



## INSTALLATION & OPERATION MANUAL

BROASTER® VF-2 & VF3i  
VENTLESS FRYER



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**Broaster Company**  
2855 Cranston Road, Beloit, WI 53511-3991  
608/365-0193 [broaster.com](http://broaster.com)



## FOR YOUR SAFETY

Do not use or store gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.



Improper installation, adjustments, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

For the sake of safety and clarity, the following words used in this manual are defined as follows:



**Indicates an imminently hazardous situation which, if not avoided, could result in serious injury or death.**



**Indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.**



**Indicates a potentially hazardous situation which, if not avoided, could result in minor injury, property damage or both.**

All adjustments and repairs shall be made by an authorized Broaster Company representative.

If there is a power failure, turn cook/filter switch OFF. On the Model 2400GH, also slide switch on gas valve OFF. DO NOT attempt to operate unit during a power failure.



**Failure to read and understand this manual completely could result in serious injury or death. Be sure ALL operators read, understand and have access to this manual at all times.**



**Rags or paper containing cooking oil can catch fire if exposed to heat. Laundering will not remove the oil. Dispose of all oil-soiled papers and rags in a trash container that is in a ventilated area away from all cooking equipment or other heat sources such as direct sunlight.**



**DO NOT clean this fryer with a water jet. Use of this cleaning method could result in serious injury or death.**



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# 1 - LIMITED WARRANTY - Parts and Labor

## FOR VF-2 & VF-3i FRYER

Subject to the terms and conditions of this warranty, The Broaster Company (Company) warrants that all equipment and parts manufactured or sold by the Company and purchased new from an authorized Company distributor are free from defects in material and workmanship. The warranty period begins on the date of installation, or one year from the date of manufacture, whichever occurs earlier. The term of the warranty is **one year for all non-wearable parts, or two years for the solid-state control panel** from the date of installation. To qualify for warranty coverage, the units must be installed by a qualified installer under supervision by an authorized distributor in accordance with applicable laws and regulations. Warranty coverage is extended to the original purchaser only and is void if the equipment is resold or relocated. If an authorized Company distributor is notified of a warranty claim during the warranty period, the Company will at its option replace, recondition or repair at its factory any part or parts of the equipment which the Company judges defective, provided the equipment has been subjected to normal usage, properly installed, operated and serviced in accordance with Company operating instructions, and there is no evidence of accident, alteration or abuse of the equipment or the use of unauthorized repair methods. All parts replaced under this warranty carry only the unexpired term of the warranty.

Service under this warranty shall be furnished only by an authorized Company distributor. The Company does not send service representatives to furnish warranty service. Your authorized Company distributor should be contacted for warranty service.

This warranty covers **on-site labor charges only**, at a fixed rate, for one year, on new equipment only. The warranty period begins on the date of installation or one year from the date on manufacture, whichever occurs earlier. Transportation charges, trip charges, zone fees, or other expenses in connection with warranty service are the obligation of the owner.

This warranty shall be void unless the ventless fryer air filter supplied by The Broaster Company is used in conjunction with the equipment.

This warranty does not apply to consumable items and supplies such as food baskets, filters, and gaskets.

**The foregoing warranty is made in lieu of all other warranties, express or implied, and the Company specifically disclaims any implied warranties of merchantability or fitness for a particular purpose.** The Company's full obligation under this warranty and the purchaser's sole remedy shall be limited to replacement, reconditioning, or repair as specified above.

IN NO EVENT SHALL THE COMPANY BE LIABLE TO THE ORIGINAL OWNER OR ANY OTHER PERSON FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM THE USE OR INABILITY TO USE THE EQUIPMENT COVERED HEREBY, WHETHER ARISING FROM BREACH OF WARRANTY, STRICT LIABILITY OR OTHERWISE.

The Company reserves the right to change or improve its products in any way without obligation to alter products previously manufactured.

Used Company equipment or Company equipment not purchased from an authorized distributor carries no warranty express or implied.





## 2 - OWNERS RESPONSIBILITY

It is the owner's responsibility to:

- Insure the Broaster® VF-2, VF-3i Fryer is properly maintained.
- Allow only properly trained personnel to operate, clean and maintain a Broaster® VF-2, VF-3i Fryer.
- Schedule and maintain documentation that the appropriate inspection and maintenance of the Fire Suppression system has been completed.
- Retain this manual for future reference.
- Insure main power supply is disconnected before the unit is serviced.
- Ensure that all safety devices are intact and the operation manual is included with the unit when you sell, trade, dispose of, or give away your Broaster® VF-2, VF-3i Fryer.
- Insure a proper surface is provided for the Broaster® VF-2, VF-3i Fryer to sit on.
- Keep the louvres in both the front and the rear of unit free from obstructions.
- Ensure that access is not obstructed to the fire suppression system. Fire suppression status can be monitored by viewing through the right side panel access hole.

If you need replacement manuals, contact an authorized Broaster Company representative or the Broaster Company at 608/365-0193.

The Customer Service Department at the Broaster Company should be contacted at the time of sale or disposal of the Broaster® VF-2, VF-3i Fryer so records may be updated.



## 3 - INSTALLATION

As you progress through the set-up of your VF-2, VF-3i fryer, refer to Chapter 4, GETTING TO KNOW YOUR BROASTER® VF-2, VF-3i FRYER for part descriptions and locations.

### LOCATION

For convenience and speed, location of the unit should be given careful consideration. If possible, locate the unit so the flow of cooked product is in a straight line from storage, in and out of the unit and to the customer. Landing tables should be provided on at least one side of the unit.

- A flat, level, stable surface capable of supporting an additional weight of 200 lbs is required for the safe operation of this unit.
- To avoid splashing of hot liquid, unit must be restrained to prevent tipping.
- Provision must be made to eliminate movement of the unit which might cause strain on electrical connections.
- DO NOT install unit where traffic areas are on either side or in back of unit.
- DO NOT install unit where the louvres in either the front or the rear are blocked or void of ventilation.
- DO NOT install unit where access to fire suppression system is blocked. Fire suppression activation is located on front panel. Fire suppression status can be monitored by viewing through the right side panel access hole.

### CLEARANCES

Recommended clearances are:

Left Side: 0"

Rear: 2"

Right Side: 0"

#### NOTICE

You must be able to access the right side panel periodically for inspection and service.

### GENERAL REQUIREMENTS

- When installing or servicing the unit, always check the dataplates, located toward the rear of the unit. This will make certain proper parts are used and the correct service rendered. DO NOT apply a voltage to this unit other than that shown on the dataplate. If in doubt, consult your local power company.
- A remote circuit breaker or fuse should be installed in main power supply located in a path of exit and clearly identified.
- The VF-2 is 19 in. wide by 24.25 in. tall by 20.12 in. deep.
- The VF-3i is 23 in. wide by 27 in. tall by 24.5 in. deep.
- Installation must conform to local codes or in their absence with National codes UL 197, UL 197SB, NFPA 70 for electrical, NFPA 96 for ventilation, NFPA 17A for Wet Chemical Extinguishing Systems, also Canadian Electrical CSA 22.2.
- Unit to be sealed to countertop (ie. silicone) or elevate on legs with optional platform.

## UNPACKING

1. Remove external cardboard packaging.

**CAUTION** **DO NOT** cut cardboard with utility knife. Damage to unit could result.

2. Open Access Door by lifting Access Door Latch and turning counter-clockwise. Remove Cooking Pot cardboard retainer.
3. Remove Cooking Basket, Basket Platform, and cardboard/styrofoam separator from Cooking Pot.
4. Remove tape from Air and Grease Filters.
5. Raise the Element by placing Element Arm above Element Retainer and remove the Cooking Pot.
6. Follow cleaning instructions as outlined in CLEANING, Section 11 of this manual.

## FIRE SUPPRESSION ACTIVATION



**DO NOT** apply power to unit until completing this procedure. Failure to do so would leave the unit without Fire Suppression capability.

7. To gain access to the Fire Suppression system remove Electrical Control Access Panel. Remove retaining screw, slide the panel up, then pull the bottom toward the outside of the unit.
8. Inside the cooking area, verify that there is tension on the cable connected to the Fusible Link.



If there is no tension on the link, removing the Fire Suppression Arming Pin will activate the Fire Suppression System. Contact authorized Broaster Company representative.

9. Verify the Fire Extinguisher gauge registers in the green.



**If the gauge does not register green, DO NOT operate the unit.** The Fire Suppression System will not function to a satisfactory level. Contact authorized Broaster Company representative.

10. Inside the Electrical Control area, locate strap securing Fire Suppression Arming Pin. Cut and remove the strap.
11. Remove Fire Suppression Arming Pin and let hang from connected chain. The Fire Suppression System is now active.
12. Replace the Electrical Control Access Panel and retaining screw.

## **ELECTRICAL CHARACTERISTICS**

The unit is available for 120/240 VAC or 120/208 VAC applied voltage, 30 amp, 60Hz, 1 phase electrical connection in the USA and Canada. (4 wire with neutral and ground)

- When installed, the unit is to be field wired and must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, or the Canadian Electrical Code, CSA C22.2, as applicable.

## **ELECTRICAL CONNECTIONS**

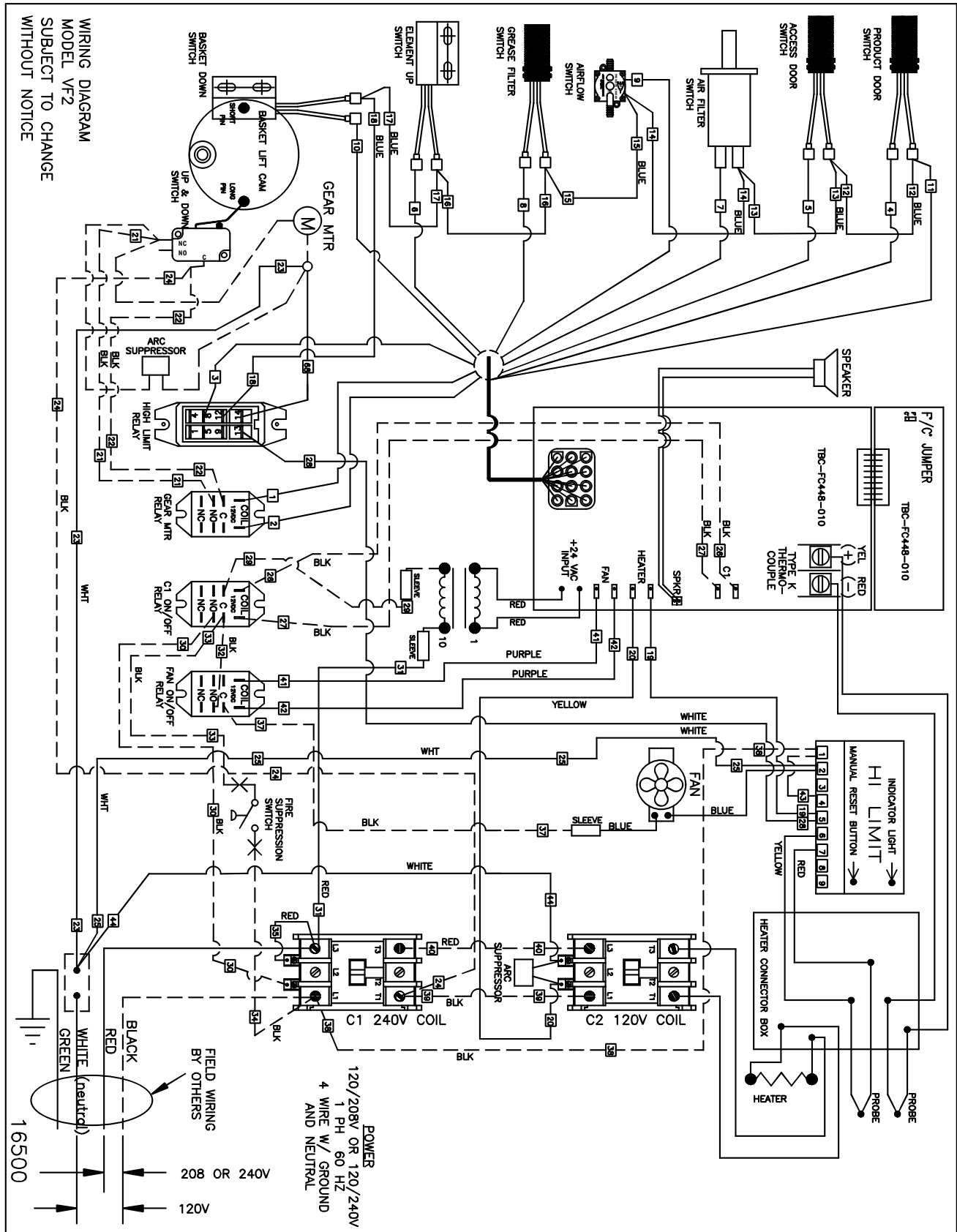
Applied voltage should match dataplate listed voltage.

