# SERVICE MANUAL



# Model C152 and C161 Soft Serve Freezer

**Original Service Instructions** 

**CAUTION:** Information in this manual is intended to be used by Taylor service technicians only.

Note: Continuing research results in steady improvements; therefore, information in this manual is subject to change without notice.

Note: Only instructions originating from the factory or its authorized translation representative(s) are considered to be the original set of instructions.

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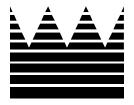
Taylor Company 750 N. Blackhawk Blvd. Rockton, IL 61072

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## **Section 1: Introduction/Safety**

- Safety
- Model C152 Specifications
- Model C161 Specifications
- General Installation Instructions
- Environmental Notices
- Running Specifications

## Safety

We at Taylor Company are committed to manufacturing safe operating and serviceable machines. The many built-in safety features that are part of all Taylor machines are aimed at protecting operators and trained service technicians alike.

**NOTICE!** This manual is intended exclusively for Taylor service personnel.

Per IEC 60335-1 and its part 2 standards, this machine is to be used only by trained personnel. It is not intended for use by children or people with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

CAUTION! DO NOT attempt to run the machine unless you have been properly trained to do so. Failure to do so can result in personal injury or machine damage.

warning! This machine must be properly grounded! DO NOT operate this machine unless it is properly grounded and all service panels and access doors are restrained with screws. Failure to do so can result in severe personal injury from electrical shock!



WARNING! Avoid injury.

- DO NOT attempt any repairs unless the main power supply to the machine has been disconnected.
- **DO NOT** operate the machine with larger fuses than specified on the data label.
- Stationary machines which are not equipped with a power cord and plug or other device to disconnect the machine from the power source must have an all-pole disconnecting device with a contact gap of at least 0.125 in. (3 mm) installed in the external installation.

- Machines that are permanently connected to fixed wiring and for which leakage currents may exceed 10 mA, particularly when disconnected, not used for long periods, or during initial installation, shall have protective devices to protect against the leakage of current, such as a GFI, and be installed by authorized personnel to the local codes.
- Supply cords used with this machine shall be oil-resistant, sheathed flexible cable, not lighter than ordinary polychloroprene or other equivalent synthetic elastomer-sheathed cord (code designation 60245 IEC 57) installed with the proper cord anchorage to relieve conductors from strain, including twisting, at the terminals and protect the insulation of the conductors from abrasion.
- For Cord-Connected Machines: Only Taylor service technicians may install a plug on this machine.

Failure to follow these instructions may result in electrocution or damage to the machine.

IMPORTANT! This machine is provided with an equipotential grounding lug that is to be properly attached to either the rear of the frame or the underside of the base pan near the entry hole for incoming power, by the authorized installer. The installation location is marked by the equipotential bonding symbol (5021 of IEC 604171) on both the removable panel and the machine's frame, as well as on the diagram.

caution! Do Not remove the machine door or any internal operating parts (examples: beater, scraper blades, etc.) unless all control switches are in the OFF position. Failure to follow these instructions may result in severe personal injury from hazardous moving parts.

**WARNING!** This machine has many sharp edges that can cause severe injuries.

### **Examples:**

- Scraper blades
- Condenser fins
- Cup/cone dispenser (if applicable)

caution! This machine must be installed on a level surface to avoid the hazard of tipping. Extreme care should be taken in moving this machine for any reason. Two or more persons are required to safely move this machine. Failure to comply may result in personal injury or machine damage.

**WARNING!** This machine must **NOT** be installed in an area where a water jet or hose can be used. **NEVER** use a water jet or hose to rinse or clean the machine. Failure to follow this instruction may result in electrocution.

NOTICE! Cleaning and sanitizing schedules are governed by your federal, state, or local regulatory agencies and must be followed accordingly. Please see the cleaning section of this manual for the proper procedure to clean this machine.

Authorized service personnel must ensure that the proper personal protective equipment (PPE) is available and worn when required during installation and service.

## **Model C152 Specifications**

### Freezing Cylinder

One, 1.5 qt. (1.4 L) volume.

### **Mix Hopper**

One, 8 qt. (7.6 L) capacity.

### **Beater Motor**

One, 0.5 hp.

### **Refrigeration Machine**

One 3,000 BTU/hr compressor. R404A.

Separate Hopper Refrigeration (SHR), one 400 BTU/hr. R134a.

(Actual BTUs will vary based on application.)

### **Electrical**

Table 1-1

Electrical	Total Amps	Supplied with NEMA Cord
115/60/1 Air	16.0	5-20P
208/230/60/1 Air	10.2	6-15P
220-240/50/1 Air	7.8	

This machine may be manufactured in other electrical characteristics. Refer to the local Taylor distributor for availability. (For exact electrical information, always see the data label of the machine.)

### Air-Cooled

**Clearance:** 4 in. (102 mm) on left and right, and 0 in. (0 mm) at the rear. If the machine has legs, install the skirt provided on the right side of the machine. Minimum air clearances must be met to ensure adequate air flow for optimum performance.

### **Dimensions**

Width: 17-3/8 in. (441 mm)

Depth: 29-3/8 in. (746 mm)

Height: 27 in. (686 mm)

Counter Clearance: Designed to rest on a plastic pad

directly on the counter top or optional cart.

### **Approximate Weights**

Note: For reference only, weights may vary depending

on accessories.

**Net:** 207 lb. (94 kg)

**Crated:** 238 lb. (108 kg)

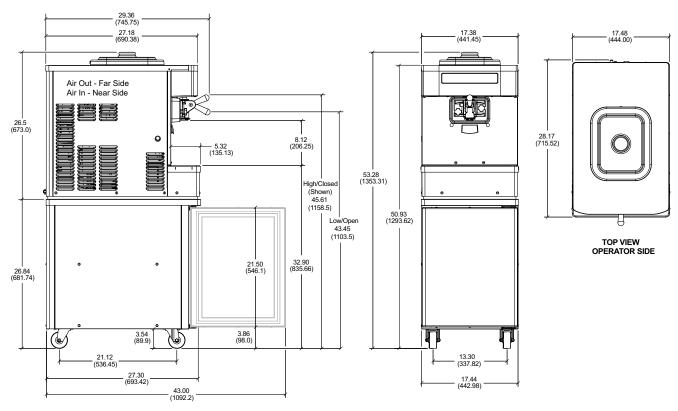
Volume: 21.1 cu. ft. (0.60 cu. m)

Availability and specifications are subject to change

without notice.

This machine is designed and constructed to meet stringent safety and sanitation requirements for NSF and UL.

## **Model C152 Specifications (Continued)**



FIGURES IN BRACKETS INDICATE MILLIMETERS / DECIMAL AND FRACTIONAL DIMENSIONS EQUAL TO ( PLUS OR MINUS 1/16 INCH [1.5mm] ). DRAWING IS TO BE USED FOR REFERENCE ONLY - DO NOT USE FOR STORE CONSTRUCTION LAYOUT.

Figure 1-1 C152 with Cart C20800-W00

30070\_A

## **Model C161 Specifications**

### Freezing Cylinder

Two, 1.5 qt. (1.4 L) volume.

### **Mix Hopper**

Two, 8 qt. (7.6 L) capacity.

### **Beater Motor**

Two, 0.5 hp.

### **Refrigeration Machine**

One 3,500 BTU/hr compressor. R404A.

Separate Hopper Refrigeration (SHR), one 400 BTU/hr. R134a.

(Actual BTUs will vary based on application.)

### **Electrical**

Table 1-2

Electrical	Total Amps	Supplied with NEMA Cord
208/230/60/1 Air	12.0	6-15P
208/230/60/1 Water	12.0	6-15P
220-240/50/1 Air	10.0	
220-240/50/1 Water	10.0	

This machine may be manufactured in other electrical characteristics. Refer to the local Taylor distributor for availability. (For exact electrical information, always see the data label of the machine.)

### Air-Cooled

**Clearance:** 6 in. (152 mm) on left and right, and 0 in. (0 mm) at the rear. Minimum air clearances must be met to ensure adequate air flow for optimum performance.

### Water-Cooled

Water inlet and drain connections out of rear 3/8 in. (9.5 mm) FPT.

### **Dimensions**

Width: 21 in. (533 mm)

Depth: 25-3/4 in. (654 mm)

Height: 29-3/8 in. (746 mm)

Counter Clearance: Designed to rest on a plastic pad

directly on the counter top or optional cart.

### **Approximate Weights**

**Note:** For reference only, weights may vary depending

on accessories.

**Net:** 305 lb. (138.3 kg)

**Crated:** 350 lb. (158.8 kg)

Volume: 22.3 cu. ft. (0.63 cu. m)

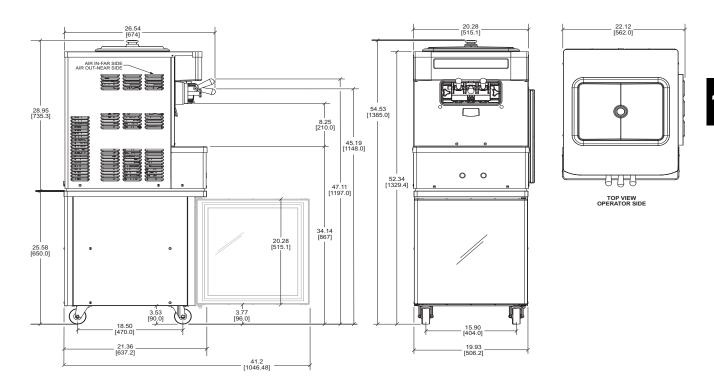
Availability and specifications are subject to change

without notice.

This machine is designed and constructed to meet stringent safety and sanitation requirements for NSF

and UL.

## **Model C161 Specifications (Continued)**



FIGURES IN BRACKETS INDICATE MILLIMETERS / DECIMAL AND FRACTIONAL DIMENSIONS EQUAL TO ( PLUS OR MINUS 1/16 INCH [1.5mm] ).

DRAWING IS TO BE USED FOR REFERENCE ONLY - DO NOT USE FOR STORE CONSTRUCTION LAYOUT.

Figure 1-2 C161 with Cart C20700-W00

### **General Installation Instructions**

**NOTICE!** Only trained, authorized service technicians should install this machine. Failure to comply will void the factory warranty.

The following are general installation instructions. For complete installation details, please see the checkout card.

IMPORTANT! All wiring and plumbing must conform to national and local codes.



INSTALL POTABLE WATER CONNECTION WITH ADEQUATE BACKFLOW PROTECTION TO COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES.

### **Site Preparation**

Inspect the area where the machine will be installed before uncrating the machine. Make sure that all possible hazards to the user and the equipment have been addressed.

**WARNING!** Only install this machine in a location where its use and maintenance is restricted to trained personnel. Failure to comply may result in personal injury.

### **Air-Cooled Machines**

Do not obstruct air intake and discharge openings. Model C152 requires 4 in. (102 mm) of space on both sides, and no space at the rear of the machine. Model C161 requires 6 in. (152 mm) of space on both sides of the machine, and no space at the rear.

Install the air deflector provided and place the rear of the machine against the wall to prevent recirculation of warm air. Minimum air clearances must be met to ensure adequate air flow for optimum performance. Failure to allow proper clearance and airflow may cause poor freezer performance and damage to the machine.

**For Indoor Use Only:** This machine is designed to operate indoors under normal ambient temperatures of 70° to 75°F (21° to 24°C). The freezer has successfully

performed in high ambient temperatures of 104°F (40°C) at reduced capacities.

**WARNING!** This machine must **NOT** be installed in an area where a water jet or hose can be used. **NEVER** use a water jet or hose to rinse or clean the machine. Failure to follow this instruction may result in electrocution.

caution! This machine must be installed on a level surface to avoid the hazard of tipping. Extreme care should be taken in moving this machine for any reason. Two or more persons are required to safely move this machine. Failure to comply may result in personal injury or machine damage.

Uncrate the machine. Inspect the machine for damage. Report any damage to the Taylor factory immediately.

This piece of equipment is made in the USA and has USA sizes of hardware. All metric conversions are approximate and vary in size.

### Installer Safety

IMPORTANT! In all areas of the world, the machine should be installed in accordance with existing local codes. Please contact your local authorities if you have any questions.

Care should be taken to ensure that all basic safety practices are followed during the installation and servicing activities related to the installation and service of Taylor machines.

- Only Taylor service personnel should perform installation and repairs on the machine.
- Authorized service personnel should consult OSHA Standard 29CFRI910.147 or the applicable code of the local area for the industry standards on lockout/tagout procedures before beginning any installation or repairs.
- Authorized service personnel must ensure that the proper personal protective equipment (PPE)

- is available and worn when required during installation and service.
- Authorized service personnel must remove all metal jewelry, rings, and watches before working on electrical equipment.

**WARNING!** This machine has many sharp edges that can cause severe injuries.

### **Examples:**

- Scraper blades
- · Condenser fins
- Cup/cone dispenser (if applicable)

#### **Electrical Connections**

IMPORTANT! In the United States, this machine is intended to be installed in accordance with the National Electrical Code (NEC), ANSI/NFPA 701987. The purpose of the NEC code is the practical safeguarding of persons and property from hazards arising from the use of electricity. This code contains provisions considered necessary for safety.

In all other areas of the world, the machine should be installed in accordance with the existing local codes. Please contact your local authorities if you have any questions.

Each machine requires one power supply for each data label on the machine. Check the data label(s) on the machine for branch circuit overcurrent protection or fuse, circuit ampacity, and other electrical specifications.

See the wiring diagram provided inside the electrical box for proper power connections.



warning! This machine must be properly grounded! DO NOT operate this machine unless it is properly grounded and all service panels and access doors are restrained with screws. Failure to do so can result in severe personal injury from electrical shock!

IMPORTANT! This machine is provided with an equipotential grounding lug that is to be properly attached to either the rear of the frame or the underside of the base pan near the entry hole for incoming power, by the authorized installer. The installation location is marked by the equipotential bonding symbol (5021 of IEC 604171) on both the removable panel and the machine's frame, as well as on the diagram.



### **IMPORTANT!**

- **DO NOT** operate the machine with larger fuses than specified on the data label.
- Stationary machines which are not equipped with a power cord and a plug or another device to disconnect the machine from the power source must have an all-pole disconnecting device with a contact gap of at least 0.125 in. (3 mm) installed in the external installation.
- Machines that are permanently connected to fixed wiring and for which leakage currents may exceed 10 mA, particularly when disconnected, not used for long periods, or during initial installation, shall have protective devices to protect against the leakage of current, such as a GFI, and be installed by authorized personnel to the local codes.
- Supply cords used with this machine shall be oil-resistant, sheathed, flexible cable, not lighter than ordinary polychloroprene or other equivalent synthetic elastomer-sheathed cord (code designation 60245 IEC 57) installed with the proper cord anchorage to relieve conductors from strain, including twisting, at the terminals and protect the insulation of the conductors from abrasion.

Failure to follow these instructions may result in electrocution or damage to the machine.

### **Beater Rotation**

NOTICE! Beater rotation must be clockwise as viewed looking into the freezing cylinder.

**WARNING!** Disconnect all power to the machine. Failure to follow this instruction may result in serious electrical shock.

To correct rotation on a three-phase machine, interchange any two incoming power supply lines at the machine main terminal block only.

To correct rotation on a single-phase machine, change the leads inside the beater motor by following the diagram printed on the motor label.

It is recommended that the beater rotation adjustment be performed by a Taylor service technician.

### **Water Connections**

### (Water-Cooled Machines Only)

An adequate cold water supply must be provided with a hand shutoff valve. The water inlet and drain connections are located on the right side or the underside of the base. These connections are either 3/8 in. or 1/2 in. FTP, depending on the model of the machine. (Refer to Model C161 Specifications on page 1-6.)

Flexible lines are recommended if local codes permit their use. In Europe, hose sets for the connection of appliances to water mains must comply to the IEC 61770 standard.

The water expansion valve setting should be set at 255 psig (1758 kPa).

Depending on local water conditions, it may be advisable to install a water strainer to prevent foreign substances from clogging the automatic water valve. There will be only one water-in and one water-out connection.

**Do not** install a hand shutoff valve on the water-out line. Water should always flow in this order: first, through the automatic water valve; second, through the condenser; and third, through the outlet fitting to an **open trap drain**.

IMPORTANT! A backflow prevention device is required on the incoming water connection side. Please see the applicable national, state, and local codes for determining the proper configuration. Water pressure to the unit must not exceed 150 psi (1034 kPa).

