

# EMERY THOMPSON

## **BATCH FREEZER INSTALLATION**

OPERATING, MAINTENANCE  
AND CLEANING MANUAL

MODEL CB200 COUNTERTOP



**Congratulations** and thank you for purchasing your new model CB200 batch freezer. With the CB200, you will be able to produce some of the finest Super Premium Hard Ice Cream, Fresh Fruit Sorbets, Artisan Gelatos, Old World Italian Ice and New England Style Frozen Lemonade. Your new machine has been built for speed, versatility, and longevity, as well as safety. It has been meticulously crafted and tested to give you many years of satisfied service. Please be sure to go over the entire instruction manual prior to using your new machine.

**STATE LAW REQUIRES THAT THE ELECTRIC POWER TO  
THIS MACHINE BE INSTALLED BY A LICENSED  
ELECTRICIAN – ONLY**

**FAILURE TO ADHERE TO THIS WILL VOID YOUR WARRANTY**

**YOUR FROZEN DESSERTS  
(FREEZING UP YOUR MACHINE)  
What you did wrong!**

When our customers first run their new Emery Thompson CB-200, what we too often hear is how they froze the machine up solid and the machine just stopped spinning.

Here is a list of what went wrong:

1. They did not read the instruction manual. Unlike a cell phone (that does not come with an instruction manual), your investment comes with a very comprehensive manual. Your new batch freezer is not “Intuitive.” You must read and understand the entire instruction manual – and especially read the warnings! It’s a lot of money to spend and not operate it properly.
2. If the scraper blades (the two long pieces of Delrin plastic) are not installed properly, the machine will start making noise in a few minutes and either freeze up or take three times as long to make a batch. The curved tip of the blade goes to the back of the machine and the other tip of the blade which is cut off on a 90 degree angle goes to the front of the machine. If this is wrong the machine will not operate properly. You need to be aware of this Each and Every time you assemble the machine. We have added a dimple on the front of each blade so that you can more easily see which way the front of the blade faces.

3. You cannot do “test” half batches. You must have two quarts of product in the freezing cylinder of the CB-200 in order to make a batch. Less than this will freeze up the machine! Do not turn on the refrigeration switch with only water in the machine. Water is not a dairy blend nor is it a water ice. No sugar or no dairy and your machine will freeze up solid.
4. YOUR BLEND: You’re going to have to trust me on this one – I’ve been building and running Emery Thompson Batch Freezers since I was sixteen years old. Your “blend” which came from a magazine, cookbook or you made it up will work fine in your home ice cream freezer or a cheap Italian or Chinese machine. Why? Because it takes a very long time to freeze – 40 minutes or more as compared to  $\frac{1}{4}$  of that time in your new Emery Thompson. And it has little or no freezing capabilities beyond your home refrigerator. Your Emery Thompson has tremendous freezing ability. But without the proper level of solids, your recipe is going to freeze up in a modern piece of dairy equipment. Solids come in the form of sugars, cream and some nuts like cashews. Splenda, Stevia and Xylitol have no solids.. Milk does not have enough solids. Coconut water has virtually no solids. Cream of Coconut does. While you can use all these products in your formula, they alone will not freeze. You are welcome to call us and we can discuss your formula with you... but physics and the laws of freezing cannot be changed. Water and flavor do not alone make a sorbet and milk alone does not make an ice cream.

# CAUTION

On 115 volt models of  
the CB200:

Be sure that the batch freezer  
is the **ONLY** appliance  
running on the circuit you  
use, otherwise, overload  
**WILL** occur!

No toasters      No blenders

No microwaves

No coffeepots      No irons

# SUPPLEMENTAL BULLETIN

PLEASE NOTE THAT DEPENDING ON THE  
MANUFACTURING DATE OF YOUR MACHINE, THERE  
ARE TWO FEATURES THAT MAY HAVE CHANGED:

1) The refrigeration  
control is a toggle switch.



