

**Cambium Extractor
Model 818**

2nd Edition

AMADAS

MAN069
November 2005
©2003

*Cambium Extractor are manufactured
by AMADAS Industries.*

You can find us on the Web at:

www.amadas.com

or e-mail us at:

amadas@amadas.com

You can also contact us at:

P.O. Box 1833 / Suffolk, VA 23439 (mailing)	P.O. Box 3687 / Albany, GA 31701 (mailing)
1100 Holland Road / Suffolk, VA 23434 (shipping)	1701 South Slappey Blvd. / Albany, GA 31706 (shipping)
(757) 539-0231 (phone)	(229) 439-2217 (phone)
(757) 934-3264 (FAX)	(229) 439-9343 (FAX)

Table of Contents

Welcome	ii
1. Safety	1
Overview	2
Safety Symbols	3
Safety Guidelines	5
Safety Decal Locations	6
2. Installation	7
Before Installing	8
Installation Instructions.....	9
3. Operation	11
Pre-Operation Checklist	12
How to Use the Cambium Extractor	13
How to Stop the Cambium Extractor	13
4. Maintenance	15
Regular Maintenance	16
Powering Down the Machine	16
After Servicing the Machine	16
Maintenance Schedule.....	17
Bearings	18
Chains	18
Drive Belts	18
Gearbox.....	19
Motor	19
Troubleshooting	20
Appendix.....	A - 1
Concrete Support Pad.....	A - 2
Maintenance Log.....	A - 2
Warranty Statement	

AMADAS

Welcome to AMADAS Industries

With origins dating back to 1963, AMADAS Industries and its predecessors have a long history of providing high quality, reliable, innovative equipment for the farming industry. AMADAS equipment is currently at work throughout the United States and in many other countries. This equipment includes machinery such as the Magnum Fource Peanut Combine, Reel Rain Traveler Irrigation System, Tree Bark Processing and Packaging Machinery, the Soils and Bark Bagger, and the Cambium Extractor.

Cambium Extractor

Congratulations on your purchase of a Model 818 Cambium Extractor. As a vital part of a bark processing system, our patented cambium extractor is designed to accept screened mill bark and separate the cambium and wood fibers from the nuggets. Not only will our extractor increase your product quality, but is also designed to provide a long service life with a minimum of maintenance.

- Leg extension kit with 36", 42", and 48" operating heights.

Dimensions

Length:	7'0"
Width:	4'10"
Height:	9'3 ½ "
Weight:	2,050 lbs.

Standard Features

Our cambium extractor includes the following standard features:

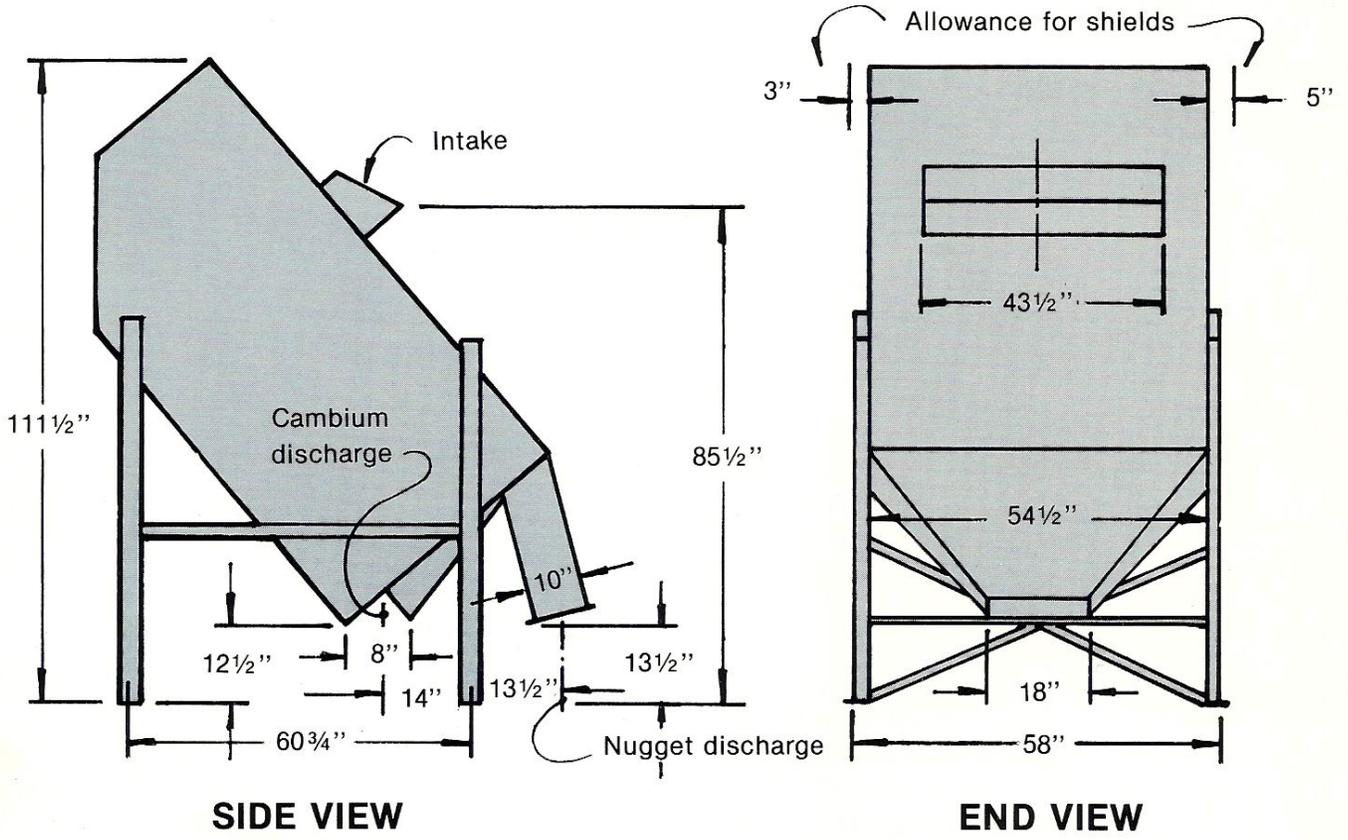
- 1 Horsepower, 3 phase, 60 cycle electric motor
- Infeed spout
- Outlet spout
- Cambium separator boards mounted on dual CA550 chains.

Optional Features

Some of the optional features available for the cambium extractor are:

- Platform with guardrails and access steps

MODEL 818



1. Safety

Overview	2
Safety Symbols	3
Safety Guidelines	5
Safety Decals	6

Overview

Safety is **everyone's** responsibility! Although safety features are incorporated into the machine and dangerous areas are marked, ultimately, careful operation is the best way to prevent an accident. To reduce the risk of accidents, please read thoroughly and follow the safety instructions and messages included in this manual and on the machine.

Safety Symbols Used

Three safety symbols are used on the machine and in this manual.

 **DANGER**

 **WARNING**

 **CAUTION**

Please familiarize yourself with each symbol and its meaning. It is crucial to your safety, and the safety of others, that you follow the safety precautions indicated by these symbols. The section beginning on the next page explains each of these symbols in detail.

Protective Devices

Protective guards and shields have been installed to protect you from hazards.

CAUTION

NEVER remove, tamper with, or modify guards or shields!

NEVER open or take off the shields while the machine is operating!

NEVER run the machine if the shields are missing or removed!

Safety Symbols

Danger

This symbol indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury. The use of the word DANGER is limited to the most extreme situations. Extreme care should be taken when you near these areas. DANGER decals are located at or as near as possible to these areas.



Warning

This symbol identifies areas or practices, which if not avoided, could result in serious personal injury. These injuries could range from minor cuts to dismemberment. Warning decals are located at or as near as possible to these areas.

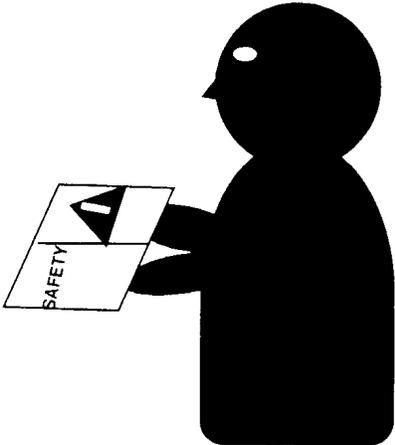


Caution

This symbol identifies a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices that could cause damage to the machine. Caution decals are located at or as near as possible to these areas.