### Refrigerant

caution! This machine contains fluorinated greenhouse gases (F-Gas) to provide refrigeration using a hermetically sealed circuit or within foam insulation. This machine's type of gas, quantity, Global Warming Potential (GWP) and CO<sub>2</sub> tonnes equivalent information is recorded on the unit's data-label. The refrigerant used is generally considered non-toxic and non-flammable. However any gas under pressure is potentially hazardous and must be handled with caution.

**NEVER** fill any refrigerant cylinder completely with liquid. Filling the cylinder to approximately 80% will allow for normal expansion.

CAUTION! Use only approved refrigerant listed on the machine's data-label or authorized through a manufacturer's technical bulletin. The use of any other refrigerant may expose users and operators to unexpected safety hazards.

**WARNING!** Refrigerant liquid sprayed onto the skin may cause serious damage to tissue. Keep eyes and skin protected. If refrigerant burns should occur, flush the area immediately with cold water. If burns are severe, apply ice packs and contact a physician immediately.

NOTICE! Taylor reminds technicians to be aware of government laws regarding refrigerant recovery, recycling, and reclaiming systems. If you have any questions regarding these laws, please contact the factory service department.

associated lubricants may be extremely moisture absorbent. When opening a refrigeration system, the maximum time the system is open must not exceed 15 minutes. Cap all open tubing to prevent humid air or water from being absorbed by the oil.

### **Environmental Notices**

**CAUTION!** This machine contains fluorinated greenhouse gases (F-Gas) to provide refrigeration using a hermetically sealed circuit or within foam insulation. This machine's type of gas, quantity, Global Warming Potential (GWP) and CO<sub>2</sub> tonnes equivalent information is recorded on the unit's data-label. The refrigerant used is generally considered non-toxic and non-flammable. However any gas under pressure is potentially hazardous and must be handled with caution.

**NEVER** fill any refrigerant cylinder completely with liquid. Filling the cylinder to approximately 80% will allow for normal expansion.



**IMPORTANT!** If the crossed-out waste

container symbol is affixed to this product, it signifies that this product is compliant with the EU Directive as well as other similar legislation in effect after August 13, 2005. Therefore, it must be collected separately after its use is completed, and cannot be disposed as unsorted municipal waste.

The user is responsible for delivering the product to the appropriate collection facility, as specified by your local code.

For additional information regarding applicable local laws, please contact the municipal facility and/or local Taylor distributor.

**Noise Level:** Airborne noise emission does not exceed 78 dB(A) when measured at a distance of 3.3 ft. (1 m) from the surface of the machine and at a height of 5.25 ft. (1.6 m) from the floor.

### **Compressor Warranty Disclaimer**

The refrigeration compressor(s) on this machine are warranted for the term indicated on the warranty card accompanying this machine. However, due to the Montreal Protocol and the U.S. Clean Air Act Amendments of 1990, many new refrigerants are being tested and developed, thus seeking their way into the service industry. Some of these new refrigerants are being advertised as drop-in replacements for numerous applications. It should be noted that in the event of ordinary service to this machine's refrigeration system, only the refrigerant specified on the affixed data label should be used. The unauthorized use of alternate refrigerants will void your compressor warranty. It will be the owner's responsibility to make this fact known to any technicians he/she employs.

It should be noted that Taylor does not warrant the refrigerant used in its machines. For example, if the refrigerant is lost during the course of ordinary service to this machine, Taylor has no obligation to either supply or provide its replacement either at billable or unbillable terms. Taylor does have the obligation to recommend a suitable replacement if the original refrigerant is banned, obsoleted, or no longer available during the five-year warranty of the compressor.

Taylor will continue to monitor the industry and test new alternates as they are being developed. Should a new alternate prove through our testing that it would be accepted as a drop-in replacement, the above disclaimer would become null and void. To find the current status of an alternate refrigerant as it relates to your compressor, call the local Taylor distributor or the Taylor factory. Be prepared to provide the model/serial number of the machine in question.

## 中国 RoHS2

## China RoHS2

		有害物质				
部件名2	铅	Hazardous Substances     铅   汞   镉   六价铬   多溴联苯   多溴二苯醚				
Part Name	(Pb)	(Hg)	(Cd)	(Cr (VI))	クスサイト (PBB)	タメーキ版 (PBDE)
金属板部件	` ′		` '		, ,	,
(Sheet metal parts)	0	0	0	0	0	0
其它金属部件	0	0	0	0	0	0
(Other metal parts)		U	U	U	U	0
塑料部件	0	0	0	0	0	О
(Plastic parts)						
盘记件	0	0	0	0	0	0
(Coil assembly)			_	_	_	_
马达、压缩机与风扇型件	0	0	0	0	0	0
(Motor, Compressor and fan assembly) 马达、刮刀架						
与处、创力条 (Motor, Beater)	0	0	0	0	0	0
断路器与接触器						
(Circuit breaker and contactors)	0	0	0	0	0	0
变压器	_	_	_		_	_
(Transformer)	0	0	0	0	0	0
热敏电阻 传感器		_	0	0	0	0
(Thermistors/Transducers)	0	0	0	0	0	0
电缆2/ 适配器	0	0	0	0	0	0
(Cable/Adaptor)	U	U	U	U	U	O
标②与绝缘材料	0	0	0	0	0	0
(Labels and insulations)		0			0	0
印刷②路板 ②件	0	0	0	0	0	О
(PCBA's)					<u> </u>	<u> </u>
②接头与金属零件	X	0	0	0	0	0
(Fittings and hardware)	1					
套圈与固定套	X	0	0	0	0	0
(Bushings and bearings)						

本表格依据 SJ/T 11364 的规定编制。

O:表型该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

X:表见该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

This table is prepared in accordance with the provision of SJ/T 11364.

O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: Indicates that said hazardous substance contained in at least one of the homogeneous material for this part is above the limit requirement of GB/T 26572.

## Running Specifications

### **Pressures/Temperatures**

The following are the Taylor-recommended settings for various components within these models. The Model C152 and C161 uses R404A.

### **Expansion Valve—Low Side (Suction)**

### **Soft Serve**

C152—Air-Cooled: 20 to 22 psi (138-152 kPa) for a normal product of 16°F to 18°F (-8.8°C to -7.7°C).

C161—Air-Cooled: 21 psi (145 kPa) for a normal product of 16°F to 18°F (-8.8°C to -7.7°C). Set each side separately at 15 psi to 16 psi (103 kPa to 110 kPa).

C161—Water-Cooled: 21 psi (145 kPa) for a normal product of 16°F to 18°F (-8.8°C to -7.7°C). Set each side separately at 15 psi to16 psi (103 kPa to 110 kPa).

### **Expansion Valve Adjustment**

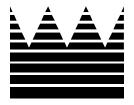
- 1. Place your gauge on the access valve on the suction line (located at the compressor).
- Adjust the pressure higher or lower by turning the adjustment screw. Clockwise turns raise the pressure, and counterclockwise turns lower the pressure.
- Make expansion valve adjustments with mix in the cylinder and with the freezer in the Auto mode. Allow adequate time for the pressure to stabilize.
- 4. For Model C161, repeat this procedure for the other side of the machine. The expansion valve on each side of the machine must be set separately.

### **Expansion Valve—High Side (Discharge)**

High side pressure varies for air-cooled machines depending on the ambient temperature.

Table 1-3

Ambient Temperature		Normal Operating Head Pressures
°F	°C	psi (kPa)
70	21.1	240 to 270 (1,655 to1,862)
80	26.7	270 to 300 (1,862 to 2,069)
90	32.2	300 to 340 (2,069 to 2,344)
100	37.8	340 to 380 (2,344 to 2,620)



## **Section 2: Controls**

- Generation II Control Logic Board
- Service Tips for Generation II Boards
- Control Overview
- Refrigeration Schematic
- Valve Functions

## **Generation II Control Logic Board**

The Generation II logic board's primary function is to interpret modes of operation. The board monitors mix levels and temperatures by sending commands to the control's power board. Commands are sent via a ribbon cable, enabling the proper relays on the power board to open or close. See Figure 2-4.

### **Function**

Interpret a mode of operation/monitor mix level and temperature/monitor product viscosity or product temperature and send a command to the power board through a ribbon cable, enabling the proper relays on the power board to be open or closed.

### **Logic Board Part Number**

See Figure 2-1 for an illustration of the logic board (part number X69571SER3).

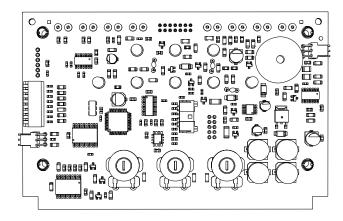


Figure 2-1

### **Dip Switch and Jumpers**

Dip switches and jumpers are located on the logic board, see Figure 2-1. For descriptions of dip switches, See Figure 2-2.

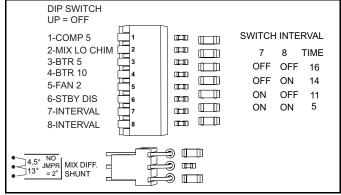


Figure 2-2

### **Power Board Part Number**

See Figure 2-4 for an illustration of the power board (part number X69574-SER).

### **Thermistor Probes**

There are two types of thermistor probes used on these freezers. The resistance value of the thermistor probes corresponds with the temperature. As the temperature increases, the probe resistance decreases.

X31602 - Barrel Probe (senses temperature of product in freezing cylinder)

X55540 - Hopper Probe (senses temperature of mix in hopper)

### Approximate Probe Resistance Readings

- 10,000 ohm at room temperature 77°F (25°C).
- 30,035 ohm at hopper temperature 35°F (2°C).
- 48,636 ohm at soft serve temperature 18°F (-7.7°C).

### **Viscosity Function**

In soft-serve freezers, the logic board monitors draw amperage on the beater motor, which is directly related to the viscosity of the product in the freezing cylinder. When the amp draw reaches its set point, the machine cycles off. Therefore, the viscosity of the product will always be consistent even though its temperature may vary slightly.

To monitor amperage, L1 power supplied to the beater motor must pass through the power board beater terminals. The same Softech<sup>™</sup> controls are used in both

single-phase and three-phase applications. For this reason the control must be set to operate in an amperage range which relates to the beater motor amperage and the desired product viscosity setting.

The selected amperage range simply determines the adjustment span of the viscosity adjustment potentiometer on the logic board. The jumper on the power board determines the amperage range selection. The jumper is placed on the pin that corresponds to the beater motor amperage when the desired product viscosity is attained. See Figure 2-4 to locate the range selection jumper.

### **Viscosity Control Range Selections**

- 2.4 Pin = 1.2 A to 2.4 A
- 5.0 Pin = 2.5 A to 5.0 A
- 8.0 Pin = 4.0 A to 8.0 A
- 11.2 Pin = 5.7 A to 11.2 A

### **Setting Viscosity Adjustment**

- 1. Place an amp probe on one of the L1 leads on the beater terminal on the power board.
- 2. Turn the viscosity adjustment screw to the MAX position.
- 3. With the freezer properly primed, actuate the refrigeration cycle (press the Auto button).
- During the freezing process, draw a sample and inspect the product's appearance. When the desired viscosity and appearance is achieved, note the beater motor's amperage.
- 5. Cancel the refrigeration cycle (press the Auto button).
- Using the chart, set the range that the beater motor's amperage falls into and place the jumper on the proper pin.

**Note:** See Viscosity Control Range Selections on page 2-3 for the amperage range.)

 Press the Auto button. When the previously noted beater motor's amperage is achieved, turn the viscosity adjustment screw counterclockwise **slowly** until the machine cycles off.

- 8. Draw several samples to verify that the following remain consistent:
  - Amperage when the machine cycles off.
  - · Product quality remains consistent.

### Mix Adjustment

The mix setting is the temperature adjustment for the mix hopper.

The ideal mix temperature is 38°F to 40°F (3.3°C to 4.4°C).

The cut-out temperature will always be 4.5°F (2.5°C) lower than the cut-in temperature. (See SB 2474.)

The range for cut-in temperature is approximately 52°F (11.0°C) min. and approximately 36°F (2.2°C) max.

### Setting the Mix Hopper Temperature

- 1. To set the mix hopper temperature, fill the hopper at least half full with approximately 40°F (4.4°C) mix.
- Install a suction pressure gauge at the evaporator pressure regulator (EPR) valve and verify the correct operating pressure. Adjust if necessary.
- 3. Set the Mix potentiometer to midrange.

**Note:** For model C161, the temperature adjustment must be made on the left logic board.

 Allow the mix hopper refrigeration system to cycle until the mix temperature is stabilized. Adjust the setting if necessary.

### Standby Adjustment

This adjustment maintains the mix temperature in the freezing cylinder during long **no sale** periods to prevent overheating of the product.

The ideal standby temperature is 30°F to 35°F (-1.1°C to 1.7°C).

Cut-out temperature will always be 4°F (2°C) lower than the cut-in temperature.

The range for cut-in temperature is approximately 44°F (6.6°C) min. and approximately 30°F (-1.1°C) max.

### Setting Standby Temperatures

 With the machine properly primed with fresh mix, turn the standby adjustment screw to the warmest position.

- 2. Press the Standby button.
- 3. When the main refrigeration system cycles off, draw a sample portion and check the product's temperature.
- 4. To get the desired standby temperature, make a slight clockwise adjustment and wait until the main refrigeration cycles off.

### **Thermistor Curve**

When checking a thermistor probe, first determine the present temperature at the probe and find it on this table, along with the approximate correct ohmmeter reading. The ohmmeter reading may vary from the correct one. Determine whether the difference is acceptable. If a probe is faulty, the difference will be great.

Table 2-1

°F	°C	Kilo Ohm
-10	-23.3	118.201
-9	-22.7	114.394
-8	-22.2	110.709
-7	-21.6	107.143
-6	-21.1	103.692
-5	-20.5	100.352
-4	-20.0	97.120
-3	-19.4	94.085
-2	-18.8	91.144
-1	-18.3	88.296
0	-17.7	85.536
1	-17.2	82.863
2	-16.6	80.273
3	-16.1	77.765
4	-15.5	75.334
5	-15.0	72.980
6	-14.4	70.627
7	-13.8	68.350
8	-13.3	66.147
9	-12.7	64.014
10	-12.2	61.951

°F	°C	Kilo Ohm
11	-11.6	59.953
12	-11.1	58.021
13	-10.5	56.150
14	-10.0	54.340
15	-9.4	52.854
16	-8.8	51.409
17	-8.3	50.003
18	-7.7	48.636
19	-7.2	47.306
20	-6.6	46.012
21	-6.1	44.754
22	-5.5	43.530
23	-5.0	42.340
24	-4.4	41.136
25	-3.8	39.967
26	-3.3	38.830
27	-2.7	37.727
28	-2.2	36.654
29	-1.6	35.612
30	-1.1	34.599
31	-0.5	33.616
32	0	32.660
33	0.5	31.760
34	1.1	30.885
35	1.6	30.035
36	2.2	29.207
37	2.7	28.403
38	3.3	27.620
39	3.8	26.859
40	4.4	26.120
41	5.0	25.400
42	5.5	24.721
43	6.1	24.059
44	6.6	23.416

°F	°C	Kilo Ohm
45	7.2	22.789
46	7.7	22.180
47	8.3	21.586
48	8.8	21.009
49	9.4	20.447
50	10.0	19.900
51	10.5	19.884
52	11.1	18.881
53	11.6	18.392
54	12.2	17.915
55	12.7	17.451
56	13.3	16.998
57	13.8	16.557
58	14.4	16.128
59	15.0	15.710
60	15.5	15.315
61	16.1	14.929
62	16.6	14.554
63	17.2	14.187
64	17.7	13.830
65	18.3	13.482
66	18.8	13.143
67	19.4	12.812
68	20.0	12.490
69	20.5	12.185
70	21.1	11.888
71	21.6	11.598
72	22.2	11.315
73	22.7	11.039
74	23.3	10.769
75	23.8	10.507
76	24.4	10.250
77	25.0	10.000
78	25.5	9.763

٥F	°C	Kilo Ohm
79	26.1	9.532
80	26.6	9.306
81	27.2	9.085
82	27.7	8.870
83	28.3	8.659
84	28.8	8.454
85	29.4	8.254
86	30.0	8.058
87	30.5	7.872
88	31.1	7.691
89	31.6	7.513
90	32.2	7.340
91	32.7	7.171
92	33.3	7.006
93	33.8	6.884
94	34.4	6.686
95	35.0	6.532
96	35.5	6.386
97	36.1	6.242
98	36.6	6.102
99	37.2	5.966
100	37.7	5.832
103	39.4	5.448
106	41.1	5.096
109	42.8	4.769
112	44.4	4.466
115	46.1	4.184
118	47.8	3.922
121	49.4	3.680
124	51.1	3.454
127	52.8	3.244
130	54.4	3.048
133	56.1	2.866
136	57.8	2.696

°F	°C	Kilo Ohm
139	59.4	2.539
142	61.1	2.391
145	62.8	2.252
148	64.4	2.124
151	66.1	2.004
154	67.8	1.891
157	69.4	1.785
160	71.1	1.687
163	72.8	1.594
166	74.4	1.508
169	76.1	1.427
172	77.8	1.351
175	79.4	1.279
178	81.1	1.212
181	82.8	1.149
184	84.4	1.090
187	86.1	1.034
190	87.8	.982
193	89.4	.932
196	91.1	.886
199	92.8	.842

## **Service Tips for Generation II Boards**

### **Initial Service Tips**

- Use the clips under the channel to hold the DEC plate when removed from the channel.
- Check all connections.
- Verify that the cable is secure.
- Verify that all pins are securely fastened in their sockets.
- Verify that all cables correctly face away from the boards. If the cable is attached incorrectly, damage to the logic board will occur, and beater motor operation will be disabled.
- · Verify probe resistance.
- Use the self-test program.