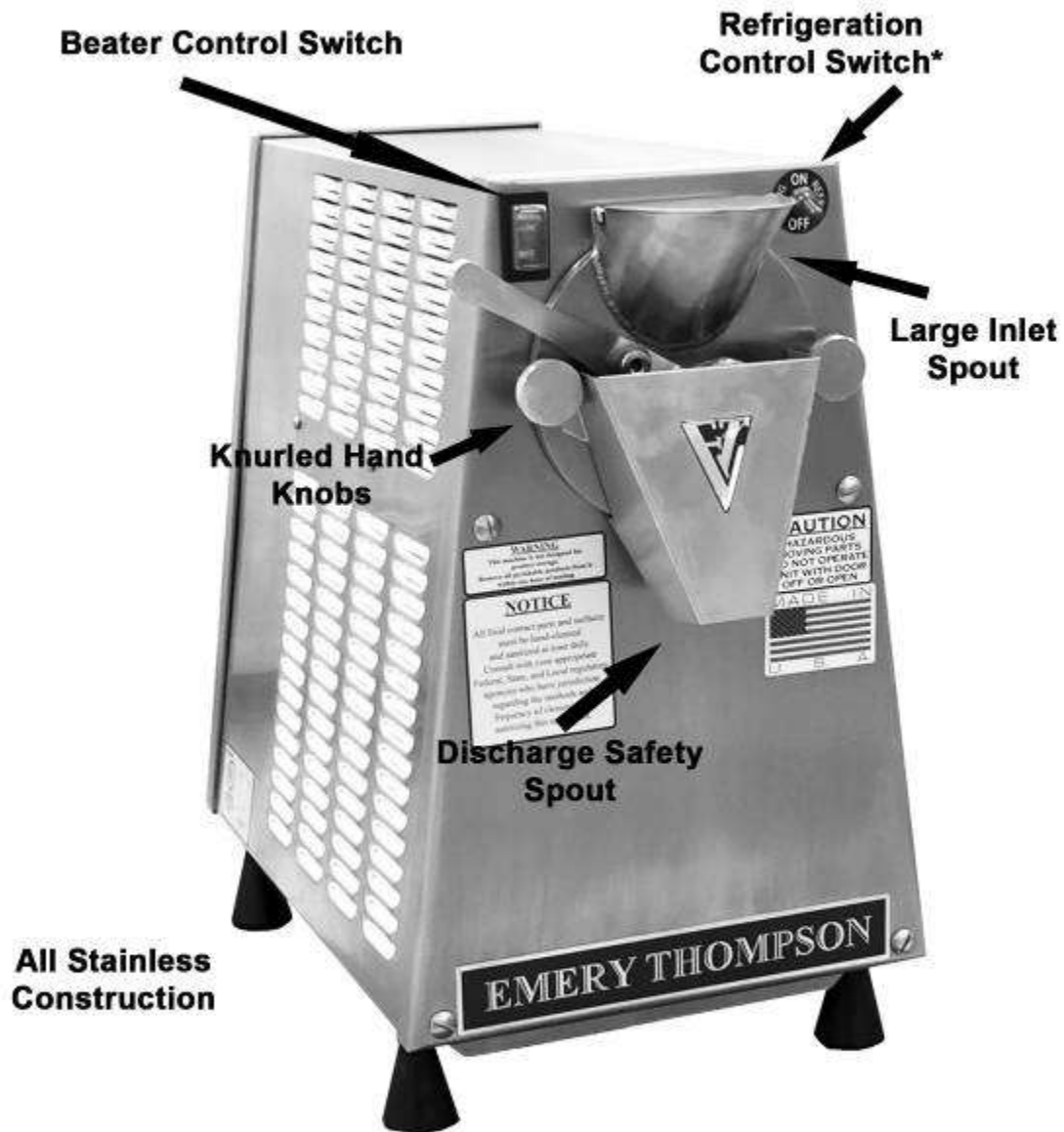
2) We have incorporated  
an external, resettable  
circuit breaker, located at  
the top rear panel of the  
machine.



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## Section 1: OVERVIEW



**\* Note: Earlier production units may have a rotating timer rather than an On/Off switch**



## **Section 1: UNPACKAGING**

Your CB200 will arrive to you on a small pallet with a heavyweight cardboard box covering it. The machine and pallet combined weigh approx. 175 pounds; the machine by itself weighs 118 pounds. Please use a helper to unpackage and move the machine safely.

Upon delivery, immediately inspect the pallet and packaging for any sign of damage. If possible, have the delivery driver wait if you suspect damage and follow below:

Begin by cutting all the way around the cardboard box at 2" above the pallet surface. Use a short box-cutter, and go around the box several times to cut all the way through the cardboard. Once cut through, lift the box straight up and off the pallet/machine.

