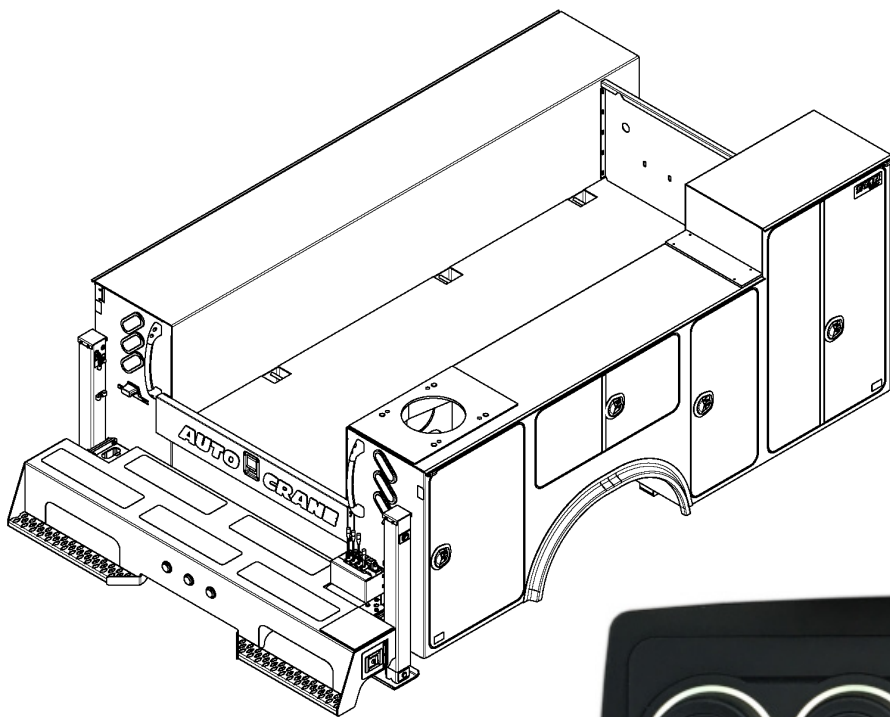




Operations Manual **TITAN[™] Connect**



475300389-0226-D

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P.O. Box 580697
Tulsa, OK 74158

Phone: 1-800-777-2760
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Tulsa, OK 74117-5904

At the time of publishing this manual is accurate to the best of our knowledge. Auto Crane reserves the right to change any or all items, components and parts, necessary for any reason. This right does not obligate Auto Crane to immediately update the manual. If in doubt, please call your local Auto Crane distributor for the most up-to-date information.

Auto Crane Company issues a limited warranty with each unit sold. See warranty pages at the end of the manual.

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1 Safety Tips and Precautions

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates information considered important, but not hazard-related.

WARNING

Federal law (49 cfr part 571) requires that the Final Stage Manufacturer of a vehicle certify that the vehicle complies with all applicable federal regulations. Any modifications performed on the vehicle prior to the final state are also considered intermediate stage manufacturing and must be certified as to compliance. The installer of this crane and body is considered one of the manufacturers of the vehicle. As such a manufacturer, the installer is responsible for compliance with all applicable federal and state regulations, and is required to certify that the vehicle is in compliance.

WARNING

It is the further responsibility of the installer to comply with the OSHA Truck Crane Stability Requirements as specified by 29 CFR part 1910.180 (C) (1). In applications, where the rotation of the load is hazardous, a tag or restraint line should be used, (ref. OSHA 1910.180(h)(3)(xvi)). To reduce the potential for the load to rotate or rope twist, operate at minimal boom angles and extension.

WARNING

Do not weld, modify, or use unauthorized components on any Auto Crane unit! This will void any warranty or liability. Also failure of the crane may result.

WARNING

Vehicle must meet Federal Law (49 CFR 393) which states the required parts and accessories necessary for safe operation. This includes lighting, reflectors, etc..

