



CITY HALL 109 NORTH MAIN STREET · HARTFORD, WI 53027

**AGENDA**  
**CITY OF HARTFORD UTILITY COMMITTEE**  
**CITY HALL COUNCIL CHAMBERS**  
**Tuesday, January 3, 2017**  
**5:30 pm**

This is a regularly scheduled meeting of the Utility Committee of the City of Hartford. Prior to this meeting, notice was given to the public by posting an agenda on the City Office Meeting Board, Library Bulletin Board, and Police Bulletin Board. In addition, the Daily News (the official City newspaper) was given notice of this meeting and an agenda was placed in their City Office mailbox at least 24 hours ago.

- 1) Call to Order
- 2) Public Comment Period
- 3) Update on electric service interruptions and water main breaks
- 4) Discussion and consideration of authorizing appropriate City Officials to enter into an agreement with Terex Utilities, Inc. for the purchase of a 2017 International truck chassis with a 48' boom for a price not to exceed \$246,761 (Executive Summary attached)
- 5) Adjournment

"Persons with disabilities requiring special accommodations for attendance at the meeting should contact the City Clerk at least one (1) business day prior to the meeting."

"Members of the Common Council may attend the above meeting. Pursuant to State ex rel. Badke v. Greendale Village Board, 173 Wis. 2d 553, 494 N.W.2d 408 (1993) such attendance may be considered a meeting of the Common Council. This notice is given so that members of the Common Council may attend the meeting without violating the open meeting law."

## EXECUTIVE SUMMARY

**TITLE:** Purchase a 2017 Digger Derrick Truck

**BACKGROUND:** The approved 2017 Capital Improvement Program includes \$250,000 to purchase a new digger derrick truck. This vehicle is used in the electric industry and is designed primarily for working near energized conductors while setting and removing poles and installing pole-mount transformers. In addition, this truck is used frequently for hauling poles, pulling overhead and underground wire for rebuild projects and lifting and setting heavy pieces of equipment such as three-phase transformers. The new truck would be an addition to our fleet and would be similar to our existing truck with the exception of a much greater lifting capacity.

Our existing digger derrick has a lifting capacity of 9,170 pounds with the winch line mounted at the end of the boom. The current lifting capacity is undersized and is at the maximum allowable limit when picking our largest standard transformer size offered to our customers. Transformer manufacturers are using more efficient materials, which are much heavier than traditional materials, to meet the energy efficiency requirements created by the Dept. of Energy. Therefore, a truck with a substantial increase in lifting capacity will be needed. The tip-mounted winch is also an important feature on our existing truck as it allows us to pull overhead and underground wire on rebuild projects with the use of auxiliary attachments that we have purchased in the past.

The specifications for the new digger derrick truck required a minimum boom height of 48', a winch line mounted at the end of the boom and a minimum lifting capacity of 13,700 pounds on a bare boom at a distance of ten feet from the base of the boom. In addition, vendors were required to provide the lifting capacity of the boom with auger and upper boom attached. The boom was specified to be installed on a 2017 International chassis with a fiberglass service body. Bid proposals were received from three vendors and their proposals are listed below.

<u>Vendor</u>	<u>Lifting Capacity</u>	<u>Price</u>
1. <b>Terex Utilities, Inc.</b>	<b>11,900</b>	<b>\$246,761</b>
2. Utility Sales and Service, Inc.	9,660	\$228,762
3. Altec Industries, Inc.	9,270	\$211,209

A detailed review of each proposal was conducted. Terex Utilities Inc. was the only vendor able to meet the criteria in our specs for boom height, winch location and lifting capacity. The truck quoted by Terex Utilities will have over an additional ton of lifting capacity when compared to the other proposals which should significantly reduce wear on the boom. They are also the most responsive and responsible vendor with a proposal of \$246,761. Hartford Electric has purchased multiple trucks from Terex Utilities, Inc. in the past. Their trucks have proved to be well constructed and reliable. A one year warranty is included with the proposal.

**FISCAL IMPACT:** \$246,761 from the budgeted \$250,000 proposed in the Capital Improvement Program under Reference No. 380-13-312.

**RECOMMENDATION:** To authorize appropriate City Officials to enter into an agreement with Terex Utilities, Inc. for the purchase of a 2017 International truck chassis with a 48' boom capable of lifting 11,900 lbs. for a price not to exceed \$246,761.

**PREPARED BY:** Brian Rhodes 12/27/16  
BRIAN RHODES DATE  
UTILITY DIRECTOR

**REVIEWED BY:** Dawn Timm 12/28/16  
DAWN TIMM DATE  
FINANCE DIRECTOR

**APPROVED BY:** Steve Volkert 12/28/16  
STEVE VOLKERT DATE  
CITY ADMINISTRATOR

Routing: Utility Committee



**TEREX**<sup>®</sup>

**CUSTOMER ORDER ACKNOWLEDGEMENT**

Terex Utilities, Inc. - 200 Eden Way - White House, TN 37188 - Phone: 605-882-4000 - Fax: 605-882-5595

Date: **12/19/2016**

Quote Number: **QU07776**

**HARTFORD ELECTRIC**  
620 WEST SUMNER STREET  
HARTFORD, WI 53027  
(262)670-3702

Attention: **CURT KAMP**

Unit Body Install Price: **\$161,648**  
Chassis: **\$85,113**

**Grand Total Each: \$246,761**

\*Plus all applicable taxes and license fees. Chassis payment is due upon chassis receipt at our facility.

Quote is valid for 30 days. Please ensure the accuracy of the specifications and drawings you provide. Changes made after receipt of order may incur additional charges. If you are trading equipment in, you warrant that: You have good title to the trade-in; it is free of all liens and encumbrances; all information you have provided related to the trade-in is true and correct.

**Notes:**

- 1) Delivery Terms are: FCA, Shipping Point Delivery Prepaid and Included.
- 2) Terms: Net 30 days
- 3) Delivery days from receipt of order shall be 210 - 270

**Buyer hereby submits its offer to purchase the Products in this Quotation, subject to acceptance by Seller. Buyer has read and agrees to all of Seller's attached Terms and Conditions of Sale. Please fax completed form to 605-882-5595 or transmit it to your Account Manager.**

Terex Utilities Inc.

*Steve Fedt*  
Sales Coordinator

*Justin Pinkalla*  
Account Manager

Accepted By:

\_\_\_\_\_

PO Number: \_\_\_\_\_

Quantity: \_\_\_\_\_

Grand Total: \_\_\_\_\_

Date: \_\_\_\_\_

**TERMS & CONDITIONS OF SALE**  
**TEREX SOUTH DAKOTA, INC./TEREX UTILITIES, INC.**  
**U.S. and CANADA (except Quebec)**

**1. Terms and Conditions.** These Terms and Conditions of Sale cancel and supersede any and all terms of sale pertaining to Parts and Equipment (and any supplements thereto) previously issued by Seller to Buyer and are subject to change without advance notice. "Seller" herein shall be the seller identified in the Sales Order Acknowledgement or other applicable sales documents. The prices, charges, discounts, terms of sale and other provisions referred to or contained herein shall apply to Seller's Parts and Equipment (hereinafter collectively referred to as "Products") sold and shipped to Buyer on and after August 1, 2016, and shall remain in effect unless and until superseded in writing by Seller. Acceptance of an order for Products by Seller shall be deemed to constitute a binding agreement between the parties pursuant to the terms and conditions contained herein and Buyer agrees that the order may not thereafter be cancelled, countermanded or otherwise changed without the prior consent of Seller. This agreement supersedes any prior agreements, representations, or other communications between the parties relating to the subject matter set forth herein. No other terms and conditions shall apply including the terms of any purchase order submitted to Seller by Buyer, whether or not such terms are inconsistent or conflict with or are in addition to the terms and conditions set forth herein. Seller's acceptance of Buyer's purchase order is conditional upon Buyer's acceptance of all the terms and conditions contained herein. Any communication construed as an offer by Seller and acceptance thereof is expressly limited to the terms and conditions set forth herein. The Products are intended for industrial/commercial use by professional contractors and their trained employees and are not intended for use by consumers.

**2. Terms of Payments.** Payment for Products purchased by Buyer shall be made in accordance with any of the following terms, provided they have been previously arranged with and expressly approved by Seller in writing: (1) cash in advance; (2) confirmed, irrevocable letter of credit established in such amount and form and at such time and at such bank as shall be approved by Seller in respect of each order; (3) credit account purchases for which payment will be due and payable on net thirty (30) day terms, plus service and other charges applicable to past due amounts in accordance with Seller's written notices; or (4) other payment arrangements expressly approved by Seller in writing prior to or at the time the order is placed. If any Buyer credit account purchase is not paid in accordance with Seller's credit payment terms, in addition to any other remedies allowed in equity or by law, Seller may refuse to make further shipments without advance payment by Buyer. Nothing contained herein shall be construed as requiring Seller to sell any Products to Buyer on credit terms at any time, or prohibiting Seller from making any and all credit decisions which it, in its sole discretion, deems appropriate for Seller. Seller shall have the right, at its option, to charge interest on all amounts not paid when due and Buyer agrees to pay such interest calculated on a daily basis, from the date that payment was due until the Seller receives payment in full, at the rate of 1.5% per month or the maximum rate permitted by applicable law. Unless otherwise agreed in writing between Seller and Buyer, Seller may, in its sole discretion, increase or decrease the price of any Product, as Seller deems reasonably necessary, at any time prior to shipment and invoice Buyer for the same. If Buyer orders the chassis through Seller, the chassis payment is due upon receipt of chassis by Seller and the balance owed for the completed unit is due in accordance with agreed upon payment terms. When supplied by Buyer, Seller will inspect the chassis upon receipt and will notify Buyer of any chassis mounted components (including but not limited to fuel tanks, air tanks, battery boxes and exhaust systems) that require relocation. Buyer will be invoiced for such work upon completion of the finished Equipment.

**3. Taxes and Duties.** Unless otherwise noted, prices quoted do not include taxes or duties of any kind or nature. Buyer agrees that it will be responsible for filing all tax returns and paying applicable tax, duty, export preparation charge and export documentation charge resulting from the purchase of the Products. In addition, in the event any other similar tax is determined to apply to Buyer's purchase of the Products from Seller, Buyer agrees to indemnify and hold Seller harmless from and against any and all such other similar taxes, duties and fees. All prices quoted are U.S. dollars unless otherwise specified. The amount of any present or future taxes applicable to the sale, transfer, lease or use of the Products shall be paid by Buyer; or in lieu thereof, Buyer shall provide Seller with a tax exemption certificate satisfactory to the applicable taxing authority proving that no such tax is due and payable upon such sale, transfer, lease or use.

**4. Title, Property, Risk and Delivery.** Unless otherwise stated in writing, for all intra-continental United States shipments, all prices and delivery are FCA, point of manufacture (Incoterms 2010); for all other shipments, all prices and delivery are FAS, named port of shipment (Incoterms 2010). Title and all risk of loss or damage to Products shall pass to Buyer upon delivery, as per Incoterms 2010. Any claims for loss, damage or delay in transit must be entered and prosecuted by the Buyer directly with the carrier, who is hereby declared to be the agent of the Buyer. Seller shall not be liable for any delay in performance of this agreement or delivery of the Products, or for any damages suffered by Buyer by reason of delay, when the delay is caused, directly or indirectly, by a force majeure event described in Section 20 herein or any other cause beyond Seller's control. Claims for shortages in shipments shall be deemed waived and released by Buyer unless made in writing within five (5) days after Buyer's receipt of shipment. Seller's responsibility for shipment shall cease upon delivery of the Products to the place of shipment, and all claims occurring thereafter shall be made to or against the carrier by Buyer. Delivery shall generally be 240 to 270 days after receipt by Seller of a signed Order, provided that, where applicable: (1) Seller receives the chassis a minimum of 90 days prior to scheduled delivery, (2) drawings are timely sent by Buyer and the approved drawings are returned to Seller by Buyer by the requested date, (3) all vendor-supplied components and Buyer-supplied accessories are received by Seller by the date necessary to comply with scheduled delivery. Seller shall not be liable for any delay in performance of this agreement or delivery of the Products, or for any damages suffered by Buyer by reason of delay, when the

delay is caused, directly or indirectly, by a force majeure event described in Section 20 herein or any other cause beyond Seller's control. Claims for shortages in shipments shall be deemed waived and released by Buyer unless made in writing within fifteen (15) days after Buyer's receipt of shipment. Seller's responsibility for shipment shall cease upon delivery of the Parts and or Equipment to the place of shipment, and all claims occurring thereafter shall be made to or against the carrier by Buyer.

**5. Delays Caused By Buyer.** In the event of a delay in shipment or delivery due to delay by Buyer in furnishing delivery instructions, arranging a method of payment satisfactory to Seller, submitting valid import permits or licenses, or any other delay caused by Buyer or at Buyer's request, if the Products are not shipped or delivered within five (5) days from the first date they are ready to be shipped or delivered, then Seller shall be entitled to charge, as compensation, any additional costs incurred related to such delay. If the Products are not shipped or delivered by the date which is ten (10) days from the first date they are ready to be shipped or delivered, then Buyer's order shall be deemed cancelled and Seller may, in its sole discretion, sell such Products to another buyer without any liability or responsibility to Buyer whatsoever. Seller shall have the right to keep payments on account already received from Buyer, and the difference between the sales price (increased by any other and all further costs, including but not limited to attorney's fees and expenses, storage and other costs, and interest accrued thereon) and the price received from another buyer shall constitute a debt of Buyer and bear interest at the same rate set forth in Section 2 herein. Seller shall be entitled to claim for any further damages suffered as a consequence of Buyer's breach of its obligations hereunder.

**6. Cancellation.** Prior to delivery to place of shipment, a Product order may be cancelled only with Seller's prior consent and upon terms indemnifying Seller from all resulting losses and damages. Seller shall have the right to cancel and refuse to complete a Product order if any term and/or condition governing this agreement is not complied with by Buyer. In the event of cancellation by Seller, or in the event Seller consents to a request by Buyer to stop work or to cancel the whole or any part of any order, Buyer shall, in the event that Seller asks Buyer to do so, make reimbursement to Seller, as follows: (i) any and all work that can be completed within thirty (30) days from date of notification to stop work on account of cancellation shall be completed, shipped and paid in full; and (ii) for work in progress and any materials and supplies procured or for which definite commitments have been made by Seller in connection with the order, Buyer shall pay such sums as may be required to fully compensate Seller for actual costs incurred, plus fifteen percent (15%). Buyer may not cancel any order after Seller's delivery to place of shipment. Orders for "Special" Equipment may not be cancelled after acceptance, except by Seller. Items of "Special" Equipment are those that differ from standard Seller specifications, have a limited market, or incorporate specifications that have been determined for a specific application. Determination of whether an item of Equipment is "Special" shall be made by Seller in its sole discretion.

**7. Inspection and Acceptance.** Buyer agrees that it shall inspect the Products immediately after receipt and promptly (in no event later than fifteen (15) days after receipt) notify Seller in writing of any non-conformity or defect. Buyer further agrees that failure to give such prompt notice or the commercial use of the Products shall constitute acceptance. Acceptance shall be final and Buyer waives the right to revoke acceptance for any reason, whether or not known by Buyer at the time of such acceptance. The giving of any such notice by Buyer shall automatically cause the provisions of Seller's warranty to apply and govern the rights, obligations and liabilities of the parties with respect to such nonconformity or defect, provided under no circumstances shall rejection give rise to any liability of Seller for incidental or consequential damages or losses of any kind. Seller shall not be bound by any agent's, employee's or any other representation, promise or inducement not set forth herein. Seller's catalogues, technical circulars, price lists, illustrations, drawings and any other similar literature are for Buyer's general guidance only and the particulars contained in them shall not constitute representations by Seller and Seller shall not be bound by them.

