \_\_\_\_\_ PART #: \_\_\_\_\_

STARTER MAKE: \_\_\_\_\_ PART #: \_\_\_\_\_

TURBO CHARGER MAKE: \_\_\_\_\_ PART #: \_\_\_\_\_

TRANS. MAKE: \_\_\_\_\_ MODEL: \_\_\_\_\_ AUTO/MANUAL: \_\_\_\_\_

HYDRAULIC PUMP MAKE: \_\_\_\_\_ MODEL: \_\_\_\_\_

**FILTERS**      **MAKE**      **PART NO.**      **LUBRICANT**      **MANUFACTURER TYPE**

OIL _____	ENGINE OIL WEIGHT _____
AIR INNER _____	TRANSMISSION FLUID TYPE _____
AIR OUTER _____	POWER STEERING FLUID TYPE _____
FUEL PRIMARY _____	HYDRAULIC OIL WEIGHT _____
FUEL SECONDARY _____	DIFFERENTIALS OIL WEIGHT _____
COOLANT _____	BRAKE FLUID TYPE _____
HYDRAULIC _____	COOLANT TYPE _____
OTHER _____	OTHER _____
OTHER _____	OTHER _____
OTHER _____	OTHER _____
OTHER _____	OTHER _____



# Department of Transportation

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## *COVID-19 Guidelines for Pre-Construction & Pre-Bid Meetings*

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The following guidelines are to be used when holding pre-construction and pre-bid meetings. Pre-construction and pre-bid meetings may require case-by-case analysis.

### WV Purchasing Division Temporary Pre-bid Meeting Policy – COVID-19 Precautions

1. Pre-bid meetings must be removed from solicitations as a requirement, wherever possible, and replaced with publication of written materials conveying the needed information (except when contrary to agency policy).
2. In instances where site inspections are necessary for bidders to have a full understanding of the project, the Purchasing Division recommends that pre-bid meetings (and the underlying solicitation) be delayed until this period of heightened concern has ended. If delaying the solicitation is not possible or would cause an undue hardship on the spending unit, the pre-bid meeting should be conducted in a manner that minimizes the risk of COVID-19 transmission to the greatest extent possible.
3. Under no circumstances is a spending to conduct a pre-bid meeting that violates a policy or declaration of the Governor's Office.

For existing central solicitations, the spending unit should work with its designated Purchasing Division buyer to issue addenda to modify pre-bid meeting requirements where necessary. On agency delegated solicitations, the spending unit can make the necessary adjustments under their delegated authority.

### Department of Transportation Pre-Construction and Pre-bid Meetings Guidelines

- When possible, limit the number of representatives of each vendor to a maximum of two (2).
- Require each vendor representative to wear a mask upon entering and while moving throughout a DOT facility for the duration of the pre-construction and pre-bid meeting.
  - Any representative who arrives at a DOT facility without a mask will not be permitted to enter.
- In areas where a minimum 6ft distancing is not feasible amongst vendors, groups must be staggered during inspections.
- For pre-construction or pre-bid meetings located at the Capitol Complex:
  - Pre-construction or Pre-bid meetings can be conducted by using the West Virginia State Training Center located in Building 7, 2<sup>nd</sup> Floor.
  - For room scheduling/availability please contact the Facility Scheduler, Jeremy Walker, at 304-414-0840 or by email at [dop-registrar@wv.gov](mailto:dop-registrar@wv.gov)
    - <https://personnel.wv.gov/ohrd/WVSTC/Pages/default.aspx>
- Vendor representatives must be met by a DOT employee conducting the meeting upon arrival to a DOT facility and escorted to the meeting location. After completion of the meeting, vendors must be escorted out of the facility.
- Upon completion of the meeting, all hard surfaces must be sanitized by the DOT employee(s) conducting the meeting.
- Pre-construction and Pre-bid meetings can be held outside of a DOT facility provided all safety guidelines can be met and no additional cost are incurred.
- Vendor representatives must provide their own refreshments.
- Delivery of bids to Building 5 must be scheduled. A DOT employee must meet the vendor representative at the Building 7 entrance and escort them to the bid box and back out of the facility. All facility COVID protocols apply.

June 17, 2020

# West Virginia Ethics Commission



## Disclosure of Interested Parties to Contracts

Pursuant to *W. Va. Code* § 6D-1-2, a state agency may not enter into a contract, or a series of related contracts, that has/have an actual or estimated value of \$1 million or more until the business entity submits to the contracting state agency a Disclosure of Interested Parties to the applicable contract. In addition, the business entity awarded a contract is obligated to submit a supplemental Disclosure of Interested Parties reflecting any new or differing interested parties to the contract within 30 days following the completion or termination of the applicable contract.

For purposes of complying with these requirements, the following definitions apply:

*"Business entity"* means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership or corporation, but does not include publicly traded companies listed on a national or international stock exchange.

*"Interested party"* or *"Interested parties"* means:

- (1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors;
- (2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract. (This subdivision does not apply to a publicly traded company); and
- (3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency. (This subdivision does not apply to persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.)

*"State agency"* means a board, commission, office, department or other agency in the executive, judicial or legislative branch of state government, including publicly funded institutions of higher education: Provided, that for purposes of *W. Va. Code* § 6D-1-2, the West Virginia Investment Management Board shall not be deemed a state agency nor subject to the requirements of that provision.

The contracting business entity must complete this form and submit it to the contracting state agency prior to contract award and to complete another form within 30 days of contract completion or termination.

*This form was created by the State of West Virginia Ethics Commission, 210 Brooks Street, Suite 300, Charleston, WV 25301-1804. Telephone: (304)558-0664; fax: (304)558-2169; e-mail: [ethics@wv.gov](mailto:ethics@wv.gov); website: [www.ethics.wv.gov](http://www.ethics.wv.gov).*

L-SERIES  
**BACKHOES**




**JOHN DEERE**

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

A large John Deere backhoe loader is shown in a construction or mining environment. The machine is yellow and black, with the operator visible in the cab. It is actively digging into a pile of dark, rocky soil. The background shows a clear blue sky and distant mountains.

**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.**



**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.*

STANDOUT FEATURE

A yellow backhoe loader is shown in a construction setting, lifting a large, black, cylindrical pipe. The pipe is held horizontally by the loader's bucket. In the foreground, several more of these large pipes are stacked in a neat row, receding into the distance. The background features a clear blue sky and a flat, open landscape. The overall scene conveys a sense of heavy-duty construction work.

**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**

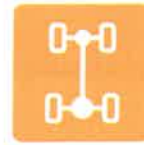
Two seat options are available from the factory to maximize comfort and productivity. A heated, air-suspension seat helps keep the operator warm and comfortable even on the coldest days. An air-suspension seat smoothes the ride for open-canopy configurations.



# 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 Hydra™ premium all-season, anti-wear hydraulic oil specifically designed for construction equipment. For cold weather, opt for Hydra™ 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	
<b>Cooling</b>				
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	
<b>Powertrain</b>				
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	<i>Forward</i>	<i>Reverse</i>	<i>Forward</i>	<i>Reverse</i>
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)	—
<b>Axles</b>				
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		22 deg.	
Axle Ratings	<i>Front</i>	<i>Rear</i>	<i>Front</i>	<i>Rear</i>
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.)
<b>Differentials</b>				
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	<i>MFWD</i>	<i>Non-Powered Front</i>	<i>MFWD</i>	<i>Non-Powered Front</i>
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			
<b>Brakes (ISO 3450)</b>				
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			
<b>Hydraulics</b>				
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)	
<b>Controls</b>				
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



