HENNY PENNY
Engineered to Last

# Henny Penny
# Open Fryer-Electric
# Model OFE-291

# TECHNICAL MANUAL

# TABLE OF CONTENTS

# SECTION 1. TROUBLESHOOTING

## 1-1. INTRODUCTION

This section provides troubleshooting information in the form of an easy to read table.

If a problem occurs during the first operation of a new fryer, recheck the installation per the Installation Section of this manual.

Before troubleshooting, always recheck the operation procedures per Section 3 of this manual.

## 1-2. SAFETY

Where information is of particular importance or safety related, the words DANGER, WARNING, CAUTION, and NOTICE are used. Their usage is described below.

SAFETY ALERT SYMBOL is used with DANGER, WARNING, or CAUTION which indicates a personal injury type hazard.


NOTICE is used to highlight especially important information.


*CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.*


***CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.***


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


**DANGER INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.**

## 1-3. TROUBLESHOOTING

To isolate a malfunction, proceed as follows:

1. Clearly define the problem (or symptom) and when it occurs.

2. Locate the problem in the Troubleshooting table.

3. Review all possible causes. Then, one-at-a-time work through the list of corrections until the problem is solved.

4. Refer to the maintenance procedures in the Maintenance Section to safely and properly make the checkout and repair needed.


**If maintenance procedures are not followed correctly, injuries and/or property damage could result.**

| Problem | Cause | Correction |
|---|---|---|
| | **COOKING SECTION** | |
| Product color not correct: | | |
| A. Too dark | • Temperature too high | • Check temperature setting in the program mode; see Programming Section in Operator's Manual |
| | • Faulty temperature probe | • Remove and replace temperature probe |
| | • Shortening too old | • Change shortening |
| | • Shortening too dark | • Filter shortening<br>• Change shortening |
| | • Breading product too far in advance | • Bread product closer to actual frying period |
| B. Too light | • Temperature too low | • Check temperature setting<br>• Remove and replace temperature probe |
| | • Fryer incorrect preheat | • Allow proper preheat time |
| | • Slow fryer heat-up/recovery | • Faulty element |
| | • Wrong cook button pushed. | • Be sure to select the correct product to be cooked |
| C. Product greasy | • Shortening old | • Replace shortening |
| | • Temperature too low | • Check temperature setting |
| | | • Temperature not recovered when product was dropped in frypot |
| | • Faulty temperature probe | • Remove and replace defective temperature probe |
| | • Frypot overloaded | • Reduce cooking load |
| | • Product not removed from frypot immediately after end of cycle | • Remove product from frypot immediately after end of cycle |

| Problem | Cause | Correction |
|---|---|---|
| | **COOKING SECTION (Continued)** | |
| D. Spotted product | • Improper separation of the product | • Load product into racks properly |
| | • Breading not uniform on the product | • Sift breading regularly<br>• Separate product during breading |
| | • Burned breading particles on product | • Filter the shortening more frequently |
| | • Product sticking together | • Separate product prior to pressure cooking |
| E. Dryness of product | • Moisture loss prior to cooking | • Use fresh products |
| | • Overcooking the product | • Reduce cooking time<br>• Reduce cooking temperature |
| | • Wrong cook button pushed | • Be sure to select the correct product to be cooked |
| Product flavor (taste):<br>A. Salty taste | • Breading mixture is too salty | • Sift breading after each use<br>• Incorrect breading mixture<br>• Discard old breading |
| | • Incorrect choice of breading | • Use breading designed for the desired product |
| B. Burned taste | • Burned shortening favor | • Replace shortening |
| | • Frypot not properly cleaned | • Drain and clean frypot |
| C. Bland taste | • Raw product not fresh | • Use fresh raw product |
| | • Breading mixture incorrect for product (spice content too low) | • Use breading designed for desired product |
| | • Cooking temperature too high (spice flavors lost) | • Check temperature |

| Problem | Cause | Correction |
|---|---|---|
| | **COOKING SECTION (Continued)** | |
| D. Rancid taste | • Shortening too old | • Replace shortening, and follow recommended care and use of shortening |
| | • Infrequent filtering | • Replace shortening and follow recommended care and use of shortening |
| | • Non-compatible products cooked within the same | • Replace shortening<br>• Use compatible products, shortening. - and follow recommended care and use of shortening |
| | • Raw product not fresh | • Use fresh product |
| General:<br>A. Meat separation from bone | • Incorrect meat cut procedures | • Use correct meat cutting |
| | • Overcooking | • Check cooking time |
| | • Product not fresh | • Use fresh product |
| B. Bone color not proper | • Using frozen product (black bone) | • Use fresh product |
| | • Improper processing of product (black bone) | • Use proper processing procedure for product |
| | • Product not thoroughly cooked (red bone) | • Check cooking time<br>• Check cooking temperature |
| C. Breading falls off | • Incorrect breading procedures | • Use correct breading procedure |
| | • Product partially frozen | • Thoroughly thaw the product, before breading |
| D. Product sticking together | • Product breaded too long prior to cooking | • Refer to breading and frying instructions |
| | • Improper loading procedure | • Properly load product per loading procedures |
| | • Wrong cook button pushed | • Be sure to select the correct product to be cooked |

| Problem | Cause | Correction |
|---|---|---|
| **POWER SECTION** | | |
| With switch in POWER position, the fryer is completely inoperative (NO POWER) | • Open circuit | • Check to see that unit is plugged in<br>• Check the breaker or fuse at supply box<br>• Check voltage at wall receptacle<br>• Check MAIN POWER switch; replace if defective<br>• Check cord and plug<br>• Check 15 amp fuses |
| **HEATING OF SHORTENING SECTION** | | |
| Shortening will not heat | • Blown fuse or tripped | • Reset breaker or replace fuse circuit breaker at supply box or control panel |
| | • Blown fuse in PC board | • Replace glass fuse in board |
| | • Faulty POWER/PUMP switch. | • Check POWER/PUMP switch per maintenance section on the POWER/PUMP switch |
| | • Faulty cord and plug | • Check cord and plug<br>• Check power at receptacle |
| | • Faulty drain switch | • Check drain switch per maintenance section on drain switches |
| | • Faulty PC Board | • Remove and replace control panel |
| | • Faulty high limit control switch | • Check high limit control switch per maintenance section on the high limit |
| | • Drain valve open | • Close drain valve |
| | • Possible faulty temperature probe | • Replace temperature probe |
| | • Faulty contactor | • Check contactor per maintenance section on contactors |

| Problem | Cause | Correction |
|---|---|---|
| **HEATING OF SHORTENING SECTION (Continued)** | | |
| Heating of shortening too slow | • Low or improper voltage | • Use a meter and check the receptacle against data plate |
| | • Weak or burnt out element(s) | • Check heating element(s) per Heating Elements Section |
| | • Points in contactor bad | • Check contactor per Heating Contactors Section |
| | • Wire(s) loose | • Tighten |
| | • Burnt or charred wire connection | • Replace wire and clean connectors |
| Shortening overheating | • Programming wrong | • Check temperature setting in the program mode |
| | • Faulty PC board | • Remove and replace control panel |
| | • Faulty temperature probe | • Remove and replace temperature probe |
| | • Check contactor for not opening | • Check faulty contactor per Heating Contactors Section |

| Problem | Cause | Correction |
|---|---|---|
| **SHORTENING FOAMING/DRAINING SECTION** | | |
| Foaming or boiling over of shortening | • Water in shortening | • At end of a Cook Cycle, drain shortening and clean frypot; add fresh shortening |
| | • Condensation line stopped up | • Remove and clean condensation line |
| | • Improper or bad shortening | • Use recommended shortening |
| | • Improper filtering | • Refer to the procedure covering filtering the shortening |
| | • Cold zone full of cracklings | • Filter shortening |
| | • Improper rinsing after cleaning the fryer | • Clean and neutralize the frypot; rinse with vinegar to remove the alkaline, then rinse with hot water and dry frypot |
| Shortening will not drain from frypot | • Drain valve clogged with crumbs | • Open valve - push cleaning rod through drain opening from inside of frypot |
| Shortening leaking through drain valve | • Obstruction in drain | • Remove obstruction |
| | • Faulty drain valve | • Replace drain valve |

## 1-4. ERROR CODE TABLE

In the event of a control system failure, the digital display shows an error message. These messages are coded: "E4", "E5", "E6", "E10", "E15", "E41", "E46", "E47", "E48", "E70B" and "E92". An alarm sounds when an error code is displayed, and to silence this alarm, press any button.

| DISPLAY | CAUSE | PANEL BOARD CORRECTION |
|---|---|---|
| "E-4" | Control board overheating | Turn switch to OFF position, then turn switch back ON; if display shows "E-4", the control board is getting too hot; check the louvers on each side of the unit for obstructions; check cooling fan, if present |
| "E-5" | Shortening overheating | Turn switch to OFF position, then turn switch back to ON; if display shows "E-5", the heating circuits and temperature probe should be checked |
| "E-6 A" | Temperature probe open | Turn switch to OFF position, then turn switch back to ON; if display shows "E-6", have the temperature probe checked |
| "E-6 B" | Temperature probe shorted | Turn switch to OFF position, then turn switch back to ON; if display shows "E-6" have the temperature probe checked |
| "E-10" | High limit | Reset the high limit by manually pushing up on the reset button; if high limit does not reset, high limit must be replaced |
| "E-15" | Drain switch | Close drain, using the drain valve handle; if display still failure shows "E-15", have the drain microswitch checked |

## 1-4. ERROR CODE TABLE (Continued)

| DISPLAY | CAUSE | PANEL BOARD CORRECTION |
|---|---|---|
| "E-41", "E-46" | Programming Failure | Turn switch to OFF, then back to ON, if display shows any of the error codes, try to reinitialize the control; if error code persists, have the control board replaced |
| "E-47" | Analog converter chip or 12 volt supply failure | Turn switch to OFF, then back to ON, if "E-47" persists, have the I/O board, or the PC board replaced; if speaker tones are quiet, probably I/O board failure |
| "E-48" | Input system error | Have PC board replaced |
| "E-70 B" | Faulty power switch, or switch wiring; faulty I/O board | Have power switch checked, along with its wiring; have Input/Output board replaced if necessary |
| "E-92" | 24 VAC fuse on I/O board open | Have components, in 24-volt circuit (I.E., hi limit, drain switch) checked for shorts |

# SECTION 2. MAINTENANCE

## 2-1. INTRODUCTION

This section provides checkout and replacement procedures, for various parts of the fryer. Before replacing any parts, refer to the Troubleshooting Section to aid you in finding the cause of the malfunction.

## 2-2. MAINTENANCE HINTS

1. A multimeter will help you to check the electric components.

2. When the manual refers to the circuit being closed, the multimeter should read zero unless otherwise noted.

3. When the manual refers to the circuit being open, the multimeter should read infinity.


**Do not move the fryer with hot shortening in the frypot or filter pan. Severe burns can result from splashing hot shortening.**

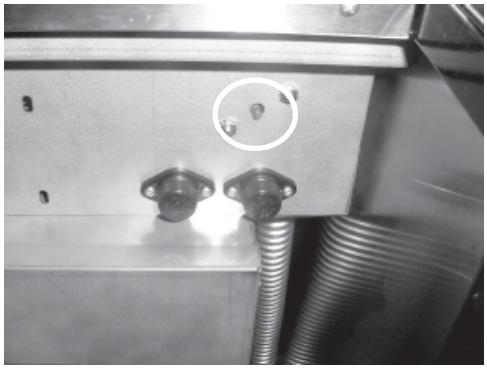
4. Remove weights from the frame to easily access rear of fryer.

## 2-3. PREVENTIVE MAINTENANCE

To ensure a long life of the fryers and their components, regular maintenance should be performed. Refer to the chart below.

| Frequency | Action |
|---|---|
| Twice Daily | Filter Shortening (See Filtering Instructions Section in Operator's Manual) |
| Annually | Lubricate Lid Rollers in back of fryer. (See Lubricating Lid Rollers Section) |

## 2-4. HIGH TEMPERATURE LIMIT CONTROL



This high temperature control is a safety, manual reset control, which senses the temperature of the shortening. If the shortening temperature exceeds 425°F (218°C), this switch opens and shuts off the heat to the frypot. When the temperature of the shortening drops to a safe operation limit, manually reset by pressing the red reset button. The red reset button is located under the control panel, in the front of the fryer, to the right of the drain. Once reset, the frypot starts heating.

**Checkout**

Before replacing a high temperature limit control, check to see that its circuit is closed.

**NOTICE**

The shortening temperature must be below 380°F (193°C) to accurately perform this check.

1. Remove electrical power supplied to the fryer.

   **WARNING**

   **To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. Remove the control panel.

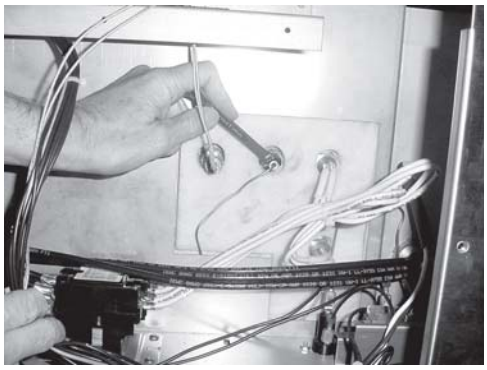
3. Remove the two nuts securing the high limit bracket to the unit, and pull the bracket from the unit.

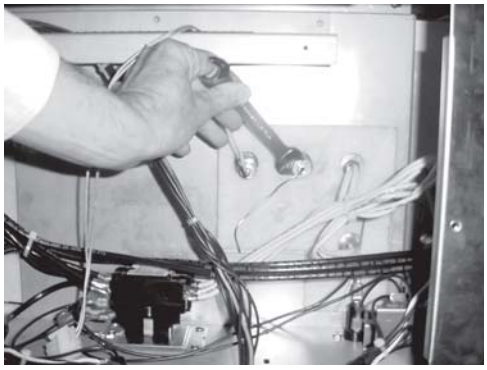
4. Remove the two screws securing the high limit to the bracket, and remove the high limit from the bracket.

5. Remove the two electrical wires from the high temperature limit control.

6. Manually reset the control, then check for continuity between the two terminals after resetting the control. If the circuit is open, replace the control, then continue with this procedure. (If the circuit is closed, the high limit is not defective. Reconnect the two electrical wires.)

## 2-4. HIGH TEMPERATURE LIMIT CONTROL (Continued)






**To avoid electrical shock of property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

**Replacement**

1. If the tube is broken or cracked, the control will open, shutting off electrical power. The control cannot be reset.
2. Drain shortening from the frypot and discard. A substance in the tube could contaminate the shortening.
3. Remove control panel.
4. Loosen small inside screw nut on capillary tube.
5. Remove capillary bulb from bulb holder inside the frypot.
6. Straighten the capillary tube.
7. Remove larger outside nut that threads into pot wall, and remove defective control from control panel area.
8. Insert new control and replace screws.
9. Uncoil capillary line, starting at capillary tube, and insert through frypot wall.


**To avoid electrical shock or other injury, run the capillary line under and away from all electrical power wires and terminals. The tube must never be in such a position where it could accidentally touch the electrical power terminals.**

10. Carefully bend the capillary tube as shown in photo and place into bulb brackets.

## 2-4. HIGH TEMPERATURE LIMIT CONTROL (Continued)

11. Pull excess capillary line from pot and tighten nut into frypot wall.

**CAUTION**

*Be sure capillary bulb of high limit is positioned so it doesn't interfere with the carrier or get damaged when cleaning the frypot.*

12. With excess capillary line pulled out, tighten smaller nut.

13. Replace front panel.

14. Refill with shortening.

## 2-5. FUSE HOLDERS

There are two fuse holders on each model of the electric fryers. To check or change fuse, unscrew black fuse holder cap.

