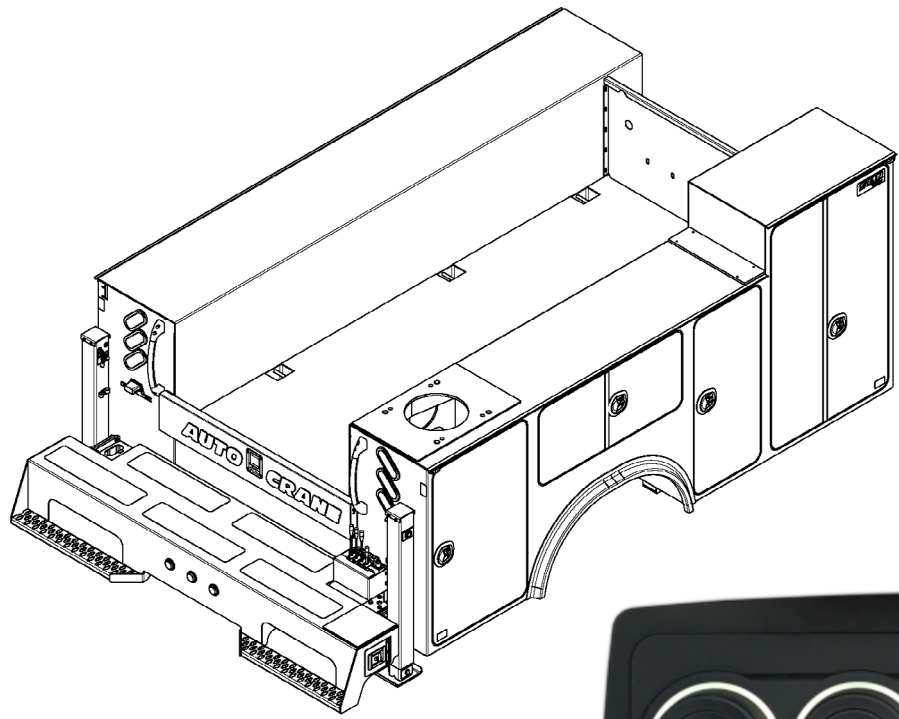




Operations Manual **TITAN** Connect



475300389-0422-C

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P.O. Box 580697
Tulsa, OK 74158

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4707 N. Mingo Rd.
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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.

Introduction 2

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.

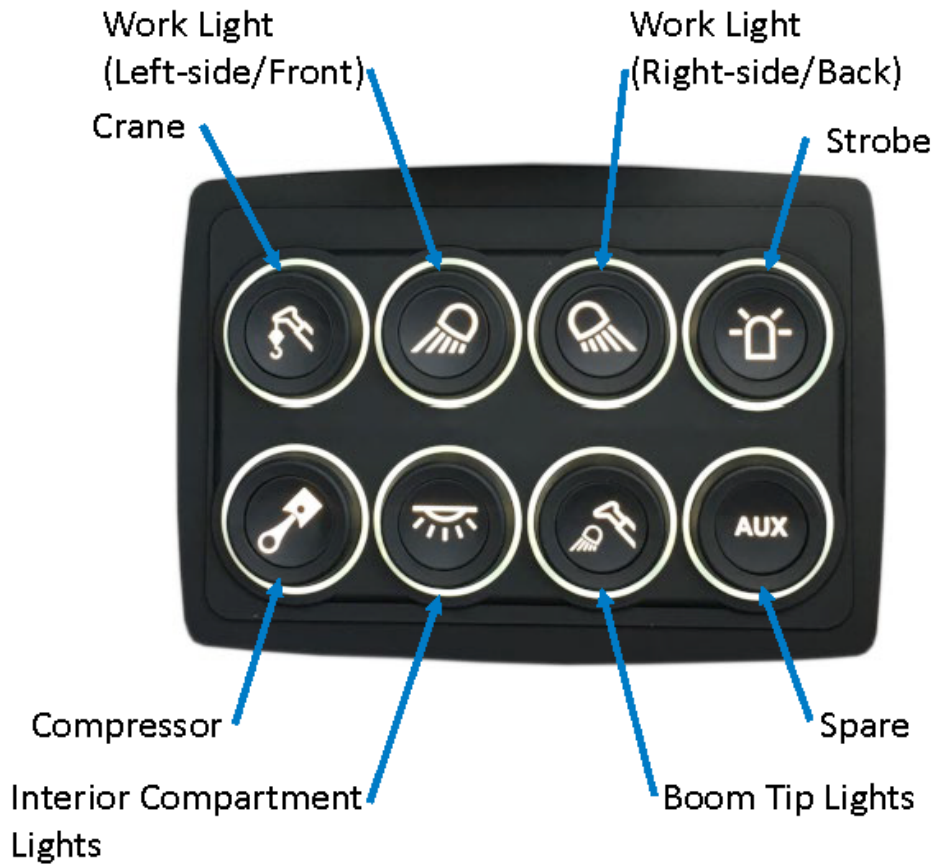
Notes:

