

SPACEMAN

COMMERCIAL ICE CREAM & FROZEN BEVERAGE EQUIPMENT

Machine Manual



Frozen Beverage Models

Counter or Floor Standing

ABOUT THE MANUAL

WELCOME TO YOUR MACHINE

Welcome to your Spaceman frozen beverage machine, engineered and designed to provide dependable operation and a consistent quality product. Your machine is approved for dairy and nondairy products, with hopper refrigeration function to maintain product temperature below 4°C (40°F), and with more automated analog control system for operational ease and efficiency. All models, countertop or floor, single or two flavor, operate in the same fashion.

This manual is a universal version that provides instructions on installation, operation, cleaning and routine maintenance. Information contained in this manual may be subject to change. Please check online or contact your local Spaceman distributor for continued updates and detailed information about your Spaceman machine.

LOOK OUT FOR THESE ICONS



WARNING: Denotes an action that WILL cause harm to the operator or machine if performed incorrectly.



IMPORTANT: Represents a vital mechanical step or note that the user must be aware of.



CAUTION: Informs the operator of a task that may lead to harm if protocol is not properly performed.



NOTE: Non-hazard, but pay extra attention.

FOLLOW INSTRUCTIONS TO BE SAFE



CAUTION: This machine has many built-in safety features to protect the operator while the machine is running.

Be cautious and follow instructions carefully when operating, cleaning, and servicing the machine.

All personnel operating this machine **MUST** read and understand this manual in its entirety. Failure to comply with this manual may damage the machine and cause severe injury to the operator.

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UNPALLETIZE MACHINE



Warning: Unpalletizing requires lifting. **Two or more personnel should remove the machine from its packaging and place it in its final operating location.** Failure to do so may result in severe injury or damage. Inspect equipment for hidden damage before signing for delivery.

1. Cut packing straps, and remove cardboard lid and outer sides from the pallet. DO NOT cut cardboard.
2. Remove plastic wrapping around machine.
3. Cut stabilizing straps, being careful not to scratch or dent the machine panels.
4. Prepare the area where the machine will be placed, remove packing cardboard from underneath machine, and place ramp wedges near front casters.
5. Unlock front casters, and roll machine down the wedges off the pallet.
6. Place the machine in its final location according to the Installation Requirements.

CHECK FOR SHIPPING DAMAGE

Inspect the machine for any shipping damage. If you find any, contact Spaceman Technical Service immediately after unpalletizing. Our technicians will help you assess the damage and determine the appropriate action prior to accepting the delivery.

UNPACK AND INSPECT PARTS

Refer to the detailed parts diagrams on the back pages if necessary.

1. Remove all packaged parts and accessories from your machine.
2. Organize items on a clean table or operating area using the checklist.
3. Inspect for damage immediately upon unpacking and call Spaceman Technical Service if you discover any damaged or missing parts.
4. Clean and properly lubricate machine parts prior to machine operation.

Included Parts:

- Hopper Cover (1 or 2)
- Front Drip Tray + Splash Shield
- Dispensing Handles
- Start-Up Kit
- Operator's Manual

INSTALLATION AND SETUP

1



Unpack and inspect machine, parts, and accessories.

2



Place machine in appropriate food preparation area. Comply with all installation requirements.

3



Read and understand ALL safety and standard operating procedures.

CLEANING AND PREPARATION

4



Fully disassemble machine, and prepare parts for cleaning.

5



Thoroughly clean and scrub machine hoppers, cylinders, and all parts.

6



Lubricate and re-assemble all machine parts.

7



Fully sanitize machine.

OPERATION

8



Prepare product in a separate container, and ensure product is thoroughly mixed.

9



Add product to hoppers and prime the cylinder using the prime plug.

10



Turn machine to FREEZE mode, and wait for product to reach frozen consistency.