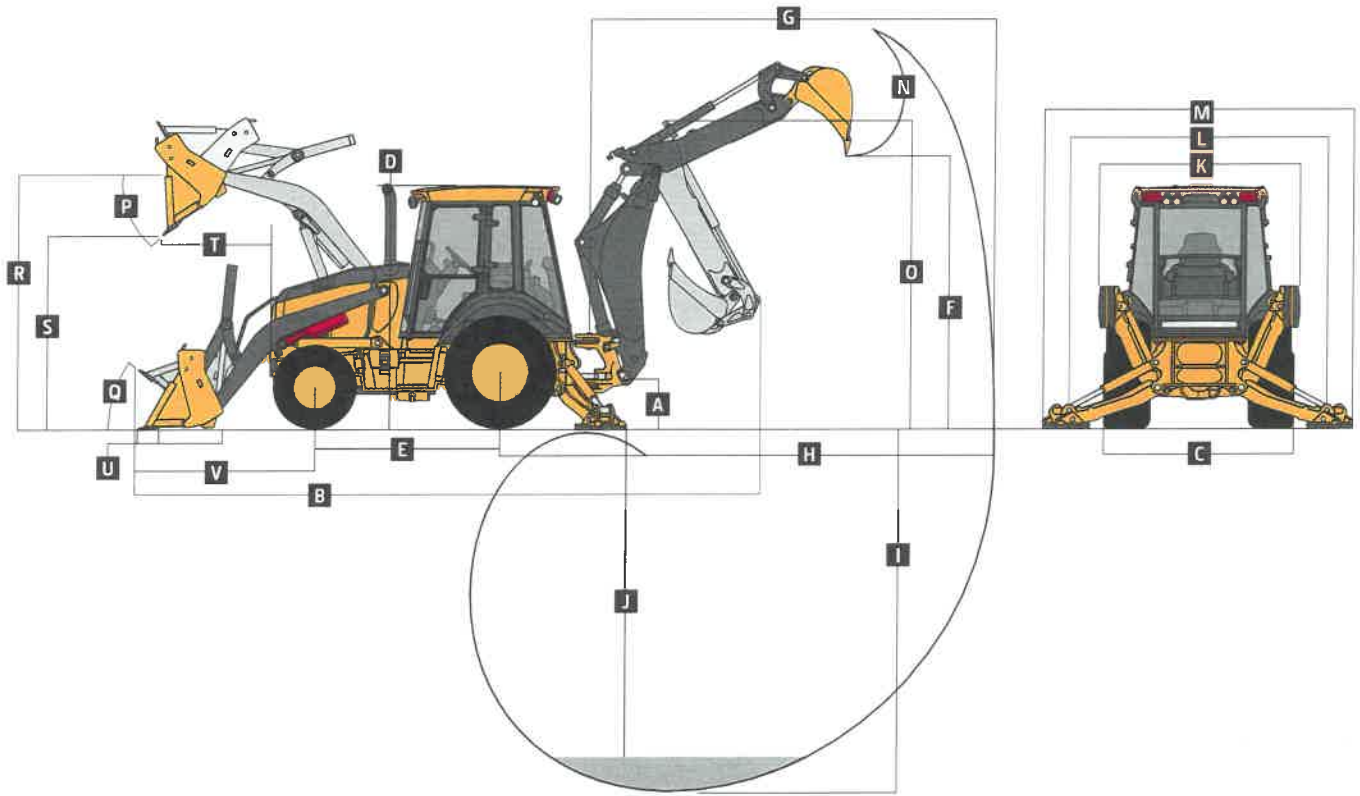
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Cylinders		310L EP			310L		
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins							
		<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>	<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>
Loader Boom (2)		80 mm (3.15 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.)		

# 310L EP / 310L

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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-m <sup>3</sup> (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	Retracted	Extended	With Standard Backhoe	Retracted	Extended
F Loading Height, Truck Loading Position	3.48 m (11 ft. 5 in.)	3.57 m (11 ft. 8 in.)	4.23 m (13 ft. 10 in.)	3.38 m (11 ft. 1 in.)	3.46 m (11 ft. 4 in.)	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	310L EP	310L
P Bucket Dump Angle, Maximum	45 deg.	45 deg.
Q Rollback Angle at Ground Level	40 deg.	40 deg.

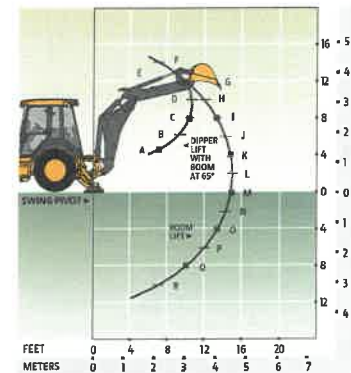
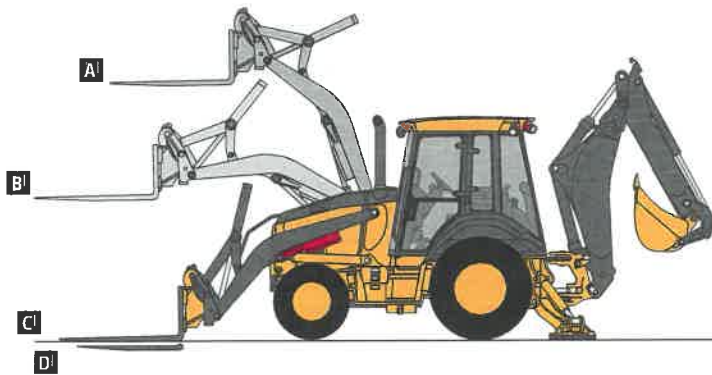
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**Loader Dimensions and Performance (continued)**

	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 <sup>3</sup> (1.00 cu. yd.)	0.86 m <sup>3</sup> (1.12 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	0.77 m <sup>3</sup> (1.00 cu. yd.)	0.86 m <sup>3</sup> (1.12 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	0.96 m <sup>3</sup> (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**

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

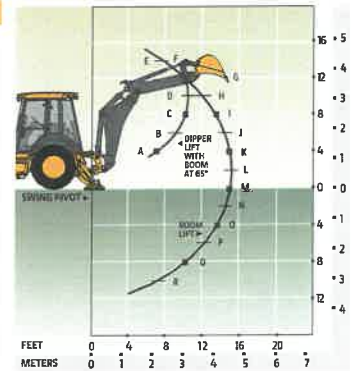
**Lift Capacities**

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

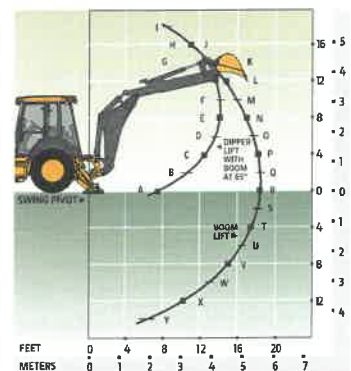
	With Standard Dipperstick		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Retracted		With 1.06-m (3 ft. 6 in.) Extendable Dipperstick, Extended	
	310L EP	310L	310L EP	310L	310L EP	310L
A	3721 kg (8,204 lb.)	3593 kg (7,921 lb.)	4089 kg (9,015 lb.)	3846 kg (8,478 lb.)	2878 kg (6,346 lb.)*	3180 kg (7,011 lb.)*
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.)

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

<sup>1</sup>Reach 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.

<b>Engine</b>		<b>310SL</b>
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	
<b>Cooling</b>		
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	
<b>Powertrain</b>		
<b>Transmission</b>	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift	
<b>Torque Converter</b>	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	<i>Forward</i>	<i>Reverse</i>
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)	—
<b>Axles</b>		
Axle Oscillation, Stop to Stop, Front Axle	22 deg.	
Axle Ratings	<i>Front</i>	<i>Rear</i>
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.)
<b>Differentials</b>		
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control	
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock	
<b>Steering (ISO 5010)</b>	Hydrostatic power steering and emergency steering	
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>
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
<b>MFWD Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears	
<b>Rear Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears	
<b>Brakes (ISO 3450)</b>		
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	
<b>Hydraulics</b>		
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)	
<b>Controls</b>		
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

