

# OWNER'S MANUAL



TECHNOLOGY FOR MILK



**Milk Cooling Tank for horizontal (HA)  
and vertical open (VA)**



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## CONGRATULATIONS, YOU HAVE JUST PURCHASED A REAFRIO MILK COOLING TANK.

Is your milk cooling tank made with a wall external and internal, lid and bottom in AISI-304 stainless steel, as well as all components that come into contact with milk. The bottom of the cooler has direct expansion refrigeration system, features a slope to facilitate the draining the milk and cleaning the cooler.

The electrical system is composed of an electronic panel with a digital display that measure, through the milk temperature, controls the start and stop of the milk refrigeration and agitation system cycles. In addition to these features, it has various components to ensure the safety of the milk cooler.

The refrigeration system consists of condensing unit(s) dimensioned(s) to guarantee the best performance in milk cooling with low consumption of electrical energy, which combined with excellent thermal insulation, ensures the efficiency of the milk cooling tank.



## IDEAL PLACE FOR INSTALLATION AND SAFETY MEASURES

**For better performance and durability of your milk cooling tank, We recommend following the instructions below:**

- Good quality electrical power, compatible with the milk cooling tank, inside current regulations;
- Try to install your reservoir in a location that is easily accessible from the truck collector and close to where milking will take place;
- The place must be a clean, cool, ventilated environment, with little entry out of the sun and away from electrical equipment, such as electric fence devices;
- The floor must be level, made of ceramic or cement, and must withstand the milk cooling tank weight at maximum capacity;
- Never place weight on top of milk cooling cover or unit condenser;

## CLEANING THE MILK COOLING TANK

Through the correct cleaning procedure, it is possible to keep the milk quality, and save water and electricity. Manual cleaning. Properly follow the safety instructions for each of the chemical products used in cleaning, thus avoiding possible accidents.

Because this process is carried out manually by mechanical action, the following steps must be followed strictly, making the cleaning efficient.

1- Immediately after collecting the milk, rinse the milk cooling tank completely with the valve open using good quality lukewarm water with a temperature between 35 and 40 °C until all superficial milk residues are removed.



- 2 - Prepare a solution with chlorinated alkaline detergent (ALCA R 2000) and good quality water with a temperature of 70 to 75 °C, (The amount used. Place this solution in the milk cooling tank. After passing evenly a plastic brush with round bristles, reaching the entire surface of the milk cooling tank, (cover, stirrer paddle, and milk outlet valve).
- 3 - Rinse thoroughly with good quality water (temperature environment) to remove residual alkaline detergent.
- 4 - Perform the same procedure as for the alkaline detergent, but this time using acid detergent (ACID R 2000) with good quality water with a the temperature of 35 to 42°C and prepare according to the cleaning product.
- 5 - Rinse thoroughly with water (room temperature) to remove acid detergent residue.
- 6 - Before adding the milk (30 to 40 minutes) prepare a sanitizer with good quality water and dosage as indicated by the product manufacturer.
- 7 - After this step, let the solution drain completely without need to perform a new rinse.

## MAINTENANCE AND PREVENTIVE MEASURES

- The milk cooling tank must be turned on only after its capacity reaches 10%, with a smaller amount, you can freeze the milk;
- Always turn off and unplug the milk cooling on rainy days or with lightning strikes;
- The measuring ruler must only be cleaned with water and detergent neutral, abrasive products should not be used (steel sponge);
- If the temperature controller does not show any data on its display, check fuses;



- The manual system must be activated when the milk cooling no longer reads the temperature controller.
- In the manual system, you must pay attention to its disconnection, because it does not have an automatic shutdown system, so you must control its operating time so as not to freeze the milk;
- If the problem is not resolved, activate the manual system, and enter contact Reafrio Technical Assistance at +55 (49) 3664-6100;



**CAUTION! Whenever you carry out maintenance or cleaning, unplug the reservoir from the outlet.**

## REAFRIO WARRANTY

### Terms:

1. The milk cooling tank is guaranteed against any manufacturing defects found, provided that the system components have been supplied by the REAFRIO and installed by a duly authorized team or company.
2. Warranty periods are valid as of the date of this document or the identification plate attached to the reservoir.
3. Parts and/or components covered by the warranty will only be replaced or reimbursed if the defects are found by the service technician or by a person duly authorized by REAFRIO. Therefore, it is essential to present an invoice or guarantee certificate, correctly filled.
4. Once the conditions of this guarantee term are satisfied, REAFRIO guarantees the repair the defect or exchange the component free of charge in accordance with the certain warranty periods. In the event of cancellation or expiration of the warranty period, the technical assistance service will be charged.