WARNING

Federal Law (49 CFR 568) requires each final-stage manufacturer to complete the vehicle in such a manner that it conforms to the standards in effect on the date of manufacture of the incomplete vehicle, the date of the final completion, or a date between those two dates. This requirement shall, however, be superseded by any conflicting provisions of a standard that applies by its terms to vehicles manufactured in two or more stages. Each final-stage manufacturer shall affix a label to the completed vehicle in accordance with 49 CFR 567.5.

Auto Crane products are designed to provide many years of safe, trouble-free, dependable service when properly used and maintained.

To assist you in obtaining the best service from your body and to avoid untimely crane and/or vehicle failure, this manual provides the following operating and service instructions. It is specifically recommended that all operating and service personnel consider this manual as mandatory material for reading and study before operating or servicing or installing Auto Crane products. It is highly recommended body owners, equipment managers, and supervisors also read this manual.

Remember, the body adds weight to the vehicle. Adding weight may change the driving and riding characteristics of the vehicle unless the appropriate overload spring(s) are installed on the truck. The payload of the vehicle is reduced by the weight of the body. The operator should exercise care when loading the vehicle. Distributing the payload on the vehicle evenly will greatly improve the driving and riding characteristics of the vehicle.

**Auto Crane Company issues a limited warranty certificate with each unit sold.
See last page for warranty.**

It has always been Auto Crane Company policy to handle all warranty claims we receive as promptly as possible. If a warranty claim involves discrepant material or workmanship, Auto Crane will take immediate corrective action. It is understandable that Auto Crane Company cannot assume responsibility of liability when it is obvious that our products have been abused, misused, overloaded or otherwise damaged by inexperienced persons trying to operate the equipment without reading the manual.

NOTICE

Auto Crane will not assume responsibility or liability for any modifications or changes made to unit, or installation of component parts without authorization.

This manual does not cover all installation, maintenance, or repair instructions pertinent to all possible situations. Should you require assistance not given in this manual, we recommend you consult your nearest Auto Crane Distributor. Our distributors see authorized parts and have service departments that can solve almost any needed repair. Auto Crane also maintains a knowledgeable Customer Service Department. In most cases, an equipment problem is solved via phone conversation with our customer service department. The customer service department also has the ability to bring a regional sales manager or a factory serviceman into the solution of an equipment problem.

If, through no fault of Auto Crane Company, it is necessary to send an experienced factory serviceman on a field service call the rates stated in the Auto Crane Distributor's Flat Rate Manual will apply.

Auto Crane Company's extensive Research and Development Program allow our customers to use the best equipment on the market. Our Engineering Staff and our knowledgeable sales people are always available to our dealers in solving crane and winch-type application problems. When in doubt, call the Auto Crane factory. Please contact the Auto Crane Company at the following telephone number: **1-800-777-2760**

The information contained in the manual is in effect at the time of this printing. Auto Crane Company reserves the right to update this material without notice or obligation.

3 Operation

IMPORTANT READ FIRST!!

VEHICLE PREPARATION FOR OUTRIGGER AND CRANE OPERATION

1. Park vehicle within crane operating distance from object that is to be lifted.

Notes:

- Make sure there are no obstructions preventing safe handling of load during crane operation.
 - Verify that no obstructions will prevent the full extension of the outrigger legs on both sides of vehicle.
 - Regardless of load to be lifted the outriggers should always be fully extended to keep vehicle stable.
 - Grade shall not exceed 1° of level. Level truck with blocks if grade exceeds 1° of level.
2. ALWAYS set the vehicle emergency brake before beginning crane operations.
 3. Use wheel chocks on the front wheels of vehicle.

INSPECT OUTRIGGERS BEFORE USE

1. Visually inspect outrigger before use making sure the outrigger is in good working order.
2. Replace or repair any worn or damaged parts before outrigger operation.
3. Check for and repair leaks on hydraulic units if they occur.

HYDRAULIC OUTRIGGER OPERATION

1. Divert hydraulic flow from control valve to outrigger operations.
2. Use the hydraulic control valve to extend outrigger slides from stowed position to the fully extended position.
3. Make sure the slides are fully extended.
4. Lower both outrigger legs until they contact the ground then extend another inch to insure good ground contact.