### **Self-Test Program**

The Generation II controls are programmed for a self-test. The control can be used to help identify problems in the power board, the logic board, and the thermistor probes. The self-test program is not intended to, and will not take the place of, a reasonable and prudent service technician.

The self-test program is divided into two sections. The first section is performed automatically by the logic board, and the second section is performed by the technician.

This test is designed to aid in identifying problems within the logic board, the power board, or the thermistor probes.

### Self-Test—Part I

The self-test program is initiated by holding down the Pump button on the logic board while simultaneously turning on the power switch. The Pump button may or may not be visible. Hold down the button until all of the buttons illuminate.

**Note:** If all of the buttons do not illuminate, or if the test cannot be initiated, the logic board is damaged.

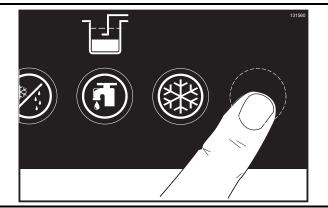


Figure 2-3

Each illuminated button corresponds with a particular relay. The illuminated button on the panel does not extinguish until the test is completed for that particular relay.

**Note:** Each relay closes for 3 seconds during this test. As the relay opens, the corresponding light extinguishes. There is a 10-second pause between each relay's activation.

Table 2-2

Logic Board Light	Corresponding Relay
MIX LOW	Mix Relay
MIX OUT	Fan Relay
MIX	Pump Relay
STANDBY	Beater Motor Relay
WASH	Compressor Relay
AUTO	Spinner Relay
PUMP	Portion Relay

When the self-test is initiated, all buttons remain on for 3 seconds. At this time, the processor begins to check the power board relays as follows:

The Set Point light turns off.

Ten seconds after the Set Point light turns off:

- The Mix relay closes and opens again. The Mix-Low light extinguishes.
- 2. The Fan relay closes and opens again. The Mix-Out light extinguishes.
- 3. The Pump relay closes and opens again. The Mix light extinguishes.

- 4. The beater motor (BTR) relay closes and opens again. The Standby light extinguishes.
- 5. The Com (compressor) relay closes and opens again. The Wash light extinguishes.
- All lights turn off and a tone sounds for 3 seconds.
   This designates the end of Part I of the self-test.

If all or most of the power board relays fail to close, the logic board is damaged. If only one relay fails to close, the power board is damaged. This test can be used to determine if a problem exists with the logic board, the power board, or elsewhere in the freezer. In other words, if during the test, the beater relay closes on the power board, but the beater motor contactor does not operate, the problem occurs after the command reaches the power board.

### Self-Test—Part II

When Part I of the self-test is complete, the control will advance to the starting point of Part II. The technician needs to complete this portion of the test. The beginning of Part II verifies the function of the control potentiometers (adjustment screw).

During this test, the Mix, Standby, Wash, Auto, and Pump lights function in direct relationship with the MIN and MAX adjustments of the potentiometer. In other words, when the adjustment screw is turned all the way to MIN, the Mix light will be illuminated. When the adjustment is turned all the way to MAX, the light will travel down and illuminate the Pump light. If the screw adjustment is made between the MAX and the MIN adjustments, one of the other lights will illuminate depending on the adjustment.

These lights create a bar graph that is directly related to the product temperature. Mix is warm, and Pump is cold.

- The Set Point light is illuminated, indicating that the control is reading the soft serve viscosity potentiometer.
- Rotate the adjustment screw back and forth from MIN to MAX. The bar graph should travel accordingly, indicating that the potentiometer is functional.
   If the bar graph lights do not react, the logic board is damaged.

been set previously, return the adjustment to its original position. For example, if the WASH light was illuminated before an adjustment screw was rotated, before going to the next step, rotate the adjustment screw until the WASH light is illuminated again.

- 3. Press the Mix button once.
- 4. The Mix-Low light is illuminated, indicating that the control is reading the Mix potentiometer.
- 5. Repeat step 2.
- 6. Press the Mix button once.
- 7. The Mix-Out light is on, indicating the control is reading the Standby potentiometer.
- 8. Repeat step 2.
- 9. Press the Mix button once.
- 10. The Mix-Low light is illuminated, indicating that the control is reading the Mix 1 terminal.
- 11. The capability of this terminal to read the thermistor probe can be checked by the following method.
  - a. Remove the thermistor probe wire from the Mix 1 terminal.
  - b. Connect the Mix 1 terminal directly to ground (simulating a warm probe). The Mix light will illuminate.
  - Remove the terminal connection from ground (simulating a cold probe). The Pump light will illuminate.

If the lights do not react, the panel is inoperative.

- 12. Press the Mix button once.
- The Mix-Out light is illuminated, indicating that the control is now reading the Barrel (freezing cylinder) probe terminal.
- 14. Check the Barrel (freezing cylinder) probe by removing the wire from the panel.
- 15. Press the Mix button again, and the self-test program is terminated.



IMPORTANT! If the machine's controls have

## **Control Overview**

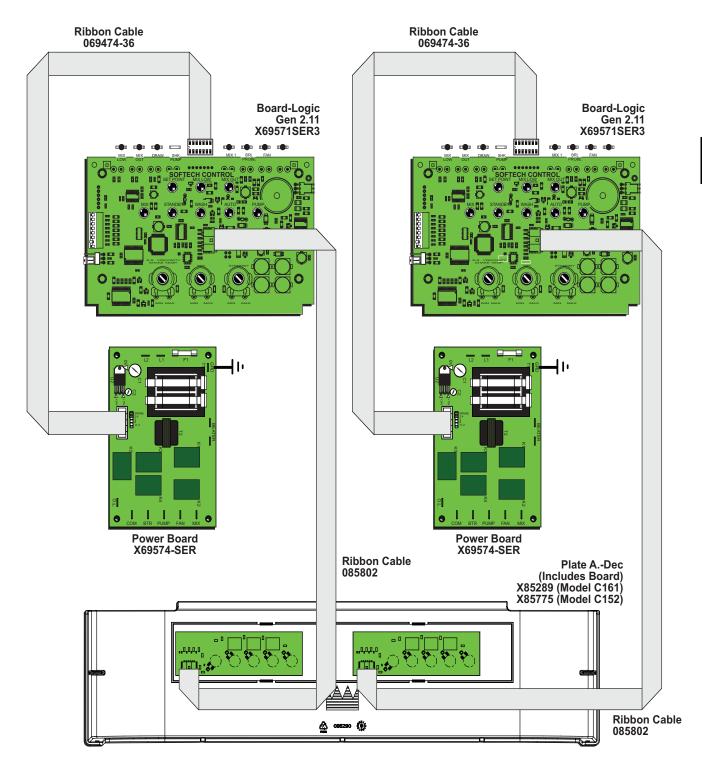


Figure 2-4

## **Refrigeration Schematic**

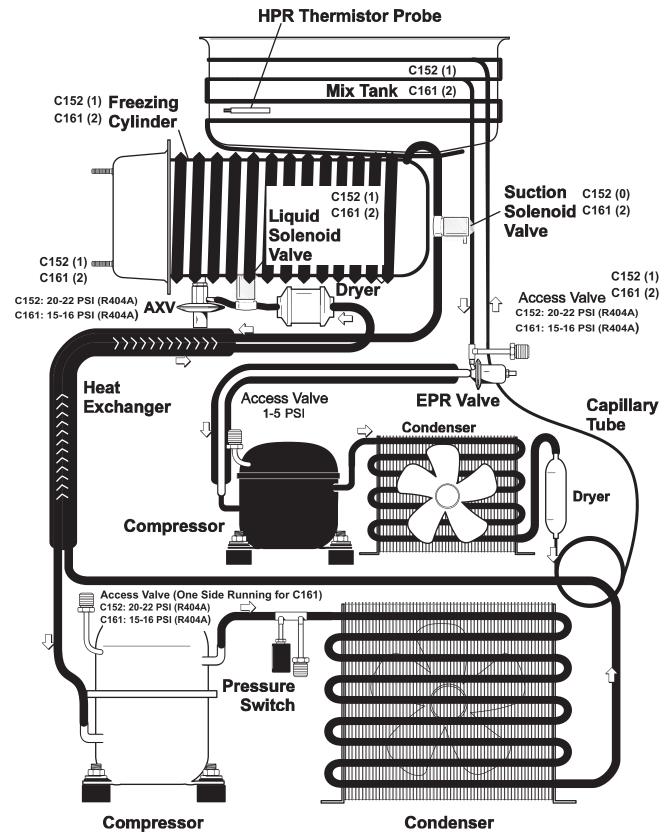


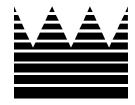
Figure 2-5

## **Valve Functions**

Table 2-3

Comp Label	Description	Function	Basic Operating Logic	Input/ Output
Evaporator Pressure Regulators (EPR)	Inlet Pressure Upstream Regulator	Limits the minimum refrigerant pressure in the hopper (currently set to 60 psig).	Limiting the minimum refrigerant pressure in the hopper prevents freezing of product mix on the hopper wall.	
Filter/Dryer		Keeps moisture, dirt, metal, and chips from entering the refrigerant flow control valves.		
Heat Exchanger (subcooler)		Allows the liquid refrigerant to be cooled before it reaches the automatic expansion valve (AXV), and thermostatic expansion valve (TXV).	When the liquid is subcooled before it reaches the refrigerant control, the refrigeration effect per machine mass of refrigerant is increased.	
Automatic Expansion Valve (AXV)	Automatic Expansion Valve of the Freezing Cylinder Circuit	Controls the refrigerant flow during the cooling of the freezing cylinder.		

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## **Section 3: Troubleshooting**

- General Troubleshooting Guide
- Electrical Troubleshooting

## **General Troubleshooting Guide**

Table 3-1

Problem		Probable Cause	Remedy		
1.	No product is being	a. Low on mix. The Mix-Out light is on.	a. Add mix to the mix hopper.		
	dispensed.	b. The power switch is in the OFF position.	b. Place the power switch to the ON position and press the Auto button.		
		c. Beater motor is out on reset.	c. Allow the beater motor to cool. Place the power switch to the OFF position. Press the RESET button firmly. Place the power switch to the ON position and press the Wash button. Open the side access panel and observe that the drive shaft is turning clockwise as viewed from the front of the machine. Press the Auto button to return to the Auto mode.		
		d. Incorrect usage of the mix feed tube.	d. Follow the correct feed tube procedures and use of air orifice.		
2.	The product is too thick.	a. Improper priming procedures.	Drain the freezing cylinder and reprime the machine.		
		b. The viscosity control is set too cold.	b. Adjust the viscosity.		
3.	The product is too soft.	a. The draw rate is set too fast.	a. Adjust the draw rate: 5 oz. to 7 1/2 oz. (142 g to 213 g) of product by weight every 10 seconds.		
		b. Outdrawing the capacity of the freezing cylinder.	b. The continuous draw rate is approximately 15 cones.		
		c. There is inadequate air space around the machine.	c. A minimum of 6 in. (15.2 cm) of clearance around all sides is required.		
		d. Dirty condenser or air filters on air-cooled machines.	d. Clean regularly.		
		Inadequate water supply on water-cooled machines.	e. Check the water supply. Check the water lines for leaks or kinks.		
f. Bad scraper blad		f. Bad scraper blades.	f. Replace the scraper blades.		
		g. The viscosity control is set too warm.	g. Adjust the viscosity.		
		h. Incorrect usage of the mix feed tube.	h. Follow the correct feed tube procedures and use of the air orifice.		
4.	The mix in the hopper is too warm.	a. The hopper cover is not in position.	a. Clean the hopper cover and place it in position.		
		b. The hopper temperature is out of adjustment.	b. Adjust the temperature control.		
5.	The mix in the hopper is too cold.	a. The hopper temperature is out of adjustment.	a. Adjust the temperature control.		
6.	Product is collecting on top of the freezer door.	The top O-ring on the draw valve is improperly lubricated or worn.	a. Lubricate properly or replace the O-ring.		

Problem	Probable Cause	Remedy
7. Excessive mix leakage from the bottom of the door spout.	The bottom O-ring on the draw valve is improperly lubricated or worn.	a. Lubricate properly or replace the O-ring.
Excessive mix     leakage into the long     drip pan.	<ul><li>a. The seal on the drive shaft is improperly lubricated or worn.</li><li>b. The seal is installed inside out on the drive shaft.</li></ul>	a. Lubricate properly or replace the seal.     b. Install the seal correctly.
9. Excessive mix leakage from the rear of the freezer into the short drip pans.	<ul> <li>a. Worn or missing O-rings.</li> <li>b. Inadequate lubrication of the drive shaft.</li> <li>c. The drive shaft and beater assembly work forward.</li> <li>d. Worn rear shell bearing.</li> <li>e. Gear box out of alignment.</li> </ul>	<ul> <li>a. Install or replace the O-rings.</li> <li>b. Lubricate properly.</li> <li>c. Verify the refrigerant charge and check for a shorted freezing cylinder.</li> <li>d. Replace the component.</li> <li>e. Re-align the gear box.</li> </ul>
10. The drive shaft is stuck in the drive coupling.	<ul><li>a. Mix and lubricant have collected in the drive coupling.</li><li>b. Rounded corners of the drive shaft, the drive coupling, or both.</li><li>c. The gear box is out of alignment.</li></ul>	<ul><li>a. Brush clean the rear shell bearing area regularly.</li><li>b. Replace worn component(s).</li><li>c. Re-align the gear box.</li></ul>
11. Freezing cylinder walls are scored.	<ul><li>a. Missing or worn front bearing.</li><li>b. The beater assembly is bent.</li><li>c. The gear box is out of alignment.</li></ul>	<ul><li>a. Install or replace the front bearing.</li><li>b. The beater assembly must be replaced.</li><li>c. Re-align the gear box.</li></ul>
12. The machine will not run when in the Auto mode.	<ul> <li>a. The machine is unplugged.</li> <li>b. The beater motor is out on reset.</li> <li>c. The circuit breaker is off, or the fuse is blown.</li> <li>d. Low on mix. The Mix-Out light is on.</li> </ul>	<ul> <li>a. Plug into wall receptacle.</li> <li>b. Allow the beater motor to cool. Place the power switch to the OFF position. Press the RESET button firmly. Place the power switch to the ON position, and press the Wash button. Open the side access panel and observe that the drive shaft is turning clockwise as viewed from the front of the machine. Press the Auto button to return to the Auto mode.</li> <li>c. <i>Do not use metal objects to press the RESET button</i>.</li> <li>d. Turn the breaker on, or replace the fuse.</li> <li>e. Add mix to the mix hopper and press the Auto button.</li> </ul>
	e. Water-cooled machines: The water is turned off.	f. Turn the water on.
13. Product is not feeding into the freezing cylinder.	a. The mix inlet hole is frozen up.     b. Incorrect usage of the mix feed tube.	<ul><li>a. The hopper temperature needs adjustment.</li><li>b. Follow the correct feed tube procedures and use of the air orifice.</li></ul>

Problem	Probable Cause	Remedy
14. Product is popping when drawn.	a. The draw rate is set too fast.	a. The draw rate should be set at 5 oz. to 7 1/2 oz. (142 g to 213 g) of product per 10 sec.
15. The Mix-Low and Mix-Out probes are not functioning.	a. There is milkstone buildup in the hopper.	a. Clean the hoppers thoroughly.
16. Machine operating/ changing modes without pressing button.	<ul><li>a. The wire harness is running directly behind the buttons, causing activation.</li><li>b. The wire harness is pinched between the control channel and DEC plate.</li></ul>	a. Remove DEC plate and secure harness below buttons.      b. Remove the DEC plate and inspect wires for damage. Reassemble and ensure wires are not caught between DEC plate and channel before tightening screws.
17. The buttons do not activate when pressed.	The wire harness is disconnected from the DEC plate or the logic board.	Remove DEC plate and verify that wire harness is connected to DEC plate and logic board.