**WARNING**
**SHOCK HAZARD**

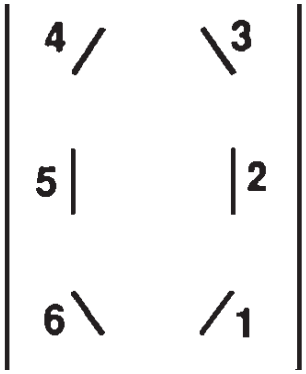
**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

**Checking Procedure for Fuse Holders**
CONTROL PANEL FUSES 3 Phase
Remove the control panel and pull the wires from the fuse holder terminals. Using a multimeter or continuity light, check across the terminals. The circuit should be closed. If not, replace the fuse (HP# EF02-007) or fuse holder (HP# EF02-006).

## 2-6. POWER/PUMP SWITCH

The POWER/PUMP switch is a three way rocker switch with a center OFF position. With the switch in the POWER position the fryer operates. With the switch in the PUMP position the filter pump operates, but the unit will not heat.


**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**




### Checkout

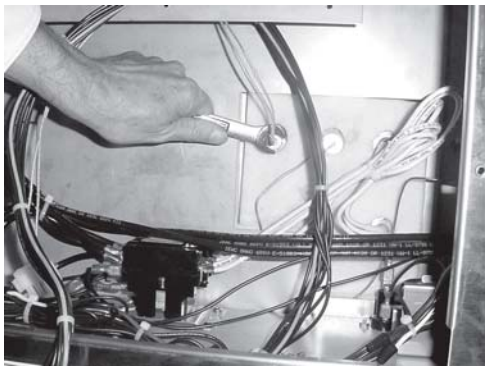
1. Remove control panel.
2. Label and remove wires from the switch.
3. OFF position-should be open circuit anywhere on the switch.
4. Power position. Check from: #5 to #6 closed circuit
   #1 to #2 closed circuit
5. Pump position. Check from: #4 to #5 closed circuit
   #3 to #2 closed circuit


Check across the jumpers on the wires of the POWER/PUMP switch. These jumpers have resistors and capacitors which may be faulty.

### Replacement

1. With control panel removed, and wires off of the switch, push in on tabs on the switch to remove from the panel.
2. Replace with new switch, and reconnect wires to switch following the wiring diagram.
3. Replace the control panel.

## 2-7. TEMPERATURE PROBE REPLACEMENT



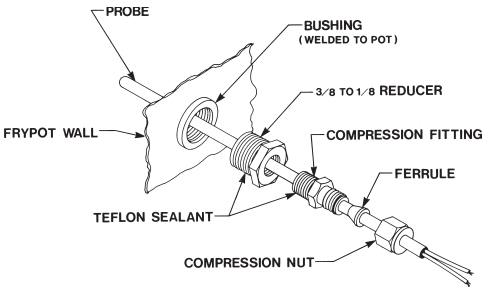



**Figure 2-1**

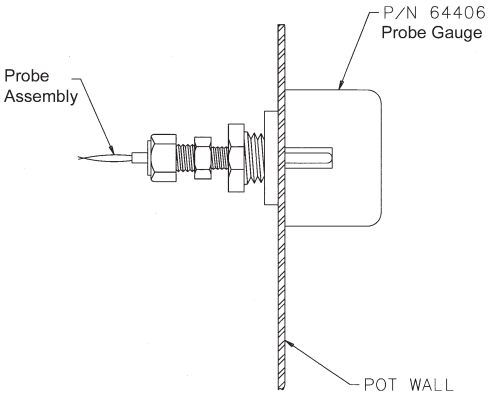



**Figure 2-2**

| Temp. F | Temp. C | Résistance en ohms | Temp. F | Temp. C | Résistance en ohms |
|---|---|---|---|---|---|
| 50 | 10,00 | 1 039,02 | 250 | 121,11 | 1 464,79 |
| 60 | 15,56 | 1 060,65 | 260 | 126,67 | 1 485,71 |
| 70 | 21,11 | 1 082,24 | 270 | 132,22 | 1 506,58 |
| 80 | 26,67 | 1 103,80 | 280 | 137,78 | 1 527,43 |
| 90 | 32,22 | 1 125,32 | 290 | 143,33 | 1 548,23 |
| 100 | 37,78 | 1 146,81 | 300 | 148,89 | 1 569,00 |
| 110 | 43,33 | 1 168,26 | 310 | 154,44 | 1 589,73 |
| 120 | 48,89 | 1 189,67 | 320 | 160,00 | 1 610,43 |
| 130 | 54,44 | 1 211,05 | 325 | 162,78 | 1 620,77 |
| 140 | 60,00 | 1 232,39 | 330 | 165,56 | 1 631,09 |
| 150 | 65,56 | 1 253,70 | 340 | 171,11 | 1 651,72 |
| 160 | 71,11 | 1 274,97 | 350 | 176,67 | 1 672,31 |
| 170 | 76,67 | 1 296,20 | 360 | 182,22 | 1 692,86 |
| 180 | 82,22 | 1 317,40 | 365 | 185,00 | 1 703,13 |
| 185 | 85,00 | 1 327,99 | 370 | 187,78 | 1 713,38 |
| 190 | 87,78 | 1 338,57 | 380 | 193,33 | 1 733,87 |
| 200 | 93,33 | 1 359,69 | 390 | 198,89 | 1 754,31 |
| 210 | 98,89 | 1 380,79 | 400 | 204,44 | 1 774,72 |
| 212 | 100,00 | 1 385,00 | 410 | 210,00 | 1 795,10 |
| 220 | 104,44 | 1 401,84 | 420 | 215,56 | 1 815,44 |
| 230 | 110,00 | 1 422,86 | 430 | 221,11 | 1 835,74 |
| 240 | 115,56 | 1 443,85 | 440 | 226,67 | 1 856,01 |

The temperature probe relays the actual shortening temperature to the control. If it becomes disabled, "E06" will show in the display. Also, if the temperature is out of calibration more than 10°F, or 10°C, the temperature probe should be replaced. An Ohm check can be performed also. See chart at end of this section.

1. Remove electrical power supplied to the fryer.


**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. Drain the shortening from the frypot.
3. Remove the control panel.
4. Using a 1/2" wrench, remove the nut on the compression fitting.
5. Remove the temperature probe from the frypot.
6. Place the nut and new ferrule on the new temperature probe and insert the temperature probe into the compression fitting until it extends one-half (1/2) inch (1.3 cm) into the frypot. Use the temperature probe gauge provided in the temperature probe kit, to ensure proper placement in frypot. See Figures 2-1 and 2-2.
7. Tighten hand tight and then a half turn with wrench.


*Excess force will damage temperature probe.*

8. Connect new temperature probe to PC board and replace control panel.
9. Replace shortening.
10. Turn power on and check out fryer.

## 2-8. COMPLETE CONTROL PANEL-HENNY PENNY

Should the control panel become inoperative, follow these instructions for replacing the board.


1. Remove electrical power supplied to the fryer.

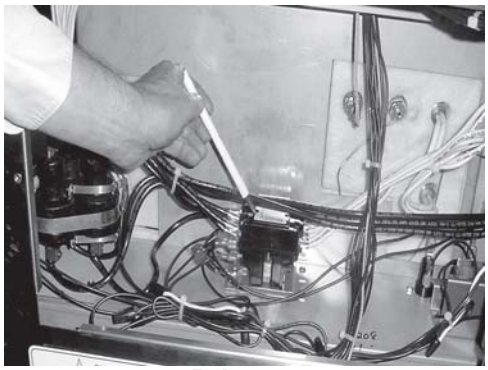

**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. Remove the two screws securing he control panel and lift panel up and out

3. Unplug the connectors going to the control board.

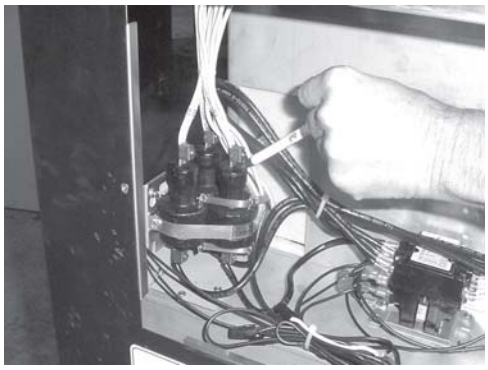
4. Install a new control panel.

## 2-9. CONTACTORS



Primary

The electric fryer requires two switching contactors: a primary and a heat contactor. The primary contactor energizes (contacts close) any time the POWER/PUMP switch is in the POWER position, and the temperature of the shortening is below 420° F ( 215° C). The high limit cuts power at the primary contactor if the temperature of the shortening is above 420° F ( 215° C). The primary contactor supplies power to one side of the heat contactor.

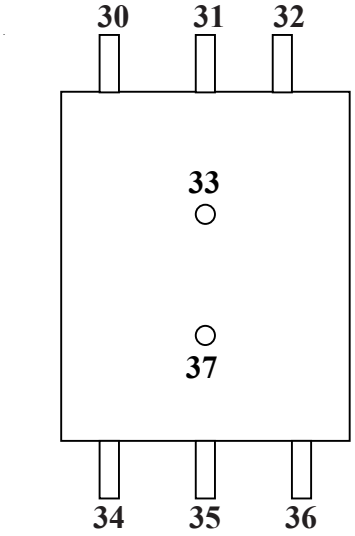


Heat

The heat contactor is controlled by the computer controller. When the controller calls for heat, the heat contactor applies power to one side of the heating elements. When the heat contactor and primary contactor are energized (contacts closed) the electric heating elements heat the shortening.

**NOTICE**

The photo shows a mercury heat contactor, but CE countries will have an electromechanical heat contactor.




**Checkout**

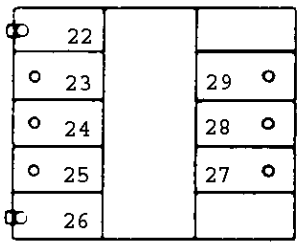
1. Remove electrical power supplied to the fryer.


**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. Remove the control panel.

3. Label and remove wires from contactors and perform a check on both contactors as follows:

Primary Contactor




| Test Points | Results |
|---|---|
| From 23 to 29 | open circuit |
| From 24 to 28 | open circuit |
| From 25 to 27 | open circuit |
| From 30 to 34 | open circuit |
| From 31 to 35 | open circuit |
| From 32 to 36 | open circuit |
| From 33 to 37 | ohm reading 1700 |
| From 22 to 26 | ohm reading 415 |

## 2-9. CONTACTORS (Continued)


**To avoid electrical shock, make connections before applying power, take reading, and remove power before removing meter leads. The following checks are performed with the wall circuit breaker closed and the main power switch in the ON position.**

4. With power reapplied and in a heat-up mode, check the power going to both contactor coils. This is to be sure power is going to the contactors.

If no voltage is found going into the primary contactor coil, check wiring, high limit, and drain switch. If no voltage at heat contactor coil check wiring and connections at PC board.

**Replacement**

If either contactor proves defective, replace as follows:


**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

1. Label and remove only those wires directly connected to the contactor being replaced.

   Hint: Removing the left side panel may be helpful in replacing the heat contactor.

2. Remove the mounting screws on the base plate of the primary contactor and remove contactor. Proceed to step 5.

3. Remove the screws securing the mercury contactor bracket to the mounting plate and remove bracket and contactor.

4. Remove the screws securing the contactor to the bracket and remove contactor from bracket.

5. Install new contactor in reverse order.

6. Install control panel and reconnect power to the fryer and test for proper operation.

## 2-10. HEATING ELEMENTS

The electric model fryer uses 2 heating elements.

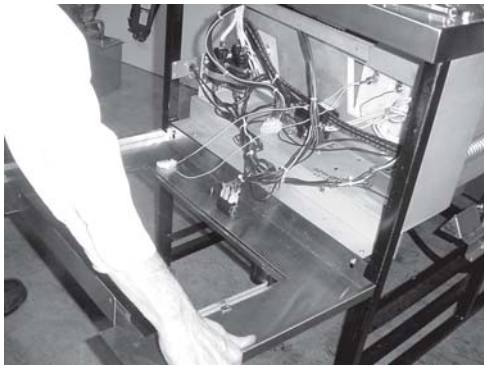
**NOTICE**

Heating elements are available in 208, 220/240, 380 and 415 volts. Check the data plate, on the shroud behind the lid, to determine the correct voltage elements.

1. Remove the electrical power supplied to the unit.


**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. Remove the control panel.



3. Remove both side panels.

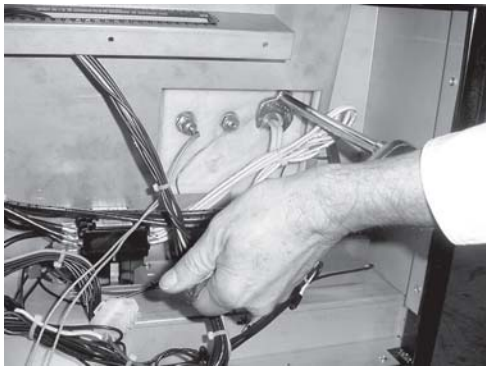
4. Remove upper screws and loosen the lower screws, to the front control shroud, and hinge it down. (See photo at left)


**To avoid electrical shock, make connections before applying power, take reading, and remove power before removing meter leads. The following checks are per formed with the wall circuit breaker closed and the main power switch in the ON position.**

5. Perform an amp check on one heating element at a time with the wires connected to the contactors. The 2 heaters actually have 3 small heating elements on the inside of the outer plate. It is important to check between the correct wires to obtain the accurate amp reading. The wires are labeled for your convenience.

| Wires | Power | Voltage | Amperage |
|---|---|---|---|
| L1-L3 | 8500W | 208V | 47.8 |
| L3-L2 | 8500W | 208V | 47.9 |
| L2-L1 | 8500W | 208V | 48.0 |
| L1-L2 | 8500W | 240V | 39.4 |
| L3-L2 | 8500W | 240V | 40.1 |
| L2-L1 | 8500W | 240V | 39.9 |

## 2-10. HEATING ELEMENTS (Continued)



**Replacement**

1. Drain the shortening.
2. Remove the high limit bulb holder from the heating element inside the frypot.
3. Disconnect the heating element wires from the contactors. Label each so it can be replaced in the same position on the new element.
4. Remove the heat contactor, as described in Contactors Section, to access the left side element nuts.
5. Loosen the screws on the element spreaders.
6. Slide the element spreaders to the center of the heating element.
7. Using a 7/8" crowsfoot, remove the brass nuts and washers which secure the ends of the elements through the frypot wall.
8. Remove the heating elements from the frypot as a group by lifting the far end, and sliding them up and out towards the rear of the frypot.

   **NOTICE**

   Always install new rubber O rings (2) when installing heating elements.
9. Install new heating elements with new rubber O-rings mounted on terminal ends, and spreaders loosely mounted in the center of the stacked elements.
10. Replace the heating elements, terminal end first at approximately 45º angle, slipping the terminal ends through the front wall of the frypot.

## 2-10. HEATING ELEMENTS (Continued)

10. Replace the brass nuts and washers on the heating element terminals. Tighten the brass nuts to 30 foot lbs of torque.

11. Replace heat contactor.

11. Move the element spreaders from the center of the element, into a position which will spread each element apart evenly on all four sides, and tighten.

12. Replace the high limit bulb holder on the top element, and position the bulb between the top and second element midway from side to side, and tighten screw which holds the bulb in place.

13. Reconnect the wires to the appropriate terminal as labeled when they were removed.

14. Replace the front control shroud and control panel.

15. Replace side panels.

16. Connect the power cord to the wall receptacle or close wall circuit breaker.

**CAUTION**

*Heating elements should never be energized without shortening in the frypot, or damage to elements could result.*

## 2-11. DRAIN MICROSWITCH

Upon pulling out on the drain handle, the microswitch should be activated and the unit will not heat, but when the handle is pushed back, the unit should operate properly. The bracket on the microswitch is slotted so it can be adjusted backward or forward.