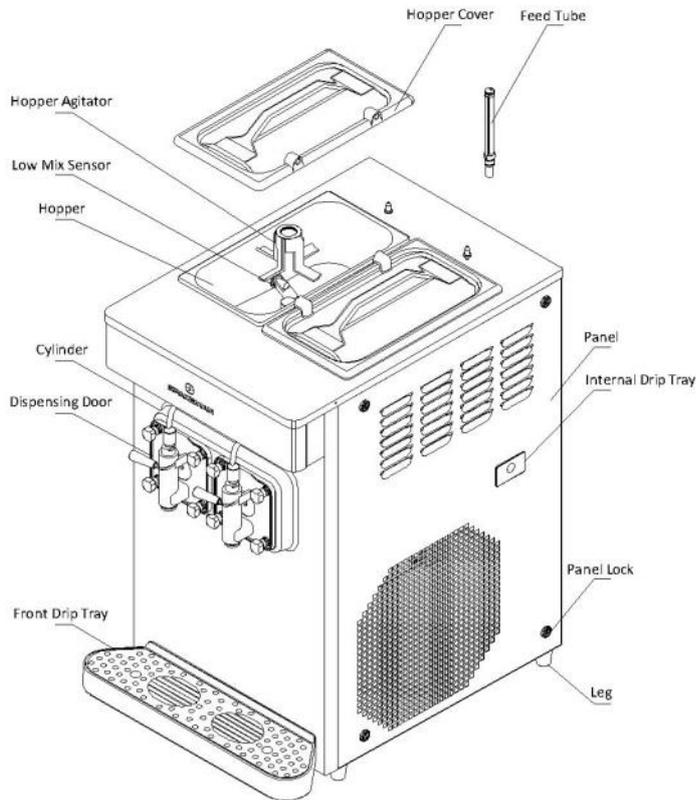
11



Slightly adjust viscosity setting as necessary to adjust product firmness.

QUICK OPERATION GUIDE

COMMON MACHINE PARTS



The image displayed is for illustration purpose only and may differ from the actual product.



Hopper Cover



Door Hand Screws



Dispensing Door with Prime Plug, and Gasket



Torque Arm



Draw Valve Pin



Ice Buster



Draw Valve with O-Rings



Draw Handle



Beater Guide



Beater



Scraper Blade



Feed Tube



Torque Assembly with O-Ring



Torque Guide



Drive Shaft



Drive Shaft Gasket



Internal Drip Tray



Front Drip Tray with Splash Shield



O-Ring Removal Tool



Brush Kit (Optional)

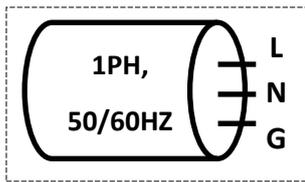


Hopper Agitator (if present)

GETTING TO KNOW YOUR MACHINE

POWER CONNECTION

1. Connect all wires to Circuit Breaker (including neutral & ground bus terminals) or Local Plug according to supply voltage and wire codes on machine power cable.
2. Verify Incoming Supply Cable is wired the same way on Circuit Breaker or Wall Receptacle before switching on or plugging in the machine.



MACHINE PLACEMENT REQUIREMENTS



CAUTION: The machine must be placed on a level surface away from walls and other objects. Failure to comply will damage the machine and refrigeration components and will void all warranties.



CAUTION: The machine is designed to operate in normal ambient temperatures of 16°C to 24°C (60°F to 75°F). Operating in higher ambient temperatures will result in degraded performance.

- Place on a flat, level, and solid surface fitted to the machine dimensions
- Ensure a minimum 152mm (6") clearance on the exhaust side (Side or Back)
- Completely clear area of dust, grease, and airborne particles
- Place away from hot equipment such as stoves, frying baskets, ovens, etc.