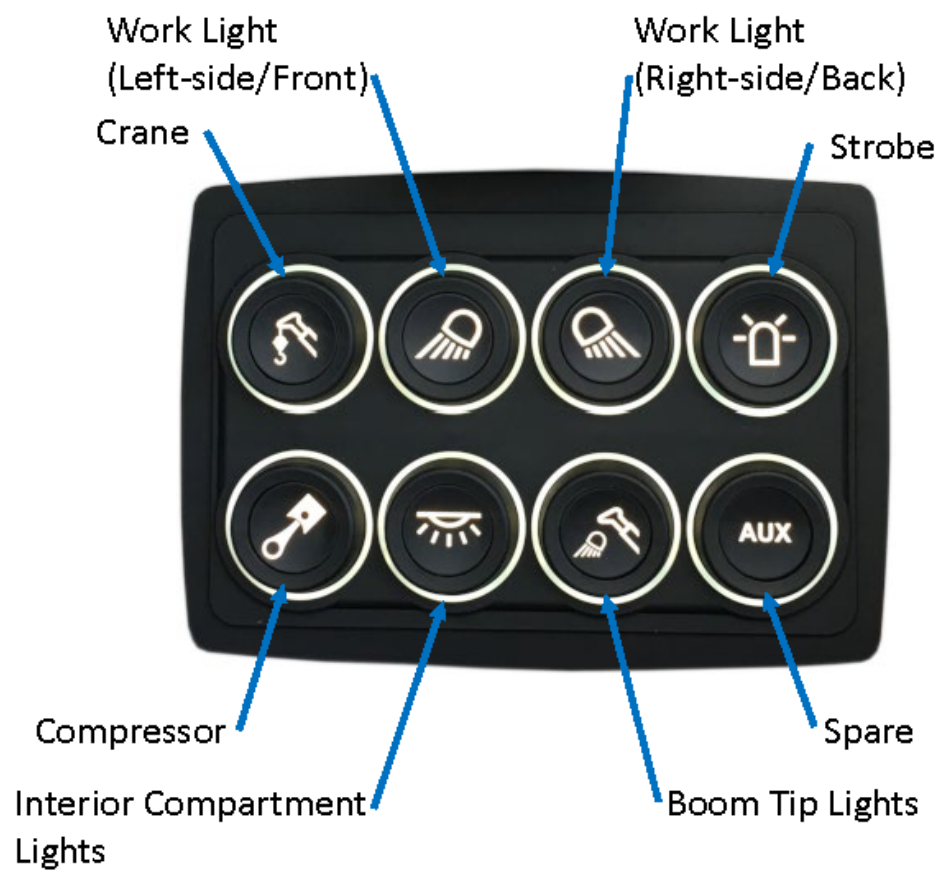
Notes:

- Use blocks under pads to increase surface area if required for stability on soft ground
- DO NOT LIFT TRUCK WHEELS WITH OUTRIGGERS. The outriggers are intended for vehicle stability during lifting operations not for complete vehicle support.

HYDRAULIC OUTRIGGER STOWING PROCEDURE

1. Fully retract vertical legs in stowed position.
2. Retract outrigger slides from extended to the fully retracted position.
3. Make sure the slides are fully retracted in the stowed position.
4. Make sure the sling is secured in place around the outrigger leg.

KEYPAD LAYOUT



Function	Description
Crane	Pressing button turns the crane on and off.
Work Light (Left-side/Front)	Pressing button turns the left-side or front (depending on installation configuration) work lights on and off.
Work Light (Right-side/Back)	Pressing button turns the right-side or rear (depending on installation configuration) work lights on and off.
Strobe	Pressing button turns the strobe on and off.
Compressor	Pressing button turns the compressor on and off.
Interior Compartment Lights	Pressing the button turns the interior compartment lights on and off.
Boom Tip Lights	Pressing the button turns the boom tip lights on and off.
Spare	Pressing the button turns the spare output on and off.