The electrical schematics can be found on pages 4 thru 7 of this section.

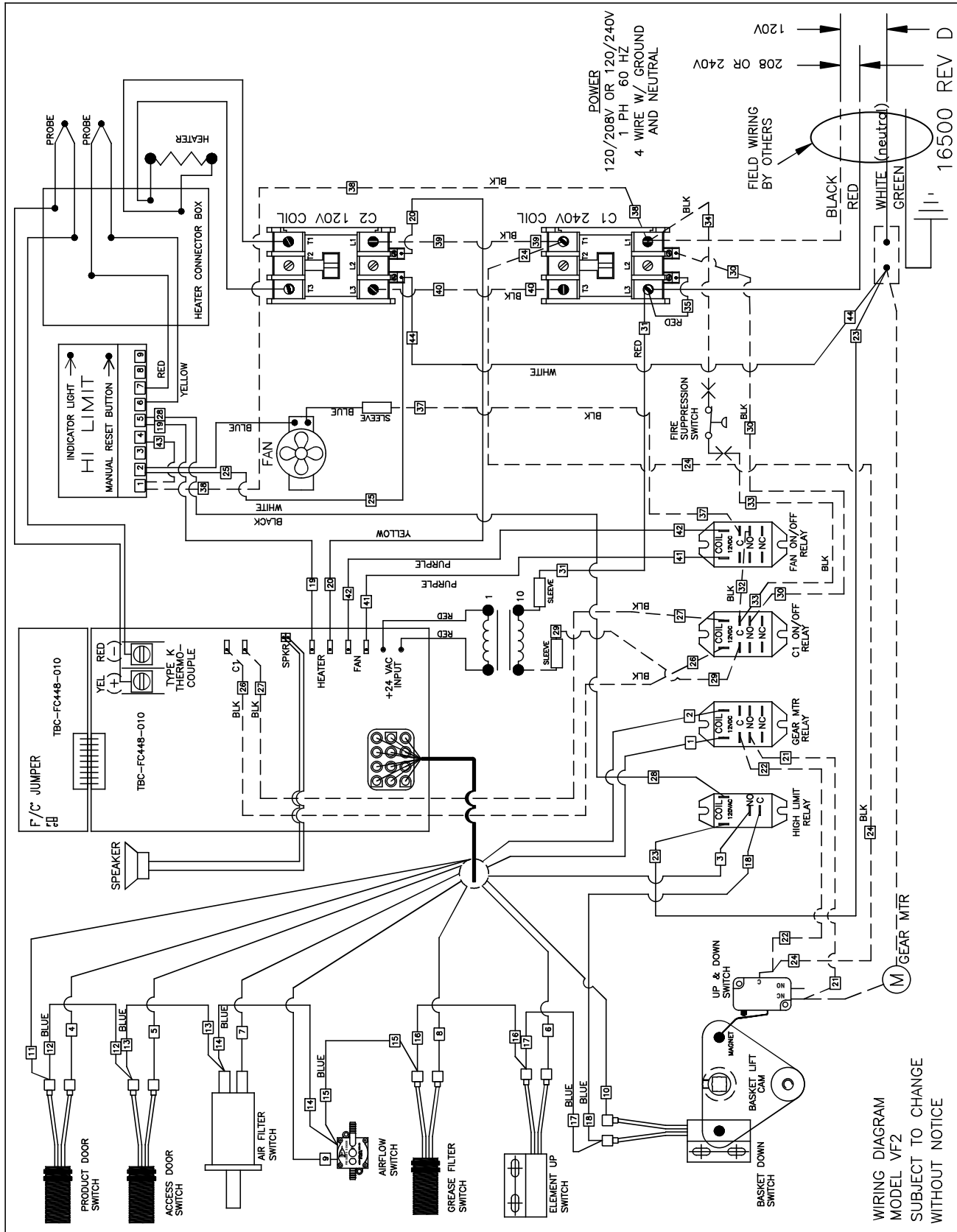
## **ELECTRICAL AMPERAGE RATING**

Input Voltage	VF2 Domestic	VF3i Domestic	VF2 Export	VF3i Export
120/240	23	23	---	---
120/208	27	27	---	---
220	---	---	21	28
230	---	---	---	---

