

# GAC<sup>®</sup> 500XT GRAIN ANALYSIS COMPUTER



OPERATOR'S MANUAL



**DICKEY-john<sup>®</sup>**  
CORPORATION

*Revolutionizing Electronics*

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## SAFETY NOTICES

Safety notices are one of the primary ways to call attention to potential hazards.



This Safety Alert Symbol identifies important safety messages in this manual. When you see this symbol, carefully read the message that follows. Be alert to the possibility of personal injury or death.

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### **WARNING**

Use of the word **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

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### **CAUTION**

Use of the word **CAUTION** with the Safety Alert Symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

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### **CAUTION**

Use of the word **CAUTION** without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in equipment damage.

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# OPERATOR'S MANUAL

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## INTRODUCTION

The DICKEY-john Grain Analysis Computer GAC500XT™ quickly tests grain and automatically calculates moisture content, temperature, and approximate test weight (density) of the sample. The unit measures empty cell characteristics, prompts for sample loading, tests the sample, and displays the results. The selected grain name is also displayed during the measurement sequence.

## TESTING SAMPLES (QUICK START)

Performing a grain sample analysis consists of six basic steps.

1. Press the MEASURE function using the **Arrow** buttons
2. Press the **Enter** button to initiate a measurement sequence.
3. Follow display instructions to empty the cell
4. Press the **Enter** button to initiate empty cell measurements. A progress bar will indicate measurement status.
5. Fill the hopper, strike the grain using the grain loader/striker (refer to [Figure 16](#)), and press the **Enter** button to initiate grain measurement. Again, a progress bar will indicate measurement status.
6. Read the test results on the display. Results include moisture, temperature, and test weight.

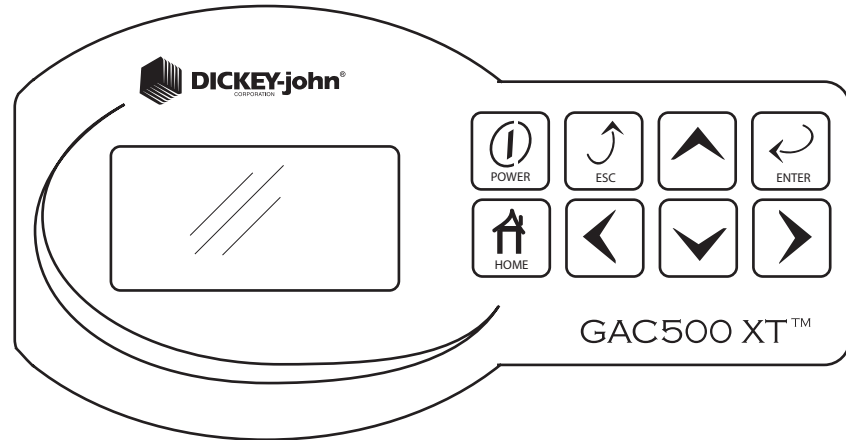
## FEATURES

Major features of the GAC500XT include:

- Memory for up to sixteen grain calibrations.
- Switchpad entry for updating grain calibration revisions.
- Error messages display when moisture, temperature, or weight is out of range.
- Switchpad entry for new or unique grain measurements.
- 12 Vdc mobile adapter.
- English/Metric units.
- Multiple language groups/dependent upon region.
- Audible alarm to signal key depression and measurement culmination.
- Print capabilities.



Figure 1  
GAC500XT Display And Switchpad



## SPECIFICATIONS

- Supply voltage and frequency
  - wall mount adapter: 90VAC to 264 VAC, 47 to 63 Hz, 0.4A max
  - 6-Volt vehicle adapter: 12-24VDC.
- Operating temperature range: 5°C to 45°C (41°F to 113°F). If the temperature range is exceeded, the unit will measure moisture and display an error message warning the operator that the readings do not necessarily meet unit specifications.
- Grain temperature range: 0°C to 50°C (32°F to 122°F). If the temperature range is exceeded, the unit will measure moisture and display an error message warning the operator that the readings do not necessarily meet unit specifications.
- Unit-grain temperature difference limit: the maximum allowable difference between the empty cell and grain temperature is 20°C (36°F). If the temperature range is exceeded, the unit will measure moisture and display an error message warning the operator that the readings do not necessarily meet unit specifications.
- Classes/types of grain or seed: calibration bulletins may be obtained through the DICKEY-john website ([www.dickey-john.com](http://www.dickey-john.com)) or by requesting a calibration bulletin at:

DICKEY-john Corporation  
5200 DICKEY-john Road  
Auburn, Illinois 62615  
(800) 637-3302

- Weight: 5.78 kg (13 lbs)
- Shipping weight: 6.35 kg (14 lbs)



## INSTALLATION AND SETUP

Before shipping, the GAC500XT is tested and inspected to ensure the unit is fully operational and meets all measurement specifications. After unpacking, inspect for damage that may have occurred during transit. Save all packing material until inspection is complete. If damage is found, immediately file a claim with the carrier. Also notify your DICKEY-john Sales Representative.

**NOTE:** Before relocating or shipping the GAC500XT, the shipping screws must be replaced.

### REMOVING SHIPPING SCREWS

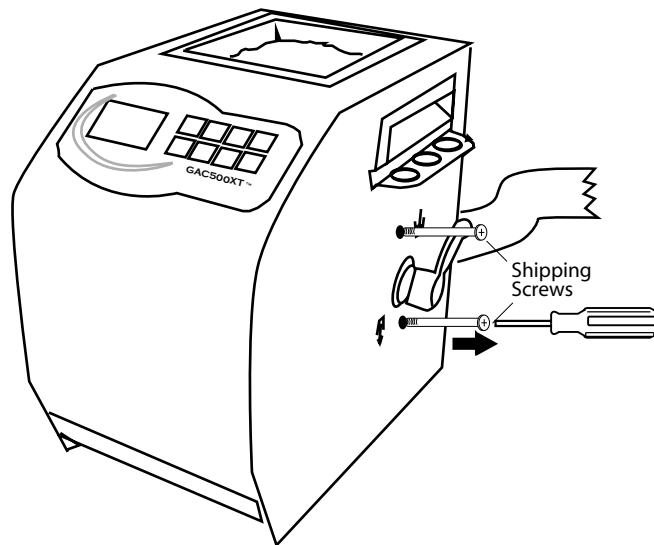
Once the GAC500XT is placed in a level location, remove the shipping screws.