- 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

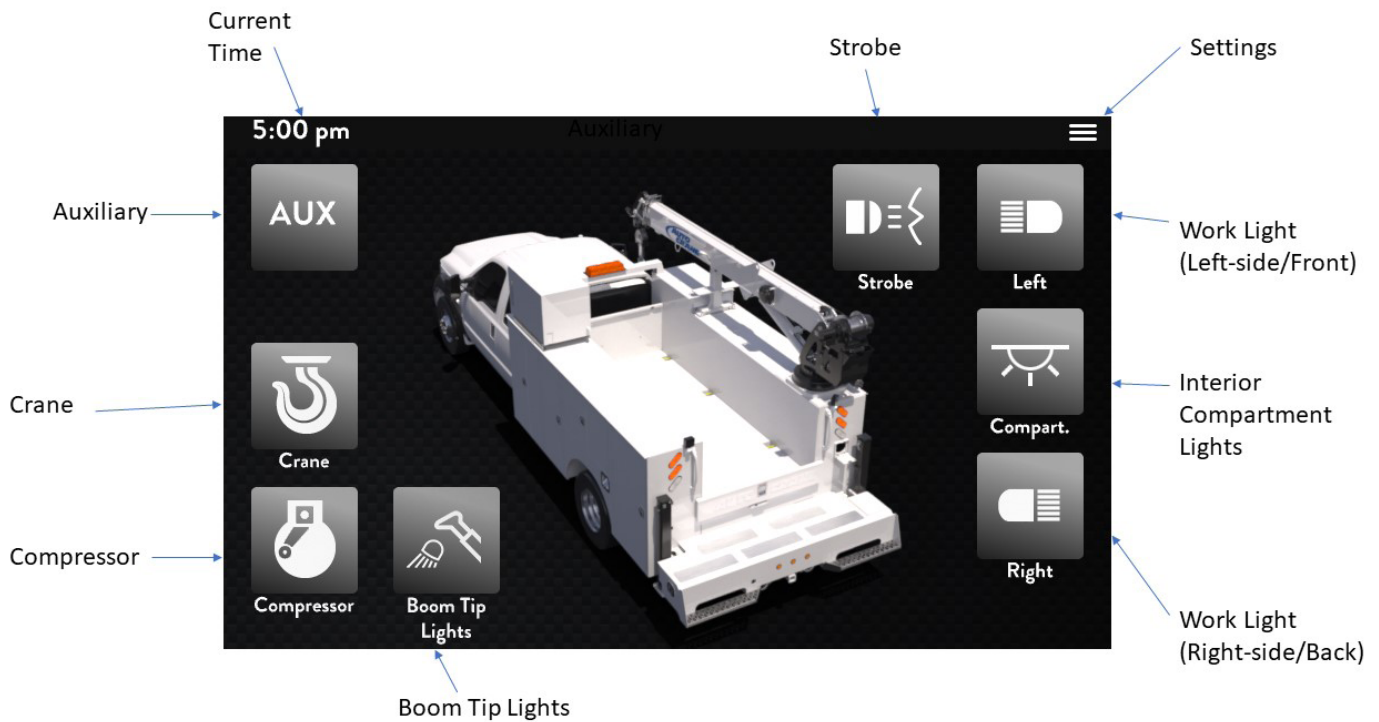
KEYPAD FUNCTION

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.