## **Electrical Troubleshooting**

The following information provides a sequential list of electrical components that L-1 power travels through to initiate various operations.

### **Auto Mode of Operation**

L-1 power travels through the power switch, beater overload switch, compressor high-pressure cut-out switch, overload terminal (OL) on the power board, and BTR terminal of the power board, and energizes the coil of the beater motor contactor.

L-1 power travels through the power switch, beater overload switch, compressor high-pressure cut-out switch, overload terminal (OL) on the power board, and COM terminal of the power board, and energizes the coil of the compressor contactor.

L-1 power travels through the power switch, beater overload switch, compressor high-pressure cut-out switch, L-1 terminal of the power board, and Mix terminal of the power board, and energizes the hopper refrigeration compressor and condenser fan.

### **Wash Mode of Operation**

L-1 power travels through the power switch, beater overload switch, compressor high-pressure cut-out switch, overload terminal (OL) on the power board, and BTR terminal of the power board, and energizes the coil of the beater motor contactor.

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### Section 4: Parts

- Warranty Explanation
- Model C152 Operator Parts
- Model C161 Operator Parts
- Model C152 Service Parts
- Model C161 Service Parts
- Beater Door Assembly Model C152
- Beater Door Assembly Model C161
- Accessories Model C152
- Accessories Model C161
- X86420-12—Control A. 115V 60HZ (Model C152)
- X85977-76 Control A. (Model C161)
- X86366 Control A.-Channel (Model C152)
- X69423 Control A.-Channel (Model C161)
- X59557-27 Box A.-Cap & Relay (Model C161)

### **Warranty Explanation**

Table 4-1

Class 103 Parts:	The warranty for new equipment parts is one year from the original date of unit installation, with a replacement parts warranty of three months.
Class 212 Parts:	The warranty for new equipment parts is two years from the original date of unit installation, with a replacement parts warranty of twelve months.
Class 512 Parts:	The warranty for new equipment parts is five years from the original date of unit installation, with a replacement parts warranty of twelve months.
Class 000 Parts:	There is no warranty for wear items.

CAUTION: Warranty is valid only if required service work is provided by an authorized Taylor service technician.

NOTE: Taylor reserves the right to deny warranty claims on equipment or parts if a unapproved refrigerant was installed in the machine, system modifications were performed beyond factory recommendations, or it is determined that the failure was caused by neglect or abuse.

#### **Compressor Warranty Disclaimer**

The refrigeration compressor(s) on this machine are warranted for the term indicated on the warranty card accompanying this machine. However, due to the Montreal Protocol and the U.S. Clean Air Act Amendments of 1990, many new refrigerants are being tested and developed, thus seeking their way into the service industry. Some of these new refrigerants are being advertised as drop-in replacements for numerous applications. It should be noted that, in the event of ordinary service to this machine's refrigeration system, only the refrigerant specified on the affixed data label should be used. The unauthorized use of alternate refrigerants will void your compressor warranty. It will be the owner's responsibility to make this fact known to any technicians he/she employs.

It should be noted that Taylor does not warrant the refrigerant used in its machine. For example, if the refrigerant is lost during the course of ordinary service to this machine, Taylor has no obligation to either supply or provide its replacement either at billable or unbillable terms.

Taylor will continue to monitor the industry and test new alternates as they are being developed. Should a new alternate prove through our testing that it would be accepted as a drop-in replacement, the above disclaimer would become null and void. To find the current status of an alternate refrigerant as it relates to your compressor, call the local Taylor distributor or the Taylor factory. Be prepared to provide the model/serial number of the machine in question.

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## **Model C152 Operator Parts**

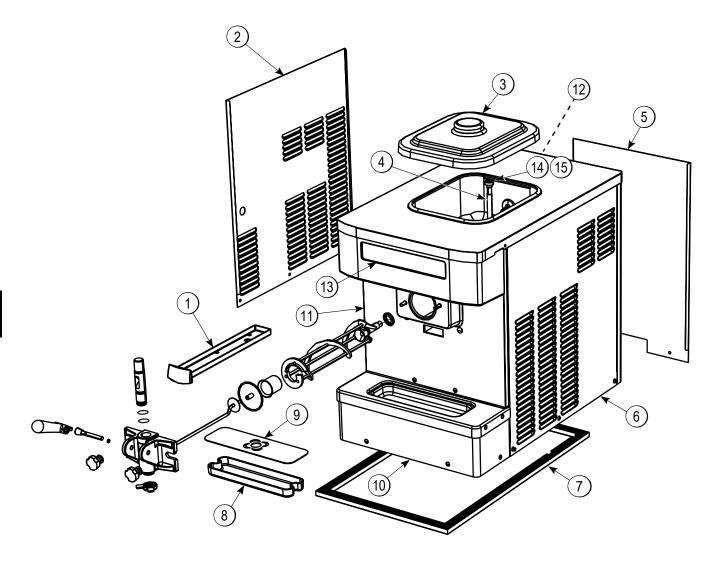


Figure 4-1

Item	Description	Part No.
1	Pan-Drip	085295
2	Panel-Left	086378
3	Cover AHopper	X49633-SP
4	Tube-Feed	035819
5	Panel-Rear	086376
6	Panel-Right	086377
7	Gasket-Base Pan	086306
8	Tray-Drip	086312

Item	Description	Part No.
9	Shield-Splash	086379
10	Panel-Lower Front	086380
11	Panel-Front	086384
12	Trim-Corner-Rear	086375
13	Plate-Dec	X85775
14	Air Orifice	022465-100
15	O-ring-3/8 OD x.070W	016137

# **Model C161 Operator Parts**

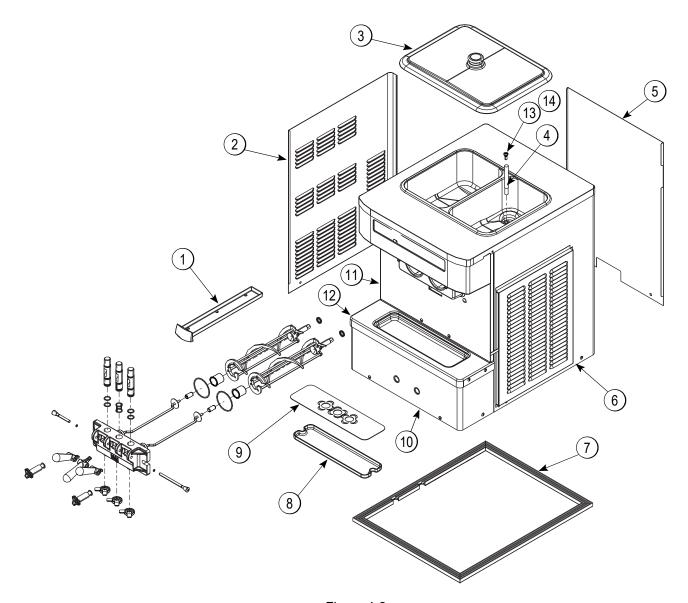


Figure 4-2

Item	Description	Part No.
1	Pan-Drip	085295
2	Panel -Side Left	085262
3	Cover AHopper	085351
4	Tube-Feed	030797
5	Panel-Rear	085274
6	Panel ASide-Right	X69433
7	Gasket-Base Pan	055815-SP

Item	Description	Part No.
8	Tray-Drip 16-7/8L x 4-5/16	085699
9	Shield-Splash	085304
10	Panel-Lower Front	X85570
11	Panel AFront	085678
12	Shelf-Drip Tray	085698
13	Orifice-Air	022465-100
14	O-ring-3/8 OD x .070W	016137

### **Model C152 Service Parts**

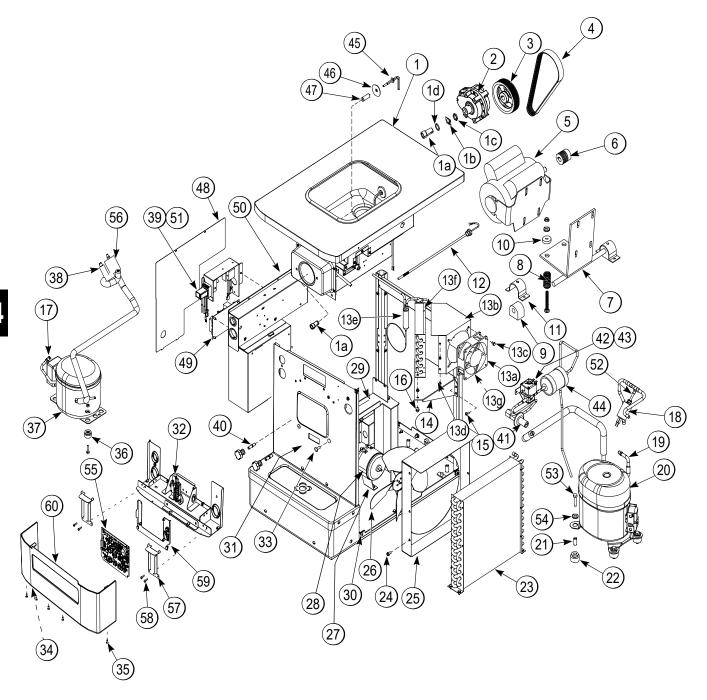


Figure 4-3

#### **Model C152 Service Parts**

Item	Description	Part No.
1	Shell AInsulated	X86356-SER
1a	Bearing-Rear Shell	023648
1b	Tab-Bearing Lock	025027
1c	Nut-Rear Bearing	023647
1d	Collar-Bearing-Rear	025564
2	Gear A*Reducer 4 to 1	025770-SER
3	Pulley-10J-4.50PD-5/8B	030455
4	Belt-Poly V-280J10	025776
5	Motor-1/2 HP	059742-12
6	Pulley-10J-1.5 PD-5/8 Bore	025479
7	Hinge AMotor	X25896
8	Spring-Comp .970 x .115 x 2.00	025707
9	Bushing-Rubber Mount	012258
10	Cap-Rubber Mount	011844
11	Clamp-Mounting	012257
12	Switch AReed Interlock Door	X65658-5
13	Motor ACondenser Fan (Includes Items 13A to 13G)	X86552-12
13a	Motor-Fan	062253-12
13b	Shroud-Condenser	051542-SP
13c	Screw-10-32 x 3/8 UNSL HWH	039381
13d	Screw-8 x 1/4 SLTD Hex	009894
13e	Dryer-Cap. Tube .026 ID x 8	048725
13f	Condenser-AC 7 x 6 x 1.25	027155
13g	Harness-Wire Danfoss	086253
14	Mount-Condenser *C152*	086362
15	Screw-10-24X1/2 Torx	002077
16	Screw-10-32X3/8 Serrated	075985
17	Valve-Access-1/4 MFL x 1/4	047016
18	Switch-Pressure 440 psi	048230
19	Valve-Access-1/4 FL x 3/8	044455
20	Compressor	049302-12
21	Sleeve-MT-Comp AE	039920
22	Grommet-Compressor MT	039919

Item	Description	Part No.
23	Condenser-AC 12L x14H x 1.87T 3RW	046556
24	Screw-10 x 3/8 Slotted Hex	015582
25	Shroud-Fan	086381
26	Fan-4 Blade 11" Push 30	027818
27	Bracket-Fan	025631
28	Motor-Fan	027817-12
29	Guide ADrip Pan	X86354
30	Fastener-Clip 10-32 U-Type CR3	064719
31	Panel AFront	086384
32	Channel AControl	X86366 See page 4-17
33	Bolt-Carriage 1/4-20x3/4	012347
34	Switch-Toggle-4PDT	037394
35	Screw-6-36x3/8 SLTD	002201
36	Kit-Mounting-Compress	047704
37	Compressor	047701-12
38	Valve-Access-1/4 FL x 1/4	044404
39	Relay-DPDT 1MA-7A 1/6HP	052111-03
40	Stud-Nose Cone	013496
41	Valve-EXP-Auto-1/4Sx1/4	046365
42	Valve-Solenoid 7/64ORF	043449-12
43	Bracket-Solenoid	086387
44	Dryer-Filter-HP62-3/8	048901
45	Probe A -Mix *Square*	X30922
46	Disc-Probe *SQ Hole*	030965
47	Spacer-Probe *SQ Hole*	030966
48	Cover-Control Box	086386
49	Board-Power Gen 2	X69574SER1
50	Control A. 115V 60HZ	See page 4-15

Item	Description	Part No.
51	Harness-Trans Relay	086256-12
52	Valve-Access-1/4 FL x 1/4	044404
53	Screw-5/16-18x1-1/2 Hex	001894
54	Washer-5/16 USS Flat CR3	000651
55	Board-Logic-Gen 2.11	X69571SER3
56	Valve-EPR 1/4S	022665
57	Bracket-DEC-Plate	087311
58	Screw-8 x 1/4 SLTD Hex	009894
59	Plate-Mounting-Board	085565
60	Plate-A DEC	X85775

## **Model C161 Service Parts**

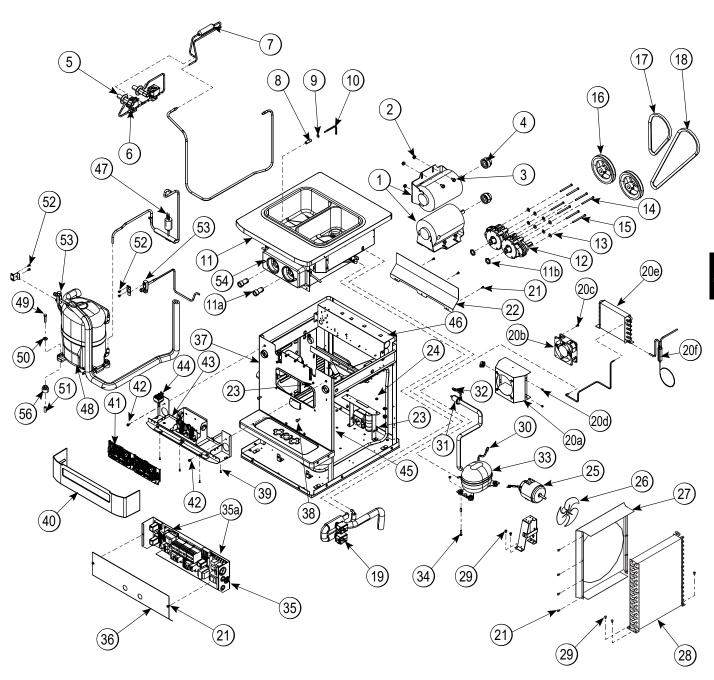


Figure 4-4

#### **Model C161 Service Parts**

Item	Description	Part No.
1	Motor-1/2 HP Remote Cap	055097-27G
2	Nut-5/16-18 Flange Nut	017327
3	Screw-5/16-18x5/8 SERR	017326
4	Pulley-AK20x5/8	041162
5	Valve-Exp-Auto-1/4S x1/4	046365
6	Valve-Solenoid 7/64ORF	043449-27
7	Dryer-Filter 1/4 x 1/4	048878
8	Spacer-Probe *Sq Hole*	030966
9	Disc-Probe *Sq Hole*	030965
10	Probe AMix *Square*	X30922
11	Shell AInsulated	X85022-SER
11a	Bearing-Rear Shell	023648
11b	Nut-Rear Bearing	023647
12	Gear A.*Reducer 4 to1	025770-SER
13	Washer-5/16 SAE Flat	017660
14	Screw-1/4-20x3 Hex Head	025984
15	Screw-1/4-20x3-1/4 Hex	025985
16	Pulley-5.7" Pitch Dia x 5/8"	041498
17	Belt-AX24	055201
18	Belt-AX45	045311
19	Valve-Sol-1/4 ORFX3/8IN	062019-27
20	Condenser ADanfoss	X63551-27G
20a	Shroud Danfoss	048818
20b	Motor-Fan 95.3 CFM 2700	062253-27
20c	Screw-10-32x3/8 UNSL HWH	039381
20d	Screw-8x1/4 SLTD Hex	009894
20e	Condenser-AC 7x6x1.25	027155
20f	Dryer-Cap. Tube .021 ID x 9	055522
*20g	Harness-Wire-Danfoss	063563
21	Screw-10x3/8 Slotted Hex	015582
22	Cover-Cap.&Relay Box	055136
23	Screw-10-32x1/2 SERR HWH	036054
24	Nut-10-32 Flange Locknut	020983
25	Motor-Fan 50 Watt	029770-27
26	"Fan-3 Blade 12 "" Pull"	063397
27	Shroud-Condenser	064356