#### **CAUTION**

**Make sure shipping screws are removed prior to operating the GAC500XT. Failure to do so may permanently damage the unit.**

*Figure 2*

*Removing Shipping Screws*



### UNIT POSITIONING

To achieve the most precise measurements, select a location that is clean, level, and protected from rapid changes in temperature. Level installation helps to ensure weight measurement that correlates with the GAC2100.



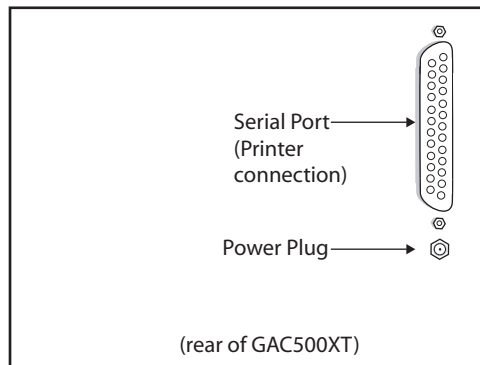


## POWER CONNECTION

Using either the AC power adapter or the mobile power adapter, connect the unit on the right rear to the wall outlet or mobile plug, respectively.

*Figure 3*

*Power Connection*



## PRINTING CAPABILITIES

The GAC500XT will print to a DICKEY-john Strip Printer PRTS (110v) and PRTSI (220v) in a column format, as illustrated in [Figure 4](#). The output from the printer port ([Figure 3](#)) is in RS-232 serial format, 1200 baud, 8 data bits, no parity, and 1 stop bit.

*Figure 4*

*Example of GAC500XT Printout*

```
DICKEY-JOHN CORP.  
GAC500XT  
  
S/N: 000003  
LINE WHEAT  
910828  
  
MOIST.: 12.5%  
TW: 61.5 LB/BU  
TEMP.: 68.3 F  
=====
```



## STARTUP

### CAUTION

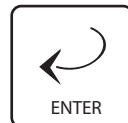
Before powering the unit, ensure the shipping screws have been removed.



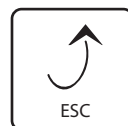
Power button



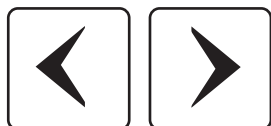
Up and Down Arrow buttons



Enter button



Escape button



Left and Right Arrow buttons



Home button

Press the **Power** button to power up the unit. The **Startup** screen will appear.

*Figure 5*

*Startup Screen*



## SWITCHPAD DEFINITIONS

### UP AND DOWN ARROW BUTTONS

The **Up** and **Down Arrow** buttons are used to select menu items, increment/decrement digits, or select characters.

### ENTER BUTTON

The **Enter** button is used to navigate into highlighted functions, initiate actions, or accept data.

### ESCAPE BUTTON

The **Escape (ESC)** button is used to navigate to the previous screen.

### RIGHT AND LEFT ARROW BUTTONS

The **Right** and **Left Arrow** buttons are used to select digits or characters.

### HOME BUTTON

The **Home** button is used to return to the **Main** menu.

# OPERATOR'S MANUAL

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## SETTINGS

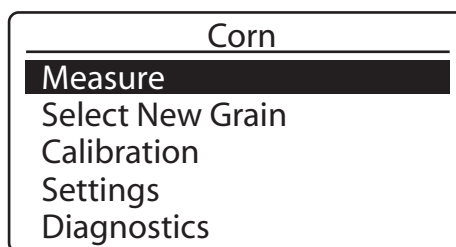


Enter button

The GAC500XT provides the opportunity to control settings such as measurement units, language, LCD contrast, access code, and output options. All control settings are customizable to meet user needs. Choose **SETTINGS** by highlighting it on the **Main** screen (Figure 6). Press the **Enter** button.

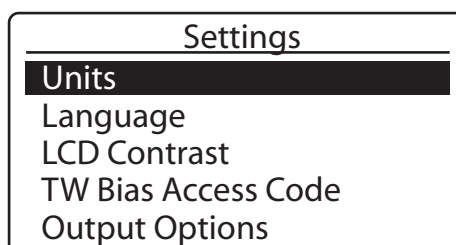
*Figure 6*

*Main Screen*



*Figure 7*

*Settings Screen*





Enter button



Up and Down Arrow Buttons



Home button

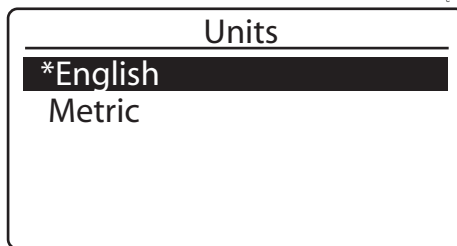
## UNITS

To change the units of measurement, select UNITS by highlighting it on the **Settings** screen. Press the **Enter** button. The selected units will be displayed with an asterisk (\*) next to the label (Figure 8). Use the **Up** and **Down Arrow** keys to navigate to the desired setting. Press the **Enter** button. Press the **Enter** button again to accept the changes and return to the previous screen. To return to the **Main** screen, press the **Home** button.

Figure 8

Units Screen

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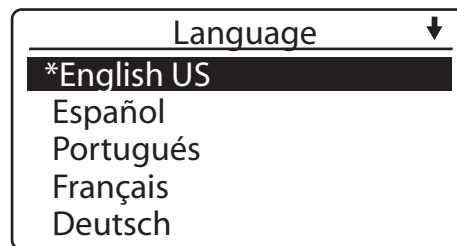
## SELECTING LANGUAGE

To change the language of the GAC500XT, access the LANGUAGE option on the **Settings** screen. Press the **Enter** button. The selected language will be displayed with an asterisk (\*) next to the label (Figure 9).

