

Matilda[®]

by Dairy Tech, Inc.



⚠ WARNING

Read and fully understand owner's manual before using this machine. Failure to follow operating instructions could result in death or serious injury.

OWNERS MANUAL



The Perfect Udder® App

Our simple, easy-to-use app keeps accurate colostrum management in the palm of your hand. View all process data and be 100% confident that your equipment is working properly.

Use the Perfect Udder® App to check:

- Is Matilda® being used properly by all of your employees?
- Is the last batch ready for use? The Perfect Udder® App can alert you so you can stay focused on other tasks.
- Do you have a question about proper use of Matilda®? Open the owner manual directly from the app - *in different languages!*
- Need help from our service team? With the Perfect Udder® App, you can send us critical Matilda® data that will help us sort through any issues.
- Give Matilda® a nickname and keep track of multiple machines on your farm all from your handheld device.
- Matilda® upgrades can be sent directly to your equipment with the press of a button.

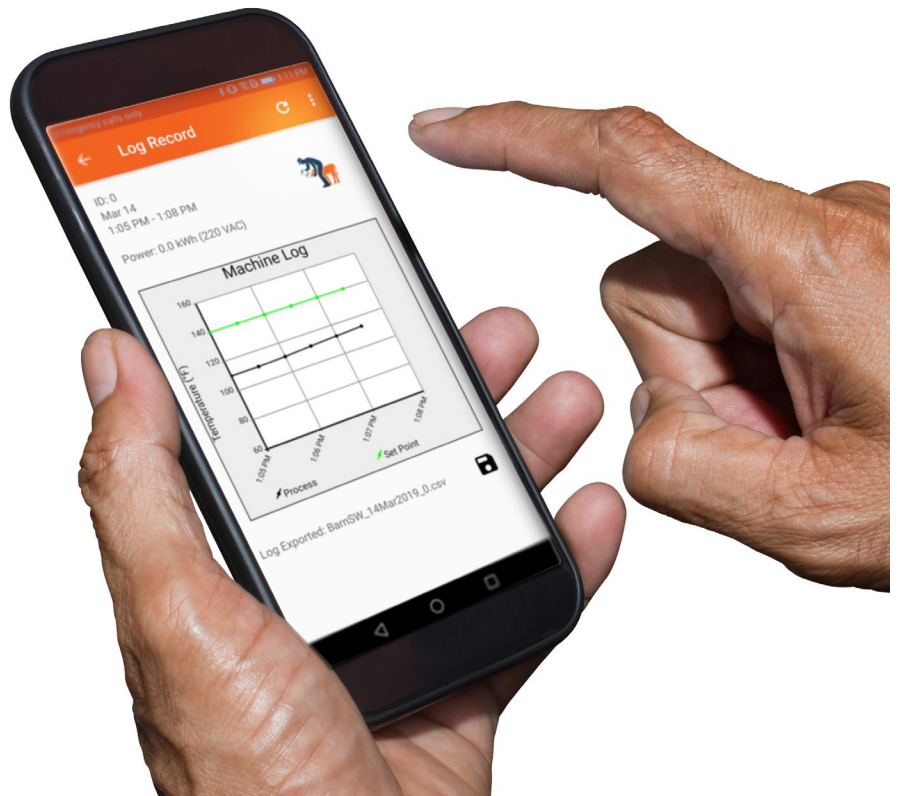
Want to make colostrum management even easier? Call Dairy Tech, Inc. today and ask for more information about how the Perfect Udder® app can work for your operation.

More features to come as Matilda® matures ... get in on the App today for lifelong support!



Currently available for
Android devices only.

Use this QR code to
download





Owner Manual

For parts list and
ordering visit

www.dairytechinc.com

Contact

Dairy Tech, Inc.

Dairy Tech, Inc.
PO Box 250
Severance, CO 80546

Toll Free: 1-866-384-2697

Local: 1-970-674-1888

Fax: 1-970-454-8898

Hours: M – F

7am – 4pm, MST

Email: Service@DairyTechInc.com

www.DairyTechInc.com

Table of Contents

Declaration of Conformity	2
Introduction	3
Disclaimers	3
Did you know?	4
Product Warranty	4
Product Registration	4
Important Safety Instructions	5
Receiving Your Pasteurizer	6
Installation	6
Choosing and Preparing a Location	6
Criteria for Selecting a Location	6
Connecting the Hoses for Water-Cooling	7
Cleaning The System	8
Water Quality	9
Electrical Requirements	10
International Installations:	10
External Circuit Breakers	11
Internal Fusing	11
Energy and Time Saving Tips	12
When Service Is Required	12
Using And Programming The Touchscreen Controller	13
Controller Legend	13
First Use Of Matilda®	14
Adjusting Settings	15
Operating Matilda®	23
Pasteurize	24
Warm	25
Cancel Program	26
Quality Control And System Monitoring	27
Time & Temp For Proper Pasteurization	27
Helpful Hints For Successful Pasteurization	27
Trouble Shooting Matilda®	28
Screen Calibration Error	32
Screen Calibration	32
Error Symbols	33
Matilda Wiring Diagram	35
Matilda Wiring Options	36
Matilda® Replacement Parts	37



CERTIFICATE & DECLARATION OF CONFORMITY FOR CE MARKING

Company contact details:

Dairy Tech Inc.
34824 CR 29, Greeley, CO 80631, USA
Tel: 866-384-2697 Fax: 970-454-8898 Email: Office@DairyTechinc.com

Dairy Tech Inc. declares under their sole responsibility that their:

Calf Milk and Colostrum Pasteurizers
listed as the following models: Matilda®, DT10G, DT30G & DT60G

comply with the Essential Requirements of the following EU Directives:

Machinery Directive 2006/42/EC
Low Voltage Directive 2014/35/EU
EMC Directive 2014/30/EU
RoHS 2 Directive 2011/65/EU

and further conform with the following EU Harmonized Standards:

EN 60204-1:2006 + A1:2009
EN 61010-1:2010
EN 61000-6-2:2005
EN 61000-6-4:2007+A1:2011

Dated: 29 December 2016

Position of signatory: CEO

Name of Signatory: Richard Dumm

Signed below:

A handwritten signature in black ink, appearing to read 'Richard Dumm', is written over a horizontal line. The signature is stylized and cursive.

INTRODUCTION

Thank you for purchasing Matilda®, a colostrum pasteurizer and warmer specifically engineered to maximize the efficiency of Dairy Tech's Perfect Udder® bags and our proven pasteurization technology. Your satisfaction with this product is very important to us. This guide will help you understand how your pasteurizer operates, and how to get the most benefit from it for you and your dairy operation.

DISCLAIMERS

THIS PASTEURIZER IS INTENDED TO BE USED IN THE MANNER DESCRIBED IN THIS *USE AND CARE* GUIDE. IT IS NOT INTENDED TO PASTEURIZE MILK OR OTHER GOODS FOR HUMAN CONSUMPTION.

Dairy Tech, Inc. has provided this use and care guide to assist you in the assembly, installation, and maintenance of your Matilda® Model Pasteurizer (the "Pasteurizer"). Serious injury and even death to persons and livestock can occur from improper installation and use of the Pasteurizer. Serious property damage can result from improper installation and use of the Pasteurizer. We recommend professional installation by qualified plumbers and electricians familiar with such devices.

DAIRY TECH, INC. RECOMMENDS THAT INSTALLATION OF ANY ELECTRICAL, MECHANICAL, GAS OR PLUMBING DEVICES REQUIRED FOR THE INSTALLATION, OPERATION AND MAINTENANCE OF THE DAIRY TECH PASTEURIZERS BE DONE ONLY BY QUALIFIED INDIVIDUALS.

It is your responsibility, or the responsibility of the electrician, plumber or other qualified installation expert, to obtain all necessary permits and certifications required by your town, county, state or other jurisdiction before installation of the Pasteurizer. It is your responsibility to read and understand the operational requirements of the pasteurizer before using it and to observe all safety precautions. It is also your responsibility to see that your personnel are properly trained to operate and maintain the Pasteurizer.

DAIRY TECH, INC. PROVIDES YOU WITH INSTRUCTIONS AND WARNINGS IN THIS *USE AND CARE* GUIDE, BUT WE ARE UNABLE TO COVER ALL POSSIBLE CONDITIONS AND SITUATIONS THAT MAY OCCUR IN YOUR DAIRY OPERATION. IT MUST BE UNDERSTOOD THAT COMMON SENSE, CAUTION AND CAREFULNESS ARE FACTORS WHICH CANNOT BE BUILT INTO THE PASTEURIZER. THESE FACTORS MUST BE SUPPLIED BY THE PERSON(S) INSTALLING, MAINTAINING OR OPERATING THE PASTEURIZER.

Under no circumstances is Dairy Tech, Inc., its directors, officers, shareholders or employees responsible for damage to property or injury to persons or livestock resulting from the improper installation or use of the Pasteurizer. Installation by an unqualified individual and improper use and improper maintenance may also void any equipment warranty that Dairy Tech, Inc. offers.

This use and care guide is based on information and data considered to be accurate; however, no warranty is expressed or implied regarding the accuracy of the information or data herein or the results to be obtained from the use of this data or information.

**PLEASE READ THIS GUIDE CAREFULLY AND THOROUGHLY
BEFORE INSTALLING AND OPERATING THE PASTEURIZER.**

If you believe the pasteurizer is operating incorrectly, please refer to the trouble shooting guide included with these instructions before calling our service department. If you still have questions, contact your local representative or call 1-866-384-2697 and we will help you to address your needs.

**This unit contains HIGH VOLTAGE electricity that
can cause serious harm or death.**



Warning: Hot
Surface



Warning:
High Voltage



Caution:
Important
Information

This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

For your safety, the recommendations and information in this manual must be followed to minimize the risk of serious burn or electrocution, as well as to prevent property damage, personal injury, or death.

If you are burned by the heating coil, hot water, steam or hot colostrum: Contact a physician, or other medical personnel for expert advice, or go to an emergency treatment facility.

Do not feed pasteurized colostrum to calves without first cooling it back down so that it is no hotter than 110°F (43°C). Colostrum hotter than 110° can cause severe burns to the calves.

DID YOU KNOW?

On-site visits are also available to more thoroughly investigate any problems you may be encountering with calf health. *Additional charges may apply for on-farm consultations. Contact your Dairy Tech, Inc representative for more information.*

PRODUCT WARRANTY

This product is warranted to be free of manufacturing defects for up to 12 months from the date of purchase. All parts will be covered by a free replacement guarantee not including shipping or service. This warranty is intended for equipment in use under normal operating conditions and does not cover damages incurred by improper use or unforeseen acts of nature. Determination of covered defects, damages or repairs is at the discretion of Dairy Tech, Inc. This warranty covers only the cost of replacement parts at Dairy Tech, Inc. current pricing. Service is not covered by this warranty. Parts replaced under warranty must be returned to:

Dairy Tech, Inc.

34824 CR 29

Greeley, CO 80631

or an Authorized Dairy Tech, Inc. Dealer.

Parts not returned will be charged to customer at retail pricing.

PRODUCT REGISTRATION

If this product was purchased directly from Dairy Tech in Greeley, CO, it has already been registered and no further action is required. If the product was purchased through a distributor or other representative, please call Dairy Tech, Inc. at **866-384-2697** within 10 days of receipt to register the Pasteurizer.

Failure to do so may result in a decreased or voided warranty period for your unit. When calling, please have the serial number which can be found on the back side of the Pasteurizer.

You may also register on-line at **www.dairytechinc.com** where you can "Contact Us", fill in your information and in the notes type the product model and serial number and the word "Register".

IMPORTANT SAFETY INSTRUCTIONS



WARNING: To reduce the risk of electric shock, burns, serious injury or death to persons when using the Pasteurizer, follow these basic precautions:

1. **Read all instructions before using the Pasteurizer.**
2. Do not operate the pasteurizer without water covering the heating elements at all times.
3. Always disconnect the electrical power before attempting service. All power sources must be disconnected before the cover is removed for repair.
4. Do not allow children to operate or play around the Pasteurizer. Close observation of children is necessary when the unit is used with children nearby.
5. Do not reach into the Pasteurizer when the power is on and the paddle is turning as this can cause serious harm.
6. Hot Surfaces include the water, baskets, motor, propeller, Perfect Udder bags, electrical fixtures, hoses, heating elements, draining water and the colostrum. Touching these surfaces during operation may result in severe burns. Do not touch hot surfaces.
7. This equipment is designed to operate in an ambient temperature range of 35°F - 104°F (2°C - 40°C), altitude up to 6560 ft (2000 m), maximum relative humidity 80% for temperatures up to 88°F (31°C) decreasing linearly to 50% RH at 104°F (40°C), for indoor use only.
8. Do not try to change unavailable settings in the pasteurizer controller without consulting a technical expert at Dairy Tech, Inc.
9. Do not repair or replace any part of the Pasteurizer or attempt any servicing unless specifically recommended in the trouble-shooting portion of this manual. Any modifications made to the unit beyond these instructions will void all warranties.
10. Always clean the unit immediately after each use, according to the instructions in the “Cleaning of your Pasteurizer” section of this manual. Build-up of residue on the propeller or tank will decrease heating and cooling efficiency, as well as harbor potentially harmful pathogens.
11. During the heating cycle, always make certain the Pasteurizer lid is closed.
12. Use the pasteurizer only for its intended purpose. DO NOT use for milk intended for human consumption as this product has not been approved for such use.
13. Do not touch the motor, hoses, lid, handle or brass fittings while the unit is hot and working.
14. Do not attempt to tilt the machine while it is full. It is extremely heavy and can cause severe injury to the operator.
15. To prevent severe burns to employees or calves, always allow the colostrum to cool completely before handling or feeding to calves.
16. The Pasteurizer must be electrically grounded. DO NOT modify the plug that is provided with the Pasteurizer. Always have a certified electrician confirm proper power supply and connections.
17. The pasteurizer must be installed on a level surface to evenly distribute weight to all the support structures.