Item	Description	Part No.
28	Condenser-AC 12LX16H	048935
29	Screw-10-32x3/8 UNSL HWH	039381
30	Valve-Access-1/4 MFLX1/4	047016
31	Valve-EPR 1/4s	022665
32	Valve-Access-1/4fl x 1/4	044404
33	Compressor Pl35g	055187-27
34	Kit-MTG-Compressor	047704
35	Control A. *Gen II*	See Page 4-16
35a	Board-Power-Gen II	X69574-SER
36	Cover-Control Box	085260
37	Panel AFront	X69417
38	Bolt-Carriage 1/4-20x3/4	012347
39	Screw-6-32x3/8 SLTD	002201
40	Plate-Dec *GENII	X85289
41	Board-Logic-Gen 2.11	X69571SER3
42	Screw-8x1/4 Sltd Hex	075985
43	Control AChannel -	X69423
	(See Page 4-18)	
44	Switch-Toggle-4pdt	037394
45	Screw-10-24x1/2 Torx	002077
46	Box ACap&Relay (See Page 4-19)	X59557-27G
47	Switch-Pressure 405 psi	052663
48	Compressor L63B562BBCB	048727-27E
49	Screw-5/16-18x1-1/2 Hex	001894
50	Washer-5/16 USS Flat CR3	000651
51	Nut-5/16-18 Flange Nut	017327
52	Screw-1/4-20x1/2 SLT HWH	039381
53	Valve-Access-1/4MFL x 3/8	053565
54	Stud-Nose Cone-5/16-18	013496
*55	Switch AReed Interlock	X65658-5
56	Grommet-CompMTG	037428

<sup>\*</sup>Not Shown

# **Beater Door Assembly Model C152**

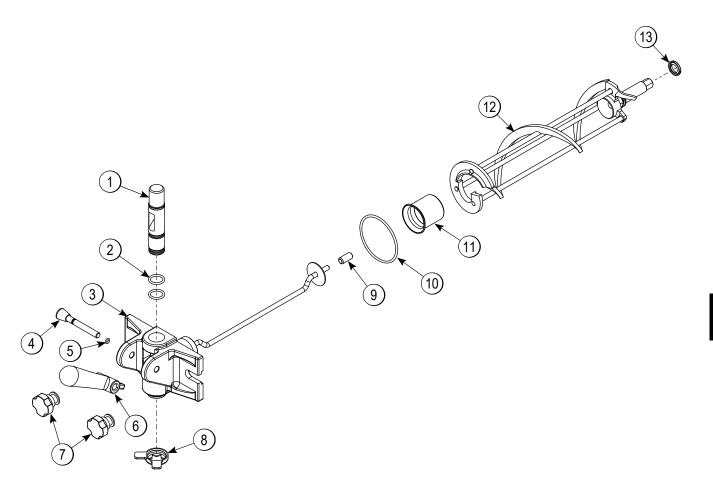


Figure 4-5

Item	Description	Part No.
1	Valve-Draw	024763-SP1
2	O-ring-7/8 OD x.103W	014402
3	Door A3SPT 1.5qt VALOX	X86373-SER
4	Pin APivot-Short	X86374
5	O-ring-5/16 OD x.070W	016272
6	Handle-Draw	085615
7	Nut-Stud	034829-SP

Item	Description	Part No
8	Cap-Design 1.010"ID-6 PT.	014218
9	Bearing-Guide	014496
10	O-ring-2-3/4 OD x .139W	019998
11	Bearing-Front	023262
12	Beater A.	X24689
13	Seal-U-Cup	080534

# **Beater Door Assembly Model C161**

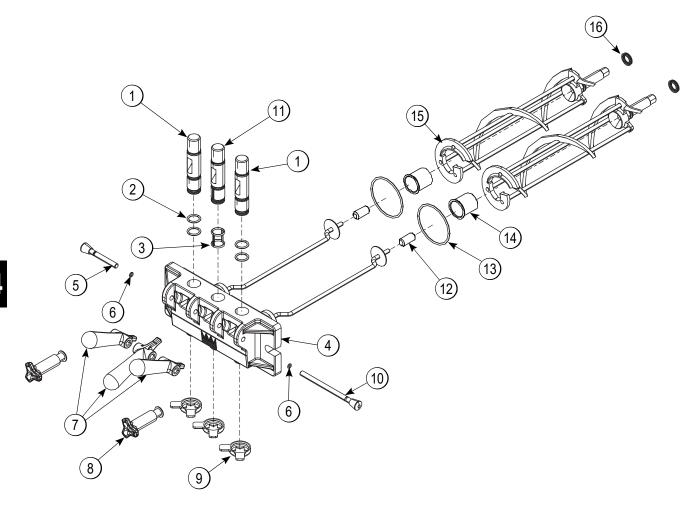


Figure 4-6

Item	Description	Part No.
1	Valve-Draw	024763-SP1
2	O-ring-7/8 OD x.103W	014402
3	Seal-Draw Valve *Small H-ring*	030930
4	Door A3SPT 1.5qt Valox	X56906SER3
5	Pin APivot -Short*	X38539
6	O-ring-5/16 OD x.070W	016272
7	Handle-Draw	085615
8	Nut-Stud	056802-SP

Item	Description	Part No.
9	Cap-Design 1.010"ID-6 PT.	014218
10	Pin APivot -Long*	X38538
11	Valve-Draw-Center	031164-SP
12	Bearing Guide	014496
13	O-ring-2-3/4 OD x.139W	019998
14	Bearing Front	023262
15	Beater A	X24689
16	Seal-U-Cup	080534

## **Accessories Model C152**



Figure 4-7

Item	Description	Part No.
1	Pail-6·qt.	023348
2	Brush-Rear BRG 1" D x 2" LG	013071
3	Brush-Double-Ended	013072
4	Brush-Draw·Valve·1" OD x 2" x 17"	013073
5	Brush-Mix-Pump-Body-3"x7" White	023316

Item	Description	Part No.
6	Lubricant-Taylor·4·oz.	047518
7	Kit ATune-Up	X25802
*	Sanitizer Kay-5 25 PKTS	See Note

\*NOTE: A sample container of sanitizer is sent with the machine, for reorders, order Kay-5<sup>®</sup> part No. 041082 (200 packs) or Stera-Sheen<sup>®</sup> part no. 055492 (100 2 oz. packs).

## **Accessories Model C161**



Figure 4-8

Item	Description	Part No.
1	Pail-6·qt.	023348
2	Brush-Rear BRG 1" D x 2" LG	013071
3	Brush-Double·Ended	013072
4	Brush-Draw·Valve·1" OD x 2" x 17"	013073
5	Brush-Mix·Pump·Body-3"x7" White	023316

Item	Description	Part No.
6	Lubricant-Taylor·4·oz.	047518
7	Kit·ATune·Up	X31167
*	Sanitizer Kay-5 25 PKTS	See Note

\*NOTE: A sample container of sanitizer is sent with the machine. For reorders, order Kay-5<sup>®</sup> part No. 041082 (200 packs) or Stera-Sheen<sup>®</sup> part no. 055492 (100 2 oz. packs).

# X86420-12—Control A. 115V 60HZ (Model C152)

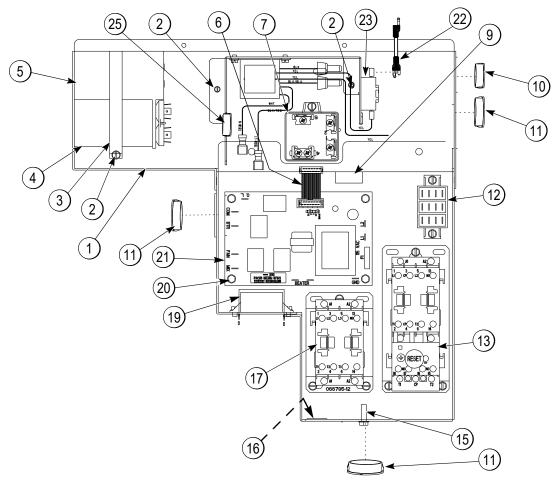


Figure 4-9

Item	Description	Part No.
1	Box AControl *C152*	X86416
2	Screw-8x1/4 SLTD Hex Washer	009894
3	Strap-Capacitor 5-5/8 in.	030258
4	Capacitor-Run - 25UF/370V	023739
5	Capacitor-Start-72-88UF/250V	039557-27
6	Cable-Ribbon - PWR/RLY	069473-36
7	Relay-Start-Compressor	045432-12
*8	Harness-Wire Cap/Relay *C152*	086254
9	Clamp-Cable-Flat Ribbon	046367
10	Bushing-Snap 1 ID x 1-1/4OD BL	600288
11	Bushing-Snap 1-5/16IDX1-1/2OD	017008
12	Block-Terminal 3 Pole	051331
13	Starter-1 Phase-4.0 to 6.5 Amp	066794-12J

Item	Description	Part No.
*14	Harness-Wire BTR MTR *C152*	086255
15	Screw-10-32x5/8 Taptite Hex HD	039382
16	Label-Protective Earth Ground	017669
17	Relay-3 Pole 115V	066795-12
*18	Harness-Wire Control Box*C152*	086257
19	Block-Terminal 1 Pole	073423
20	Screw-6-32X5/8 Taptite Hex HD	041363
21	Board-Power-GEN 2	069574-12
22	Harness AWire-Main Power	X86554-12
23	Relay ADoor Interlock *C152*	X86626-12
*24	Nut-10-32 Whiz Flange Locknu	020983
25	Bushing-Split 51/64ID x 1-1/	037491

<sup>\*</sup> Not Shown

## X85977-76 Control A. (Model C161)

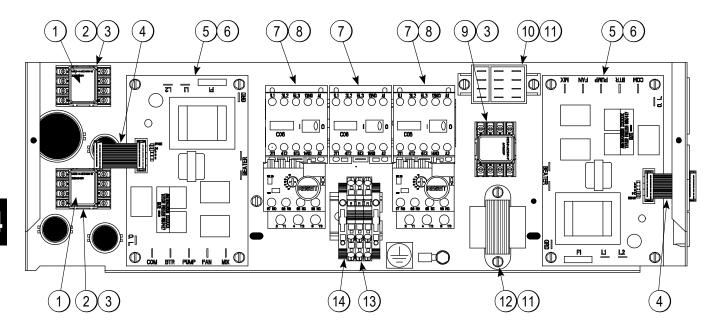


Figure 4-10

Item	Description	Part No.
1	Relay-DPDT 100UA to 7A	052111-76
**2	Socket-Relay-for Use w/052111	052112
3	Screw-6X5/16 SLTD Round	013646
4	Cable-Ribbon-PWR/Relay	069473-60
5	Board-Power-GEN 1 & 2	X69574-SER
*5a	Fuse063A-250V-5x20mm	051272
6	Screw-6-32x5/8 UNSLTD	041363
7	Contactor 230VAC 1PH	055248-27
8	Overload-Thermal-2P	055249-27G

Item	Description	Part No.
9	Relay-DPDT 100UA - 7A 1/8	052111-03
10	Block-Terminal 2P .25 SPD	069015
11	Screw-8X1/4 SLTD Hex	009894
**12	Trans120/208/240V	081783-27
13	Block-Terminal 3 Pole Green	080968
14	Plate-End Terminal Block	080969
*	Harness-Wire-Cntrl Box	069129-27
*	Harness-Wire-Main	069219-27
*	Harness-Trans/Relay	069278-27

<sup>\*</sup>Not Shown

<sup>\*\*</sup>Part of 069278-27 Harness

# X86366 Control A.-Channel (Model C152)

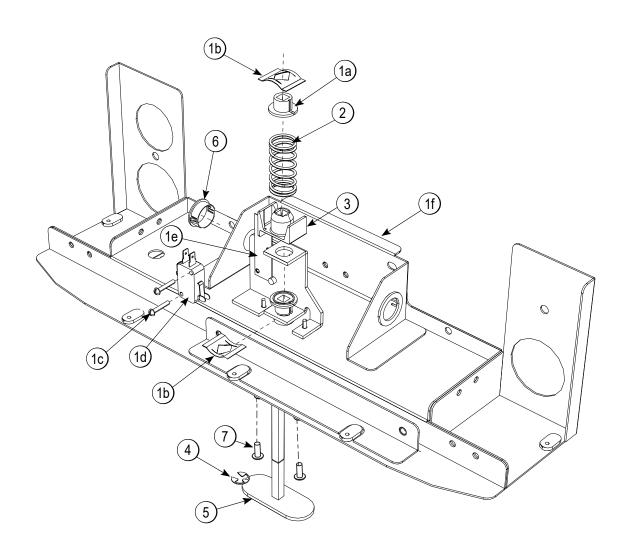


Figure 4-11

Item	Description	Part No.
1	Switch ADraw (Includes Items 1a-1f)	X55234
1a	Bearing-Switch	029244
1b	Nut-Push On-1/2DIA. Shaft	039735
1c	Screw-4-40x5/8 SLTD	027219
1d	Switch-Lever-SPDT	027214
1e	Insulator-Switch 1/64	029099

Item	Description	Part No.
1f	Bracket-Switch	035524
2	Spring-Comp.720x.063X2.00	023664
3	Actuator-Switch-Plastic	035609
4	E-ring-1/4 IN-ZD	034962
5	Arm ASwitch	X30736
6	Bushing-Snap 15/16 ID x 1-3/32	010548
7	Screw-6-32x3/8 SLTD	002201

# X69423 Control A.-Channel (Model C161)

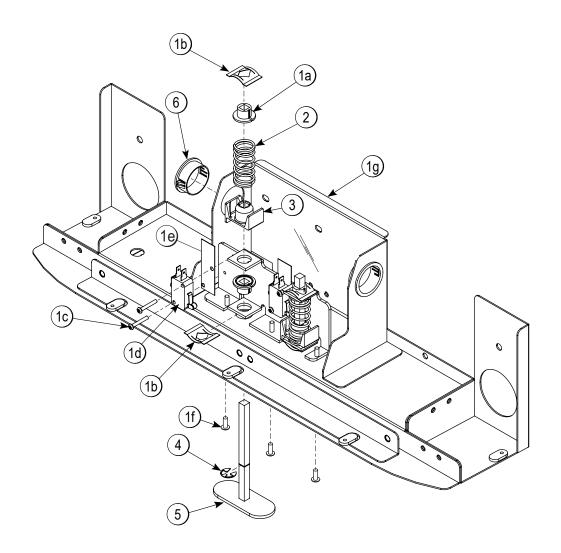


Figure 4-12

Item	Description	Part No.
1	Switch ADraw (Includes Items 1a-1g)	X85566
1a	Bearing-Switch	029244
1b	Nut-Push On-1/2DIA. Shaft	039735
1c	Screw-4-40x5/8 Sltd	027219
1d	Switch-Lever-Spdt	027214
1e	Insulator-Switch 1/64	029099

Item	Description	Part No.
1f	Screw-6-32x3/8 Sltd	002201
1g	Bracket-Switch	085567
2	Spring-Comp.720x.063x2.00	023664
3	Actuator-Switch-Plastic	035609
4	E-ring-1/4 in-ZD	034962
5	Arm ASwitch	X30736
6	Bushing-Snap 15/16 ID x 1-3/32	023396