# WIRING DIAGRAM - VF-2

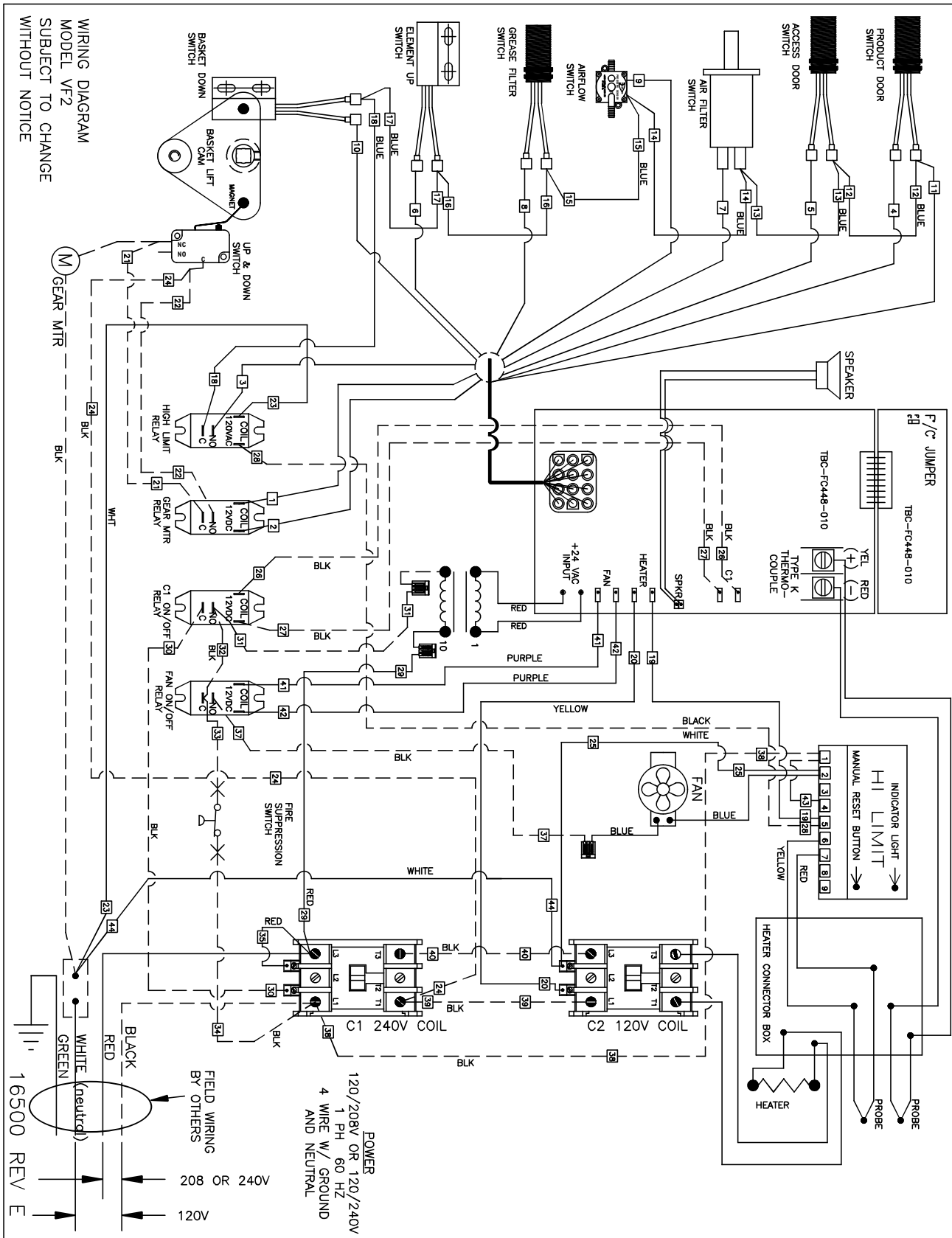


# WIRING DIAGRAM - VF-2 effective S/N VF2F70041x



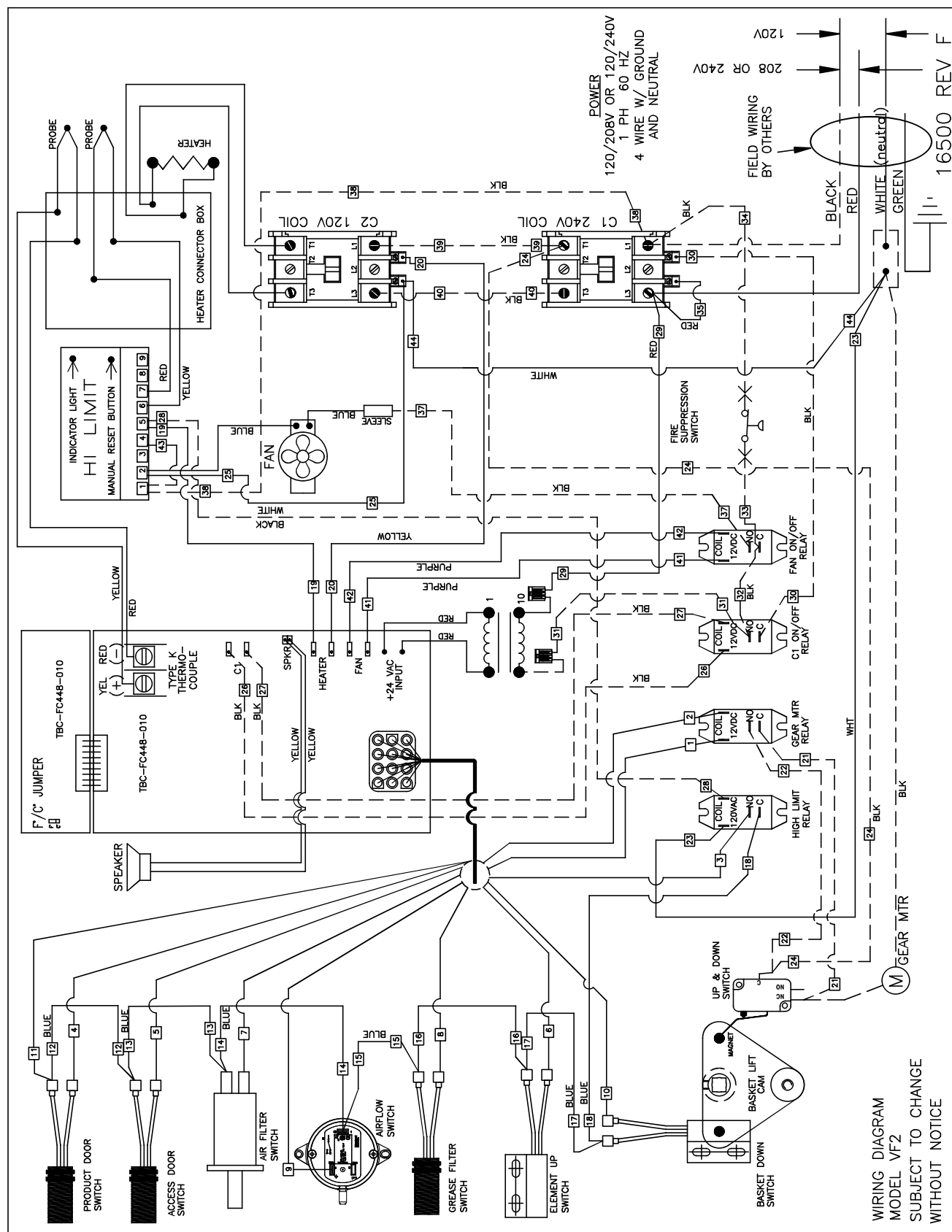
WIRING DIAGRAM  
MODEL VF2  
SUBJECT TO CHANGE  
WITHOUT NOTICE

## WIRING DIAGRAM - VF-2 effective S/N VF2F90xxxx

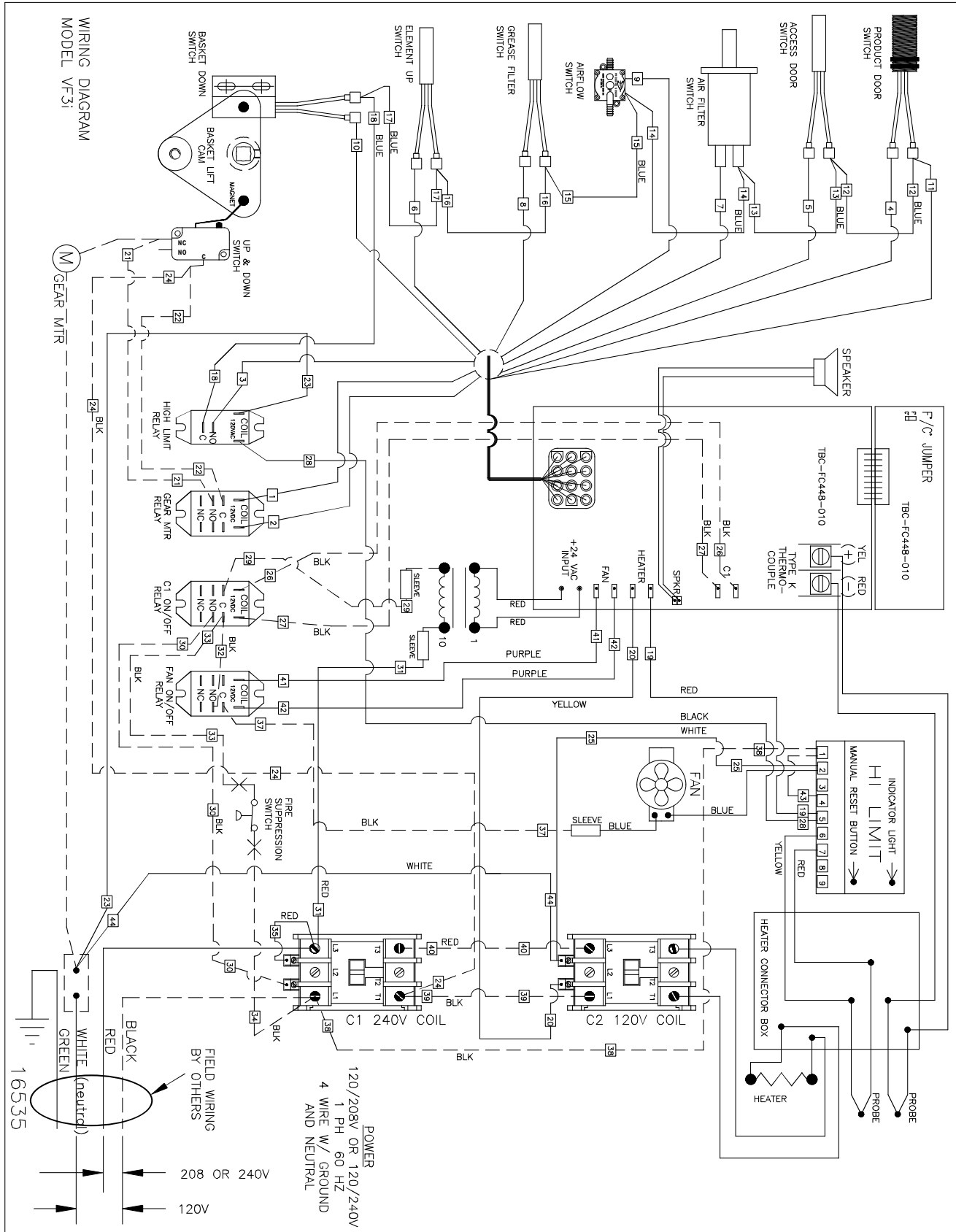




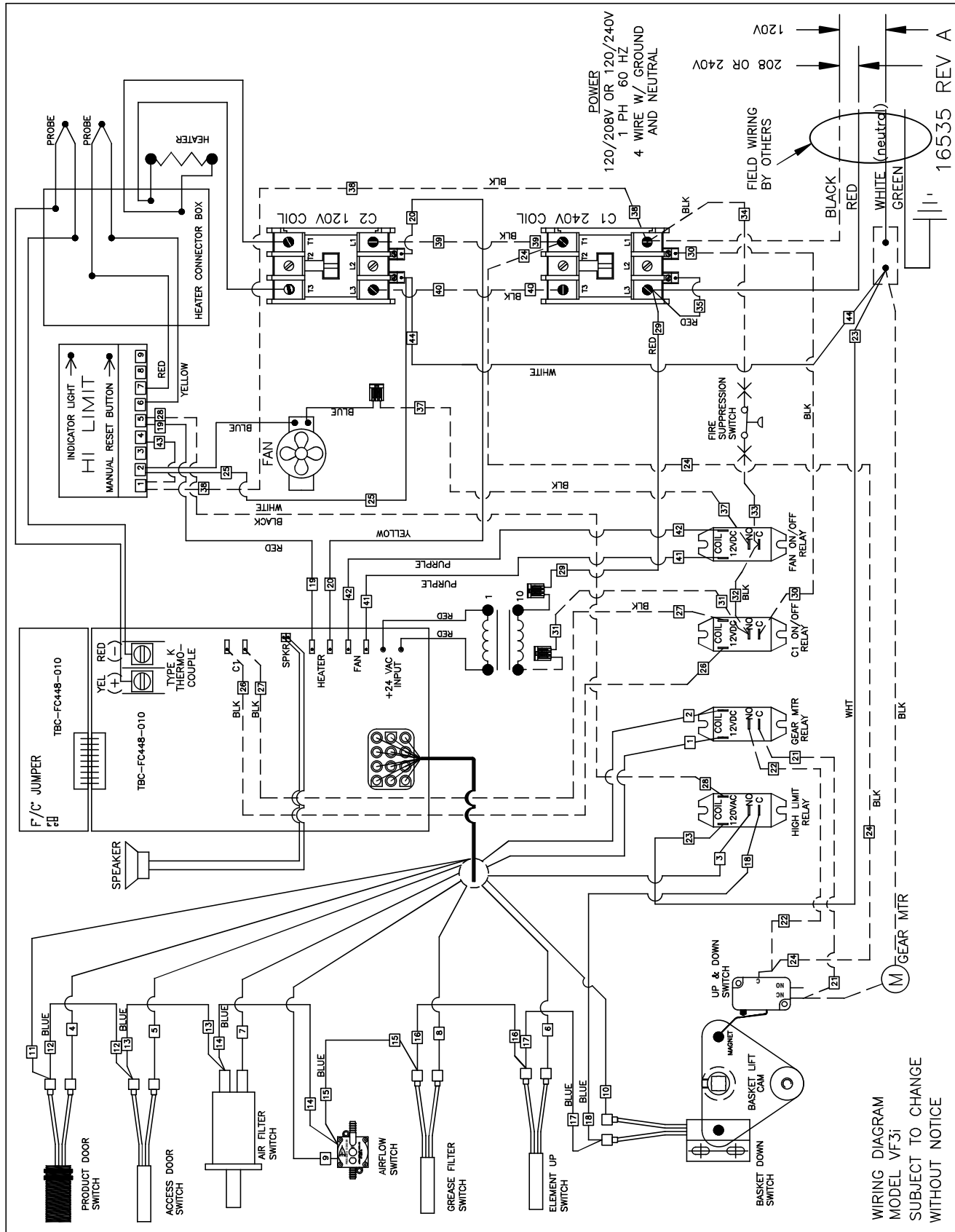
## WIRING DIAGRAM - VF-2 effective S/N VF2L90xxxx