1. Remove electrical power supplied to the unit.

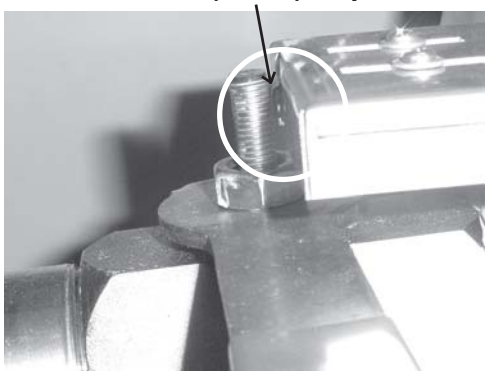

**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. The following check should be made to determine if the drain switch is defective.

   a. Remove bracket from the unit.

   b. Remove wires from the switch.

   c. Check for continuity across the two outside terminals on the drain switch. If circuit is open, the drain switch is bad. The circuit should only be opened by pressing on the actuator of the drain switch.




3. To replace switch, remove switch from the bracket, and install switch in reverse order.

4. Test to see if drain valve handle actuates the switch. The gap between the drain switch and the shaft should be no more than 1/8” (3 mm).
   HINT: Listen for click of switch while pulling drain valve handle.

## 2-12. DRAIN VALVE AND EXTENSION

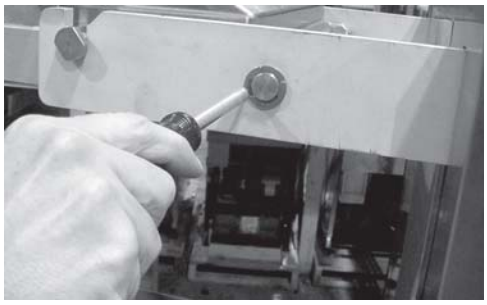
The drain valve opens when the drain valve handle is pulled out and drains the shortening out of the pot.

**Replacement**

1. Using a 3/8" socket, remove the nuts securing the drain switch bracket, and pull the bracket from the studs.
2. Remove the nut securing the drain handle and pull the handle from the drain valve.
3. Using a large adjustable wrench, unscrew the drain valve and extension from the unit.
4. Replace the drain valve and extension.
5. Replace the drain switch bracket.
6. Adjust the microswitch to be no more than 1/8" (3 mm) from the shaft of the drain valve.

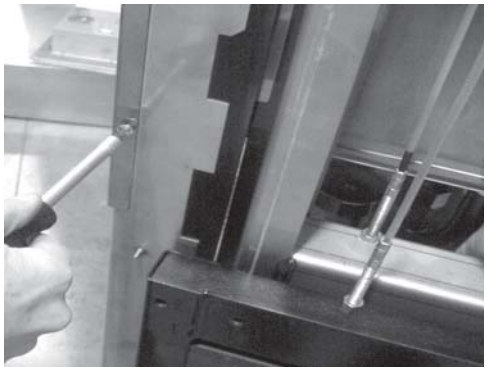
   HINT: Listen for click of switch while pulling drain valve handle.

## 2-13. NYLATRON STRIPS REPLACEMENT



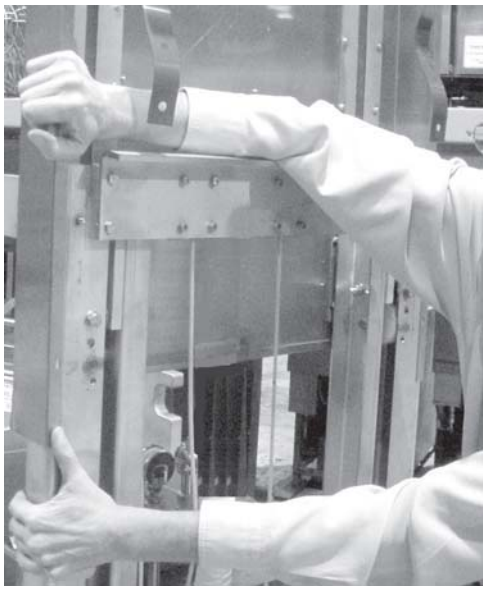
1. Raise the lid and remove the retention ring from one end of the lid pin.
2. Slide the lid pin from unit.
3. Lift the lid from unit.
4. Using a 3/8" socket, remove the nuts securing the rear shroud and remove shroud.

5. Using a Phillip's-head screwdriver, remove the screws securing the top cap and remove top cap.
6. Remove the bolts securing the nylatron strips to the weight assembly and remove strips from weight assembly.



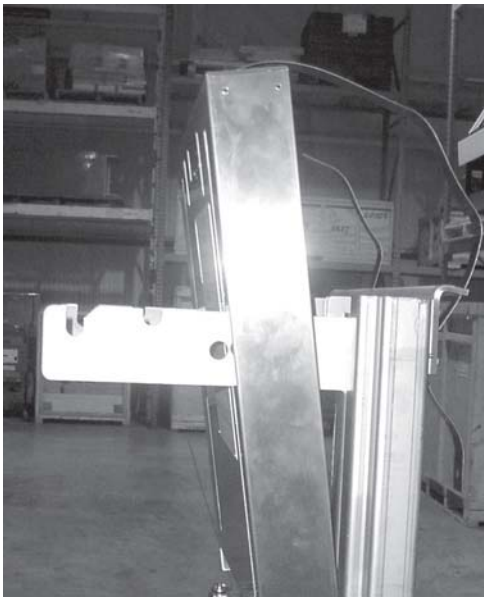
7. Using a Phillip's-head screwdriver, remove the screws securing the front shroud.

## 2-13. NYLATRON STRIPS REPLACEMENT (Continued)



8. Lift the front shroud up and out, over the arm of the lid.

9. Thread the new nylatron strip through the track in the front shroud.



10. Lining up the holes in the strips, fit the front shroud back over the lid arms.

11. Secure the strips to the weight assembly.

12. Replace back shroud, top cap, and lid, and replacement is complete.

## 2-14. LID COUNTERWEIGHT CABLES

The Lid Counterweight in the back of the fryer balances the weight of the lid system to allow easier opening and closing of the lid. The weight has two cables attached to it, and weighs about 100 lbs. (45.4 kg).

1. Using a 3/8" socket, remove the nuts securing the rear shroud of the fryer and remove the shroud.

2. Using Phillip's-head screwdriver, remove the screws securing the top cap and remove cap.

3. Raise the lid.

4. Unscrew the broken cable from the weight assembly and the bracket attached to the fryer, and remove broken cable.

5. Screw a 5/16" nut on each end of the new cable.

6. Using a wrench, screw the new cable into the weight assembly until tight.

7. Using a 1/2" wrench, tighten the nut (already threaded on the cable) against the weight assembly, securing the cable into the weight assembly.

8. Pull the cable over the pulley and down behind the weight assembly.

9. Insert the cable into the hole in the bracket and screw a 5/16" nut onto the end of the cable. Tighten the cable, by screwing the cable through this nut until the weight assembly becomes level.

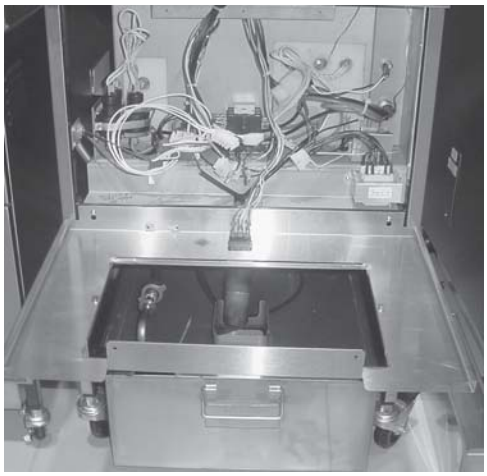
   **NOTICE**

   The safety cable should now have slack in it with the weight assembly level.

10. Tighten the nut against the top of the bracket, securing the cable.

11. Replace the top cap and rear shroud and repair is now complete.

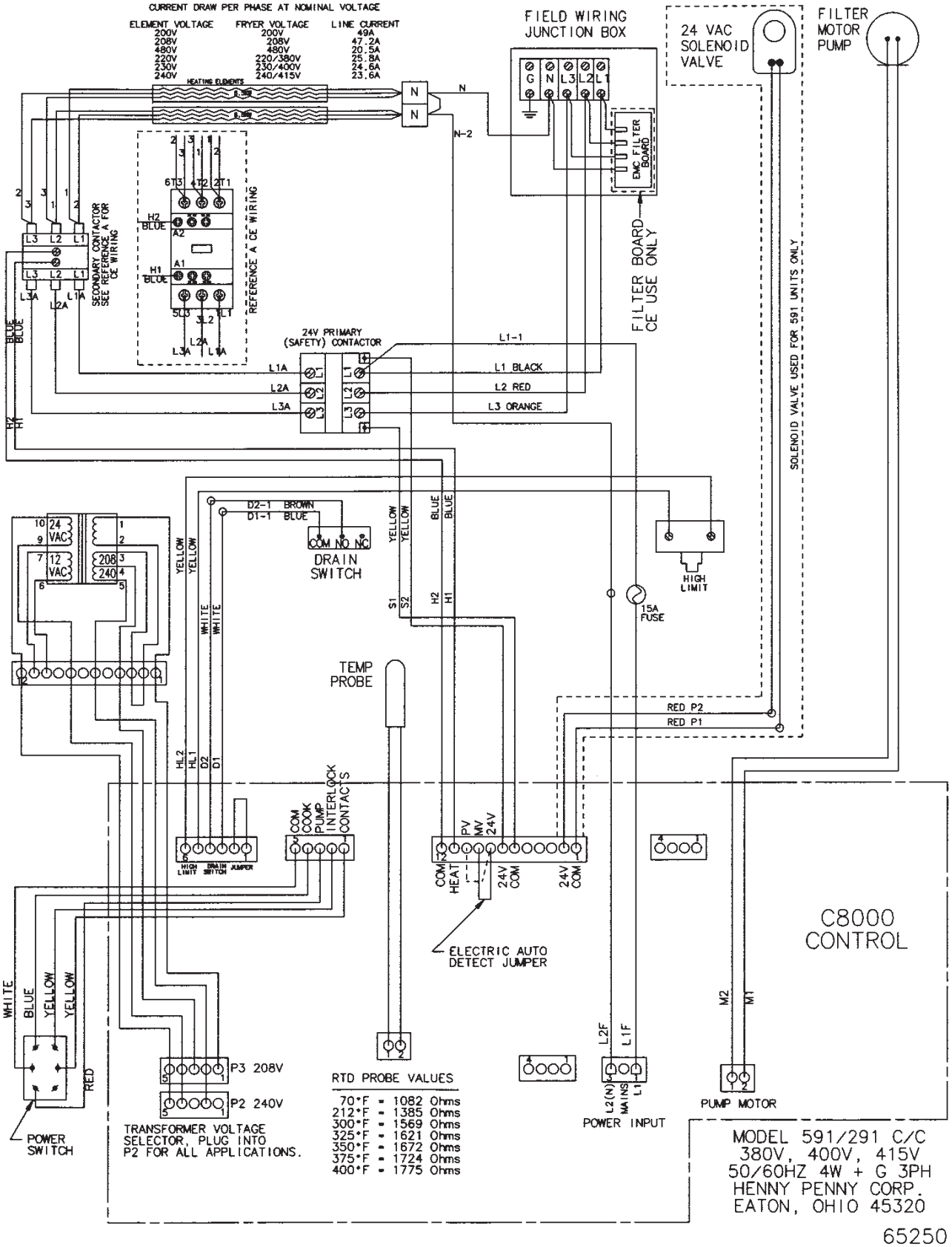
## 2-15. TRANSFORMER REPLACEMENT



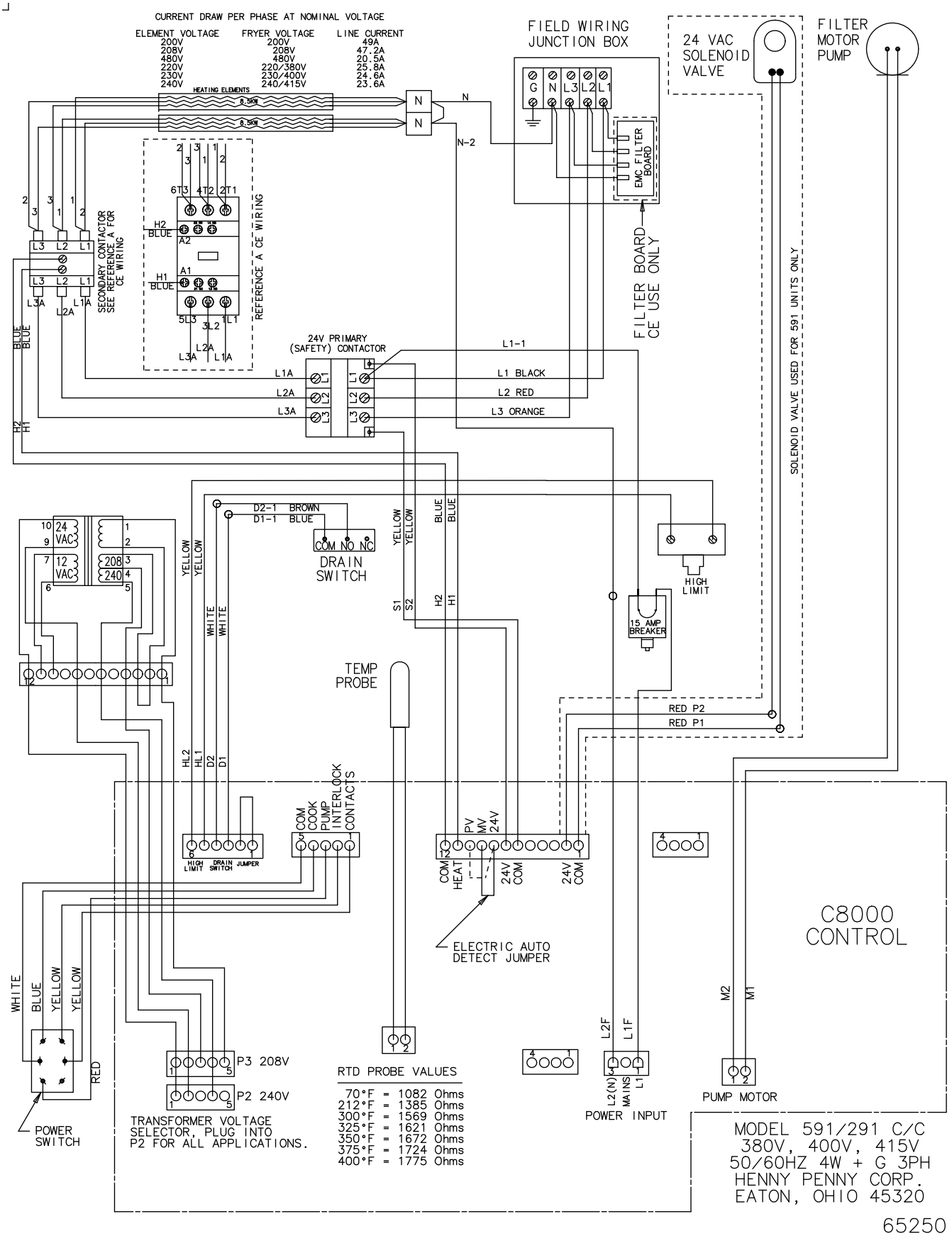
1. Remove the electrical power supplied to the unit.