# X59557-27 Box A.-Cap & Relay (Model C161)

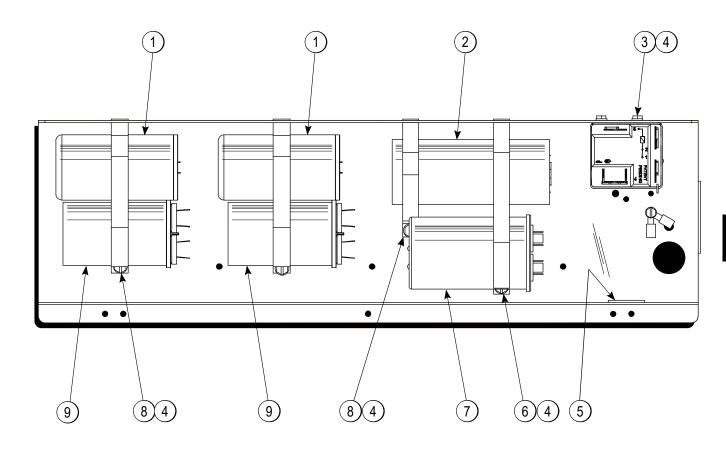


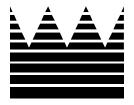
Figure 4-13

Item	Description	Part No.
1	Capacitor-Start 72-88UF/330V	059757
2	Capacitor-Start 161-193UF/25	031790
3	Relay-Start-Compressor	047067
4	Screw-10x3/8 Slotted Hex	015582
5	Bushing-Snap 11/16 ID x 7/8OD	010548

Item	Description	Part No.
6	Strap-Capacitor 7-11/32	037890
7	Capacitor-Run 30UF/370V	038487
8	Strap-Capacitor 5-5/8 IN.	030258
9	Capacitor-Run 10UF/370V	059998
*	Harness-Wire-Cap/Relay	063975-27

<sup>\*</sup> Not Shown

Notes:	



## **Section 5: Parts List**

- C152 Standard Machine
- C152 ROHS Compliant
- C152 Marine Machine
- C161 Standard Machine
- C161 ROHS Compliant
- C161 Water-Cooled Machine
- C161 Marine Machine

Model C15212H000, 115V 60HZ 1PH A/C Tecumseh (R404A) Standard Machine				
Description	Part Number	Qty.	Warr. Class	Comments
Actuator-Switch-Plastic	035609	1	103	Draw Switch
Arm ASwitch	X30736	1	103	Draw Switch
Bearing-Front	023262	1	000	
Bearing-Guide	014496	1	000	
Bearing-Rear Shell *150 52 68*	023648	*	000	See X23648-SER Kit ABearing Rear
Beater A. *150 2 162 168*	X24689	1	103	
Belt-Poly V 280J10	025776	1	000	
Block-Terminal 1P	073423	1	103	
Block-Terminal 3 Pole	051331	1	103	
Block-Terminal 2P L1,N	039421	1	103	
Board-Logic-GEN 2.11 SD/CHM/DF	X69571SER3	1	103	
+Clamp-Cable-Ribbon 25C Snap	055033	1	000	
+Plate-Mounting-Board	085565	1	103	
+Screw-6-32X5/8 SLTD Round	019309	4	000	
Board-Power GEN 1 & 2	X69574SER1	1	212	
+Fuse125A-250V-5x20mm-Fast	086029	1	000	
Bolt-Carriage-1/4/20x3/4	012347	2	000	
Brush-Double Ended-Pump & Feed T	013072	1	000	
Brush-Draw Valve 1"ODX2"X17"L	013073	1	000	
Brush-Mix Pump Body-3"X7" White	023316	1	000	
Brush-Rear BRG 1IN.DX2IN.LGX14	013071	1	000	
Bushing-Snap 1 ID x 1-1/4OD	600288	2	103	Control Box and Front Panel
Bushing-Snap 11/16 ID x 7/8	010548	2	103	Control Channel

Description	Part Number	Qty.	Warr. Class	Comments
Bushing-Snap 51/64ID x 1-1/	037491	1	103	Control Box
Cable-Ribbon-PWR/RLY	069476-36	1	103	Power Board To Logic Board
Cap-Design-1.010"ID 6 Point	014218	1	000	
BracketDEC Plate	087311	2	000	
Compressor AKA9462ZXD-AK172BT	049302-12	1	512	
+Capacitor-Run-25UF/370VAC	023739	1	103	
+Capacitor-Start - 72 88uf/250v	039557-27	1	103	
+Relay-Start-Compressor	045432-12	1	103	
+Grommet-Compressor Mount	039919	4	000	
+Sleeve-Mounting-Comp	039920	4	000	
+Screw-5/16-18x1-1/2 Hex Head	001894	4	000	
Compressor-TL2.5F-R134A	047701-12	1	512	Aux - May Use X47701SER1 Complete Kit
+ Cover-Terminal-Compressor	047739	1	103	
+Relay-Start-Compressor	027714-12	1	103	
+ Kit-Mounting-Compressor	047704	1	000	
Condenser-AC-7x6x1.25-2 Row	027155	1	103	Aux
+Dryer-Cap. Tube .026 ID x 11,	048894	1	000	
Condenser-AC-12LX14HX1.87T 3RW	046556	1	103	Main
Cord-Power	045666	1	103	
Core-Shrader-Valve-Teflon	037047	2	103	
Cover AHopper Black	X49633-SP	1	103	
Decal-Clean InstHopper	019029	1	000	
Decal-Troubleshooting	038374	1	000	
Diagram-Wiring *C152*	086047-12	1	000	
Door A1 Spout -1.5 qt	X86373-SER	1	103	

Model C	15212H000, 115V 60HZ 1PH A	/C Tecumseh (	R404A) Standard N	Machine
Description	Part Number	Qty.	Warr. Class	Comments
+Pin APivot	X86374	1	103	
+O-ring-5/16 OD x .070W	016272	1	000	
Rod ABaffle	X57200	1	103	
+O-ring-2-3/4 OD x.139w	019998	1	000	
+Handle-Draw *161*	085615	1	103	
+Valve-Draw *161*	024763-SP1	1	103	
+O-ring-7/8 OD x .103W	014402	2	000	
Dryer-Cap. Tube .026 ID x 11,	048894	1	000	Aux
Dryer-Filter-HP62 3/8 X 1/4S	048901	1	000	
Eyelet-Reset Button	013739	1	103	
Fan 4 Blade 11 " Push 30 Deg CW	027818	1	103	
Gasket-Base Pan *C152*	086306	1	000	
+Screw-10X7/16 UNSL TD HWH	066234	10	103	Gasket-Base Pan
Gear-Reducer	025770-SER	1	103	
+Screw 1/4 20x3 Hex Head Cap	025984	2	000	
+Screw 1/4 20x3 1/4 Hex Head	025985	2	000	
Guide ADrip Pan	X86354	1	103	
Harness-Wire-Cap/Relay	086254	1	103	
Harness-Wire-Control Box *C152*	086257	1	103	
Harness-Wire-Danfoss *C152*	086253	1	103	
Harness-Wire-Dec Plate	085802	1	103	
Harness-Wire-BTR MTR *C152*	086255	1	103	
Harness-Wire-MX LVL/HPR PRBE	086666	1	103	
Harness-Trans Relay A.	086256-12	1	103	
+Kit ATrans 120/208/240V 24V	X81783-27S	1	103	

Description	Part Number	Qty.	Warr. Class	Comments
Kit AMotor-Fan	X62253-12	1	103	
Kit AProbe-Thermistor-IP68	X82397-SER	1	103	
Kit ATune Up*150 152*	X25802	1	000	
O-ring-5/16 OD x .070W	016272	1	000	
O-ring-7/8 OD x .103W	014402	2	000	
Bearing-Guide	014496	1	000	
O-ring-3/4 OD x .103w	015835	1	000	
O-ring-2-3/4 OD x .139w	019998	1	000	
Seal-U-Cup	080534	1	000	
Bearing-Front	023262	1	000	
Tool -O-ring-Removal	048260-WHT	1	000	
Label-Caution-Ground-Cord Unit	032165	1	000	
Label-SW-Power-Off/On-SYM	052632	1	000	
Label-Condenser Sharp	059287	2	000	
_abel-Warn-Cover	051433-CAN	5	000	
Label-Warn-Elec-SGL-Small	032717-CAN	2	000	
Leg-4"-3/8-16 Stud-Plastic	024755	4	103	
Lubricant-Taylor 4 oz.	047518	1	000	
Lug-Grounding-4-14GA Wire	017667	1	000	
+Screw-1/4-20x5/8 Serrated	017522	1	000	
+Nut-1/4-20 Whiz Flange Lock	017523	1	000	
Man-Oper	085592-M	1	000	
Motor-1/2 Hp	059742-12	1	212	
+Capacitor-Run 35uf/370v	059756	1	103	
+Capacitor-Start 460 552uf/165v	059758	1	103	

Model C15212	15212H000, 115V 60HZ 1PH A/C Tecumseh (R404A) Standard Machine			
Description	Part Number	Qty.	Warr. Class	Comments
Motor-Fan 95.3 CFM 2700 RPM	062253-12	*	103	See - Kit AMotor-Fan
Motor-Fan	027817-12	1	103	
+Fan 4 Blade 11 " Push 30 Deg CW	027818	1	103	
Nut-Stud	034829-SP	2	103	
Pail-6 qt.	023348	1	000	
Pan-Drip 13-5/16	085295	1	103	
Panel-Front	086384	1	103	
+Screw-10-24x1/2 Torx Truss	002077	5	000	
+Screw-10x3/8 Slotted Hex	015582	5	000	
Panel-Lower-Front	086380	1	103	
Panel-Rear *C152*	086376	1	103	
Panel-Left	086378	1	103	
Panel-Right	086377	1	103	
Panel-Skirt-Air *C152*	086649	1	103	Only for Machines with legs
Trim-Corner-Rear *C152*	086375	2	103	
Plate ADEC *C152*	X85775	1	103	Complete w/Board
Probe AThermistor-FEM-0.25	X31602-38	*	103	Use X82397-SER Kit AProbe-Thermistor IP68
Probe AMix *Square*	X30922	2	103	
+Disc-Probe *SQ Hole*	030965	2	103	
+Spacer-Probe *SQ Hole*	030966	2	103	
Pulley-10J-1.5pd-5/8 Bore	025479	1	103	Beater Motor
Pulley-10J-4.50pd 5/8 Bore	030455	1	103	Gear Reducer
Relay-Start-Compressor	045432-12	1	103	Main
Relay-DPDT 1MA to 7A 1/6HP	052111-03	1	103	

	15212H000, 115V 60HZ 1PH A	1		T
Description	Part Number	Qty.	Warr. Class	Comments
+Socket-Relay for Use w/052111	052112	1	103	
Relay-Start-Compressor	027714-12	1	103	Aux
Relay-3 Pole 115V	066795-12	1	103	
Sanitizer Kay-5 125 Packets	041082	1	000	
Seal-U-Cup	080534	1	000	
Shelf-Drip Tray *C152*	086311	1	103	086312 Tray
Shell A Insulated *152*	X86356-SER	1	512	
Stud-Nose Cone-5/16-18x5/16-18	013496	2	103	
Shield-Splash	086379	1	103	
Shroud-Condenser	086310	1	103	
Shroud-Danfoss	051542-SP	1	103	Aux
Shroud-Fan	086381	1	103	Main
Spring-Comp.720x.063x2.00	023664	1	103	Draw Switch
Starter-1 Phase 2.5 to 4	066794-12J	1	103	
+Overload-Thermal-1P-2.5/4.0A	067461-1J	1	103	
+Button-Reset	066795-33	1	103	
Support ADrip Tray *C152*	X86382	1	103	
Switch ADraw	X55234	1	103	
Bearing-Switch	029244	2	000	
Bracket-Switch-*168*	035524	1	103	
Insulator-Switch 1/64 ARMIT	029099	1	103	
Nut-Push On-1/2DIA. Shaft	039735	2	000	
Screw-4-40x3/4 UNSLTD HWH	052569	2	000	
Switch-Lever-SPDT-15A-125-25	027214	1	103	
+Actuator-Switch-Plastic	035609	1	103	

Model C15212H000, 115V 60HZ 1PH A/C Tecumseh (R404A) Standard Machine							
Description	Part Number	Qty.	Warr. Class	Comments			
+Arm ASwitch	X30736	1	103				
+Spring-COMP.720x.063x2.00	023664	1	103				
+E-ring-1/4 IN-ZD	034962	2	000				
Switch AReed Interlock Door	X65658-5	1	103				
Switch-Pressure 440 Psi Solder	048230	1	103				
Switch-Toggle-4PDT*On-None-On	037394	1	103	Switch APower			
Terminal-Low Voltage Ground	034455	1	000				
Tray-Drip	086312	1	103				
Tube-Feed-150-Danfoss-166 Hole	035819	1	103				
Valve-Access 1/4FL x 3/8SDR-90	044455	1	103				
Valve-Access 1/4 MFLX 1/4 S90	047016	1	103				
Valve-Solenoid 7/64ORF x 1/4	043449-12	1	103				
Valve-EPR 1/4S	022665	1	103	Aux			
Valve-Exp-Auto-1/4S x1/4 FPT	046365	1	103				
+Boot-Valve-Expansion	050900	1	000				

Model C15227H000, 208-230V 60HZ 1PH A/C Tecumseh (R404A)								
Description	Part Number	Qty.	Warr. Class	Comments				
Block-Terminal 2P L1,L2	039422	1	103					
Board-Power GEN 1 & 2	X69574-SER	1	212					
+Fuse063A-250V-5X20MM-SLO B	051272	1	000					
Compressor AKA9462ZXD-AK172ET	049302-27	1	512					
+Capacitor-Run-15UF/370V	027087	1	103					
+Capacitor-Start-72 88UF/330	039567	1	103					
+Relay-Start-Compressor	048150	1	103					
Compressor TL3G- R134A	047701-27	1	512	Aux - May Use X47701SER2 Complete Kit				
+Relay-Start-Compressor TL3G	047702-27	1	103					
+Capacitor-Start-60UF-220/275V	047703	1	103					
+Dryer-Cap. Tube .026 ID x 8F	048725	1	000					
Contactor 230VAC 1PH 50/60HZ	055248-27	1	103					
Cord-Power	025340-27	1	103					
Diagram-Wiring *C152*	086047-27	1	000					
Harness-Trans Relay A.	086256-27	1	103					
Kit AMotor-Fan	X62253-27	1	103					
Motor-1/2 Hp	059742-27	1	212					
+Capacitor-Run 30MFD/370V	083338	1	103					
+Capacitor-Start 130-156UF/330V	083339	1	103					
+Screw-5/16-18x5/8 SERR. F	017973	4	000					
Motor-Fan 95.3 CFM 2700 RPM	062253-27	*	103	See - Kit AMotor-Fan				
Motor-Fan	027817-27	1	103					
+Fan 4 Blade 11 " Push 30 Deg CW	027818	1	103					
Relay-3 Pole-30A-208/240 50/60	066795-33	1	103					

Model C15227H000, 208-230V 60HZ 1PH A/C Tecumseh (R404A)								
Description	Part Number	Qty.	Warr. Class	Comments				
Relay-Start-Compressor	048150	1	103	Main				
Relay-Start-Compressor TL3G	047702-27	1	103	Aux				
Relay-Start-Compressor	048150	1	103	Main				
Starter-1 Phase 2.5 to 4	066794-27H	1	103					
+Overload-Thermal-1P-2.5/4.0A	067461-1H	1	103					
+Button-Reset	066794-1	1	103					
Valve-Solenoid 7/64ORF x 1/4	043449-27	1	103					

Model C15	240HW00, 220-240V 50 Hz 1PH	A/C Tecumse	eh (R404A). ROHS Complia	ant
Description	Part Number	Qty.	Warr. Class	Comments
Block-Terminal 2P L1, N	039421	1	103	
Compressor AKA9462ZXC-AK172JT	049302-40	1	512	
+Capacitor Run 15UF/370V	027087	1	103	
+Capacitor Start 72-88UF/330V	039567	1	103	
+Relay Start Compressor	048150	1	103	
Cord-Power-Harmonized	066395-95	1	103	
Diagram Wiring *C152*	086047-40	1	000	
Harness-Trans Relay A.	086256-40	1	103	
Motor 1/2 HP	059742-40	1	103	
+Capacitor Run 30 MFD/370V	083338	1	103	
+Capacitor Start 130-156UF/33	083339	1	103	
Motor-Fan 23.2W 50HZ	027817-34	1	103	
+Fan 4 Blade 11 " Pull 30 Deg	027818	1	103	

#### C152 Marine Machine

Model C15212HWMU, 115V 60HZ 1PH A/C Tecumseh (R404A) Marine Machine								
Description	Part Number	Qty.	Warr. Class	Comments				
PANEL-REAR *C152*	086376-SPN	1	103					
PANEL-RIGHT *C152*	086377-SPN	1	103					
PANEL-LEFT *C152*	086378-SPN	1	103					
PANEL-LOWER-FRONT *C152*	086380-SPN	1	103					
PANEL-FRONT *C152*	086384-SPN	1	103					
DIAGRAM-WIRING *C152*	086047-12M	1	000					
TRIM-CORNER-REAR *C152*	086375-SPN	2	103					
HARNESS-WIRE-CONTROL Box	086257-G	1	103					