**8. Warranty for New Products.** Seller warrants its new Equipment and Parts manufactured and sold worldwide, to be free, under normal use and service, of any defects in material or workmanship for a period of twelve (12) months from the date of delivery (as limited by Seller's Limited Product Warranty); provided that Buyer sends Seller written notice of the defect within thirty (30) days of its discovery and establishes that: (i) the Equipment has been operated and maintained in strict compliance with Seller's operating and maintenance manuals ; and (ii) the defect did not result in any manner from the intentional or negligent action or inaction of Buyer, its agents or employees and (2) a new machine registration certificate has been completed, signed and delivered to the Seller within thirty (30) days of the Equipment's "in-service" date. If requested by Seller, Buyer must return any defective Product to Seller's manufacturing facility, or other location designated by Seller, for inspection, and if Buyer cannot establish that conditions (i) and (ii) above have been met, then this warranty shall not cover the alleged defect. Failure to give written notice of defect within such period shall be a waiver of this warranty and any assistance rendered thereafter shall not extend or revive it. Accessories, assemblies and components included in the Products of Seller, which are not manufactured by Seller, are subject to the warranty of their respective manufacturers. This warranty shall not cover any item on which serial numbers have been altered, defaced or removed. Maintenance and wear parts are not covered by this warranty and are the sole maintenance responsibility of Buyer. This warranty is limited to the original purchaser or end-user if sold to a distributor, and is not assignable or otherwise transferable without written agreement of Seller. **THIS WARRANTY IS EXPRESSLY IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED (INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) AND ALL OTHER OBLIGATIONS OR LIABILITY ON SELLER'S PART. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY CONTAINED HEREIN.** Seller neither assumes nor authorizes any other person to assume for Seller any other liability in connection with the sale of Seller's Products. This warranty shall not apply to any of Seller's Products or any part thereof which has been subject to misuse, alteration, abuse,

negligence, accident, acts of God or sabotage. No action by either party shall operate to extend or revive this limited warranty without prior written consent of Seller.

**9. Warranty for Used Equipment.** Used Equipment sold hereunder is sold on an "AS IS, WHERE IS, WITH ALL FAULTS" BASIS WITH NO WARRANTIES WHATSOEVER, EXCEPT AS TO TITLE, UNLESS OTHERWISE SPECIFICALLY AGREED IN WRITING BY BUYER AND SELLER. SELLER ASSUMES NO RESPONSIBILITY FOR THE CONDITION, SAFETY, LEGAL COMPLIANCE, OR USABILITY OF THE USED EQUIPMENT AND MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE USED EQUIPMENT INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SELLER MAKES NO REPRESENTATION OR WARRANTY REGARDING THE CONDITION OF THE USED EQUIPMENT, NOR THE SUFFICIENCY OF ANY WARNINGS, INSTRUCTIONS OR MANUALS PROVIDED WITH THE USED EQUIPMENT. Seller recommends and Buyer acknowledges that Buyer should contact the original manufacturer to obtain all available information for the used Equipment, including but not limited to product manuals, warnings, safety bulletins, recall notices, and instructional placards before using the used Equipment. Seller shall not be responsible for providing such information. Buyer agrees not to assert any claims against Seller with respect to the used Equipment or its use. Buyer agrees that it shall inspect the used Equipment prior to issuance of a purchase order for such Equipment and acknowledges that it is not relying upon any photographs, images, videos, representations, statements or other assertions made by Seller with respect to the used Equipment's condition, but is relying upon its own knowledge and/or inspection of the used Equipment.

**10. Remedies for Breach.** IN THE EVENT OF ANY BREACH OF THE WARRANTY BY SELLER, THE PARTIES AGREE THAT SELLER'S LIABILITY SHALL BE LIMITED EXCLUSIVELY TO THE REMEDIES OF REPAIR OR REPLACEMENT (AT SELLER'S SOLE DISCRETION) OF ANY DEFECTIVE EQUIPMENT COVERED BY THE WARRANTY. In no event shall any repair or replacement of any defective equipment covered by the Seller's warranty extend the length of the warranty beyond the period specified in Section 8 herein.

**11. Limitation of Liability.** NOTWITHSTANDING ANYTHING CONTAINED IN THIS AGREEMENT TO THE CONTRARY, SELLER AND ITS AFFILIATES SHALL NOT BE LIABLE FOR, AND SPECIFICALLY DISCLAIM, ANY LIABILITY FOR ANY: (A) LOST PROFITS AND/OR BUSINESS INTERRUPTION (WHETHER DIRECT OR INDIRECT); AND (B) INDIRECT, INCIDENTAL, CONSEQUENTIAL (WHETHER DIRECT OR INDIRECT) OR OTHER DAMAGES OR LOSSES OF ANY KIND WHATSOEVER, including, without limitation, labor costs, lost profits, loss of use of other equipment, third party repairs, personal injury, emotional or mental distress, improper performance or work, penalties of any kind, loss of service of personnel, or failure of Products to comply with any federal, state, provincial or local laws, regardless of whether arising from a breach of contract, or warranty, legal claims or otherwise. **Nothing in this Section shall operate to exclude Seller's liability for death or personal injury when directly related to Seller's negligent act or omission.**

**12. Limitation of Actions.** Any action for breach of this agreement must be commenced within one (1) year after the cause of action has accrued.

**13. Specification Changes.** In the event Seller incurs additional expense because of changes in specifications or drawings previously approved by Buyer, or in the event Seller is required to modify the ordered Equipment, perform any additional work or supply any additional Products, the additional expense shall be added to the purchase price. Buyer must submit to Seller a revised purchase order specifying any and all requested changes. Upon receipt of Buyer's revised purchase order, Seller shall have the right, in its sole discretion, to accept or reject any changes in specifications requested by Buyer.

**14. Trade-in Offers.** Trade-in offers are subject to Seller's inspection and acceptance of the equipment, which must have been maintained to U.S. Department of Transportation operating and safety standards. All accessories on the equipment, including without limitation jibs, winches, pintle hooks and trailer connectors, must remain with the equipment unless otherwise agreed by Seller and Buyer in writing. Seller reserves the right to cancel any trade-in offers or agreements if these conditions are not met, or if Buyer has misrepresented any information about the trade-in unit.

**15. Insurance.** Until the purchase price of any Products is paid in full, the Buyer shall provide and maintain insurance equal to the total value of the Equipment delivered hereunder against customary casualties and risks; including, but not limited to fire and explosion, and shall also insure against liability for accidents and injuries to the public or to employees, in the names of Seller and Buyer as their interest may appear, and in an amount satisfactory to Seller. If the Buyer fails to provide such insurance, it then becomes the Buyer's responsibility to notify the Seller so that the Seller may provide same; and the cost thereof shall be added to the contract price. All loss resulting from the failure to affect such insurance shall be assumed by the Buyer.

**16. Patents, Copyrights, Trademarks, Confidentiality.** No license or other rights under any patents, copyrights or trademarks owned or controlled by Seller or under which Seller is licensed are granted to Buyer or implied by the sale of Products hereunder. Buyer shall not identify as genuine products of Seller products purchased hereunder which Buyer has treated, modified or altered in any way, nor shall Buyer use Seller's trademarks to identify such products; provided, however, that Buyer may identify such products as utilizing, containing or having been manufactured from genuine products of Seller as treated, modified or altered by Buyer or Buyer's representative, upon prior written approval of Seller. All plans,

photographs, designs, drawings, blueprints, manuals, specifications and other documents relating to the business of Seller ("Information") shall be and remain the exclusive property of Seller and shall be treated by Buyer as confidential information and not disclosed, given, loaned, exhibited, sold or transferred to any third party without Seller's prior written approval; provided, however, that these restrictions shall not apply to Information that Buyer can demonstrate: (a) at the time of disclosure, is generally known to the public other than as a result of a breach of this Agreement by Buyer; or (b) is already in Buyer's possession at the time of disclosure by from a third party having a right to impart such Information.

**17. Default and Seller's Remedies.** In the event of default by Buyer, all unpaid sums and installments owed to Seller, shall, at Seller's sole option, become immediately due and payable without notice of any kind to Buyer. In addition to its right of acceleration, Seller may pursue any and all remedies allowed by law or in equity, including but not limited to any and all remedies available to it under the Delaware Uniform Commercial Code. In addition to the foregoing, and not in limitation thereof, Seller shall have the right to set off any credits or amounts owed to Buyer against any amounts owed by Buyer to Seller.

**18. Indemnification by Buyer.** Buyer hereby agrees to indemnify, release, defend and hold harmless Seller, its directors, officers, employees, agents, representatives, successors, and assigns against any and all suits, actions or proceedings at law or in equity (including the costs, expenses and reasonable attorney's fees incurred in connection with the defense of any such matter) and from any and all claims, demands, losses, judgments, damages, costs, expenses or liabilities, to any person whatsoever (including Buyer's and Seller's employees or any third party), or damage to any property (including Buyer's property) arising out of or in any way connected with the performance or the furnishing of Products under this agreement, regardless of whether any act, omission, negligence (including any act, omission or negligence, relating to the manufacture, design, repair, erection, service or installation of or warnings made or lack thereof with respect to any Products furnished hereunder) of Seller, its directors, officers, employees, agents, representatives, successors or assigns caused or contributed thereto. If Buyer fails to fulfill any of its obligations under this paragraph or this agreement, Buyer agrees to pay Seller all costs, expenses and attorney's fees incurred by Seller to establish or enforce Seller's rights. The provisions of this paragraph are in addition to any other rights or obligations set forth in this agreement.

**19. Installation.** Unless otherwise expressly agreed in writing, Buyer shall be solely responsible for the installation and erection of the Products purchased. Although Seller may in some cases provide a serviceman, data and drawings to aid Buyer with installation or start-up, Seller assumes no responsibility for proper installation or support of any Products when installed and disclaims any express or implied warranties with respect to such installation and support. Notwithstanding whether data and drawings are provided or a serviceman aids in the installation, Buyer shall indemnify and hold Seller harmless and at Seller's request, defend Seller from all claims, demands or legal proceedings (including the costs, expenses and reasonable attorney's fees incurred in connection with the defense of any such matter) which may be made or brought against Seller in connection with damage or personal injury arising out of said installation or start-up.

**20. Force Majeure.** Seller shall not be liable to Buyer or be deemed to be in breach of this agreement by reason of any delay in performing, or any failure to perform, any of Seller's obligations in relation to the Products if the delay or failure was due to any cause beyond the reasonable control of Seller including (without limitation) strike, lockout, riot, civil commotion, fire, accident, explosion, tempest, act of God, war, epidemic, stoppage of transport, terrorist activity, supply shortage or changes in government, governmental agency, laws, regulations or administrative practices.

**21. Anti-Corruption; Export Controls; No Boycotts.** Buyer agrees that it shall, and that any party retained by the Buyer ("Retained Party") shall, comply with all applicable laws including, but not limited to, laws prohibiting public corruption and commercial bribery. Buyer further agrees that it shall, and that any Retained Party shall, comply with all applicable export controls, economic sanctions, embargoes and regulations regarding the export, re-export, shipment, distribution and/or sale of the Products, technology, information or warranty related services. Buyer further agrees that it shall comply with applicable laws pursuant to the Joint Comprehensive Plan of Action (JCPOA) of July 14, 2015 and any other applicable laws, resolutions, regulations or licenses for the export or re-export of Products, technology, information or warranty related services directly, or with its knowledge indirectly into Iran. Buyer further agrees that it shall not, and any Retained Party shall not, export or re-export the Products, technology, information or warranty related services directly, or with its knowledge, indirectly, into Sudan. Buyer further agrees that it shall not, and any Retained Party shall not, export or re-export the Products, technology, information or warranty related services directly or with its knowledge indirectly into Cuba without Buyer first obtaining written approval from Seller. Failure to comply strictly with this section and all applicable laws, regulations and licensing/approval requirements shall be grounds for immediate termination of this agreement by Seller. Notwithstanding anything to the contrary contained in any agreement between the Buyer and Seller or in any other document or agreement relating to the Products sold hereunder, Seller will not comply with requests related to the boycott of any country or other jurisdiction, except to the extent such boycott is required by or otherwise not inconsistent with United States law.

**22. Telematics.** If a telematics system is included with the Equipment, the telematics system is administered by a third party ("Teleservice Provider") and collects a range of operational data about the Equipment including, but not limited to, usage, performance and reliability. Buyer consents to Seller's obtaining such data from the Teleservice Provider for warranty, product improvement and customer support purposes

**23. Construction and Severability.** These Terms and Conditions of Sale constitute the entire agreement between the parties regarding the subject matter hereof and shall be construed and enforced in accordance with the laws of England. The United Nations Convention on Contracts for the International Sale of Goods (1980) (CISG) shall not apply. The invalidity or unenforceability of any provisions of this agreement shall not affect any other provision and this agreement shall be construed in all respects as if such invalid or unenforceable provision were omitted. In the event of any conflict between the English version of this agreement and its translated version, the English version shall control.

**24. Jurisdiction.** The parties agree that the proper and exclusive forum and venue in all legal actions brought to enforce or construe any provisions herein shall be in United States District Court, District of Delaware or, if federal jurisdiction is lacking in such action, in New Castle County Superior Court in Delaware.

**25. No Assignment.** No rights arising under this agreement may be assigned by the Buyer unless expressly agreed to in writing by the Seller.

**26. No Set-off.** Buyer shall have no right to set-off any amounts it may owe Seller against amounts Seller may owe Buyer under this or any other agreement between Buyer and Seller.

**27. Miscellaneous.** Buyer represents that: (i) it is solvent and has the financial ability to pay for the Equipment and Parts purchased hereunder and (ii) it has all requisite right, power and authority to perform its obligations under this agreement.

Buyer's Initials: \_\_\_\_\_



Terex South Dakota, Inc.  
500 Oakwood Rd, Watertown, SD 57201  
Phone: 605-882-4000 Fax: 605-882-1842

12/19/2016

**HARTFORD ELECTRIC**  
620 WEST SUMNER STREET  
HARTFORD, WI 53027  
Attention: CURT KAMP

Phone: (262)670-3702

**Qty. Description**

UNIT

- 1 One (1) new Terex Commander 5048 model hydraulic rotating digger derrick with a boom tip winch.

**Design Criteria:**

- \* Design criteria is in accordance with current industry and engineering standards applicable and accepted for structural and hydraulic design.
- \* Meets ANSI/ASSE A10.31-2013.

**Elevation:**

- \* From +80 degrees above horizontal to -20 degrees below horizontal.

**Dual Lift Cylinders:**

- \* Double-acting cylinders with chrome plated rods and integral holding valves. Trapezoid mounting design offers greater boom support and stability providing less wear and longer life. Either cylinder can hold the rated lifting capacity of the derrick.

**Steel Lower Boom:**

- \* The boom is a fabricated box utilizing high-strength steel plates.

**Steel Intermediate Boom:**

- \* Fabricated box constructed of high strength steel. Powered by a double acting hydraulic cylinder equipped with integral holding valves on both extend and retract ports.

**Fiberglass Hydraulic Upper Boom:**

- \* Capable of lifting the hydraulic capacity of the derrick in all positions.
- \* Tested and rated for line voltage up to and including 46 KV AC.
- \* Tapered non-metallic rollers mounted at the end of the intermediate boom support the fiberglass boom under load minimizing scratches and abrasions. The sides of the fiberglass boom are supported and guided by non-metallic rollers to reduce tracking.