<p>Safety Alert Symbol This symbol alerts you to possible hazards. Follow the recommended precautions and safe operating procedures. If you have any questions, please contact your dealer or the manufacturer.</p>	
---	--

<p>Safety Instructions Safety features have been designed into the machine with hazardous areas marked. Please read and follow the instructions in this manual prior to operating, maintaining, or servicing this machine.</p>	
--	---

<p>Notes Throughout the manual, information that needs to be emphasized is set apart with either a "NOTE!" or "IMPORTANT!" heading. Please be sure to read carefully this information, as it usually indicates a situation that could cause machine damage.</p>	<div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p>NOTE! It is recommended that the sprockets and chains be replaced as a set. New components, when used with old components, wear more quickly than normal.</p> </div>
---	--

Safety Guidelines



Many accidents can be prevented by your knowledge of safety. Prevent injuries by reading and following the safety warnings in this manual and on the machinery. Alert others to potential hazards.

Remember all machinery can be dangerous if used incorrectly. Please operate carefully. Safety is only a word until it is put into practice!

When operating the machine:

- Keep hands, feet, and clothing away from moving parts.
- Do NOT operate machine unless all safety shields are in place.
- Do NOT operate the cambium extractor with broken or missing rotor parts.
- Properly ground all electrical equipment.
- Do NOT allow anyone to stand on or inside the machine during operation.

- Do NOT walk or crawl underneath the machine while it is in operation.

DANGER

Always lock out and tag the cambium extractor's power disconnect switch before performing any kind of maintenance. Failure to turn the power off can lead to death or serious personal injury.

When servicing the machine:

- Disconnect and lock out power before servicing.
- Keep people away from the cambium extractor while maintenance people are servicing the machine.
- Use stable work platforms to reach any point not easily reached from floor level.

Safety Decals

Safety decals identify specific hazards and general safety. Please note the following about the decals:

- Keep them clean and legible.
- Never remove a safety decal from the machine.
- When you replace a part with a safety decal, also replace that decal.
- For replacement decals, call your AMADAS parts representative.
- Replacement safety decals are available free of charge.

Decals

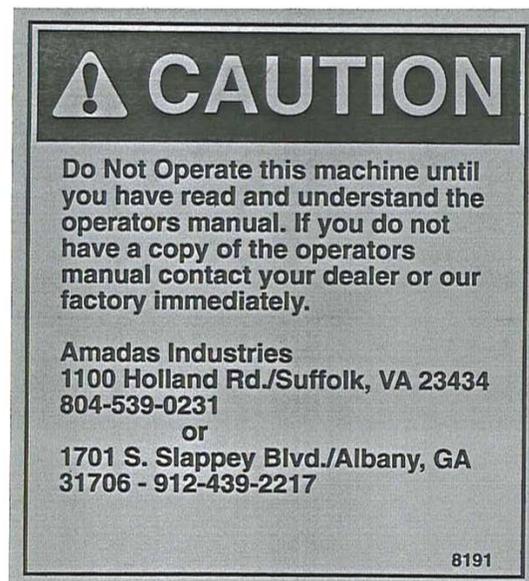
The following decals are included on the bulk feeder:



8188



8190



8191

2. Installation

Before Installing	8
Installation Instructions	9

Before Installing

Before you install the cambium extractor, please read the following:

- Carefully read over the installation instructions and familiarize yourself with the installation procedure.
- Be aware that the cambium extractor is heavy. You will need a hoist with a minimum lifting capacity of 9 tons.
- Determine where the cambium extractor will be located. It is necessary to have a concrete pad at that location.
- Perform the pre-installation inspection indicated on the checklist below.

Inspection Checklist

- √ Remove all packing materials.
- √ Carefully inspect the cambium extractor and all associated parts and equipment.
- √ If there is any evidence of damage from shipment or handling, report it immediately to your AMADAS dealer/ representative.

Installation Instructions

CAUTION

Do NOT attempt to lift the cambium extractor without a hoist. The hoist must have a minimum capacity of 9 tons.