Optional Items								
Description Part Number Qty. Warr. Class Comments								
KIT ALEG/AIR SKIRT *C152*	X86606	1	103					
+PANEL-SKIRT-AIR *C152*	086649	1	103					

C16127F000, 208 230V 60Hz 1PH A/C Bristol (R404A) Standard Machine								
Description	Part Number	Qty.	Warr. Class	Comments				
Actuator Switch Plastic	035609	2	103	Draw Switch				
Arm A. Switch	X30736	2	103	Draw Switch				
Bearing Front	023262	2	000					
Bearing Guide	014496	2	000					
Beater A. *150/152/162/16	X24689	2	103					
Belt AX24	055201	1	000					
Belt AX45	045311	1	000					
Block Terminal 2P .25 SPA	069015	1	103					
Block Terminal 3 Pole Green	080968	3	103					
Plate End Terminal Block	080969	2	103					
Board Logic Gen 2.11 SD/CHM/DF	X69571SER3	2	212					
+Clamp Cable Ribbon 25C Snap	055033	2	000					
+Plate Mounting Board	085565	2	103					
+Screw 6 32X5/8 SLTD Round	019309	8	000					
Board Power Gen 1 & 2	X69574-SER	2	212					
Fuse .063A 250V 5X20MM Slo Blo	051272	2	000					
Bolt Carriage 1/4 20x3/4	012347	2	000					
Brush DBL End Pump & Feed	013072	1	000					
Brush Draw Valve 1"OD x 2	013073	1	000					
Brush Mix Pump Body 3" X	023316	1	000					
Brush Rear BRG 1"D x 2"LG	013071	1	000					
Bushing Snap 1 ID x 1 1/4OD	600288	1	000	Control Box				
Bushing Snap 11/16 ID x 7/8OD	010548	5	103	Control Box				
Bushing Snap 1 5/16ID x 1	017008	4	103	Control Box and Front Panel				

C16127F000, 208 230V 60Hz 1PH A/C Bristol (R404A) Standard Machine								
Description	Part Number	Qty.	Warr. Class	Comments				
Bushing Split 43/64ID x 7/8OD	027691	2	103	Control Box				
Bushing Snap 15/16 ID x 1	023396	2	103	Control Channel				
Button Reset Red Plastic	055249	2	103					
+Eyelet Reset Button	013739	2	103					
Cable Ribbon PWR Relay 60 in	032445	2	103					
Cap Design 1.010"ID 6 POI	014218	3	000					
Compressor L63B562BBCB	048727-27E	1	512	Main				
+Capacitor Start 161 193UF/25	031790	1	103					
+Capacitor Run 30UF/370V	038487	1	103					
+Relay Start Compressor	047067	1	103					
+Grommet Compressor Mount	037428	4	000					
+Sleeve Mounting Comp.	039924	4	000					
+Screw 5/16 18x1 1/2 Hex Head	001894	4	000					
Compressor PL35G	055187-27	1	512	Aux May Use X55187SER2 Complete Kit				
+Capacitor Start 60UF 220/	047703	1	000					
+Cover Terminal Compressor DN	055357	1	000					
+Relay Start Compressor PL	055358	1	000					
+Kit Mounting Compressor	047704	1	000					
Condenser AC 7X6X1.25 2 Row	027155	1	103	AUX				
+Dryer Cap. Tube .021 ID x 9F	055522	1	000	AUX				
+Screw 1/4 20x1 Hex Head	017254	4	000					
Condenser AC 12LX16HX2.5T	048935	1	103	Main				
Contactor 230VAC 1PH 50/60HZ	055248-27	3	103					
Cord Power 250V 15A 120"L	068754-27	1	103					
Core Schrader Valve Teflon	037047	4	103					

C16127F000, 208 230V 60Hz 1PH A/C Bristol (R404A) Standard Machine							
Description	Part Number	Qty.	Warr. Class	Comments			
Coupling 3/8FS x 1/4FS	031791	4	103				
Cover Hopper Black*161*	085351	1	103				
Decal INST CLN HPR	019029	1	000				
Decal Troubleshoot	038374	1	000				
Diagram Wiring	085584-27S	1	000				
Door A. 3 Spout 1.5 qt Valox	X56906SER3	1	103				
Rod A. Baffle	X57200	2	103				
+Cap Design 1.010"ID 6 POI	014218	3	000				
+O ring 2 3/4 OD x .139W	019998	2	000				
+Handle Draw	085615	3	103				
+Pin A. Pivot *Long*	X38538	1	103				
+O ring 5/16 OD x .070W	016272	1	000				
+Pin A. Pivot *Short*	X38539	1	103				
+O ring 5/16 OD x .070W	016272	1	000				
+Valve Draw	024763-SP1	2	103				
+O ring 7/8 OD x .103W	014402	4	000				
+Valve Draw Center	031164-SP	1	103				
+Seal Draw Valve *Small H ring	030930	1	000				
Dryer Cap. Tube .021 ID x 9F	055522	1	000	AUX			
Dryer Filter 1/4 x 1/4 SOLD	048878	1	000	Line LIQ HTE Dry			
Eyelet Reset Button	013739	2	103				
Fan 3 Blade 12 " Pull 24D	063397	1	103				
Filter Air 13.5x17.75x7/1	042703	1	000				
Gasket Base Pan *161*	055815-SP	1	000				
+Screw 10x7/16 UNSL TD HWH	066234	12	000	Gasket Base Pan			

C16127F000, 208 230V 60Hz 1PH A/C Bristol (R404A) Standard Machine								
Description	Part Number	Qty.	Warr. Class	Comments				
Gear A.*Reducer 4 to 1 Service	025770-SER	2	212					
+Screw 1/4 20x3 Hex Head Cap	025984	4	000					
+Screw 1/4 20x3 1/4 Hex Head	025985	4	000					
Harness Wire Cap/Relay	063975-27	1	103					
Harness Wire Control Box	069129-27	1	103					
Harness Wire Dec Plate	085802	2	103	Logic Board to DEC Plate				
Harness Wire Danfoss	063563	1	103					
Harness Wire Main	069219-27	1	103					
Harness Trans/ Relay	069278-27	1	103					
Switch A. Reed Interlock Door	X65658-5	1	103					
Switch Toggle 4PDT *on None On	037394	1	103	Power				
Kit A. Compressor	X55187SER2	1	512	Complete Set				
Capacitor Start 60UF 220/	047703	1	000					
Compressor PL35G	055187-27	1	512					
Cover Terminal Compressor DN	055357	1	000					
Kit Mounting Compressor	047704	1	000					
Relay Start Compressor PL	055358	1	000					
Kit A. Motor Fan	X62253-27	1	103					
+Fan 3 Blade 12 " Pull 24D	063397	1	103					
Kit A. Probe Thermistor IP68	X82397-SER	3	103					
Kit A. Tune Up	X31167	1	000					
Bearing Front	023262	2	000					
Bearing Guide	014496	2	000					
Cap Design 1.010"ID 6 Point	014218	3	000					
O ring 2 3/4 OD x .139W	019998	2	000					

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C16127F000, 208 230V 60Hz 1PH A/C Bristol (R404A) Standard Machine						
Description	Part Number	Qty.	Warr. Class	Comments		
O ring 5/16 OD x .070W	016272	2	000			
O ring 7/8 OD x .103W	014402	4	000			
Seal Draw Valve *Small H ring	030930	1	000			
Seal U Cup	080534	2	000			
Tool O ring Removal Freezer	048260-WHT	1	000			
Label Caution GRD Perm EN	032164	1	000			
Label SW Power Off/On SYM	052632	1	000			
Label Warn Condenser SHAR	059287	2	000			
Label Warn Cover	051433	5	000			
Label Warn Elec TW Small	032718	1	000			
Lubricant Taylor 4 oz.	047518	1	000			
Lug-grounding 4-14GA Wire	017667	1	000			
+Screw-1/4-20x5/8 Serrated HWH	017522	1	000			
+Nut-1/4-20 Whiz Flange Lock	017523	1	000			
Man-Oper	055155-M	1	000			
Motor-1/2 HP Remote Caps	055097-27G	2	212			
+Capacitor-Run 10UF/370V	059998	2	103			
+Capacitor-Start 72-88UF/330V	059757	2	103			
+Screw-5/16-18x5/8 Serr. F	017326	8	000	Beater Motor		
Motor-Fan 50 Watt w/Ground	029770-27	1	103			
Motor-Fan 95.3 CFM 2700 RPM	062253-27	*		See - Kit AMotor-Fan		
Nut-Stud	056802-SP	2	103			
Overload-Thermal-2P-2.4/3.6A	055249-27G	2	103			
Pail-6 qt.	023348	1	000			

**PARTS LIST** 

C16127F000,	C16127F000, 208 230V 60Hz 1PH A/C Bristol (R404A) Standard Machine					
Description	Part Number	Qty.	Warr. Class	Comments		
Pan-Drip 13-5/16	085295	2	103			
Panel ALower Front	X85570	1	103			
+Bracket-Reset	085572	2	103			
+E-Ring 3/16 .335 OD 1500-18P	049178	4	000			
+Eyelet-Reset Button	013739	2	103			
+Pin-Pivot	013592	2	103			
Panel ASide Right	X69433	1	103			
Panel-Front	085678	1	103			
Panel-Side *L*	085262	1	103			
Panel-Rear *AC	085274	1	103			
Plate ADEC	X85289	1	103	Complete w/Board		
Probe AThermistor-FEM-0.25	X31602-38	*	103	Use X82397-SER Kit AProbe-Thermistor IP68		
Probe AMix *Square*	X30922	2	103			
+Disc-Probe *SQ Hole*	030965	2	103			
+Spacer-Probe *SQ Hole*	030966	2	103			
Pulley-5.7" Pitch DIA x 5	041498	2	103			
Pulley-AK20X5/8	041162	2	103			
Relay-DPDT 100UA to 7A 1/8HP	052111-03	1	103			
Relay-DPDT 100UA to 7A	052111-76	2	103			
+Socket-Relay for Use w/052111	052112	3	103			
Relay-Start-Compressor	047067	1	103			
Relay-Start-Compressor-PL35G	055358	1	103			
Sanitizer-Stera Sheen -Green	055492	1	000			
Shell AInsulated	X85022-SER	1	512			

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C16127F000, 208 230V 60Hz 1PH A/C Bristol (R404A) Standard Machine							
Description	Part Number	Qty.	Warr. Class	Comments			
Stud-Nose Cone-5/16-18x5/16-18	013496	2	103				
+Nut-Stud	056802-SP	2	103				
Shield-Splash	085304	1	103				
Shroud-Condenser	064356	1	103				
Shroud Danfoss	048818	1	103				
Spring-COMP.720x.063x2.00	023664	2	103	Draw Switch			
Support ADrip Tray	X85704	1	103				
Switch ADraw	X85566	2	103				
Bearing-Switch	029244	4	000				
Bracket-Switch	085567	1	103				
Insulator-Switch 1/64 Armite	029099	2	000				
Nut-Push On-1/2DIA. Shaft	039735	4	000				
Screw-4-40x3/4 Unsltd HWH	052569	4	000				
Switch-Lever-SPDT-15A-125-25	027214	2	103				
+Actuator-Switch-Plastic	035609	2	103	Draw Switch			
+Arm ASwitch	X30736	2	103	Draw Switch			
+Spring-Comp.720x.063x2.00	023664	2	103	Draw Switch			
+E-ring-1/4 IN-ZD	034962	2	000				
Switch AReed Interlock Door	X65658-5	1	103				
Switch-Pressure 405 PSI-SOLD	052663	1	103	Line Discharge			
Switch-Toggle-4PDT*On-None-On	037394	1	103	Switch APower			
TEE-1/4S-Copper	003949	2	000				
Terminal-FEM.SP.22-18 .25	015850-L	13	000				
Terminal-FEM.SP.INS.16-14	023959-L	3	000				

C16127F000, 208 230V 60Hz 1PH A/C Bristol (R404A) Standard Machine						
Description	Part Number	Qty.	Warr. Class	Comments		
Terminal-FEM.SP.INS.22-18.25	043729-L	4	000			
Terminal-Low Voltage Ground	034455	2	000			
Tray-Parts-Barrel-1.5 qt-Twin	034807	*	000	Optional		
Tray-Drip	085698	1	103			
Tube-Feed166 Hole-SS-TM	030797	2	103			
Valve-Access 1/4FL x 1/4 Sold	044404	1	103	Line Suction DANF		
Valve-Access-1/4MFL x 3/8ODS	053565	2	103	Line Access DISCCHG/Low		
Valve-Access-1/4 MFLX1/4	047016	1	103			
Valve-EPR 1/4S	022665	1	103	Line Suction DANF		
Valve-EXP-AUTO-1/4S x1/4	046365	2	103			
+Boot-Valve-Expansion	050900	2	000			
Valve-Sol-1/4 ORFX3/8IN-1/2OD	062019-27	2	103	Line Suction Sol		
Valve-Solenoid 7/64ORF x 1/4	043449-27	2	103	Line Liquid Solenoid		
Washer-3/8 USS Flat CR3	000653	7	000			
Washer-5/16 USS Flat CR3	000651	4	000			

## C161 ROHS Compliant

C16140FW00, 220 240V 50Hz 1PH, A/C Bristol (R404A), ROHS Compliant				
Description	Part Number	Qty.	Warr. Class	Comments
Compressor L63B562BBKB	048727-40E	1	512	
+Capacitor Run 15UF/370V	027087	1	103	
+Capacitor Start 161 193UF	031790	1	103	
+Relay Start Compressor	048766	1	103	
Harness Wire Cap/Relay *1	063975-40	1	103	

C16140FW00	, 220 240V 50Hz 1P	H, A/C I	Bristol (R404A), R	OHS Compliant
Description	Part Number	Qty.	Warr. Class	Comments
Cord Power Harmonized	066395-95	1	103	
Diagram Wiring *161*	085584-40S	1	000	
Motor 1/2 HP Remote Caps	055097-40G	2	212	
+Capacitor Run 10UF/370V	059998	2	103	
+Capacitor Start 88 108UF/	059759	2	103	

## C161 Water-Cooled Machine

C16127R000,	C16127R000, 208 230V 60Hz 1PH W/C Bristol (R404A) Standard Machine						
Description	Part Number	Qty.	Warr. Class	Comments			
Adaptor-3/8MP x 1/2 Barb-	011021	2	103				
Bracket AFitting *161*W	X63791	1	103				
Bracket-Valve-W/C *C708*	058440	1	103				
Clamp-Hose 3/4 ID CONST T	067113	6	000				
Condenser-WC-Spiral 11-1/2 O	049309	1	103				
Elbow-3/8MP x 1/2 Barb-BR	018641	2	103				
Hose-Rubber 1/2 ID x 7/8 OD	R50200	5	000				
Panel-Rear *161*WC*	085356	1	103				
Panel-Side *C161*R*WC*	085357	1	103				
Switch-Pressure 350 psi-S	048231	1	103				
Valve-Water 3/8 Reg/Head	046686	1	103				

3	1
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Description	Part Number	Qty.	Warr. Class	Comments
Panel ASide Right *161*	X69433-SPN	1	103	
Panel ALWR Frnt-Complet	X85729SER1	1	103	
Panel-Side *161*L*	085262-SPN	1	103	
Panel-Rear *161*AC	085274-SPN	1	103	
Diagram-Wiring *C161 MARI	085584-40M	1	103	
Panel-Front *C161*	085678-SPN	1	103	
Harness-Wire-Control Box	069129-40	1	103	
Block-Terminal 4 Pole GRE	080967	1	103	
Optional Items				
Kit AHopper Lock Twin *161*	X66359	1	103	
Kit ALeg/Air Skirt *161*	X64119	1	103	
+Panel-Skirt-Air *161*	055508	1	103	



## **Section 6: Wiring Diagrams**

- Diagram 086047-12 (C152)
- Diagram 086047-12M (C152)
- Diagram 086047-27 (C152)
- Diagram 086047-27M (C152)
- Diagram 086047-40 (C152)
- Diagram 085584-27S (C161)
- Diagram 085584-40M (C161)
- Diagram 085584-40S (C161)