Figure 9

Language Screen

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At the top right corner of the **Language** screen, a downward pointing arrow will appear. This indicates that more languages are available for selection than can fit on the screen. The additional language selections may be accessed by using the **Down Arrow** button. Once the end of the language list is reached, the screen will automatically wrap around to the first language option. Select the appropriate language and press the **Enter** button. Press the **Enter** button again to accept the changes and return to the previous screen. To return to the **Main** screen, press the **Home** button.



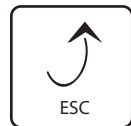
Enter button



Up and Down Arrow Buttons



Left and Right Arrow Buttons



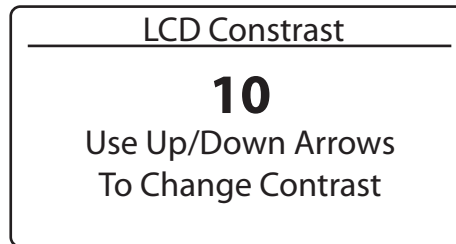
Escape button

## LCD CONTRAST

The LCD Contrast may be adjusted on a scale of 1-10, 10 being the most intense. To change the LCD contrast, access the LCD CONTRAST option on the **Settings** screen. Press the **Enter** button. The **LCD Contrast** screen will be displayed ([Figure 10](#)).

*Figure 10*

*LCD Contrast Screen*



Use the **Up** and **Down Arrow** buttons to change the contrast of the LCD. The LCD will reflect the changes as the number is altered. When the desired contrast has been reached, press the **Enter** button. The user will automatically be returned to the **Settings** screen.

## TW BIAS ACCESS CODE

The Test Weight Bias Access Code may be altered from the factory default, which is set to "0000". This will ensure that only authorized personnel change the test weight bias. For additional information on test weight bias, refer to TEST WEIGHT BIAS.

To change the test weight bias access code, access the TW BIAS ACCESS CODE option on the **Settings** screen. Press the **Enter** button. The **Test Weight Bias Access Code** screen will be displayed ([Figure 11](#)).

*Figure 11*

*Test Weight Bias Access Code Screen*



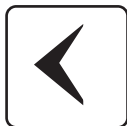
Use the **Arrow** buttons to navigate to the appropriate character. Press the **Enter** button. The **Up** and **Down Arrow** buttons increase/decrease the value of the number. The **Left** and **Right Arrow** buttons navigate through the number. Once the desired number has been entered, press the **Enter** button to accept the value and return to the previous screen. Press the **Escape** button to return to the previous screen.



Enter button



Up and Down Arrow Buttons



Left and Right Arrow Buttons



Escape button



Home button

## OUTPUT OPTIONS

Output options allow the user to display information such as radix point, output weight, output temperature, output errors, and printing capabilities.

To alter standard output options, select OUTPUT OPTIONS on the **Settings** screen. Press the **Enter** button. The **Output Options** screen will be displayed ([Figure 12](#)).

*Figure 12*

*Output Options Screen*

Output Options	
Radix Point	<input checked="" type="checkbox"/>
Output Weight	YES
Output Temp.	YES
Output Errors	YES
Print D1-D4	YES

Use the **Up** and **Down Arrow** buttons to navigate through the menu and the **Left** and **Right Arrow** buttons to select the desired output options. Radix Point may be either a period (.) or a comma (,). The other selections are either YES (on) or NO (off). Once the desired input has been achieved, press the **Enter** button to accept the value and return to the previous screen. Press the **Escape** button to return to the previous screen or the **Home** button to return to the **Main** screen.



## MEASURING MOISTURE

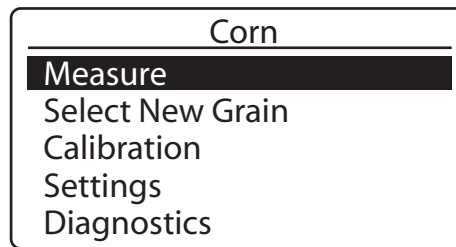
The **Main** screen will appear immediately after all startup self tests have been successfully completed. This is the “home” screen through which all other screens are accessed.

### PREPARING TO MEASURE MOISTURE

Assure the grain selection is correct. The selected grain is displayed on the top of the **Main** screen (Figure 13). If the grain displayed is correct, continue with LOADING HOPPER. If the grain is incorrect, refer to GRAIN SELECTION to choose the grain to be tested. After choosing the proper grain, continue with LOADING HOPPER.

*Figure 13*

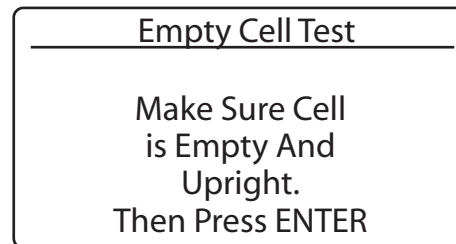
*Grain Selection Displayed*



Choose MEASURE on the **Main** screen and press the **Enter** button. A message indicating an EMPTY CELL TEST will appear on the display (Figure 14).

*Figure 14*

*Empty Cell Test*



Enter button

### **CAUTION**

Ensure the GAC500XT is not disturbed during this process. Movement may alter weight measurement, thereby degrading the moisture accuracy.

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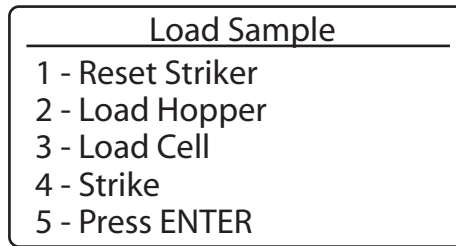




Enter button

Ensure the Grain Loader/Striker is in the left most position (fully pushed in) prior to this test. Press the **Enter** button to perform the EMPTY CELL TEST. A progress bar will appear on the screen. Ambient measurements are required to perform moisture calculations. Once the test has been performed, the unit will provide procedures to load a grain sample (Figure 15).