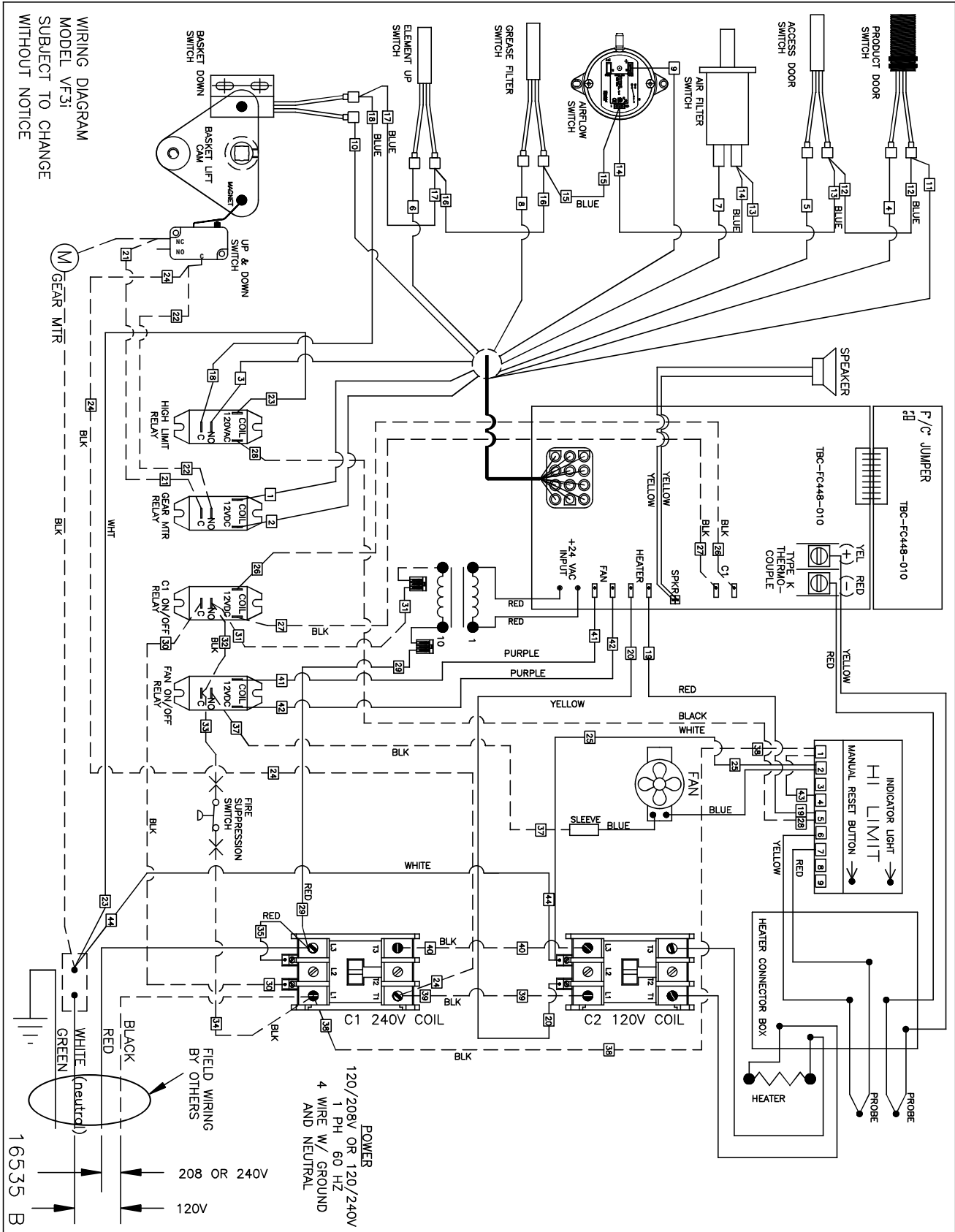
# WIRING DIAGRAM - VF-3i



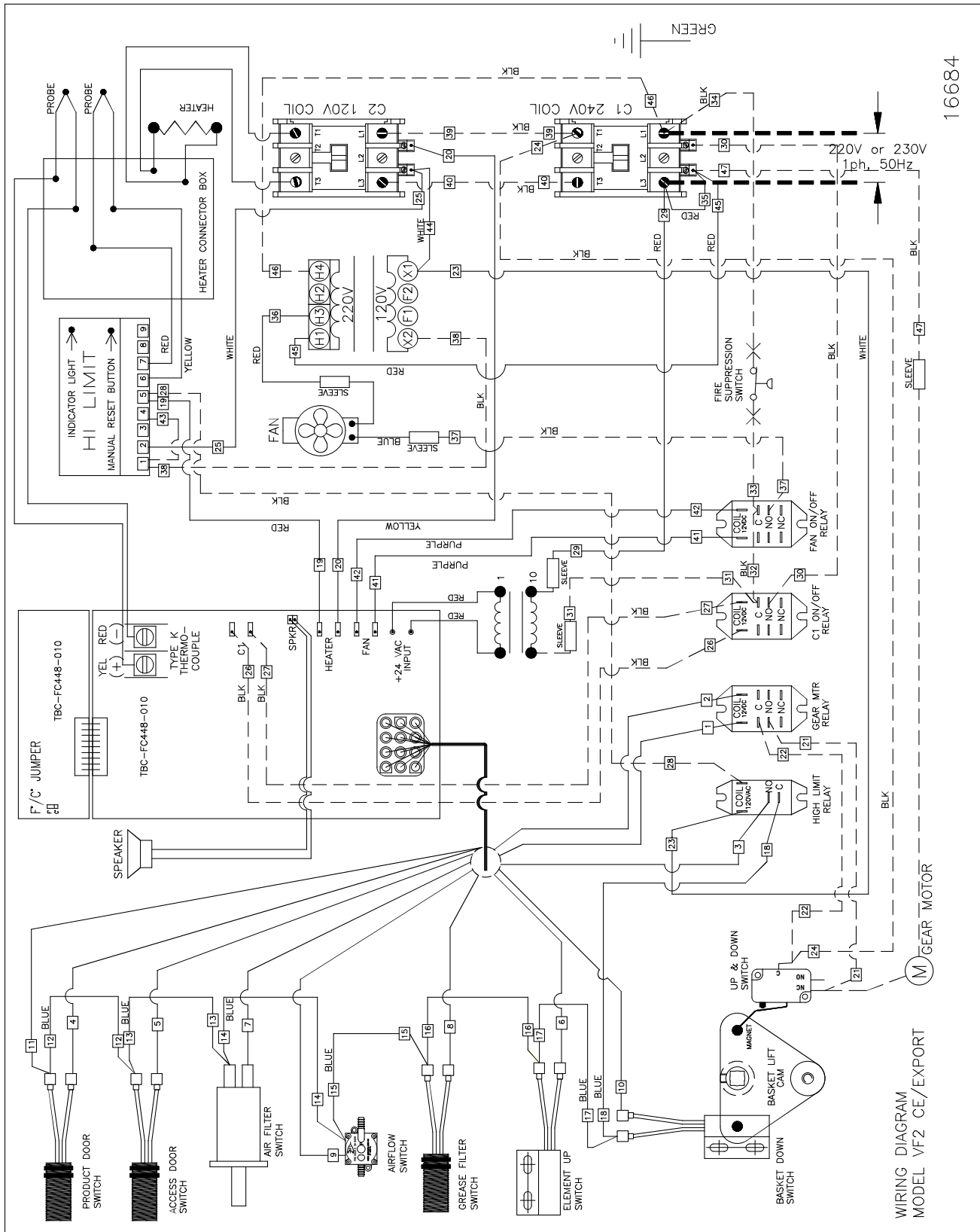
# WIRING DIAGRAM - VF-3i effective S/N VF3G90xxxx