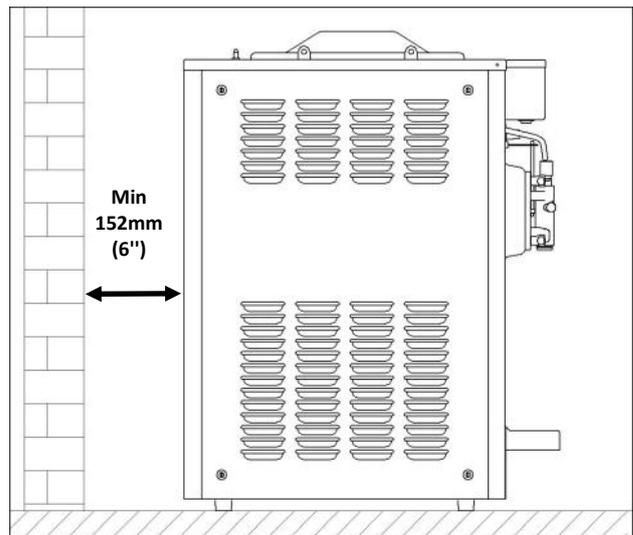
REFRIGERANT REQUIREMENTS

Spaceman requires that only the specified refrigerant be used in your machine.

Alternative refrigerants may cause damage to the cooling system and/or prevent the machine from operating at optimal performance.

If you require an alternative refrigerant, please call Spaceman Technical Support for a list of compatible alternatives for your compressor.

A detailed specification label for a Spaceman machine. It includes fields for Model Number, Serial Number, Volts, Hz, and Ph. Below these are sections for Motor Type (Compressor-A, Compressor-B, Beater, Cooling Fan, Mix Fan, Mix Agitator), Rated Power, and Operating Amps. A 'REFRIGERANT' section is highlighted with a red box, showing options for R404a (700 g) and R134a (100 g). There are also sections for Test Pressure (Main Compressor-A and Mix Compressor-B) with checkboxes for MPa and PSIG. The label includes the Intertek logo and CE mark, and states 'Conforms to NSF/ANSI STD 6'. At the bottom, it provides contact information for Spaceman Machines Made in China by Zhejiang Spaceman Ice Systems Co., Ltd.



The image displayed is for illustration purpose only and may differ from the actual product.

ROUTINE MAINTENANCE

ROUTINE MAINTENANCE OPERATION:

- **Disassemble, Clean, and Lubricate:** Daily
- **Replace Wearable Parts:** Every 1 to 3 months*
- **Preventative Maintenance:** Quarterly**

* Based on machine usage and cleaning intervals; a Tune-Up Kit is available with all wearable parts (O-rings, gaskets, etc.) except scraper blades

** Based on cleanliness of location and proximity to powder-based machines. Preventative maintenance includes cleaning condensers, checking belt tensions, and cleaning the interior of the machine frame as required.



Tune-Up Kit

The image displayed is for illustration purpose only and may differ from the actual product.

For optimal machine performance and many years of efficiency and reliability from your machine, Spaceman recommends cleaning and sanitizing the machine and its parts **daily**. The machine comes equipped with a brush kit specifically designed to efficiently and properly clean the machine.



WARNING: If this is the first time operating the machine, you **MUST** clean and sanitize **ALL** parts prior to running the machine.



IMPORTANT: Cleaning and sanitizing schedules are governed by state or local regulatory agencies and **MUST** be followed accordingly. Routine maintenance **MUST** be performed a minimum of once every 3 days.



CAUTION:

- Do **NOT** run the machine without properly lubricating required parts
- Do **NOT** clean the machine with abrasive or toxic chemicals and cleaners. Doing so may cause damage to the stainless steel material
- **ONLY** use Spaceman-included cleaning brushes and lubrication
- **NEVER** use metal objects to clean or operate the machine
- **ALWAYS** replace wearable parts a minimum of every 3 months
- **ALWAYS** prime machine prior to operating
- **ALWAYS** inspect parts for excess wear and damage



NOTE: Additional brushes, lubrication, wearable parts, and tools can be purchased from Spaceman to ensure proper maintenance. Extra wearable parts (except scraper blades) are found in the Start-Up Kit.

ROUTINE MAINTENANCE

DISASSEMBLE PARTS



NOTE: Prepare dishwashing area prior to disassembly, and use a bucket to temporarily store removed parts.