RECEIVING YOUR PASTEURIZER

Use care when unpacking your Matilda® Model pasteurizer. It will have arrived in one box or crate. Please make a note of any cautionary labels that are used on the carton suggesting orientation, where to cut with a knife, fragile, etc.

INSTALLATION

WARNING: INSTALL THE UNIT ACCORDING TO THE INSTALLATION INSTRUCTIONS. TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, SERIOUS INJURY OR DEATH TO PERSONS, READ THE IMPORTANT SAFETY INSTRUCTIONS BEFORE OPERATING THIS PASTEURIZER.

BEFORE USING THIS UNIT FOR THE FIRST TIME, WASH OUT THE INSIDE OF THE SINK WITH HOT SOAPY WATER AND RINSE CLEAN.

Choosing and Preparing a Location

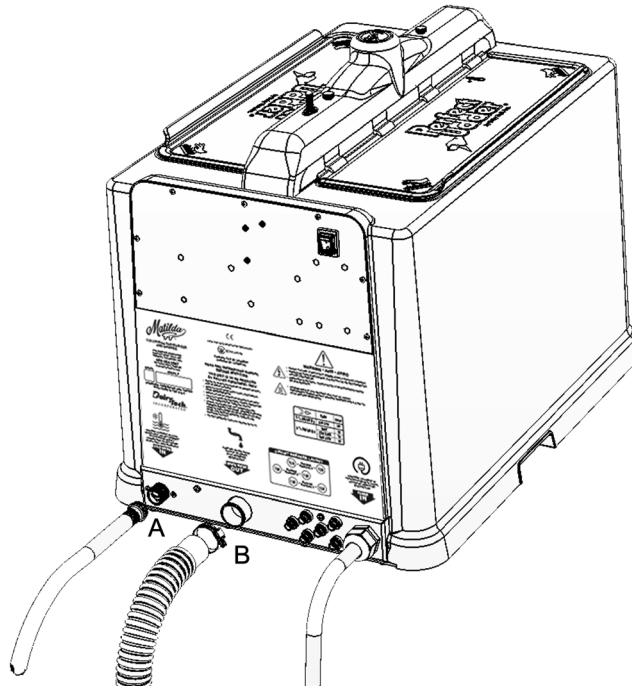
Criteria for Selecting a Location

- a) Choose an indoor spot that will be protected from the elements. Extreme heat and freezing temperatures will damage the unit.
- b) Cold water is required to be connected to the unit for water cooling the Perfect Udder bags. A hot water source is not necessary for use of the equipment, it makes its own hot water.
- c) Floor drains will allow for proper cleaning and rinsing of the product as well as to clean up colostrum spills.
- d) Power requirements are single-phase, 240 VAC, 30 A circuit breaker rated for use as branch circuit protection. Three-phase connections are also available.
- e) Floor space or shelf space requirements are approximately 24" (60 cm) wide x 36" (90 cm) deep.
- f) Avoiding extremely drafty areas will improve heating efficiency of the unit.
- g) Always have 2 people lift and carry the unit grasping with both hands on the sides of the unit. Never attempt to move the unit while it is full of water.
- h) Operating weight of Matilda® is approximately 250 lb (113 kg). Be certain that tables, shelves or other surfaces can support the weight.

CONNECTING THE HOSES FOR WATER-COOLING

A: Cold Water Connection

B: Water Drain



Cold Water Connection: A 6' (1.8 m) black supply hose is supplied with the machine. This hose with factory ends supplies all the cold water to cool the product when pasteurization is finished. It can connect to any normal domestic pressure cold water source including a hose, but it **MUST BE ON AT ALL TIMES DURING OPERATION**. Using the supplied hose, attach one end to the threaded solenoid valve on the back of the unit, with the other end going to a regular hose bib supply. **NOTE:** If water pressures exceed 80psi (5.5BAR), install a pressure reducer.

WATER DRAIN: This 4' black hose must be connected to the back of Matilda® as shown in the image using the provided clamp. It should be directed to a drain, cistern, stock tank or other collection system. **Do not connect the drain hose to another hose or to any system that can create back-pressure. This will prevent proper cooling and will cause the machine to overflow which may damage sensitive electrical components and void your warranty.** If you wish to salvage the wastewater, direct the drain line to a 5-gallon bucket and place an inexpensive sump pump in that bucket to send water where it needs to go. It is important to keep water turned on anytime the pasteurizer is in operation to prevent damage to the heating elements.

CLEANING THE SYSTEM



**NOTE: NEVER SPRAY
MATILDA® WITH WATER!!**

*Serious Electrical System Damage
can occur and will void your
warranty.*

Be sure to DISCONNECT FROM POWER BEFORE cleaning.

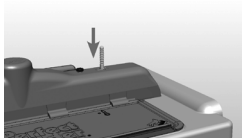
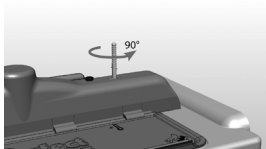
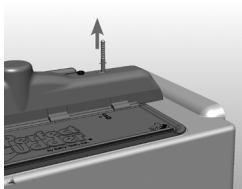
HELPFUL TIP: Always keep the doors closed to prevent flies, insects, Matilda® must be cleaned periodically. We recommend every few days, but it depends on contamination due to dirty bags, broken bags and poor water quality.

Do not use abrasive cleaning pads or solutions. Do not use cleaners containing ammonia, organic solvents, or potassium hydroxide.

1. Begin by lifting both lids and remove the wire baskets from each side. The baskets can then be cleaned outside of the unit with a soft brush and disinfectants.



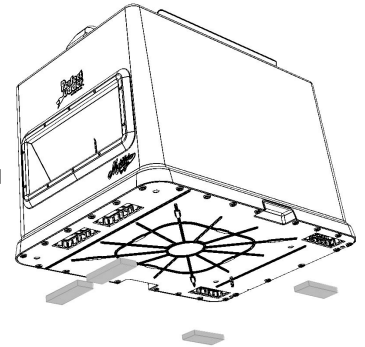
2. Lift the drain handle, turn it 90°, then lower it into the collar to lock it open while the contents drain out the back of the machine.



3. Perform a warm water rinse to remove dirt and grime.
4. Once the surfaces have been cleaned, perform a final hot water rinse.
5. Periodically, but at least monthly, utilize a sanitizing/disinfecting product like Effercept® to destroy any biofilm that may be developing on the surfaces of the equipment. Make sure that the product is safe for plastic surfaces. Spray generously and allow to air dry.

Air Filters

Matilda® has 4 air filters that are located in her bottom enclosure panel. We recommend that you clean these filters when you clean Matilda®.



1. After you have finished cleaning Matilda®, and BEFORE filling her with water, tip her up to reveal the Bottom Enclosure Panel.
2. Remove the 4 air filters and remove anything that restricts air flow.
3. Rinse the air filters with clean water and re-install.

Once the unit is dry and clean, lower the drain and turn the machine on so it can once again fill with water and prepare itself for use.

Annually have a qualified electrician inspect and tighten the screws in the terminal blocks in the back of Matilda®. Make sure power is completely disconnected before opening the electrical access panel.

WATER QUALITY

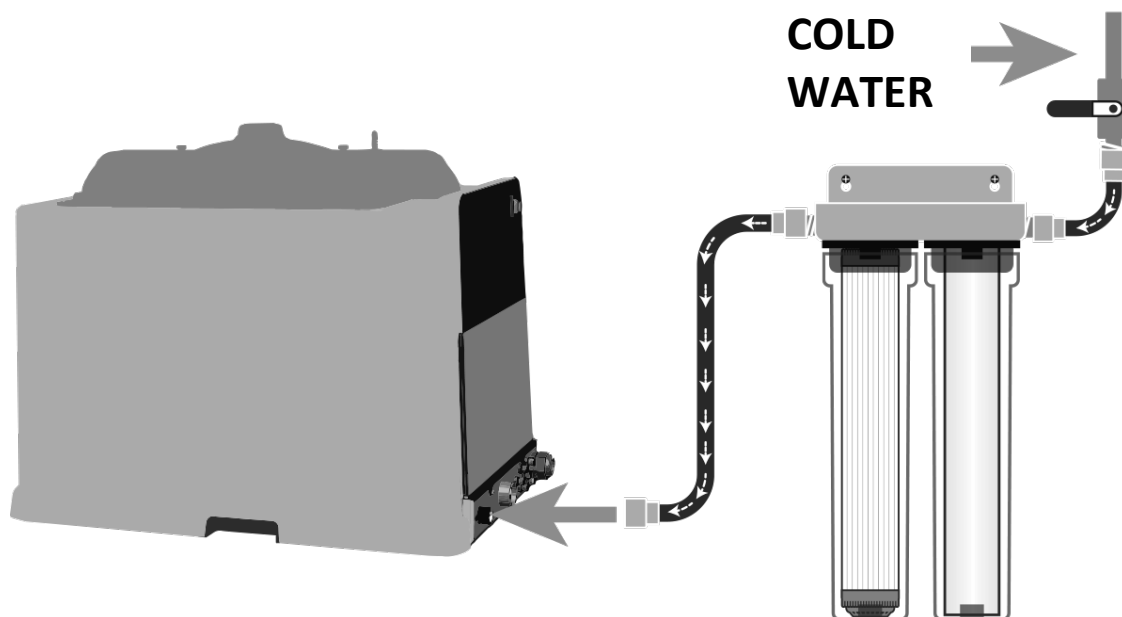
POOR WATER QUALITY WILL HAVE AN ADVERSE EFFECT ON HEATING ELEMENT LONGEVITY AS WELL AS THE OTHER COMPONENTS OF THIS EQUIPMENT THAT ARE IN CONTACT WITH WATER OF POOR QUALITY.

Dairy Tech Inc is not responsible for your water quality and the effects that it may have on our equipment.

If you have poor water, dirty water or hard water, purchase and install a water filtration/softener system.

DAIRY TECH RECOMMENDS THE FOLLOWING STEPS:

1. Test a sample of water that will be used with the Dairy Tech equipment. Local experts will be able to tell you if your water quality will be detrimental to electric heating elements and other components of our system.
 - a. If the starting water quality is acceptable, take additional samples at monthly intervals to help determine how often to replace the cartridges in your system
 - b. If your water quality is NOT acceptable, install the water filtration/softener system and replace cartridges every 3 months or anytime they are visibly dirty, or if water flow is compromised.



THIS SYSTEM WILL NOT REMOVE CHEMICALS OR DISINFECT WATER AND IS NOT INTENDED FOR DRINKING WATER.

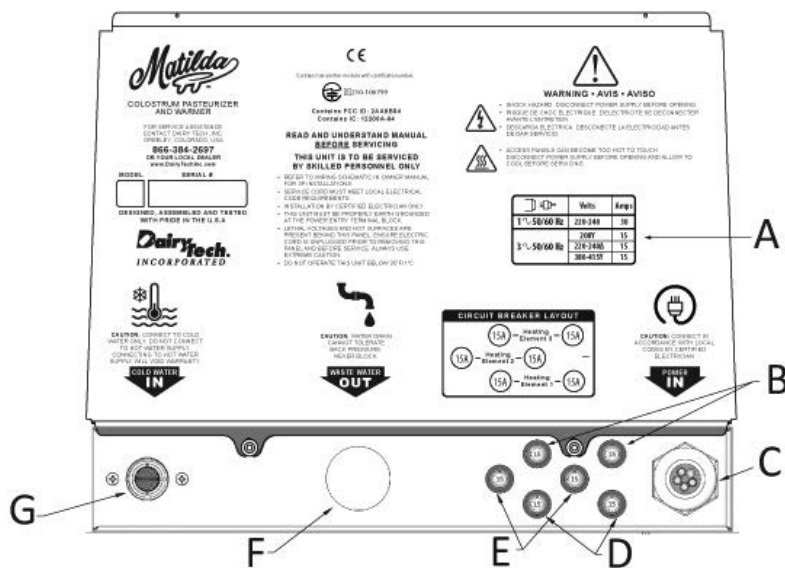
ELECTRICAL REQUIREMENTS

The electrical supply cord is not included with your purchase due to many jurisdictions that require installation only by certified electricians. It may be purchased separately and installed on your farm. Local ordinances and electrical codes will dictate wire sizing, lengths and connections including the need for power kill switches in some locations. Always check with your local electrician for installation assistance. Carefully review the decal on the inside of the rear panel to see which power supply your Matilda® is prepared for per your ordering instructions. Instructions and a wiring diagram are provided for your benefit but always call our service department for additional assistance. Failure to meet these requirements will void the warranty and could result in serious damage to the unit, bodily injury or death. The receptacle may need to be fitted with a water-resistant cover for added protection.

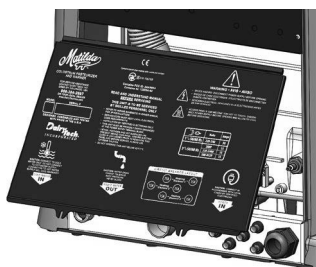


ALL CONNECTIONS SHOULD BE PERFORMED BY AN ELECTRICIAN OR OTHER TRAINED PERSONNEL.

- The receptacle should be sharing minimal usage with other equipment to avoid unexpected outages and tripping of the breaker. If the power is lost, but returns within 1 hour, the cycle will resume automatically in most instances.
- Check your electrical system to make certain it is properly grounded to avoid the possibility of electrical shock.