**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

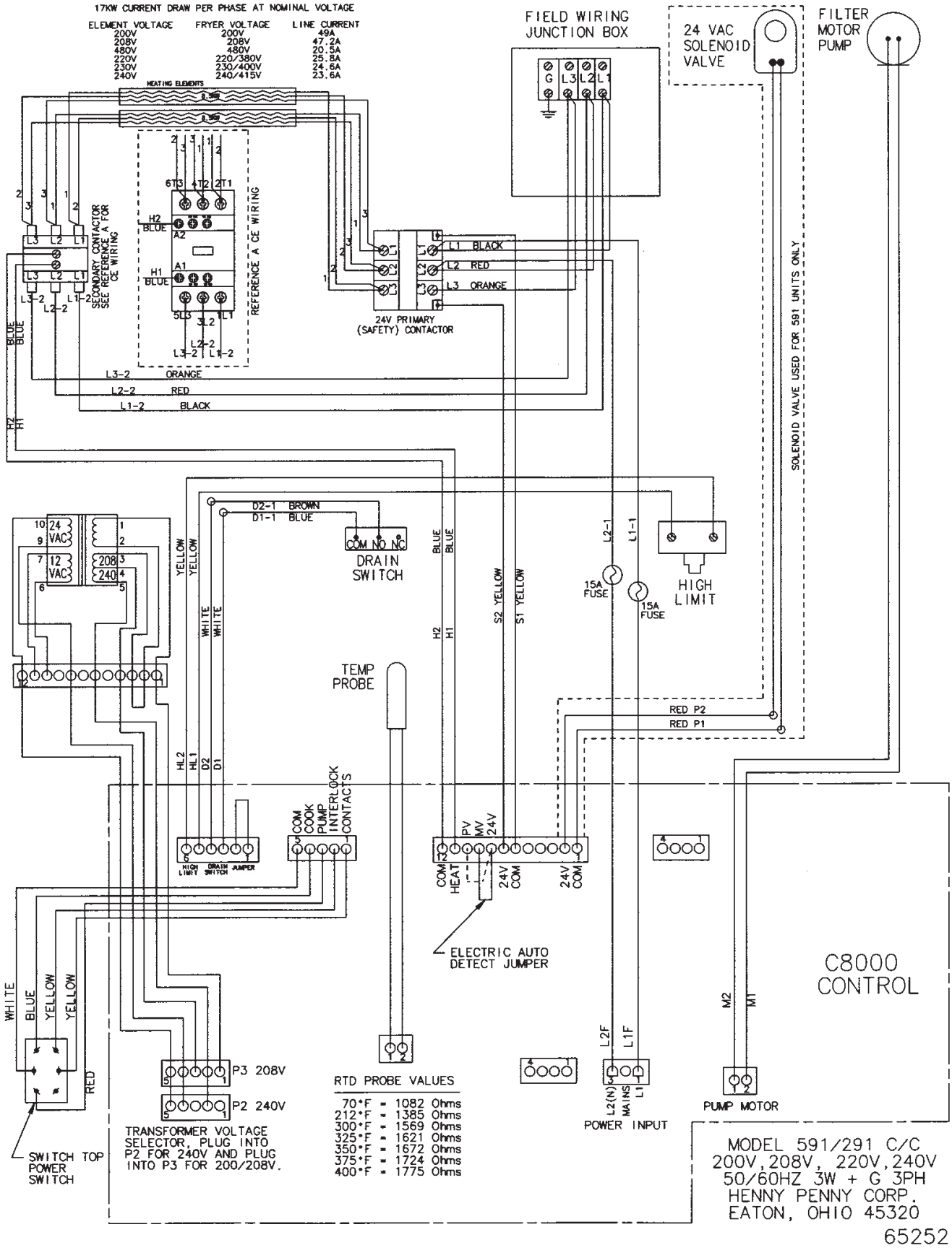
2. Remove the control panel.
3. Using a Phillip's head screwdriver, remove the 2 screws, to the front shroud, inside the control area.
4. Using a Phillip's head screwdriver, remove the 3 screws, to the front shroud, under the control area.
5. Pull front shroud down and hook front shroud on the 2 screws on the front of the frame.
6. Disconnect connector to transformer.
7. Using a Phillip's head screwdriver, remove the 2 screws securing the transformer and pull transformer from unit.
8. Install new transformer in reverse order.



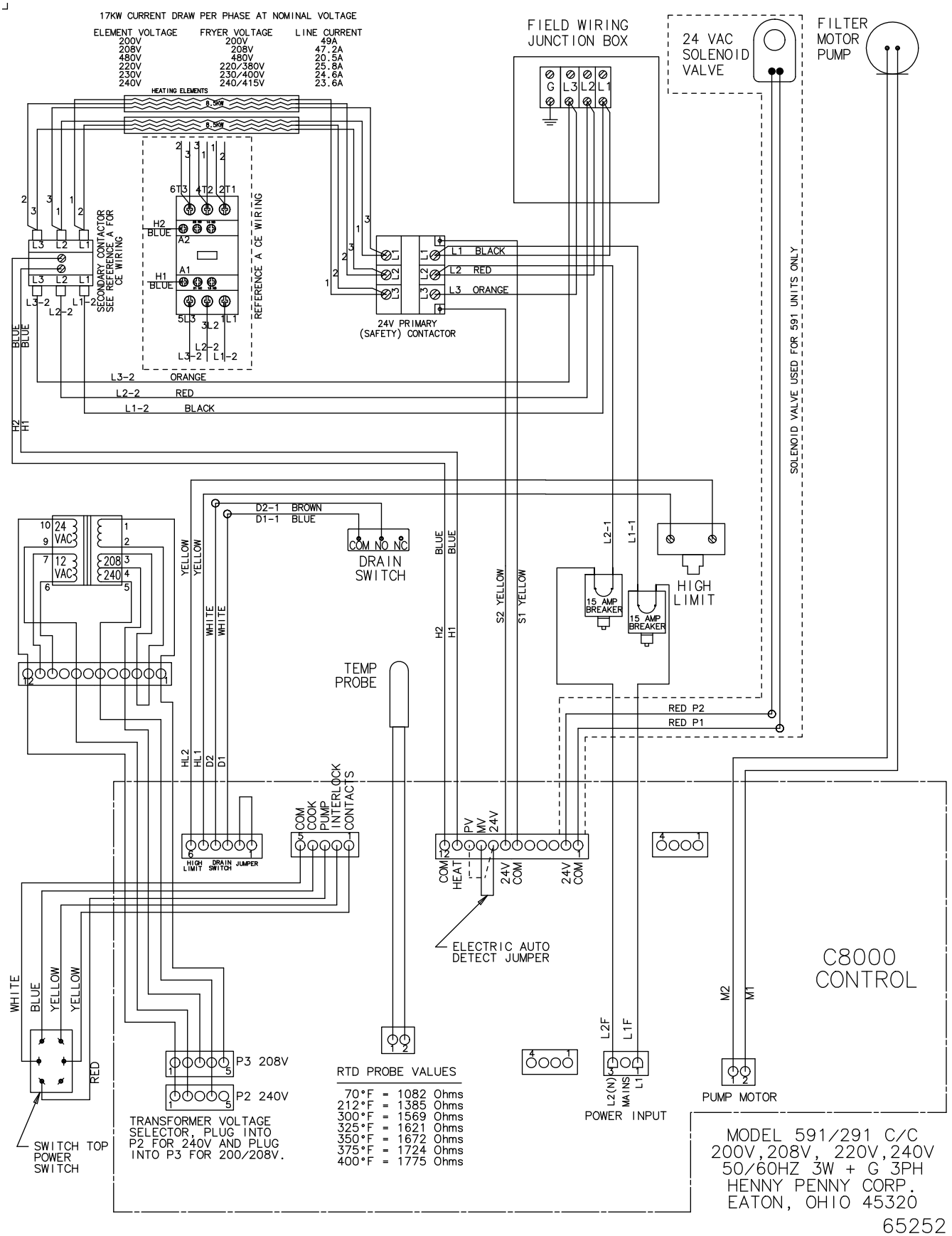

**SN: BE0608002 & Below**



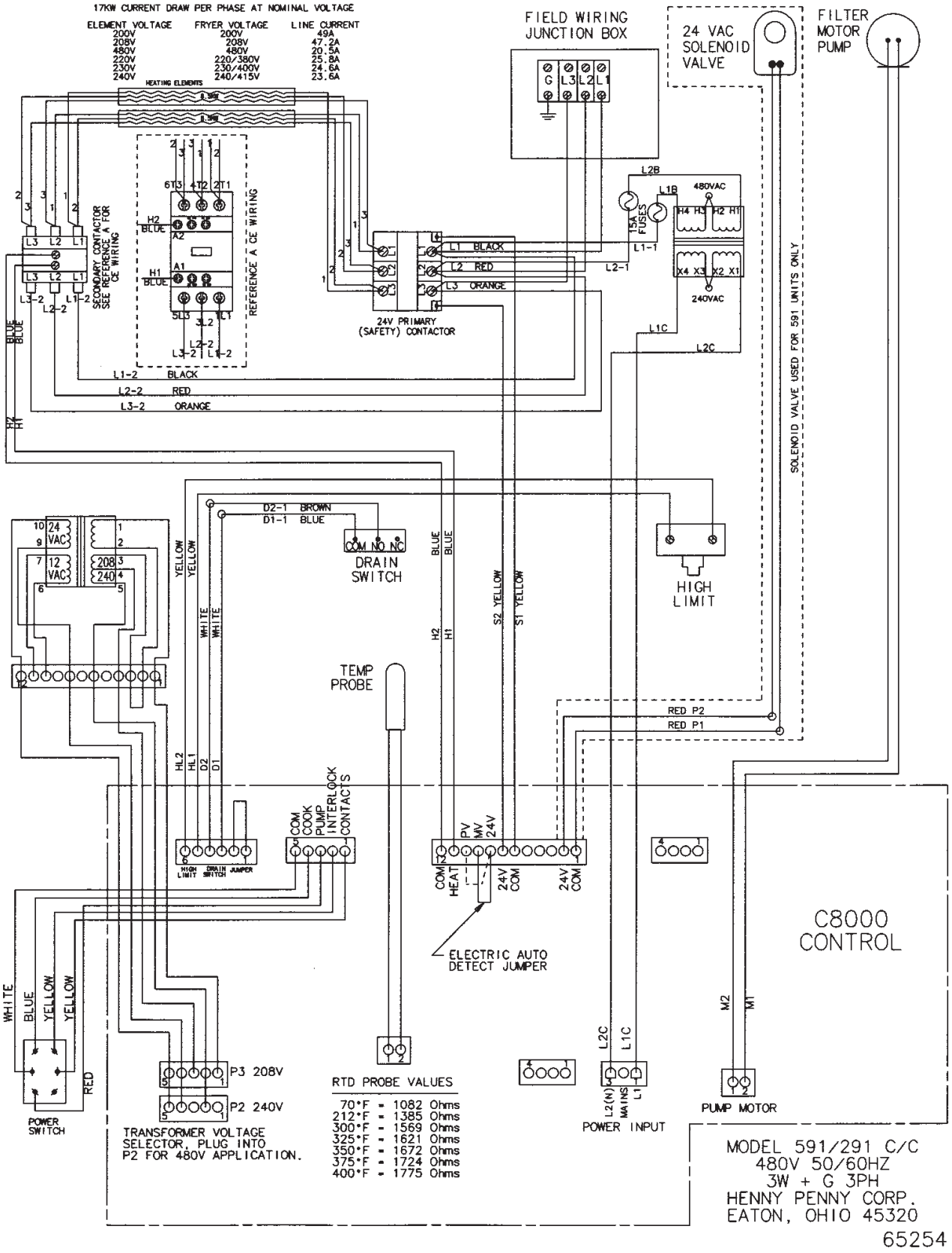

**SN: BE0608003 & Above**



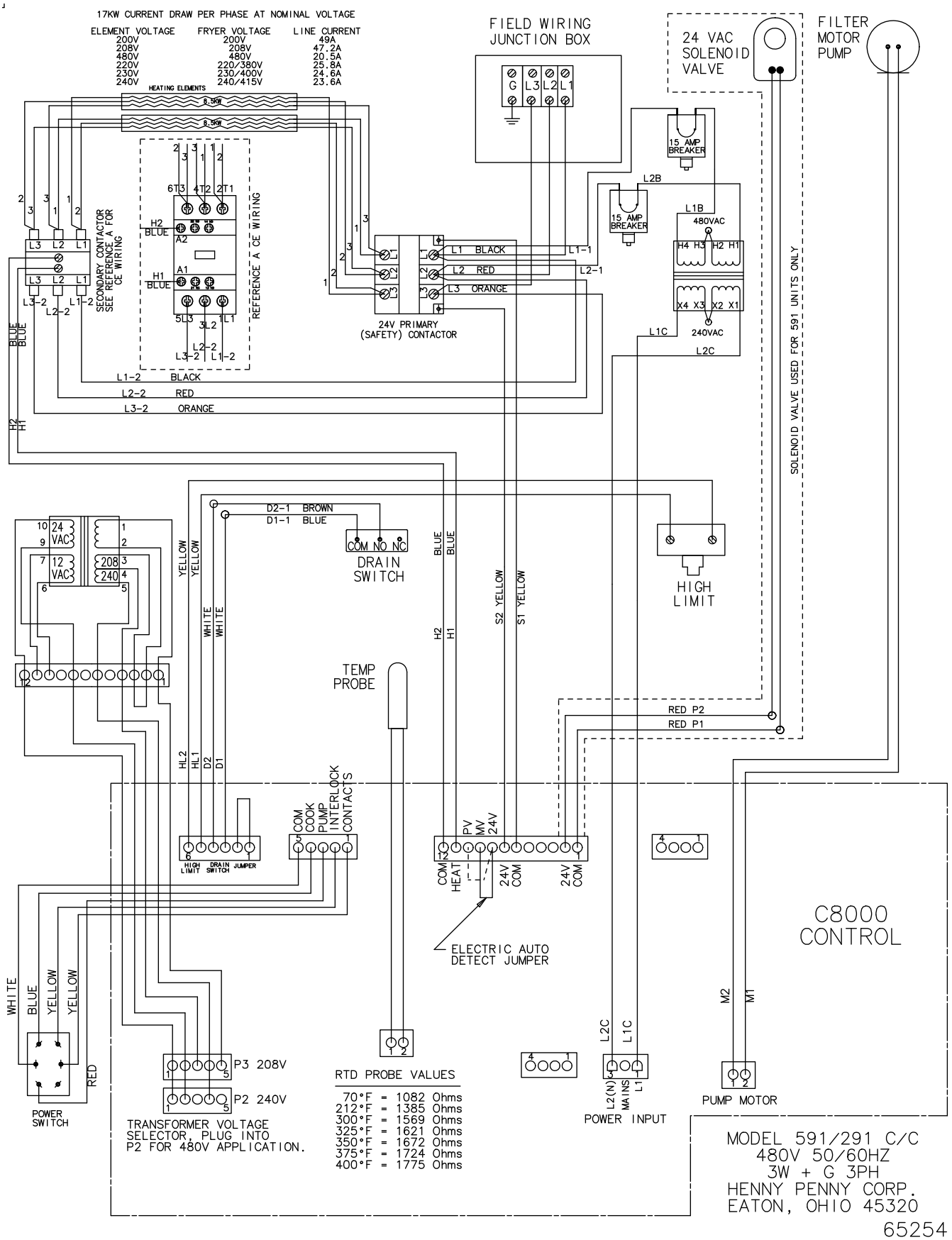

**SN: BE0608002 & Below**




**SN: BE0608003 & Above**




**SN: BE0608002 & Below**




**SN: BE0608003 & Above**

# SECTION 3. PARTS INFORMATION

## 3-1. INTRODUCTION

This section lists the replaceable parts of the Henny Penny Model 291 fryer.

## 3-2. GENUINE PARTS

Use only genuine Henny Penny parts in your fryer. Using a part of lesser quality or substitute design may result in damage to the unit or personal injury.

## 3-3. WHEN ORDERING PARTS

Once the parts that you want to order have been found in the parts list, write down the following information:

Item Number 2
Part Number 16738 Example:
Description High Limit

From the data plate, list the following information:

Product Number 01100
Serial Number 0001 Example:
Voltage 208

## 3-4. PRICES

Your distributor has a price parts list and will be glad to inform you of the cost of your parts order.

## 3-5. DELIVERY

Commonly replaced items are stocked by your distributor and will be sent out when your order is received. Other parts will be ordered, by your distributor, from Henny Penny Corporation. Normally, these will be sent to your distributor within three working days.

## 3-6. WARRANTY

All replacement parts (except lamps and fuses) are warranted for 90 days against manufacturing defects and workmanship. If damage occurs during shipping, notify the carrier at once so that a claim may be properly filed. Refer to warranty in the front of this manual for other rights and limitations.

## 3-7. RECOMMENDED SPARE PARTS FOR DISTRIBUTORS

Recommended replacement parts, stocked by your distributor, are indicated with √ in the parts lists. Please use care when ordering recommended parts, because all voltages and variations are marked. Distributors should order parts based upon common voltages and equipment sold in their territory.