**Continuous And Unrestricted Rotation:**

- \* A hydraulic rotary manifold provides a rotating oil distribution system for continuous and unrestricted rotation.

**Miscellaneous:**

- \* Relief valves to protect the derrick circuits and digger-winch circuits.
- \* Hydraulic hoses are equipped with permanent type hose fittings.
- \* A custom load chart stating actual lifting capacity considering all final options, chassis, body,

**Qty. Description**

outriggers, and other fixed equipment with capacity based on completed unit stability is included.

- \* A boom-angle indicator and decal are mounted on each side of the lower boom.
- \* All metallic components of the complete digger derrick device are prime painted.
- \* Two complete manuals providing operational and maintenance procedures, and a replacement parts listing.
- \* Warning decals provided with unit.

Boom Tip Winch Including Transferable Pole Buddy Assembly:

- \* 15,000 lb. bare drum capacity worm gear winch equipped with hydraulic counterbalance valve mounted at end of intermediate boom. Telescopic trombone tubes provide oil to the winch motor. Equipped with flanged pole buddy transferrable from intermediate boom to upper boom.
- \*Note: For use of a synthetic rope or wire rope on boom tip worm gear winch.

Bare Boom Lift Capacities:

- \* Boom Angle: All Booms Retracted
- \* Maximum Elevation 27850 lbs.
- \* 10 Ft. Radius 13700 lbs.

Work Zone Capacities:

- Median Digging Radius 21.5 ft.
- Digging Capacity at Median Radius 3116 lbs.
- Lift Capacity at Median Radius 5188 lbs.

Sheave Height:

- \* With intermediate boom extended, 38.7 ft. at maximum elevation.
- \* With upper boom extended, 48.0 ft. at maximum elevation.
- \* Dimensions are based on a 40" chassis frame height.

Load Radius:

- \* 29.2 ft. from C/L of rotation, at 0 degree, intermediate boom extended.
- \* 38.5 ft. from C/L of rotation, at 0 degree, upper boom extended.

**1 RH Open Front Command Post With Dual Joystick Pilot Operated Controls with Radio Remote Control:**

- \* Controls have integral interlock switches and adjustable arm rests.
- \* Right hand joystick operates all boom function of up/down and extensions.
- \* Left hand joystick operates digger, winch and turntable rotation functions.
- \* Control joysticks include electrical interlocks that activate a hydraulic dump valve that provide flow to main control valve.
- \* Red Emergency stop plunger.
- \* Start/Stop on control panel.
- \* Two Speed auger switch.
- \* Glycerin filled pressure gauge is provided to monitor system pressure.
- \* Permanent type control decals are provided.
- \* Adjustable cushioned operator seat is provided as standard and includes side rails.
- \* Hydraulic foot throttle.
- \* Includes a control and horn.

Radio Remote Control:

- \* Includes (1) waist harness, (2) rechargeable batteries, (1) battery charger, (1) receiver, (1) transmitter, and placards.

**Qty. Description**

- 1 Pole Claw Arms:  
\*Unique circular design of arms that handle poles up to 23 inch diameter.
- 1 Customer Declined, Load Moment Limiter.  
\* Purchaser is aware of OSHA Crane and Derrick standard, subpart CC for construction (1926-14160).
- 1 Hydraulic Overload Protection for Boom system:  
\* An Operator aid to prevent damage to the derrick by stopping selected functions if an over load occurs. The functions necessary to eliminate the overload condition remain operational, to relieve the cause of overload.  
\* Disables boom extend, winch up, and digger dig when boom lift senses an overloaded condition.  
\* The system is fully automatic relative to the operation and re-set functions.
- 1 Planetary gear drive rotation including spring loaded hydraulically released parking brake and reversible hydraulic motor (non-slip rotation).
- 1 Customer Declined, Anti-Two Block.  
\* Purchaser is aware of OSHA Crane and Derrick standard, subpart CC for construction (1926.1416).
- 1 12,000 ft-lb Two Speed Digger With Hydraulic Shift (ESK 76BA):  
\* Planetary gear drive powered by reversible hydraulic motor.  
\* Telescopic trombone tube is provided to shift the two-speed digger hydraulically.
- 1 LH Auger Storage and Digger Hanger:  
\* Digger hanger bracket is box section and is equipped with a transfer protection system, auger stowage bracket with self latching auger catch and hydraulic auger release.  
\* The auger stowage bracket stores up to a 24" diameter auger, in the standard position.  
\* Digger storage protection system to protect the auger storage cable from damage caused by over-winding. Oil from the digger system is returned to tank before the cable is over-stressed.
- 1 Nylon 1" flat webbing strap for auger roll-up.
- 1 Solid Hex Auger Shaft with Coupler:  
\* 60" long x 2-5/8" hex auger shaft with auger adjustment holes.
- 1 Terex Texoma 20" BTA (bullet tooth auger) x 104" long - 60" of 1/2" upper & 1" lower flighting, 2 5/8" hex bushing. Rollup dish and cable pin welded in place and auger painted Terex Red.
- 1 Operator LED light at controls at command post.
- 1 Pedestal:  
\* Square constructed pedestal has access holes for maintenance of hydraulic plumbing.
- 1 Boom Stow Protection For Controls Above Rotation:  
\* Protects against damage from excessive down pressure by cutting off oil supply to the derrick.  
\* Includes a 2 channel electric collector ring.
- 1 Pump For Use (Required Approximate 120% PTO):  
Tandem vane high efficiency 3000 psi rated hydraulic pump providing 40 gallons per minute combined flow.  
\* Provides 16 gallons per minute to boom functions and 24 gallons per minute to digger/winch

**Qty. Description**

functions and combines flow when boom is not in operation providing 40 gallons per minute to digger/winch at 1600 rpm engine speed, boom extension is faster than winch.

\* Provides up to 6 gallons per minute for tools at 700 rpm engine speed.

\*Includes pump kit.

FOR GENERAL ONLY: With the use of Radio Controls.

- 1 Hydraulic Reservoir:  
50 gallon hydraulic oil reservoir includes 10 micron replaceable cartridge type return line filter mounted in reservoir with bypass valve incorporated in filter to prevent restricted flow.  
\* A 100 mesh in screen in filter cap. A 40 mesh screen included in tank outlet and a 2 1/2" full flow gate type shut off valve.  
\* Relief valves to protect the derrick circuits and digger-winch circuits.
- 1 Super Duty A-Frame Outriggers with swivel type stabilizer pads. (8982)
- 1 Super Duty A-Frame Outriggers with swivel type stabilizer pads. (8982)
- 1 Controls For 2-Sets Of Outriggers And Auxiliary Tool Outlets Below Rotation (Diggers):  
\* Recessed at rear of truck each side for ease of view for outrigger placement.  
\* Includes switches and alarm for outrigger in motion alarm.
- 1 Outrigger Interlock:  
\* To operate the boom the outriggers must be extended.
- 1 Subframe constructed with an open center.
- 1 Tie down kit.
- 1 Remote Sensor Bracket:  
\* Bracket to be used with the Williams remote sensor. Installed to supply sensor to work with truck engine.  
  
\*\* ALTERED FROM STANDARD \*\*
- 1 International Diamond Logic will be used ILO Terex Chassis Controller:
- 1 Winch extension shaft for PG winch.
- 1 Clevis for two part line attachment.
- BODY, INSTALLATION  
\*\* BODY INFORMATION \*\*
- 1 (1) Brand FX Transverse Body:  
\* As per attached Body Specifications.  
  
\*\* BODY INFORMATION \*\*
- 1 (1) Steel Flatbed:  
\* As per attached Flatbed Specifications.

**Qty. Description**

- 1 Install Derrick Over Rear Axle And Install All Associated Components:  
\* Final test and inspect completed unit including stability and dielectric testing per manufacturers requirements and ANSI/ASSE A10.31-2006.
- 1 Hose and fittings to connect the hydraulic system from the oil reservoir to the pump and unit.
- 1 Power take off with indicator light for automatic transmission.
- 1 DOT Inspection.
- 1 Set chassis parameters.
- 1 Back-up alarm to sound when the vehicle is shifted into reverse.
- 4 Laminated wood outrigger pad 24" x 24" x 2-1/4" with rope handle.  
\* Includes outrigger pad storage.  
  
Locate under Flatbed - (2) under each side.
- 4 Pendulum style retainer.
- 2 Rubber wheel chocks with eye bolt.
- 2 Wheel chock bracket, single for mounting under the body.
- 2 Pendulum style retainer.
- 1 Stationary post style cone holder.  
  
Location on Front Outriggers to be determined on Approval Drawings.
- 1 Grab handles as necessary for 3-point contact.
- 1 (2) Set(s) of Pool-Type Grab Handles:  
\* Locate at Rear - Curbside and Streetside.
- 2 Cable type gripstrut stirrup step.  
  
Locate on Curbside and Streetside Rear of Flatbed.
- 1 Rigid stirrup step mounted on side access for ground to body access.
- 1 Access step mounted on floor of the body to access the top of body compartment or access platform.  
  
Locate on Flatbed to access the Command Post Steps.

**Qty. Description**

- 1 Fold-up access step mounted on command post.  
Number of Steps to be determined on Approval Drawings.
- 1 Mud flap with logo 30" tall.  
Note: Trim As-Required.
- 1 A mounting kit for under 45" flatbed frame height for a pair of mud flaps.
- 1 Spring rewind grounding reel installed on curbside rear of tailshelf or flatbed with payout to rear. Reel includes 50' of yellow 2/0 cable and grounding clamp. Reel is compatible with either a 1-point or 3-point grounding system.
- 4 Buyers Products D-ring tie down rated for 2000# safe working, recessed, 360 degree swivel.  
Locations to be determined on Approval Drawings.
- 1 Chain Storage with recess of the subframe.
- 1 Boom rest for Digger Derrick, H-frame style weldment used on Super-Duty outriggers, 36" wide.
- 1 Front pole carrier kit bunk style with a ratchet with 2" wide webbing tie down strap to secure pole and pole bunk arm weldment.
- 1 Rear pole carrier assembly 20-24" bunk style, removable and bed mount.
- 1 Digger Derrick dual position boom rest saddle.
- 1 Peterson LED 7-lamp DOT Lighting Package:  
\* Complies with FMVSS 108.  
\* Includes required lights, junction box and wiring harness.  
\* Note: Back-up lights are incandescent.
- 1 Lighted license plate bracket kit with incandescent light.
- 1 Peterson Clearance Light Kit with 2.50" Amber, LED.
- 1 Back-up lights are LED that replace incandescent light.
- 1 Whelen 2 corner LED, Amber Strobe Light Kit with 4" grommets.  
\*Wired into On/Off switch in cab.  
Locate in Lightbar at Rear - (1) on each side.

**Qty. Description**

- 1 Whelen LED 3.5" White Flash Light. (Pair)  
\*3 LED Clusters, 10 flash pattern.  
  
Locate in Lightbar at Rear - (1) on each side.
  
- 1 (2) Whelen Century Series LED Mini Lightbar(s) with Aluminum Base:  
\* Model #MC11PA  
\* Locate on each side of Boom Rest.
  
- 1 Strobe and Golight mounting bracket weldment.  
  
Locate on Curbside of Boom Rest.
  
- 1 Strobe mounting bracket weldment mounted under the pole rack.  
  
Locate on Streetside of Boom Rest.
  
- 1 Golight 20004 LED spotlight, hand held remote and white in color.  
  
Locate on Curbside of Boom Rest.
  
- 1 Unity AG-R-H halogen 6" spotlight with round mounting bracket.  
\* 50 Watt.  
  
Locate at Rear of Pedestal.
  
- 1 Bracket for spotlight mounting.  
  
Locate on rear of Pedestal.
  
- 4 Truck-Lite 8150 - Round Work Light, LED.  
  
Locate at each of Outriggers - to illuminate outrigger legs when extended.
  
- 1 Tekonsha Voyager electric brake control.
  
- 1 Remote engine stop/start control from rear of vehicle.
  
- 1 Remote two-speed control from rear of vehicle.
  
- 1 15 ton pintle hook:  
\* Safety chain eyes.

**Qty. Description**

"Pintle hook brackets and attachment methods are designed to meet the associated pintle hook ratings. They are not designed for recovery purposes. If recovery attachments are required, please order the appropriate tow eyes."

Terex P/N: 0086018.

1 ICC rear bumper.

1 7-prong trailer socket.

NOTE: Stop & turn signal lights on combined circuit.

1 Oil tank mounting for external reservoirs.

Hydraulic Tank to be located between Chassis Cab and Front Outriggers.

60 Fill with Hydraulic oil for low temperature use.

\* Refer to the product maintenance manual for specific type to be used.

1 1" x 65' Samson, 2-IN-1 Stable Braid uncoated rope.

1 Miller swivel hook, 6 ton.

1 Hannay spring loaded hydraulic hose reel with 4-way roller assembly.

\* 50' of 1/2" Hose Set.

\* Quick disconnect HTMA male and female flush faced couplers and dust covers.

\* Installed on hose reel with ball stop.

Locate at Rear on Tailshelf with Payout to Rear.

1 Tamper storage brackets.

Location at Rear on Tailshelf to be determined on Approval Drawings.

1 (4) Shovel Storage Tubes:

\* 3-Inch Inside Diameter Tubing.

\* Location on Rear of Boom Rest to be determined on Approval Drawings.

1 Safety Kit consists of the following:

\*10-lb ABC fire extinguisher with the use of 0092099 bracket.

\*James King triangle reflector kit.

Both items to be Ship Loose.

1 Rear view vision square light camera & 7" monitor system.

**Qty. Description**

- 1 General Specifications of C5048 equipped as per this quote:
  - \* Reference attached Product Literature and Preliminary Load Chart -- for additional information.
  - \* Maximum Capacity: 25970-Lbs
  - \* Capacity at 10.6-Ft Radius: 11900-Lbs
  - \* Maximum Horizontal Reach: 38.5-Ft
  - \* Maximum Sheave Height (Based on 40-Inch Frame Height): 48.0-Ft
  - \* Maximum Dig Radius: 27.1-Ft

NOTE: Final Load Chart will be included with completed unit based on final unit with all included options (including stability / body and chassis).

- 1 Paint flatbed one color up to 16'.
  - \*Note - Paint under carriage black.

- 1 Paint C5000 derrick one color.
  - Paint White to match Chassis Cab.

- 1 Paint body floor with non-skid paint.

CHASSIS

\*\* CHASSIS INFORMATION \*\*

- 1 2018 International 7400 4x2 Regular Cab Chassis:
  - \* As per the attached Chassis Proposal #11398-03.

SPECIAL CHARGES

- 1 Delivery to Customer.

OPTIONS:

ADD

Notes:

1. Federal Excise Tax will be added if certificate is not supplied with order.
2. The following items must be considered by the purchaser if not already included:  
Back-up Alarm \$150.00; Strobe Light \$525.00; Wheel Chocks \$110.00;  
Outrigger Pads \$200.00 to \$650.00 (based on pad size & type); Truck Grounding Cable \$550.00;  
Barricade Kit \$895.00; Hydraulic Over Load Protection (derrick only, price will vary  
based on final option selection); Boom / Boom Stow Interlock \$700.00; Engine Stop / Start  
\$200.00 to \$795.00 (based on unit model); Auxiliary Let Down \$1500.00; and Platform  
Liner \$380.00 to \$625.00 (based on platform size).
3. Terex Utilities, Inc. - Assembly in Watertown, South Dakota is ISO 9001:2000 Certified.