**Used milk coolers have no warranty.**

## CANCELLATION OF WARRANTY

This guarantee will lose its validity in cases of:

1. Damage caused to the milk cooling tank by misuse, abuse, neglect or lack of proper maintenance, in disagreement with the manufacturer's instructions;
2. Damage caused by accidents or natural agents (electrical discharges and others);
3. Damage caused by improper electrical network installations or subject to power fluctuations;
4. Repairs, modifications, or violations of the milk cooling, carried out by unauthorized person;
5. Amendments, erasures, or doubts in the data of this warranty certificate or on the nameplate of the milk cooling;
6. If the milk cooling is moved or uneven causing an error in the ruler measurement;

The milk cooling will be sent to the supplier for technical analysis, if does not present a manufacturing defect, the expenses will be passed on to the owner.

**IMPORTANT NOTICE** If the milk cooling fails during the period warranty, contact your dealer or Reafrio. The milk cooling should only be repaired or dismantled in the presence of a duly accredited person, under penalty of voiding the warranty.



## WARRANTY CERTIFICATE

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Customer name

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Purchase date

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Serial number

Milk Cooling Tank:  Vertical Open (VA)  Closed Horizontal (HA)

Number of milking:  2 (Two)  4 (Four)

Milk Cooling Tank Capacity:  230L  300L  450L  500L  600L  
 800L  1000L  1250L  1500L  2000L  2500L  3000L  
 4000L  5000L  6000L

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Name of person responsible for delivery

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Person responsible for installation

**REFRIBRASIL INDÚSTRIA E COMÉRCIO LTDA** assures the customer of this milk cooler tank the following guarantee:

- 5-year warranty on all stainless steel.
- 1 year warranty (electrical and cooling components).









### CHECK LIST

Client name: \_\_\_\_\_

Telephone: \_\_\_\_\_

City: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Milk Cooler tank:       Cylindrical (VA)       Horizontal (HA)      Number

Milk Cooler Capacity:  230L       300L       450L       500L

Delivery man's name: \_\_\_\_\_

The person responsible for installation: \_\_\_\_\_

Accessories that come with the milk cooler tank:

Ruler       Electrical equipment       Stainless steel cap       Nylon

Note: \_\_\_\_\_

### DELIVERY CONFERENCE INSTALLED BY REAFRIO

The general operation of the milk cooler tank: \_\_\_\_\_

Security measures: \_\_\_\_\_

Instructions under preventive measures: \_\_\_\_\_

Minimum initial electrical energy: \_\_\_\_\_ Max

Installation Location: \_\_\_\_\_

### INSTALLED BY REAFRIO?

Yes       No If no, why? \_\_\_\_\_

Note: \_\_\_\_\_

I am aware of the entire operation of the reservoir, and I have no further doubts.

\_\_\_\_\_  
Signature of owner/responsible





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State: \_\_\_\_\_

Number of milkings:     2 (Two)     4 (Four)  
 600L     800L     1000L

Cap     Rod/connector

Maximum final electrical energy: \_\_\_\_\_

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delivery man's signature





## TECHNICAL REPORT - ELECTRIC POWER

This document tends to specify and guide the minimum requirements that must be met by the final consumer for the correct functioning of the milk tanks models VA (vertical open) and HA (horizontal open), for that the warranty requirements set by the company **Refribrasil Industry and Commerce Ltd.**

## ELECTRICAL CHARACTERISTICS OF MILK TANKS

All milk cooler tanks mentioned in this document follow one of the characteristics described below:

AC Power system: Single-phase

Voltage: 220Vac

Electrical components: 220Vac

AC Power system: Three-phase

Voltage: 220Vac

Electrical components: 220Vac

AC Power system: Three-phase

Voltage: 380Vac

Electrical components: 220Vac

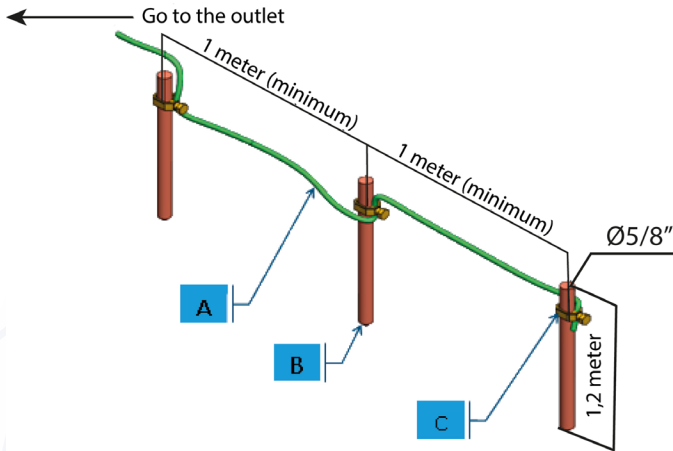
In both cases, the milk tanks are provided with protections that guarantee the efficiency and effective useful life of the items that make up the same. Protections against magnetic effects (short circuit), (overloads) and minimum and maximum limits of electrical voltages admitted.