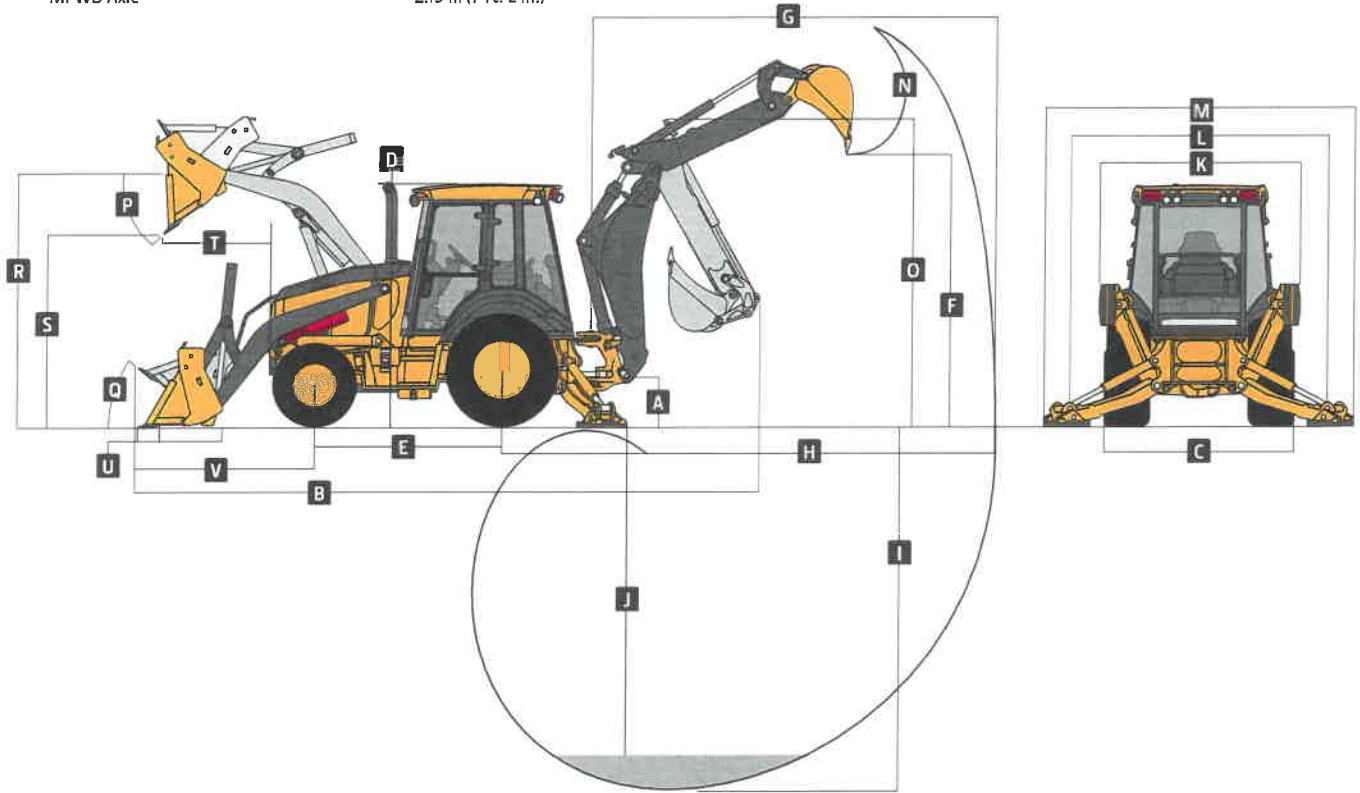


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<b>Cylinders</b>		<b>310SL</b>	
Heat-treated, chrome-plated, polished rods; hardened steel (replaceable bushings) pivot pins			
	<i>Bore</i>	<i>Rod Diameter</i>	<i>Stroke</i>
Loader Boom (2)	80 mm (3.15 in.)	50 mm (1.97 in.)	789 mm (31.08 in.)
Loader 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.)
<b>Heavy-Duty Option</b>	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)			
<b>Standard</b>	90 mm (3.54 in.)	50 mm (1.97 in.)	500 mm (19.69 in.)
<b>Extended Optional</b>	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.)
<b>Electrical</b>			
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		
<b>Operator Station</b>			
Type (ISO 3471)	Fully enclosed cab, isolation mounted, ROPS/FOPS, left/right access, with molded roof; optional quarter cab (front glass only) and canopy		
<b>Tires/Wheels</b>			
	<i>Front</i>	<i>Rear</i>	
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	
<b>Serviceability</b>			
<b>Refill Capacities</b>			
Cooling System			
Cab	275 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.)		
<b>Operating Weights</b>			
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.)		
<b>Optional Components (weight difference between base equipment and option)</b>			
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.)		

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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-m<sup>3</sup> (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 (16,832 lb.)		
Crowd Cylinder	36.6 kN (8,229 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	3.42 m (11 ft. 3 in.)	3.54 m (11 ft. 7 in.)	4.16 m (13 ft. 8 in.)
G Reach from Center of Swing Pivot	5.52 m (18 ft. 1 in.)	5.61 m (18 ft. 5 in.)	6.62 m (21 ft. 9 in.)
H Reach from Center of Rear Axle	6.58 m (21 ft. 7 in.)	6.68 m (21 ft. 11 in.)	7.68 m (25 ft. 2 in.)
I Digging Depth (SAE maximum)	4.35 m (14 ft. 3 in.)	4.50 m (14 ft. 9 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.)	4.45 m (14 ft. 7 in.)	5.51 m (18 ft. 1 in.)
2440-mm (8 ft.) Flat Bottom	3.99 m (13 ft. 1 in.)	4.13 m (13 ft. 7 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.)	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.)	3.10 m (10 ft. 2 in.)
Extended Stabilizers	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			
Standard Stabilizers	3.53 m (11 ft. 7 in.)	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.)	4.03 m (13 ft. 3 in.)
N Bucket Rotation	190 deg.	190 deg.	190 deg.
D Transport Height	3.48 m (11 ft. 5 in.)	3.49 m (11 ft. 5 in.)	3.49 m (11 ft. 5 in.)

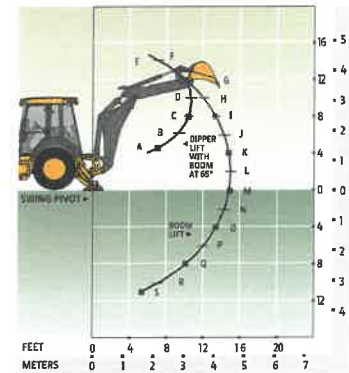
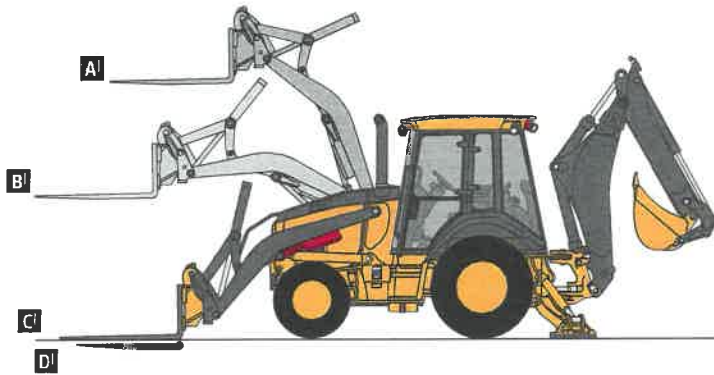
While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations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

**Loader Dimensions and Performance**

	310SL			
P Bucket Dump Angle, Maximum	45 deg.			
Q Rollback Angle at Ground Level	40 deg.			
	<i>Heavy-duty</i>	<i>Heavy-duty long lip</i>	<i>Heavy-duty</i>	<i>Multipurpose</i>
Bucket Capacity	0.86 m <sup>3</sup> (1.12 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)	1.00 m <sup>3</sup> (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**

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



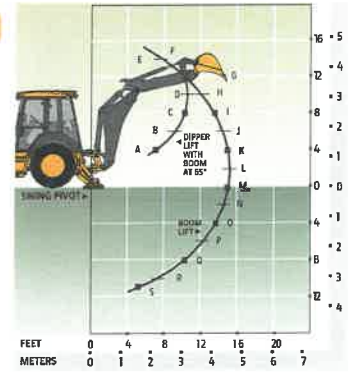
With Standard Dipperstick

**Lift Capacities**

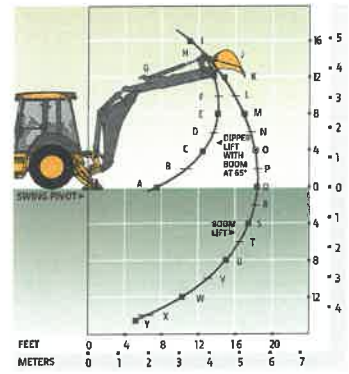
Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

	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.)	4604 kg (10,151 lb.)	3554 kg (7834 lb.)	3946 kg (8,699 lb.)
B	3673 kg (8,097 lb.)	3673 kg (8,097 lb.)	3251 kg (7,166 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.)	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.)	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.)	2912 kg (6,420 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.)	1678 kg (3,699 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.)	1846 kg (4,070 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.)	1701 kg (3,749 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.)	1198 kg (2,641 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.)	1344 kg (2,962 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.)	1401 kg (3,089 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.)	1422 kg (3,135 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.)	1425 kg (3,141 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.)	1418 kg (3,127 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.)	1407 kg (3,102 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.)	1394 kg (3,073 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.)	1381 kg (3,044 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.)	1369 kg (3,019 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.)	1361 kg (3,001 lb.)
T	—	—	—	—	1186 kg (2,614 lb.)	1359 kg (2,995 lb.)
U	—	—	—	—	1190 kg (2,623 lb.)	1365 kg (3,009 lb.)
V	—	—	—	—	1208 kg (2,664 lb.)	1388 kg (3,061 lb.)
W	—	—	—	—	1261 kg (2,780 lb.)	1451 kg (3,199 lb.)
X	—	—	—	—	1446 kg (3,188 lb.)	1666 kg (3,674 lb.)
Y	—	—	—	—	1986 kg (4,377 lb.)	2289 kg (5,047 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.