## 3-8. INDEX OF PARTS LIST ILLUSTRATIONS

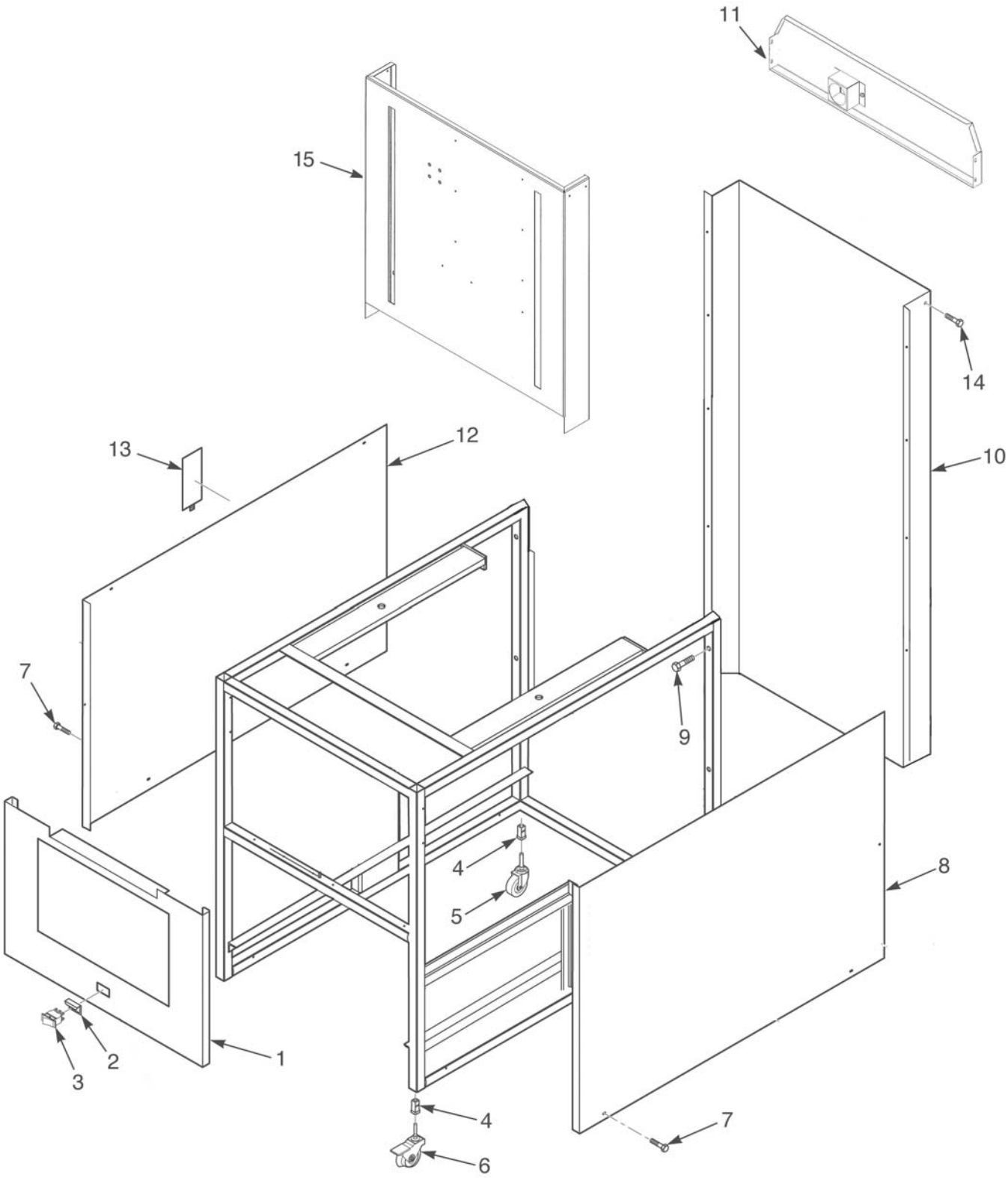
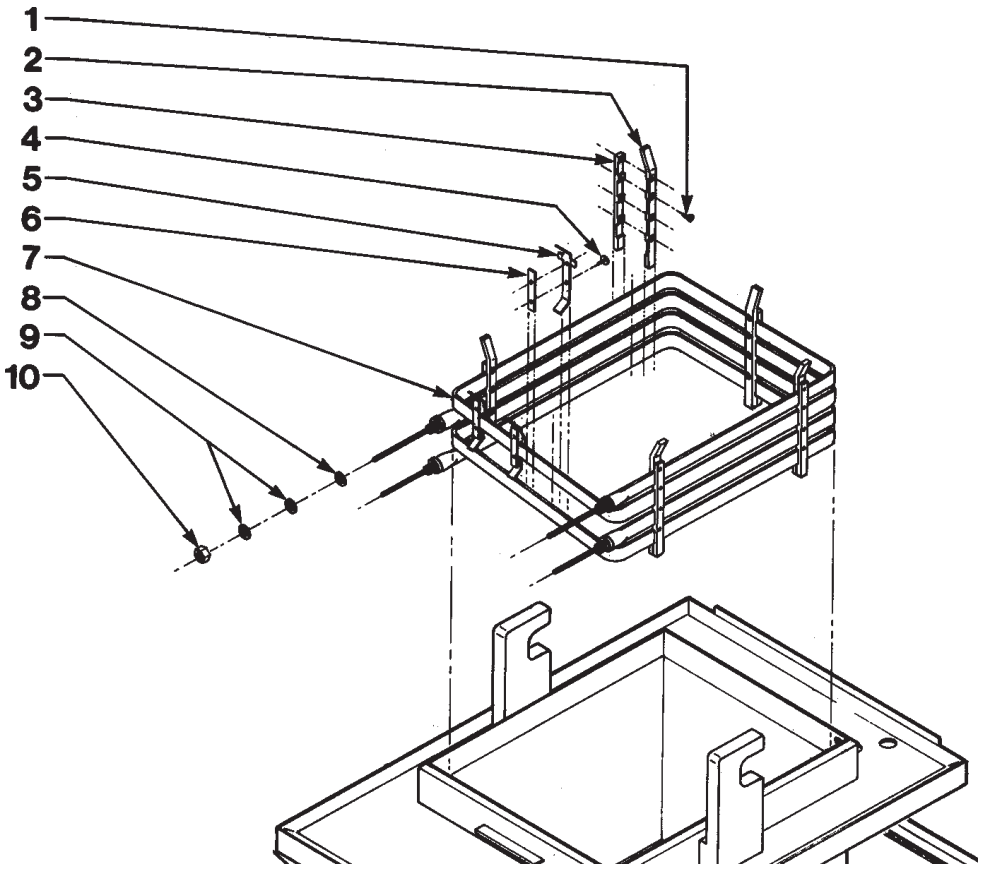



**Figure 3-1. Frame and Cover Assembly**

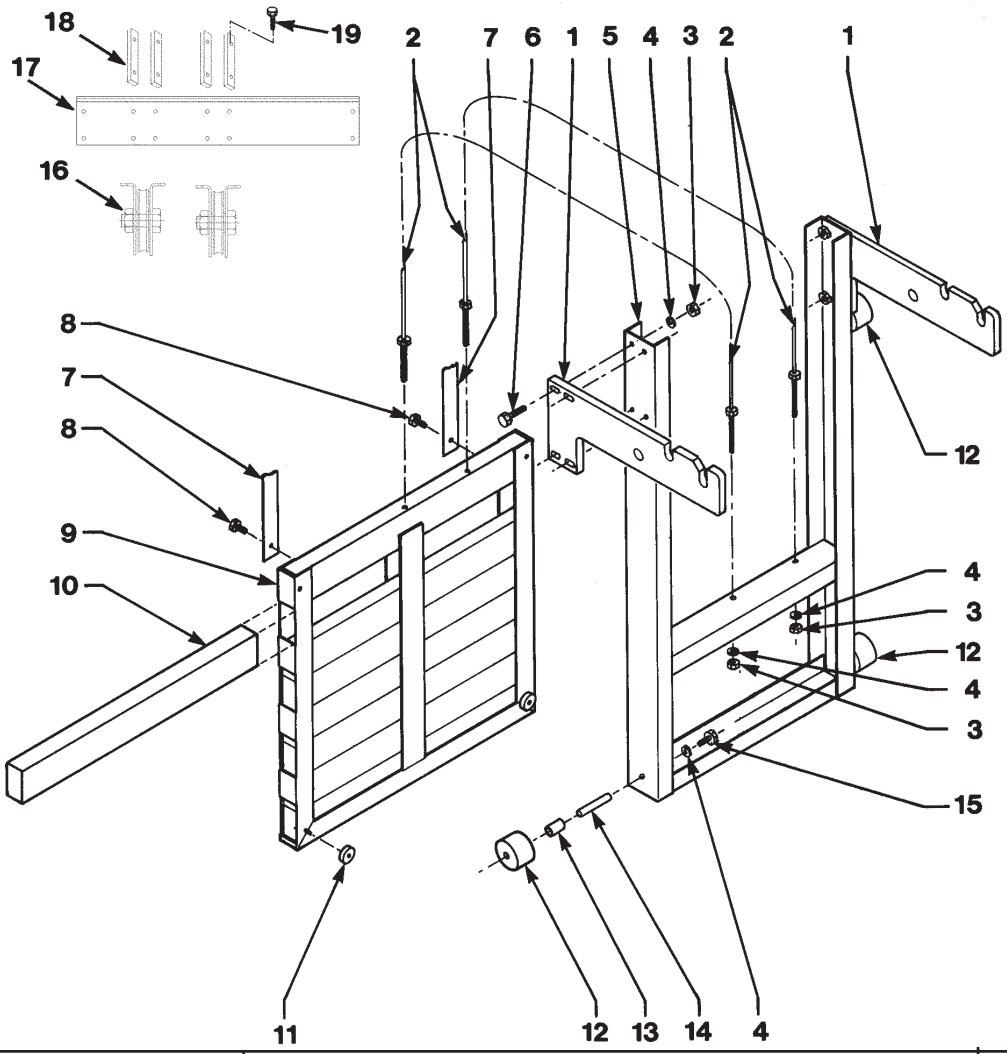
| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-1 | | FRAME & COVER ASSEMBLY | |
| 1 | 39796 | WELDMENT – CONTROL PANEL FRONT ..... | 1 |
| 2 | 53669 | GUARD – POWER SWITCH ..... | 1 |
| √ 3 | 29898 | SWITCH – POWER ..... | 1 |
| 4 | 54225 | 1" INSERT – LEG MACHINED ..... | 4 |
| 5 | 53673 | CASTER, SWIVEL 4" ..... | 2 |
| 6 | 37246 | CASTER W/BRAKE & SWIVEL LOCK ..... | 2 |
| 7 | SC03-005 | SCREW - - #8 x 1/2” PH PHD ..... | 4 |
| 8 | 66934 | SIDE PANEL – RIGHT ..... | 1 |
| 9 | SC01-215 | SCREW - 5/16-18 x 2.5” HEX HD BOLT ..... | 4 |
| 10 | 37291 | REAR SHROUD – ACCESS ASSEMBLY ..... | 1 |
| 11 | 35726 | TOP COVER – REAR SHROUD ..... | 1 |
| 12 | 66933 | SIDE PANEL – LEFT ..... | 1 |
| 13 | 36337 | DOOR – ACCESS ..... | 1 |
| 14 | SC02-023 | SCREW - #8-B x 3/8” PH THD SS ..... | 5 |
| 15 | 75696 | LABEL - POWER/PUMP - ENGLISH ..... | 1 |
| 16* | 14457 | KIT - SOUND DEADENING (PUMP NOISE) ..... | 1 |

√ recommended parts
* not shown



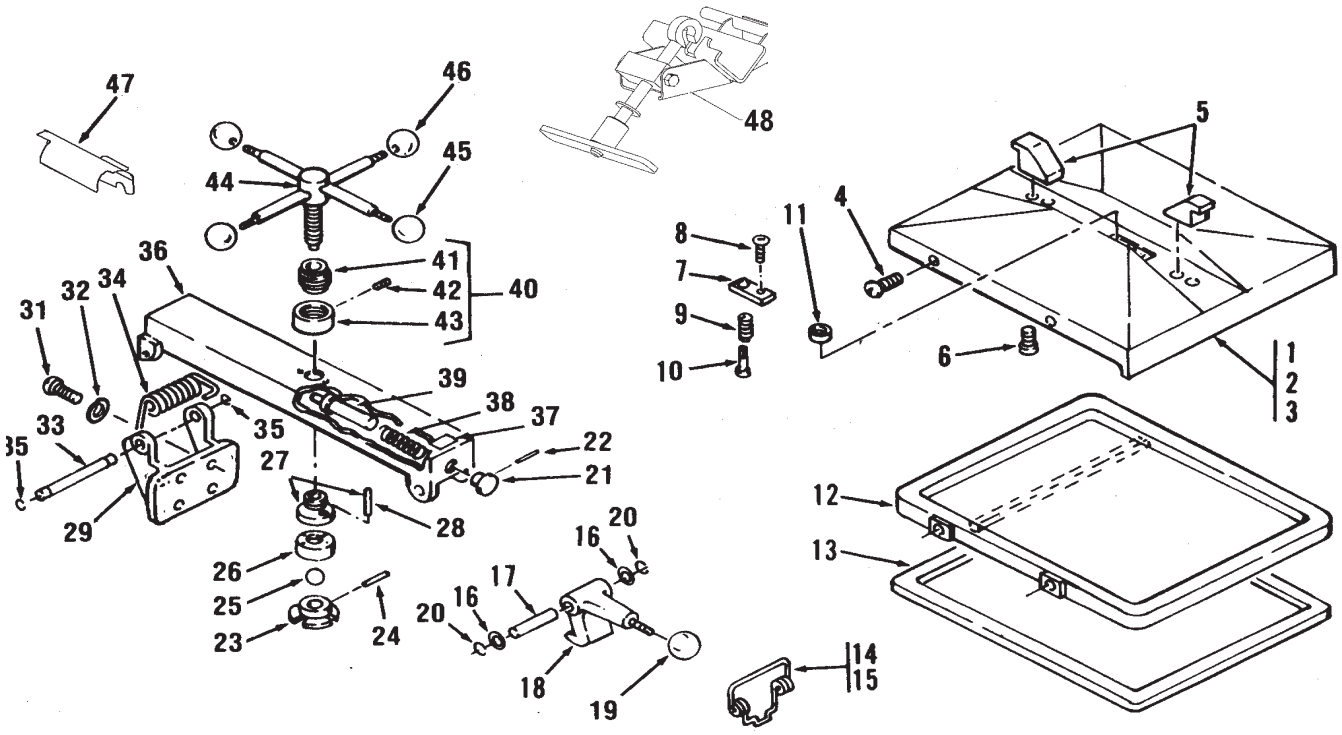

| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-2 | | ELEMENT ASSEMBLY | |
| 1 | SC01-083 | SCREW, (#10-32 x 1/2 PH FHD) ..... | As Required |
| 2 | 35101 | SUPPORT, ELEMENT - LONG ..... | 5 |
| 3 | 35100 | SUPPORT, ELEMENT - SHORT ..... | 5 |
| 4 | SC01-074 | SCREW, (#10-32 x 1/2 PH THD S) ..... | As Required |
| 5 | 35435 | BRACKET, HI LIMIT PROBE ..... | 3 |
| 6 | 35462 | BRACKET, HI LIMIT PROBE ..... | 3 |
| √ 7 | 35234 | HEAT ELEMENT ASSEMBLY, 8.5 KW 208V ..... | 2 |
| √ 7 | 35598 | HEAT ELEMENT, 8.5 KW 240V ..... | 2 |
| √ 7 | 48367 | HEAT ELEMENT, 230 V(Int'l Only) ..... | 2 |
| √ 7 | 36290 | HEAT ELEMENT, 220 V(Int'l Only) ..... | 2 |
| 8 | 16855 | SEAL, O-RING ..... | 4 |
| 9 | WA01-005 | WASHER, (5/8 DIA. TYPE A - SERIES N) ..... | 8 |
| 10 | NS01-017 | NUT, (5/8-18 B HEX) ..... | 4 |