- A. Wiring Specifications
- B. Heat Element #3 Circuit Breakers
- C. Electric Line IN
- D. Heat Element #2 Circuit Breakers
- E. Heat Element #1 Circuit Breakers
- F. Waste Water OUT
- G. Cold Water IN

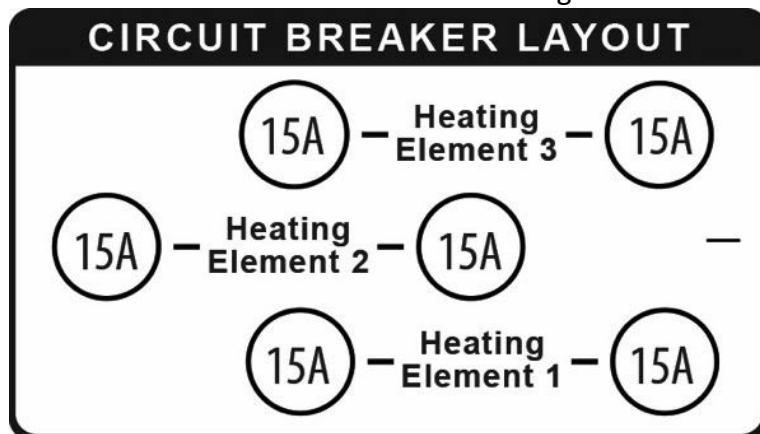


International Installations:

Matilda® can utilize a variety of power sources. Consult the wiring options diagram in this owner manual (*page Error! Bookmark not defined.*) as well as those on the machine for further instruction and options. Follow the labels attached inside the back panel of the machine for specific wiring instructions in these instances.

External Circuit Breakers

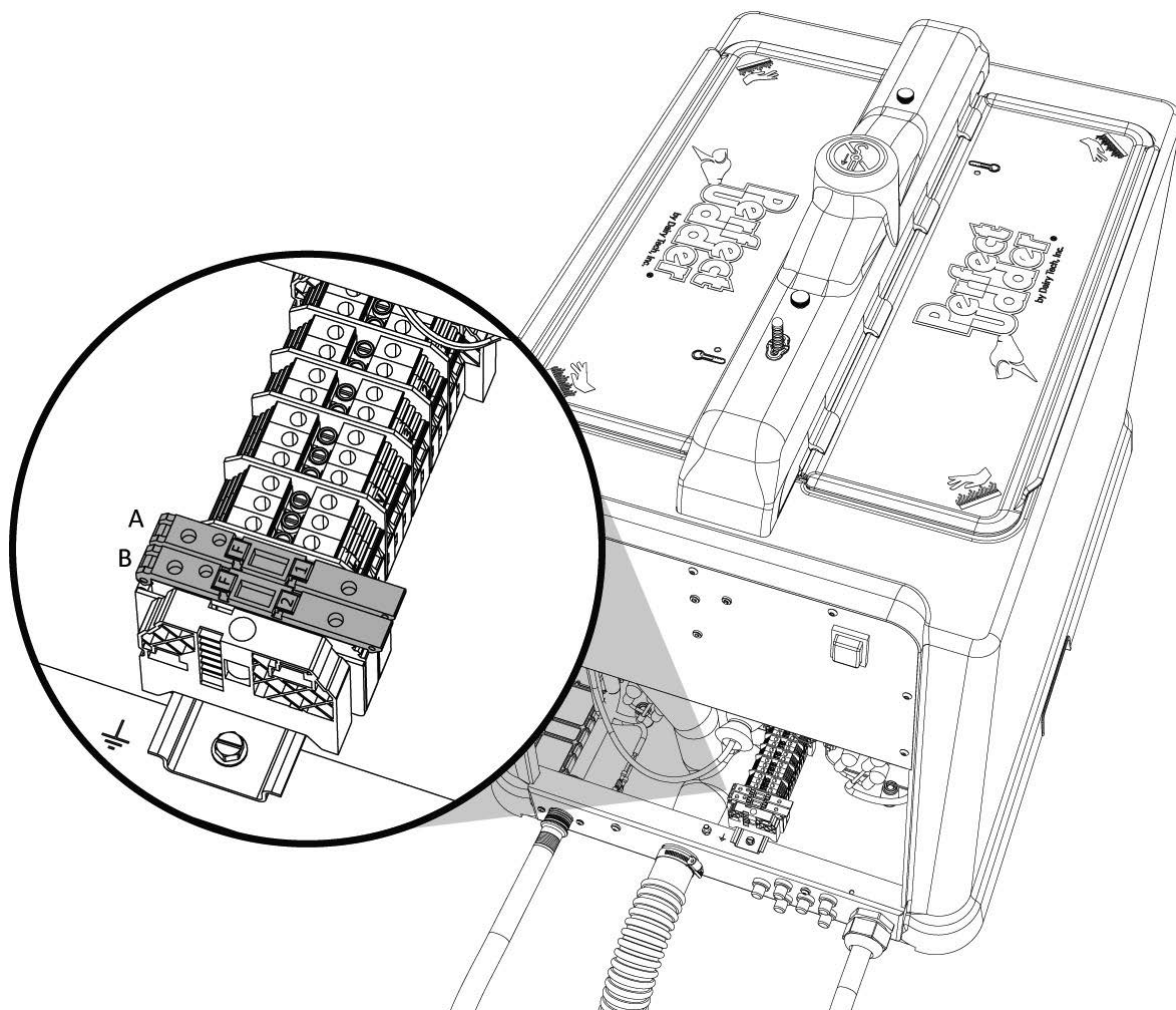
The unit is equipped with 6 external circuit breakers on the back of the unit. These circuit breakers protect both sides of the heating elements from internal and external damage. The layout of the circuit breakers is shown below, as well as on the unit itself. Refer to Trouble Shooting for further information.



Internal Fusing

There are 2 internal fuses that protect the internal power supply. They are located in DIN mounted holders labeled F1 and F2 as shown in this image.

- A. FUSE F1
- B. FUSE F2



ENERGY AND TIME SAVING TIPS

1. Pasteurize the colostrum as quickly as possible after collection. This will prevent the excessive growth of bacteria in the colostrum and also take advantage of the heat to improve energy efficiency.
2. Avoid placing the unit in an area of high drafts to prevent convection heat losses while pasteurizing.
3. Colostrum can be stored in the refrigerator for 24-48 hours if it is handled cleanly once it has been pasteurized. Filling Perfect Udder® Colostrum management bags allow for a disposable system that makes it easy to keep track of dates and colostrum quality. These bags also allow the product to be warmed more quickly when they are needed for the newborn and can then be fed without recontamination of the product. Order more bags from your local veterinary supply dealer or online at www.perfectudder.com
4. Do not try to use plastic calf bottles in Matilda®. It is impossible to transfer heat across the thick plastic to ensure adequate pasteurization.
5. Always wear nitrile or latex gloves when handling the colostrum to prevent the spread of pathogens from your skin surface.
6. Keep the lids closed on Matilda® when not in use. This will keep the heat inside and also prevent contamination with dirt and insects.
7. Water quality is very important. The heating elements will be inefficient if deposits begin to build up and they will also experience early failure. If signs of poor water quality exist, we recommend a filter and water softener combination (*part no. K-WaterFiltration-System*) available at www.dairytechinc.com
8. Matilda® can be turned off during non-busy times to conserve energy.

WHEN SERVICE IS REQUIRED

If you purchased Matilda® from an authorized dealer, contact them directly with inquiries or repair questions. For prompt service, work through the troubleshooting guide in this manual to give an accurate description of the problem.

The Dairy Tech, Inc. service department can also assist when needed 1-866-384-2697 extension 2



Repair by an unauthorized service technician will void the warranty.

USING AND PROGRAMMING THE TOUCHSCREEN CONTROLLER

Be sure the pasteurizer is charged with water using the instructions on page 14 prior to the first use of your pasteurizer.

FUNCTION INDICATORS



IDLE TEMP:
GREEN = set Idle Temperature is reached.
WHITE = Inactive



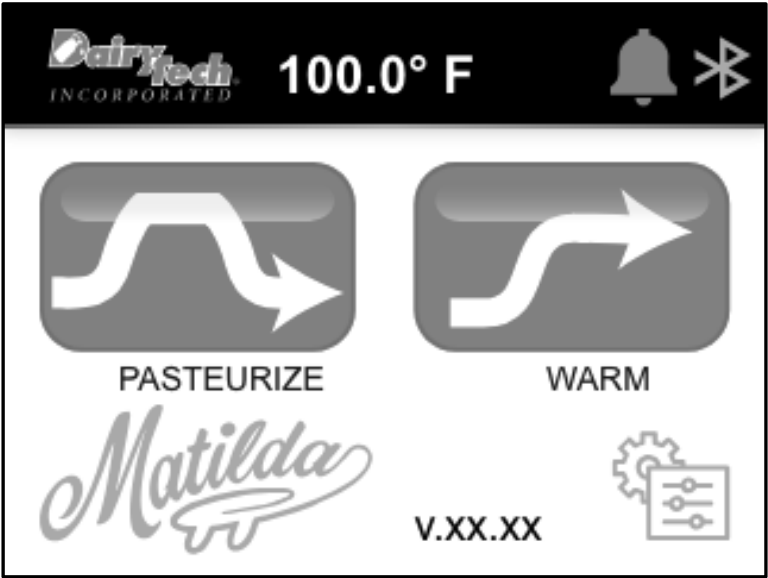
HEAT:
RED = Heating
WHITE = Inactive



MOTOR:
YELLOW = motor is turning stir rod.
WHITE = Inactive



WATER:
BLUE = water is being added to the sink.
WHITE = Inactive



ALERT SYMBOL

BLUETOOTH SYMBOL

SETTINGS

SOFTWARE VERSION

CONTROLLER LEGEND



Back



HOME



Forward



Adjust DOWN



Adjust UP



Adjustable Setting



Locked
(Requires Password)



Unlocked



Yes



Cancel



No

ERROR SYMBOLS

See page 32 for detailed explanations.



Hardware



Heat



Lid Open



Motor



Temperature



Water

FIRST USE OF MATILDA®

NEVER START A CYCLE UNLESS THE UNIT HAS FILLED WITH WATER. FAILURE TO DO SO WILL RESULT IN DAMAGE TO THE UNIT AND VOID THE WARRANTY.



BEFORE USING THIS UNIT FOR THE FIRST TIME, WASH OUT THE INSIDE OF THE SINK WITH HOT SOAPY WATER AND RINSE CLEAN. INITIAL CLEANING OF THE SINK IS NECESSARY TO REMOVE DIRT AND CONTAMINATION FROM TRANSIT. SEE CLEANING INSTRUCTIONS ON PAGE 8.

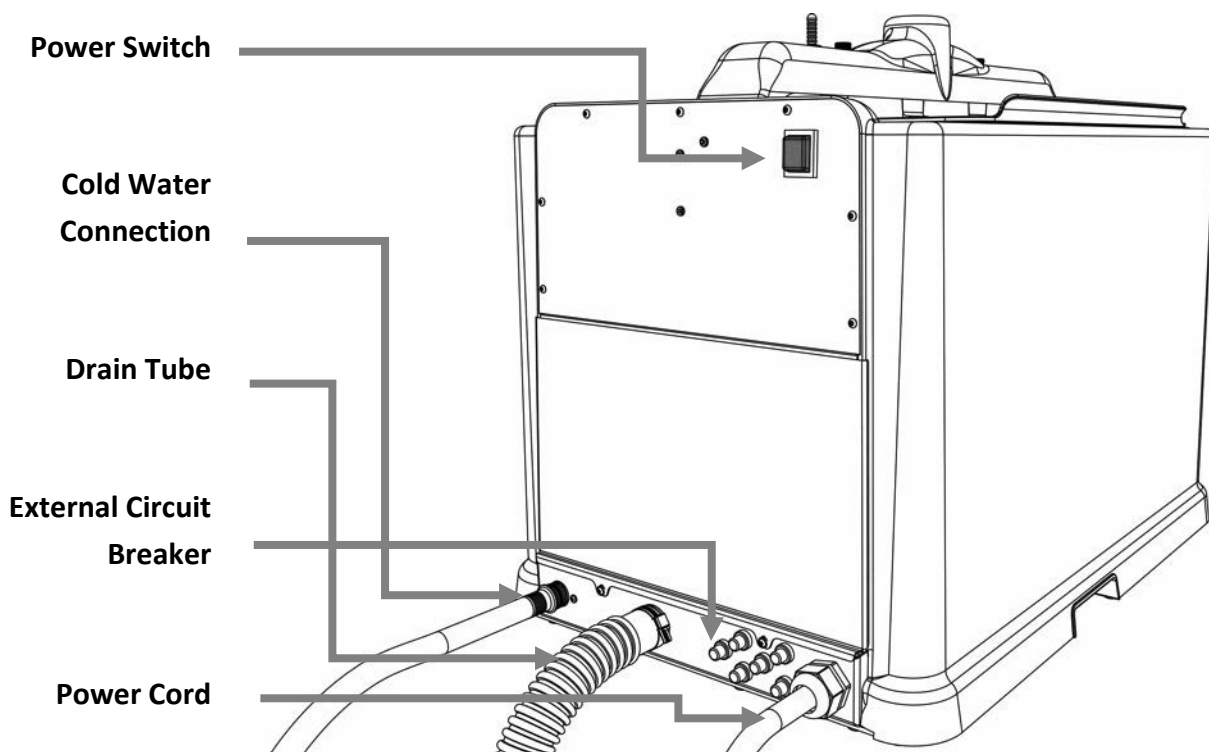
Matilda® Set-Up Menu

Step 1. Plug in the unit to the power source

Step 2. Connect the water and turn water on. Also connect the drain tube and direct it to the floor drain.

Step 3. Now, turn on rear power switch. Matilda® should immediately begin to fill with water.

Once she has filled to the level of the float switch, she will begin heating the water bath to the preset maintenance temperature (IDLE TEMP).



You are now ready to make adjustments to Matilda's Settings.