<b>Engine</b>	<b>310SL HL</b>	
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	
<b>Cooling</b>		
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	
<b>Powertrain</b>		
<b>Transmission</b>	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift	
<b>Torque Converter</b>	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)	7.1 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)	—
<b>Axles</b>		
Axle Oscillation, Stop to Stop, Front Axle	22 deg.	
Axle Ratings	<i>Front</i>	<i>Rear</i>
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.)
<b>Differentials</b>		
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control	
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock	
<b>Steering (ISO 5010)</b>	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	10.09 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
<b>MFWD Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears	
<b>Rear Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears	
<b>Brakes (ISO 3450)</b>		
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	
<b>Hydraulics</b>		
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)	
<b>Controls</b>		
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



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## 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
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## 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

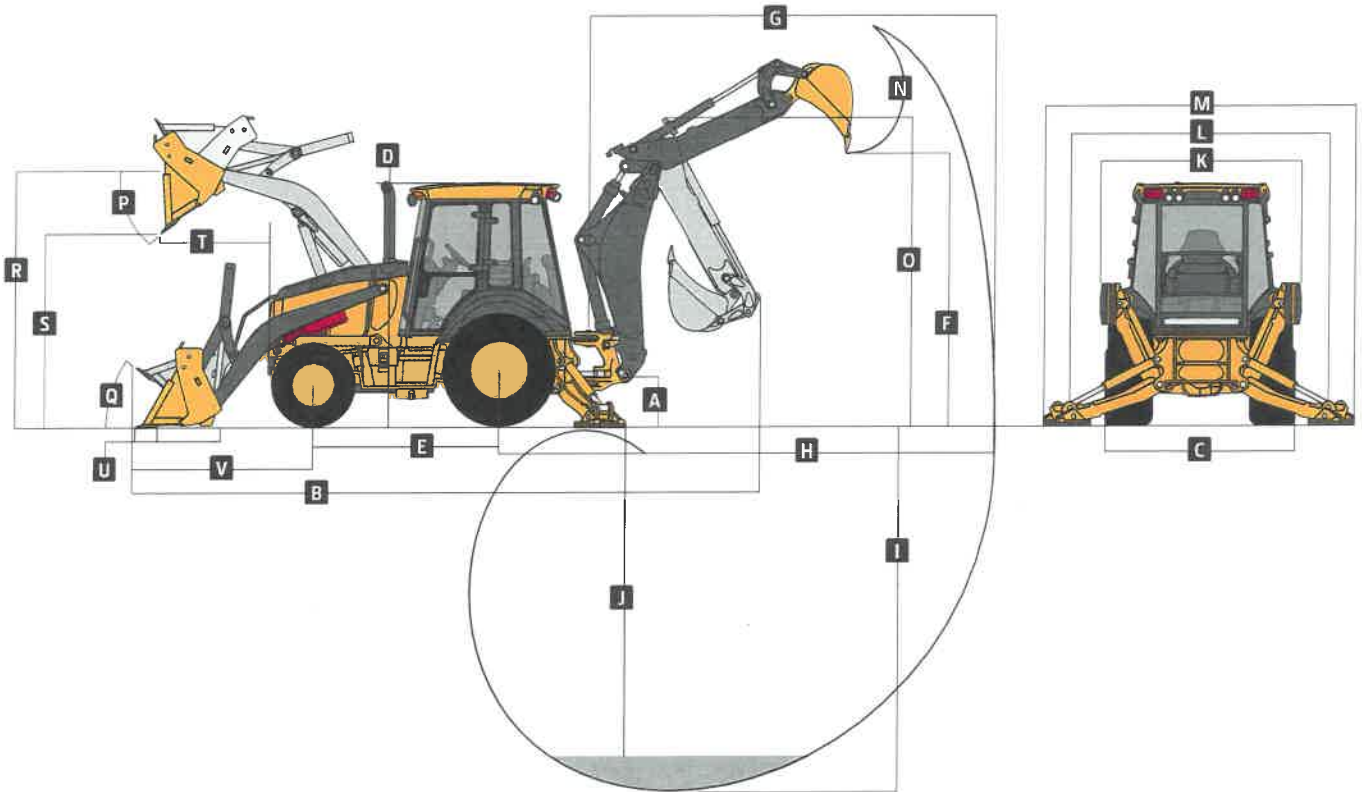
With Full Fuel Tank, 79-kg (175 lb.) Operator, Standard Equipment, and Standard Bumper	7516 kg (16,571 lb.)
Typical with Cab, Extendable Dipperstick, and 454-kg (1,000 lb.) Counterweight	8495 kg (18,729 lb.)

### 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.)

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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-m<sup>3</sup> [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.

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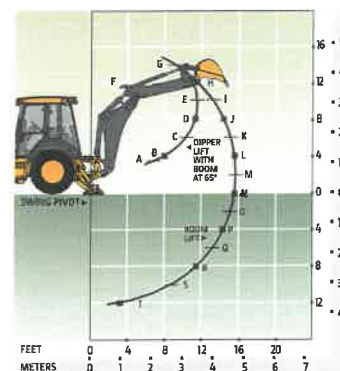
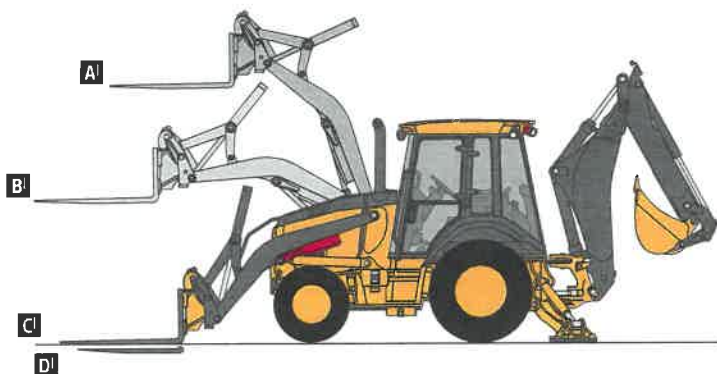
## Loader Dimensions and Performance (continued)

### 310SL HL

	Heavy-duty	Heavy-duty long lip	Heavy-duty	Multipurpose
Bucket Capacity	0.86 m <sup>3</sup> (1.12 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)	1.00 m <sup>3</sup> (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

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



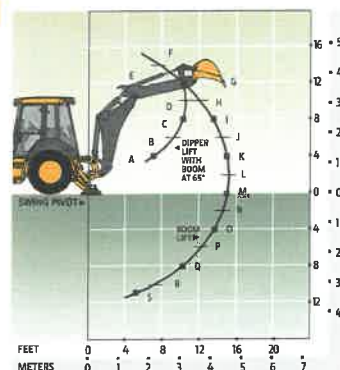
With Standard Dipperstick

## Lift Capacities

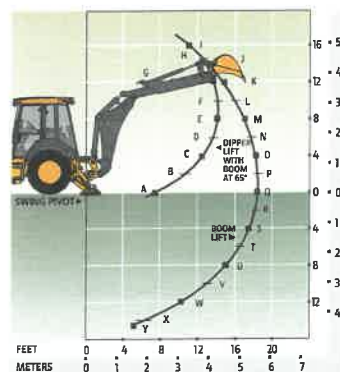
Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