Carefully remove the shrink-wrap off of the exterior of the machine.

The machine is bolted through its' feet from the underside of the pallet. Use a 1/2" wrench to remove all four bolts, and the machine will be free of the pallet. With the assistance of a helper, lift the machine and move to your work area.

The pallet and box can be saved so that if the machine is ever moved, it can be done so safely.

## **Section 2: WORK AREA REQUIREMENTS**

As stated in section 1, the machine weighs 118 pounds, and has some momentum when running, so it is necessary to position it on a solid work surface that can easily support this weight, and resist wobbling. For reference, the machine height should be set up so that the top of the spout is at chest height of the operator.

**ELECTRICAL CONNECTION:** The model CB200 machine comes with a 72 inch long flexible power cord that has an L14 - 20 locking male plug installed on it. It **MUST ONLY** be connected to a matching receptacle which has been wired to a dedicated and fused 20-amp circuit. Your machine has a wiring tag on its cord, as well as electrical specifications on its serial number tag on the rear of the machine. Your electrician can also call us for technical information if necessary during business hours.

Clearance around the machine is critical for airflow and performance. Also, please be sure to remove all plastic protective film from the sheet metal surfaces. The distance away from walls, other equipment, etc. should be 8" in the rear, 18" on each side, 18" on top, and its' front open to the room. It also should remain on the four feet it was shipped on, not only for airflow but also for cleaning beneath it.

The surrounding area should be kept free of clutter, the floors dry, and with at least some air circulation.

### **Section 3: SAFETY**

First, be sure to read and understand this machine manual, and familiarize yourself and other operators with the machine features, its operation, cleaning, and maintenance.

Your machine is equipped with several important safeguards that should never be removed or altered. DO NOT remove the following items:

- Inlet spout combination lid and gate – restricts fingers from coming in contact with moving blades/dasher, and helps control splashing.
- Door discharge guard – restricts fingers and utensils from coming in contact with moving blades/dasher. Also, in combination with the discharge chute, funnels product into smaller containers neatly.

The sides, front, and rear section of the machine have ventilation openings in them. All but the rear panel are louvered to deflect food and splashing liquids away from the inside. Never spray water directly at/into these openings.

If your machine is set up with a plug on the end of its cord, make absolutely sure your hands are dry when plugging it in, or unplugging it.

When operating the machine, avoid distractions such as conversations, television, small children, etc.

The door and the dasher are heavy parts, and are slippery when wet. Use extreme care handling them. Keep the floor and work area neat and dry to avoid slippage. Do not use the top of the machine as a storage spot.

### **Section 3: SAFETY (Cont'd)**

In addition to the above:

- DO NOT operate your machine unless it is connected to a circuit wired, grounded, and properly fused by a licensed electrician.
- DO NOT put fingers, hands or any utensils in either the inlet spout or door outlet.
- DO NOT operate the machine unless it is properly assembled and all guards are in place.
- DO NOT force any of the (washable) parts together or into/on the machine. All parts should fit together easily.
- DO NOT operate the machine with the freezing cylinder empty.
- DO NOT turn on the machine's refrigeration switch with only water in the freezing cylinder.
- DO NOT let your product over-freeze during production. This is the most common mistake a new operator makes.

## **Section 4: OPERATION**

Your new CB200 batch freezer is very easy to operate, having only two controls on it. The dasher/blade assembly (mixer or beater) is controlled by an illuminated rocker switch at the upper left-hand corner of the machine. When the switch is "rocked" upward, it illuminates signifying that the dasher is spinning. This switch also functions as a circuit breaker to protect the drive motor. If your product is being over-frozen and gets too stiff, the switch will automatically trip like a circuit breaker, and automatically switch itself off.

The second control is for the refrigeration, and is an ON/OFF toggle switch. Turning the switch on will start the refrigeration process. Products freeze at different times, so it is best to log actual freezing times for repeatability. Eight to ten minutes is a good starting point. **NEVER LEAVE THE MACHINE UNATTENDED WHILE IN OPERATION.** As mentioned in the above paragraph, if the machine is allowed to run too long or left unattended it will eventually freeze your product solid and turn itself off. The machine will then be unusable until either your product thaws, or the product is manually removed from the cylinder.