1. If you haven't already done so, determine where the cambium extractor is to be located. Pour a concrete pad, if needed. (Refer to the **APPENDIX** at the end of this manual for details on pouring a concrete pad.)
2. If equipped with leg extensions: using a hoist with the proper lifting capacity, lift the cambium extractor and bolt the leg extensions in place.
3. Position the cambium extractor on the concrete support pad. Using shims, adjust the cambium extractor until it is level.
4. Bolt the cambium extractor to the concrete support pad.
5. If equipped with the access platform, steps and railings, install these items.

CAUTION

The electrical circuit to the cambium extractor should be installed by a qualified, certified electrician familiar with machinery installation.

6. Properly size and install the electrical circuit to the cambium extractor in accordance with the electric motor nameplate, the National Electrical Code, and all relevant local codes.
7. Install a power disconnect switch that can be locked in the open (OFF) position at the cambium extractor in

accordance with the National Electrical Code.

IMPORTANT! It is recommended that a lockout power disconnect switch be installed at the cambium extractor for the protection of the maintenance personnel. The power disconnect switch also allows the machine to be shut off in the event of an emergency.

NOTES

3. Operation

Pre-Operation Checklist.....12
How to Use the Cambium Extractor.....13
How to Stop the Cambium Extractor.....13

Pre-Operation Checklist

Before using the cambium extractor, perform the checklist below to make sure that the machine is ready to be used.

Pre-Operation Checklist

- ✓ Turn the power disconnect switch OFF. Lock out and tag all circuit breaker.
- ✓ Check the cambium extractor for any obstructions that could interfere with the operation of the machine.
- ✓ Check that all equipment associated with the cambium extractor is ready to operate.
- ✓ Check all shields. **DO NOT OPERATE UNLESS ALL SHIELDS ARE IN PLACE!**
- ✓ Make sure that everyone is clear of the cambium extractor.
- ✓ Turn the power disconnect switch ON.

DANGER

Always lock out and tag the cambium extractor power disconnect switch before performing checks. Failure to turn the power off can lead to death or serious personal injury.

How to Use the Cambium Extractor

Follow the steps below to use the cambium extractor:

1. Verify the cambium extractor is ready for use by completing the Pre-Operation Checklist on the previous page.
2. Turn on the power to the cambium extractor and all associated equipment. The cambium extractor should start operating.

CAUTION

If the cambium extractor vibrates excessively or makes abnormal noises, stop the machine immediately and investigate. Do NOT operate the machine if it is not working properly or needs immediate maintenance.

If case of an emergency, turn the power disconnect switch off to stop the cambium extractor.

3. Verify that the cambium extractor and all associated equipment are operating properly. Make any adjustments necessary to keep the operation running smoothly.

CAUTION

Shut off power before making any adjustments. If power is required to make an adjustment, use extreme caution to avoid contact with moving parts.

How to Stop the Cambium Extractor

1. Turn off the power to the cambium extractor and all associated equipment.
2. Verify that the cambium extractor stops.
3. If the machinery is to be left unattended for any length of time, lock out and tag the power disconnect switch and all circuit breakers.

CAUTION

Do NOT leave the cambium extractor unattended without locking out and tagging the power disconnect switch and all circuit breakers. Failure to disconnect the power could result in serious personal injury.

NOTES

4. Maintenance

- Regular Maintenance.....16
- Powering Down the Machine16
- After Servicing the Machine.....16
- Maintenance Schedule17
 - Bearings18
 - Chains18
 - Drive Belt.....18
 - Gearboxes.....19
 - Motor19
- General Maintenance.....19
- Troubleshooting20

Regular Maintenance

We strongly recommend that you perform regular maintenance on your cambium extractor to help ensure efficient and safe operation. This section describes the maintenance that needs to be performed according to the Maintenance Chart on the next page.

A Maintenance Log is included in the **APPENDIX**. Please copy the log and use it to maintain records of maintenance performed on the cambium extractor.

Powering Down the Machine

IMPORTANT! Before any kind of maintenance is performed on the cambium extractor, it must be powered down. Follow the steps below to make sure the cambium extractor is shut down completely.

1. Turn off power to the cambium extractor and all associated equipment.
2. Lock out and tag the cambium extractor power disconnect switch.
3. Verify that power is off by performing the following checks.
 - a. Turn on power to the cambium extractor, leaving the power disconnect switch locked out. Verify that the cambium extractor does not operate.
 - b. Turn off power to the cambium extractor and lock out and tag all circuit breakers.
 - c. Using a volt meter, verify that incoming power is disconnected from the cambium extractor.