	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	5625 kg (12,402 lb.)	5625 kg (12,402 lb.)	5350 kg (11,795 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.)	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.)	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.)	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.)	3282 kg (7,235 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.)	1496 kg (3,297 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.)	2236 kg (4,931 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.)	2067 kg (4,557 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.)	1031 kg (2,273 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.)	1312 kg (2,892 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.)	1442 kg (3,179 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.)	1509 kg (3,327 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.)	1545 kg (3,405 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.)	1562 kg (3,444 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.)	1570 kg (3,461 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.)	1573 kg (3,467 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.)	1574 kg (3,470 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.)	1576 kg (3,474 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.)	1582 kg (3,487 lb.)
T	3270 kg (7,210 lb.)	8176 kg (3,709 lb.)	—	—	1390 kg (3,065 lb.)	1595 kg (3,516 lb.)
U	—	—	—	—	1412 kg (3,113 lb.)	1622 kg (3,575 lb.)
V	—	—	—	—	1457 kg (3,212 lb.)	1674 kg (3,691 lb.)
W	—	—	—	—	1556 kg (3,430 lb.)	1789 kg (3,944 lb.)
X	—	—	—	—	1873 kg (4,130 lb.)	2154 kg (4,748 lb.)
Y	—	—	—	—	2846 kg (6,274 lb.)	3266 kg (7,200 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



# 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.

<b>Engine</b>		<b>315SL</b>	
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		
<b>Cooling</b>			
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		
<b>Powertrain</b>			
<b>Transmission</b>	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift		
<b>Torque Converter</b>	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	<i>Forward</i>	<i>Reverse</i>	
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)	—	
<b>Axles</b>			
Axle Oscillation, Stop to Stop, Front Axle	22 deg.		
Axle Ratings	<i>Front</i>	<i>Rear</i>	
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.)	
<b>Differentials</b>			
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		
<b>Steering (ISO 5010)</b>		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	10.10 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	
<b>MFWD Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears		
<b>Rear Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears		
<b>Brakes (ISO 3450)</b>			
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		
<b>Hydraulics</b>			
<b>Main Pump</b>	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)		
<b>Controls</b>			
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, MFWD (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
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## 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)
	12.5/80-18 F3 (12)	16.9L-28 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)
	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.)

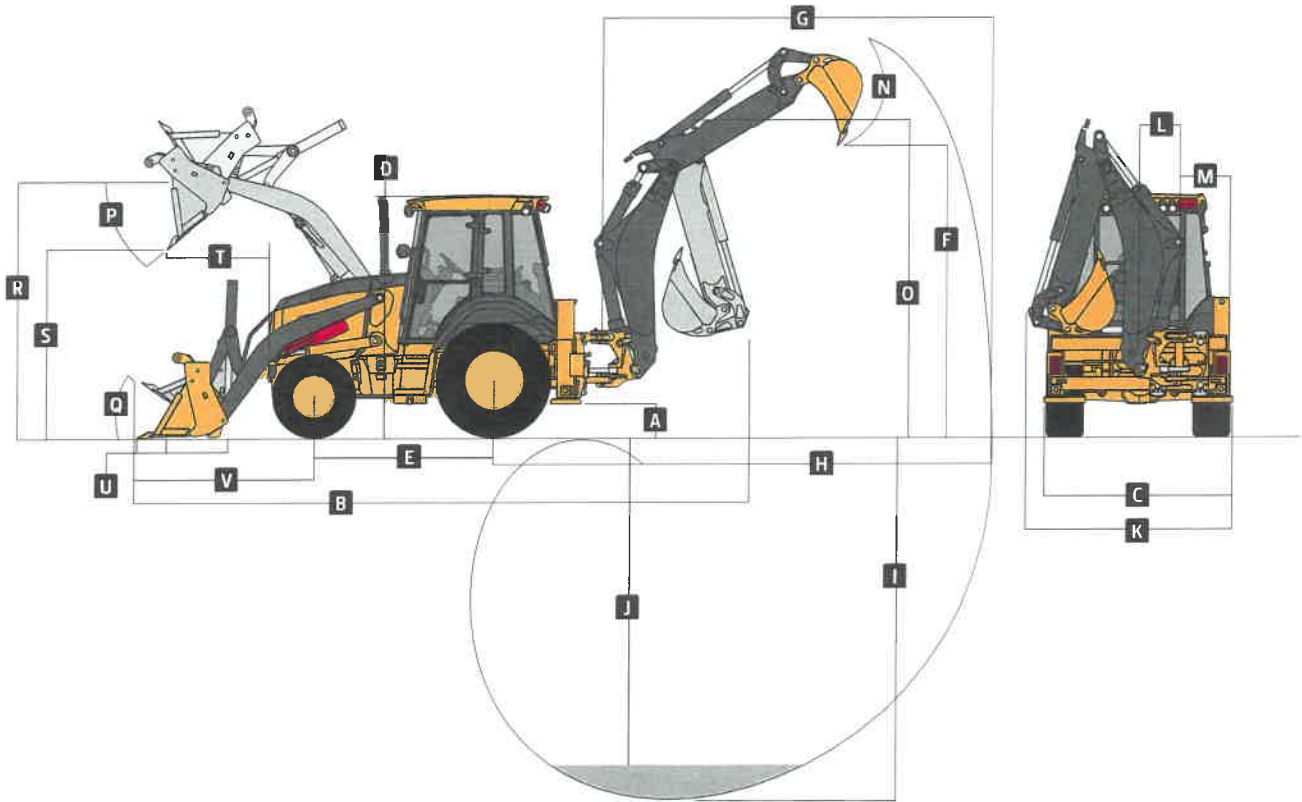
### Optional Components (weight difference between base equipment and option)

MFWD with Tires	220 kg (485 lb.)
Cab	263 kg (580 lb.)
Extendable Dipperstick	222 kg (490 lb.)

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## 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<sup>3</sup> (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 Optional Extendable Dipperstick		
	With Standard Backhoe	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.)

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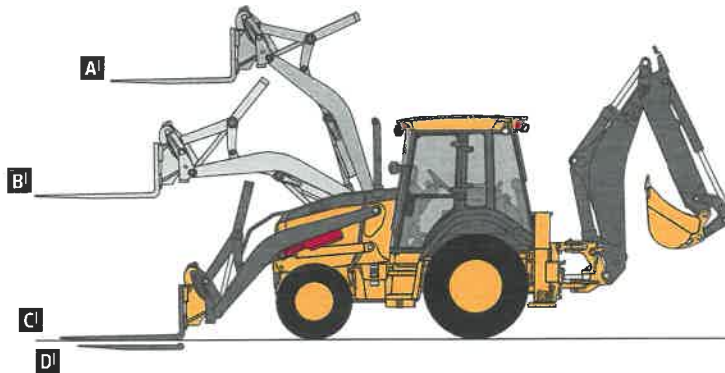
**Loader Dimensions and Performance**

**315SL**

<b>P</b> Bucket Dump Angle, Maximum	45 deg.			
<b>Q</b> 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 <sup>3</sup> (1.00 cu. yd.)	1.00 m <sup>3</sup> (1.31 cu. yd.)	0.96 m <sup>3</sup> (1.25 cu. yd.)	1.00 m <sup>3</sup> (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.)
<b>R</b> 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.)
<b>S</b> 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.)
<b>T</b> 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.)
<b>U</b> 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.)
<b>V</b> 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**

<b>Hydraulic Capacity</b>	<i>1219-mm (48 in.) Tines</i>	<i>1524-mm (60 in.) Tines</i>
<b>A<sup>1</sup></b> Maximum Height	2023 kg (4,459 lb.)	1891 kg (4,168 lb.)
<b>B<sup>1</sup></b> Maximum Reach	3160 kg (6,967 lb.)	2979 kg (6,568 lb.)
<b>C<sup>1</sup></b> At Ground Line	4000 kg (8,818 lb.)	3783 kg (8,340 lb.)
<b>D<sup>1</sup></b> Below Ground Line	216 mm (8.5 in.)	216 mm (8.5 in.)