Also remember that different products will take on different amounts of air (overrun), so depending on the product you are making, you will be filling your machine with less than the 3 quarts/liters maximum output capacity.

## **Section 4: OPERATION** (Cont'd)

The normal sequence of operation, assuming the machine is cleaned and sanitized, would be as follows:

- flip the inlet spout guard open.
- pour in the mix/ingredients.
- close the inlet spout guard
- turn on the beater switch (upper left).
- turn the toggle switch to the ON position.
- check the stiffness of the mix by slightly and quickly opening the gate to allow a small amount of product to come out.
- when the desired stiffness is achieved, **MAKE SURE** you immediately turn off the refrigeration.
- open the discharge gate and allow the product to come out as fast as it will flow, and fill your container(s).

See the next section for cleaning and sanitizing.

## **Section 5: CLEANING , ASSEMBLY and SANITIZING**

Note: Your local or state health inspector will always have jurisdiction over the methods and chemicals that he/she prefers for use on this machine. Our instructions are based on industry standards, and should be discussed with your inspector.

The first step toward insuring a clean and sanitary machine is to identify the various parts that will or could come in direct or indirect contact with food. (see diagram 5-A, p.19) These parts have to be cleaned and sanitized at the end of each use or period of use that lasts one hour or more without refrigeration/freezing. In other words, if you leave mix residue in the machine for an hour or more before your next batch, the machine should be disassembled, cleaned, and sanitized. All of the parts to be cleaned are dishwasher top rack safe, or can be manually cleaned with warm water and dish washing detergent, along with an abrasive hand pad. The inside surface of the freezing cylinder will have to be manually washed with detergent and thoroughly rinsed.

Once the parts have been hand or machine washed, then dried, there are three areas that require a coating of food-grade grease on them prior to assembly, the rear section of the dasher shaft, the door outer surface where the gate slides against it (see diagram 5-A, p.19), and the inside (bore) of the white rear bushing in the cylinder. On the dasher shaft, coat the surface of the last 2 1/2 inches of the REAR of the shaft with a film of food grease, then install two blade springs, the blade, and then while holding that blade on do the same for the other blade. Then smear grease into the bore of the white plastic bushing that goes through the freezing cylinder. Now the dasher can be inserted into the freezing cylinder.

## **Section 5: CLEANING, ASSEMBLY and SANITIZING (Cont'd)**

Put the drive end of the dasher into the bushing in the rear of the cylinder, and push it all the way into the bushing. Rotate the dasher assembly so it engages onto the drive motor, and the assembly moves backward until the blades touch the rear of the cylinder. Wipe off any excess food grease that has smeared off at the bushing.

Smear a thin film of food grease on the door surface where the round discharge gate slides against it during opening and closing of the handle. (see diagram 5-A, p.19) The round gate has an O-ring under it, and if the O-ring gets dry, it has a tendency to roll out of its groove. Check and be sure the small round bushing is in the pocket on the backside center of the door, and put the door in place on the two mounting studs. The nose of the dasher shaft should go into the round bushing in the door. Now install and evenly tighten each of the two knurled knobs. The unit is now ready for sanitizing.

Sanitization is the important step of using a chemical to kill any remaining bacteria just prior to introducing food products to the machine. Emery Thompson uses and recommends the sanitizer "Stera-Sheen Green Label" made by Purdy Products Company. Mix a 2-quart batch of sanitizer (following the manufacturer's instructions) and pour the mixture into the CB200. Turn on the beater motor, and agitate this mixture for a full minute (NOTE: DO NOT run the refrigeration at this time!) After a minute, discharge the sanitizing fluid, and from this point forward, do not put fingers or dirty utensils on any surface that could introduce bacteria into your product. The sanitizer (once diluted) is food-safe, and does not need to be rinsed from the machine with water.



You are now ready to add your product to the machine! BE SURE that when making any product that will take on air, enough room is left in the freezing cylinder to accommodate it. (i.e.- ice cream mix add approximately 2 quarts, and w/ 50% overrun you will yield 3 finished quarts)

## **Section 6: CARE and MAINTENANCE**

One of the best features of an Emery Thompson batch freezer is the small amount of maintenance and the ease of care required to keep it running and looking new. The materials we use for our parts are the best available for their intended purpose, and are designed for maximum longevity.