√ recommended parts

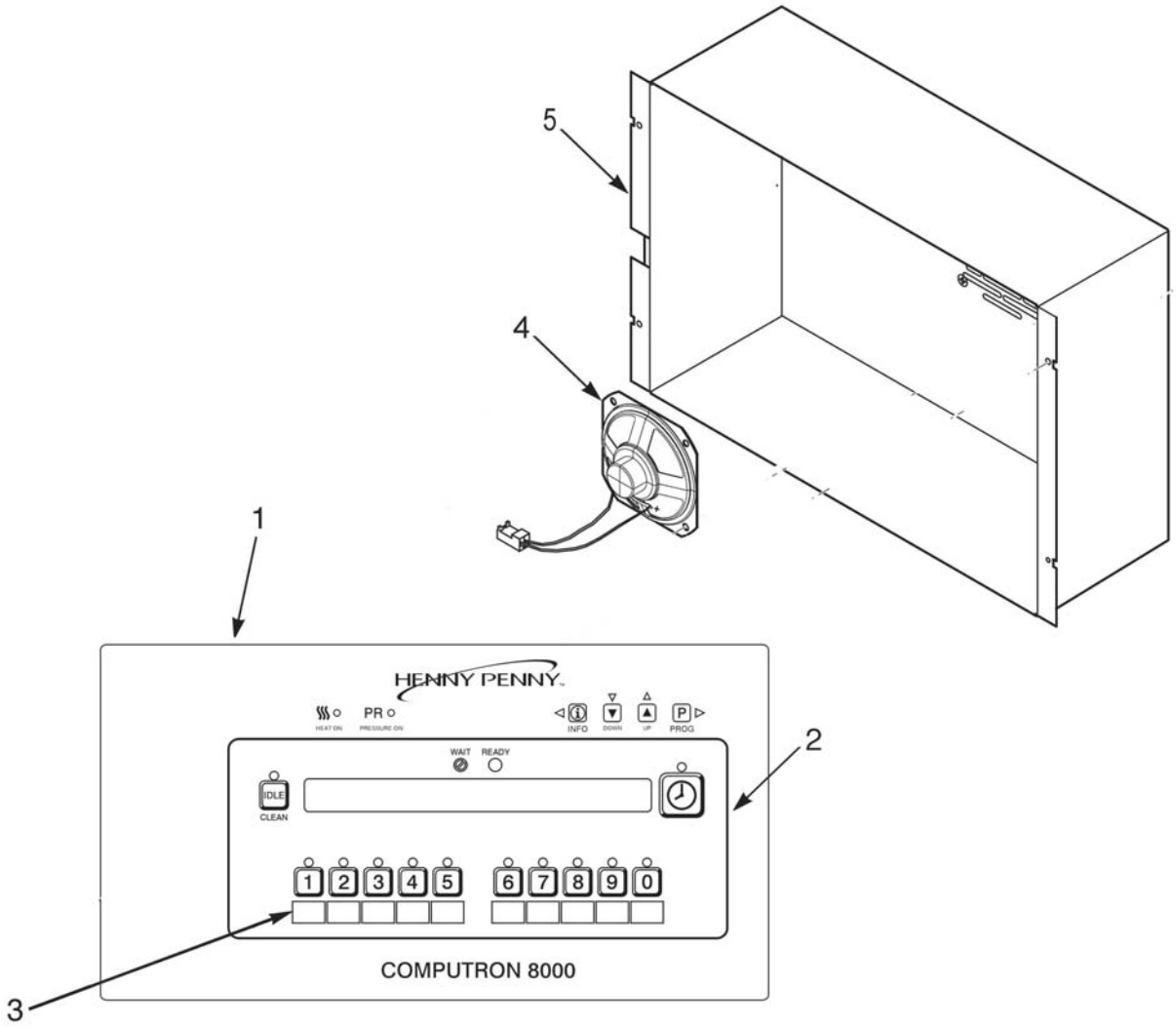



| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-3 | | COUNTERWEIGHT SYSTEM | |
| 1 | 35026 | ARM, LID SUPPORT | 2 |
| √ 2 | 35207 | CABLE | 2 |
| 3 | NS01-025 | NUT, HEX 5/16-18 SS | 10 |
| 4 | LW01-010 | WASHER, 3/8 SPLIT RING SS | 10 |
| 5 | 35092 | CARRIAGE | 1 |
| 6 | SC01-069 | SCREW, 3/8-16 X 1-1/2 HEX HD S2P | 8 |
| 7 | 36839 | SLIDE | 2 |
| 8 | SC01-042 | SCREW, 3/8-16 X 1 HEX C | 2 |
| 9 | 36625 | WELD ASSEMBLY, C/W CARRIAGE | 1 |
| 10 | 36627 | COUNTERWEIGHT BAR | 4 |
| 11 | 36626 | SPACER, C/W FRAME | 2 |
| 12 | 37362 | WHEEL, CARRIAGE | 4 |
| 13 | 37363 | SPACER, CARRIAGE WHEEL | 4 |
| 14 | 37364 | SPINDLE | 4 |
| 15 | SC01-081 | SCREW, 3/8-24 X 3/4 HEX HD SS | 4 |

√ recommended parts



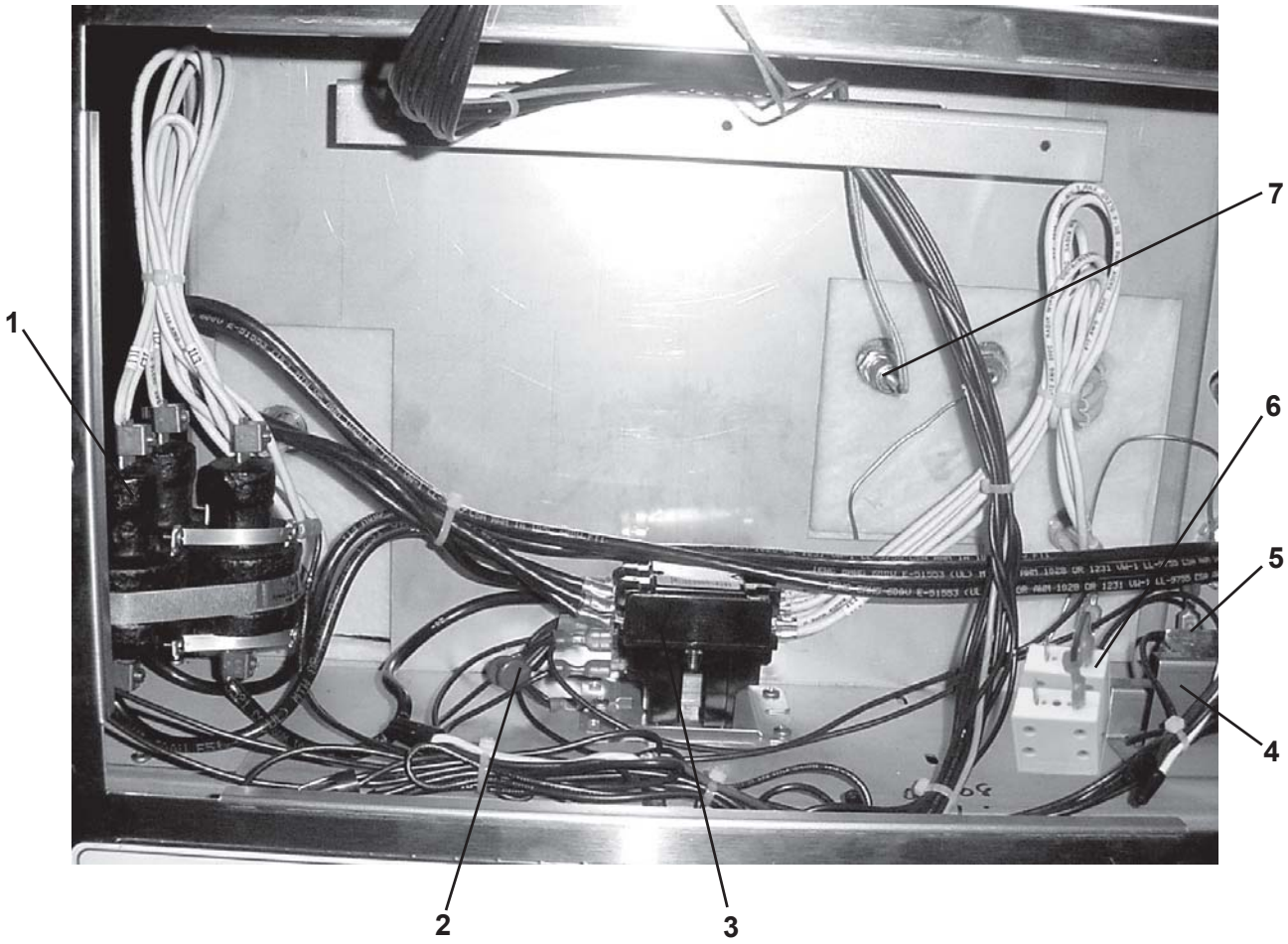

| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-4 | 65818 | Lid Assembly Complete | |
| 1 | RR01-004 | Ring - Retaining - 1/2 in. | 1 |
| 2 | WA01-020 | Washer - .513 ID-.750 OD-.05 THK | 1 |
| 3 | 51531 | Stop - Lid, Cast | 1 |
| 4 | SC01-041 | Screw - 5/16”-18 x 1 HEX HD C | 2 |
| 5 | 55754 | Handle Weld Assembly | 1 |
| 6 | 55756 | Assy. - Latch/Sleeve Coat | 1 |
| 7 | 59169 | Lid Latch Bracket | 1 |
| 7a | 52498 | Spring - Lid Latch | 1 |
| 7b | 51707 | Lid Latch Bracket | 1 |
| 8 | SC01-248 | Screw 10-32 x 1.25 PH THD SS | 2 |




| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-5 | | CONTROL PANEL ASSEMBLY | |
| √ 1 | 65279RB | ASSY - 8 HEAD C8000 CONTROL ..... | 1 |
| 2 | 65236 | DECAL – 8 HEAD C8000 ..... | 1 |
| 3 | 32634 | MENU CARD C8000 BLANK ..... | 1 |
| 3 | 65922 | MENU CARD C8000 8-HD HP GM ..... | 1 |
| √ 4 | 26974 | WIRE/SPEAKER ASSY ..... | 1 |
| 5 | 65661 | STUD ASSY-8-HEAD-C8000- COVER ..... | 1 |
| 6* | 65893RB | ASSY - I/O BOARD ..... | 1 |
| 7* | 14688 | KIT, 290 TO 291 CONVERSION ..... | 1 |
| 7* | 14692 | KIT, 292 TO 291 CONVERSION ..... | 1 |

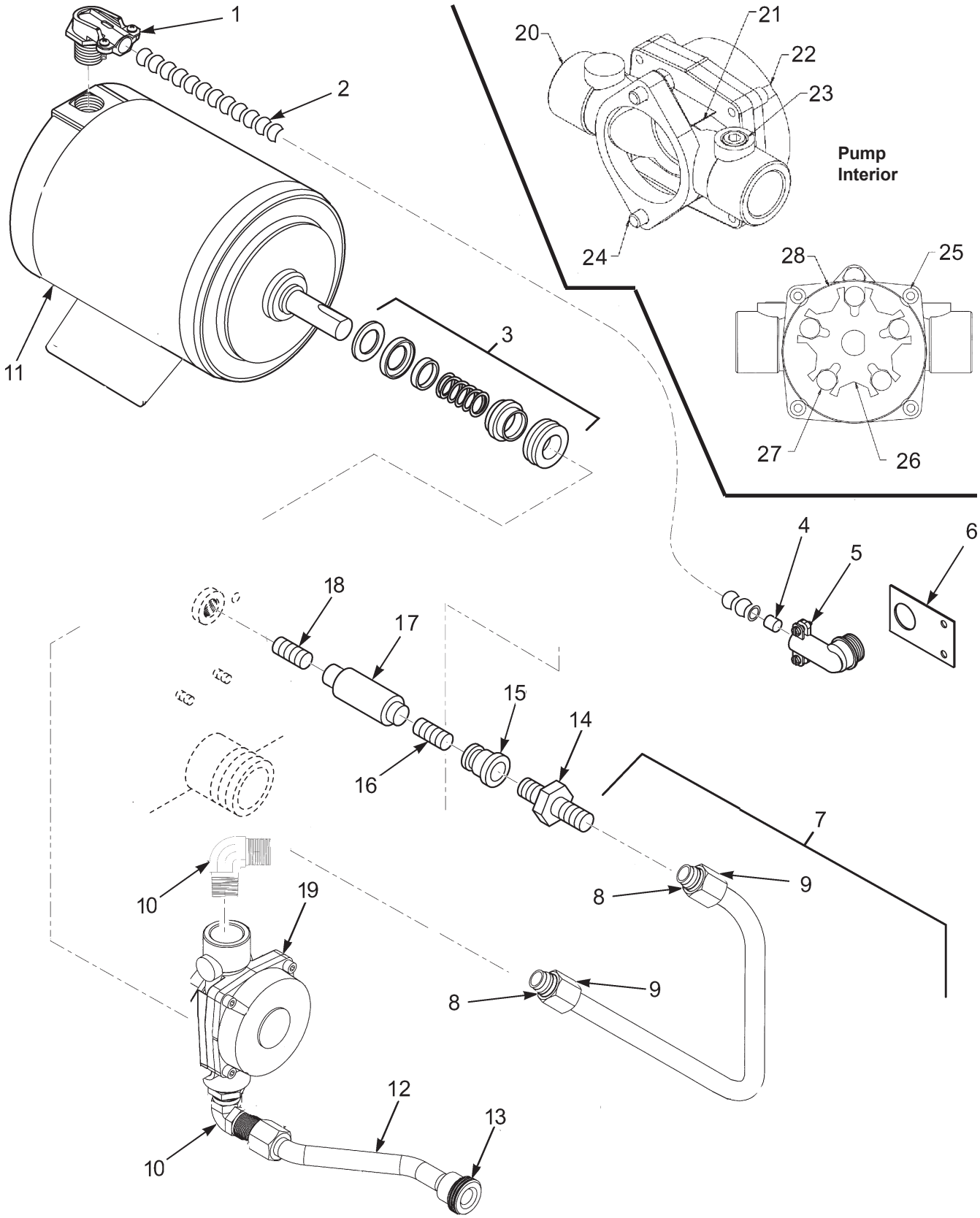
√ recommended parts

* not shown




| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-6 | | BEHIND CONTROL PANEL COMPONENTS | |
| √ 1 | 29942 | CONTACTOR - MERCURY 208/240 VAC ..... | 1 |
| √ 1* | 65075 | ASSY.-240V E/M HEAT CONTACTOR-CE-240V (UK) | 1 |
| √ 1* | 65074 | ASSY.-240V E/M HEAT CONTACTOR-CE-230V .. | 1 |
| √ 2 | 30971 | CAPACITOR-RESISTOR ASSY ..... | 1 |
| √ 3 | 19405 | CONTACTOR KIT - 208/240 VAC ..... | 1 |
| 4 | 17216 | BRACKET ASSY- HIGH LIMIT ..... | 1 |
| √ 5 | 16738 | 450° F HIGH LIMIT ..... | 1 |
| √ 5 | 60241 | 425° F HIGH LIMIT - CE ..... | 1 |
| √ 6 | EF02-125 | BREAKER-PUSH BUTTON RESET-15 AMP ..... | 2 |
| | | SN: BE0608003 & ABOVE | |
| √ 6 | 18364 | FUSE HOLDER ASSY - 15 AMP ..... | 2 |
| | | SN: BE0608002 & BELOW | |
| √ 6 | EF02-006 | FUSE HOLDER ..... | 2 |
| √ 6 | EF02-007 | FUSE - 15 AMP ..... | 2 |
| √ 6 | EF02-104 | FUSE HOLDER - 20A-250V ..... | 1 |
| √ 6 | EF02-007 | FUSE - 15 AMP - CE ..... | 1 |
| √ 7 | 14335 | PROBE KIT ..... | 1 |
| √ 8* | 72854 | ASSY - TRANSFORMER - 24VAC - C8000 ..... | 1 |