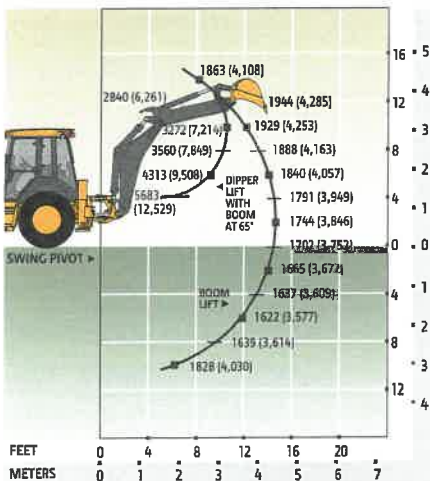


**Lift Capacities**

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

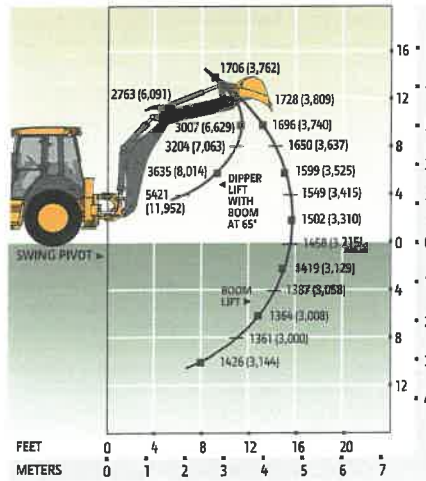
**STANDARD LIFT**

**With Standard Dipperstick**



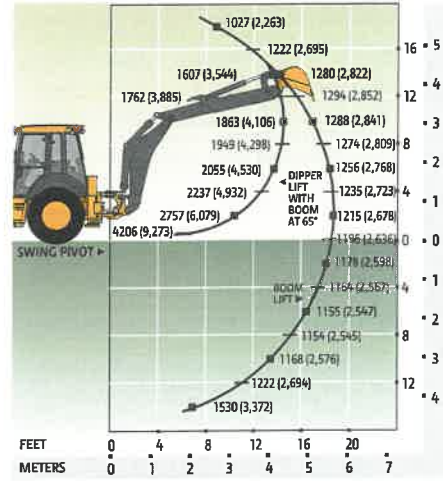
**STANDARD LIFT**

**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

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<b>Engine</b>	<b>410L</b>	
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	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	
<b>Cooling</b>		
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	
<b>Powertrain</b>		
<b>Transmission</b>	5-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift	
<b>Torque Converter</b>	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)	—
<b>Axles</b>		
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.)
<b>Differentials</b>		
Mechanical-Front-Wheel-Drive (MFWD) Axle	Automatic, limited-slip traction control	
Rear Axle	Foot actuated, hydraulically engaged 100% mechanical lock	
<b>Steering (ISO 5010)</b>	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
<b>MFWD Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears	
<b>Rear Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 4 gears	
<b>Brakes (ISO 3450)</b>		
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	
<b>Hydraulics</b>		
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)	
<b>Controls</b>		
Backhoe	2-lever mechanical standard; pilot controls with pattern select and auxiliary functions optional; field kits available for additional mechanical-control options	



# 410L SPECIFICATIONS



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## 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,

8068 kg (17,786 lb.)

Standard Equipment, and 340-kg (750 lb.)

Counterweight

Typical with Cab, Extendable Dipperstick, and

8828 kg (19,463 lb.)

567-kg (1,250 lb.) Counterweight

## 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.)

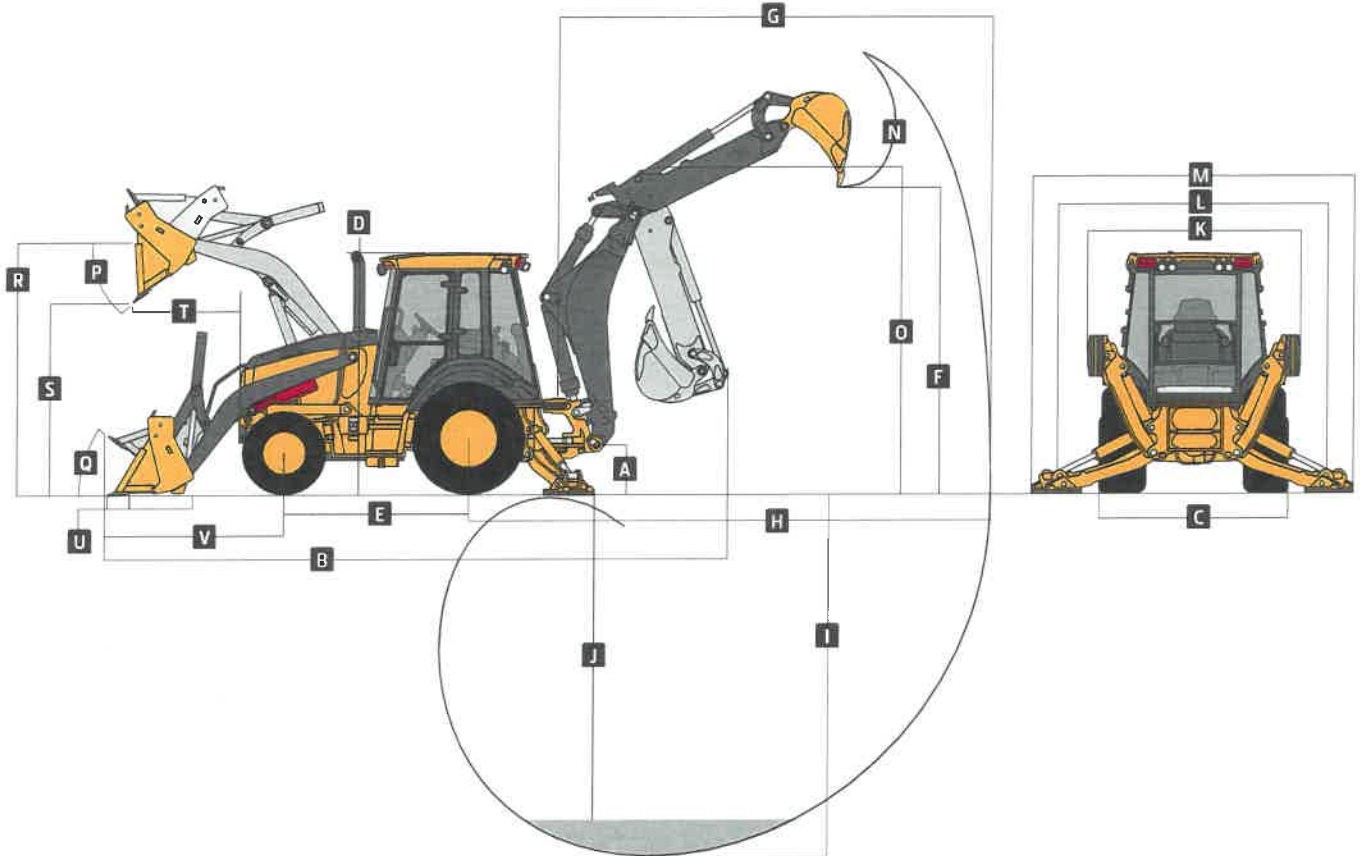
Backhoe Bucket Coupler

64 kg (141 lb.)

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## 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-m<sup>3</sup> (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		

	With Standard Backhoe	With Optional Extendable Dipperstick Retracted	Extended
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.)

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.

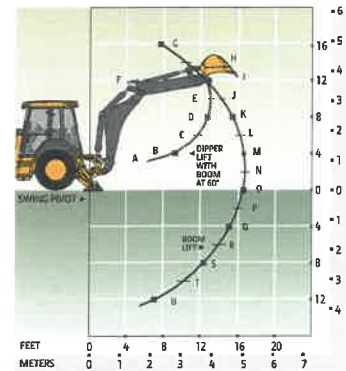
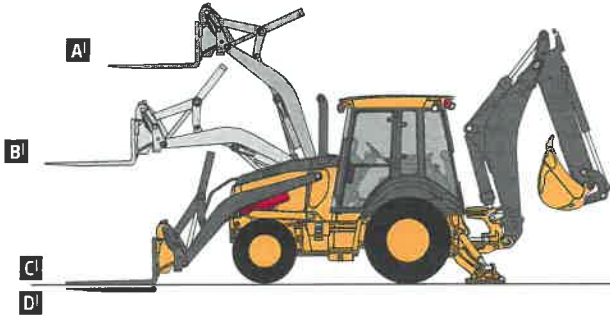
**Loader Dimensions and Performance**