Diagnostics 4

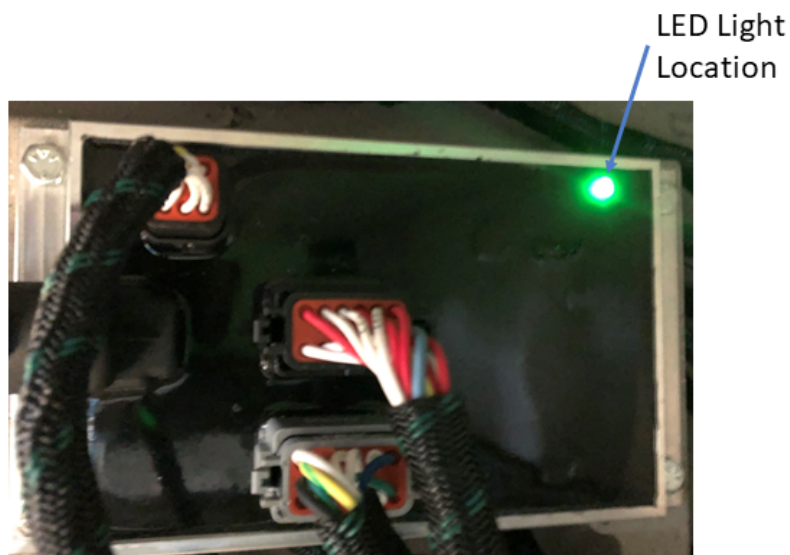
KEYPAD DIAGNOSTICS

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.





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4707 N. Mingo Rd. Tulsa, OK 74158-0697

5 YEAR LIMITED BODY WARRANTY

COVERED PRODUCTS:

- * Auto Crane Service Bodies- no rust-thru guarantee to the first owner/user of record for five (5) years from the date of purchase.
- * Door Hinges-Guarantee the hinges will not fail to operate or come off the product, to the first owner/user of record for five (5) years from the date of purchase.

ELIGIBILITY:

- * Product(s) warranted must be properly maintained and serviced.
- * The selling distributor must file for the first owner/user the application for warranty by completing the delivery report form enclosed in the Owner's Manual within 30 days of the product purchase date. The complete delivery report form must be forwarded to Auto Crane Company. The warranty agreement issued is not transferable.

EXCLUSIONS:

- * Warranty applies to the Auto Crane bodies only and excludes all options, modifications and alterations.
- * Paint required following repairs or replacement of parts under warranty after the first year from the date of delivery.
- * Product(s) that have been misused or damaged, inclusive of, but not limited to, accidents.
- * Absent a completed and valid delivery report form, the original date of manufacture will be used as the effective date for the limited warranty.

SPECIFIC NON-RUST-THRUWARRANTY EXCLUSIONS:

- * Product(s) that have been used to carry corrosive materials, where such materials result in rust-thru conditions.
- * Product(s) purchased by the first owner/user in prime paint condition.
- * Consequential damages including, but not limited to, transportation costs, lost profit and loss of income, as a result of a vehicle being out of service.
- * Product(s) purchased and used outside the U.S.A. or Canada.

APPLYING FOR WARRANTY:

- * Claims may be handled by contacting your nearest authorized Auto Crane Distributor. All claims are to be filed in writing on an Auto Crane Warranty Claim Form.
- * The Auto Crane Company reserves the sole right to inspect item(s) claimed for warranty and decide the best way to handle any and all claims, including the replacement or repair of the warranted part.
- * Should the warranted product rust thru, the hinges fail to operate or come off the product, Auto Crane will pay the cost of parts and flat rate labor to repair or replace as necessary the defective component.

NOTE: Paint following repair or replacement of a part is exclusive under warranty after the first year from date of delivery.

- * DEFECTS FROM MANUFACTURINGWORKMANSHIP AND/OR MATERIAL NOT SPECIFIED ABOVE WILL BE SUBJECT TO WARRANTY INCLUSIVE OF MATERIALS AND LABOR TO THE FIRST OWNER/USER OF RECORD FOR TWO (2) YEARS FROM THE DATE OF DELIVERY. Exclusions, as well as methods of applying for warranty remain the same as stated in the limited five (5) year warranty covered above.