CAUTION: Always separate O-rings and gaskets from metal parts to prevent damage while washing.



1. Verify the power switch is turned to OFF.
2. Remove the torque arm, first pulling up out of the torque assembly and then down out of the flat sensor arm; **DO NOT LIFT UP ON CURVED SENSOR ARM.**
3. Remove dispensing door hand-screws (4).
4. Remove dispensing door assembly, torque assembly (including torque guide), and beater assembly.
5. Remove torque assembly O-ring using O-ring tool; remove torque guide.
6. Remove scraper blades (2) from beater assembly; separate scraper blade clips (2) from scraper blades.
7. Remove dispensing door gasket using O-ring tool.
8. Rotate draw valve until the flat part at the top is perpendicular to the clear face of the dispensing door (use towel if necessary).
9. Remove ice buster.
10. Remove draw valve, twisting it while removing.
11. Remove draw valve O-rings (2) using O-ring tool.
12. Unscrew and remove prime plug from dispensing door.
13. Use a towel to remove drive shaft at the back of the cylinder.
14. Separate drive shaft gasket from drive shaft.
15. Remove front drip tray and internal drip tray.

ROUTINE MAINTENANCE

WASH PARTS



CAUTION: Never wash parts in a dishwasher. Always hand-wash components with nontoxic, food-safe cleaners.

1. Verify power switch is turned to OFF.
2. Use the large brush and cool water to thoroughly clean inside the cylinder; *be sure to scrub the back of the cylinder and verify the cylinder is free of ALL product.*
3. Thoroughly clean and dry the rear of the cylinder with the supplied black brushes and a clean, dry towel.
4. Gently clean and wipe down the outside of the machine.
5. Carefully and thoroughly wash all parts removed from the machine using supplied brushes, sponges, and clean towels; *when cleaning the dispensing door, clean the priming port with a small brush.*
6. Carefully and thoroughly clean all gaskets and O-rings removed from the machine; *be sure to wipe gaskets and O-rings to remove excess lubricant.*
7. Verify all parts are clean and free of all food product prior to re-assembling machine.



ROUTINE MAINTENANCE

ASSEMBLE PARTS



CAUTION: Never force the installation of any parts. All parts fit correctly without force. If parts don't seem to fit, remove all parts and repeat assembly.

1. VERIFY MACHINE POWER SWITCH IS IN THE OFF POSITION

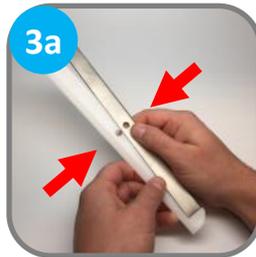
2. INSTALL DRIVE SHAFT

- Place drive shaft gasket on drive shaft.
- Seal gasket open space with Spaceman lubricant, extending onto drive shaft and *avoiding the top square part*.
- Insert drive shaft into rear shell bearing at the back of the cylinder, and turn it until the key engages firmly into the socket (when inserted correctly, the drive shaft will no longer turn 360°).



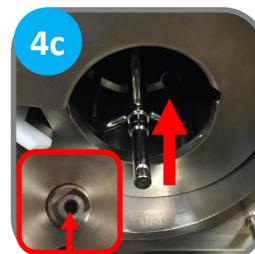
3. INSTALL BEATER ASSEMBLY

- Install scraper blade clips (2) onto scraper blades (2).
- Fit scraper blades onto beater.
- Insert assembly into cylinder; turn assembly until it engages the drive shaft key and no longer turns 360°.



4. INSTALL TORQUE ASSEMBLY

- Place O-ring on torque assembly, coating with Spaceman lubricant.
- Place torque guide onto the short end of the torque assembly; *DO NOT lubricate this component*.
- Insert torque assembly into pilot hole in the center of the drive shaft (torque guide first), *ensuring that torque guide DOES NOT fall off*.
- Rotate torque assembly so the hole for the torque arm is vertical, facing up and down.