**410L**

<b>P</b> Bucket Dump Angle, Maximum	45 deg.		
<b>Q</b> Rollback Angle at Ground Level	40 deg.		
	<i>Heavy-duty</i>	<i>Heavy-duty</i>	<i>Multipurpose</i>
Bucket Capacity	1.00 m <sup>3</sup> (1.31 cu. yd.)	1.15 m <sup>3</sup> (1.50 cu. yd.)	1.00 m <sup>3</sup> (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.)
<b>R</b> 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.)
<b>S</b> 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.)
<b>T</b> Reach at Full Height, Bucket at 45 deg.	730 mm (28.7 in.)	772 mm (30.4 in.)	772 mm (30.4 in.)
<b>U</b> Digging Depth Below Ground, Bucket Level	135 mm (5.3 in.)	135 mm (5.3 in.)	131 mm (5.1 in.)
<b>V</b> 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**

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



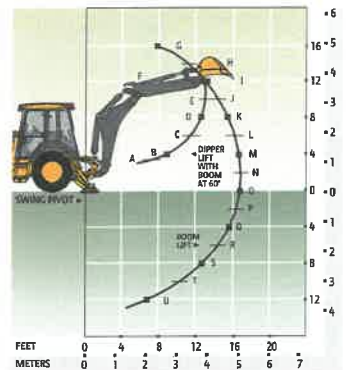
With Standard Dipperstick

**Lift Capacities**

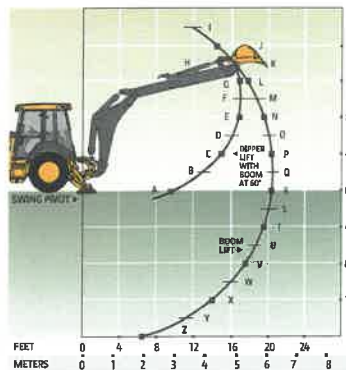
Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

<i>With Standard Dipperstick</i>		<i>With 1.21-m (4 ft. 0 in.) Extendable Dipperstick, Retracted</i>		<i>With 1.21-m (4 ft. 0 in.) Extendable Dipperstick, Extended</i>	
<i>Standard Lift</i>	<i>Lift Mode</i>	<i>Standard Lift</i>	<i>Lift Mode</i>	<i>Standard Lift</i>	<i>Lift Mode</i>
<b>A</b>	7747 kg (17,080 lb.)	7747 kg (17,080 lb.)	7508 kg (16,553 lb.)	4957 kg (10,928 lb.)	5327 kg (11,743 lb.)
<b>B</b>	6041 kg (13,318 lb.)	6041 kg (13,318 lb.)	5826 kg (12,845 lb.)	3141 kg (6,924 lb.)	3492 kg (7,698 lb.)
<b>C</b>	4469 kg (9,852 lb.)	4469 kg (9,852 lb.)	4277 kg (9,429 lb.)	2729 kg (6,015 lb.)	3036 kg (6,693 lb.)
<b>D</b>	4024 kg (8,871 lb.)	4024 kg (8,871 lb.)	3838 kg (8,461 lb.)	2513 kg (5,541 lb.)	2798 kg (6,169 lb.)
<b>E</b>	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.)
<b>F</b>	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.)
<b>G</b>	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.)
<b>H</b>	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.)
<b>I</b>	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.)
<b>J</b>	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.)
<b>K</b>	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.)
<b>L</b>	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.)
<b>M</b>	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.)
<b>N</b>	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.)
<b>O</b>	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.)
<b>P</b>	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.)
<b>Q</b>	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.)
<b>R</b>	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.)
<b>S</b>	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.)
<b>T</b>	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.)
<b>U</b>	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.)
<b>V</b>	—	—	—	—	1614 kg (3,558 lb.)
<b>W</b>	—	—	—	—	1643 kg (3,623 lb.)
<b>X</b>	—	—	—	—	1703 kg (3,755 lb.)
<b>Y</b>	—	—	—	—	1843 kg (4,064 lb.)
<b>Z</b>	—	—	—	—	2465 kg (5,435 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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<b>Engine</b>	<b>710L</b>	
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	
<b>Cooling</b>		
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	
<b>Powertrain</b>		
<b>Transmission</b>	4-speed, helical-cut gears, full PowerShift™ transmission with hydraulic reverser standard; electric clutch cutoff on loader lever; standard AutoShift	
<b>Torque Converter</b>	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	<i>Forward</i>	<i>Reverse</i>
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)	—
<b>Axles</b>		
Axle Oscillation, Stop to Stop, Front Axle	18 deg.	
Axle Ratings	<i>Front</i>	<i>Rear</i>
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.)
<b>Differentials</b>		
MFWD Axle	Automatic, limited-slip traction control	
Rear Axle	Foot actuated, hydraulically engaged mechanical lock	
<b>Steering (ISO 5010)</b>	Hydrostatic power steering and emergency steering	
Axle	<i>MFWD</i>	<i>Non-Powered Front</i>
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
<b>MFWD Axle</b>	Heavy duty, outboard planetary final drives distribute shock loads over 3 gears	
<b>Rear Axle</b>	Heavy duty, inboard planetary final drives distribute shock loads over 3 gears	
<b>Brakes (ISO 3450)</b>		
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	
<b>Hydraulics</b>		
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



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## Hydraulics (continued)

## 710L

### Controls

Backhoe  
Loader

Pilot controls with pattern select standard; electrohydraulic (EH) auxiliary functions optional  
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) 14.5/75-16.1 F3 (16)	21L-28 R4 (18) 20.5-25 L-3 (20)
With MFWD	15-19.5 R4 (12) 15-19.5 R4 (12)	21L-28 R4 (18) 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

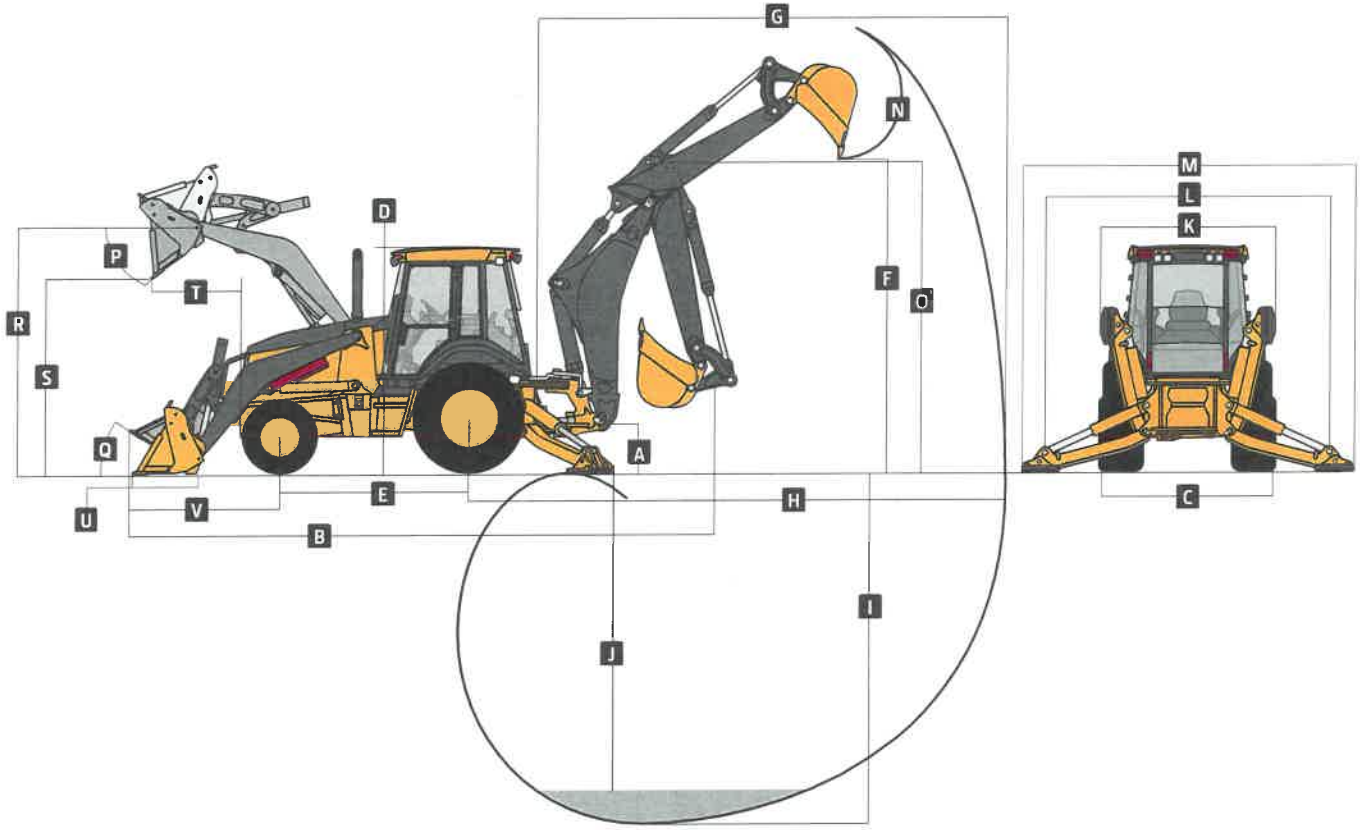
With Full Fuel Tank, 79-kg (175 lb.) Operator, and Standard Equipment	11 607 kg (25,588 lb.)
Typical with Cab, MFWD, Extendable Dipperstick, and 680-kg (1,500 lb.) Counterweight	12 262 kg (27,033 lb.)