# WIRING DIAGRAM - VF-3i effective S/N VF3H90xxxx



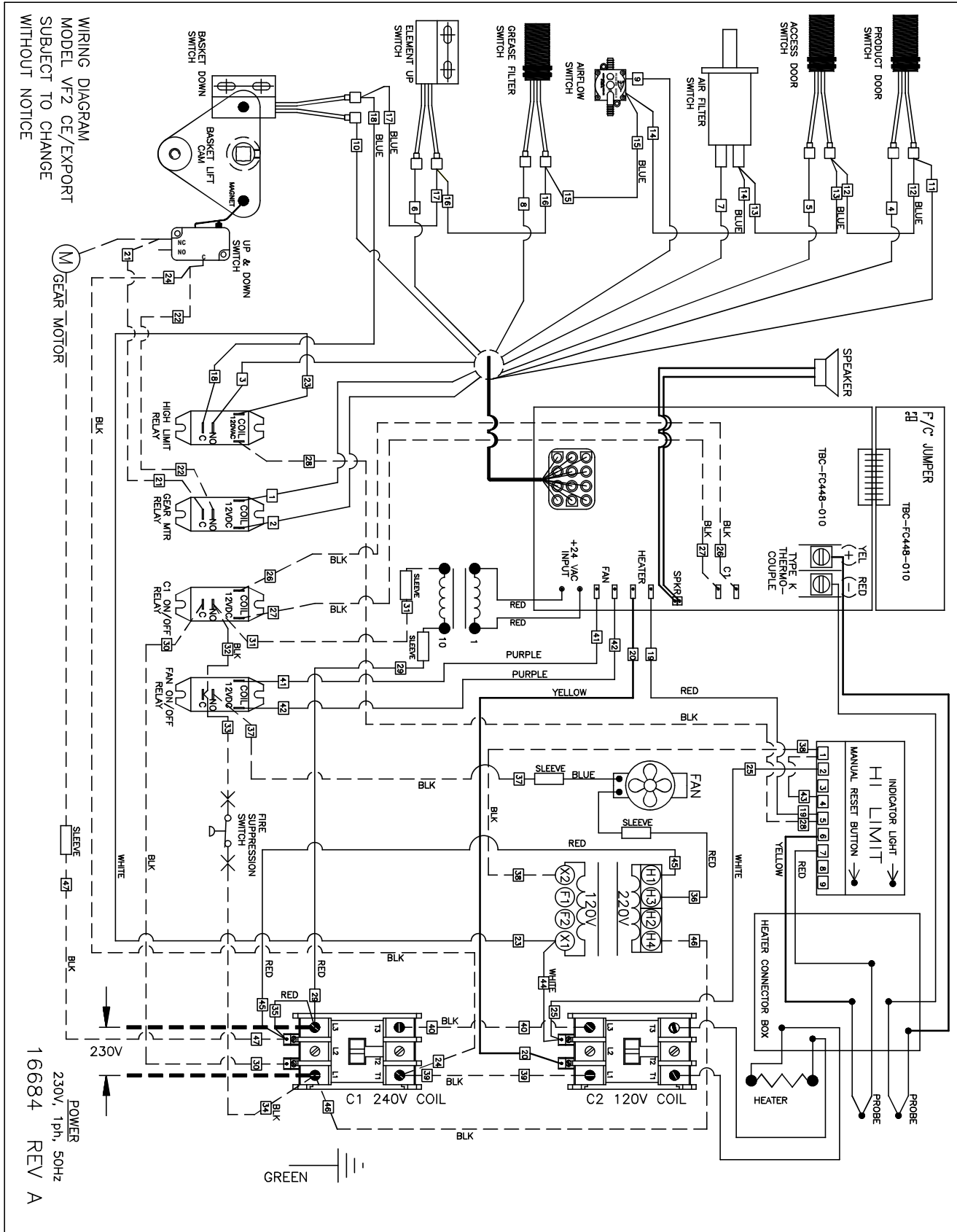
# WIRING DIAGRAM - VF-2 EXPORT



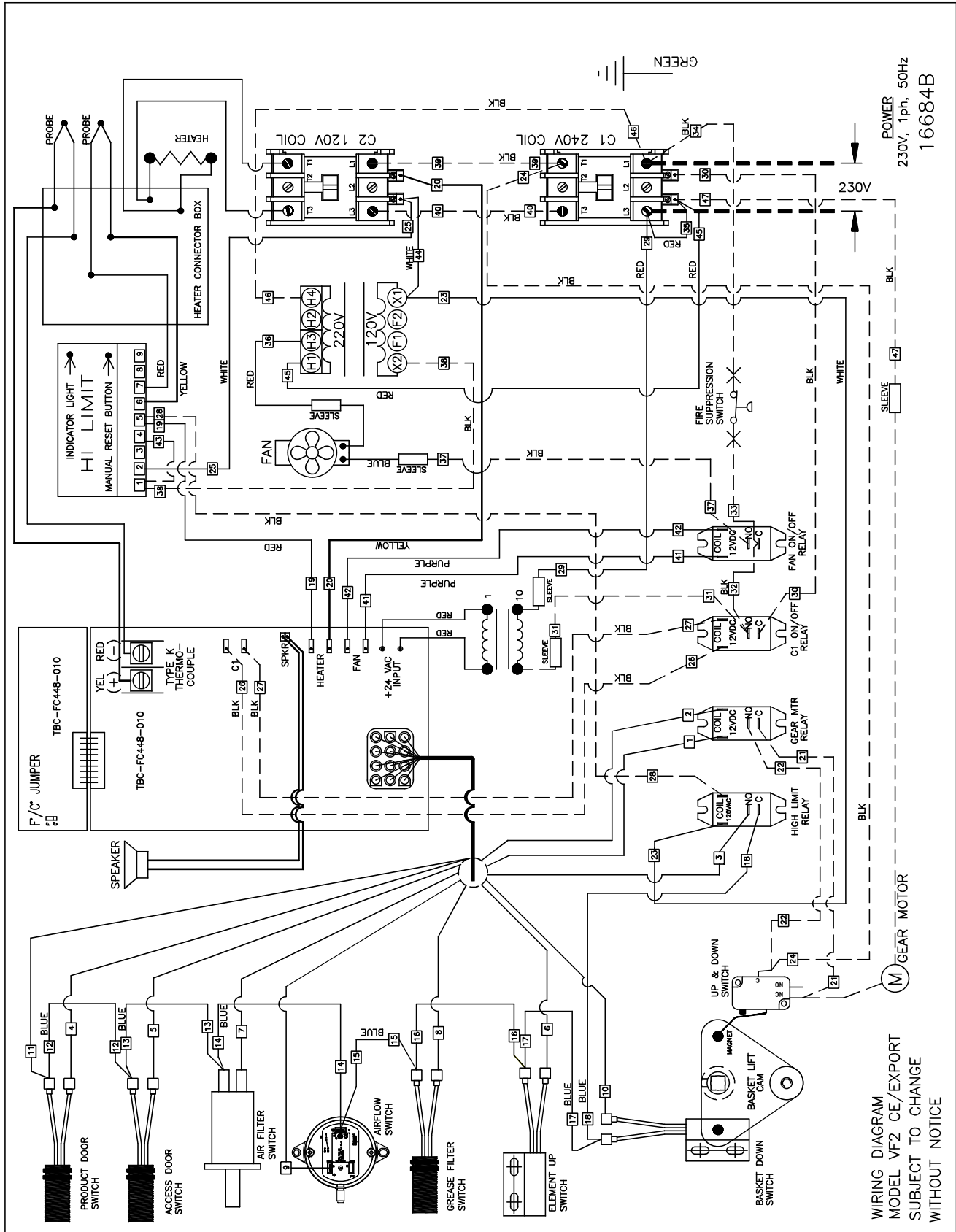
16684

WIRING DIAGRAM  
MODEL VF2 CE/EXPORT

# WIRING DIAGRAM - VF-2 EXPORT effective S/N VF2F90xxxx



# **WIRING DIAGRAM - VF-2 EXPORT effective S/N VF2L90xxxx**



WIRING DIAGRAM  
MODEL VF2 CE/EXPORT  
SUBJECT TO CHANGE  
WITHOUT NOTICE

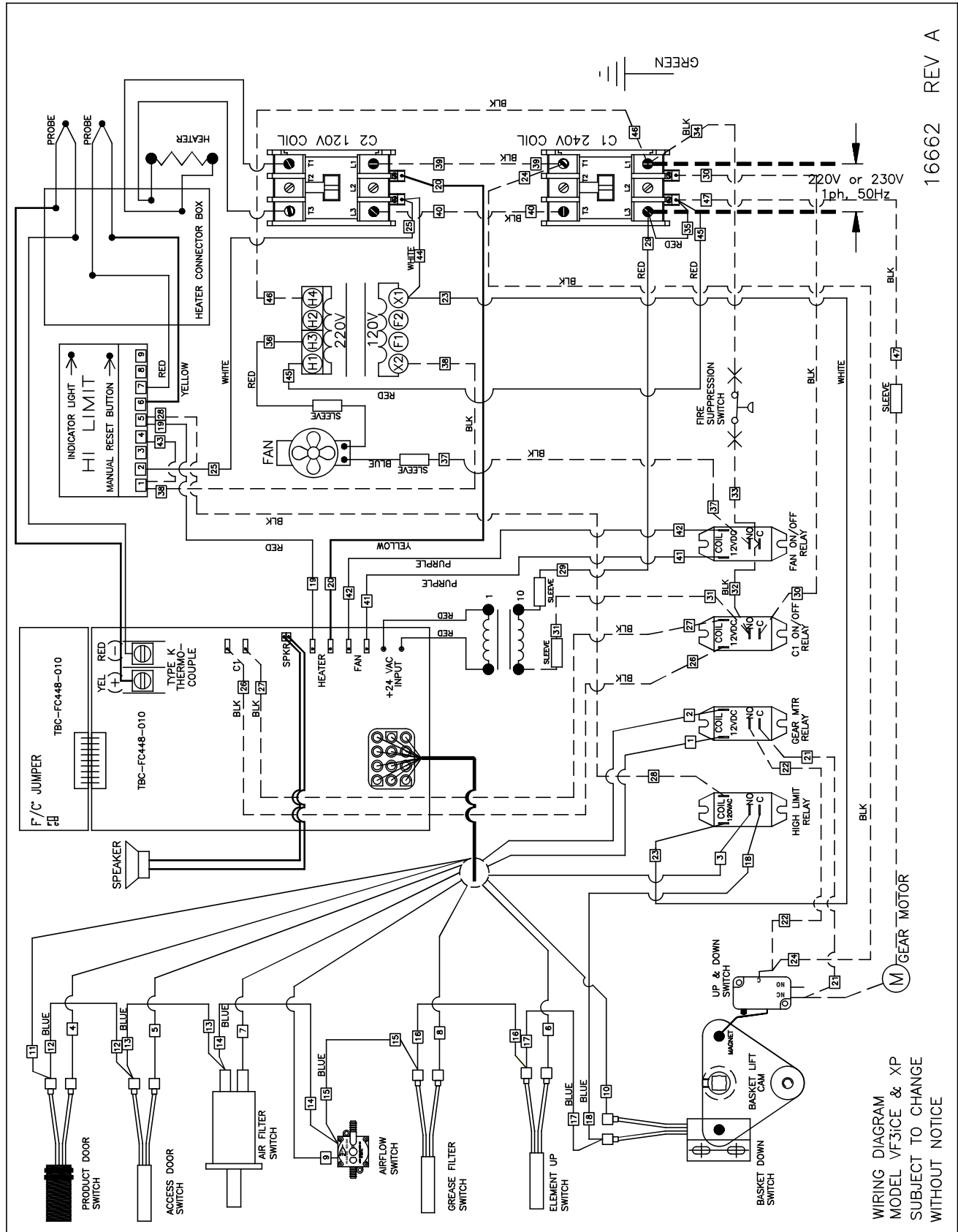
16684B

## WIRING DIAGRAM - VF-3i EXPORT





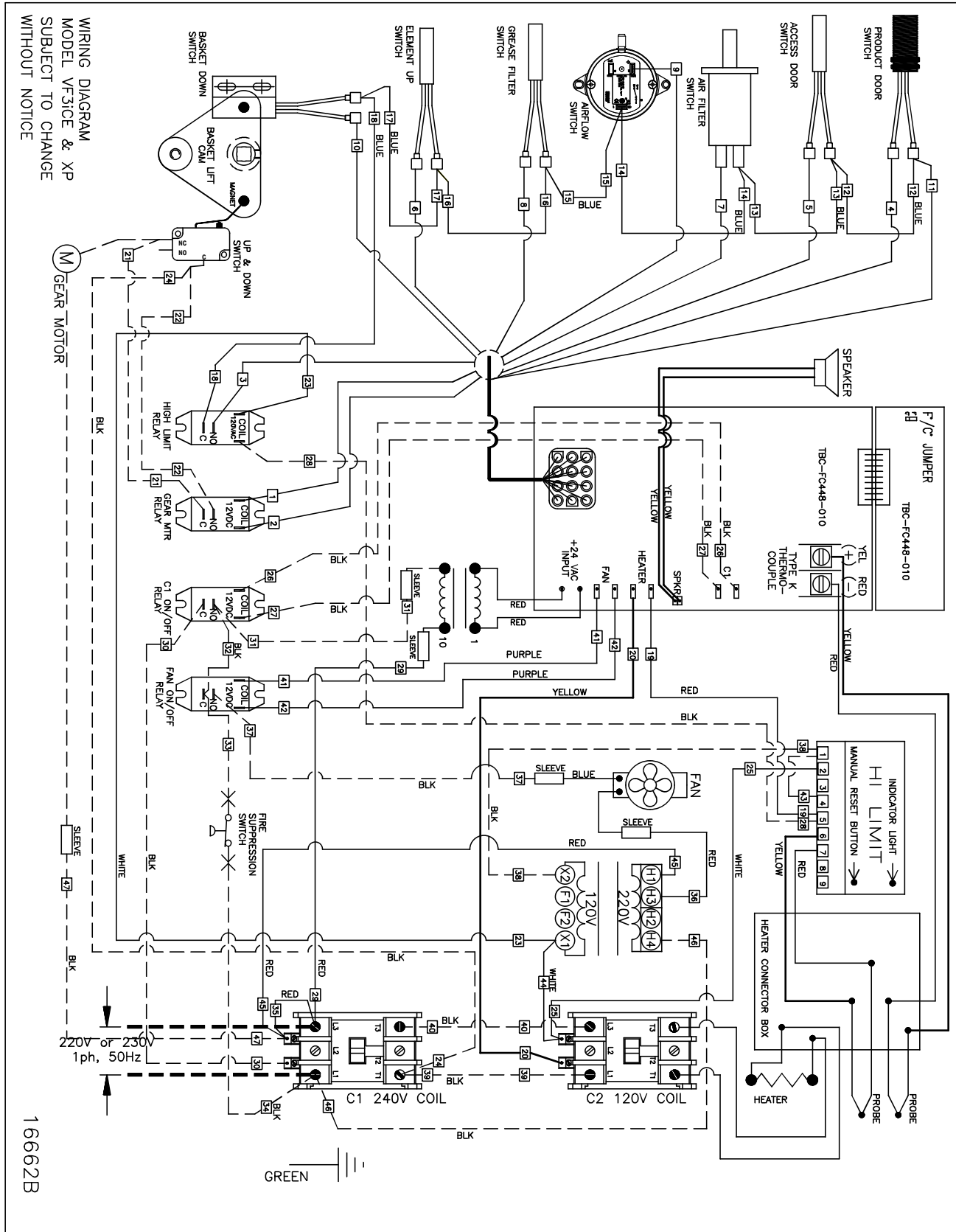
# WIRING DIAGRAM - VF-3i EXPORT effective S/N VF3G90xxxx



16662 REV A

WIRING DIAGRAM  
MODEL VF3ICE & XP  
SUBJECT TO CHANGE  
WITHOUT NOTICE

# WIRING DIAGRAM - VF-3i EXPORT effective S/N VF3H90xxxx



16662B

## INITIAL START-UP

13. Fill Cooking Pot with cooking oil and place in unit.  
VF2 - 14 lbs  
VF3i - 21 lbs
14. Lower Element into Cooking Pot and hang Platform on Platform Lift Arm. Oil fill should be at cold level. Add or remove oil as needed.
15. Close and latch the Access Door.
16. Turn circuit breaker ON or install fuse.
17. Press the power ON button. The POWER light and the Heat On indicator light will illuminate.
18. Set Time and Temperature. For detailed instructions refer to the Controller Basic Programming in Section 6, CONTROL PANEL.
19. Verify the function of the unit by performing a cooking cycle without product. For detailed instructions refer to the Cooking section of Section 8, PRODUCT PREPARATION AND COOKING.



## 4 - GETTING TO KNOW YOUR BROASTER® VF-2, VF-3i FRYER



1. Product Door: Product is inserted and removed through this opening.
2. Access Door: Provides access to filters and cooking area for cleaning and maintenance.
3. Access Door Latch: Holds Access Door closed during operation. Lift and turn to open and close Access Door.
4. Control Panel: Operator interface that controls cooking cycle. This will be discussed in detail in the CONTROL PANEL section of this manual.
5. Fire Suppression Ring: Manually activates fire suppression system if the system fails to operate automatically.
6. Fire Suppression Viewing Hole: Check the status of the Fire suppression system by looking through this hole.

7. Electrical Control Access Panel: Removable panel to allow access to unit control devices.

**WARNING** This panel should only be removed by an authorized Broaster Company representative. Electrical hazard could result in serious injury or death. Disconnect main power to unit before removing.

8. Air Filter: Cleans air being drawn through the cooking area. Installed in filter tray (24)

**NOTE:** Replace Air Filter every 3 months. More frequently for units experiencing higher volume.

9. Cooking Pot: Holds cooking oil.

**WARNING** **Hot shortening!** Hot shortening could splash causing serious burns.

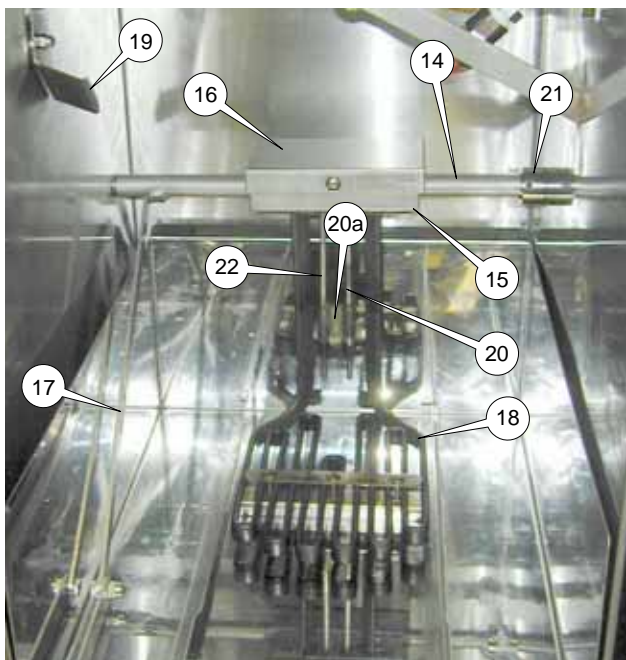


10. Splash Tray: Catches oil that escapes from the Cooking Pot or over flows.



**Hot shortening!** Hot shortening could splash causing serious burns.

11. Food Basket: Holds product during cooking cycle.
12. Platform Lift Arm: Automatically raises and lowers Platform into the Cooking Pot when cooking cycle is started.
13. Platform: Food Basket is placed on this surface.
14. Element Shaft: Hollow shaft that houses element wiring and rotates to allow element to be raised.
15. Element Wiring Box: Attached to the Element Shaft and protects element wiring.
16. Element Wiring Box Cover: Removable cover that allows access to element wiring.
17. Element Lift Arm: Raises and lowers element.



18. Element: Heats the oil in the Cooking Pot.

19. Element Retainer: Holds the element in the raised position when the Element Arm is positioned above it.

20. High Limit Probe: Provides temperature feedback to high limit control.

- 20a. Probe clamp: Clamps probes 20 & 22 to heating element to maintain position of probes. Bar on heating element indicates Hot and Cold oil levels.

21. Element Shaft Retainer: Holds the Element Shaft in place. When loosened, the Element Shaft and connected parts can be removed from the unit.

22. Temperature Probe: Provides temperature feedback to solid state control.

23. Grease Filter: Condenses oil and water vapors from exhaust air before air travels to Air Filter.

24. Filter Tray: Holds air filter and grease filter in their correct operating positions.

25. Fusible Link: Activates the Fire Suppression system if temperature in cooking area exceeds melting temperature (280° F).