ROUTINE MAINTENANCE

5. INSTALL DISPENSING DOOR



- a. Place O-rings (2) on draw valve, coating with Spaceman lubricant.
- b. Insert draw valve 7/8 way into the dispensing door from the top, *rotating as you install*.
- c. Turn draw valve so the flat portion at the valve top is perpendicular to the clear face of the dispensing door .
- d. Insert ice buster through the dispensing spout at the bottom of the door and into the slot on the draw valve.
- e. Rotate draw valve to lock ice buster in place; turn valve until the hole for the draw handle is accessible on front.
- f. Insert draw handle; secure in place with valve pin.
- g. Screw prime plug onto dispensing door.
- h. Place dispensing door gasket on door, coating with Spaceman lubricant.
- i. Place beater guide onto dispensing door, with flange flush with the back of the door.
- j. Align door assembly with torque assembly and mounting bolts; carefully lift curved sensor arm out of the way, and install dispensing door until flush with machine; *if needed, gently wiggle dispensing door to get the beater guide to line-up correctly inside the beater; DO NOT force the dispensing door onto the machine.*
- k. Lifting door up, tighten dispensing door hand-screws (4) in a cross-pattern.
- l. With tapered end down, install torque arm up through the flat sensor arm and then down into the torque assembly; torque arm should move freely back and forth; **DO NOT LIFT UP ON CURVED SENSOR ARM.**

6. INSTALL HOPPER ASSEMBLY AND DRIP TRAYS

- a. If machine has hopper agitator, lubricate inside it and install with arrow pointing up.
- b. Install hopper lid and drip trays (internal and front).



ROUTINE MAINTENANCE

SANITIZE

IMPORTANT: After sanitizing the machine, DO NOT rinse or touch areas that have been sanitized. Product must be added immediately. If new product will not be added immediately, rinse machine with clean water and loosen door hand-screws to allow cylinder to air-dry. Sanitize machine before using again.

CAUTION: Always use food-grade, no-rinse sanitizer to sanitize. If warm water is required to dissolve sanitizer, allow the solution time to cool before adding to machine.

1. Verify assembly is complete and machine power is OFF.
2. Verify the draw valve is in the CLOSED position (LEFT).
3. Mix a minimum of 7.57 liters (2 gallons) of food-grade sanitizer in a bucket or container.
4. Pour a minimum of 7.57 liters (2 gallons) of food-grade sanitizer solution into the hopper.
5. Turn power switch to WASH.
6. Allow solution to agitate for 5 to 10 minutes; *NEVER leave machine on WASH for more than 10 minutes.*
7. While agitating, gently use a clean brush to scrub and distribute sanitizer solution along hopper walls and hopper agitator (if present).
8. Place a bucket or container below the draw valve.
9. OPEN the draw valve (RIGHT) and drain solution from the machine.
10. Turn power switch to OFF.



ROUTINE MAINTENANCE

ADD PRODUCT TO MACHINE



NOTE: The MIX LOW light illuminates and alarm sounds when the hopper is low on product mix and automatically turn off when machine is filled.



1. Verify machine has been recently sanitized (within 1 hour); if machine has not been recently sanitized, verify door hand-screws are tight, and perform sanitizing steps (Page 13).
2. Turn power switch to OFF.
3. Thoroughly mix and prepare at least 7.57 liters (2 gallons) of product according to manufacturer instructions; mix should be cool and smooth (free of large chunks).
4. Place a bucket or container below the draw valve.
5. OPEN draw handle (RIGHT).
6. Pour 0.95 liters (0.25 gallons) of product into the hopper; sanitizer will start to flow out of the draw spout.
7. Once sanitizer has been purged from the machine and a steady stream of product is flowing from the spout, CLOSE draw handle (LEFT).
8. Pour remaining product into the hopper.
9. Open the prime screw (counter-clockwise) on the front of the dispensing door and allow the cylinder to fill with product to the desired level; *cylinder must be at least 75% full to operate.*
10. Close the prime screw and tighten completely.
11. Replace hopper lid.