#### 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.)

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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-m<sup>3</sup> (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		
	<i>With Standard Backhoe</i>	<i>With Optional Extendable Dipperstick</i>	
		<i>Retracted</i>	<i>Extended</i>
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.

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**Loader Dimensions and Performance (continued) 710L**

	Standard-duty	Standard-duty	Multipurpose
Bucket Capacity	1.24 m <sup>3</sup> (1.62 cu. yd.)	1.43 m <sup>3</sup> (1.87 cu. yd.)	1.00 m <sup>3</sup> (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 <sup>1</sup> Maximum Height	2632 kg (5,803 lb.)
B <sup>1</sup> Maximum Reach	4378 kg (9,651 lb.)
C <sup>1</sup> At Ground Line	6057 kg (13,353 lb.)
D <sup>1</sup> Below Ground Line	140 mm (5.5 in.)

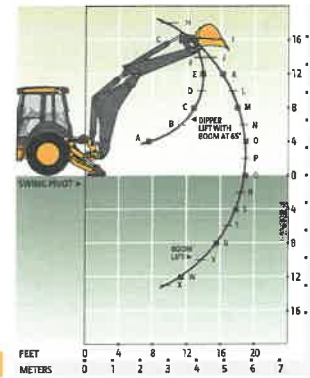


**Lift Capacities**

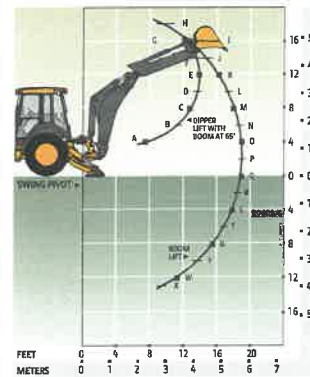
Lift capacities are over-end values in kg (lb.). Figures listed are 100% of the maximum lift force available.

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.)	5290 kg (11,662 lb.)	3397 kg (7,488 lb.)
C	4492 kg (9,903 lb.)	4732 kg (10,432 lb.)	4344 kg (9,578 lb.)	4520 kg (9,965 lb.)	2914 kg (6,425 lb.)
D	4087 kg (9,010 lb.)	4419 kg (9,743 lb.)	3932 kg (8,669 lb.)	4229 kg (9,323 lb.)	2659 kg (5,862 lb.)
E	3718 kg (8,197 lb.)	4022 kg (8,866 lb.)	3557 kg (7,843 lb.)	3860 kg (8,510 lb.)	2479 kg (5,466 lb.)
F	3219 kg (7,096 lb.)	3483 kg (7,679 lb.)	3050 kg (6,724 lb.)	3313 kg (7,304 lb.)	2324 kg (5,123 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.)

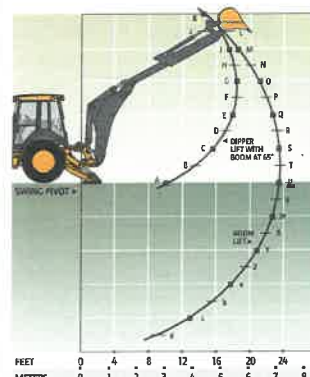
\*Indicates capacity is stability limited. Lift capacities are over end with stabilizers down and tires tangent to ground.



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
<b>Powertrain</b>							
●							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
●	●	●	●	●	●	●	Transmission remote oil-sampling port
●	●	●	●	●	●	●	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
<b>Backhoe</b>							
		●	●		●	●	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 swagers, thumbs, augers, etc. (plumbing not included)
▲	▲	▲	▲	▲	▲	▲	Hydraulic thumb
			▲	▲	▲	▲	Rear hydraulic coupler
			▲	▲	▲	▲	Spring-type coupler
<b>Loader<sup>2</sup></b>							
●	●	●	●	●	●	●	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
<sup>1</sup> See dealer for range of HD, multipurpose, and coupler buckets and forks.							
<b>Hydraulic System</b>							
●							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

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-m<sup>3</sup> (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-m<sup>3</sup> (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-m<sup>3</sup> (1.31 cu. yd.) loader bucket; a 315SL unit with 16.9L-28 R4 (12) tubeless rear and 12.5-80-18 10PR (R4) front tires, and 1.00-m<sup>3</sup> (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-m<sup>3</sup> (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-m<sup>3</sup> (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	
		●	●		●		<b>Hydraulic System (continued)</b>
							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
							<b>Electrical System</b>
						●	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
							<b>Lights</b>
						●	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)
							<b>Operator's Station</b>
						●	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)
							<b>Operator's Station (continued)</b>
						●	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
						●	<b>Canopy:</b> Mechanical-suspension deluxe vinyl swivel seat with lumbar adjustment and armrests (fully adjustable)
						●	<b>Quarter Cab:</b> Mechanical-suspension deluxe vinyl swivel seat with lumbar adjustment and armrests (fully adjustable), front windshield, and windshield wiper (1 front)
						▲	<b>Cab with Dual Doors and A/C:</b> 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)
							<b>Overall Vehicle</b>
						●	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

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**JOHN DEERE**

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# ***RISING TO THE CHALLENGE.***

Every day brings new challenges — demanding jobsites, long hours, and an increasing focus on uptime. Our job is to bring you the opportunities to overcome them. Our experienced engineers, specialized service techs, and global parts and service network are always ready to step up to help you **Run Your World.**



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

USERID: XCI9620      PRICE INFORMATION      01DEC20    11:20:21    PAGE    1

ORDER NUMBER:      REVIEW PRIOR PRICE: 01DEC20  
 SOLD TO ACCT: 179614 COWEN, WV      REQUESTED DELIVERY:  
 SHIPPING MODE:      SOLD:      NEW ORDER:

ORDER CODE	QTY	DESCRIPTION	WEIGHT	SUGGESTED LIST PRICE
0A71T	1	310SL BACKHOE LOADER	6830	121,345.00
1065	1	ENGINE FT4	3576	10,028.00
170C	1	JDLINK 5YR TEMP LICENSE 50HR	5	.00
2035	1	CAB STANDARD	1566	13,243.00
2401	1	DECAL ENG W/ENG PACKET	6	.00
3095	1	AXLE MFWD W/LIM SLIP & AUTO	1368	.00
4464	1	TIRE GAL 19.5L24 12.5/80-18	920	.00
5285	1	CONTROL PILOT	56	2,594.00
5410	1	COUPLER DEERE STD QUICK	160	1,465.00
5656	1	BUCKET 24" HD 7.5 CU FT	432	1,370.00
6010	1	DIPPER - STANDARD	1001	.00
6230	1	HYD,AUX W/2WAY FLOW, THUMB	285	4,582.00
7025	1	LDR SINGLE LEVER NO AUX	134	.00
7645	1	LDR BKT 1.3CY LG LIP BKT 92"	1195	3,424.00
8410	1	FRONT COVER COUNTERWEIGHT	13	.00
8675	1	BATTERY DUAL	127	287.00
9060	1	MIRRORS INTERIOR	2	82.00
9116	1	ROOF W/LED LIGHTS	96	1,053.00
9140	1	BUCKET CYLINDER HEAVY DUTY	139	273.00
9920	1	MIRRORS EXTERIOR REAR VIEW 2	8	343.00
9970	1	SEAT AIR SUSP CLOTH W/HEAT	146	994.00

TOTAL    18065    161,083.00