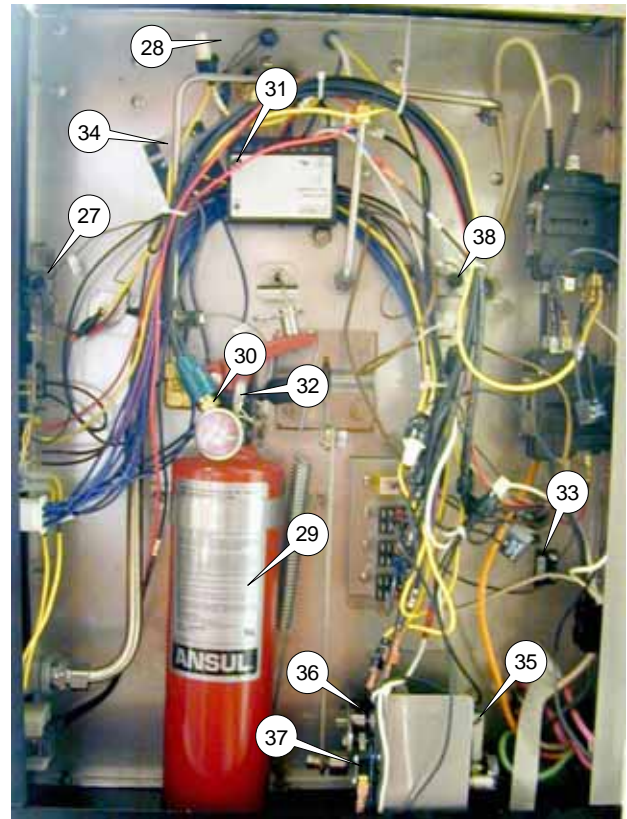
26. Air Filter Switch: Detects the absence of the Air Filter. Unit will not function without Air Filter installed. (visible only when filter tray (24) is removed)

27. Product Door Switch: Indicates whether the Product Door is open. Unit will not start a cook cycle if the door is open.





- 28. Access Door Switch: Indicates whether Access Door is open. Unit will not function if door is open. (on other side of panel)
- 29. Fire Extinguisher: Capable of extinguishing a grease fire.
- 30. Fire Extinguisher Pressure Switch: Monitors pressure within Fire Extinguisher. Unit will not operate if pressure drops below specified minimum.
- 31. High Limit Reset: Resets the High Limit Control when it trips to prevent the oil temperature from exceeding 475° F. (This may trip inadvertently during shipping.)
- 32. Fire Suppression Arming Pin: When removed from Fire Extinguisher the Fire Suppression system is armed to activate when the Fusible Link is melted.
- 33. Element Switch: Indicates that element is up. Unit will not function if element is up.



- 34. Air Filter Differential Pressure Switch: Indicates an unacceptable level of air flow through the Air Filter by measuring pressure drop through filter. If pressure drop exceeds maximum set value, unit will not function.

#### NOTICE

Replace Air Filter every 3 months or sooner if needed.

- 35. Platform Lift Motor and Cam: Raises and lowers Platform.
- 36. Platform Down Switch: Senses that platform is down.
- 37. Platform Up/Down Switch: Stops motor when platform is up or down.
- 38. Grease Filter Switch: Indicates when grease filter is not properly installed. Unit will not run with grease filter not properly installed.





## 5 - PRE-COOKING PREPARATION

### START-UP



Check oil level before pressing the ON button.

Exceeding the proper oil level may result in excessive oil splatter, product floating out of the basket, and increased grease laden vapors through the air filter system.

An inadequate amount of oil will result in exposed, uncooked product and possibly expose the heating element causing excessive smoke.

1. Push the ON button, the word POWER should turn green. The HEAT ON light will illuminate indicating the cooking oil is being heated.
2. When the HEAT ON light goes off, the oil has reached the set temperature.
3. Push the START button. This will perform a cook cycle to preheat the basket to operating temperature.
4. When an audible alert sounds, push the stop button.

### COOKING OIL

The words “oil” and “shortening” are used to describe a high quality liquid cooking medium manufactured for deep frying.



Danger of fire exists if the oil level is below the minimum level.

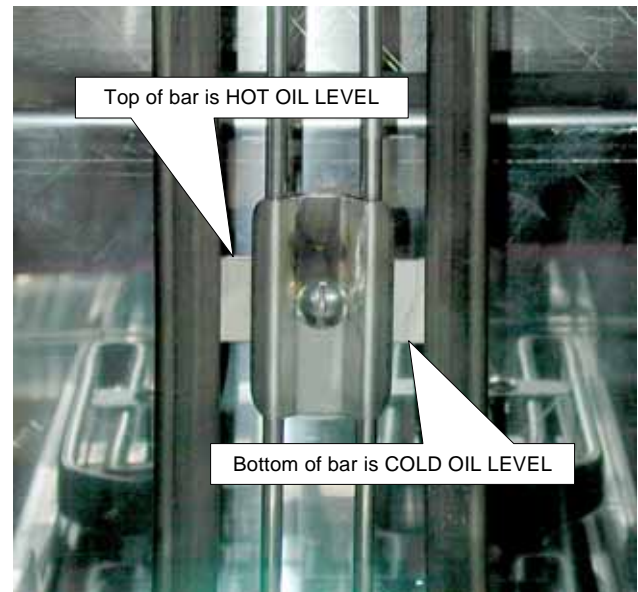


Using old oil will reduce flash-point and be more prone to surge boiling.



Use care when handling hot oil. Oil could splash causing serious burns.

Fill cooking well with Broaster® Bro-Oil® liquid oils or a high quality liquid oil manufactured for deep frying. Fill cooking well to COLD OIL LEVEL as shown below.



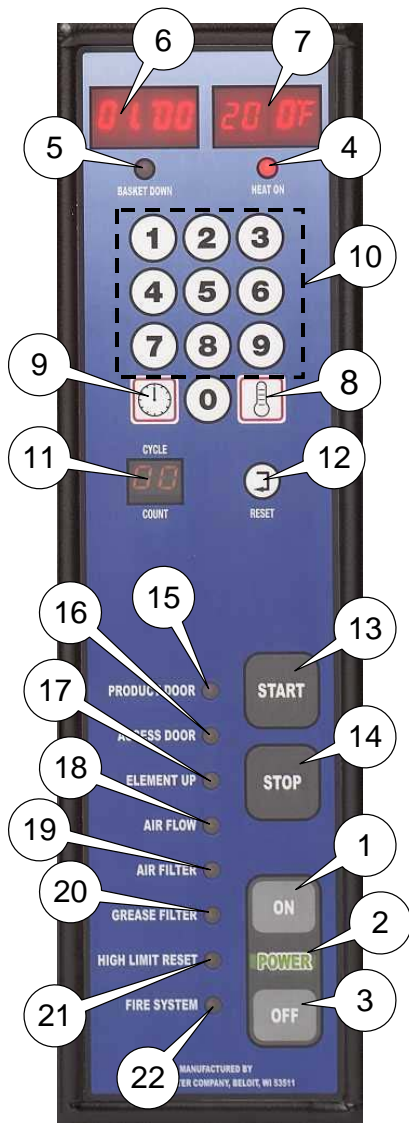
### FOOD AND CONDIMENTS

Make sure the food you purchase is high quality. For best results, product should be uniform in size.



## 6 - CONTROL PANEL

### DUAL DISPLAY FAMILIARIZATION



1. **ON:** Turns power to unit on.
2. **Power On indicator Light:** The word 'POWER' illuminates green when power is applied to unit.
3. **OFF:** Turns power to unit off.
4. **Heat On Indicator Light:** Illuminates when oil is being heated. Light goes off when oil reaches set temperature.

5. **Basket Down Indicator Light:** Illuminates when Food Basket is in lowered position.
6. **Time Display:** Shows time count-down during a cook cycle, program values during programming and programmed time during idle period.
7. **Temp Display:** Shows set temperature and actual temperature on demand.
8. **Cook Temperature Button:** Initiates temperature programming and display actual temperature.
9. **Cook Time Button:** Initiates time programming.
10. **Numerical Keypad:** Enters and adjusts set point values.
11. **Cycle Count Display:** Increases in increments of one every time a cooking cycle is completed.
12. **Cycle Count Reset Button:** Resets the cycle count display to "zero".
13. **Start Button:** Starts a cooking cycle and lowers the platform.
14. **Stop Button:** At end of cooking cycle, silences the audible alert.

**NOTICE** Stop Button can be pushed at any time during a cooking cycle; however, cooking time will revert to the initial setting.

## OPERATIONAL LOCKOUTS

Indicator lights illuminate to show “Operation Lockout” conditions that need to be corrected before unit will function.

15. **Product Door Indicator Light:** Illuminates when the Product Door is open.
16. **Access Door Indicator Light:** Illuminates when the Access Door is open or when Access Door Latch is improperly latched.
17. **Element Up Indicator Light:** Illuminates when the heating element is in the raised position.
18. **Air Flow Indicator Light:** Illuminates when the flow of air through the Air Filter area falls below acceptable level.

### NOTICE

**Replace Air Filter every 3 months.**

19. **Air Filter Indicator Light:** Illuminates when the air filter is not installed in the unit.
20. **Grease Filter Indicator Light:** Illuminates when the grease filter is not installed in the unit.
21. **Hi-Limit Control Indicator Light:** Prevents oil temperature from exceeding 475° F. If power to control turns off due to Hi-Limit Control, this indicator light will illuminate, press the OFF button and **DO NOT** attempt to operate until it has been serviced by an authorized Broaster Company representative.
22. **Fire System Light:** Illuminates when 6 months have passed to indicate semi-annual maintenance is due on fire suppression system.

## CONTROLLER BASIC PROGRAMMING

### NORMAL OPERATING MODE



**Check oil level before pressing the ‘ON’ button.**

**Action:** Press ‘ON’ button.

**Response:** Temp Display alternates between number values for cook temperature, and LO (idle mode). LO will disappear when oil temperature has reached cook temperature value. Time Display will show the set time in minutes and seconds.

#### Set Temperature:

**Action:** Press Cook Temperature Button twice within 5 seconds.

**Response:** Programming mode has been entered. Flashing Temp Display reads “###F.” (### = temperature value ie: 360F)

**Action:** If desired, press keypad numbers to change displayed value then press Cook Temperature Button once to enter new value into memory.

**Response:** Controller returns to idle mode.

#### Set Time:

**Action:** Press Cook Time Button twice within 5 seconds.

**Response:** Programming mode has been entered. Flashing Time Display reads “##:##.” (##:## = time value ie: 08:00)

**Action:** If desired, press key pad numbers to change displayed value in minutes and seconds then press Cook Time Button once to enter new value into memory.

**Response:** Controller returns to idle mode.

### **Reset Cycle Counter:**

**Action:** Press Reset Button twice in 5 seconds.

**Response:** Display will return to a setting of “00.”

#### **NOTICE**

**If counter is not reset before reaching “99.”**

**Upon the next cycle completion, the display will begin counting at “01.”**

Normal operating programming can be done at any time without affecting presets.

## **PRESET COOK MODE**

### **Choose Preset Cook Cycle:**

**Action:** Press a button, 0 thru 9, corresponding to the desired preset.

**Response:** The TIME display will show “P\_\_X”, where X is the preset selected.

#### **NOTICE**

**If a button is not pressed in ten seconds, the display will revert to the previous display.**

**Action:** Press the same button again,

**Response:** The TIME display will show the preset time, the TEMP display will show the preset setpoint, and the temperature will now regulate to the new setpoint.

### **PROGRAMMING PROCEDURE (PRESET MODE)**

#### **NOTICE**

**There are 2 methods for programming the pre-sets. Method 1 for all VF models manufactured before September 1, 2012 and method 1 or 2 for all VF models manufactured after September 1, 2012.**

### **PRESET PROGRAMMING METHOD 1**

**Action:** Press and hold the TIME and TEMP buttons simultaneously for three seconds.

**Response:** The TIME display and TEMP display will begin flashing. The CYCLE COUNT display will show “-0” indicating that the preset #0 values are displayed. The preset values for the TIME and TEMP will be shown on the display.

### **Change Cook Time:**

**Action:** Press the TIME button once.

**Response:** The TEMP display will turn off and only the TIME display will flash.

**Action:** Key in the desired cook time then press the TIME button to save the new setting.

#### **NOTICE**

**If a button is not pressed in ten seconds, the display will revert back to both the TIME and TEMP displays flashing.**

### **Change Cook Temperature:**

**Action:** Press the TEMP button once.

**Response:** The TIME display will turn off and the TEMP display will be flashing.

**Action:** Key in the desired temperature setting then press the TEMP button to save the new setting.

#### **NOTICE**

**Note: If a button is not pressed in ten seconds, the display will revert back to both the TIME and TEMP displays flashing.**

**Advance to Next Preset:**

**Action:** Press the RESET button once.

**Response:** The CYCLE COUNT display will change to “-1” and the presets for #1 will be displayed.

Repeat the process as described. After the presets for #9 are displayed, pressing the RESET button again will cause the control to return to normal operation.