QUOTATION

Brand FX LLC

TEREX-WATERTOWN  
STEVE FEDT  
steve.fedt@terex.com

HARTFORD ELECTRIC

Exp. Date: 11/04/2016  
Quote No: 81182-0002  
SADL PACK: SADL E 27" SINGLE BOX SADDLE PACK

10/20/2016

Page 1

REF. NO	DESCRIPTION	QTY
	== 27" SINGLE BOX SADDLE PACK - 0.000 ==	1
	27" SINGLE SADDLE PACK	1
	SS= 27	
	CS= 27	
	OL= 27	
SB-PD20	OVERALL WIDTH - 96.00	1
	PACK DEPTH - 20.00	1
	PACK HEIGHT - 48	1
	MOUNTING HEIGHT - 30.00	1
SB-USS6	STEEL UNDERSTRUCTURE	1
ABLB	ALUMINUM BULKHEAD (LB)	1
	STEEL REAR FLAT	1
NSWGLB	STANDARD LINE BODY WHITE GELCOAT (MATCHES INTERNATIONAL 9219)	1
SB-LRR	D-RING 3 POINT LATCH STAINLESS STEEL	2
	TYPE 304 STAINLESS STEEL HARDWARE	1
SB-HSH	TYPE 304 STAINLESS STEEL DOOR HINGE	1
SB-DHVC	VINYL COVERED S/S CABLE DOOR STOPS	1
SB-DHOCHR	OVER CENTER DOOR CHECK	2
SB-CTNS	NON SKID COMPARTMENT TOPS	1
SB-DRA	FULL LENGTH ALUM DRIP RAIL	1
	ALUMINUM ROCK GUARDS	1
	AUTOMOTIVE GRADE BUBBLE GASKET	1
	ONE PIECE MOLDED DOORS	1
	WITH AUTOMOTIVE FINISH	
	BOTH SIDES	
	RECESSED DOOR JAMBS	1
	FLOW THROUGH VENTILATION SYSTEM	1
	MARKER LIGHTS ONLY	1
SB-TVFGB	FIBERGLASS TRANSVERSE OPEN BOTH SIDES	1
SB-TVFH	FIXED TRAN SHELF-FULL WIDTH-MID HEIGHT	1
	OPEN TO STREETSIDE	
	LOCATION TO BE DETERMINED ON APPROVAL DRAWING	
SB-TVDA2	CAGE & DRWR-PULL 1 WAY (3) DRWR FULL WIDTH	1
	PULL CURBSIDE	
	3" DEEP	
LB	STREET FRONT COMPT	1
	-- SEE TRANSVERSE	1
SB-XLS1	-- LOCKING SWIVEL HOOK ON ADJUSTABLE RAIL	10
	MOUNTED 3-4-3	

REF. NO	DESCRIPTION	QTY	
LB	CURB FRONT COMPT	1	
SB-LPGO	-- SEE TRANSVERSE	1	
	LED FLEXGLO COMPARTMENT LIGHTING TOP & SIDES OF DOOR PRICED PER COMPARTMENT	2	

**Customer:** Terex  
Hartford Electric

Date

10/17/2016

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**DESCRIPTION**

**B&G Bodies Inc. 156" Treadplate Flatbed 94 inches wide.**

12 Ga. Hot rolled Treadplate floor.

6" structural steel Channel crossmembers on 12" centers.

24" Wide Recessed Access steps installed on curbside.

Stake pockets installed on 24" centers with 3" steel flat rub rail.

7-Lamp light bar installed at rear.

**Prepared For:**

TEREX - # 11398-03 HARTFORD C5048  
Ryan Kloos  
600 Oakwood Road  
Watertown, SD 57201-  
(605)882 - 4000  
Reference ID: N/A

**Presented By:**

NORTH CENTRAL INTL  
Robin Kunz  
4511 NORTH CLIFF  
SIOUX FALLS SD 57104 -  
(605)336-3820

Thank you for the opportunity to provide you with the following quotation on a new International truck. I am sure the following detailed specification will meet your operational requirements, and I look forward to serving your business needs.

**Model Profile**  
**2018 7400 SFA 4X2 (SA525)**

<b>APPLICATION:</b>	Utility/Service (Other)
<b>MISSION:</b>	Requested GVWR: 54000. Calc. GVWR: 39000 Calc. Start / Grade Ability: 25.48% / 2.42% @ 55 MPH Calc. Geared Speed: 64.3 MPH
<b>DIMENSION:</b>	Wheelbase: 222.00, CA: 147.00, Axle to Frame: 100.00
<b>ENGINE, DIESEL:</b>	{Cummins L9 350} EPA 2017, 350 HP @ 2000 RPM, 1000 lb-ft Torque @ 1400 RPM, 2200 RPM Governed Speed, 350 Peak HP (Max)
<b>TRANSMISSION, AUTOMATIC:</b>	{Allison 3000_RDS_P} 5th Generation Controls; Close Ratio, 6-Speed, With Double Overdrive; On/Off Hwy; Includes Oil Level Sensor, With PTO Provision, Less Retarder, With 80,000-lb GVW & GCW Max.
<b>CLUTCH:</b>	Omit Item (Clutch & Control)
<b>AXLE, FRONT NON-DRIVING:</b>	{Meritor MFS-16-143A} Wide Track, I-Beam Type, 16,000-lb Capacity
<b>AXLE, REAR, SINGLE:</b>	{Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, 200 Wheel Ends, Driver Controlled Locking Differential Gear Ratio: 6.43
<b>CAB:</b>	Conventional
<b>TIRE, FRONT:</b>	(2) 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position
<b>TIRE, REAR:</b>	(4) 11R22.5 Load Range H HDR2 (CONTINENTAL), 491 rev/mile, 75 MPH, Drive
<b>SUSPENSION, RR, SPRING, SINGLE:</b>	Vari-Rate; 23,500-lb Capacity, With 4500 lb Auxiliary Rubber Spring
<b>PAINT:</b>	Cab schematic 100GM Location 1: 9219, Winter White (Std) Chassis schematic N/A

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
SA52500	Base Chassis, Model 7400 SFA 4X2 with 222.00 Wheelbase, 147.00 CA, and 100.00 Axle to Frame.	6814/3966	10780
1570	TOW HOOK, FRONT (2) Frame Mounted	8/0	8
1CAJ	FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.866" x 3.622" x 0.433" (276.0mm x 92.0mm x 11.1mm); 456.0" (11582mm) Maximum OAL	197/700	897
1LLA	BUMPER, FRONT Steel, Swept Back	0/0	0
	<u>Includes</u> : BUMPER, FRONT Powder Coated Gray (Argent) Color		
1SAL	CROSSMEMBER, REAR, AF (1)	-3/43	40
1WEW	WHEELBASE RANGE 197" (500cm) Through and Including 264" (670cm)	0/0	0
2ARU	AXLE, FRONT NON-DRIVING {Meritor MFS-16-143A} Wide Track, I-Beam Type, 16,000-lb Capacity	95/0	95
	<u>Notes</u> : The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.		
3ADE	SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf; 16,000-lb Capacity; With Shock Absorbers	76/0	76
	<u>Includes</u> : SPRING PINS Rubber Bushings, Maintenance-Free		
	<u>Notes</u> : The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.		
4091	BRAKE SYSTEM, AIR Dual System for Straight Truck Applications	0/0	0
	<u>Includes</u> : BRAKE LINES Color and Size Coded Nylon : DRAIN VALVE Twist-Type : GAUGE, AIR PRESSURE (2) Air 1 and Air 2 Gauges; Located in Instrument Cluster : PARKING BRAKE CONTROL Yellow Knob, Located on Instrument Panel : PARKING BRAKE VALVE For Truck : QUICK RELEASE VALVE On Rear Axle for Spring Brake Release: 1 for 4x2, 2 for 6x4 : SLACK ADJUSTERS, FRONT Automatic : SLACK ADJUSTERS, REAR Automatic : SPRING BRAKE MODULATOR VALVE R-7 for 4x2, SR-7 with relay valve for 6x4		
	<u>Notes</u> : Rear Axle is Limited to 23,000-lb GAWR with Code 04091 BRAKE SYSTEM, AIR and Standard Rear Air Cam Brakes Regardless of Axle/Suspension Ordered		
4193	BRAKES, FRONT, AIR CAM 16.5" x 6", Includes 24 Sqn Long Stroke Brake Chambers	0/0	0
	<u>Notes</u> : The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.		
4722	DRAIN VALVE {Bendix DV-2} Automatic, with Heater, for Air Tank	0/0	0
	<u>Includes</u>		

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
	: DRAIN VALVE Mounted in Wet Tank		
4AZA	AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel)	0/0	0
4EBS	AIR DRYER {Bendix AD-9} With Heater	0/0	0
	<u>Includes</u> : AIR DRYER LOCATION Inside Left Rail, Back of Cab		
4EXU	BRAKE CHAMBERS, REAR AXLE {Bendix EverSure} 30/30 Spring Brake	0/0	0
4EXV	BRAKE CHAMBERS, FRONT AXLE {Bendix} 24 SqIn	0/0	0
4NDH	BRAKES, REAR, AIR CAM S-Cam; 16.5" x 8.625" Includes 30/30 Sq.In. Long Stroke Brake Chambers and Spring Actuated Parking Brake	0/10	10
	<u>Notes</u> : The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires.		
4SPA	AIR COMPRESSOR {Cummins} 18.7 CFM Capacity	0/0	0
4VGN	AIR TANK Painted Aluminum, With Straight Thread O-Ring Ports	0/0	0
4WBX	DUST SHIELDS, FRONT BRAKE for Air Brakes	4/0	4
4WDM	DUST SHIELDS, REAR BRAKE for Air Brakes	0/6	6
4WZJ	AIR TANK LOCATION (2) : One Mounted Under Each Frame Rail, Front of Rear Suspension, Parallel to Rail	0/0	0
5710	STEERING COLUMN Tilting and Telescoping	0/0	0
5CAN	STEERING WHEEL 2-Spoke; 18" Dia., Black, Leather Wrapped	1/0	1
5PTB	STEERING GEAR (2) {Sheppard M100/M80} Dual Power	119/0	119
7BEV	AFTERTREATMENT COVER Steel, Black	0/0	0
7BKS	EXHAUST SYSTEM Single Horizontal Aftertreatment Device, Frame Mounted Right Side Under Cab; for Single Vertical Tail Pipe, Frame Mounted Right Side Back of Cab	0/0	0
7WBA	TAIL PIPE (1) Turnback Type, Bright, for Single Exhaust	0/0	0
7WBS	MUFFLER/TAIL PIPE GUARD (1) Bright Stainless Steel	0/0	0
7WDM	EXHAUST HEIGHT 10'	0/0	0
8000	ELECTRICAL SYSTEM 12-Volt, Standard Equipment	0/0	0
	<u>Includes</u> : DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab : FUSES, ELECTRICAL SAE Blade-Type : HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover : HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever : HEADLIGHTS (2) Sealed Beam, Round, with Chrome Plated Bezels : JUMP START STUD Located on Positive Terminal of Outermost Battery : PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light : STARTER SWITCH Electric, Key Operated : STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector : TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature		

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
	: WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever : WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted : WIRING, CHASSIS Color Coded and Continuously Numbered		
8518	CIGAR LIGHTER Includes Ash Cup	1/0	1
8875	BATTERY TERMINALS Sealed	2/0	2
8GXD	ALTERNATOR {Leece-Neville AV1160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount, With Remote Sense	0/0	0
8HAB	BODY BUILDER WIRING Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	2/0	2
8HAH	ELECTRIC TRAILER BRAKE/LIGHTS Accommodation Package to Rear of Frame; for Combined Trailer Stop, Tail, Turn, Marker Light Circuits; Includes Electric Trailer Brake Accommodation Package With Cab Connections for Mounting Customer Installed Electric Brake Unit, Less Trailer Socket	0/2	2
8MKL	BATTERY SYSTEM {International} Maintenance-Free, (3) 12-Volt 1950CCA Total	44/11	55
8NAA	TAIL LIGHT WIRING MODIFIED Includes: Wiring for Standard Lt & Rt Tail Lights; Separate 8.0' of Extra Cable Wiring for Lt & Rt Body Mounted Tail Lights	0/2	2
8RGA	2-WAY RADIO Wiring Effects; Wiring With 20 Amp Fuse Protection, Includes Ignition Wire With 5 Amp Fuse, Wire Ends Heat Shrink and Routed to Center of Header Console in Cab	1/0	1
8RMA	RADIO AM/FM/WB/Clock/Bluetooth/USB Input/3MM Auxiliary Input, MP3, Apple Device Play & Control, Bluetooth for Phone & Music, with Multiple Speakers	1/0	1
8VAY	HORN, ELECTRIC Disc Style	0/0	0
8WCK	POWER SOURCE, TERMINAL TYPE 2-Post	1/0	1
8WCL	HORN, AIR Black, Single Trumpet, Air Solenoid Operated	0/0	0
8WGL	WINDSHIELD WIPER SPD CONTROL Force Wipers to Slowest Intermittent Speed When Park Brake Set and Wipers Left on for a Predetermined Time	0/0	0
8WMA	SWITCH, TOGGLE, FOR WORK LIGHT Lighted; on Instrument Panel and Wiring Effects for Customer Furnished Back of Cab Light	2/1	3
8WML	HEADLIGHTS Long Life Halogen; for Two Light System	0/0	0
8WPH	CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	0/0	0
8WPZ	TEST EXTERIOR LIGHTS Pre-Trip Inspection will Cycle all Exterior Lamps Except Back-up Lights	0/0	0
8WRB	HEADLIGHTS ON W/WIPERS Headlights Will Automatically Turn on if Windshield Wipers are turned on	0/0	0
8WTK	STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection	0/0	0
8WTP	COURTESY LIGHT (2) Mounted In Front Map Pocket Left and Right Side	1/0	1
	<u>Notes</u> : Feature included with CAB INTERIOR TRIM, Premium		
8WWJ	INDICATOR, LOW COOLANT LEVEL With Audible Alarm	0/0	0

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
8WXD	ALARM, PARKING BRAKE Electric Horn Sounds in Repetitive Manner When Vehicle Park Brake is "NOT" Set, With Ignition "OFF" and any Door Opened	0/0	0
8WZP	INDICATOR, BATTERY WARNING Green BATTERY ON Indicator, Mounted on Left Side of Instrument Panel, To be Used with Factory Installed or Customer Mounted Battery Disconnect Switch	1/0	1
8XAH	CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III With Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses	0/0	0
8XDU	BATTERY BOX Steel, With Aluminum Cover, 14" Wide, 3 Battery Capacity, Mounted Left Side Under Cab	-3/-2	-5
8XGT	TURN SIGNALS, FRONT Includes LED Side Turn Lights Mounted on Fender	0/0	0
8XHD	BATTERY DISCONNECT SWITCH 300 Amp; Cab Mounted, Disconnects Charging Circuits; Locks with Padlock	2/0	2
9585	FENDER EXTENSIONS Rubber	6/0	6
9HBM	GRILLE Stationary, Chrome	0/0	0
9WAC	BUG SCREEN Mounted Behind Grille	5/0	5
9WBC	FRONT END Tilting, Fiberglass, With Three Piece Construction; for WorkStar	0/0	0
10060	PAINT SCHEMATIC, PT-1 Single Color, Design 100  <u>Includes</u> : PAINT SCHEMATIC ID LETTERS "GM"	0/0	0
10761	PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	0/0	0
11001	CLUTCH Omit Item (Clutch & Control)	-65/-10	-75
12703	ANTI-FREEZE Red, Extended Life Coolant; To -40 Degrees F/ -40 Degrees C, Freeze Protection	0/0	0
12849	BLOCK HEATER, ENGINE 120V/1000W, for Cummins ISB/B6.7/ISL/L9 Engines	0/0	0
12EHX	ENGINE, DIESEL {Cummins L9 350} EPA 2017, 350 HP @ 2000 RPM, 1000 lb-ft Torque @ 1400 RPM, 2200 RPM Governed Speed, 350 Peak HP (Max)	0/0	0
12THT	FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed With Residual Torque Device for Disengaged Fan Speed  <u>Includes</u> : FAN Nylon	-36/2	-34
12UWZ	RADIATOR Cross Flow, Series System; 1228 SqIn Aluminum Radiator Core With Internal Water to Oil Transmission Cooler and 1167 In Charge Air Cooler  <u>Includes</u> : DEAERATION SYSTEM with Surge Tank : HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps : RADIATOR HOSES Premium, Rubber	9/-6	3
12VBB	AIR CLEANER Dual Element  <u>Includes</u> : GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted	4/0	4
12VXT	THROTTLE, HAND CONTROL Engine Speed Control; Electronic, Stationary, Variable Speed; Mounted on Steering Wheel	0/0	0