6 Warranty



P.O. Box 580697 Phone: (918) 438-2760
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LIMITED WARRANTY 2 YEAR PARTS AND LABOR

Auto Crane will warranty to the consumer for a period of (2) years parts and labor from the date of purchase. Each new Auto Crane unit they sell will be free under normal use and service from defects in material and workmanship. Date of purchase will be honored as the date indicated on the Bill of Sale, which must accompany the Warranty Registration and be on file with Auto Crane. Absent a valid Warranty Registration and appropriate documentation, the original date of manufacture, as indicated by the serial number on the product, will be used to determine the effective date of the 2 year warranty.

The obligation of Auto Crane under this warranty is limited to the replacement or repair of parts that appear to the manufacturer after review and/or inspection to be defective and paid flat rate labor for replacing defective parts. This warranty does not obligate Auto Crane to bear the travel time charges in connection with the replacement or repair of defective parts. Responsibility for customer's claims arising from misapplication, abuse, misuse or alteration of equipment or parts lies with the distributor or user and no warranty obligation is assumed in these circumstances by Auto Crane.

Auto Crane will in no event be liable for any consequential damages or contingent liabilities arising out of the failure of any Auto Crane Product or parts to operate properly.

Auto Crane makes no warranty in respect to component accessories, it being subject to the warranties of their respective manufacturers.

If field service, at the request of the distributor, is rendered and fault is found not to be with Auto Crane's product, the distributor shall pay the time and expense of the field representative.

Claims for service labor or other expenses that have incurred by the buyer without approval or authorization or Auto Crane will not be accepted.

When applying for warranty, claims may be handled by contacting your nearest authorized Auto Crane Distributor. All claims are to be filed in writing on an Auto Crane Warranty Claim Form.

AUTO CRANE COMPANY IS UNDER NO OBLIGATION TO EXTEND THIS WARRANTY TO ANY CUSTOMER FOR WHICH AN AUTO CRANE DELIVERY REPORT FORM HAS NOT BEEN COMPLETED AND ON FILE WITH AUTO CRANE COMPANY

Limited Warranty 2 Years

Effective September 2, 2003



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LIMITED WARRANTY 1 YEAR PURCHASED REPLACEMENT PARTS

Auto Crane will warranty to the consumer for a period of (1) year from the date that a new Auto Crane replacement part was purchased from an authorized Auto Crane distributor. Each new Auto Crane part they sell will be free under normal use and service from defects in material and workmanship. Date of purchase will be honored as the date indicated on the Bill of Sale to the consumer.

The obligation of Auto Crane under this warranty does not apply to parts replaced under the limited warranty for a new Auto Crane product. The warranty for parts replaced under the limited warranty of a new Auto Crane product expires when the warranty for that product expires.

The obligation of Auto Crane under this warranty is limited to the replacement or repair of purchased replacement parts that appear to the manufacturer to be defective after review of documentation (Auto Crane Warranty Claim Form, photos, data etc.) provided by the Auto Crane distributor and/or inspection of parts returned to Auto Crane. This warranty does not obligate Auto Crane to bear labor costs to replace the defective parts or travel time charges in connection with the replacement or repair of defective parts. Responsibility for customer's claims arising from misapplication, abuse, misuse or alteration of equipment or parts lies with the distributor or user and no warranty obligation is assumed in these circumstances by Auto Crane.

Auto Crane will in no event be liable for any consequential damages or contingent liabilities arising out of the failure of any Auto Crane product or parts to operate properly

Auto Crane makes no warranty in respect to parts for component accessories, it being subject to the warranties of their respective manufacturers.

If field service, at the request of the distributor, is rendered and fault is found not to be with Auto Crane's product, the distributor shall pay the time and expense of the field representative.

Claims for service labor or other expenses that have incurred by the buyer without approval or authorization or Auto Crane will not be accepted

When applying for warranty claims may be handled by contacting your nearest authorized Auto Crane **Distributor. All claims are to be filed in writing on an Auto Crane Warranty Claim Form.**

Limited Parts Warranty 1 Year

Effective June 15, 2010