ADJUSTING SETTINGS

*** IMPORTANT WARNING ***



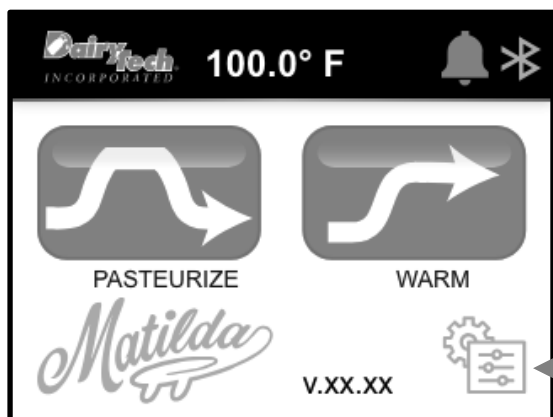
DO NOT ALTER SETTINGS IN THE CONTROLLER WITHOUT CONSULTING A DAIRY TECH REPRESENTATIVE. ANY UNAUTHORIZED ADJUSTMENTS WILL VOID THE PRODUCT WARRANTY AND MAY LEAD TO SERIOUS HEALTH CONSEQUENCES FOR THE CALVES.

Settings Categories

- 01: Language
- 02: Temperature Scale (*Fahrenheit or Celsius*)
- 03: Electricity (*3 Phase or 1 Phase*)
- 04: Alert (*ON or OFF*)
- 05: Bluetooth (*ON or OFF*)
- 06: Feeding Temperature
- 07: Feed Hold
- 08: Cool Temperature
- 09: Cool Hold
- 10: Warm Dwell
- 11: Idle Temperature
- 12: Test

The following settings require a password to modify.

- 13: Temperature Calibration
- 14: Pasteurization Temperature
- 15: Pasteurization Dwell
- 16: Change Password
- 17: Factory Reset



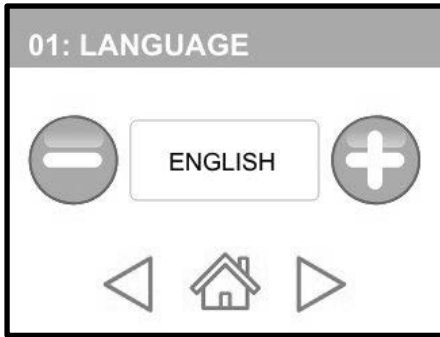
To Access "Settings"

Select **"SETTINGS"** icon on home screen



This will open the first adjustable setting "LANGUAGE". Use the arrow buttons to scroll through the Settings Categories until you arrive at the setting you wish to adjust. Follow the on-screen prompts to customize your controller settings.

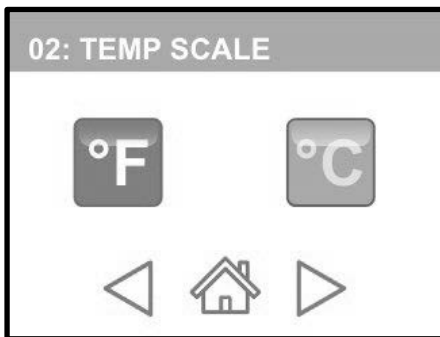
01: Language



LANGUAGE is the first category. English is the default language.

1. To change the language, simply touch the Plus (+) or Minus (-) buttons to scroll to language you prefer.
2. If you are satisfied with your selection, press **"HOME"** to save or press **"FORWARD/BACK"** to make other modifications.

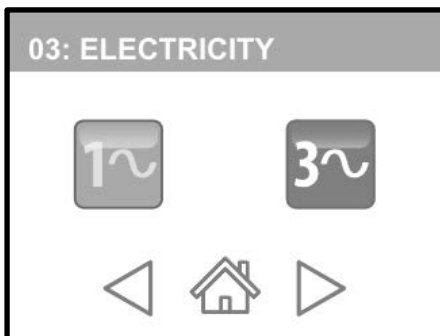
02: Temperature Scale



Temp Scale is the second category.

1. Touch the **FORWARD** button to get to this category. Fahrenheit is the default Temperature Scale. To change the scale, simply touch the Celsius button. Now all of the information will be in the language you chose.
2. If you are satisfied with your selection, press **"HOME"** to save or press **"FORWARD/BACK"** to make other modifications.

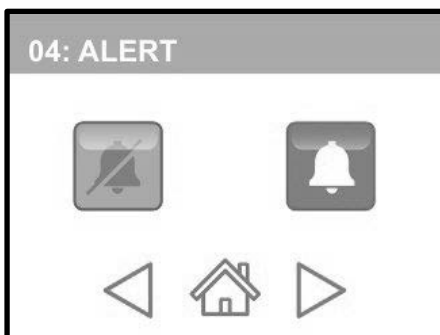
03: Electricity



Electricity is the third category.

1. Touch the **FORWARD** button to get to this category. 3P is the default setting. To change, simply touch the 1P button.
2. If you are satisfied with your selection, press **"HOME"** to save or **press "FORWARD/BACK"** to make other modifications.

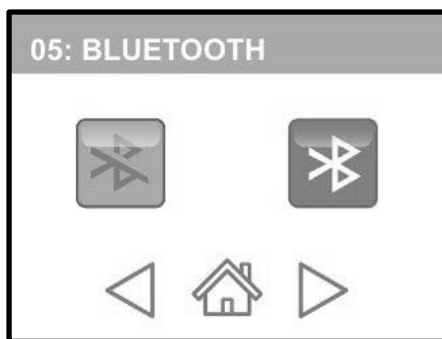
04: Alert



ALERT is the third category and it determines whether or not you will hear audible alarms made by the machine

1. Touch the **FORWARD** button to get to this category. ALERT ON is the default setting. To turn off the alert, simply touch the ALERT OFF button.
2. If you are satisfied with your selection, press **"HOME"** to save or press **"FORWARD/BACK"** to make other modifications.

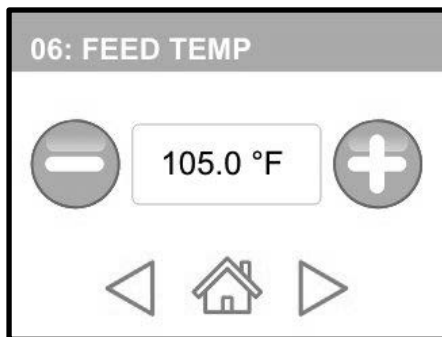
05: Bluetooth



BLUETOOTH is the fifth category. This option must be “ON” if you want to be able to communicate with Matilda® with the Perfect Udder phone app. *You will need the Perfect Udder™ app if you wish to change the name of your machine.*

1. Touch the **FORWARD** button to get to this category. Bluetooth “ON” is the default setting.
2. To change the scale, simply touch the “Bluetooth OFF” button. Now all of the information will be in the language you chose.
3. If you are satisfied with your selection, press “**HOME**” to save or press “**FORWARD/BACK**” to make other modifications.

06: Feeding Temperature



FEED TEMP is the sixth category. The default feeding temperature is 105°F (40°C). Only increase this temperature in extremely cold conditions.

1. Touch the **FORWARD** button to get to this category.
2. Use the (-) or (+) buttons to decrease or increase this setting to your desired feeding temperature.
3. If you are satisfied with your selection, press “**HOME**” to save or press “**FORWARD/BACK**” to make other modifications.



WARNING: Feeding at a temperature HIGHER than 110°F/43°C can cause serious injury to the calf.

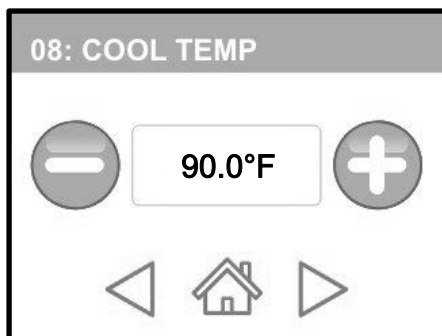
07: Feeding Temperature Hold



FEED HOLD is the seventh category. This setting dictates how long the cycle will hold the final feeding temperature before the cycle is complete. When a cycle is complete, Matilda® will maintain her Idle Temperature until End Cycle is selected.

1. Touch the **FORWARD** button to get to this category. The default feeding hold time is 5 minutes.
2. Use the (-) or (+) buttons to decrease or increase this setting to your desired Feeding Temperature Dwell time.
3. If you are satisfied with your selection, press “**HOME**” to save or press “**FORWARD/BACK**” to make other modifications.

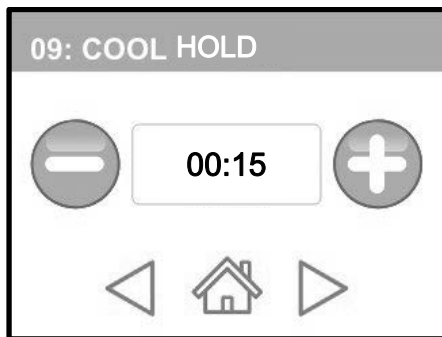
08: Cool Temperature



COOL TEMP is the eighth category. This is the temperature that the unit will COOL to when a cycle has completed pasteurization. Choose a temperature that is within reach of your water supply. Example: If your water is 50°F (10°C), then choose 60°F (16°C) or higher as your cool temp. This will prevent excessive water loss but also take some work away from your freezer.

1. Touch the FORWARD button to get to this category. The default “COOL” temperature is 90°F (32°C).
2. Use the (-) or (+) buttons to decrease or increase this setting to your desired feeding temperature.
3. If you are satisfied with your selection, press “**HOME**” to save or press “**FORWARD/BACK**” to make other modifications.

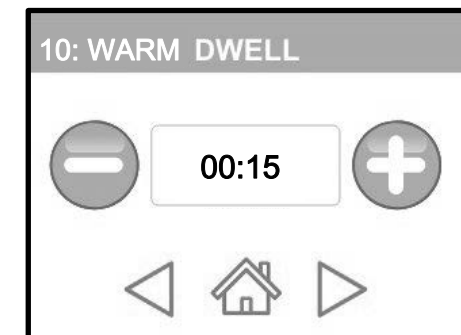
09: Cool Hold



COOL HOLD is the ninth category. This setting is important. Matilda® cannot see the temperature inside of the bag, only the water bath; therefore, we must ask her to continue to hold at the Cool Temp for a period of time to make certain that excess heat is removed from the Perfect Udder® bags.

1. Touch the FORWARD button to get to this category. The default cooling hold time is 15 minutes.
2. Use the (-) or (+) buttons to decrease or increase this setting to your desired Cool Hold time.
3. If you are satisfied with your selection, press “**HOME**” to save or press “**FORWARD/BACK**” to make other modifications.

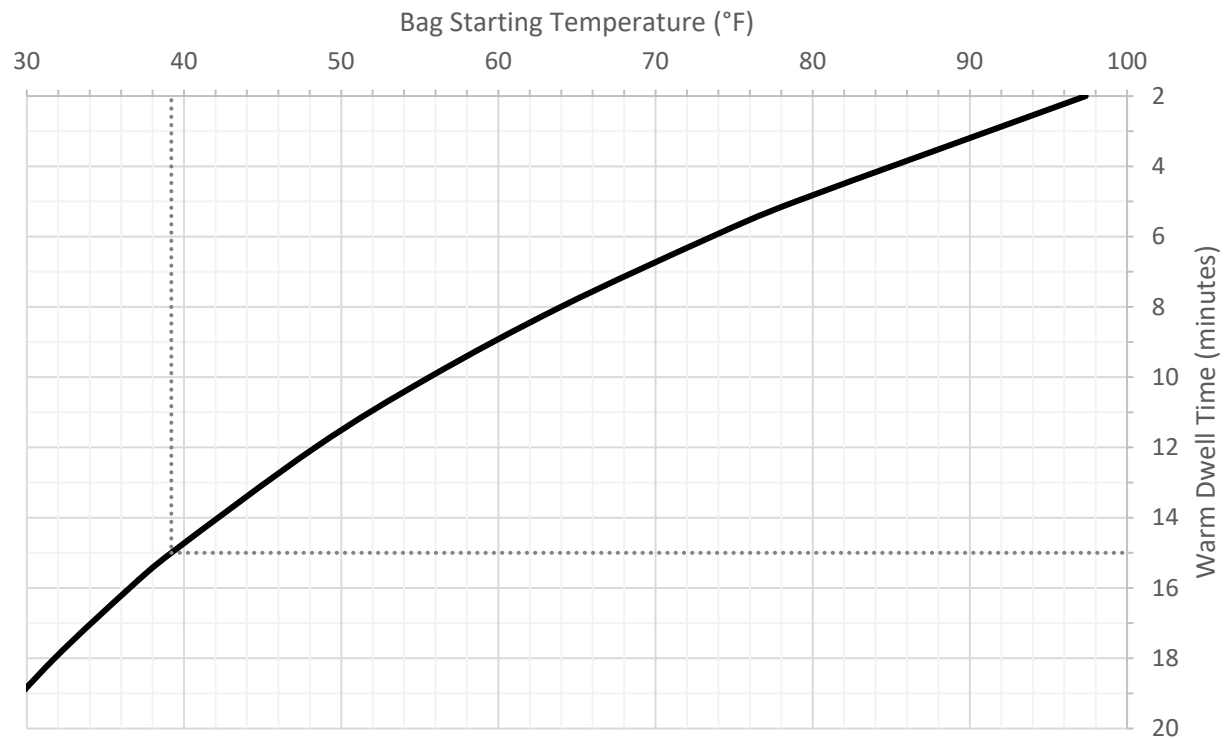
10: Warm Dwell



WARM DWELL is the tenth category. This setting determines how long Matilda® will stay above the Feed Temperature. The dwell time only affects the Warm cycle when the Cold profile is selected. If your Perfect Udder® bags have not been chilled to refrigeration temperatures of approximately 39°F (4°C) you may need to reduce the dwell time to avoid exceeding the Feed Temperature. A chart with suggested settings is shown below.