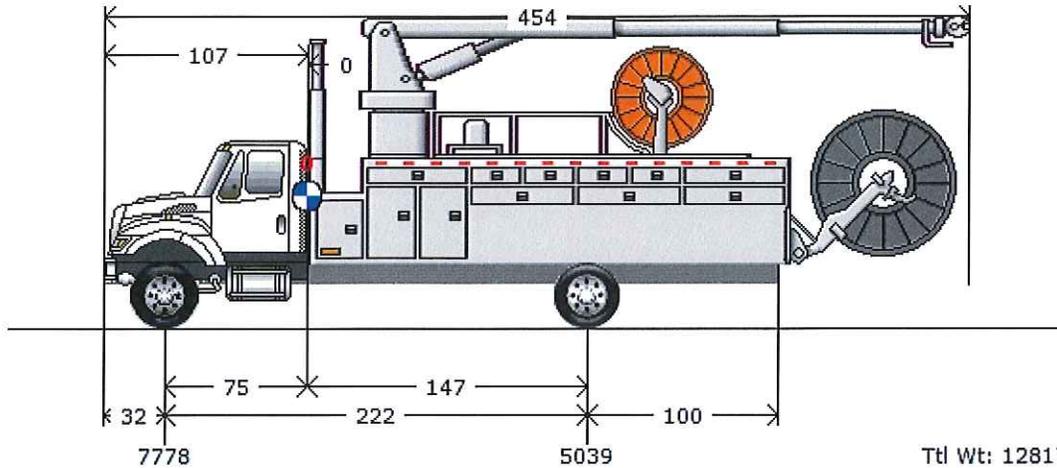
<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
12WZE	EMISSION COMPLIANCE Federal, Does Not Comply With California Clean Air Idle Regulations	0/0	0
12XAT	ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; With Ignition Switch Control for Cummins ISB/ B6.7 or ISL/L9 Engines	0/0	0
12XZG	FEDERAL EMISSIONS {Cummins L9} EPA, OBD and GHG Certified for Calendar Year 2017	0/0	0
13AVR	TRANSMISSION, AUTOMATIC {Allison 3000_RDS_P} 5th Generation Controls; Close Ratio, 6-Speed, With Double Overdrive; On/Off Hwy; Includes Oil Level Sensor, With PTO Provision, Less Retarder, With 80,000-lb GVW & GCW Max.	201/48	249
13WEH	AUTOMATIC NEUTRAL Allison WT Transmission Shifts to Neutral When Parking Brake is Engaged and Remains in Neutral When Parking Brake is Disengaged, Without On/Off Switch	0/0	0
13WGH	TRANSMISSION DIPSTICK Relocated to Right Side of Transmission	0/0	0
13WLP	TRANSMISSION OIL Synthetic; 29 thru 42 Pints	0/0	0
13WUS	ALLISON SPARE INPUT/OUTPUT for Rugged Duty Series (RDS); General Purpose Trucks Modified for Single Input Auto Neutral	0/0	0
13WVN	TRANSMISSION SHIFT CONTROL {Allison} Bump Shifter Type; for Allison 3000 & 4000 Transmission	0/0	0
13WYH	TRANSMISSION TCM LOCATION Located Inside Cab	0/0	0
13WYU	SHIFT CONTROL PARAMETERS Allison 3000 or 4000 Series Transmissions, 5th Generation Controls, Performance Programming	0/0	0
13XAL	PTO LOCATION Left Side of Transmission	0/0	0
14ARB	AXLE, REAR, SINGLE {Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, 200 Wheel Ends, Driver Controlled Locking Differential . Gear Ratio: 6.43	0/241	241
	<u>Includes</u> : REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle		
	<u>Notes</u> : The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires. : When Specifying Axle Ratio, Check Performance Guidelines and TCAPE for Startability and Performance		
14VAH	SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 23,500-lb Capacity, With 4500 lb Auxiliary Rubber Spring	0/62	62
	<u>Notes</u> : The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires.		
14WMG	AXLE, REAR, LUBE {EmGard FE-75W-90} Synthetic Oil; 30 thru 39.99 Pints	0/0	0
15924	FUEL TANK STRAPS Bright Finish Stainless Steel	0/0	0
15LMR	FUEL/WATER SEPARATOR {Racor 400 Series,} Unheated, with Primer Pump, and WIF Sensor	0/0	0

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
15LPE	LOCATION FUEL/WATER SEPARATOR Mounted Inboard of DEF Tank, Under Cab  <u>Notes</u> : For Use With 5 Gallon DEF Tank Only	0/0	0
15SXJ	FUEL TANK Top Draw; Non-Polished Aluminum, 24" Diam., 50 U.S. Gal., 189 L Capacity, Mounted Left Side Under Cab	12/2	14
15WCN	DEF TANK 5 U.S. Gal. 18.9L Capacity, Frame Mounted Outside Left Rail, Under Cab	9/4	13
16030	CAB Conventional  <u>Includes</u> : ARM REST (2) Molded Plastic; One Each Door : COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window : CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel : DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted : GLASS, ALL WINDOWS Tinted : GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side : GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side : INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color : STEP (4) Two Steps Per Door	0/0	0
16GHU	GRAB HANDLE, CAB INTERIOR (2) Safety Yellow	0/0	0
16HBA	GAUGE CLUSTER English With English Electronic Speedometer  <u>Includes</u> : GAUGE CLUSTER (6) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter, Washer Fluid Level : ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout : WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)	0/0	0
16HCS	GAUGE, TEMPERATURE, AMBIENT Sensor Wiring with Display Unit Mounted in Cluster	0/0	0
16HGH	GAUGE, OIL TEMP, AUTO TRANS , for Allison Transmission	1/0	1
16HHE	GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} With Black Bezel Mounted in Instrument Panel	2/0	2
16HKT	IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	0/0	0
16HLJ	GAUGE, DEF FLUID LEVEL	0/0	0
16JYX	SEAT, DRIVER {National 2000} Air Suspension, High Back With Integral Head Rest, Cloth, Isolated, 1 Chamber Lumbar, 2 Position Front Cushion Adjustment, -3 to +14 Degree Seat Back Angle Adjustment, Dual Shocks  <u>Includes</u> : SEAT BELT 3-Point, Lap and Shoulder Belt Type	29/10	39
16RPX	SEAT, PASSENGER {National} Air-Suspension, High Back With Integral Headrest, Cloth, Isolated, 1 Chamber Lumbar, 2 Position Front Cushion Adjustment, -3 to +14 Degree Seat Back Adjustment	59/20	79

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
	<u>Includes</u> : SEAT BELT 3-Point, Lap and Shoulder Belt Type		
16SDU	MIRRORS (2) {Lang Mekra} Styled; Rectangular, Power Both Sides, Thermostatically Controlled Heated Heads, Clearance Lights LED, Bright Finish Heads & Brackets, Breakaway Type, 7.09" x 15.75" & Integral Convex Both Sides, 102" Inside Spacing	8/0	8
16SEE	GRAB HANDLE Chrome; Towel Bar Type With Anti-Slip Rubber Inserts; for Cab Entry Mounted Left Side Only at "B" Pillar	3/0	3
16VCC	SEAT BELT All Orange; 1 to 3	0/0	0
16WBY	ARM REST, RIGHT, DRIVER SEAT	3/0	3
16WBZ	ARM REST, LEFT, PASSENGER SEAT	3/0	3
16WCT	AIR CONDITIONER {Blend-Air} With Integral Heater & Defroster	43/4	47
	<u>Includes</u> : HEATER HOSES Premium : HOSE CLAMPS, HEATER HOSE Mubea Constant Tension Clamps : REFRIGERANT Hydrofluorocarbon HFC-134A		
16WEE	CAB SOUND INSULATION Includes Dash Insulator and Engine Cover Insulator	12/0	12
	<u>Notes</u> : Feature included with CAB INTERIOR TRIM, Premium		
16WJS	INSTRUMENT PANEL Center Section, Flat Panel	0/0	0
16WJU	WINDOW, POWER (2) and Power Door Locks, Left and Right Doors, Includes Express Down Feature	5/0	5
16WKY	HVAC FRESH AIR FILTER	0/0	0
16WLE	STORAGE POCKET, DOOR Molded Plastic, Full Width; Mounted on Passenger Door	0/0	0
16WRX	CAB INTERIOR TRIM Deluxe	0/0	0
	<u>Includes</u> : "A" PILLAR COVER Molded Plastic : CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering : CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets and CB Radio Pocket : DOOR TRIM PANELS Molded Plastic; Driver and Passenger Doors : FLOOR COVERING Rubber, Black : HEADLINER Soft Padded Cloth : INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section : STORAGE POCKET, DOOR (1) Molded Plastic, Full-Length; Driver Door : SUN VISOR (2) Padded Vinyl with Driver Side Toll Ticket Strap, Integral to Console		
16WSK	CAB REAR SUSPENSION Air Bag Type	0/0	0
16XWD	SUNSHADE, EXTERIOR Aerodynamic, Painted Roof Color; Includes Integral Clearance/Marker Lights	15/2	17
16XWJ	WINDSHIELD WIPER BLADES Snow Type	2/0	2

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
27DUS	WHEELS, FRONT {Accuride 41730} DISC; 22.5x9.00 Rims, Polished Aluminum, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	0/0	0
28DMC	WHEELS, REAR DUAL DISC; 22.5x8.25 Rims, Polished Aluminum, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	0/-140	-140
	<u>Notes</u> : Aluminum Wheels not Painted or Coated : COMPATIBLE TIRE SIZES: 11R22.5, 12R22.5, 255/70R22.5, 255/80R22.5, 265/75R22.5, 275/70R22.5, 275/80R22.5, 295/75R22.5, 295/80R22.5 : Polished Surface Outside Dual Only		
60AAH	BDY INTG, REMOTE POWER MODULE (2) Mounted Inside Cab behind Driver Seat; Up to 6 Outputs & 6 Inputs each, Max. 20 amp. per Channel, Max. 80 amp Total (Includes 2 Switch Packs With Latched Switches)	0/0	0
60ABC	BDY INTG, REMOTE START/STOP To Start and Stop Vehicle Engine	0/0	0
60ABE	BDY INTG, PTO ACCOMMODATION for Electric over Hydraulic PTO, Does Not Include Solenoids, With Latched Switch Mounted on Dash Includes Audible Alarm and Indicator Light in Gauge Cluster (Requires 1 Remote Power Module input & 1 output)	0/0	0
7382135423	(4) TIRE, REAR 11R22.5 Load Range H HDR2 (CONTINENTAL), 491 rev/mile, 75 MPH, Drive	0/60	60
7792545419	(2) TIRE, FRONT 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position	82/0	82
	<b>Services Section:</b>		
40115	WARRANTY Standard for WorkStar 7300/7400 (4x2, 4x4, 6x4, 6x6), Effective with Vehicles Built January 2, 2015 or Later, CTS-2002U	0/0	0
	<b>Total Component Weight:</b>	<b>7778/5038</b>	<b>12816</b>
	120 DAY TERMS	0/0	0
	<b>Total Goods Purchased:</b>	<b>0/0</b>	<b>0</b>

The weight calculations included in this proposal are an estimate of future vehicle weight. The actual weight as manufactured may be different from the estimated weight. Navistar, Inc. shall not be liable for any consequences resulting from any differences between the estimated weight of a vehicle and the actual weight.



Graphics are provided as visual aids only and are not intended to represent the actual scale, shape, or color of the truck or its components. All weights are represented in lbs.

Truck		Body/Trailer		Chassis/Empty Weights	
Bumper to Axle	(BA) 32.0	Body Length	(BL) 347	Tractor Front Axle:	7,778
Wheelbase	(WB) 222.00			Tractor Rear Axle:	5,038
Axle to Frame	(AF) 100.00				
Axle to Back Cab	(ABC) 75				
Cab to Axle	(CA) 147				
Usable CA	147				
CA Reduction Adjustment	0.00				
Fuel-Diesel(Gals)	0				
DEF(Gals)	0				

Before the Cab			Cab			Chassis			Body			After the Body		
#	Weight	CG	#	Weight	CG	#	Weight	CG	#	Weight	CG	#	Weight	CG
						1	0	0						

Loads		Weight Distribution	
Payload Weight:	0	Total Front Axle:	7,778
Driver:	0	Total Rear Axle:	5,039
Fuel-Diesel(Lbs):	0	Total Weight:	12,817
DEF(Lbs):	0		

Weights and clearances in this proposal are estimates only. Navistar, Inc. is not liable for any consequences resulting from any differences between the estimated weights and clearances and the actual manufactured weights and clearances.

**Weight Distribution**

All weights are represented in lbs.