DANGER

Always lock out and tag the cambium extractor power disconnect switch before performing any maintenance. Failure to turn the power off can lead to death or serious personal injury.

After Servicing the Machine

Once maintenance has been complete and all safety checks are performed, restart the cambium extractor for operation as follows:

1. Check all shields. **DO NOT OPERATE UNLESS ALL SHIELDS ARE IN PLACE!**
2. Make sure that everyone is clear of the cambium extractor.
3. Turn the power disconnect switch ON.
4. Turn on the power to the cambium extractor and all associated equipment. The cambium extractor should start operating.

CAUTION

If the cambium extractor vibrates excessively or makes abnormal noises, stop the machine immediately and investigate. Do NOT operate the cambium extractor if it is not working properly or it needs immediate maintenance.

If case of an emergency, turn the power disconnect switch off to stop the cambium extractor.

Maintenance Schedule

Item	Action	Interval			
		Weekly	Monthly	Every 6 Months	Yearly
Bearings	Lubricate			X	
Chains	Inspect/adjust		X		
Discharge Spout	Inspect				X
Drive belt	Inspect		X		
Gearbox	Change oil				X
Infeed Hopper	Inspect				X
Motors	Clean		X		
Shields	Inspect				X

Bearings

Bearings should be greased every six months.

1. Power down the machine according to the instructions on page 16.
2. Using a hand operated grease gun, add a single pump of NLGI no. 2 multi-purpose ball bearing grease to each bearing.

NOTE! Keep grease fittings clean by wiping clean with a rag prior to greasing the bearings. Cleaning the fittings helps prevent dirt from entering and damaging the bearings.

Chains

Chains should be inspected every month. Regular inspection can increase the life of each chain and prevent unnecessary stops in machine operation.

1. Power down the machine according to the instructions on page 16.
2. Remove the top covers on the cambium extractor.
3. Clean the chains with a rag. Regularly cleaning will help prevent grime build up and help the chains last longer.
4. Inspect the sprockets, rollers, and chains for damage or excessive wear.

NOTE! We recommend that you replace sprockets and chains as a set. New components used with old components will wear out faster than normal.

5. Adjust the chain tension by moving the adjuster idlers. The chains should be tight enough so that they can be lifted,

by hand, approximately 1 ¼" at the midpoint of the machine.

6. Inspect the cambium separator boards and replace any that are damaged or missing.
7. Replace the top covers and bolt in place.



CAUTION

Do NOT operate the cambium extractor without the safety shields in place. Doing so can cause serious personal injury.

Drive Belt

Inspect the drive belt every month. Regular inspection can prevent unnecessary stops in machine operation.

1. Power down the machine according to the instructions on page 16.
2. Remove the shields covering the drive belts.
3. Adjust the tension in the drive belts by moving the idlers. The belts should be tight enough so that they can be displaced, by hand, approximately 1 ½" midway between the pulleys.
4. Replace the shields and bolt in place.

Gearboxes

Drain and replace the gearbox oil after the first 250 hours (approximately one month) of operation. Drain and replace the oil gearbox additionally at every 2500 hours (approximately one year) of operation.

1. Power down the machine according to the instructions on page 16 before you change the oil in the cambium extractor.
2. Refill each gearbox to the level of the plug located halfway up from the bottom of the gearbox. Use Mobil SCH 634 Synthetic oil or a similar substitute.
2. Check the frame for rust or corrosion. Repaint if necessary.
3. Check the safety shields and decals. Replace if missing or damaged.
4. If equipped, check the access platform for damage or loose railings. Repair or replace as necessary.
5. Inspect the infeed hopper and discharge spout for damage or dents. Replace if necessary.

Motor

Clean the motor every month, or as necessary to keep the motor clean. A clean motor will run cooler and last longer.

1. Power down the machine according to the instructions on page 16.
2. Remove the shields covering the drive belt and motor.
3. Using compressed air, blow dust and dirt off of the motor.
4. Wipe any grease or oil off of the motor with a rag.
5. Make sure all drain holes and ventilation openings are clear of debris.
6. Replace the shields and bolt in place.