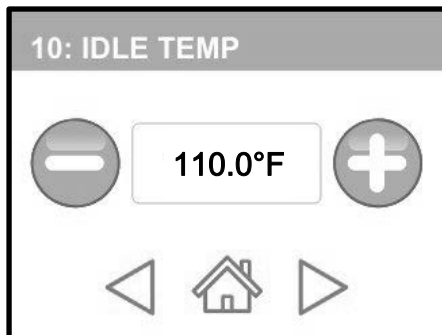
1. Touch the FORWARD button to get to this category. The default warm dwell time is 15 minutes.
2. Use the (-) or (+) buttons to decrease or increase this setting to your desired Cool Hold time.
3. If you are satisfied with your selection, press “**HOME**” to save or press “**FORWARD/BACK**” to make other modifications.

Suggested Warm Dwell Time for 105°F Feed Temperature



These times are approximations and may need to be adjusted for your specific application.

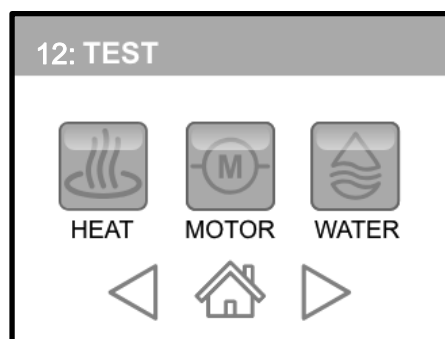
11: Idle Temperature



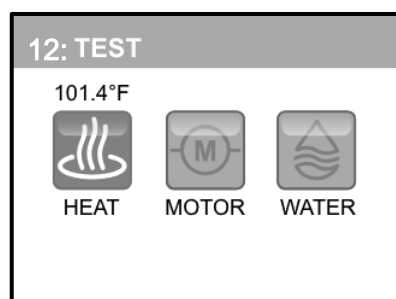
IDLE TEMPERATURE is the eleventh category. This is the temperature that Matilda® maintains until a program is selected. Idle Temp is the setting that dictates what temperature the water bath will climb to as Matilda® prepares for work

1. Touch the FORWARD button to get to this category. The default IDLE TEMPERATURE is 110°F (43°C).
2. Use the (-) or (+) buttons to decrease or increase this setting to your desired temperature.
3. If you are satisfied with your selection, press **"HOME"** to save or press **"FORWARD/BACK"** to make other modifications.

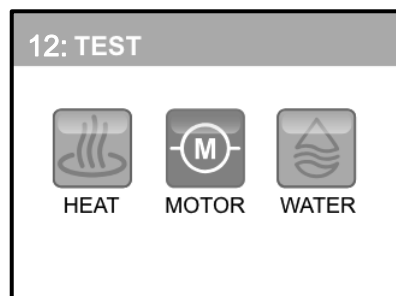
12: Test



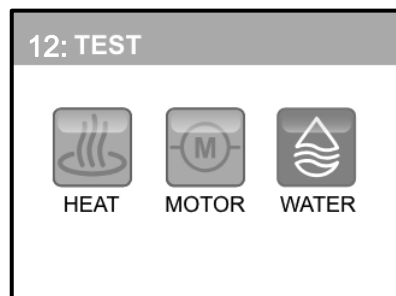
TEST is the twelfth category. The purpose of these buttons is to allow you to test these key components are functioning properly.



Touching the “HEAT” button will power the heating elements. NEVER test the heating elements without water in the sink completely covering the elements. This can test the elements by watching for a rising temperature and it can also be used during diagnostics to determine if there is proper current flowing through all of the connected elements



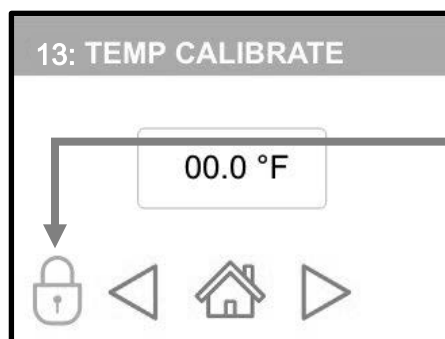
Touching the “MOTOR” button will turn on the motor. If the motor does not begin to spin, follow the instructions in the troubleshooting portion of this manual.



Touching the “WATER” button will turn on the water valve. If the valve does not turn on, follow the instructions in the troubleshooting portion of this manual.

When you are finished testing, touch the active button again to deactivate the test, then touch “**HOME**” to save and return to the Main Menu or press “**FORWARD/BACK**” to make other modifications.

Settings 13-17 are protected by a password.
You will be asked to enter a password to continue.



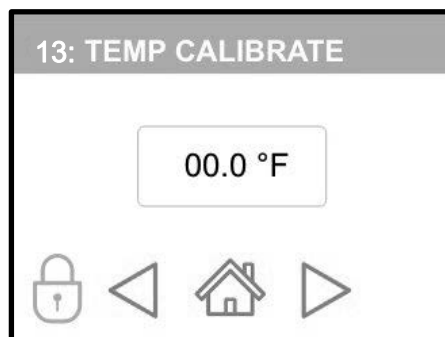
If you still wish to modify any of these settings, touch the “LOCKED” icon in the bottom left side of the screen.

1. This will open a keypad. Enter the 4-digit password then touch the Green button. If you have entered the correct pass code, the screen will unlock.



Once you have unlocked this screen, ALL pass code protected screens will be unlocked until you press “**LOCK**” or “**HOME**” to save.

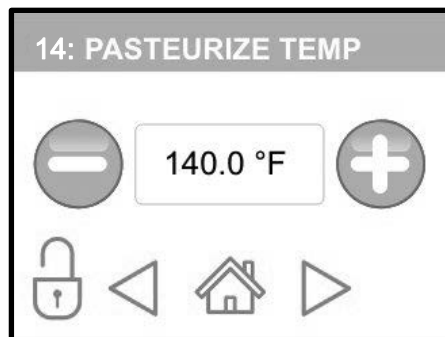
13: Temperature Calibration



Matilda® is calibrated by Dairy Tech before leaving the factory. Before adjusting the calibration, make sure that you are using a high-quality secondary thermometer. Allow a pasteurization cycle to climb to the pasteurization temperature and wait until it is at this level for five minutes. Now it is okay to check the water bath temperature with a high-quality thermometer. If the control does not match very closely, then you can adjust. If the control reads high, reduce offset, if the control reads low, increase offset.

1. After unlocking this screen, use the (-) or (+) buttons to decrease or increase this setting to your desired temperature.
2. If you are satisfied with your selection, press “**LOCK**” or “**HOME**” to save or press “**FORWARD/BACK**” to make other modifications.

14: Pasteurization Temperature



NOTE: Years of research has proven that the temperature for proper colostrum pasteurization is 140°F (60°C). Changes to this setting are strongly discouraged.

1. After unlocking this screen, use the (-) or (+) buttons to decrease or increase this setting to your desired temperature.
2. If you are satisfied with your selection, press “**LOCK**” or “**HOME**” to save or press “**FORWARD/BACK**” to make other modifications.

15: Pasteurization Dwell



NOTE: This setting will dictate how long to stay at your Pasteurization Temperature. Years of research has proven that the proper colostrum pasteurization time is 60 minutes at 140°F (60°C).

1. After unlocking this screen, use the (-) or (+) buttons to decrease or increase this setting to your desired length of time.
2. If you are satisfied with your selection, press **"HOME"** to save or press **"FORWARD/BACK"** to make other modifications.

16: Change Password



If you like, you can change the password to protect your custom settings.

1. Unlocking this screen will display an orange keypad.
2. Enter your new 4-digit password then touch the Green button. *(Password displayed is used only for example.)*
3. This will **"Lock"** ALL settings screens again. You will need to enter your New Password to make additional changes to any password protected screens.



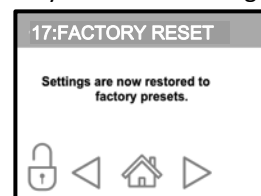
If at any time the new password is lost or cannot be remembered, the system has default password that can retrieved by contacting your Dairy Tech Dealer or our Service Department.

17: Factory Reset



This action will return all settings back to factory defaults.

1. After unlocking this screen, you will be reminded that this action will replace ALL custom settings and ask if you want to proceed.
2. Selecting **"NO"** will keep your current custom settings in place and return you to the FACTORY RESET SCREEN.
3. Selecting **"YES"** will return all settings back to factory defaults including the screen calibration.
4. The screen will not be responsive to touch inputs. You will need to switch off Matilda®, power her back up, and recalibrate the touchscreen.



OPERATING MATILDA®

This unit contains HIGH VOLTAGE electricity that can cause serious harm or death.



Warning:
Hot Surface



Warning:
High Voltage



Caution:
Important
Information



Once Matilda® is turned on, she will automatically fill with water and begin heating to the set idle temperature.

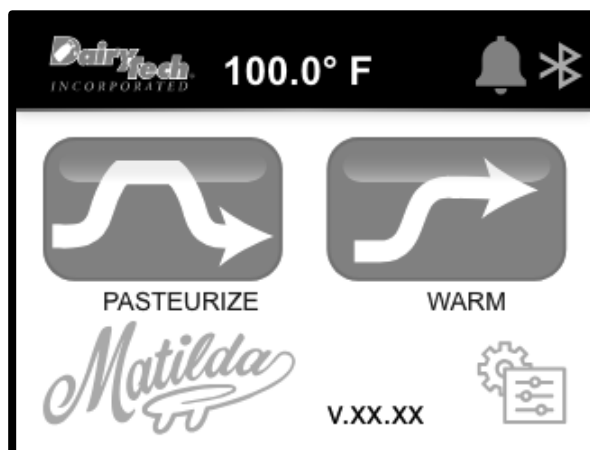
Once the Idle Temperature has been reached, a green LED light will appear to the left of the display to alert you that a cycle may be initiated.

Take care when inserting Perfect Udder® bags into Matilda®. Insert one bag at a time to avoid overflowing the drain. It is normal that some water run out of the drain when placing bags. This helps to keep the water fresh in the unit at all times.

Choose any combination of bags. Each side of Matilda® can hold:

- One 4L bag
- One 3L bag
- Two 2L bags

Once the bags are inserted, close both lids. Matilda® will not operate with the lids open.



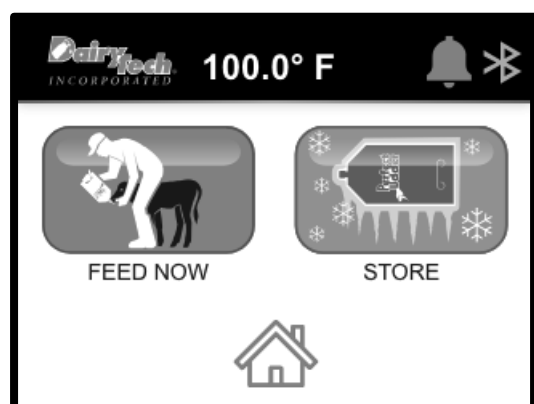
To begin operation, choose:

Pasteurize or Warm

PASTEURIZE



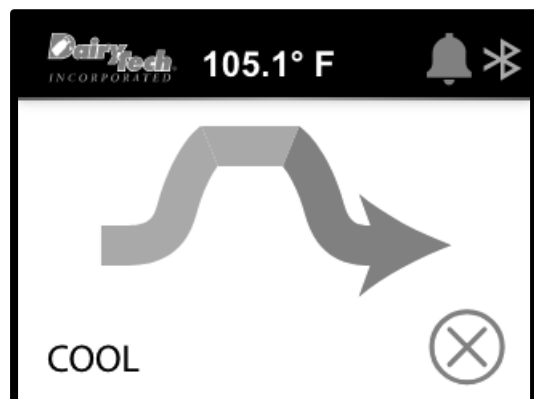
Choosing “Pasteurize” will complete the process of heating the Perfect Udder® bags to the set pasteurization temperature, holding there for the Pasteurization Dwell time, and then cooling down to the Cool Temperature and hold there for the Cool Dwell time.



At this point you have two Pasteurization Profiles to choose from:

1. **FEED NOW:** Colostrum is pasteurized then cooled to a predetermined **Feeding temperature** for immediate use.
or
2. **STORE:** Colostrum is pasteurized then cooled to a predetermined **COOL temperature** for storage in a refrigerator or freezer for future use.

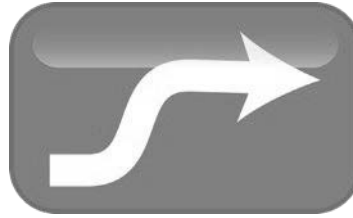
NOTE: The parameters for setting these temperatures and dwell times can be adjusted in the Settings menu.
(see *Adjust Settings*)



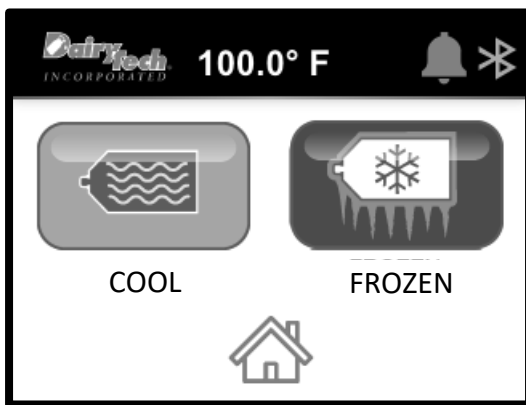
Matilda® will sound an ALERT to notify you when your selected profile is complete *(If you are using the Perfect Udder® app, you can also receive this notification on your phone.)*

Lift the lid(s) and carefully remove the bags from the equipment. The bags of colostrum are now ready for feeding or STORAGE, depending on your profile selection.

WARM



In this cycle, the Perfect Udder® bags will warm to your pre-set Feeding Temperature and then hold there for your pre-set Feeding Dwell Time. Do not take the bags from the machine early as there may still be ice in the bag which will lead to poor colostrum absorption and loss of energy for the calf.