	<u>Truck</u>		
	Front	Rear	Total
<b><u>Chassis Weight</u></b>			
Chassis Weight:	7,778	5,038	12,816
Fuel:	0	0	0
DEF:	0	0	0
Empty Body:	0	1	1
<b>(Curb Weight):</b>	<b>7,778</b>	<b>5,039</b>	<b>12,817</b>

**Loads**

Payloads:	0	0	0
Driver:	0	0	0
<b>Axle Totals (Gross Weight):</b>	<b>7,778</b>	<b>5,039</b>	<b>12,817</b>

**Weight Ratings**

	<u>Truck</u>	
	Front	Rear
Axle(axle capacity)	16,000	23,000
Tire(tire capacity)	20,000	26,440
Suspension(suspension capacity)	16,000	23,500
Spring:	0	
Fed Bridge Law (axle spread):	20,000	20,000

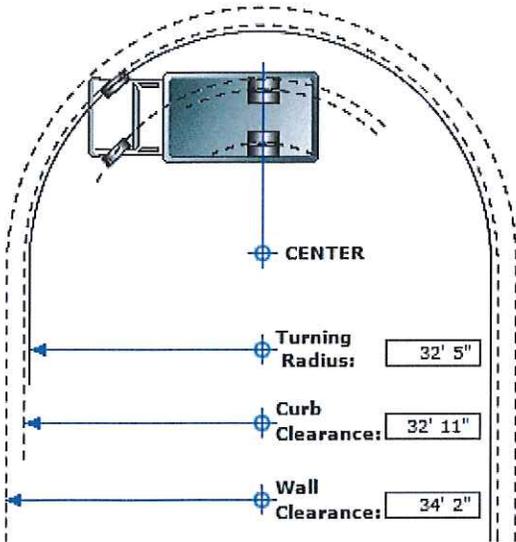
<b>Wheel Combination</b>	<b>Load</b>	<b>Limit</b>
1 - 2	12,817	48,000

Federal Total Vehicle Weight Limit: 80,000

Maximum Gross Vehicle Weight Rating (GVWR) 39,000 - Gross Vehicle Weight(GVW) 12,817 = 26,183 Reserves

**Weight Summary**

\* Distributed weights are within capacity limits



Series: 7000  
 Model: SA525  
 Description: 7400 SFA 4X2  
 Model Year: 2018

**Calculation Factors**

Wheelbase: 222  
 Front Axle: 0002ARU  
 Description: AXLE, FRONT NON-DRIVING, {Meritor MFS-16-143A} Wide Track, I-Beam Type, 16,000-lb Capacity  
 Front Wheel: 0027DUS  
 Description: WHEELS, FRONT, {Accuride 41730} DISC; 22.5x9.00 Rims, Polished Aluminum, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs  
 Front Tire: 07792545419  
 Description: TIRES, 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position  
 Steering Gear: 0005PTB  
 Description: STEERING GEAR, (2) {Sheppard M100/M80} Dual Power

**Turning Radius Statistics**

General Information

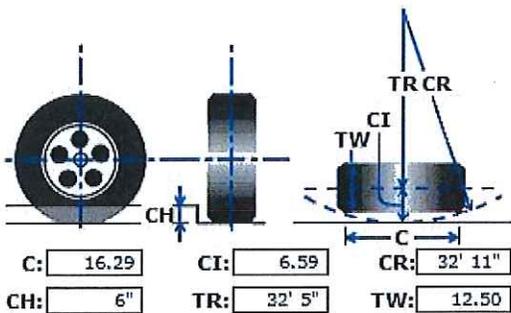
Inside Turn Angle: 43 Degrees  
 Radial Overhang: 21

Axle Information

KingPin Inclination: 6.25 Degrees  
 KingPin Center: 71.5

**Turning Radius - Curb View**

C - Curb Contact Length: 16.29  
 CI - Curb Clearance Increment: 6.59  
 CR - Curb Clearance Radius: 32'11"  
 CH - Curb Height: 6"  
 TR - Turning Radius: 32'5"  
 TW - Tire Width: 12.50



\* All Measurements are in inches, unless otherwise specified.

This information is based on engineering information available at this time. Actual figures may vary. Navistar, Inc. cannot accept liability for consequences due to this variance.

(0012EHX)

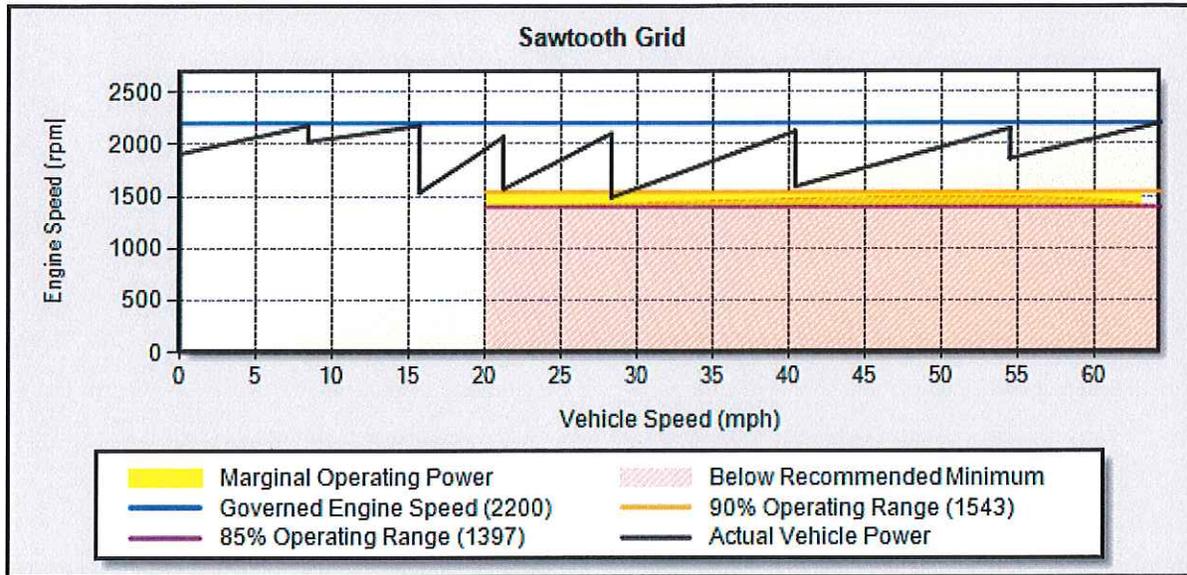
ATTACHMENTS: 0060ABE 0015WCN 0012THT

<u>Parameter</u>	<u>Value</u>	<u>UOM</u>
Max Accelerator Vehicle Speed	60	MPH
Road Speed Governor Upper Droop	0	MPH
Road Speed Governor Lower Droop	0	MPH
Vehicle Speed Limiter Override	N, DISABLE FEATURE OR FUNCTION	N/A
VSLO Maximum Road Speed Delta	3	MPH
VSLO Maximum Distance	47	MILES
Max Engine Speed No Veh Speed Sensr	2018	RPM
VS Governor Accel/Decel Limit Enabl	N, DISABLE FEATURE OR FUNCTION	N/A
VS Governor Acceleration Rate Limit	8000	RPM/SEC
Load Based Speed Control	N, DISABLE FEATURE OR FUNCTION	N/A
LBSC - Engine Speed Breakpoint	1800	RPM
Gear Down Protection Enable	N, DISABLE FEATURE OR FUNCTION	N/A
GDP - Heavy Load Vehicle Speed	60	MPH
GDP - Light Load Vehicle Speed	57	MPH
Driver Reward Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Driver Reward Mode	0, ROAD SPEED GOVERNOR	N/A
Fuel Economy - Expected Level	5.88	MPG
Fuel Economy - Good Level	6.47	MPG
Fuel Economy - Best Level	6.92	MPG
% Idle Time - Expected Level	30	%
% Idle Time - Good Level	20	%
% Idle Time - Best Level	10	%
Speed Reward - Expected Level	0	MPH
Speed Reward - Good Level	0	MPH
Speed Reward - Best Level	0	MPH
Speed Reward - Penalty Level	0	MPH
Idle Speed Adjustment Enable	Y, ENABLE FEATURE OR FUNCTION	N/A
Low Idle Speed	750	RPM
Idle Shutdown Enable	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Time Before Shutdown	15.0	MIN
ISD Percent Engine Loading	100	%
ISD With PTO	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Manual Override	N, DISABLE FEATURE OR FUNCTION	N/A
ISD With Parking Brake Set	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Ambient Temperature Override	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Cold Ambient Air Temperature	30	F
ISD Intermediate Ambient Air Temp	40	F
ISD Hot Ambient Air Temperature	81	F
ISD Manual Override Inhibit Zone En	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Hot Ambient Automatic Override	Y	N/A
ISD Engine Coolant Temp Threshold	30	F
Vehicle Acceleration Management	N, DISABLE FEATURE OR FUNCTION	N/A
Variable Acceleration Speed 1	20	MPH
Variable Acceleration Speed 2	50	MPH
Variable Acceleration Rate 1	3.60	MPH/SEC
Variable Acceleration Rate 2	3.60	MPH/SEC
Cruise Control Enable	Y, ENABLE FEATURE OR FUNCTION	N/A
CC Maximum Vehicle Speed	60	MPH
CC Save Set Speed	N, DISABLE FEATURE OR FUNCTION	N/A
CC Upper Droop	0.0	MPH
CC Lower Droop	0.0	MPH
CC Auto Resume	N, DISABLE FEATURE OR FUNCTION	N/A
Engine Fan Min On Time For AC	30	SEC
Remote Accelerator Enable	N, DISABLE FEATURE OR FUNCTION	N/A

Remote Accelerator Mode	1, REMOTE ACCELERATOR PEDAL OR LEVER WITH TRANS VERIFICATION	N/A
PTO Enable	Y, ENABLE FEATURE OR FUNCTION	N/A
PTO In Cab Mode	Y, ENABLE FEATURE OR FUNCTION	N/A
Remote PTO Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Remote Station PTO Enable	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Max Engine Speed	1500	RPM
PTO Min Engine Speed	500	RPM
PTO Maximum Engine Load	1199	LB-FT
PTO Max Vehicle Speed	2	MPH
PTO Accelerator Override	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Accel Override Max Engine Speed	1500	RPM
PTO Clutch Override	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Service Brake Override	Y, ENABLE FEATURE OR FUNCTION	N/A
PTO Parking Brake Interlock Mode	1, PTO PRK BRK INT TYPE SET TO CAB ONLY	N/A
PTO Transmission Neutral Interlock	Y, ENABLE FEATURE OR FUNCTION	N/A
PTO Eng Spd Limit w/VSS Limit	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Ignore Vehicle Speed Sensor	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Resume Switch Speed	700	RPM
PTO Set Switch Speed	1500	RPM
PTO Additional Switch Speed	700	RPM
PTO Ramp Rate	100	RPM/SEC
Remote PTO Number of Speed Settings	1	N/A
Remote PTO Speed Setting 1	1000	RPM
Remote PTO Speed Setting 2	1200	RPM
Remote PTO Speed Setting 3	1400	RPM
Remote PTO Speed Setting 4	1600	RPM
Remote PTO Speed Setting 5	1800	RPM
Remote Station PTO Resume Sw Spd	1000	RPM
Remote Station PTO Set Switch Speed	2000	RPM
Remote Station PTO Addition Sw Spd	1500	RPM
Transmission Driven PTO	N, DISABLE FEATURE OR FUNCTION	N/A
Transmission Driven PTO Type	0, ENGINE DRIVEN STEADY LOAD	N/A
Powertrain Protection Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Max Torque Allow By Axle/Driveshaft	23602	LB-FT
Max Torque in Top Gear Range	2995	LB-FT
Max Torque in Int. Gear Range	2995	LB-FT
Max Torque in Low Gear Range	2995	LB-FT
Max Torque w/o Vehicle Speed	1475	LB-FT
Lowest Gear of Top Gear Range	2.00	N/A
Lowest Gear of Int. Gear Range	3.00	N/A
Lowest Gear of Low Gear Range	6.00	N/A
Engine Protection Shutdown	N, DISABLE FEATURE OR FUNCTION	N/A
Engine Protection Restart Inhibit	Y, ENABLE FEATURE OR FUNCTION	N/A
Sudden Veh Speed Decel Threshold	6.96	MPH
Trip Information Vehicle Ovrsped1	0	MPH
Trip Information Vehicle Ovrsped2	0	MPH
Veh Speed Sensor Anti Tamper Level	1, HIGH LEVEL	N/A
Maintenance Monitor Enable	N	N/A
Maintenance Monitor Operating Mode	0, MAINTENANCE MONITOR AUTOMATIC MODE OF OPERATION	N/A
Maintenance Monitor Alert Percent	90	%
Maintenance Monitor Distance	15000	MILES
Maintenance Monitor Fuel	2000	GALLONS
Maintenance Monitor Time	500	HOURS
Maintenance Monitor Interval Factor	1.00	N/A
Master Password	000000	N/A
Adjustment Password	000000	N/A
Reset Password	000000	N/A

These Electronic Parameters are complete with error

ENGINE/TRANSMISSION MATCHING



Sawtooth Details

Gear	Trans Ratio	Upshift Power Avail		Govern Power Avail		Peak Power Comparison			Warn Msg
		Veh Spd (MPH)	Eng Spd (RPM)	Veh Spd (MPH)	Eng Spd (RPM)	Gear Step (%)	85% Range (%)	90% Range (%)	
1C	3.49	0.0	1913	8.4	2179	N/A	57	43	
2C	1.86	8.4	2028	15.7	2178	N/A	57	43	
2L	1.86	15.7	1536	21.2	2070	N/A	57	43	
3L	1.41	21.2	1569	28.3	2101	N/A	57	43	
4L	1.00	28.3	1490	40.4	2125	N/A	57	43	
5L	0.75	40.4	1594	54.5	2150	N/A	57	43	
6L	0.65	54.5	1864	64.3	2200	N/A	57	43	

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

## STEADY STATE PERFORMANCE

Performance Results	Gear	Veh Spd (mph)	Eng Spd (rpm)	Fuel Econ (mpg)	Grade (%)	Notes
LEVEL ROAD MAXIMUM SPEED	6L	66.9	2287	*****	0.00	
HI GEAR SPEED @ RATED RPM	6L	64.3	2200	*****	1.43	
55.0 MPH STEADY-STATE	6L	55.0	1881	*****	2.42	
TYPICAL OPERATING SPEED	6L	60.0	2052	*****	2.06	- Calculated Grade Ability/Fuel Economy

VEHICLE ORDER CODING ERRORS MAY RESULT IF THE "LEVEL ROAD MAX SPEED" VALUE EXCEEDS THE "HI GEAR SPEED @ RATED RPM" AND IS USED AS THE ENGINE PROGRAMMABLE VEHICLE SPEED LIMIT.

IF THE RESULTS CONTAIN "-----", VEHICLE CANNOT ATTAIN THAT SPEED.

IF THE RESULTS CONTAIN "\*\*\*\*\*", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

## Recommendations / General Information

IDLE FUEL RATE : \*\*\*\*\* GALS/HR @ 700.0 RPM  
TORQUE CONVERTER : TC-419 STALL RATIO: 2.02

## Fuel Economy Route: Normal Route - City, Suburban, and Highway

Key Fuel Economy Information	City	Suburban	Highway	Notes
MILES PER GALLON	*****	*****	*****	
AVERAGE MPH	18.9	39.7	54.6	
MISSION MINUTES	29.92	52.09	173.37	

IF THE RESULTS CONTAIN "\*\*\*\*\*", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

**GRADEABILITY PERFORMANCE**

**Enroute - Full Throttle Upshift Performance**

Gear	Trans Ratio	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Notes
1C	3.49	0.0	1913	0.00	29.81	@ STALL
		5.1	2053	214.50	29.81	@ 70% EFF
		6.6	2105	242.42	25.48	80% EFF
		8.4	2179	249.02	20.33	
2C	1.86	8.4	2028	204.01	16.42	
		15.7	2178	250.16	10.42	
2L	1.86	15.7	1536	259.60	10.85	
		21.2	2070	307.60	9.40	
3L	1.41	21.2	1569	263.75	7.94	
		28.3	2101	303.51	6.64	
4L	1.00	28.3	1490	253.78	5.42	
		40.4	2125	298.75	4.16	
5L	0.75	40.4	1594	262.88	3.54	
		54.5	2150	287.87	2.41	
6L	0.65	54.5	1864	290.38	2.44	
		64.3	2200	272.23	1.43	RATED RPM
		65.1	2227	236.64	1.00	
		66.0	2256	195.76	0.50	
		66.9	2287	151.47	0.00	LEVEL ROAD

**STARTING / TOP GEAR PERFORMANCE**

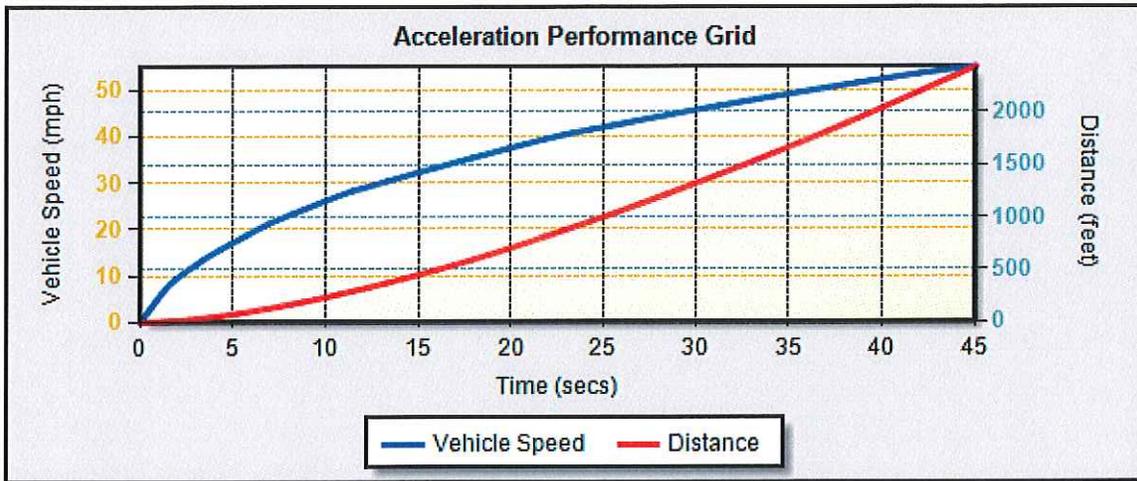
Gear	Trans Ratio	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Notes
1C	3.49	0.0		0.00	29.81	@ STALL
		6.6		242.42	25.48	80% EFF - Calculated Start Ability

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

THE TRANSMISSION WAS SIMULATED IN PERFORMANCE OPERATING MODE.