Figure 15  
Load Sample Screen

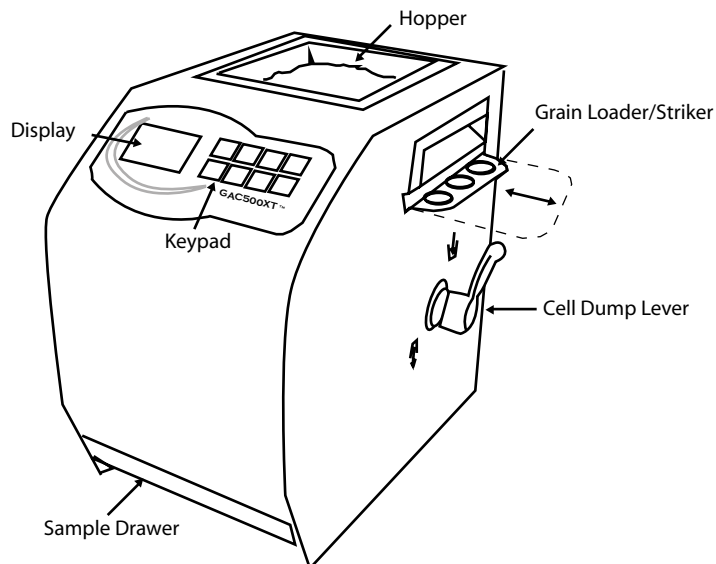


## LOADING HOPPER

Make sure the Cell Dump Lever is in the upper position, enabling the cell to receive grain. Fill the hopper 1/2 inch above the separation line between the top of the hopper and the hopper compartment. Heap the grain slightly. Fill the grain cell by pulling out the Grain Loader/Striker (Figure 16).

**IMPORTANT:** The Loader/Striker should be pulled to the right in a smooth and reasonably swift stroke. After grain is loaded, return the Loader/Striker to the left. This operation will ensure the cell is completely filled and leveled.

Figure 16  
Loading Hopper



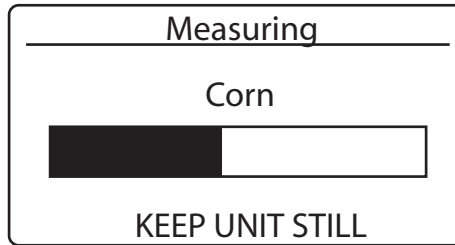


Enter button

Once the grain has entered the cell, replace the Grain Loader/Striker (push in to close) and press the **Enter** button. A message will appear on the display indicating the measurement is taking place ([Figure 17](#)).

*Figure 17*

*Measurement Window*



The status bar will indicate the progress of the grain measurement. Once the measurement is complete, the moisture reading will be displayed on the screen ([Figure 18](#)).

*Figure 18*

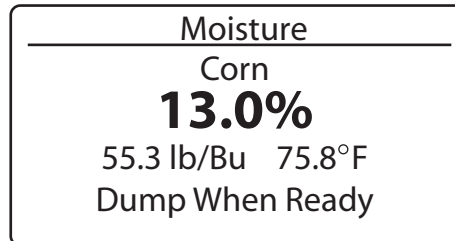
*Moisture Display*



Up and Down Arrow Buttons



Left and Right Arrow Buttons



Dump the sample by rotating the Cell Dump Lever to the bottom (unload) position. Empty the Sample Drawer and the unit is ready to test the next sample.

If an error occurred during reading, the moisture measurement is a predicted value. Although it is not assured to meet accuracy specifications, it is likely to be accurate within +/- 0.5%. If multiple errors occur, use the **Arrow** buttons to scroll through the error descriptions.

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## GRAIN SELECTION

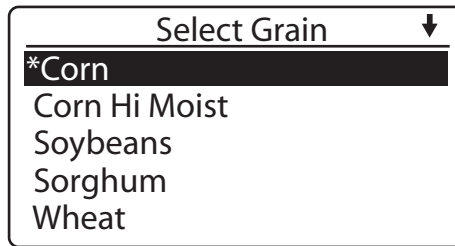


Enter button

To select a new grain, choose the SELECT NEW GRAIN option from the **Main** screen. Press the **Enter** button to access the **Select Grain** screen (Figure 19).

Figure 19

Select Grain Screen



Up and Down Arrow Buttons

The current grain selection is displayed at the top of the list and marked with an asterisk (\*). The list is saved in a "last used" order. Use the **Up** and **Down Arrow** buttons to highlight the desired grain. Choose the desired grain by pressing the **Enter** button. The newly selected grain will be displayed at the top of the list and marked with an asterisk.

At the top right corner of the **Select Grain** screen, a downward pointing arrow will appear. This indicates that more grains are available for selection than can fit on the screen (16 grains total). The additional grain selections may be accessed by using the **Arrow** buttons. Once the end of the grain list is reached, the screen will automatically wrap around to the first grain option.

If the desired grain is not listed, one of the existing grains may be replaced with another. Refer to ENTERING NEW GRAIN CALIBRATIONS for additional information on entering new grains.

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## GRAIN CALIBRATIONS

### ENTERING NEW GRAIN CALIBRATIONS

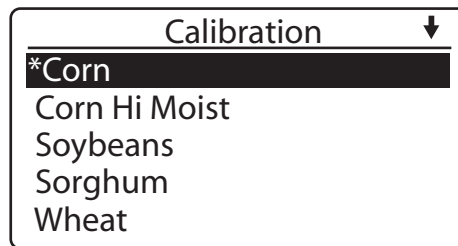
Select the CALIBRATION option from the **Main** screen and press the **Enter** key. The **Calibration** screen will be displayed (Figure 20).



Enter button

Figure 20

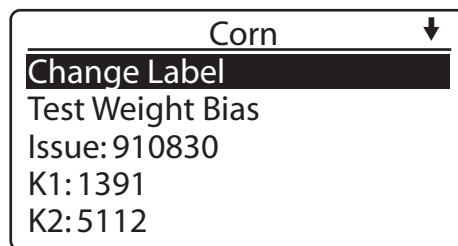
Calibration Screen



The current grain selection is displayed at the top of the list and marked with an asterisk (\*). Choose the desired grain by pressing the **Enter** button. The specific grain information will be displayed (Figure 21).

Figure 21

Grain Information Screen



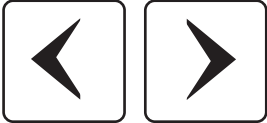
At the top right corner of the **Grain Information** screen, a downward pointing arrow will appear. This indicates that more grains are available for selection than can fit on the screen (16 grains total). The additional grain selections may be accessed by using the **Arrow** buttons. Once the end of the grain list is reached, the screen will automatically wrap around to the first grain option.