**PRESET PROGRAMMING METHOD 2****Set Temperature:**

**Action:** Press Cook Temperature Button twice within 5 seconds.

**Response:** Programming mode has been entered. Flashing Temp Display reads “###F.” (### = temperature value ie: 360F)

**Action:** If desired, press keypad numbers to change displayed value then press Cook Temperature Button once to enter new value into memory.

**Response:** Controller returns to idle mode.

**Set Time:**

**Action:** Press Cook Time Button twice within 5 seconds.

**Response:** Programming mode has been entered. Flashing Time Display reads “##:##.” (##:## = time value ie: 08:00)

**Action:** If desired, press key pad numbers to change displayed value in minutes and seconds then press Cook Time Button once to enter new value into memory.

**Response:** Controller returns to idle mode.

When Temperature and Time have been set press and hold the desired preset number

button until you hear a beep. The temp and time for that preset button is saved.

Repeat these steps for the remaining preset buttons.

## 7 -FIRE SUPPRESSION SYSTEM

### GENERAL DESCRIPTION

The Fire Suppression system is specifically designed for controlling wet chemical fires in the fryer.

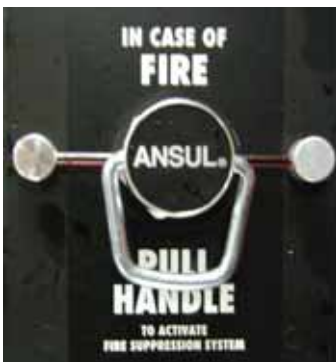
The system consists of a cylinder assembly (with pressure switch and gauge), actuating lever, fusible link assembly, manual pull station and two nozzles.

### AUTOMATIC OPERATION

Upon the detection of a fire, the system will automatically operate. the fusible link in the cooking area separates at a temperature of 280° F, which allows the spring to pull down on the actuating lever. The valve stem is pushed down releasing pressure and wet chemical to the nozzles.

### MANUAL OPERATION

When the manual pull handle on the front panel is pulled, the system operates similarly by disconnecting the fusible link cable from the actuating lever. The spring pulls down on the lever releasing pressure and wet chemical to the nozzles.



#### IMPORTANT:

The manual pull handle is to be pulled **ONLY** IN CASE OF FIRE in the fryer (use when the auto-matic system has failed).

#### NOTICE

If the pressure in the cylinder drops below 195 psi, the pressure switch opens, deactivating the power relay cutting all power to the fryer.

### INSPECTION & MAINTENANCE

#### NOTICE

Selected fire suppression maintenance procedures are detailed in Section 4, Fire Suppression Maintenance and Replacement of the VF-2/ VF-3i Service & Parts Manual.

The Fire Suppression system must be serviced on a regular basis. Three types of servicing are required: Monthly, Semi-Annually, and 12 Year. Prior to any inspection, the Fire Suppression system needs to be exposed.

#### Gaining Access

To gain access to the Fire Suppression system remove Electrical Control Access Panel.

1. Disconnect main power.
2. Remove retaining screw.
3. Slide the panel up to clear retaining tabs.
4. Pull the bottom toward the outside of the unit.



## **Monthly Inspection**

The fire suppression system must be inspected on a monthly basis. The inspection should be conducted by the owner/operator or authorized Broaster Company representative. The following items must be checked and verified during the monthly inspection:

1. The Fire Suppression system is in its proper location.
2. No obvious physical damage or condition exists that may prevent operation.
3. The pressure gauge is in green operating range.

### **NOTICE**

It is recommended that the pressure gauge be checked more frequently. This can be done without removing the Electrical Control Access Panel by viewing through the Fire Suppression Viewing Hole on the panel.

4. The maintenance tag is in place and is up to date.
5. The manual pull is unobstructed.
6. The nozzle blow-off caps are intact and undamaged.

## **Semi-Annual Inspection**

The fire suppression system must be tested and maintained on a Semi-Annual basis. The system must be inspected by certified service personnel, as per NFPA 17A and include the following:

### **NOTICE**

The fryer has a light that activates when 6 months have passed to indicate the semi-annual maintenance is due.

1. A check to see that the hazard has not changed.

2. Examination of the fusible link, cylinder piping, nozzles, and all auxiliary equipment. Fusible links must be replaced at least semi-annually from the date of installation with the proper rated link.
3. Examination of the fire extinguisher. If it is low or high, recharge the system.
4. Verification that the agent distribution piping is not obstructed. Remove blow-off caps from nozzles to ensure they are free of grease build-up and inspect for deterioration. Replace them as necessary. Silicone blow-off caps must be replaced at least annually from the date of installation.

### **NOTICE**

All blow-off caps must be lubricated semi-annually using Broaster #16663 lubricant.

5. When semi-annual maintenance of any wet chemical container or system component reveals conditions such as but not limited to corrosion or pitting in excess of manufactured limits, structural damage or fire damage, repairs by soldering, welding, or brazing. The affected part(s) shall be replaced or hydrostatically tested in accordance with the recommendations of the manufacturer or the original certifying agency or both.
6. All fire suppression systems must be tested for proper electrical operation. A discharge of the extinguishing agent is not normally part of the test. Simply remove one lead from the pressure switch to initiate appliance shutdown.
7. When the maintenance of the Fire Suppression system reveals defective parts that could cause an impairment or failure of proper operation of the Fire Suppression system, the affected parts must be replaced or repaired.



8. The maintenance report, with recommendations if any, shall be filed with the owner or with the designated party responsible for the system.
9. The service personnel shall date and sign the Semi-Annual Inspection & Maintenance Log contained in this manual as an indication that the inspection has been completed.

### **Twelve Year Maintenance**

Maintenance must be done on the fire suppression system every twelve years. The maintenance must be performed by certified service personnel per NFPA 17A and includes the following:

1. The wet chemical extinguishing agent must be removed and discarded.
2. The cylinder needs to be hydrostatically tested.

#### **NOTICE**

Certified service personnel can generally be found locally through authorized suppliers of fire extinguishing equipment in the yellow pages or call your Broaster Distributor for sources.

3. If the cylinder shows no signs of rupture or distortion, recharge the Fire Suppression system in accordance with NFPA 17A guidelines.

# SEMI-ANNUAL INSPECTION & MAINTENANCE LOG

Fryer Serial No. \_\_\_\_\_

**REPLACE FUSIBLE LINK AT EACH SEMI-ANNUAL INSPECTION**

Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____
Date _____	I & M by _____	Date _____	I & M by _____

## 8 - VENTILATION SYSTEM

### AIR FILTER REPLACEMENT

**Note:** Replace every **3 Months** or sooner if needed.

1. Open access door.
2. Unlatch filter tray and pull tray out (about 1.50") with your free hand under the tray and swing tray down 45°.
3. With both hands pull tray out towards you.
4. Remove Air filter.
5. Install new Air Filter in tray with arrows up as shown in picture at right.
6. Reinstall filter tray into unit by tilting it at 45° and sliding it into the cabinet as far as it will go at the 45° tilt.
7. While lifting latch end up, push filter back with your thumbs toward the back of the tray until it stops. Also when the top of the filter is against the top of the cabinet and push tray in until it stops.
8. Latch in place and close access door.
9. Unit is ready to operate.





## 9 - COOKING WEIGHT, TEMPERATURE AND TIME

### PRODUCTS

The following charts give suggested temperature, time settings and load sizes. Actual cook times may vary depending on a products internal temperature before cooking.

#### NOTICE

Increase cook time when cooking oversized product. Use our methods of food preparation and cooking procedures for the best possible results.

#### WARNING

The fryer is designed for snack-type, frozen food products listed on page 2. This unit is **NOT** designed to cook 8-piece cut chicken, whether fresh or frozen.

#### WARNING

Placing more than the recommended amount of frozen product in the cooking basket will increase the amount of surge boiling in the cooking well.

## VF2 & VF3i Product Cooking Chart

Product Description*	Package Description	Product Number	Lbs/Case	Cooking Time**	Cooking Temperature**	Approx. Load - Kgs (Lbs.)		Approx. Pieces	
						VF2	VF3i	VF2	VF3i
Jumbo Popcorn Chicken	2/5# bags	96262	10	4.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	48	72
Cajun Jumbo Popcorn Chicken	2/5# bags	96277	10	4.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	48	72
Chicken Tenders	2/5# bags	96641	10	5.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	16	24
Zesty Home Style Chicken Tenders	2/5# bags	96349	10	5.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	14	21
Chicken Fillets	2/5# bags	96638	10	6.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	8	12
Traditional Wings	2/5# bags	96261	10	10.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	16	24
Hot 'N Spicy Wings	4/5# bags	96639	20	10.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	16	24
Boneless Buffalo Wings	2/5# bags	96318	10	5.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	16	24
Fully-Cooked Oven Roasted Chicken Wings	2/5# bags	96351	10	7.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	16	24
Chicken Gizzards	Bulk Packed	96271	10	5.0 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	21	32
Jumbo Corndogs (4 oz. ea)***	Bulk Packed	96661	10	7.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	8	12
Pork Tenderloin	Bulk Packed	96313	8	3.5 Min.	182°C (360°F)	.45 Kgs (1 lb.)	.91 Kgs (2 lbs.)	3	6
Deluxe Pizza Burritos	48 in 7 trays	96316	15	8.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	6	9
Deluxe Beef 'n Bean Burritos	48 in 7 trays	96317	15	7.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	6	9
Deluxe Breakfast Burritos	48 in 7 trays	96323	15	8.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	6	9
Catfish Tender Strips	Bulk Packed	96340	10	5.0 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	21	31
Hand-Breaded Style Catfish Fillets	Bulk Packed	96354	10	5.0 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	16	24
Premium Cod Fillets (2 oz. Natural Cut)	2/5# Bags	96329	10	5.0 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	16	24
Premium Cod Fillets (4 oz. Natural Cut)	2/5# Bags	96295	10	5.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	8	12
Premium Beer-Battered Recipe Shrimp (tail-off)	2/5# Bags	96286	8	3.0 Min.	182°C (360°F)	.45 Kgs (1 lb.)	.68 Kgs (1.5 lbs.)	33	50
Potato Wedges	6/5# bags	96698	30	5.0 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	20	30
Potato Slices	6/5# bags	96258	30	3.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	26	40
Italian-Style 3-Cheese Mozzarella Sticks	4/3# bags	96279	12	2.0 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	32	48
Beer Battered Onion Rings	20/8 oz bags	96287	10	1.5 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	48	72
Natural Cheddar Nuggets	Bulk Packed	96324	7	2 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	118	177
Jalapeno Peppers	4/3# bags	96325	12	2 Min.	182°C (360°F)	.91 Kgs (2 lbs.)	1.36 Kgs (3 lbs.)	28	42

\* All products are individually quick frozen and uncooked.

\*\* Suggested settings - actual cook times and temperatures may vary depending on product's temperature before cooking.

\*\*\* Corndogs should be thawed under refrigeration for 12 hours prior to cooking.

## 10 - COOKING OIL CARE

### IMPORTANT

- > Store cooking oil at room temperature: 65° - 75° F.
- > Do not reuse the oil container.
- > Keep oil away from heat and flames.
- > Do not store oil near oxidizing agents.

**⚠ DANGER** Use care when handling hot oil. Oil could splash causing serious burns.

Maximum oil life depends on proper care. It is very important if the finished product is to be presentable and edible. Useful oil life can be affected by many things:

**Oil Quality:** Poor quality oil will require replacement more often.

**Temperature:** Lowering oil temperature setting during slow periods or between business rushes will extend useful oil life.

**Volume:** The more product cooked, the more often oil will need filtering and replacing.

**Type of Coating and Seasoning Used:** Ingredients in some coatings can effect the appearance of end product and shorten the useful oil life.

**Amount of Care Oil Receives: DO NOT** leave any crumb build up in oil, on cooking well or on food basket. Oil will need replacing more often if improperly maintained.