3 Operation

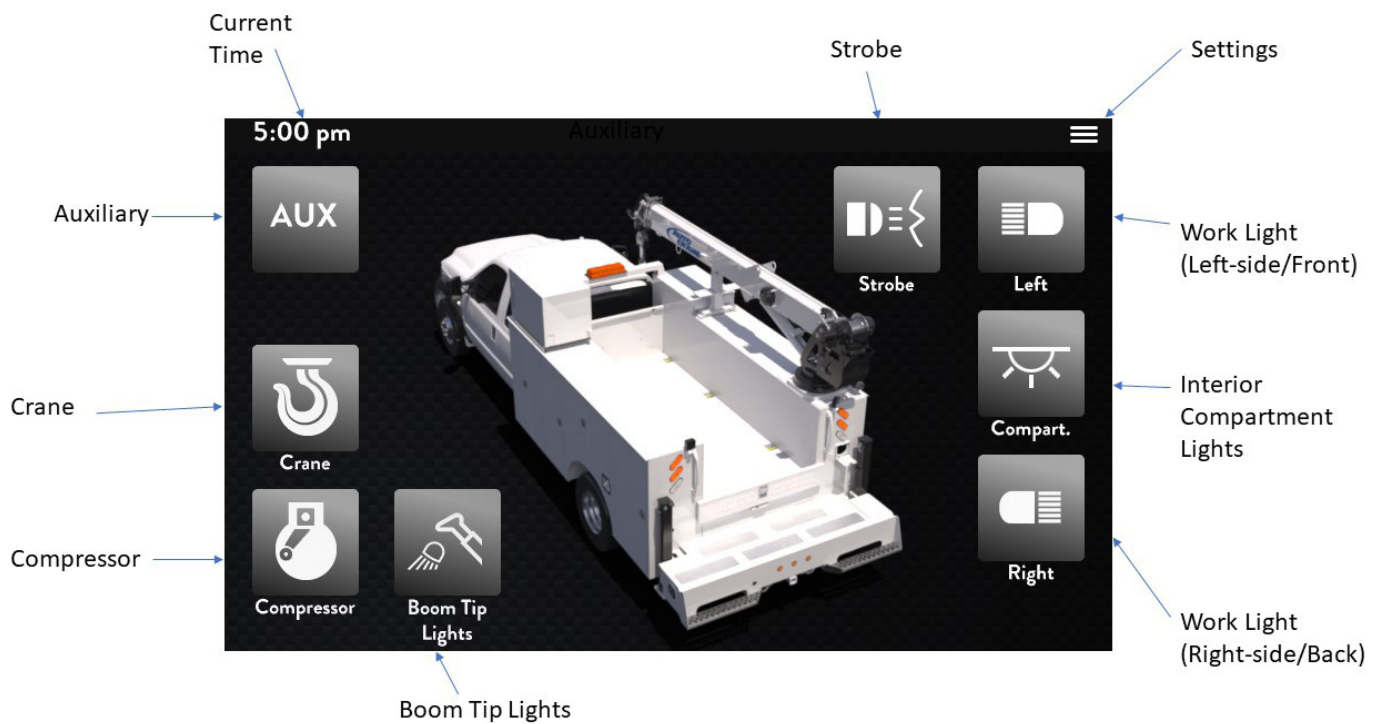
KEYPAD FUNCTION

E-STOP FUNCTION



- E-stop is located directly above keypad in cranebox compartment.
- Press to activate E-stop and Twist to release.
- Activating E-stop will shut down vehicle engine and will not allow to start engine again until E-stop is deactivated.

LCD SCREEN LAYOUT (Optional Feature)



Function	Description
Crane	Selecting turns crane on and off
Current Time	Show the current time
Strobe	Selecting turns strobe on and off
Work Light (Left-side/Front)	Selecting turns the left-side or front (depending on installation configuration) work lights on and off
Interior Compartment Lights	Selecting turns interior compartment lights on and off
Work Light (Right-side/Rear)	Selecting turns the right-side or rear (depending on installation configuration) work lights on and off
Boom Tip Lights	Selecting turns boom tip lights on and off
Compressor	Selecting turns compressor on and off

3 Operation

LCD SCREEN FUNCTION

- Press icon on screen to turn on. When function is turned on, the icon will be blue.
- Press icon on screen again to turn off. When function is turned off, the icon will be gray.
- Press and hold icon to temporarily disable any timer tied to crane/compressor function. Screen will flash, then appropriate function icon will be purple. Timer will remain disabled until PDM resets.
- When crane or compressor is selected, the PTO may engage and/or high idle will engage depending on chassis (Titan Work Ready Only)
- The work lights can be configured for either front/back or left/right depending on how the Titan Connect has been installed. Reference installation manual for more details.
- LCD screen is available as an option and is generally located in cab.
- Note that not all functions shown on LCD screen maybe installed on vehicle.