The outer casing of your machine is all heavy-gauge stainless steel, and will only require a daily wipe down w/ a mild detergent and warm water. Using a stainless steel cleaner/polish will also help keep it looking new.

There are three areas mentioned previously that require food grease to be applied daily: the area of the dasher shaft that goes through the rear bushing in the cylinder, the door face where the gate slides against it, and the bore of the rear bushing. (see diagram 5-A, p.19) Keeping these three areas clean and lubricated will directly affect the life of the parts involved, and must be addressed DAILY.

Your machine should be operated in the cleanest environment possible, but the potential exists for an eventual accumulation of dust/lint/debris on the surface of the condensing fins. This is the area just behind the expanded metal grate on the rear surface of the

## **Section 6: CARE and MAINTENANCE** (Cont'd)

machine. It can be cleaned using a strong (shop-type) vacuum cleaner with a soft brush attached.

The following parts are wearable and should be inspected at least weekly:

### **DIAGRAM 5-A APPROX. LIFE**

- Part # SEAL011 - o-ring, square, inside rear bushing 1,000 hrs./ 1 year
- Part # SPRG005 - blade Springs .....2,000 hrs./2 years
- Part # BRNG002 - bearing, dasher front..... 2,000 hrs./2 years
- Part # BLAD010 - blade, scraping.....5,000 hrs./4.5 years
- Part # SEAL013 - o-ring, gate .....1,000 hrs./ 1 year
- Part # FAST024 - washer, Teflon.....1,000 hrs./ 1 year
- Part # SEAL012 - o-ring, door seal .....4,000 hrs./ 4 years
- Part # SPRG006 - spring, gate pressure .....4,000 hrs./ 4 years

If your batch freezer has been stored in an unheated area and is brought into a warm area for use, allow it to sit for at least 12 hours in the warmer temperature; condensation could build up on cold surfaces.

Never transport, store, or use your machine in any position other than upright on its feet; Oil in the refrigeration system could travel into areas of the machine's piping where it could remain trapped.

Your machine has been tested and is rated for use in ambient air temperatures as high as 104 degrees Fahrenheit, and as low as 50 degrees Fahrenheit. Operation in temperatures at the high end of capacity may slightly increase freezing time and vice versa at the cold end.

## **Section 7: RECIPES**

The following recipes are very basic, and require few ingredients, but are a good starting point to familiarize yourself with freezing times and consistencies, as well as begin to form a production routine. NEVER put undissolved sugar into your machine for any recipe. Dissolve it first, then add to machine.

### **Lemon Ice**

- 2 quarts of cool tap water
- 1 pounds of sugar
- Zest grated from 2 large lemons
- 10 ounces of fresh-squeezed lemon juice

Mix the sugar with the water in a clean container until the sugar is dissolved. Slowly pour this into your CB200 machine. Add the lemon juice and lemon zest; start the dasher and set at 234 RPM. Then turn on the refrigeration and freeze for 8-10 minutes, depending on desired consistency. Store and serve at 16 degrees F.

### **Coffee Ice Cream**

- 2 quarts 14% ice cream mix
- 1/2 ounce of vanilla extract
- 1 ounces Taster's Choice instant coffee crystals
- Hershey's chocolate syrup to taste

Pour first three ingredients into machine and start dasher. Turn on refrigeration, and freeze for 10-12 minutes. Add chocolate syrup approximately one tablespoon at a time to taste (takes away bitterness of coffee).

## **Section 7: RECIPES (Cont'd)**

### **Bordeaux Wine Sorbet**

- 1 pound of sugar
- 24 ounces of tap water
- 1 bottle (750 ml) red Bordeaux wine
- 12 ounces red raspberries
- (optional) 4 grams of stabilizer

Mix the sugar with the water in a clean container until the sugar is dissolved. Slowly pour this and the remaining ingredients into the machine; start dasher, then the refrigeration. Freeze for approximately 12 minutes