Up and Down Arrow Buttons



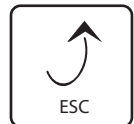
Enter button



Left and Right Arrow Buttons



Up and Down Arrow Buttons



Escape button

## MODIFYING GRAIN INFORMATION

Modifications may be made to existing grain information. Information that may be modified includes Grain (Label) Name, Test Weight Bias, Issue Number, and Calibration (K1-K9) Values.

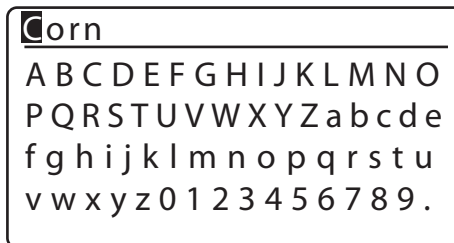
### GRAIN (LABEL) NAMES

To change the name of the grain, select the CHANGE LABEL option from the **Grain Information** screen. Press the **Enter** button. Highlight the character to be modified by using the **Left** and **Right Arrow** buttons (Figure 22). Use the **Down Arrow** button to move the cursor from the highlighted character to the character selection area. Use the **Arrow** buttons to navigate to the appropriate character and press the **Enter** button to select it. Repeat this process until all desired characters have been updated. Press the **Enter** button once again to accept the changes and return to the previous screen. Press the **Escape (ESC)** button to return to the previous screen.

*Figure 22*

*Modifying Grain Names*

---





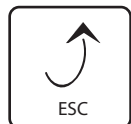
Enter button



Up and Down Arrow Buttons



Left and Right Arrow Buttons



Escape button

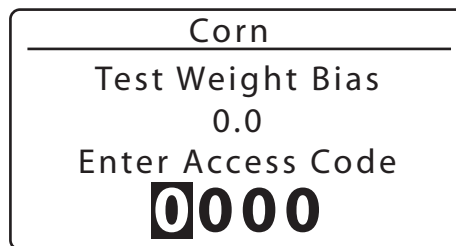
## TEST WEIGHT BIAS

The test weight adjustment allows the entering of a correction factor for differences between the GAC500XT grain test weight and the official test weight method. An offset value may be introduced by authorized personnel.

To change the test weight bias, select the TEST WEIGHT BIAS option from the **Grain Information** screen. Press the **Enter** button. Use the **Arrow** buttons to enter the ACCESS CODE (the ACCESS CODE is set to "0000" as a default) (Figure 23). Use the **Arrow** buttons to navigate to the appropriate character and press the **Enter** button to select it. The **Up** and **Down Arrow** buttons will increase/decrease the value of the number. The **Left** and **Right Arrow** buttons will navigate through the number. Repeat this process until all desired characters have been updated.

Figure 23

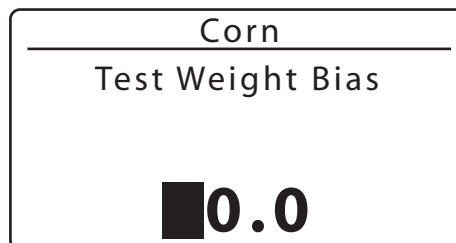
Entering Access Code



Once the ACCESS CODE has been entered, press the **Enter** button again. The **Test Weight Bias** screen will be displayed (Figure 24). Use the **Arrow** buttons to enter the appropriate test weight bias. The **Up** and **Down Arrow** buttons will increase/decrease the value of the number. The **Left** and **Right Arrow** buttons will navigate through the number. Once the value has been entered, press the **Enter** button to accept the value and return to the previous screen. Press the **Escape** button to return to the previous screen.

Figure 24

Test Weight Bias Screen







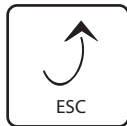
Enter button



Up and Down Arrow Buttons



Left and Right Arrow Buttons



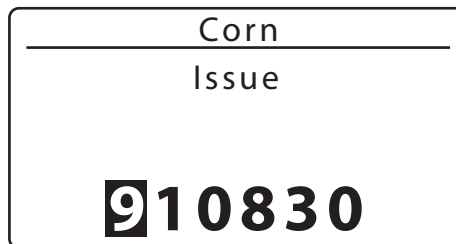
Escape button

## ISSUE NUMBER

An Issue Number is an optional number that is issued with calibration control. To change the issue number of the grain, select the **ISSUE** option from the **Grain Information** screen. Press the **Enter** button. The **Issue Number** screen will appear (Figure 25). Use the **Arrow** buttons to navigate to the appropriate character and press the **Enter** button to select it. The **Up** and **Down Arrow** buttons will increase/decrease the value of the number. The **Left** and **Right Arrow** buttons will navigate through the number. Repeat this process until all desired characters have been updated. Once the desired number has been entered, press the **Enter** button to accept the value and return to the previous screen. Press the **Escape** button to return to the previous screen.

Figure 25

Issue Number Screen

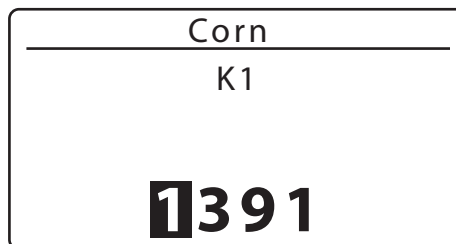


## CALIBRATION VALUES (K1-K9)

Calibrations are published on the DICKEY-john website, located at [www.dickey-john.com](http://www.dickey-john.com) on an annual basis. To maintain current calibration values, these K numbers must be periodically updated. Select the appropriate K number to be updated on the **Grain Information** screen. Press the **Enter** button. The K information will appear (Figure 26). Use the **Arrow** buttons to navigate to the appropriate character and press the **Enter** button to select it. The **Up** and **Down Arrow** buttons will increase/decrease the value of the number. The **Left** and **Right Arrow** buttons will navigate through the number. Repeat this process until all desired characters have been updated. Once the desired number has been entered, press the **Enter** button to accept the value and return to the previous screen. Press the **Escape** button to return to the previous screen.