SETTING CLOCK (LCD SCREEN ONLY)

1. Select the 3 bars located in the top right of screen.
2. In the Settings menu, select General.
3. In the General menu, select Clock.
4. Input the current time. Reference table below.

Label	Description
Use GPS Time	Uses the time from the GPS signal
Set Hour	Type in the current hour
Set Minute	Type in the current minute
12 Hour Time	Changes between 12hr or 24 hr mode
Set Day	Type in the current day
Set Month	Type in the current month
Set Year	Type in the current year

Clock Menu

ADJUSTING SCREEN BRIGHTNESS (LCD SCREEN ONLY)

1. Select the 3 bars located in the top right of screen.
2. In the Settings menu, select Display.
3. In the Display menu, touch the plus sign to increase brightness or touch the minus sign to decrease brightness.

RETURNING TO HOME SCREEN (LCD SCREEN ONLY)

Select the "X" located in the upper right corner of screen.

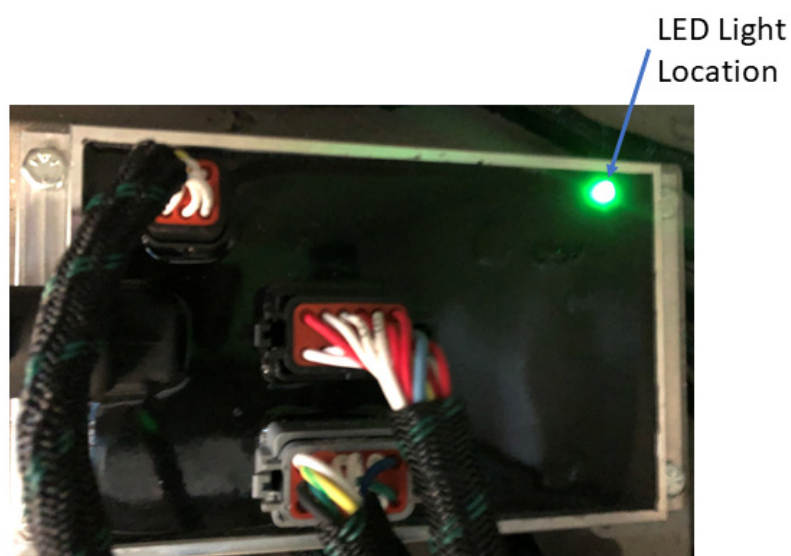
KEYPAD DIAGNOSTICS

The keypad has some basic diagnostics build into the hardware. The buttons will change color or flash under certain conditions. Those are listed in the table below.

Color	Flash/Steady	Condition
White	Steady	Function is not active
Blue	Steady	Function is active
Red	Steady	Over-current condition on function
Purple	Steady	Function timer is disabled (Power On Demand option only)
Red	Flashing (All 8)	E-stop is active

PDM DIAGNOSTICS

The PDM has some diagnostics using a single LED located on the PDM. The PDM is located behind a cover in the front left compartment. The cover may need to be removed to see the LED light. Reference figure below for the LED location. The table below defines the LED status, color, and corresponding condition.



Flash/Steady	Condition
Solid	Normal (No Faults)
No LED	No CAN communication with body or no power
On 1s, Off 0.25s	No CAN communication with chassis
On 0.25s, Off 1s	Low voltage
On 0.5s, Off 0.5s	Over current condition
On 1s, Off 1s	Over temperature
On 0.25s, Off 0.25s	Internal Error (Contact AC Tech Support)

5 Power On Demand Features (Optional)

Titan Connect also comes with an additional feature that will disengage the PTO and/or drop idle when there is no longer a demand for a function. The benefits of this feature include:

- Reduces fuel consumption.
- Reduces wear and tear on hydraulic system.
- Reduces heat in the hydraulics.
- Better than an All-in-One solution since the cab can still be cooled or heated in extreme ambient temperatures.
- Automatically starts/stops vehicle based on Demand.
- System uses same functions from crane remote except for IDLE. IDLE control is disabled with Power On Demand as system controls this IDLE status.