√ recommended parts/* not shown

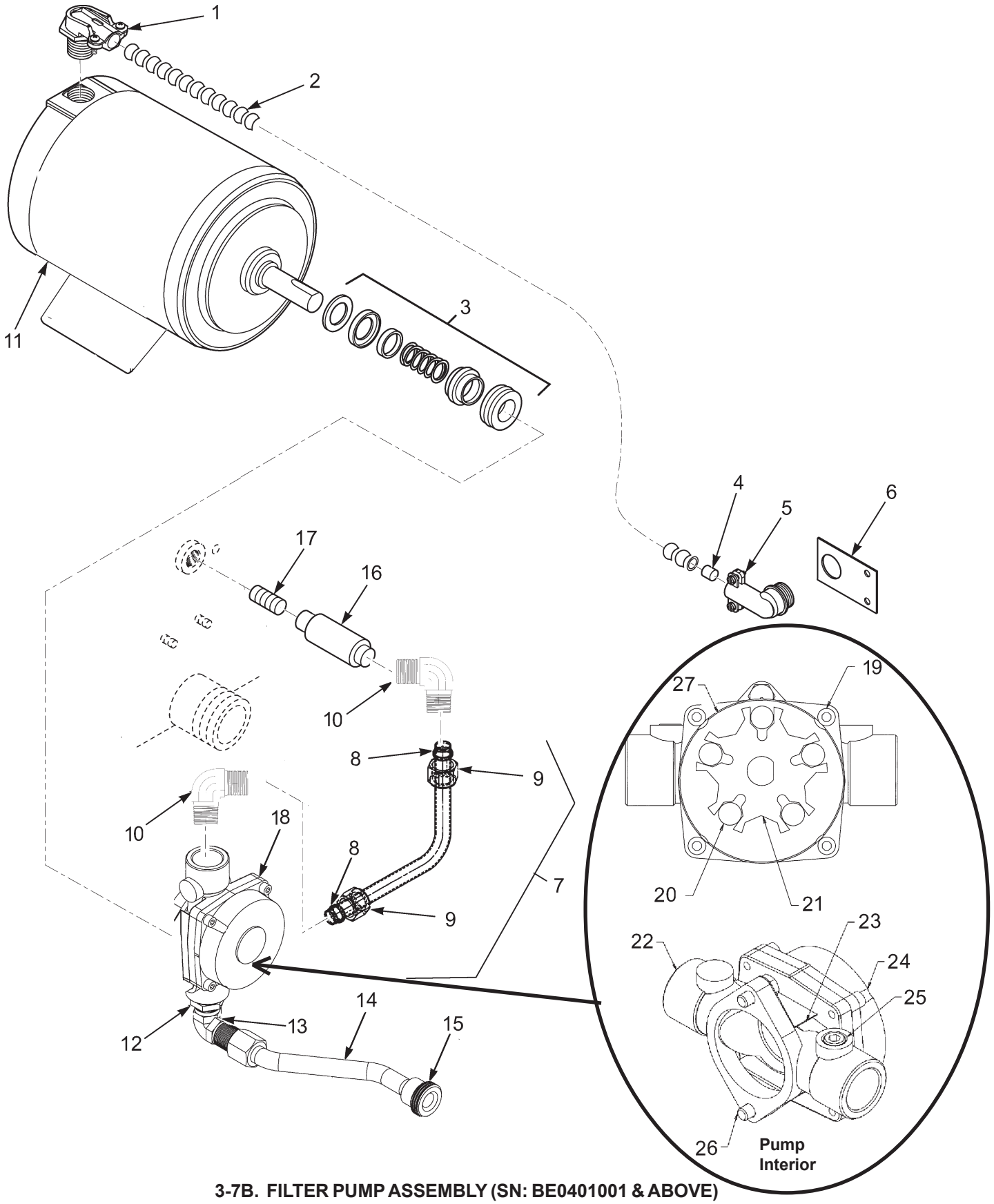



**3-7A. FILTER PUMP ASSEMBLY (BELOW SN: BE0401001)**

| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-7A | | FILTER PUMP ASSEMBLY | |
| 1 | 18107 | CONDUIT CONNECTOR 3/8 X 90 | 1 |
| 2 | 54484 | BLOWER/PUMP – FLEXIBLE CONDUIT | 1 |
| √ 3 | 17476 | PUMP SEAL KIT | 1 |
| 4 | 18105 | ANTI SHORT 3/8 INCH | 2 |
| 5 | 18644 | CONDUIT CONNECTOR 3/8 X 90 | 1 |
| 6 | 51831 | PUMP CONDUIT BRACKET | 1 |
| 7 | 55836 | ASSY – OIL RETURN LINE | 1 |
| 8 | 16808 | SLEEVE, FITTING | 2 |
| 9 | 16809 | NUT, FITTING | 2 |
| 10 | 17407 | CONNECTOR, 1/2 MALE ELBOW | 2 |
| √ 11 | 67583 | MOTOR – FILTER PUMP | 1 |
| 12 | 62206 | ASSY - TUBE - PUMP TO DISCON - 590 | 1 |
| √ 13 | 17430(use 69289) | UNION, MALE FITTING | 1 |
| 14 | 16807 | FITTING, CONNECTOR MALE | 1 |
| 15 | FP01-122 | REDUCER, 3/8 TO 1/2 | 1 |
| 16 | FP02-024 | NIPPLE, CLOSE 3/8 | 1 |
| 17 | 35472 | CHECK VALVE - PRESSURE | 1 |
| 18 | FP02-007 | NIPPLE 3/8 X 1-1/2 | 1 |
| 19 | 17437 | PUMP SUBASSY 8GPM | 1 |
| √ 20 | 17454 | BODY - PUMP | 1 |
| √ 21 | 17456 | PUMP SHIELD | 2 |
| √ 22 | 17451 | COVER - PUMP | 1 |
| √ 23 | SC01-016 | PLUG 1/4 HEX COUNTERSUNK | 1 |
| √ 24 | SC01-026 | SCREW 5/16-18 X 3/4 HEX HD C | 2 |
| √ 25 | SC01-132 | 1/4-20 X 5/8 SOC HD CAP SCREW | 4 |
| √ 26 | 17447 | ROTOR - PUMP | 1 |
| √ 27 | 17446 | ROLLER - TEFLON SET | 1 |
| √ 28 | 17453 | PUMP O RING GASKET | 1 |
| 29* | 67589 | ASSY - FILTER PMP & 1/2 HP MOTOR | 1 |

√ recommended parts

* not shown

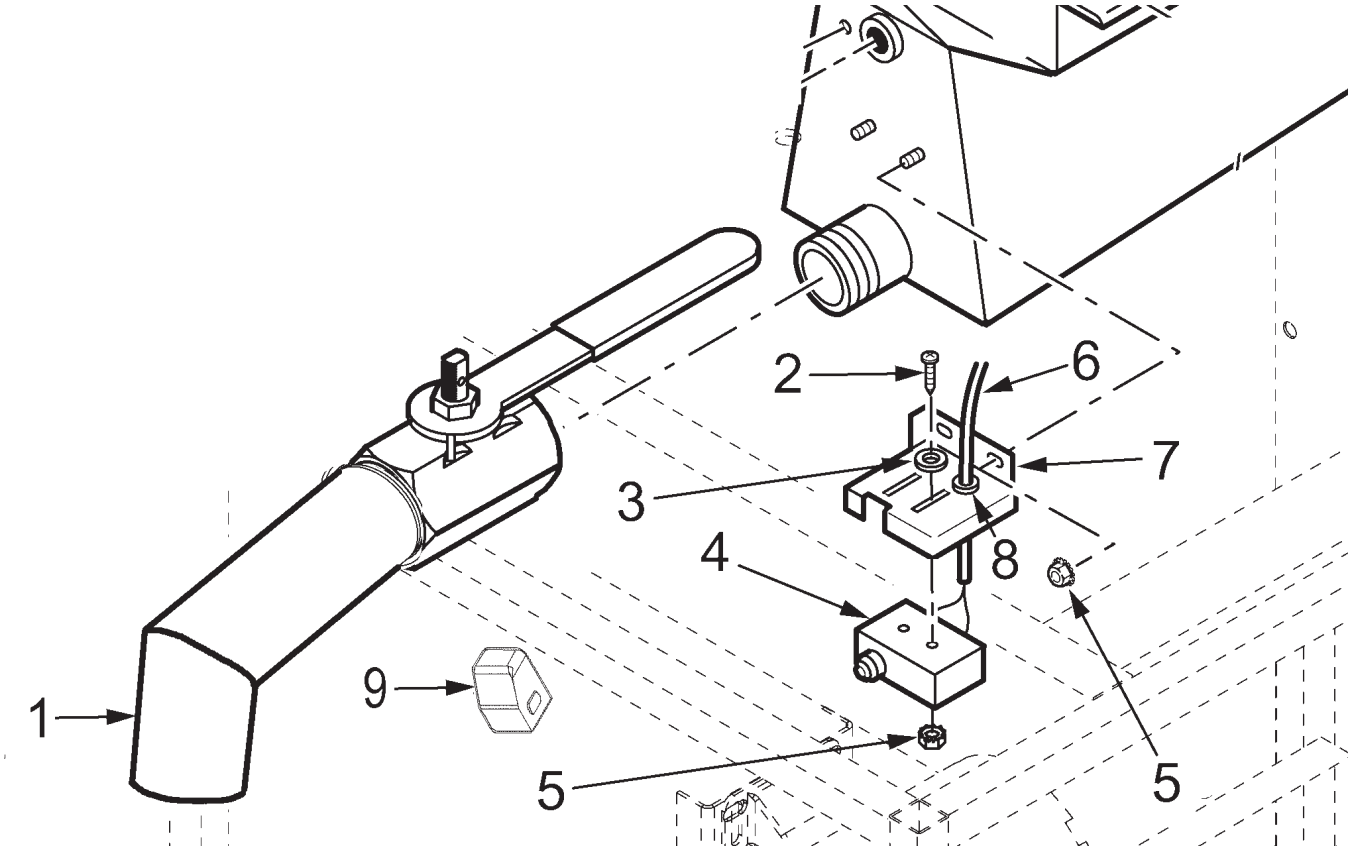



**3-7B. FILTER PUMP ASSEMBLY (SN: BE0401001 & ABOVE)**

| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-7B | | FILTER PUMP ASSEMBLY | |
| 1 | 18107 | CONDUIT CONNECTOR 3/8 X 90 | 1 |
| 2 | 54484 | BLOWER/PUMP – FLEXIBLE CONDUIT | 1 |
| √ 3 | 17476 | PUMP SEAL KIT | 1 |
| 4 | 18105 | ANTI SHORT 3/8 INCH | 2 |
| 5 | 18644 | CONDUIT CONNECTOR 3/8 X 90 | 1 |
| 6 | 51831 | PUMP CONDUIT BRACKET | 1 |
| 7 | 66618 | ASSY – OIL RETURN LINE | 1 |
| 8 | 16808 | SLEEVE, FITTING | 2 |
| 9 | 16809 | NUT, FITTING | 2 |
| 10 | FP01-169 | CON-90 MALE 3/4 TUBE 3/4 NPT | 2 |
| √ 11 | 67583 | MOTOR – FILTER PUMP | 1 |
| 12 | FP01-089 | BUSHING - REDUCING 3/4M TO 1/2F | 1 |
| 13 | 17407 | CONNECTOR, 1/2 MALE ELBOW | 1 |
| 14 | 62206 | ASSY - TUBE - PUMP TO DISCON | 1 |
| √ 15 | 17430(use 69289) | UNION, MALE FITTING | 1 |
| 16 | 21800 | VALVE - 3/4 CHECK | 1 |
| 17 | FP02-021 | NIPPLE - 3/4 NPT X 3 IN LG BL | 1 |
| 18 | 64218 | PUMP SUBASSY 8GPM | 1 |
| √ 19 | SC01-132 | 1/4-20 X 5/8 SOC HD CAP SCREW | 4 |
| √ 20 | 23469 | ROLLER - 7 GPM PUMP | 5 |
| √ 21 | 23468 | ROTOR - 7GPM PUMP | 1 |
| √ 22 | 23647 | BODY - 7 GPM PUMP | 1 |
| √ 23 | 17456 | PUMP SHIELD | 2 |
| √ 24 | 23470 | CAP - 7 GPM PUMP | 1 |
| √ 25 | FP01-020 | PLUG 1/4-18 HEX LEVEL SEAL | 1 |
| √ 26 | SC01-026 | SCREW 5/16-18 X 3/4 HEX HD C | 2 |
| √ 27 | 17453 | PUMP O RING GASKET | 1 |
| 28* | 69356 | ASSY, 3/4” PUMP AND MOTOR | 1 |

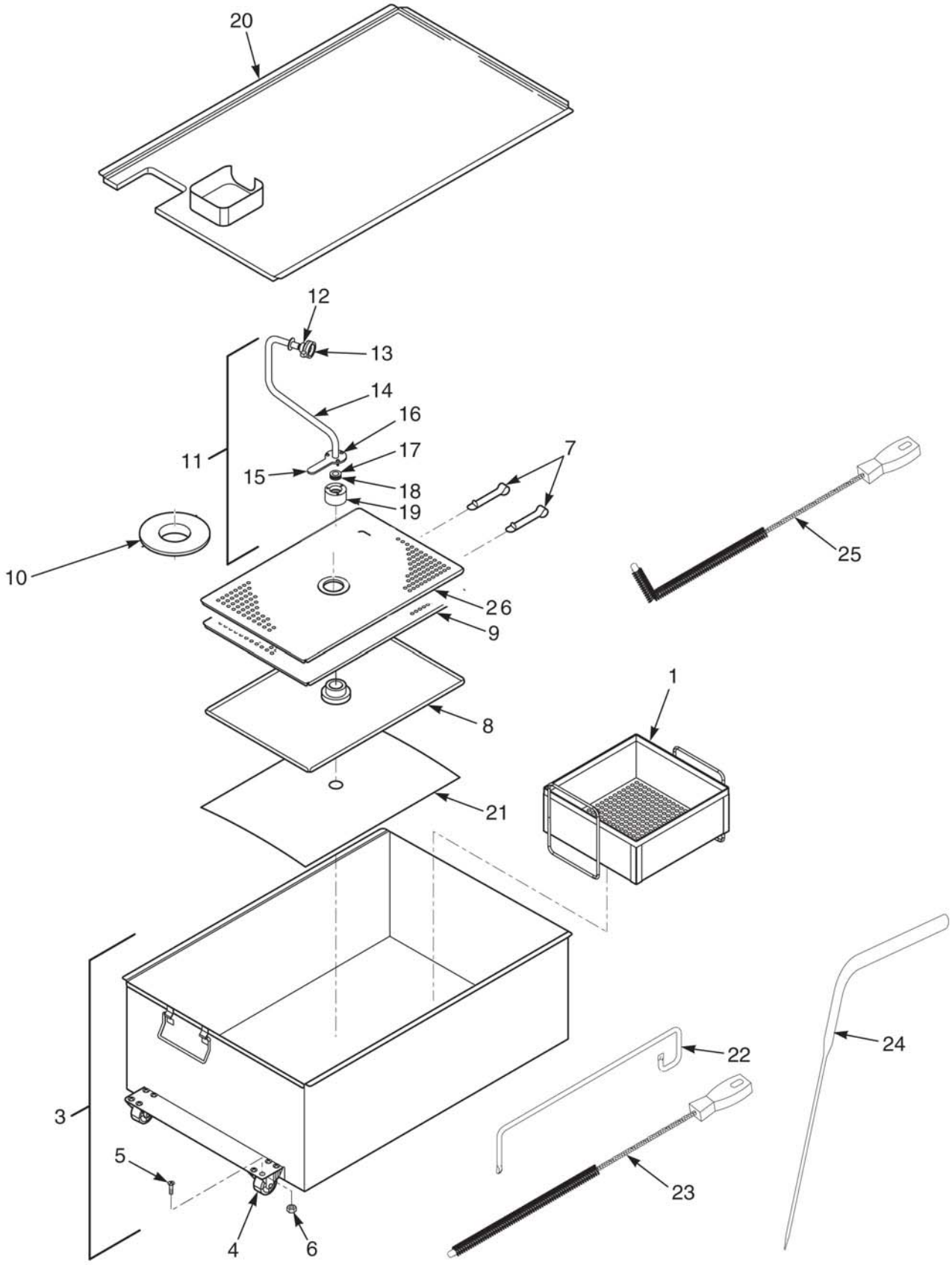
√ recommended parts

* not shown




| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-8 | | DRAIN VALVE & DRAIN SWITCH ASSEMBLIES | |
| 1 | 65520 | DRAIN VALVE ASSEMBLY (BELOW SN: BE0401001) . | 1 |
| 1 | 66553 | DRAIN VALVE ASSEMBLY (SN: BE0401001 & ABOVE) | 1 |
| 2 | SC01-058 | SCREW #6-32 X 1 PH. PAN HD. ..... | 2 |
| 3 | WA01-006 | WASHER #6 TYPE A ..... | 2 |
| √ 4 | 54228 | DRAIN SWITCH W/BOOT ..... | 1 |
| 5 | NS02-005 | NUT #6-32 HEX ..... | 2 |
| 6 | 52519 | CORD ASSY., DRAIN INTERLOCK ..... | 1 |
| 7 | 65522 | BRACKET, SWITCH (BELOW SN: BE0404001) ..... | 1 |
| 7 | 67619 | BRACKET, SWITCH (SN: BE0404001 & ABOVE) ..... | 1 |
| 8 | EF02-017 | STRAIN RELIEF ..... | 2 |
| 9 | 67617 | BRACKET - MICROSWITCH TRIGGERING ..... | 1 |
| 10* | 76579 | PLATE - D/I SWITCH COVER ..... | 1 |