Figure 26

K Number Screen





## DIAGNOSTICS

Several diagnostic tools are available to assure the unit is operating properly or to provide assistance to technicians during service calls. These include cell tests, temperature, weight check, display test, and system information.

To access the **Diagnostics** screen, select the DIAGNOSTICS option from the **Main** menu. Press the **Enter** button. The **Diagnostics** screen will be displayed (Figure 27).

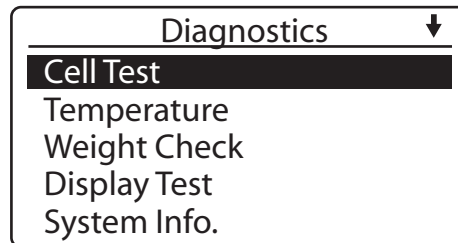


Enter button

Figure 27

Diagnostics Screen

---



## CELL TEST

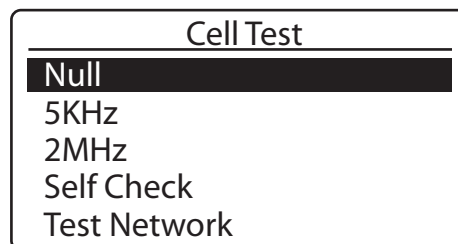
The cell test provides several functions for test and troubleshooting cell measurements. These functions include Null, 5KHz, 2MHz, Self Check, and Test Network. Null, 5KHz, and 2MHz tests provide cell measurements of the primary grain measurement frequencies. Self-check provides SCD1 and SCD2 testing of cell capacitance and conductance measurements. Test network provides additional measurements.

To access the **Cell Test** screen, select the CELL TEST option from the **Diagnostics** screen. Press the **Enter** button. The **Cell Test** screen will be displayed (Figure 28).

Figure 28

Cell Test Screen

---





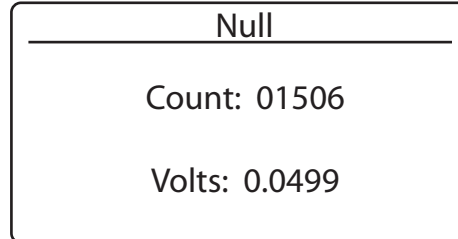
Enter button

## NULL TEST, 5KHZ, AND 2MHZ TESTS

Choose the appropriate test to be run and press the **Enter** button. A voltage measurement and count will be displayed ([Figure 29](#)). To return to the **Cell Test** screen, press the **Escape (ESC)** button.

*Figure 29*

*Example Of Null Test*



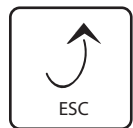
## SELF CHECK TEST

During the self check test, ensure the cell is empty. SCD2 and SCD1 measurements will be displayed.

SCD2 should measure 2500 +/- 20 counts.

SCD1 should measure 375 +/- 20 counts.

If these measurements are out of range, clean the cell (refer to CLEANING AND CARE) and repeat testing once the cell is cleaned. If measurements are out of range after cleaning, contact your distributor or DICKEY-john Service Department at 1-800-637-3302. Outside of the U.S., contact DICKEY-john Europe at 00 33 (0) 1 41 19 21 80.

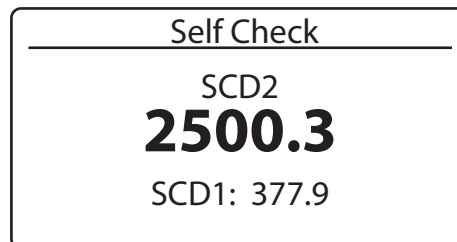


Escape button

Choose the SELF CHECK option from the **Cell Test** screen. Press the **Enter** button. The self check will automatically begin and the results will be displayed ([Figure 30](#)). To return to the **Cell Test** screen, press the **Escape (ESC)** button.

*Figure 30*

*Self Check Screen*





## TEST NETWORK

During the network test, ensure the cell is emptied and in the upright position. Empty cell measurements will be taken. Ambient measurements are required to perform network calculations. The progress bar will indicate status.

Ensure an empty cell measurement is used prior to performing the D1 and D2 measurement. Minimize the time between empty cell measurement and D1 and D2 measurement to gain the best results.

Choose the TEST NETWORK option from the **Cell Test** screen. Press the **Enter** button. The unit will prompt for the cell to be emptied and the **Enter** button pressed again (Figure 31).

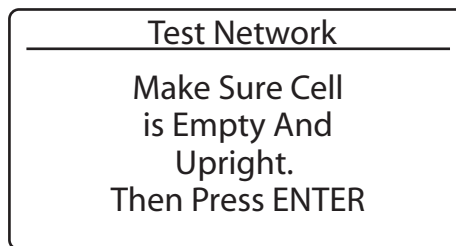


Enter button

Figure 31

Test Network Prompt Screen

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Press the **Enter** button to begin the test. A status bar will be displayed (Figure 32), followed by the test results (Figure 33).

Figure 32

Test Network Status Bar

---

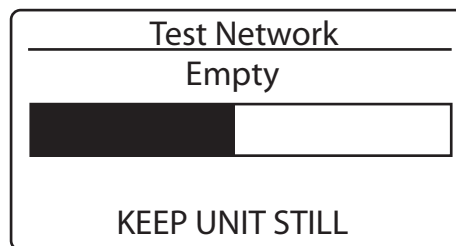
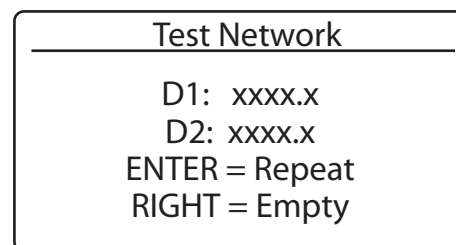


Figure 33

Test Network Results

---

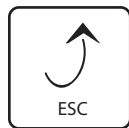




Enter button



Right Arrow button



Escape button

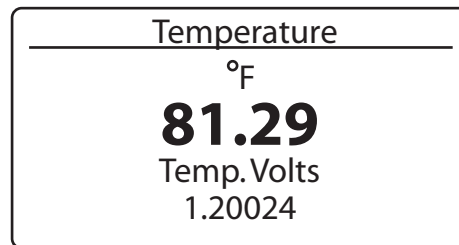
Once empty cell measurements are complete, the display will prompt for measurement (ENTER) or repeat of the empty cell (RIGHT ARROW). Press the **Enter** button to measure D1 and D2, or the **Right Arrow** button to repeat empty cell measurements. Press the **Escape (ESC)** button to return to the **Cell Test** screen.