WARNING

The vehicle and/or components on the vehicle starts and stops automatically. Keep clear of areas where moving parts occur during PTO engagement, engine running.



WARNING

Activate body E-stop before servicing any component on vehicle.

Pressing the CRANE button on the keypad will automatically start the truck engine and activate the PTO to move the truck to running status. The system will be looking for operational input from the operator and rely on timers to mitigate idle time. PTO Timers for CRANE demand are configurable from 1 to 3600 seconds. Once this timer has expired, the system shuts off the PTO and begins an ENGINE IDLE timer, configurable from 1 to 4800 minutes. Once this timer expires the system will shut down the truck. At any time, the system will be constantly looking for DEMAND from the operator for Crane needs and return the truck to full running operation. The COMPRESSOR function has a similar setup and operation.



**AUTO CRANE SERVICE TRUCK BODIES
LIMITED WARRANTY**

1.1 Scope of Warranty Coverage. Upon the terms and subject to the conditions set forth in this limited warranty:

(a) AUTO CRANE (referred to herein as “**AUTO CRANE**” or the “**Manufacturer**”) warrants to each initial end user customer (a “**Purchaser**”) relating solely to the body, hinges, and applicable paint of a new Auto Crane Service Truck Body (the “**Product**”) that:

(i) the Product will not rust through the metal, and the hinges will not fail to operate, under normal working and service conditions, for a period of five (5) years from the date the Product is shipped from AUTO CRANE (the “**Product Warranty Term**”). For purposes of this Section 1.1(a)(i), the term “rust through” means a hole rusted all the way through the metal service truck body.

(ii) the Standard Paint or Titan Armor Paint on the Product will not fail due to blistering, adhesion or surface rust, under normal working and service conditions, for a period of eighteen (18) months for Standard Paint (the “**Standard Paint Warranty Term**”) or five (5) years for Titan Armor Paint from the date that the Product is shipped from Auto Crane (the “**Titan Armor Paint Warranty Term**”, and together with the Standard Paint Warranty Term and the Product Warranty Term, the “**Warranty Term**”). For purposes of this Section 1.1(a)(ii), the term “surface rust” means rust caused by paint degradation. In no event shall “surface rust” include peeling paint caused by impact, scratches, or damage to bare metal surfaces. Additionally, Purchaser should be aware that “Titan Armor Paint” is a proven marine based industrial product rather than an automotive product; as a result, the gloss and surface texture might differ from other commonly-used paint products and will not be comparable to automotive finish smoothness or aesthetic. For avoidance of doubt, any such aesthetic complaints in Titan Armor Paint are not covered by this Limited Warranty.

(iii) A Purchaser shall be eligible for an additional eighteen (18) months of coverage in addition to the Product Warranty Term and the Standard Paint Warranty Term, or an additional ten (10) years in addition to the Titan Armor Paint Warranty Term (also referred to as the “**Standard (+) PLUS benefit**”) only if the Purchaser (i) complies with Section 1.2(a) and (ii) registers the Product within eighteen (18) months of the Product’s ship date at myproduct.autocrane.com.

(b) Notwithstanding the foregoing, this warranty does not cover components damaged by accident, abuse, misuse, neglect, untrained operators, collision, overloading, modification, disassembly, rework, misapplication, improper installation or storage, lack of cleaning or maintenance, or improper service. This warranty does not cover removal or reinstallation of the service truck body or components, or normal wear and tear and loss of functionality due to aging of the Product (which may include but is not limited to dents, chips, corrosive chemical attack to the paint, discoloration or fading caused by customer or dealer applied components or decals).