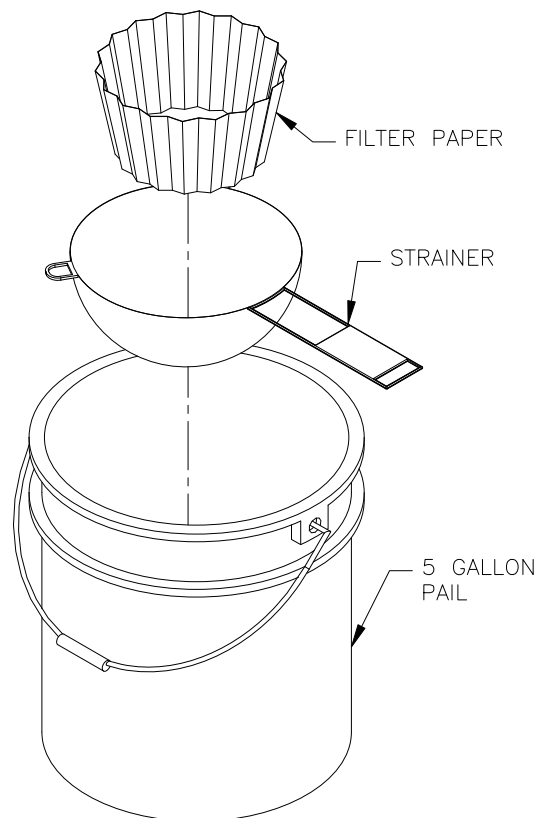
**DAILY MAINTENANCE:** Strain oil using large strainer, filter paper, and 5 gallon pail provided in each Accessory Kit.

### NOTICE

**DO NOT** use filter compound when filtering oil. It will plug up the filter paper.

**Oil Replacement:** How can you tell if oil should be replaced? It will show signs of increased smoking or foaming. If not discarded, safety and product quality could be sacrificed.

Discard used oil properly.







## 11 - CLEANING PROCEDURES

### MINIMUM CLEANING REQUIREMENTS

	DAILY	WEEKLY	DETAILS
Clean Cooking Pot	Dishwasher	Soak	12-2
Clean Grease Filter	X		12-3
Clean Filter Tray	X		12-3
Clean Splash Tray	X		12-3
Clean Food Basket	X	Soak	12-2
Clean Basket Lift Platform	X	Soak	12-2
Clean Cooking Area	X		12-3
Filter/Strain Cooking Oil	X		11-1
Replace Air Filter	Replace every <b>3 Months</b> or sooner if needed		12-2

**Note:** If cooking volume is high, perform above requirements more frequently.

**⚠ WARNING** Rags or papers containing cooking oil can catch fire if exposed to heat. Laundering will not remove the oil. Dispose of all oil-soiled papers and rags in a trash container that is in a ventilated area away from all cooking equipment or other heat sources such as direct sunlight.

**NOTICE**

Check liquid in Splash Tray several times daily. Empty as needed.

**⚠ WARNING**


Water and hot oil **DO NOT** mix. **DO NOT** pour contents of splash tray into cooking well. Hot oil could splash causing serious burns.

## COOKING CHAMBER PARTS

1. Press power OFF and disconnect main power supply and allow cooking oil to cool completely.
2. Open Access Door by raising Access Door Latch and turn counter-clockwise. Lift door off hinges.
3. Remove Food Basket if present.
  4. Remove Basket Lift Platform.
5. Unlatch filter tray and pull tray out (about 1.50") with your free hand under the tray and swing tray down 45°.
6. With both hands pull tray out towards you.
7. Remove Air filter and grease filter from Filter Tray and set air filter aside so it will not get wet.
8. Raise Element by placing Element Arm above Element Retainer.
9. Carefully remove Cooking Pot and filter oil or discard used oil properly.
10. Remove Splash Tray.
11. Wipe element guard and interior of chamber with clean cloth or paper towel to remove any crumbs.

### NOTICE

Because the Air filter has steam from the cooking process going through it, let the Air Filter dry out over night before reinstalling into the Filter Tray.

 **WARNING** Cooking oil may splash while moved. Not allowing cooking oil to cool completely could cause serious burns.

## DISHWASHER SAFE COMPONENTS

The Splash Tray, Product Door, Access Door, Cooking Pot, Basket Lift Platform, Filter Tray and Grease Filter can be removed from the unit and placed in a dishwasher.

### DISHWASHER (DAILY)

1. Pre-rinse Splash Tray, Access Door, Cooking Pot, Basket Lift Platform, and Food Basket with hot water. Dislodge any caked-on or stuck-on crumbs.
2. Place Splash Tray, Access Door, Cooking Pot, Basket Lift Platform, Filter Tray, Grease Filter and Food Basket in dish washer for full cleaning and rinse cycle.
3. Rinse Cooking Pot, Basket Lift Platform, and Food Basket, with a vinegar and water solution (1/2 cup vinegar per gallon of water) to neutralize detergent residue.
4. Wipe all surfaces of Cooking Pot, Food Basket, and Basket Lift Platform. Dry before filling with new oil.
5. Reinstall the Splash Tray and Cooking Pot into the cooking chamber and lower the Element into the Cooking Pot. Then reinstall the Basket Lift Platform, and Access Door
6. Reinstall grease filter into filter tray. **BE SURE** magnet end of grease filter is on the right side when in place.
7. Reinstall air filter into Filter Tray with arrows pointing up.
8. Reinstall Filter Tray into unit by tilting it at 45° and sliding it into the cabinet as far as it will go at the 45° tilt.

9. Lift latch end up so the top of the filter is against the top of the cabinet and push tray until it stops.
10. Latch in place and close access door.
11. Unit is ready to operate.

## HAND CLEANING (WEEKLY)

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1. Fully immerse Cooking Pot, Basket, and Platform in solution of 1 ounce of Broaster® Cooking Well Cleaner (P/N 99500 or 92643) to 1 gallon of warm tap water.
2. Soak for a minimum of 15 minutes.

### NOTICE

It is safe to leave soaking up to 12 hours.

3. Drain and discard cleaning mixture.
4. Clean Cooking Pot inside and outside using a non-metallic heavy duty commercial scouring pad that is USDA approved.

## UNIT SURFACES

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Frequently wipe off excess oil and crumbs with a clean cloth or paper towel. **DO NOT** use harsh abrasives and chemicals.

### WARNING

Rags or papers containing cooking oil can catch fire if exposed to heat. Laundering will not remove the oil. Dispose of all oil-soiled papers and rags in a trash container that is in a ventilated area away from all cooking equipment or other heat sources such as direct sunlight.



## 12 - DAILY / SEASONAL SHUTDOWN

### **WARNING**

Rags or papers containing cooking oil can catch fire if exposed to heat. Laundering will not remove the oil. Dispose of all oil-soiled papers and rags in a trash container that is in a ventilated area away from all cooking equipment or other heat sources such as direct sunlight.

### **DAILY SHUTDOWN**

1. Press power OFF.

### **NOTICE**

Fan will stay on for 2 hours to cool unit

2. Check cooking oil for replacement. Refer to Section 10, COOKING OIL CARE.
3. Wipe oil and crumbs from unit surfaces with a clean cloth or paper towel.
4. Clean food basket and platform.
5. Clean Splash Tray as needed.

### **SEASONAL SHUTDOWN**

1. Turn main circuit breaker OFF and unplug electrical cord.
2. Discard cooking oil.
3. Remove air filter and discard.
4. Thoroughly clean the unit. For cleaning instructions, refer to Section 11, CLEANING.
5. Prop access door open to allow air movement through cooking area while idle.

### **NOTICE**

Do not store unit below 32° F.



## 13 - TROUBLESHOOTING

All adjustments and repairs shall be made by an authorized Broaster Company representative.

### **ELECTRICAL TIPS**

COMPLAINT	CAUSE	REMEDY
POWER light not illuminated	<ol style="list-style-type: none"><li>1. Unit OFF</li><li>2. Main power OFF</li><li>3. Unplugged</li><li>4. Fire extinguisher pressure below low limit</li></ol>	<ol style="list-style-type: none"><li>1. Press ON button</li><li>2. Turn ON</li><li>3. Plug in</li><li>4. Disconnect main power Contact certified fire suppression agent</li></ol>
Cycle will not start	<ol style="list-style-type: none"><li>1. Unit OFF</li><li>2. Main power OFF</li><li>3. Solid state controller in program mode</li><li>4. Lockout Condition tripped</li><li>5. Platform not lowered</li></ol>	<ol style="list-style-type: none"><li>1. Press ON button</li><li>2. Turn ON</li><li>3. Exit program mode</li><li>4. See INDICATOR LIGHTS below</li><li>5. Motor control failure Contact service person</li></ol>
HEAT ON light not illuminated	<ol style="list-style-type: none"><li>1. Unit OFF</li><li>2. Main power OFF</li><li>3. Solid state controller in program mode</li><li>4. Oil temperature has reached programmed temperature</li></ol>	<ol style="list-style-type: none"><li>1. Press ON button</li><li>2. Turn ON</li><li>3. Exit program mode</li><li>4. Unit ready to cook</li></ol>
Cycle stops in progress	<ol style="list-style-type: none"><li>1. STOP button was pushed</li><li>2. Lockout Condition tripped</li></ol>	<ol style="list-style-type: none"><li>1. Press START button</li><li>2. See INDICATOR LIGHTS below</li></ol>
Power Light illuminated but no power to controller display	<ol style="list-style-type: none"><li>1. Lockout Condition tripped</li></ol>	<ol style="list-style-type: none"><li>1. See INDICATOR LIGHTS below</li></ol>

## INDICATOR LIGHTS

The series of indicator lights on the Display Panel check for specific conditions that make the VF-2 fryer safe to operate. The unit will not start or continue a cook cycle if any of the following indicator lights are lit.

COMPLAINT	CAUSE	REMEDY
Product Door <sup>(A)</sup>	1. Product Door Open 2. Failed switch	1. Close product door 2. Push power OFF button Contact service person
Access Door	1. Access Door Open 2. Failed switch	1. Close Access door 2. Push power OFF button Contact service person
Element Up	1. Element in raised position 2. Failed switch	1. Lower element 2. Push power OFF button Contact service person.
Air Flow	1. Fan failure 2. Failed switch	1. Push power OFF button Contact service person 2. Push power OFF button Contact service person
Air Filter <sup>(B)</sup>	1. Air Filter not in place 2. Failed switch	1. Insert Air Filter all the way 2. Push power OFF button Contact service person
Grease Filter	1. Grease Filter not in place 2. Failed switch	1. Insert Grease Filter 2. Push power OFF button Contact service person
High Limit Reset	1. Oil exceeded maximum temperature 2. Probe Failure	Push power OFF Contact service person
Fire System	1. 6 months operation has elapsed.	1. Contact certified Fire Service Personnel for required maintenance inspection.

### NOTICE

Power to the controller and heating element are electronically disconnected when:

- Access Door is Open
- Element is in the **UP** position
- Air Flow is below acceptable level
- Air filter is not in place
- Grease filter is not in place
- High Limit Control has been tripped

(A) The Product Door may be opened without interrupting the cooking cycle. However, cycle cannot be started until product door is closed.

(B) Air Filter should be replaced at least every 3 months or sooner if volume is high.



## **SOLID STATE CONTROLLER TIPS**

<b>COMPLAINT</b>	<b>CAUSE</b>	<b>REMEDY</b>
Display reads FAIL	1. There is a controller failure	1. Push power OFF button Contact service person
Display reads HI	1. Oil temperature too high	1. Push power OFF button Contact service person
Display reads PROB	1. There is a temperature sensor probe failure	1. Push power OFF button Contact service person
Display reads CHEC	1. Oil temperature not rising properly	1a. Check wall fuse or circuit breaker 1b. Push power OFF button Contact service person

## **FROZEN IQF PRODUCT**

**Note:** This unit is not designed to cook 8 piece cut chicken, whether fresh or frozen.

<b>COMPLAINT</b>	<b>CAUSE</b>	<b>REMEDY</b>
Product too light	1. Low oil temperature 2. Not done 3. Food basket overloaded	1. Check cook temperature 2. Increase cook time 3. Decrease load
Product too dark	1. High oil temperature 2. Overcooked 3. Oil old 4. Thawed and refrozen	1. Check cook temperature 2. Decrease cook time 3. Change oil 4. Keep product at 0°F or below
Product not done	1. Low oil temperature 2. Food basket overloaded 3. Cook time too short	1. Check cook temperature 2. Decrease load 3. Increase cook time
No flavor	1. Overcooked 2. Old product	1. Check cook time 2. Discard
White spots	1. Food basket overloaded	1. Decrease load size
Dark spots	1. Dirty oil	1. Filter or replace oil







**Broaster Company**  
2855 Cranston Road, Beloit, WI 53511-3991  
608/365-0193  
**broaster.com**