General Maintenance

Inspect the machine every year. A general inspection each year will increase the service life of the cambium extractor.

1. Power down the machine according to the instructions on page 16.

Troubleshooting

Problem	Cause	Remedy	See Page
Cambium Extractor does not operate	Power is off.	Make sure power has been fully restored to machine.	16
	Drive belt is broken.	Replace the drive belt.	
	Obstruction is blocking chain.	Power down machine and remove obstruction.	16
	Cambium separator chain is broken.	Repair or replace chain.	
Cambium is not extracted from bark	Cambium separator boards missing.	Replace boards.	
	Cambium separator chain is broken.	Repair or replace chain.	
	Material fed to extractor too fast.	Adjust input rate.	

Appendix

Concrete Support Pad	A - 2
Maintenance Log	A - 2

Concrete Support Pad

The concrete support pad provides a safe, stable platform for the cambium extractor. The pad may be part of a larger structure, such as a plant floor, but it must meet the following requirements:

- The concrete support pad must be flat and level within 1 degree of horizontal (1" rise for 5' run).
- The concrete support pad must be made from at least 2000 PSI concrete.
- The concrete support pad must be at least the following dimensions:
 - 70 inches long
 - 68 inches wide
 - 4 inches thick.

Maintenance Log

A Maintenance Log for the cambium extractor should be filled out and kept up to date. By recording all maintenance performed on the machine, it can be verified that the routine maintenance has been performed as scheduled. An accurate maintenance log will also help identify any abnormal or untimely repairs made to the machine.

A log has been included in this Appendix. We recommend you photocopy this log and use it to record maintenance.

WARRANTY

For AMADAS INDUSTRIES Industrial Machinery

A. General Provisions

AMADAS INDUSTRIES ("Company") warrants that each machine manufactured by it and sold under its trademark shall be free from defects in material and workmanship. The company's sole obligation under this warranty shall be limited to making good, F.O.B. Company factory, any part of its product which under normal and proper use and maintenance proves defective in material and workmanship within six months after delivery to the Buyer provided that notice of such defect and satisfactory proof thereof is promptly given by the Buyer to the Company, with transportation charges prepaid, and Company's examination proves such part to have been defective.

This warranty does not apply in respect to damage to any product or accessory or attachment thereof caused by overloading or other misuse, neglect or accident nor does this warranty apply to any product, or accessory or attachment thereof which shall have been repaired or altered by other than the Company which, in the sole judgement of the Company affects the performance, stability or purpose for which it was manufactured.

With respect to tires, engines, or other trade accessories, the Company makes no warranty whatsoever and the buyer shall rely solely upon the existing warranties, if any, of the respective manufacturers thereof.

B. Unapproved Service or Modification

All obligations of AMADAS INDUSTRIES under this warranty are terminated if the machinery is modified or altered in ways not approved by AMADAS INDUSTRIES

C. Owner's Responsibilities

- a. Read the operator's manual before operating the machinery.
- b. Perform all necessary maintenance as described in the operators's manual.
- c. Contact AMADAS INDUSTRIES promptly on any warranty claim.
- d. Sign the AMADAS INDUSTRIES machine delivery form and return promptly as this validates the warranty.

D. Disclaimer

There are no warranties that extend beyond the description here. **ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE ARE SPECIFICALLY DISCLAIMED AS ARE ALL OTHER REPRESENTATIONS TO THE PURCHASER.** AMADAS INDUSTRIES specifically excludes any liability on behalf of the Company for any incidental or consequential damages including, but not limited to loss of profits, rental of substitute equipment, or other commercial losses. AMADAS INDUSTRIES shall not be responsible for expenses or inconvenience that you might incur or experience with respect to any AMADAS INDUSTRIES Industrial Machinery, nor shall AMADAS INDUSTRIES be liable for defects, damage, or failure caused by improper storage, unreasonable use, or abuse, or accident, including the failure to provide reasonable and specified maintenance. This warranty applies only to the original purchaser of the machinery. Because some states do not allow the exclusion of limitation of incidental or consequential damages, the above limitation may not apply to you. This warranty gives you specific legal rights. You may also have other rights, which vary from state to state. Where there is a conflict between a provision of this warranty and the provision of any state, the state legislation prevails.

AMADAS