You have two Warming profiles to choose from:

1. **From COOL:** Use this option when warming colostrum that has been refrigerated.

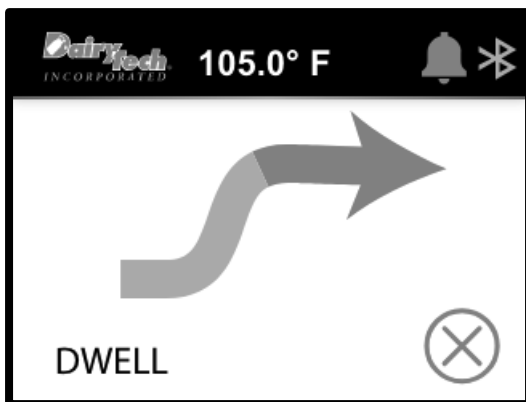
or

2. **From FROZEN:** Use this option when warming colostrum that has been frozen.

NOTE: The parameters for setting these temperatures and dwell times can be adjusted in the Settings menu. (see *Adjust Settings*)



NOTE: If the colostrum has not been cooled to refrigeration temperatures of approximately 39°F (4°C) you may need to reduce the WARM DWELL time to avoid exceeding the Feed Temperature. Refer to the WARM DWELL setting on page 18.



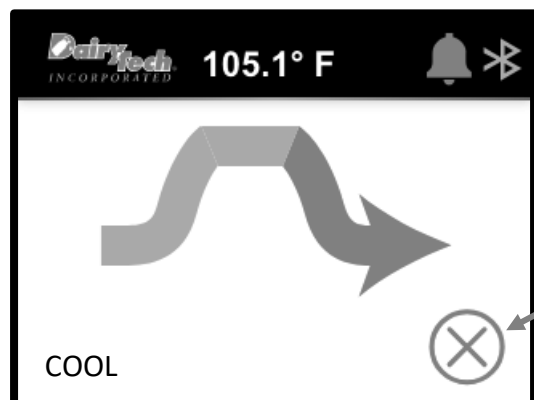
Matilda® will sound an ALERT to notify you when your selected profile is complete (*If you are using the Perfect Udder® app, you can also receive this notification on your phone.*)

Lift the lid(s) and carefully remove the bags from the equipment. The bags of colostrum are now ready for feeding or STORAGE, depending on your profile selection.

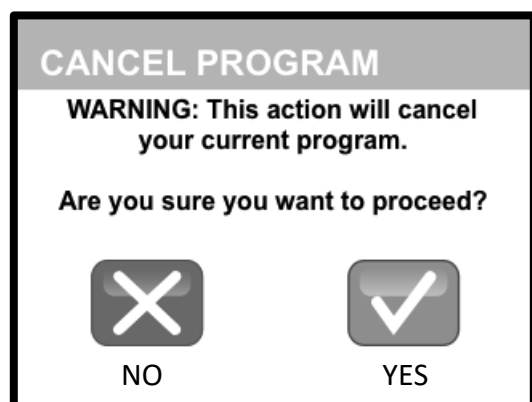
Always check the temperature of the colostrum before feeding to make certain it is not too hot (>110F) or too cold (<90F)

MANAGEMENT HINT: Colostrum fed either too hot or too cold will have a great impact on absorption of IgG. Colostrum greater than 110°F can be dangerous for the calf. Cold colostrum can also deplete the calf of much needed energy and can often lead to failure of passive transfer.

CANCEL PROGRAM



If you want to cancel a program, simply touch the “**CANCEL**” button in the lower right corner of the controller screen.



After you select “CANCEL”, you will see another screen that will ask you to confirm that you wish to cancel the current program.

- Selecting “**NO**” takes user back to program already in progress.
- Selecting “**YES**” terminates program and takes user back to HOME Screen.

QUALITY CONTROL AND SYSTEM MONITORING

The following recommendations should be carried out when the system is first installed and then on a monthly schedule to make certain that the pasteurization process is working adequately.

1. Follow all instructions for proper installation by thoroughly reading the manual.
2. Use quality colostrum in the machine. The process can be overwhelmed if there are too many bacteria to begin with.
3. Handle the colostrum cleanly after pasteurization to prevent recontamination.
4. Verify display temperatures periodically with a second thermometer to be sure that the displayed reading matches closely with a trusted calibrated source.

TIME & TEMP FOR PROPER PASTEURIZATION

Colostrum 140°F (60°C)/ 60 minutes

HELPFUL HINTS FOR SUCCESSFUL PASTEURIZATION

Time pasteurization so that it happens as quickly as possible after harvest of the colostrum. If pasteurization is not going to be started for more than a couple of hours, it will be important to first cool the colostrum so that spoilage and pathogenic bacteria do not multiply in the product.

1. **Will I need to add anything to the colostrum after it has been pasteurized?** Not Usually. There are certain vitamins that are heat sensitive and may be decreased in concentration due to the pasteurization process but to our knowledge, no cases of deficiency or hypovitaminosis have been attributed to proper pasteurization. There may be circumstances due to regional or farm-specific conditions that would dictate supplementation of vitamins, minerals or even added fat/protein. Always check with your local veterinarian if there are such suspicions and treat according to their instructions.
2. **What if the colostrum becomes spoiled before I pasteurize it?** This condition is fairly common and can happen at times even when the same successful routines have been followed. There are spoilage bacteria in colostrum that release acid as their by-products. This is usually lactic acid, but there are also others. The release of acid from these proliferating bacteria then drives down the pH of the colostrum making it more acidic. Once the product is pasteurized it is safe for the calves to drink, but this can lead to rancid odors and flavors that might decrease consumption by the calves. Digestibility might also be different which can lead to scours. In cases of severe drop in pH, the colostrum will separate completely with a very thick layer of “cheese” on top or thick like pudding throughout the product. This is not due to overheating. It is due to the fact that protein denaturation and separation is made worse by the added heat of the pasteurization process. Heat combined with spoiled colostrum of low pH is a bad recipe which is why we recommend that you always try to pasteurize as soon as possible after harvest.
3. **What is the optimal routine for handling colostrum?** We recommend that colostrum be pasteurized immediately after harvest and then either fed at once or cleanly transferred to a colostrum bank to be refrigerated or frozen. The colostrum can then be warmed to body temperature prior to feeding.
4. **Are there ways to preserve the colostrum if refrigeration is not an option?** Yes. Potassium Sorbate and other preservatives can be added to colostrum that is already pasteurized and this will help to prevent the growth of any remaining bacteria in the product. It is important to note that K-sorbate will not kill existing bacteria but will prevent any new growth. **NOTE: DO NOT ADD IT PRIOR TO PASTEURIZATION** as it will cause a lower pH and the symptoms described above including thickened or separated product and bad flavors.
5. **Will I harm immunoglobulins if I pasteurize colostrum?** NO. When done properly colostrum can be successfully pasteurized to eliminate the same pathogens that can be found in the milk. These pathogens are even more dangerous in colostrum since these bacteria and viruses can easily pass through the gut wall along with the large proteins that impart immunity to the calf. Colostrum can be safely pasteurized at 140F for 60 minutes to remove all pathogens without significant damage to immunoglobulins. Colostrum pasteurization should be as much a part of herd biosecurity as milk pasteurization

TROUBLE SHOOTING MATILDA®

- This guide is intended for use as a troubleshooting directive. All electrical tests and diagnostics should be performed only by those skilled in the electrical profession.
- All electrical testing and repairs should be performed by an experienced professional or technician trained in the electrical trade.
- Serious injury or death may result from improperly testing or handling this equipment.
- This unit contains HIGH VOLTAGE electricity that can cause serious harm or death.



Warning:
Hot Surface



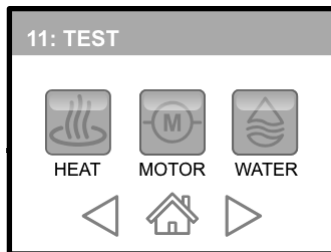
Warning:
High Voltage



Caution:
Important
Information

All parts can be ordered at our website

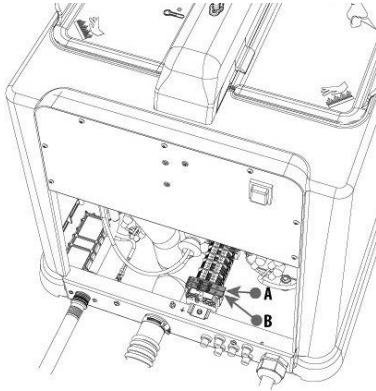
www.DairyTechInc.com



Remember, if you are experiencing issues with your Matilda®, you can go into her settings and scroll to “TEST”. Once you are there, you can perform a checkup on the three main components: HEAT, MOTOR, WATER.

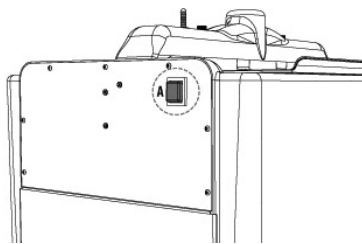
1. No Power to the Control Panel

- Check to be certain unit is plugged into 240vac outlet and that there is power at the outlet.
- Check fuses F1 & F2 on the DIN rail in the back of the machine. These are the Line 1 and Line 2 supply fuses. If blown, replace with 5x20mm 3.0A 250V fast blow fuses. DO NOT REPLACE WITH OVERSIZED FUSES.



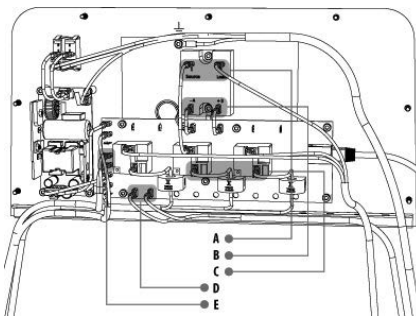
A. Fuse F1
B. Fuse F2

- Check the toggle switch to see if it is lit when switched on. This should indicate that power is getting to the switch.



A. Power Switch

- Check for 240vac power between the bottom switch terminals. Once the switch is flipped check for 240VAC at the top two terminals on the switch. Replace if necessary.

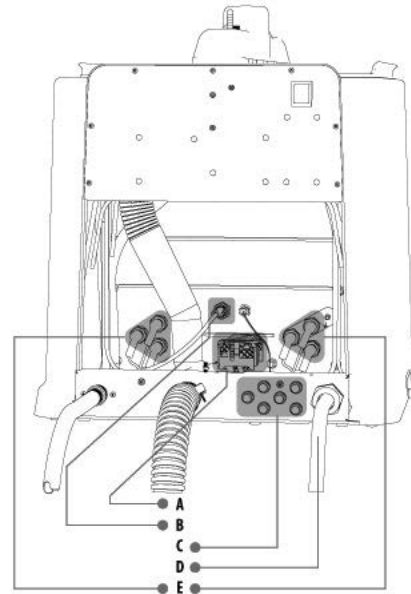


A. Top Switch Terminals
B. Bottom Switch Terminals

- The control itself could be malfunctioning or internally damaged. This is only rarely seen. Call for assistance.

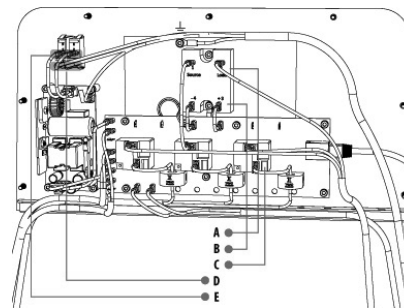
2. Matilda® Does Not Heat:

Be certain that breakers on the back of the machine are not tripped. If the breakers are being tripped, the system is likely being shorted to ground. Look for damage to the power cord, terminal blocks and heaters to indicate trouble areas. Have the system checked by a certified electrician before operating.



A. Terminal Block
B. Temperature Switch Terminals
C. Circuit Breakers
D. Power Cord
E. Heating elements

- Has the over-temperature switch on the back of the tank tripped? Check continuity across the temperature switch terminals.



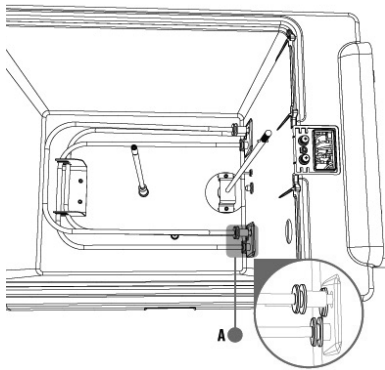
A. SSR Terminal 1 & 2
B. SSR Pins 3 & 4
C. Relay 1&2 Lower Terminals
D. Water Valve Terminals
E. Temperature Switch Terminals

- Is there power getting to the relays? Check for 230VAC across the lower terminals of relays 1 and 2 on the power board.
- Once activated, check continuity across the terminals of each relay on the power board and across SSR Terminals 1 and 2 to be certain they are closing.
- Is the DC signal from the control arriving at the SSR? Check across SSR Pins 3 and 4 for 24VDC.

3. 240 VAC is Getting to the Heating Elements, but Still No Heat.

- Check for continuity through the heating elements. If no continuity, replace the heating element with the included spare or order a replacement from Dairy Tech, Inc.

HEATING ELEMENTS: The heating elements are replaced when necessary by removing the back panel after disconnecting all power to the unit. Drain the tank of water. Pull the terminal boots back from the heater terminals and disconnect the ring terminals. Loosen the 2 nuts that attach each heating element to be removed. The elements must be removed in order from top to bottom. Use caution when removing to avoid dropping or striking the heaters against each other. Remove the top heater by sliding it forward into the tank and lifting it out of the unit. The middle and bottom heaters may then be removed as needed.