FROZEN PRODUCT OPERATION

FREEZE PRODUCT

1. Verify cylinder is full of mixed product.
2. Turn power switch to FREEZE and verify STANDBY mode is off (see below).
3. The motor will begin to agitate the product, and the cooling system will begin to freeze the product.
4. Freezing product takes approximately 10 minutes; product is at the adjusted viscosity when the flat sensor arm is switched to the RIGHT.
5. When the product reaches the desired viscosity, it is ready to dispense.

DISPENSE PRODUCT

1. OPEN draw handle (RIGHT) until the desired amount is dispensed.
2. CLOSE the draw handle (LEFT) when finished dispensing.



CLOSED

OPEN

STANDBY MODE

IMPORTANT: When the machine will NOT be utilized for several hours, place it in STANDBY mode to conserve electricity and reduce product loss.

In STANDBY, product remains below 5°C (41°F) in both the cylinder and hopper, but will NOT be frozen.



To enter STANDBY mode:

- Press STANDBY indicator light in front of machine
- Light illuminates green when machine is in STANDBY mode



To exit STANDBY mode:

- Press STANDBY indicator light on front of machine, and green light will de-illuminate
- Allow 5 to 10 minutes for machine to begin freezing again

MACHINE POWER RESET

IMPORTANT: Machine shuts down automatically if cylinder experiences freeze-up (usually because the viscosity is set too high for the selected product to prevent motor damage).

Use the green reset button on the machine's back panel to return the machine to normal operation.



Proper Machine Reset

1. Turn power switch to OFF.
2. Firmly press green reset button.
3. Wait 15 to 20 minutes.
4. Turn power switch to WASH.
5. Observe machine performance.



CAUTION: If machine makes any abnormal noise during reset, immediately turn power switch OFF and contact service team.



NOTE: If machine doesn't turn on, turn power switch OFF, wait 30 minutes, and repeat steps 1 to 4. If problem persists, contact service team.

FROZEN PRODUCT OPERATION

ADJUST PRODUCT CONSISTENCY



The viscosity adjustment screw, located above the draw handle, controls the firmness of dispensed product. The higher the viscosity, the more firm the product. Viscosity settings should NOT need continuous adjustment.

To adjust product consistency, use a #2 Phillips-head screwdriver to turn the viscosity adjustment screw. Make small adjustments each time, and allow at least 10 to 15 minutes between adjustments to evaluate product firmness.



Increase viscosity (more firm):

Turn viscosity adjustment screw clockwise.
Turn a maximum of two full turns per adjustment.



Decrease viscosity (less firm)

Turn viscosity adjustment screw counter-clockwise.
Turn a maximum of two full turns per adjustment.



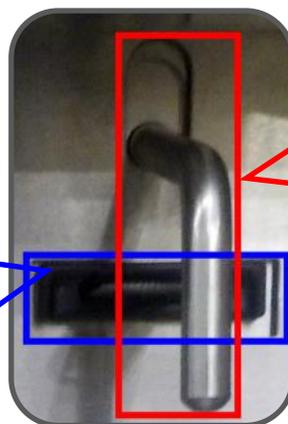
WARNING: STOP turning viscosity adjustment screw if you feel any increase in resistance to prevent damage.

MANAGE SENSOR ARMS

Located directly above the draw valve, this arm tells the machine when product is being dispensed and how firm the product is. Beater and cooling systems are turned on and off based on information from the sensor arms.

Flat arm moves left and right and tells machine when product is at desired consistency.

Switched RIGHT means consistency is correct. Switched LEFT or IN THE MIDDLE means consistency is not yet correct.



Curved arm moves up and down and tells machine when product is being dispensed.

It moves UP when draw handle is in the OPEN position.

FROZEN PRODUCT OPERATION

PROBLEM: PRODUCT WON'T DISPENSE

Probable Cause

1. Product is over-frozen in cylinder.
2. Inadequate mix in hopper.
3. Power switch is in the OFF position.
4. Unit is unplugged.
5. Tripped circuit breaker or blown fuse.
6. Improper mixing of product.
7. Machine has tripped safety reset.
8. Beater assembly is rotating counter-clockwise or is not rotating.