ACCELERATION PERFORMANCE RESULTS

Acceleration Performance Grid



Acceleration Performance: TIME TO ACCELERATE ON A GRADE TO 55.0 (MPH) IS 45.07 (SECS)

Acceleration Performance Details

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes	
1C	0.19	0.1	1.0		
	0.39	0.6	2.0		
	0.58	1.3	3.0		
	0.76	2.2	4.0		
	0.94	3.4	5.0		
	1.14	5.0	6.0		
	1.34	7.0	7.0		
	1.57	9.4	8.0		
2C	1.67	10.6	8.4		
	1.98	14.7	9.4		
	2.30	19.4	10.4		
	2.64	24.8	11.4		
	3.00	31.0	12.4		
	3.37	38.1	13.4		
	3.78	46.3	14.4		
	4.21	55.8	15.4		
2L	4.34	58.9	15.7		
	4.80	69.7	16.7		
	5.27	81.5	17.7		
	5.74	94.1	18.7		
	6.22	107.7	19.7		
	6.72	122.3	20.7		
	3L	6.95	129.5	21.2	
		7.56	148.8	22.2	
8.17		169.2	23.2		
8.80		190.9	24.2		
9.43		213.8	25.2		
10.07		238.0	26.2		
10.73		263.6	27.2		
11.41		291.4	28.2		
4L	11.53	296.3	28.3		
	12.41	333.3	29.3		

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
	13.29	372.0	30.3	
	14.19	412.5	31.3	
	15.09	454.8	32.3	
	16.01	498.9	33.3	
	16.94	544.9	34.3	
	17.88	592.9	35.3	
	18.83	642.9	36.3	
	19.80	695.0	37.3	
	20.78	749.5	38.3	
	21.80	807.9	39.3	
	22.89	871.5	40.3	
5L	22.97	876.1	40.4	
	24.30	955.8	41.4	
	25.65	1038.6	42.4	
	27.01	1124.4	43.4	
	28.39	1213.4	44.4	
	29.80	1305.6	45.4	
	31.22	1401.3	46.4	
	32.66	1500.4	47.4	
	34.12	1603.3	48.4	
	35.61	1709.8	49.4	
	37.12	1820.3	50.4	
	38.67	1936.2	51.4	
	40.30	2060.4	52.4	
	42.03	2194.6	53.4	
	43.89	2341.1	54.4	
6L	44.08	2356.7	54.5	
	45.07	2436.0	55.0	

## REQUIRED TCAPE INFORMATION

TCAPE Factors For Vehicle

Selected Rear Axle Gear Ratio(s):	6.43
Parked PTO:	NO
Enroute PTO:	NO
Vehicle Vocation:	GENERAL ON HIGHWAY
ID Wheel Slip Conditions:	Yes
Road Governor/Cruise Ctrl:	No
Engine Fan Type:	VISCOUS
Road Surface Type:	TYPICAL
Fuel Economy Route:	Normal Route - City, Suburban, and Highway
Acceleration Grade (%):	0.0
Frontal Area (FT <sup>2</sup> ):	76
Speed Limit on Route (MPH):	61.0
Relative Drag Coefficient:	85
Alternator (A):	40
Steering Gear (HP):	2.60
Air Conditioner (HP):	3.20
Vehicle Width (IN):	96
Vehicle Height (IN):	114
Weight on Drive Axle (LBF):	23000
Acceleration Vehicle Spd (MPH):	55.0
Air Compressor (HP):	2.20
TIRE, FRONT	2 - RADIAL LOWPROFILE
TIRE, REAR	4 - RADIAL NORMAL

Components

0002ARU	AXLE, FRONT NON-DRIVING {Meritor MFS-16-143A} Wide Track, I-Beam Type, 16,000-lb Capacity
0004SPA	AIR COMPRESSOR {Cummins} 18.7 CFM Capacity
0005PTB	STEERING GEAR (2) {Sheppard M100/M80} Dual Power
0008GXD	ALTERNATOR {Leece-Neville AV1160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount, With Remote Sense
0012EHX	ENGINE, DIESEL {Cummins L9 350} EPA 2017, 350 HP @ 2000 RPM, 1000 lb-ft Torque @ 1400 RPM, 2200 RPM Governed Speed, 350 Peak HP (Max)
0012THT	FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed With Residual Torque Device for Disengaged Fan Speed
0013AVR	TRANSMISSION, AUTOMATIC {Allison 3000_RDS_P} 5th Generation Controls; Close Ratio, 6-Speed, With Double Overdrive; On/Off Hwy; Includes Oil Level Sensor, With PTO Provision, Less Retarder, With 80,000-lb GVW & GCW Max.
0014ARB	AXLE, REAR, SINGLE {Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, 200 Wheel Ends, Driver Controlled Locking Differential
0016030	CAB Conventional
0016WCT	AIR CONDITIONER {Blend-Air} With Integral Heater & Defroster
0016XWD	SUNSHADE, EXTERIOR Aerodynamic, Painted Roof Color; Includes Integral Clearance/Marker Lights
07382135423	TIRE, REAR 11R22.5 Load Range H HDR2 (CONTINENTAL), 491 rev/mile, 75 MPH, Drive 11R22.5 Load Range H HDR2 (CONTINENTAL), 491 rev/mile, 75 MPH, Drive
07792545419	TIRE, FRONT 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position

**TCAPE HAS BEEN DESIGNED TO GIVE ECONOMY AND PERFORMANCE PREDICTIONS WHICH HAVE BEEN SHOWN TO BE TYPICAL FOR MOST OPERATIONS. HOWEVER, DUE TO OPERATING CONDITIONS, DRIVER INFLUENCES, AND OTHER FACTORS, YOUR RESULTS MAY VARY FROM THOSE PREDICTED. ALSO, BECAUSE OF FUEL MAPPING PROCEDURES USED BY VARIOUS ENGINE MANUFACTURERS, COMPARISONS OF FUEL ECONOMY RESULTS FOR DIFFERENT BRANDS OF ENGINES MAY VARY FROM THOSE SHOWN.**

**NAVISTAR, INC. SHALL NOT BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, INTERRUPTION OF BUSINESS OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND THAT ARE INCURRED BY DEALER OR BY DEALER'S CUSTOMERS AS A RESULT OF RELIANCE ON TCAPE, WHETHER THE CLAIM IS IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.**

**DIGGER DERRICK  
COMMANDER 5048  
PG WINCH**

**TEREX SOUTH DAKOTA**  
  
THIS IS AN ESTIMATED CAPACITY CHART AND MAY BE RESTRICTED BY STABILITY TESTING AND BOOM OPTIONS.

-CAUTION: MULTIPLE-PART LINES ARE REQUIRED FOR LOADS ABOVE X LBS.  
-SYNTHETIC OR ROTATION RESISTANT WIRE ROPE MUST HAVE X LB. BREAKING STRENGTH AND 2.5% MAXIMUM STRETCH AT X LB SAFE WORKING LOAD.  
-WIRE ROPE OTHER THAN ROTATION RESISTANT MUST HAVE X LB. BREAKING STRENGTH.  
-CAPACITIES ARE BASED ON AN UNLOADED VEHICLE WEIGHT OF NOT LESS THAN X LBS. AND ARE 85% OF TIPPING LOADS WITH TRUCK LEVELLED ON A FIRM LEVEL SURFACE.  
-USE BOOM ANGLE AND SECTION EXTENDED CAPACITY IF SECTIONS ARE NOT FULLY EXTENDED.  
-ALL OUTRIGGERS MUST BE EXTENDED AND SET FIRMLY ON THE GROUND BEFORE OPERATING THE DERRICK.  
-WARNING: ALWAYS REFER TO UPPER CONTROL LOAD CHART FOR OPERATION FROM BOOM TIP CONTROLS.

REF: E04G-Q1303  
OPTIONS: FBG HYD 3RD, ESK,  
AUG 18, TRANS TPP

WARNING: DERRICK MUST BE MOUNTED ACCORDING TO INSTALLATION INSTRUCTIONS. IF DERRICK IS MODIFIED IN ANY WAY OR REMOUNTED, TEREX SOUTH DAKOTA, MUST BE ADVISED AS CAPACITIES SHOWN MAY BE AFFECTED.

BOOM ANGLES IN DEGREES	FULLY RETRACTED			2ND SECTION EXTENDED		
	LOAD RADIUS (FT)	SHEAVE HEIGHT (FT)	LOAD CAPACITY (LB)	LOAD RADIUS (FT)	SHEAVE HEIGHT (FT)	LOAD CAPACITY (LB)
80	4.1	30.8	25970	5.7	39.6	18350
75	5.8	30.3	19400	8.2	39.0	13240
60	10.6	28.0	11900	15.8	35.8	7310
45	15.5	24.5	8660	21.9	30.8	5410
30	18.7	20.0	7310	26.5	24.5	4410
15	20.6	14.8	6370	29.3	17.1	3720
0	21.1	9.3	5440	30.1	9.3	3050
-20	19.6	2.1	3570	28.1	-1.0	1720

BOOM ANGLES IN DEGREES	3RD SEC. EXT. -2ND SEC. RET.			2ND & 3RD SEC. EXTENDED		
	LOAD RADIUS (FT)	SHEAVE HEIGHT (FT)	LOAD CAPACITY (LB)	LOAD RADIUS (FT)	SHEAVE HEIGHT (FT)	LOAD CAPACITY (LB)
80	6.0	39.6	17880	7.5	48.5	13720
75	8.5	39.0	13080	11.0	47.7	9600
60	15.9	35.7	7670	20.4	43.5	5420
45	22.0	30.8	5810	28.3	37.1	3930
30	26.6	24.4	4830	34.4	28.9	3140
15	29.4	17.0	4140	38.1	19.3	2600
0	30.1	9.2	3480	39.1	9.2	2090
-20	28.0	-1.1	2150	36.5	-4.1	1060

LOAD RADIUS (FT)	SHEAVE HEIGHT (FT)	4TH SEC. EXTENDED	
		LOAD CAPACITY (LB) ZONE A	LOAD CAPACITY (LB) ZONE B
NOT APPLICABLE			

FORM #3056 R111

For Reference Only  
This Preliminary Load Chart was created as per Terex Quote #QU07776.  
  
Final Load Chart will be included with completed unit based on final unit with all included options (including stability, body type and chassis).



Customer: Hartford Electric  
 Quote #: QU07776

Based On: C:\Users\dave.blanding\Documents\1-Weight Studies by QU\2016\QU07776\DFA\QU07776 - WEIGHT STUDY - R1.xls

### PRELIMINARY WEIGHT RANGE ANALYSIS

	Front	Rear	Total
*Estimated Bare Chassis Weight	7778	5038	12816
**Chassis Legal Limits	16000	20000	33000
Estimated Total	12631 ± 800	18539 ± 1000	31170 ± 1650
Estimated Reserve Capacity	3369 ± 800	1461 ± 1000	1830 ± 1650

#### Including 1000 lbs. Payload

Estimated Total	12631 ± 800	19539 ± 1000	32170 ± 1650
Estimated Reserve Capacity	3369 ± 800	461 ± 1000	830 ± 1650

#### Including 500 lbs. Tongue Load

Estimated Total	12457 ± 800	19213 ± 1000	31670 ± 1650
Estimated Reserve Capacity	3543 ± 800	787 ± 1000	1330 ± 1650

#### Including 1000 lbs. Payload and 500 lbs. Tongue Weight

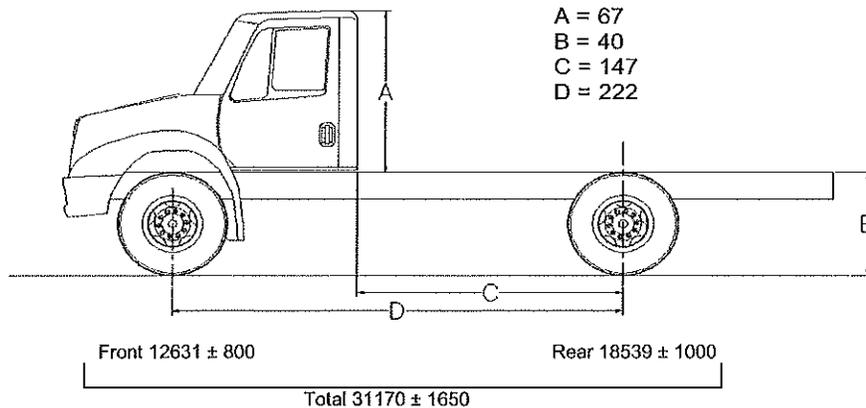
Estimated Total	12457 ± 800	20213 ± 1000	32670 ± 1650
Estimated Reserve Capacity	3543 ± 800	-213 ± 1000	330 ± 1650

Estimated Total Includes	
Personnel	500
Fuel	345
Payload	1000
Tongue Load	500

If any cells are highlighted as such, estimated weight plus 5% of the chassis legal limit may exceed the legal limit of the chassis.

Notes: ASSUMES STANDARD INSTALLATION AND LOAD AT FLATBED CG.

- \*CHASSIS WEIGHT IS BASED ON CHASSIS SPECS. ANY VARIATION IN ACTUAL CHASSIS WEIGHT WILL AFFECT ESTIMATED TOTAL.
- \*\*LEGAL LIMIT IS MINIMUM VALUE OF CHASSIS RATING OR FEDERAL BRIDGE LAW.
- \*\*\*WEIGHTS ARE ESTIMATES ONLY PLEASE NOTE ANY SPECIAL REQUIREMENTS.



FEDERAL BRIDGE LAW LIMITS FRONT AXLE TO 16000LBS AND REAR AXLE TO 20000LBS.