A. Round Gaskets/Sealing Washers

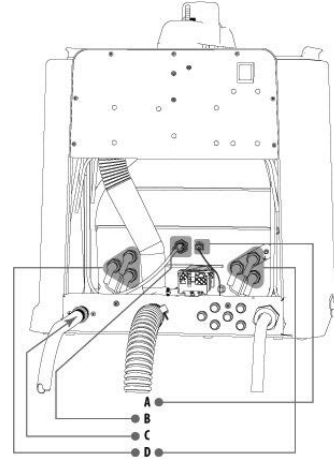
Replace the element in the opposite order of their removal. **DO NOT OVER-TIGHTEN THE HEATER ELEMENTS.** Make sure all 6 round gaskets are in place against the inside surface of the tank.

4. Matilda® Does Not Get to Temperature, but the Heater is Hot or Heats Slowly.

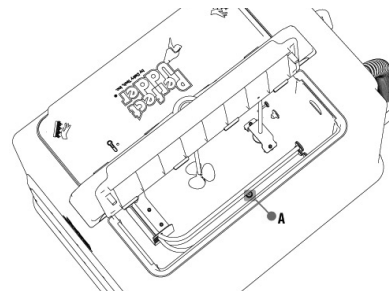
- There are two (2) or three (3) active heating elements in each unit depending on the model. Check resistance on each element with the power off to determine if one needs replacing.
- Make certain that the agitator motor is turning during the cycle. It should be on during heating, timing, and cooling cycles. Replace if it is not working.
- Cold water is coming into the system. If there is a leak in the system, such as a leaking cold-water solenoid valve, the heater cannot keep up and the colostrum will not heat properly. Repair the leak or replace the valve.

5. Water is Leaking from Under the Unit

- With power disconnected from the unit, open the back panel and check the heating elements, over-temperature switch, thermistor, and water valve for leaks. Also check the thermistor in the bottom of the tank and for damage to the tank itself.



A. Thermistor
B. Temperature Switch Terminals
C. Water Valve
D. Heating Elements

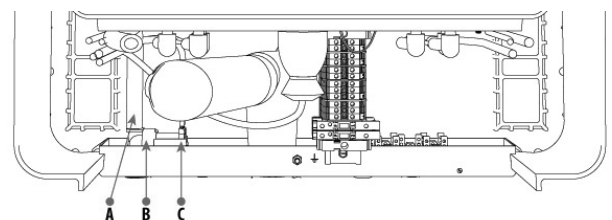


A. Thermistor (in the bottom of the tank)

6. Cooling Solenoid Valve Will Not Stop Running

- Check the power supply to the valve. IF there is power keeping it open during unwanted times, the control could be malfunctioning, especially if the cold output LED # is on at the wrong times. Replace Control.
- It is possible that some debris has held the solenoid open. Disconnect power and remove tubing from valve inside cabinet. Blow into the supply hose to eject any debris from the valve or force water backward through the valve. The valve may need to be replaced if it is powering properly but not closing when the solenoid closes.

Top View looking down into back side of Matilda®

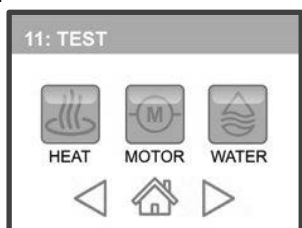


A. Tubing on Valve
B. Valve Supply Connection
C. Water/Cooling Solenoid Valve

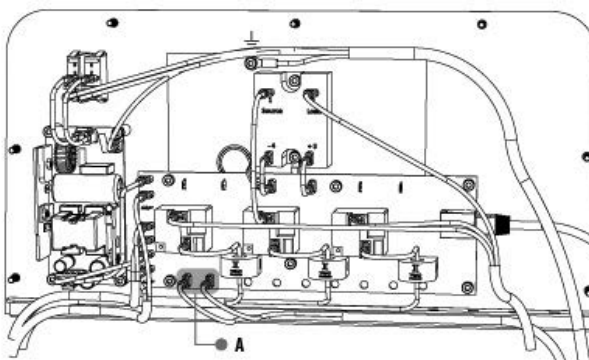
7. Matilda® Will Not Cool:

At the end of the heating and time-out cycle, the cooling solenoid valve should automatically open and allow cool water into the machine.

- Make certain the discharge drain is not blocked, kinked or obstructed with back pressure of any kind.
- Make certain the cold-water supply to the unit is always on. It is common to find that someone has shut the valve not knowing its importance.
- Check the cooling solenoid valve.
- Troubleshoot valve by pressing SETTINGS – TEST – then WATER VALVE. Is there power to the solenoid valve? If the power is on and the machine has water but it will not flow, replace the valve.



- No power to the valve? Check for power at the water valve terminals on the power board. Replace if necessary.



A. Water Valve Terminals

- Check the water supply to make sure screens and filters are free from debris and kinks in the hoses.

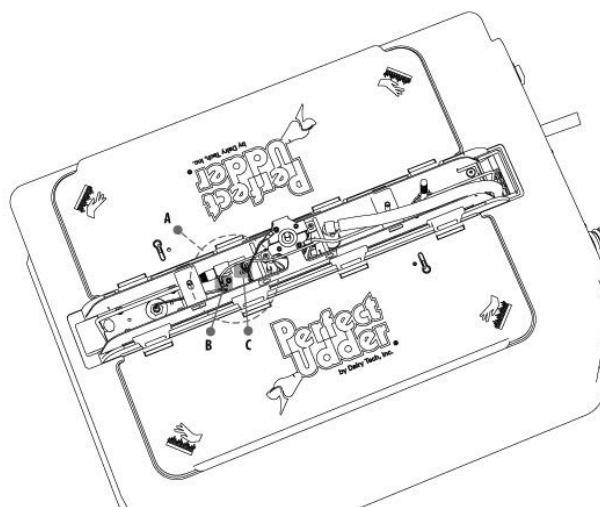
8. Colostrum is Separated or Congealed:

The most common cause for colostrum to separate or congeal is acidification. Fermentation of the colostrum by bacteria will cause the release of lactic acid and other acidic by-products resulting in a lower pH. This in turn allows it to separate. The heat of pasteurization will exacerbate this problem.

- To control this, cool the colostrum during holding stages or pasteurize the colostrum sooner after collection to prevent the start of fermentation.
- Temperatures that are too high (rarely a problem since our units cannot superheat water).

9. Stir Motor is NOT Turning:

Make certain that the wires to the motor have not been damaged or pulled out of the bridge board.



A. Bridge Board
B. Motor Wire Connection
C. Motor Wire Connection

- If there is power to the motor and it will not turn, replace the motor.
- If there is no power to the motor, check the control screen for errors.

10: Touchscreen is Not Responsive

Screen Calibration Error

A number of customers have had issues with their Matilda touchscreens becoming unresponsive and needing to go through the calibration process.

Note: Users may accidentally enter screen calibration mode during machine startup if they impatiently tap on the screen.

If the calibration steps are then tapped through incorrectly, the miscalibration can result in a screen that does not respond to normal touches.

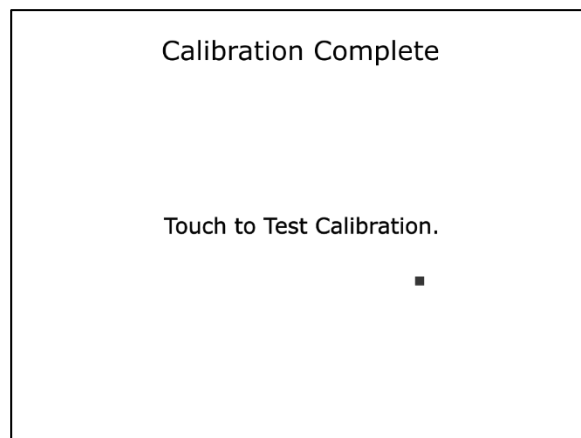
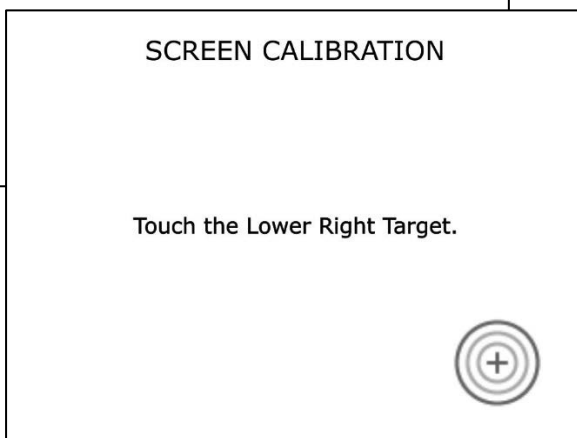
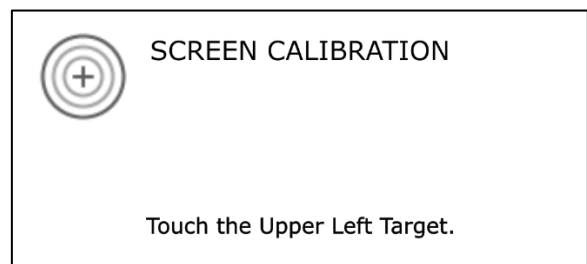
The next firmware release (version > 0.951) will require the user to use a long press to enter screen calibration mode. This should reduce the number of unintentional recalibrations. Firmware updates can be made with an Android device and the Matilda app.

Screen Calibration

During startup, the touchscreen on the Matilda unit can be calibrated. Calibration mode is entered by tapping on the screen while the startup splash screen is visible. Machines with firmware 0.951 and earlier need only a single tap to enter calibration mode. Machines updated beyond firmware 0.951 will require a long tap or “press-and-hold” input to enter calibration mode.

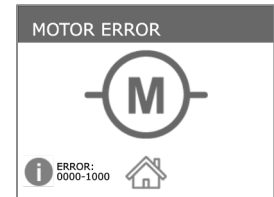


Then tap the center of each bullseye target to calibrate the screen. The calibration can be checked on the following screen. After a brief delay, the machine will resume the startup process.



ERROR SYMBOLS

If Matilda® detects a problem, she will display a RED symbol to help you determine what the issue could be. Tapping on the error number will give additional information about the error. Additional troubleshooting steps are given in the table below.



Symbol	#	Issue	Solution
	N/A	One or both of the lids are open.	1. Make sure both lids are closed during operation. 2. If lids are closed, unplug the unit and check that the cords are firmly plugged into the lid sensors in the back of the unit.
	1	Tank Temperature Failed to Rise	1. Check that the water supply has not been turned off. 2. Make sure both lids are closed during operation. Element 1, 2, and/or 3 Over Current Fault: The measured heating element current is over the limit. 1. Check the heating elements for damage. 2. Check the line voltage and wiring. 3. Try power cycling the machine and checking if the problem persists. Element 1, 2, and/or 3 Under Current Fault: The measured heating element current is under the limit. 1. Check the 1 Phase / 3 Phase machine setting. 2. Check if the circuit breakers needs to be reset. 3. Check the line voltage and wiring. 4. Check the heating elements for damage. 5. Try power cycling the machine and checking if the problem persists. CPU to Bridge Temperature Delta Fault: A large temperature difference was measured between the Controller PCB and the Bridge Motor temperature sensors. 1. Check if the bridge fan is operational. 2. Check if the bridge air path is blocked. 3. Check for other temperature sensor faults.
	0	Tank Failed to Fill	1. Check that the water supply line is connected 2. Check that the water supply is turned on. 3. Check that the water supply is capable of supplying at least 1.5gpm (5.7lpm). 4. Check if the float switch is stuck in the down position. 5. Run the Water Test from the machine settings menu.
	28	Water Valve Electrical Error	1. Check that the water/cooling solenoid valve is connected 2. Check for additional error codes
	12	Motor Temperature Over or Under Limit	1. Do not operate the machine in freezing conditions. 2. Do not operate the machine if the air temperature exceeds 50°C (122°F). 3. Check that the Motor Temperature Sensor is plugged into the Bridge PCB. 4. When powered off, check that the propeller shaft rotates freely and the propeller is clean. 5. Try power cycling the machine and checking if the problem persists.
	10	The Tank Temperature Sensor measurement was out of range.	1. Check that the Tank Temperature Sensor is plugged into the Controller PCB. 2. Try power cycling the machine and checking if the problem persists.
	11	The Process Temperature Sensor measurement was out of range.	1. Check that the Process Temperature Sensor is plugged into the Controller PCB. 2. Verify the tank water temperature matches the temperature reported by the machine using an independent thermometer. 3. Try power cycling the machine and checking if the problem persists.
	13	The temperature of the heater SSR was outside of its operating range.	1. Do not operate the machine in freezing conditions. 2. Do not operate the machine if the air temperature exceeds 50°C (122°F). 3. Check if the air flow to the Power PCB and SSR is blocked. 4. Check that the SSR Temperature Sensor is plugged into the Power PCB. 5. Try power cycling the machine and checking if the problem persists.
	14	A large temperature difference was measured between the Tank Temperature Sensor and Process Temperature Sensor.	1. Check if the float switch is stuck in the up position. 2. Check for other temperature sensor faults.