Remedy

1. Lower viscosity setting as required (Page 13).
2. Ensure hopper is at least half full.
3. Turn power switch to FREEZE.
4. Verify machine is plugged into power source.
5. Verify and reset circuit breaker and/or fuse.
6. Follow manufacturer instructions for mixing product; ensure correct mix ratios.
7. Reset machine (Page 12).
8. Contact Spaceman Technical Support.

PROBLEM: MACHINE SHUTS DOWN AUTOMATICALLY

Probable Cause

Cylinders are experiencing freeze-up (usually due to viscosity being set too high for selected product).

Remedy

Reset machine (Page 12), and lower viscosity as required (Page 13).

PROBLEM: PRODUCT LEAKS EXCESSIVELY INTO INTERNAL DRIP TRAY

Probable Cause

1. Improper or inadequate lubrication of drive shaft gasket.
2. Damaged, missing, or improperly installed drive shaft gasket.

Remedy

1. Use sufficient food-grade lubricant, and add sufficient lubricant inside drive shaft gasket during assembly (Page 8).
2. Replace drive shaft gasket every 1 to 3 months; replace torque assembly guide every 1 to 3 months.

PROBLEM: PRODUCT LEAKS EXCESSIVELY FROM DISPENSING DOOR SPOUT

Probable Cause

1. Improper or inadequate lubrication of draw valve and draw valve O-rings.
2. Cracked, broken, or worn draw valve O-rings.

Remedy

1. Use sufficient food-grade lubricant when assembling draw valve (Page 9).
2. Replace O-rings every 1 to 3 months.

PROBLEM: SCORED CYLINDER WALLS

Probable Cause

1. Broken torque or beater assembly.
2. Beater guide worn or missing.

Remedy

1. Repair or replace torque or beater assembly.
2. Replace or install beater guide.

TROUBLESHOOTING

PROBLEM: PRODUCT IS TOO FIRM

Probable Cause

1. Inadequate mix in hopper.
2. Improper mixing of product.
3. Torque arm is not installed correctly.
4. Viscosity adjustment is set incorrectly.

Remedy

1. Ensure hopper is at least half full.
 2. Follow manufacturer instructions for mixing product; ensure correct mix ratios.
 3. Install torque arm on dispensing door.
 4. Lower viscosity setting as required (Page 13).
-

PROBLEM: PRODUCT IS TOO SOFT

Probable Cause

1. Improper mixing of product.
2. Missing, damaged, or incorrectly installed scraper blades.
3. Viscosity adjustment is set incorrectly.
4. Beater is rotating counter-clockwise.

Remedy

1. Follow manufacturer instructions for mixing product; ensure correct mix ratios.
2. Inspect scraper blades for damage and correct installation.
3. Increase viscosity setting as required (Page 13).
4. Call Spaceman Technical Support.

PROBLEM: MACHINE WON'T OPERATE IN FREEZE OR WASH MODES

Probable Cause

1. Machine is unplugged.
2. Tripped circuit breaker or blown fuse.
3. Machine has tripped safety reset.

Remedy

1. Verify machine is plugged into power source.
 2. Verify and reset circuit breaker and/or fuse.
 3. Reset machine (Page 12).
-

PROBLEM: COMPRESSOR DOESN'T WORK WHEN MACHINE IS IN FREEZE MODE

Probable Cause

Machine has tripped safety reset due to motor overload.

Remedy

Reset machine (Page 12).

PROBLEM: DRIVE SHAFT WON'T REMOVE

Probable Cause

1. Lubrication on square ends of drive shaft.
2. Scoring due to lack of lubrication.

Remedy

1. Do NOT lubricate the square end of the drive shaft; contact Spaceman Technical Support for instructions on removing and inspecting drive shaft and gear box for damage.
2. Replace Drive Shaft, use additional lubrication.