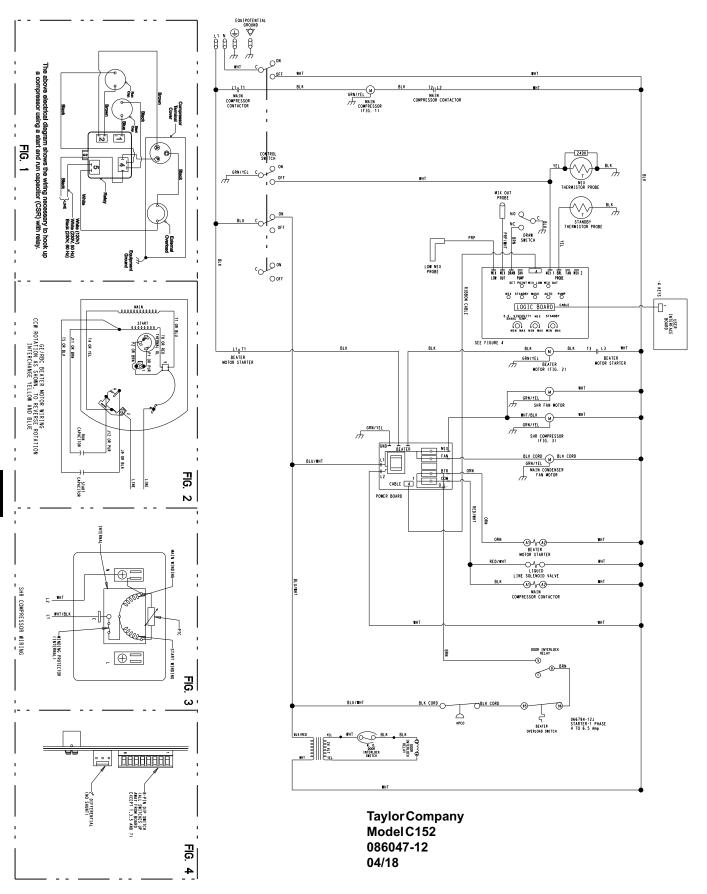


Figure 6-1 Diagram 086047-12 (C152)

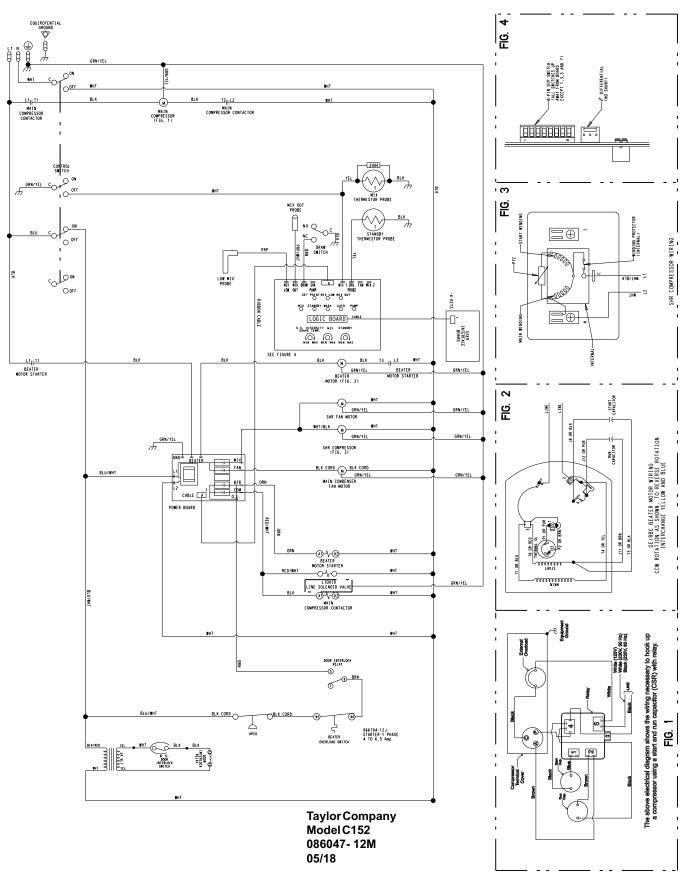


Figure 6-2 Diagram 086047-12M (C152)

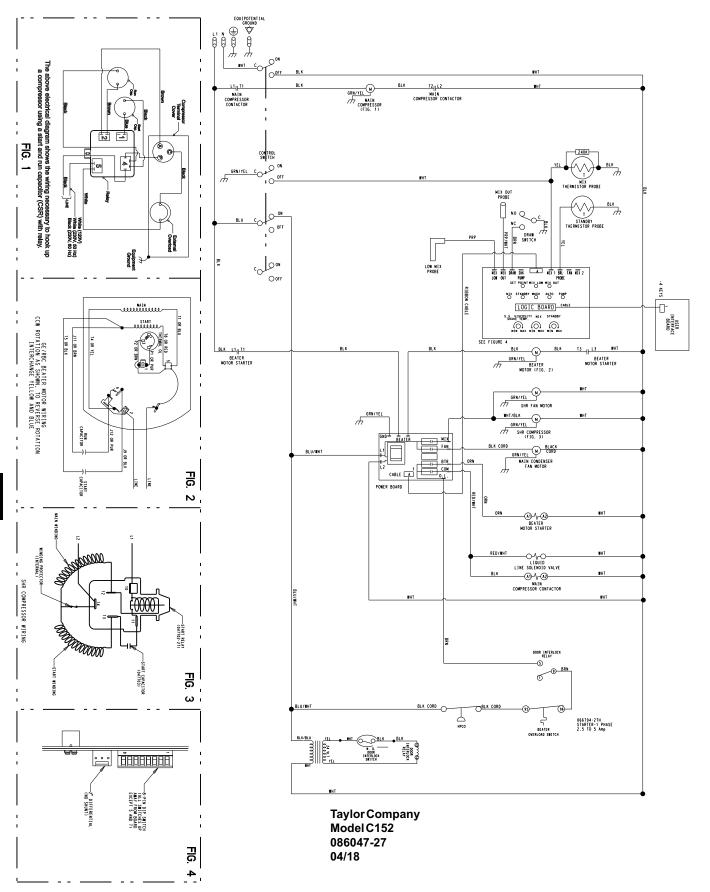


Figure 6-3 Diagram 086047-27 (C152)

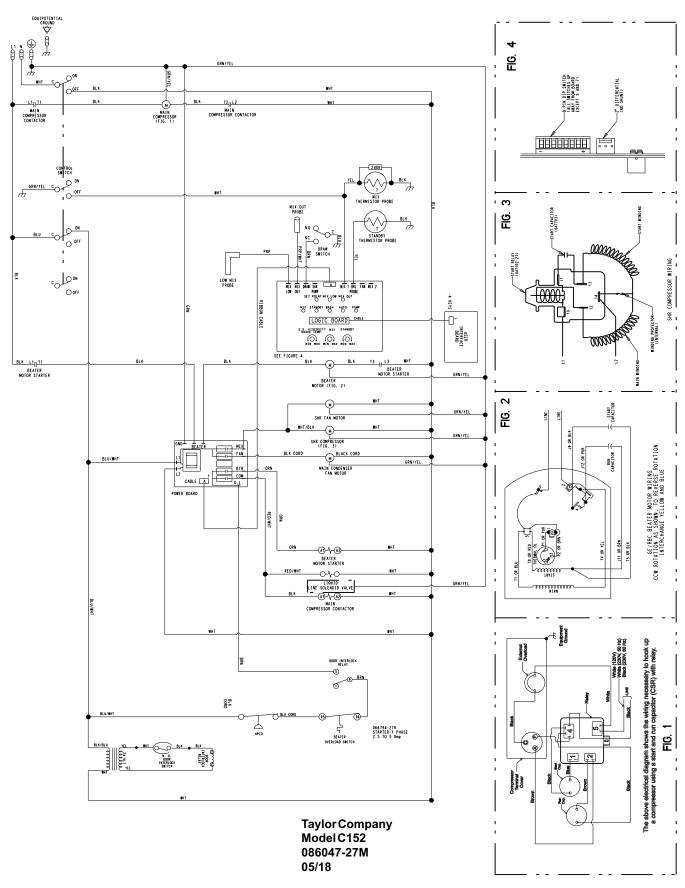


Figure 6-4 Diagram 086047-27M (C152)

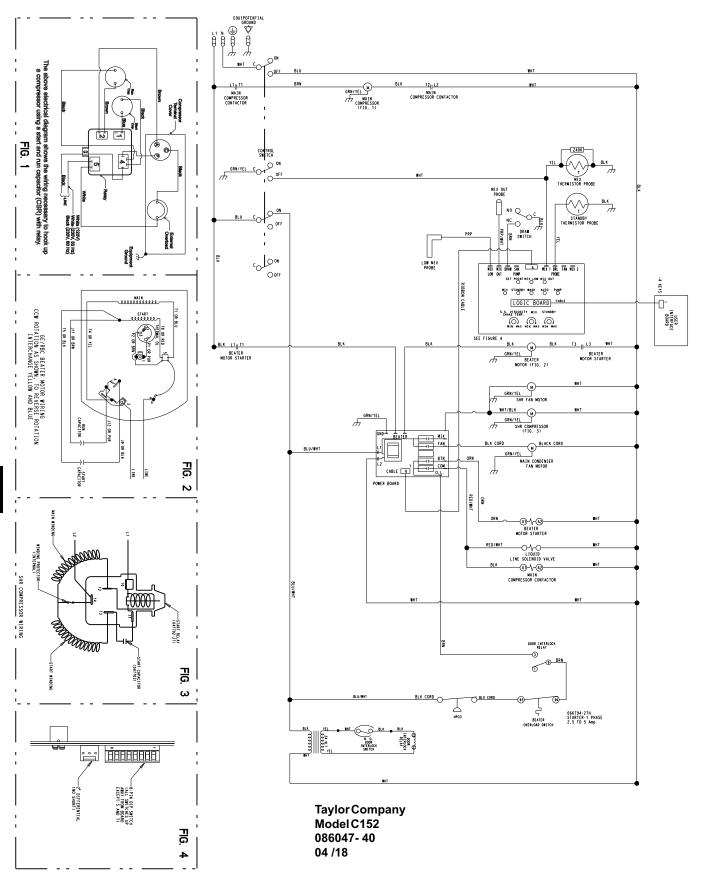
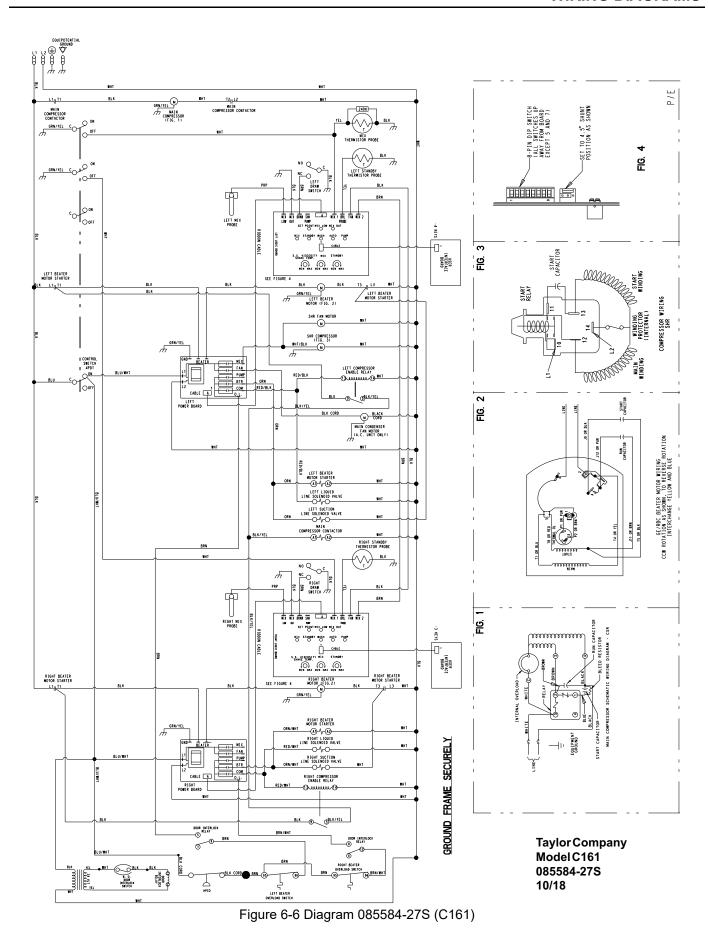


Figure 6-5 Diagram 086047-40 (C152)



Wiring Diagrams Model C152 & C161

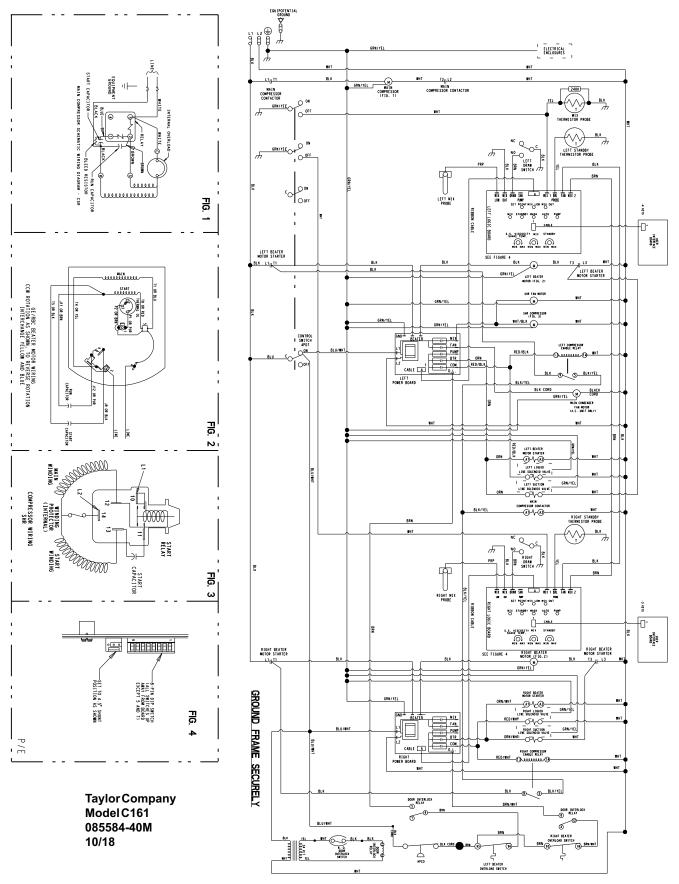


Figure 6-7 Diagram 085584-40M (C161)

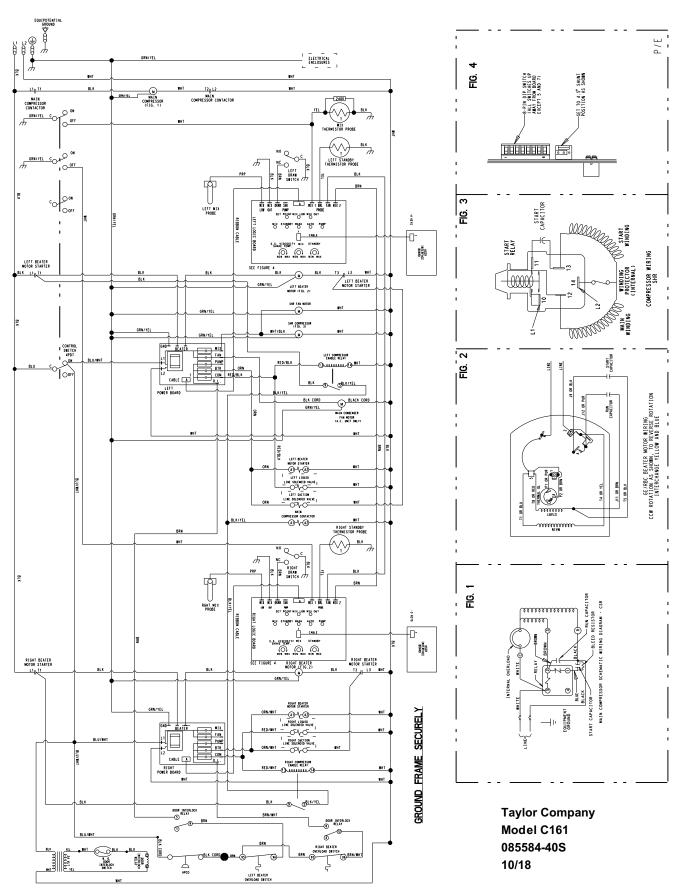


Figure 6-8 Diagram 085584-40S (C161)