1.2 Eligibility of Warranty Coverage.

(a) A Purchaser shall be eligible for warranty coverage under Section 1.1 of this Limited Warranty during the Warranty Term only if:

(i) Purchaser maintains, or causes to be maintained, the Product according to commercially reasonable standards and any applicable materials or procedures made available to Purchaser relating to the maintenance of the Product and utilizes the Product for the purposes for which it was created; and

(ii) No repairs or alterations have been made by any party other than AUTO CRANE, including Purchaser, unless otherwise authorized in writing by AUTO CRANE.

1.3 Transferability of Warranty.

(a) This warranty is transferable only from the Purchaser to the first subsequent transferee (the “**Transferee**”) of the Product from Purchaser upon (i) written notification to AUTO CRANE and (ii) registration of the transfer, both within 30 days of such Product transfer.

(b) Upon satisfaction of transfer requirements set forth in Section 1.3(a), the Transferee shall succeed to all the rights and obligations of the Purchaser set forth in this Limited Warranty.

1.4 **Certain Limitations on Scope of Warranty Service.**

(a) Any obligation of AUTO CRANE under this warranty, statutory or otherwise, is limited to the repair of solely the Product, and no other parts of the service truck body, at its factory or Authorized Service Centers. Notwithstanding the foregoing, if field service or repair is performed by AUTO CRANE at the request of the Purchaser and no defect is found with material or workmanship of the Product, the Purchaser shall compensate AUTO CRANE for its time and expenses within thirty (30) days of delivery of an invoice relating to the same. AUTO CRANE will not provide any cash payment or credits for defective materials or workmanship.

(b) Any travel time, transportation charges, freight charges, or similar costs incurred by AUTO CRANE in connection with the repair of defective parts, shall be the responsibility of the Purchaser. If applicable, AUTO CRANE shall invoice Purchaser for the total amount of such charges within sixty (60) days of fulfilling its duties under this warranty, payable within thirty (30) days of delivery of such invoice. In no event shall AUTO CRANE be liable for bills for service, labor or other expenses that have been incurred by the Purchaser without approval or prior authorization by AUTO CRANE for inspection, maintenance, or repair of the Product.

(c) All repair quotes submitted to AUTO CRANE must be itemized to include parts, materials, labor hours, and the applicable labor rate(s). Any Purchaser (or dealer or distributor, if applicable) shall supply part numbers for paint touch up, repair, or any other warranty measures.

1.5 **Limitations of Liability.** AUTO CRANE shall in no event be liable for punitive, special or consequential damages relating to the Product or this Warranty. AUTO CRANE makes no warranty in respect to third-party accessories, upgrades, or additions to the Product.

1.6 **Improving Product.** AUTO CRANE reserves the right to improve the Product through changes in design or materials as it may deem desirable or necessary without being obligated to incorporate, upgrade, or otherwise modify previously manufactured products.

1.7 **Limitations of Warranty.**

(a) THE WARRANTY SET FORTH ABOVE IS THE ONLY EXPRESS WARRANTY. AUTO CRANE HEREBY DISCLAIMS AND EXCLUDES ANY OTHER EXPRESS, IMPLIED, OR STATUTORY WARRANTIES, ARISING BY OPERATION OF LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE, OF TRADE, OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY.

(b) ANY IMPLIED WARRANTY WHICH BY LAW MAY NOT BE EXCLUDED IS LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF ORIGINAL RETAIL PURCHASE OF THE PRODUCT.

(c) This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.

(d) This warranty is valid only in the U.S.A. and Canada. For warranty outside the U.S.A. and Canada contact your nearest AUTO CRANE Distributor.

1.8 **No Modifications to Warranty.** No AUTO CRANE dealer, distributor, agent or employee is authorized to make any modification, extension or addition to this warranty.

1.9 **How to Apply for Warranty Coverage.**

All claims are handled by contacting your nearest Auto Crane Dealer. For questions, please contact customer support: accustomersupport@ramseyindustries.com.

Visit [Dealer Locator - Auto Crane](#) for Auto Crane Dealer locations and contact information.

Additional warranty, service support, product information, and parts information can be found on www.autocrane.com.