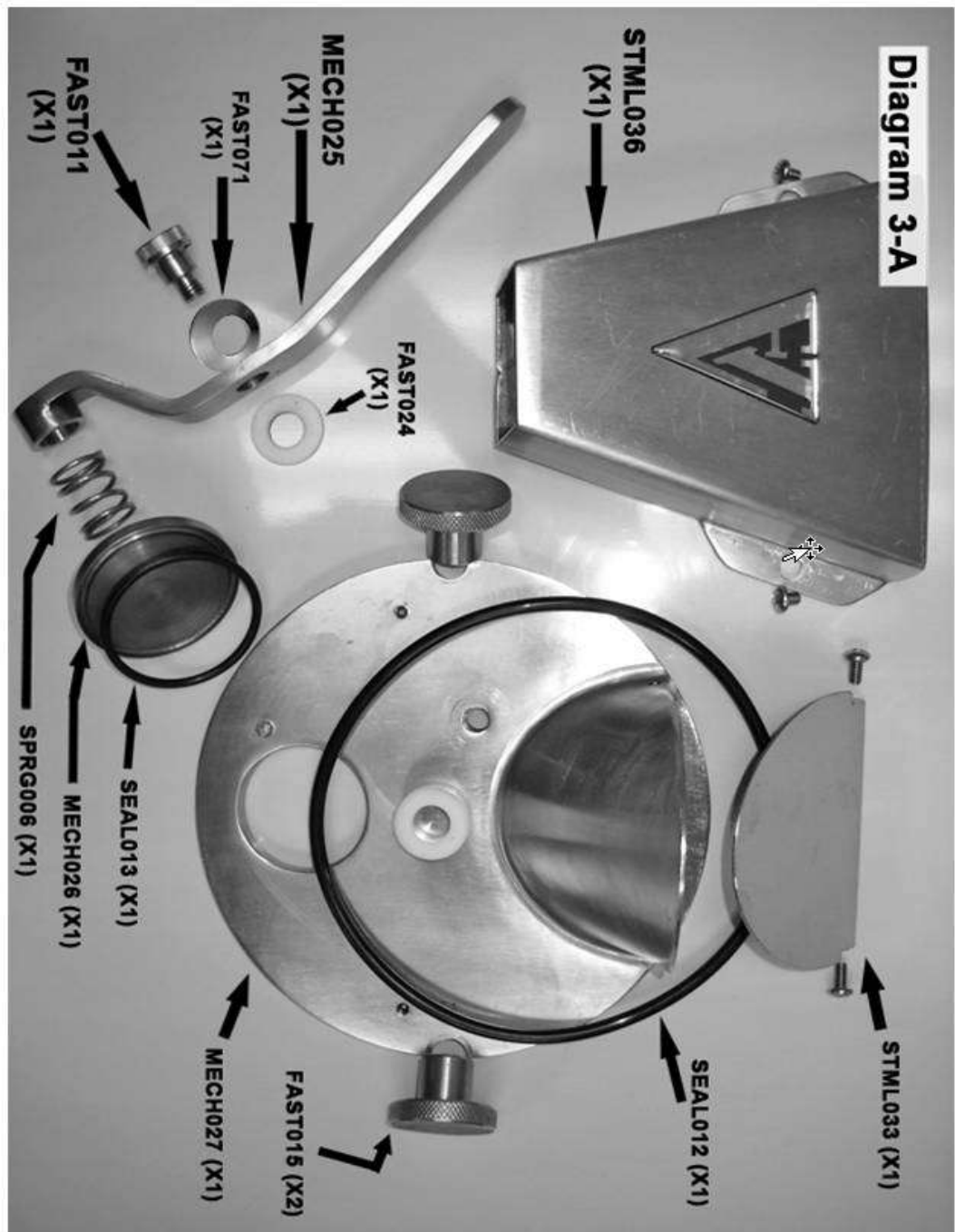
### **Fresh Mango Sorbet**

- 1 pound of sugar
- 26 ounces of tap water
- 3 pounds of fresh mango
- juice of one lemon