## TEMPERATURE

The temperature test provides a measurement of cell temperature. The cell may be empty or full for this measurement. Choose the TEMPERATURE option from the **Diagnostics** screen. Press the **Enter** button. The **Temperature** screen will be displayed (Figure 34). Allow approximately 6 seconds for the unit to complete averaging measurements. The display will update every 6 seconds with a new measurement. Press the **Escape (ESC)** button to return to the **Diagnostics** screen.

Figure 34

Temperature Screen



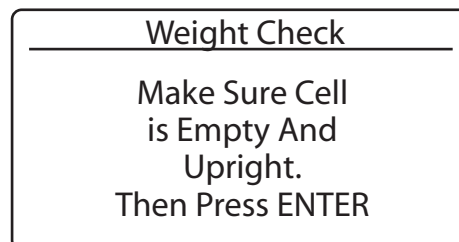
## WEIGHT CHECK

The weight check feature may be used to measure the weight of the empty cell or the grain currently held inside the cell. An empty cell test should be conducted to verify the empty cell weighs 0.0 grams. Once this has been completed, grain should be loaded into the hopper, then into the cell, and the weight may be checked again. After the weight has been checked, the excess grain in the grain drawer must be discarded, then the cell may be emptied into the grain drawer. The weighed grain may then be taken to a calibrated scale to verify the weight.

To access the weight check function, choose the WEIGHT CHECK option from the **Diagnostics** screen. Press the **Enter** button. A message will be displayed advising that the cell must be empty (Figure 35).

Figure 35

Weight Check Verification Screen





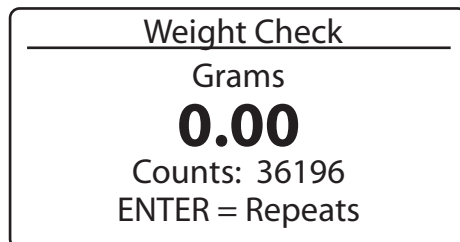
Enter button

Press the **Enter** button. The GAC500XT will weigh the empty cell. A status bar will appear, followed by the results of the weight measurement (Figure 36).

Figure 36

Weight Check Screen - Empty Cell

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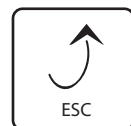
Home button

Once the measurement is displayed (results should read 0.00 grams), grain may be loaded into the hopper, then the cell, and another measurement may be taken by pressing the **Enter** button again. The process will be repeated and a new weight measurement will be displayed (Figure 37). When all readings have been completed, press the **Home** button to return to the **Main** menu or press the **Escape (ESC)** button twice to return to the **Diagnostics** screen.

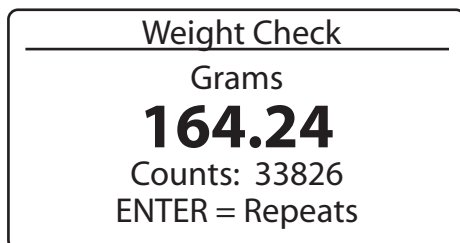
Figure 37

Weight Check Screen - Grain Measurement

---



Escape button

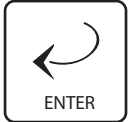




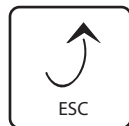
## DISPLAY TEST

The display test provides the user with an alternating checkerboard display pattern to detect pixels that remain on or off. Missing pixels will display a light region, while pixels that are stuck on will display a dark region.

To access the **Display Test** screen, select the DISPLAY TEST option on the **Diagnostics** screen. Press the **Enter** button. The **Display Test** screen will be displayed (Figure 38). The screens will alternate until either the **Escape (ESC)** button or the **Enter** button are pressed.



Enter button



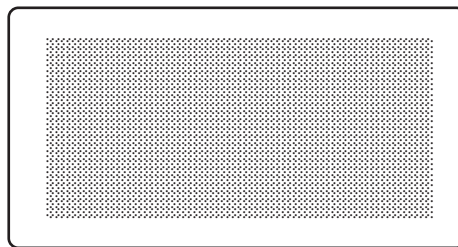
Escape button



Home button

*Figure 38*

*Display Test Screen*



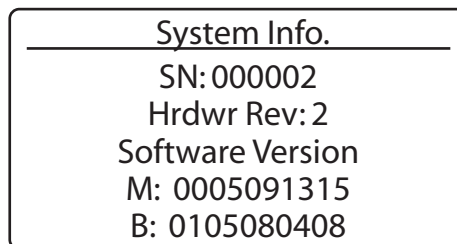
## SYSTEM INFORMATION

The system information option provides the unit's serial number, hardware revision, and software version.

To access the **System Information** screen, select the SYSTEM INFO option from the **Diagnostics** screen. Press the **Enter** button. The **System Information** screen will be displayed (Figure 39). To exit the screen, select the **Escape (ESC)** button to return to the **Diagnostics** screen, or press the **Home** button to return to the **Main** screen.

*Figure 39*

*System Information Screen*





## TROUBLESHOOTING

### SHIPPING AND TRANSPORTATION

The GAC500XT is designed to withstand moderate movement during transportation of the unit. Local transportation from one testing site to another may be accommodated without incident or disruption to the functionality of the unit.

However, care must be taken when transporting the GAC500XT long distances or shipping the unit for service to the DICKEY-john Service Center.

#### **CAUTION**

**Failure to observe and comply with the following procedures for long distance shipping will result in the voidance of the GAC500XT warranty.**

Before shipping the GAC500XT, the following procedures must be followed.

1. Remove the Sample Drawer, invert it, and replace it upside down in the unit. This is required to lift the test cell to the upmost position, aligning the test cell securing hardware inside the unit.
2. Replace the shipping screws located on the right side of the unit. The screws will not align with the test cell securing hardware unless the support cell is lifted to its upmost position by inverting the Sample Drawer.
3. Once the screws are securely in place, remove the Sample Drawer and reinsert it in the correct position.