## GROUNDING INSTALLATION PROCEDURE

Grounding is mandatory for protection against shock, atmospheric conditions, electrostatic discharges, and over voltages.

The following are some recommendations for carrying out the installation of the grounding kit, see Table 1:

- Find the best grounding location, give preference to places with more moisture;
- The distance between the rods must be at least 01 meters apart;
- The ground rod must be grounded leaving the end (Approximately 10mm) to facilitate the placement of the o and grounding;
- The distance required for installation may vary depending on the conditions of the location where the milk tank will be installed;
- The grounding cable must be properly connected to the outlet.



**Composition of the grounding kit**

Item	Description	Quantidad
A	Grounding cable 1x6mm <sup>2</sup> VD/AM	10 meters
B	Ground Rod 5/8" x 1.2m	03 parts
C	Grounding connector	03 parts

## ACCEPTABLE LIMITS ON ELECTRIC POWER SUPPLY

Every milk tank is willing to tolerate variations for more or less in the supply of electricity to it. This limit meets the requirements to maintain the durability and quality of the items that are present in the milk tank.

The acceptable limit corresponds to variations of 10% of the rated voltage (TN) of the electrical network. As a result, the reading voltage (TL) with the cooling system in operation must correspond to the values in table 01.

**Table 01:** Acceptable voltage limits

AC POWER SYSTEM	VOLTAGE NOMINAL (TN)	RANGE OF VALUES SUITABLE
SINGLE PHASE	220V	0,90TN ≤ TL ≤ 1,10TN
THREE PHASE	380V	0,90TN ≤ TL ≤ 1,10TN
THREE PHASE	220V	0,90TN ≤ TL ≤ 1,10TN

To prevent unsuitable electrical energy values, it is incorporated into the reservoir controller a monitoring system of voltage, which disables the cooling system when the voltage is outside the appropriate values programmed into it.

## ACCEPTABLE POWER LIMITS OF DEVICES WHAT CONSTITUTES THE MILK COOLER TANK

### Temperature Controller

The temperature controller used in the reservoirs follows the following specifications:

**Manufacturer:** Full Gauge Controls

**Model:** MT-516RVTi plus

The controller has a rated voltage supply of 115Vac or 230Vac

The product has a tolerance of  $\pm 10\%$  against power variations power supply, that is, the appropriate value is between 207V and 253V.

According to the manufacturer, voltage ranges other than the appropriate one can result in damage to the controller, such as the burning of internal components, loss of parameters, variations in temperature reading, source overheating, between others.

### Condenser Unit





Refrigeration condensing units, manufacturer Danfoss line MT – Single units cover models from sizes MT19 to MT64 being single-phase and three-phase.

Table 2 shows the values of electrical voltages supported by the compressors in order for them to function properly.

**Table 02: Acceptable voltage limits for Danfoss compressors**

SUITABLE VALUES OF VOLTAGE RANGES COMPRESSORS MT LINE DANFOSS			
	208-230V / 1 / 60Hz	208-230V / 3 / 60Hz	380 / 3 / 60Hz
<b>LOW VALUE OF NOMINAL VOLTAGE 60Hz[V]</b>	<b>208</b>	<b>200</b>	<b>380</b>
<b>LOW RANGE VALUE 60Hz[V]</b>	<b>187</b>	<b>180</b>	<b>342</b>
<b>LOW VALUE OF NOMINAL VOLTAGE 60Hz[V]</b>	<b>230</b>	<b>230</b>	<b>380</b>
<b>LOW RANGE VALUE NOMINAL 60Hz[V]</b>	<b>253</b>	<b>253</b>	<b>418</b>

Limits outside the ranges described above may result in damage to the unit. Capacitors, such as burning out of the starting capacitors, overheating in the compressor, reduced useful life and excess number of starts caused from overheating, as well as the burning of the electric motor.







TECHNOLOGY FOR MILK

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