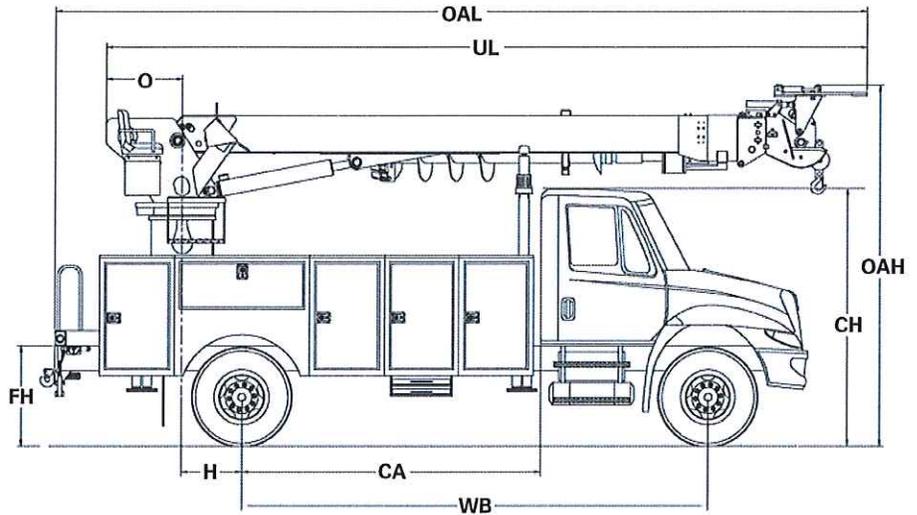


# TEREX®

## COMMANDER 5000 SERIES

### DIGGER DERRICK

Terex® Telelect Digger Derricks are known throughout the industry. They come with a long history featuring quality and innovative design.



Measurements	Commander 5045			Commander 5048			Commander 5050			Commander 5052			Commander 5055		
	ORA	BC	CMT												
<i>(Minimum Recommendations)</i>															
Typical Frame Height (FH)	40 in. (101.6 cm)														
Typical Cab Height (CH)	112 in. (284.5 cm)														
Offset (O)	30.5 in. (77.5 cm)														
Overall Height (OAH)	12' 0"	12' 0"	11' 2"	12' 0"	12' 0"	11' 2"	12' 0"	12' 0"	11' 2"	12' 0"	12' 0"	11' 2"	12' 0"	12' 0"	11' 2"
	(3.7 m)	(3.7 m)	(3.4 m)	(3.7 m)	(3.7 m)	(3.4 m)	(3.7 m)	(3.7 m)	(3.4 m)	(3.7 m)	(3.7 m)	(3.4 m)	(3.7 m)	(3.7 m)	(3.4 m)
Overall Length (OAL)	24' 8"	32' 4"	23' 4"	26' 8"	34' 4"	25' 4"	26' 8"	34' 4"	25' 4"	26' 8"	34' 4"	25' 4"	29' 8"	37' 4"	28' 4"
	(7.5 m)	(9.8 m)	(7.1 m)	(8.1 m)	(10.5 m)	(7.7 m)	(8.1 m)	(10.5 m)	(7.7 m)	(8.1 m)	(10.5 m)	(7.7 m)	(9.0 m)	(11.4 m)	(8.6 m)
Unit Length (UL)	23' 6" (7.2 m)			25' 6" (7.8 m)			25' 6" (7.8 m)			25' 6" (7.8 m)			28' 6" (8.7 m)		
Center of Rotation (H)	24 in.	111.5 in.	61 in.	24 in.	111.5 in.	61 in.	24 in.	111.5 in.	61 in.	24 in.	111.5 in.	61 in.	24 in.	111.5 in.	61 in.
	(61 cm)	(283.2 cm)	(155 cm)	(61 cm)	(283.2 cm)	(155 cm)	(61 cm)	(283.2 cm)	(155 cm)	(61 cm)	(283.2 cm)	(155 cm)	(61 cm)	(283.2 cm)	(155 cm)
Cab to Axle (CA)	120 in.	138 in.	102 in.	120 in.	138 in.	102 in.	120 in.	138 in.	102 in.	120 in.	138 in.	102 in.	120 in.	150 in.	102 in.
	(304.8 cm)	(350 cm)	(259 cm)	(304.8 cm)	(350 cm)	(259 cm)	(304.8 cm)	(350 cm)	(259 cm)	(304.8 cm)	(350 cm)	(259 cm)	(304.8 cm)	(350 cm)	(259 cm)
Wheel Base (WB)	192 in.	210 in.	174 in.	192 in.	210 in.	174 in.	192 in.	210 in.	174 in.	192 in.	210 in.	174 in.	192 in.	222 in.	174 in.
	(487.7 cm)	(533.4 cm)	(442 cm)	(487.7 cm)	(533.4 cm)	(442 cm)	(487.7 cm)	(533.4 cm)	(442 cm)	(487.7 cm)	(533.4 cm)	(442 cm)	(487.7 cm)	(563.9 cm)	(442 cm)
Front Axle (GAWR)	12,000 lb. (5,443 kg)														
Rear Axle (GAWR)	21,000 lb.	21,000 lb.	34,000 lb.	21,000 lb.	21,000 lb.	34,000 lb.	21,000 lb.	21,000 lb.	34,000 lb.	21,000 lb.	21,000 lb.	34,000 lb.	21,000 lb.	21,000 lb.	34,000 lb.
	(9,525 kg)	(9,525 kg)	(15,422 kg)	(9,525 kg)	(9,525 kg)	(15,422 kg)	(9,525 kg)	(9,525 kg)	(15,422 kg)	(9,525 kg)	(9,525 kg)	(15,422 kg)	(9,525 kg)	(9,525 kg)	(15,422 kg)
Gross Vehicle Weight Rating (GVWR)	33,000 lb.	33,000 lb.	46,000 lb.	33,000 lb.	33,000 lb.	46,000 lb.	33,000 lb.	33,000 lb.	46,000 lb.	33,000 lb.	33,000 lb.	46,000 lb.	33,000 lb.	33,000 lb.	46,000 lb.
	(14,969 kg)	(14,969 kg)	(20,865 kg)	(14,969 kg)	(14,969 kg)	(20,865 kg)	(14,969 kg)	(14,969 kg)	(20,865 kg)	(14,969 kg)	(14,969 kg)	(20,865 kg)	(14,969 kg)	(14,969 kg)	(20,865 kg)
Recommend Weight For Stability	25,000 lb. (11,340 kg)			25,000 lb. (11,340 kg)			25,000 lb. (11,340 kg)			25,500 lb. (11,567 kg)			25,500 lb. (11,567 kg)		
Frame Section Modulus	18.0 in <sup>3</sup>														
Frame Yield Strength	50,000 psi														
Frame RBM	900,000 in-lbs														



**TEREX®**

500 Oakwood Drive  
PO BOX 1150  
Watertown, SD 57201-6150  
USA

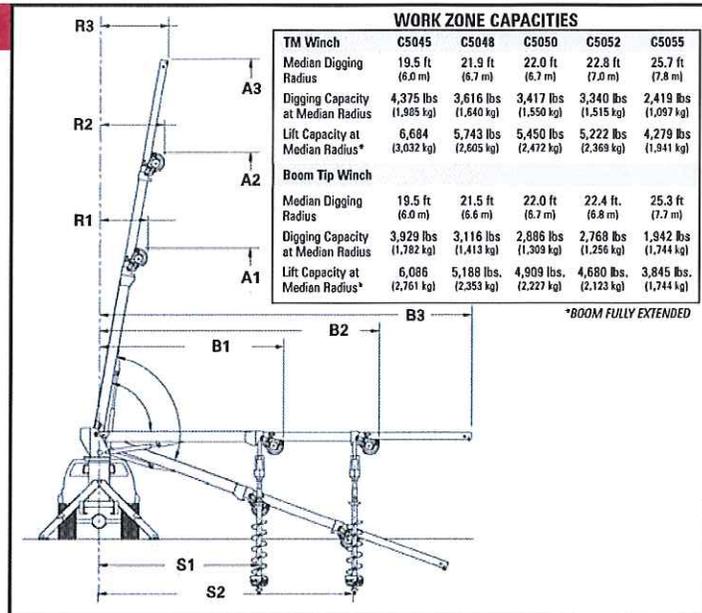
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E-mail: utilities.info@terex.com

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# COMMANDER 5000 SERIES

## STANDARD EQUIPMENT

- 100 Degrees of Boom Travel (+80 to -20)
- Dual Lift Cylinders
- Self-Aligning Swivel Ball Bushings
- Rectangular, Bi-Axial Epoxy Resin, Filament Wound Fiberglass Booms
- Box Fabricated Steel Lower Boom and Intermediate
- Hydraulic Boom Extension Intermediate & Upper
- Full Pressure Hydraulic Controls
- Full Pressure, Open-Center Hydraulic System
- 50 Gallon Hydraulic Oil Reservoir
- Custom Made Zoned Load Chart
- Continuous Unrestricted Rotation
- 15,000 lb. Turntable Winch
- Meets or Exceeds ANSI A10.31
- Planetary Parking Brake Rotation
- Right-Hand Command Post Controls
- Engine Stop/Start at Lower Controls
- Boom Angle Indicator
- Outrigger Interlock
- Moving Outrigger Alarm
- Truck Level Indicator



## CAPACITIES & DIMENSIONAL DATA (Based on a 40 Inch Frame Height)

Model	Maximum Capacity	Capacity @ 10 ft Radius	Load Radius			Sheave Height			Horizontal Reach			Digging Radius	
			R1	R2	R3	A1	A2	A3	B1	B2	B3	S1	S2
<b>CMDR 5045</b>													
TM Winch	30,000 lb (13,608 kg)	16,050 lb (7,295 kg)	3.1 ft (0.9 m)	4.6 ft (1.4 m)	6.1 ft (1.86 m)	28.9 ft (8.81 m)	37.2 ft (11.34 m)	45.6 ft (13.9 m)	19.1 ft (5.82 m)	27.6 ft (8.41 m)	36.1 ft (11.0 m)	16.1 ft (4.91 m)	24.6 ft (7.5 m)
PG Winch	30,000 lb (13,608 kg)	14,600 lb (6,620 kg)	3.7 ft (1.13 m)	5.1 ft (1.55 m)	6.0 ft (1.83 m)	27.9 ft (8.5 m)	36.2 ft (11.03 m)	45.0 ft (13.72 m)	18.2 ft (5.55 m)	26.7 ft (8.14 m)	35.5 ft (10.82 m)	16.1 ft (4.91 m)	24.6 ft (7.5 m)
<b>CMDR 5048</b>													
TM Winch	30,000 lb (13,608 kg)	15,350 lb (6,963 kg)	3.4 ft (1.0 m)	5.0 ft (1.5 m)	6.6 ft (2.0 m)	30.8 ft (9.4 m)	39.7 ft (12.1 m)	48.6 ft (14.8 m)	21.1 ft (6.4 m)	30.1 ft (9.2 m)	39.1 ft (11.9 m)	18.1 ft (5.5 m)	27.1 ft (8.2 m)
Boom Tip Winch	27,860 lb (12,637 kg)	13,700 lb (6,214 kg)	4.0 ft (1.2 m)	5.6 ft (1.7 m)	6.5 ft (2.0 m)	29.9 ft (9.1 m)	38.7 ft (11.8 m)	48.0 ft (14.6 m)	20.2 ft (6.2 m)	29.2 ft (8.9 m)	38.5 ft (11.7 m)	18.1 ft (5.5 m)	27.1 ft (8.2 m)
<b>CMDR 5050</b>													
TM Winch	30,000 lb (13,608 kg)	15,300 lb (6,940 kg)	3.4 ft (1.0 m)	5.2 ft (1.6 m)	7.0 ft (2.1 m)	30.8 ft (9.4 m)	40.7 ft (12.4 m)	50.0 ft (15.4 m)	21.1 ft (6.4 m)	31.1 ft (9.5 m)	41.1 ft (12.5 m)	18.1 ft (5.5 m)	28.1 ft (8.5 m)
Boom Tip Winch	27,820 lb (12,619 kg)	13,650 lb (6,192 kg)	4.0 ft (1.2 m)	5.7 ft (1.7 m)	6.9 ft (2.1 m)	29.9 ft (9.1 m)	39.7 ft (12.1 m)	49.9 ft (15.2 m)	20.2 ft (6.2 m)	30.2 ft (9.2 m)	40.5 ft (12.3 m)	18.1 ft (5.5 m)	28.1 ft (8.5 m)
<b>CMDR 5052</b>													
TM Winch	30,000 lb (13,608 kg)	15,260 lb (6,922 kg)	3.4 ft (1.0 m)	5.3 ft (1.6 m)	7.3 ft (2.2 m)	30.8 ft (9.4 m)	41.7 ft (12.7 m)	52.5 ft (16.0 m)	21.1 ft (6.4 m)	32.1 ft (9.8 m)	43.1 ft (13.1 m)	18.1 ft (5.5 m)	29.1 ft (8.8 m)
Boom Tip Winch	27,790 lb (12,606 kg)	13,600 lb (6,169 kg)	4.0 ft (1.2 m)	5.9 ft (1.8 m)	7.2 ft (2.2 m)	29.9 ft (9.1 m)	40.7 ft (12.4 m)	51.9 ft (15.8 m)	20.2 ft (6.2 m)	31.2 ft (9.5 m)	42.5 ft (13.0 m)	18.1 ft (5.5 m)	29.1 ft (8.8 m)
<b>CMDR 5055</b>													
TM Winch	30,000 lb (13,608 kg)	14,400 lb (6,532 kg)	3.9 ft (1.2 m)	5.9 ft (1.8 m)	7.9 ft (2.4 m)	33.8 ft (10.3 m)	44.6 ft (13.6 m)	55.5 ft (16.9 m)	24.1 ft (7.3 m)	35.1 ft (10.7 m)	46.1 ft (14.1 m)	21.1 ft (6.4 m)	32.1 ft (9.8 m)
Boom Tip Winch	24,300 lb (11,022 kg)	12,850 lb (5,829 kg)	4.5 ft (1.4 m)	6.4 ft (2.0 m)	7.8 ft (2.4 m)	32.8 ft (10.0 m)	43.6 ft (13.3 m)	54.9 ft (16.7 m)	23.2 ft (7.1 m)	34.2 ft (10.4 m)	45.5 ft (13.9 m)	21.1 ft (6.4 m)	32.1 ft (9.8 m)

## OPTIONAL EQUIPMENT

- Various Digger/Augers
  - Auger Storage Left Side (Typical)
  - Auger Storage Right Side (Subject to Configuration)
- Fiberglass Personnel Platform
  - Liners With or Without Steps
- Handle Rack Controls
- Various Types of Controls
- Radio Remote Controls
- Full Pressure Upper Controls
- Single Stick "T" Controls
- Engine Stop/Start and Throttle Advance at Top Controls
- Engine Stop/Start and Throttle Advance at Lower Controls
- Various Types of Throttle Advance at Lower Controls
- Hydraulic Overload Protection (HOP)
- Boom Tip Winch
- Material Handling Jibs
- Transferable Pole Flanges
- Various Sizes of Pole Guides
- Pole Guide Interlock
- Planetary Slip Brake Rotation
- Hydraulic Tool Outlets
- Pole Puller
- Multi-Part Line Components
- Corner Mount Derricks
- Boom Storage Warning Light
- Outrigger Sag Light
- Various Types of Outriggers
- Truck Grounding Cable & Clamp

Effective Date: September 2014. Product specifications and prices are subject to change without notice or obligation. The photographs and/or drawings in this document are for illustrative purposes only. Refer to the appropriate Operator's Manual for instructions on the proper use of this equipment. Failure to follow the appropriate Operator's Manual when using our equipment or to otherwise act irresponsibly may result in serious injury or death. The only warranty applicable to our equipment is the standard written warranty applicable to the particular product and sale and Terex makes no other warranty, express or implied. Products and services listed may be trademarks, service marks or trade-names of Terex Corporation and/or its subsidiaries in the USA and other countries. All rights are reserved. Terex® is a registered trademark of Terex Corporation in the USA and many other countries. Copyright 2014 Terex Corporation.