**IMPORTANT: Shipping the unit with the sample drawer inverted will damage the test cell. It is imperative that the sample drawer be placed in the correct position before shipping.**

### CLEANING AND CARE

#### **CAUTION**

**Ensure unit is disconnected from AC outlet prior to cleaning.**

To ensure the most reliable operation of the GAC500XT, clean the cell daily during heavy use or prior to storage. Use the cell brush to clean the inside of the grain cell.

The display, keypad, and enclosure may also be cleaned with window cleaner. Do not spray cleaner into the cell opening or power connector.

Protect the unit from temperature and moisture extremes.

When transporting the unit, invert the sample drawer to protect the measurement cell from vibration and shock damage.





## ERROR CODES

The GAC500XT contains a microprocessor to control the grain sample measurements and self-checks to determine the integrity of the internal electronics. If any limit is exceeded or malfunctions occur, an error code will be displayed.

### ERROR 1

**Probable Cause:**

1. The empty cell self check reading is out of limits.

**Corrective Action:**

1. Dump the cell and ensure it is empty.

### ERROR 2

**Probable Cause:**

1. The empty cell weight reading is out of limits.

**Corrective Action:**

1. Dump the cell and ensure it is empty.

### ERROR 6

**Probable Cause:**

1. The moisture reading exceeds the upper limit.

**Corrective Action:**

1. Choose a product within the moisture range and try again.

### ERROR 7

**Probable Cause:**

1. The moisture reading exceeds the lower limit.

**Corrective Action:**

1. Choose a product within the moisture range and try again.

### ERROR 8

**Probable Cause:**

1. The empty cell ambient temperature has exceeded its limit.

**Corrective Action:**

1. Allow the GAC500XT to reach normal operating temperature.

### ERROR 9

**Probable Cause:**

1. The sample temperature exceeds its limit.

**Corrective Action:**



1. Allow the sample to either cool down or warm up, then try again.

## **ERROR 10**

### **Probable Cause:**

1. The difference in temperature between empty cell ambient and full cell condition exceeds its limits.

### **Corrective Action:**

1. Change the appropriate conditions and try again.

## **ERROR 20**

### **Probable Cause:**

1. The unit has detected a software error.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **ERROR 21**

### **Probable Cause:**

1. The measurement cell exceeded low limit.

### **Corrective Action:**

1. Repeat test. If error recurs, contact DICKEY-john Service Department.



## **ERROR 22**

### **Probable Cause:**

1. The measurement cell exceeded high limit.

### **Corrective Action:**

1. Repeat test. If error recurs, contact DICKEY-john Service Department.

## **ERROR 23**

### **Probable Cause:**

1. The measurement cell weight is too low.

### **Corrective Action:**

1. Increase the sample size and repeat the test.

## **ERROR 24**

### **Probable Cause:**

1. The measurement cell weight is too high.

### **Corrective Action:**

1. Repeat the test. Be sure to follow display instructions, ensuring that excess grain has been swept off the cell top.

## **ERROR 25**

### **Probable Cause:**

1. Error was encountered measuring weight.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **ERROR 26**

### **Probable Cause:**

1. VF error is encountered.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **ERROR 27 - 32**

### **Probable Cause:**

1. D1/D2 error is encountered.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.



## **ERROR 33**

### **Probable Cause:**

1. Cell count error is encountered.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **ERROR 34**

### **Probable Cause:**

1. Grain calibration constants entry error.

### **Corrective Action:**

1. Verify and re-enter correct constants.

## **ERROR 35**

### **Probable Cause:**

1. Grain calibration constants entry error.

### **Corrective Action:**

1. Verify and re-enter correct constants.

## **ERROR 36**

### **Probable Cause:**

1. Weight lower than average sample weight tolerance.

### **Corrective Action:**

1. Increase the sample size and repeat the test.

## **ERROR 37**

### **Probable Cause:**

1. Weight higher than average sample weight tolerance.

### **Corrective Action:**

1. Repeat the test. Be sure to follow display instructions, ensuring that excess grain has been swept off cell top.

## **ERROR 39**

### **Probable Cause:**

1. GAC500XT input voltage low.

### **Corrective Action:**

1. Power supply or mobile adapter may be loose or damaged. Verify connection. If problem persists, replace.



## **ERROR 40**

### **Probable Cause:**

1. GAC500XT input voltage is high.

### **Corrective Action:**

1. Replace the power supply or mobile adapter.

## **ERROR 41**

### **Probable Cause:**

1. Display voltage is too low.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **ERROR 42**

### **Probable Cause:**

1. Display voltage is too high.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **ERROR 43**

### **Probable Cause:**

1. Positive cell voltage is too low.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **ERROR 44**

### **Probable Cause:**

1. Positive cell voltage is too high.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **ERROR 45**

### **Probable Cause:**

1. Negative cell voltage is too low.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.



## **ERROR 46**

### **Probable Cause:**

1. Negative cell voltage is too high.

### **Corrective Action:**

1. Contact DICKEY-john Service Department.

## **REPLACEMENT PARTS**

Mobile Power Adapter	467950190
Wall Power Adapter	467950150

# OPERATOR'S MANUAL

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*Dealers have the responsibility of calling to the attention of their customers the following warranty prior to acceptance of an order from their customer for any DICKY-john product.*

## **DICKY-john<sup>®</sup> WARRANTY**

DICKY-john warrants to the original purchaser for use that, if any part of the product proves to be defective in material or workmanship within one year from date of original installation, and is returned to DICKY-john within 30 days after such defect is discovered, DICKY-john will (at our option) either replace or repair said part. This warranty does not apply to damage resulting from misuse, neglect, accident, or improper installation or maintenance. Said part will not be considered defective if it substantially fulfills the performance expectations. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE, AND OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED. DICKY-john neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with said part and will not be liable for consequential damages. Purchaser accepts these terms and warranty limitations unless the product is returned within fifteen days for full refund of purchase price.

**For DICKY-john Service Department,  
call 1-800-637-3302 in either the U.S.A. or Canada**



**Headquarters:**

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