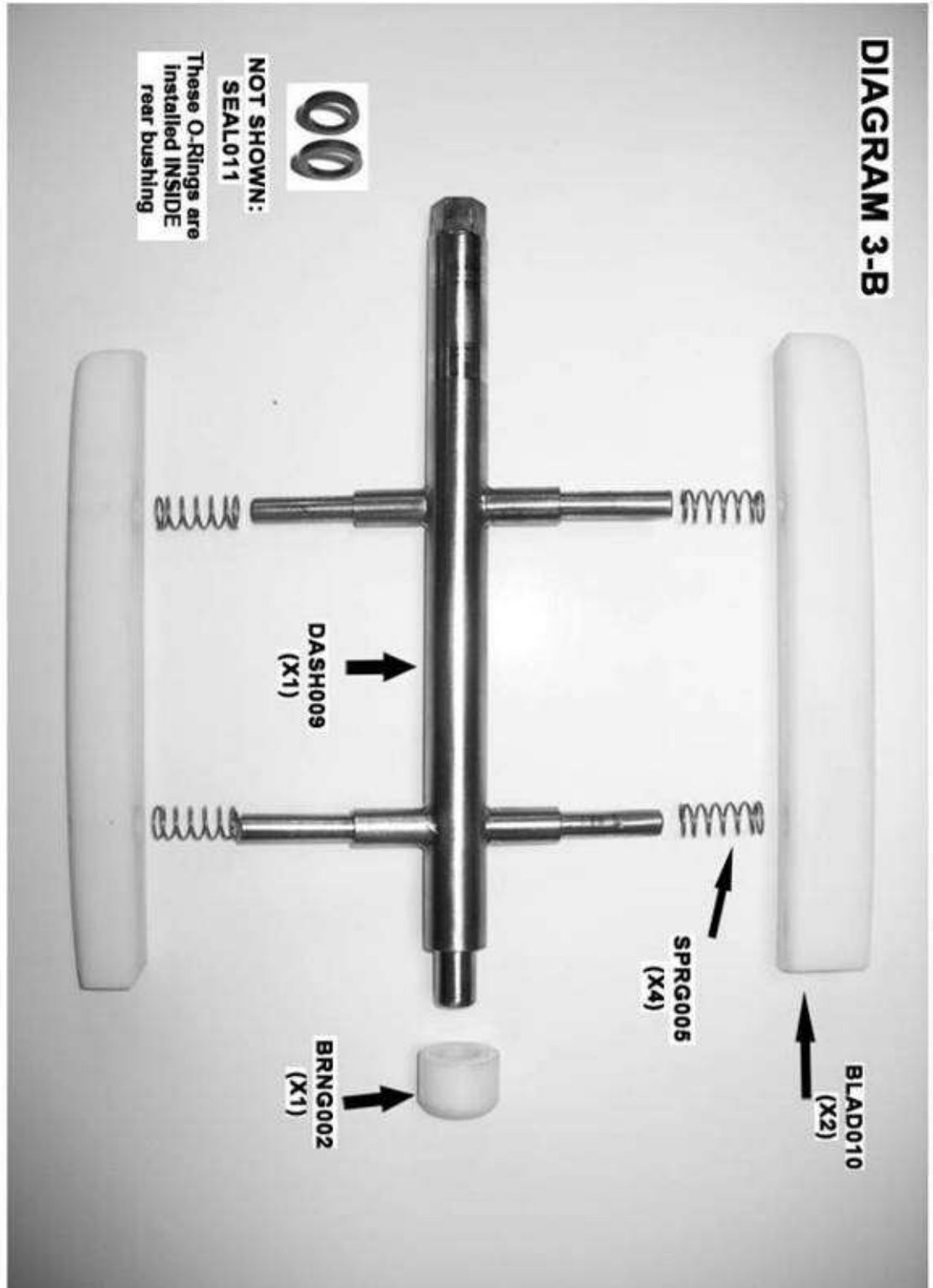
Mix the sugar with the water in a clean container until the sugar is dissolved. Slowly pour this and the remaining ingredients into the machine; start dasher, then the refrigeration. Freeze for approximately 12 minutes.

## Section 8: PARTS DIAGRAMS

STML036	GUARD, DISCHARGE, CB200 MACHINE (1X)	FAST015	KNOB, DOOR ATTACHING, CB200 MACHINE (2X)
MECH025	HANDLE, GATE SLIDING, CB200 MACHINE (1X)	SEAL012	O-RING, DOOR SEALING, CB200 MACHINE (1X)
FAST011	SHOULDER BOLT, HANDLE-TO-DOOR, CB200 MACHINE (1X)	STML033	GUARD, INLET SPOUT, CB200 MACHINE (1X)
FAST024	WASHER, TEFLON, HANDLE PIVOT, CB200 MACHINE (1X)	MECH026	GATE, DISCHARGE, CB200 MACHINE (1X)
SPRG006	SPRING, GATE PRESSURE, CB200 MACHINE (1X)	FAST071	WASHER, SPRING PRESSURE, CB200 MACHINE (1X)
SEAL013	O-RING, GATE SEALING, CB200 MACHINE (1X)		
MECH027	DOOR, W/ WELDED SPOUT, CB200 MACHINE (1X)		