Symbol	#	Issue	Solution
	2, 3, 6	Element #1, #2, or #3 was using MORE current than expected.	1. Check that the voltage across indicated heating element does not exceed 250 VAC. 2. Disconnect power and check that element resistance is greater than 18 Ω.
	3, 5, 7	Element #1, #2, or #3 was using LESS current than expected	1. Check that the voltage across the middle heating element is at least 200 VAC. 2. Disconnect power and check that element resistance is less than 30 Ω.
	8	The temperature sensors in the tank measured a significant difference.	1. Check that the tank is full of water. 2. Check that the solenoid valve turns off when tank is full during heating.
	9	The controller and bridge temperatures were too far apart.	1. Check that the bridge fan runs when the stir motor is running. 2. Make sure the air filters on the bottom of the machine are not clogged or blocked. 3. Do not operate the machine in freezing conditions. 4. Do not operate the machine if the air temperature exceeds 50°C (122°F).
	15	The power board was not detected.	1. Check that the Power PCB data cable is connected to both the Controller PCB and the Power PCB. 2. Check that the Power PCB power supply cable is connected at both the Power Supply and the Power PCB. 3. Try power cycling the machine and checking if the problem persists.
	19	The bridge board was not detected.	1. Try power cycling the machine and checking if the problem persists. 2. Check that the ethernet cable is firmly connected to the bridge board and the controller board.
	16, 17, 18	The 24VDC, 3.3VDC, or 1.8VDC line in the power board measured out of range.	Power PCB 24V0 Bus Fault, 3V3 Bus Fault and/or 1V8 Bus Fault: The Power PCB bus voltage was out of range. 1. Try power cycling the machine and checking if the problem persists. 2. Check if the wires have been disconnected from the temperature switch terminals. 3. Check for continuity between the temperature switch terminals.
	20, 21, 22, 23	The 24VDC, 5.0VDC, 3.3VDC, 1.2VDC line in the controller board measured out of range.	Controller PCB 24V0 Bus Fault, 5V0 Bus Fault, 3V3 Bus Fault and/or 1V2 Bus Fault: The Controller PCB bus voltage was out of range. 1. Try power cycling the machine and checking if the problem persists. 2. Check that the Controller PCB power supply cable terminals are fully connected to the Controller PCB.
	24, 25, 26	The power board relay #1, #2, or #3 output driver reported an error.	1. Try power cycling the machine and checking if the problem persists. 2. Check for additional error codes.
	27	The power board SSR #2 output driver reported an error.	1. Check the solid-state relay wiring at the Power PCB 2. Check for additional error codes.

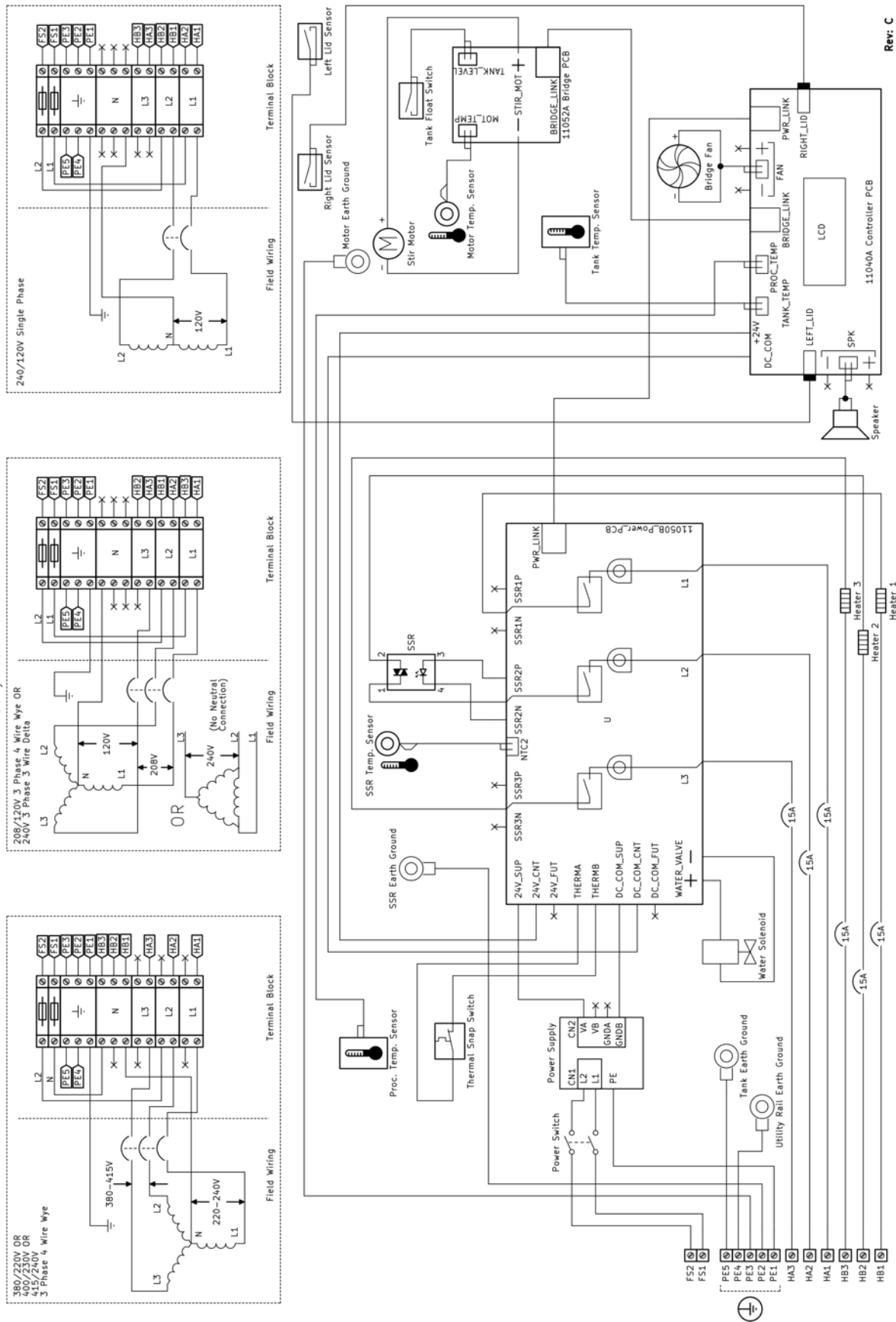
This is only a basic list of possible error symbols, possible issues and solutions. For the most comprehensive diagnostic tool, please consider purchasing the Perfect Udder® App. It not only has the most up-to-date trouble shooting guides, it also gives you the ability to monitor individual machine performance and install system software updates.

Ask your Dairy Tech, Inc. dealer for more information about this valuable tool.

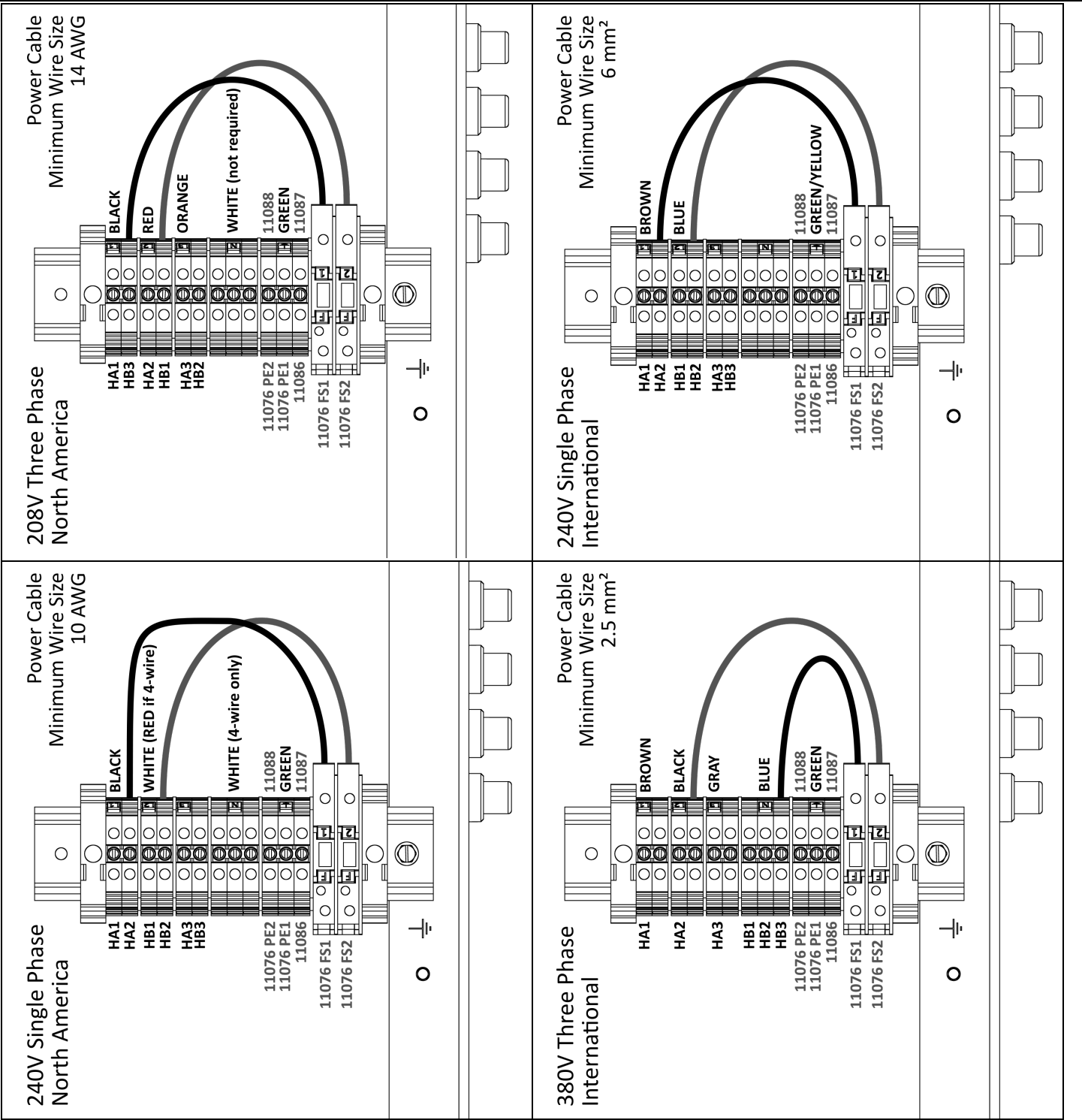


MATLIDA WIRING DIAGRAM

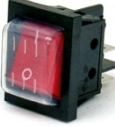
Matilda Wiring Diagram
Dairy Tech Inc.



MATLIDA WIRING OPTIONS



MATILDA® REPLACEMENT PARTS

 Circuit Breaker 15 Amp Circuit Breaker with waterproof cover for Matilda® <i>Part number: QE-CircuitBreaker15</i>	 Drain Operator Rod Complete Drain Assembly for Matilda®. Includes: Drain Rod, Mounting Bracket, Drain Stopper <i>Part number: QM-DrainOperator</i>
 Stir Motor 24v Motor with special endbell; shaft & sticker <i>Part number: QE-Motor24v</i>	 Drain Stopper Replacement Drain Stopper. Mounts to bottom of Drain Operator Rod (<i>Drain Operator Rod sold separately</i>) <i>Part number: QP-DrainStopper</i>
 5x20mm Fuse 507-1266-ND 3A 250V cartridge fuse for Matilda® <i>Part number: QE-Fuse 5x20mm</i>	 Float Switch High Water Float Switch for Matilda® <i>Part number: QE-WtrFltSw</i>
 BagBasket Stainless Steel bag basket used for holding Perfect Udder® bags in place during pasteurize and warm cycles <i>Part number: QM-Basket</i>	 Heating Element 2500watt heating element 230VAC for Matilda®, bolt in style 5D218A <i>Part number: QE-Element2.5kW</i>
 Bridge Bottom ABS bridge bottom half for Matilda® <i>Part number: QM-BridgeBottom</i>	 Lid Universal Lid with Magnets for Matilda® Fits either side <i>Part number: Q-Assy-Lid</i>
 Bridge Top ABS Bridge Top for Matilda® <i>Part number: QM-Bridgetop</i>	 Main PC and Touch Screen Complete replacement for Matilda® Touch Screen. Includes: Touch Screen, Bezel enclosure, Speaker & Decal <i>Part number: Q-Assy-MainPC</i>
 Cooling Fan Cooling Fan - 24VDC, 40mmx20mm <i>Part number: QE-Fan</i>	 Main Power Switch Main power switch Matilda 24VAC, water-resistant <i>Part number: QE-PowerSwitch</i>
 Deck Decal Replacement Decal for Matilda. Protects Touch Screen Controller. <i>Part number: QM-Decal</i>	 Matilda Power Supply 24VDC Power Supply <i>Part number: QE-PowerSupply</i>

	PC Board Incoming Power PC Board for Matilda® <i>Part number: QE-PCA-Power</i>
	Propeller Agitation Propeller. Mounts to Stir Shaft (<i>Shaft sold separately</i>) <i>Part number: QM-Propeller</i>
	Propeller Assembly Complete propeller assembly for Matilda®. Includes: Propeller, Stir Shaft, Shaft Bearing <i>Part number: Q-Assy_Prop</i>
	Ring Terminal Ring Terminal for Water Temperature Sensor. <i>Part number: QE-TempSensorRingTerminal</i>
	Shaft Seal Rotary Shaft Oil Seal. 9x24x7. Teflon coated <i>Part number: QH-ShaftSeal</i>
	Solid State Relay 240V Solid State Relay for Heat Control <i>Part number: QE-RelaySS-240</i>
	Speaker PIU Audio Loudspeaker <i>Part number: QE-Speaker</i>
	Stir Shaft Attaches to Motor. Stainless Steel <i>Part number: QM-ShaftStir</i>

	Thermostat/Thermistor High Temp Thermostat 78C <i>Part number: QE-Thermostat75C</i>
	Water Inlet Valve Water Inlet Solenoid Valve. 24VDC <i>Part number: QP-Valve 24VDC</i>
	Water Temp Sensor NTC Water Temp Sensor <i>Part number: QE-TempSensorProbe</i>

DairyTech[®]
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For parts list and ordering
visit www.DairyTechInc.com

Contact Dairy Tech, Inc.

Dairy Tech, Inc.
34824 CR 29
Greeley, CO 80631

Toll Free: 1-866-384-2697

Local: 1-970-674-1888

Fax: 1-970-686-5871

Hours: M – F 7am – 4pm, MST

Web: www.DairyTechInc.com

eMail: office@DairyTechInc.com