## Section 8: PARTS DIAGRAMS (Cont'd)



SEAL011	O-RING, SQUARE CROSS-SECTION, INSIDE REAR BUSHING (2X)		
DASH009	DASHER, STAINLESS STEEL, CB200 MACHINE (1X)		
BRNG002	BEARING, DASHER FRONT, CB200 MACHINE (1X)		
SPRG005	SPRING, SCRAPER BLADE COMPRESSION, CB200 MACHINE (4X)		
BLAD010	BLADE, SCAPER, CB200 MACHINE (2X)		

**Section 8: PARTS DIAGRAMS** (Cont'd)



## **Section 9: WARRANTY**

### 12 Month Limited Warranty on New Freezers

Except as limited and conditioned hereafter, The Emery Thompson Machine and Supply Company, Inc. (hereinafter referred to as the “Company”) warrants to the original purchaser and user only, the said machine and all parts thereof to be free from defects in material and workmanship for a period of twelve (12) months from the *date of shipment* from the company’s factory if it is proved to our satisfaction to be inoperative due to defects in material or factory workmanship. *CAUTION:* this warranty is valid only if required service is provided by an authorized agent of the Company or person or persons directly authorized by the Company to perform the necessary repairs. Emery Thompson Machine and Supply can be reached at (ph)718-588-7300, (fax)352-796-0720, or (email) STEVE@EMERYTHOMPSON.COM

Definitions: The term “original purchaser” used herein shall be deemed to be that person, firm, association, or corporation for whom the equipment referred to herein is originally sold to.

The term “Company” or “Factory” shall mean the plant of the company located at 15350 Flight Path Drive, Brooksville, Florida 34604 U.S.A.

Labor and Transportation Charges: the Company assumes no liability under the warranty for any transportation charges or labor expenses incident to its work under this warranty; such transportation expenses and labor costs to be assumed and paid for by the purchaser.

Use and Care of the Machine: Purchaser shall only use the machine in accordance with the operator’s manual provided by the Company and no liability under this warranty or otherwise shall attach by reason of a defect caused by negligence, abnormal use, misuse or abuse of said machine, or for any accident that may occur to said machine, or any part thereof after said machine has left the Factory, nor for any defects that may arise by placing any part in said machine which has not been manufactured or approved by the Company. Misuse of the machine includes owners failure to (1) clean, lubricate and assemble per the Operators Manual; (2) replace damaged or worn “wear items” which include but not limited to O-rings, gaskets, front bearings, rear bearings, scraper blades, drive shaft or water valve. (3) handle parts properly, resulting in breakage; or (4) use unauthorized service agencies.

**Purchaser shall not remove, alter, or deface the serial number on said machine, and there will be no liability of Emery Thompson Machine and Supply Company if any of same shall occur.**



## **Section 9: WARRANTY (cont'd)**

Repair or Replacement of Defective Parts: The Company's obligation under this warranty is limited to the repair of defective parts at the Brooksville, Florida Factory, or replacement from the Company's own inventory. In the event the Company ships a replacement part prior to the return of the defective part, payment will be required for said part and credit issued or reimbursement made *only if the defective part is returned within thirty (30) days from the replacement date.*

**WARNING:** The use of alternate refrigerants **WILL** void your warranty. Use only the refrigerant specified on this unit's data plate found on the rear panel.

Emery Thompson Machine and Supply Company, Inc. reserves the right to make design changes, or to make additions to, or improvements on its products without imposing any obligation on itself to make such changes on its products previously manufactured.

This warranty is exclusive and is in lieu of all other warranties and remedies under the law, including any implied warranty of merchantability or fitness for a particular purpose. The original owner's sole remedy with respect to any Emery Thompson freezer shall be repair or replacement of defective components under the terms of this warranty. All rights to consequential or incidental damages (including claims for lost sales, lost profits, property damages, or service expenses) are expressly excluded. No distributor, dealer, or other person is authorized to make any commitment or assume any liability on behalf of Emery Thompson Machine and Supply Company, Inc. beyond this warranty.

This warranty is **NOT TRANSFERABLE.**