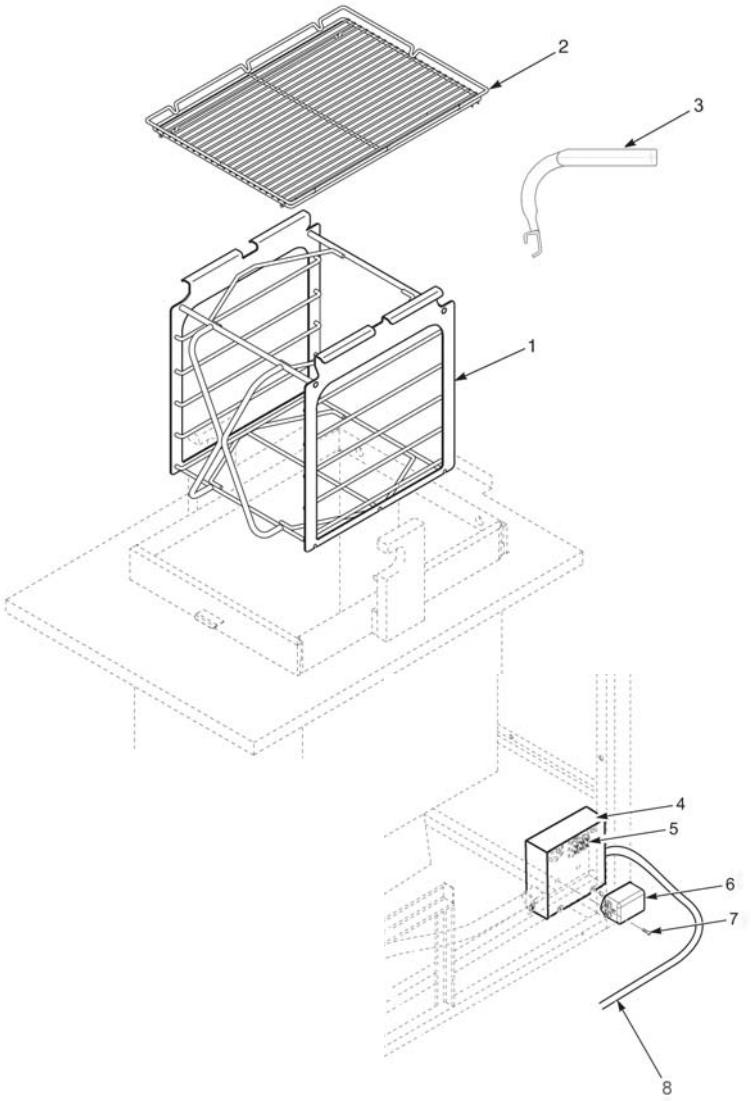
√ recommended parts




**3-9. DRAIN PAN AND FILTER ASSEMBLY**

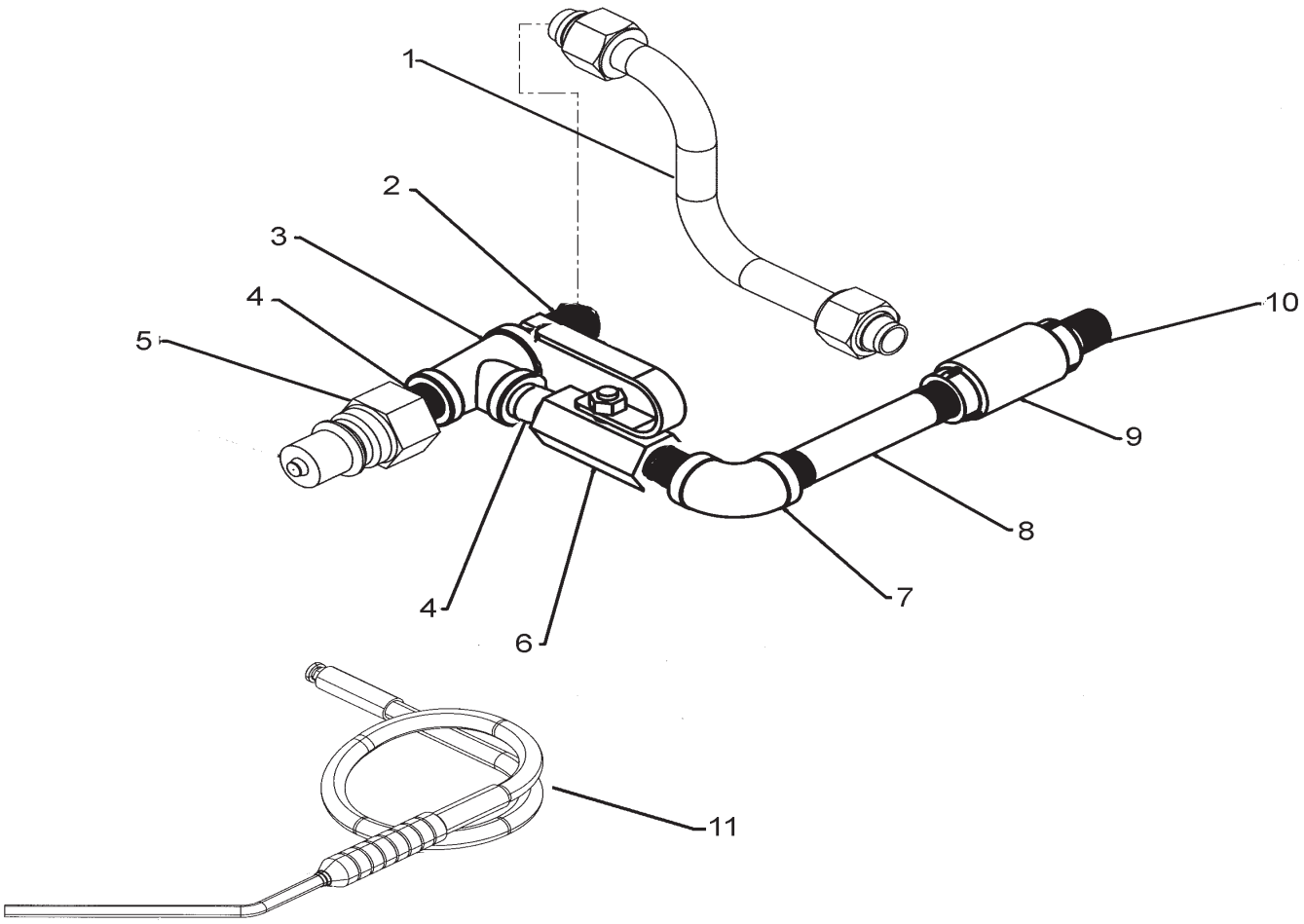
| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-9 | | DRAIN PAN AND FILTER ASSEMBLY | |
| 1 | 52194 | CRUMB CATCHER (OPTIONAL) | 1 |
| 2 | 03204 | CRUMB CATCHER BASKET W/HANDLE (OPTIONAL) | 1 |
| 2 | 21010 | CRUMB CATCHER BASKET ASSEMBLY | 1 |
| 2 | 24429 | HANDLE - CRUMB BASKET | 1 |
| 3 | 52496 | FILTER DRAIN PAN ASSEMBLY | 1 |
| 4 | 52487 | CASTER | 2 |
| 5 | SC01-009 | SCREW 1/4-20 X 1/2 | 8 |
| 6 | NS02-002 | NUT 1/4-20 | 8 |
| 7 | 17505 | FILTER CLIPS | 2 |
| 8 | 17503(use 14674) | BOTTOM FILTER SCREEN (SN:BE0503009 AND BELOW) | 1 |
| 8 | 65447 | BOTTOM FILTER SCREEN (SN: BE0503010 AND ABOVE) | 1 |
| 9 | 17502(use 14674) | TOP FILTER SCREEN (SN:BE0503009 AND BELOW) | 1 |
| 10 | 36305 | WASHER & STANDPIPE | 1 |
| 11 | 24212 | STANDPIPE ASSEMBLY (SN:BE0503009 AND BELOW) | 1 |
| 11 | 14658 | KIT, 8 HEAD PICK-UP TUBE (SN: BE0503010 AND ABOVE) | |
| √ 12 | 17431(use 69289) | UNION - MALE FITTING | 1 |
| √ 13 | 17432(use 69289) | UNION - HANDLE FITTING | 1 |
| 14 | 24211 | WELDMENT, FILTER TUBE AND WASHER | 1 |
| 15 | 23740 | HANDLE, STANDPIPE 8 HEAD | 1 |
| 16 | SC01-245 | SCREW 10-32 X 1/2 | 3 |
| 17 | 23804 | INSERT, FILTER NUT | 1 |
| 18 | OR01-007 | O-RING, FILTER NUT INSERT | 1 |
| 19 | 23803 | FILTER NUT (SN:BE0503009 AND BELOW) | 1 |
| 19 | 66535 | FILTER NUT (SN: BE0503010 AND ABOVE) | 1 |
| 20 | 62082 | FILTER DRAIN PAN COVER ASSEMBLY | 1 |
| √ 21 | 12102 | FILTER ENVELOPE PAPER (100 PER CARTON) | 1 |
| 22 | 65776 | ROD - LONG CLEAN OUT | 1 |
| √ 23 | 35771 | BRUSH | 1 |
| 24 | 35310 | STIRRER | 1 |
| √ 25 | 12126 | BLACK L-BRUSH | 1 |
| 26 | 65211 | CRUMB CATCHER | 1 |

√ recommended parts
* not shown



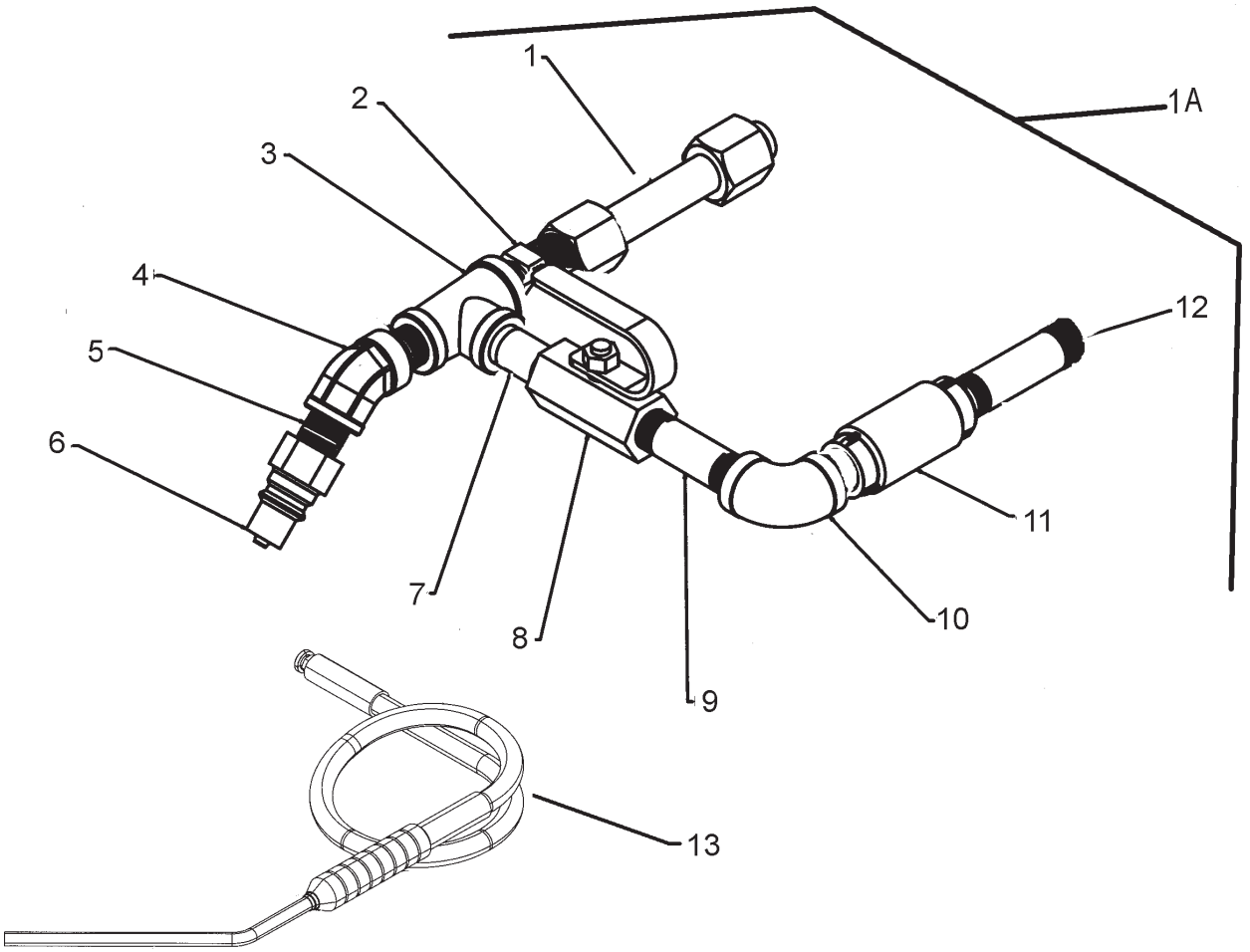

| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-10 | | CARRIER, RACKS & JUNCTION BOX ASSY | |
| 1 | 62183 | CARRIER ASSY | 1 |
| 2 | 44782 | RACK HALF SIZE – 8 HEAD FRYER | 1 |
| 3 | 62126 | JUNCTION BOX ASSY | 1 |
| 3 | 62127 | JUNCTION BOX ASSY - CE | 1 |
| 4 | 65427 | ASSY - 5-POLE TERMINAL BLOCK - CE | 1 |
| √ 5 | 51057 | ASSY - EMC FILTER - CE | 1 |
| 6 | SC01-023 | SCREW #6-32 X 1/4 PH RHD C | 8 |
| 7 | 65180 | ASSY - MAIN POWER CORD | 1 |
| 7 | 65181 | CORD - 291/591 POWER | 1 |
| | 58146* | PLUG-90, 60A, 3PH, 250V, #15-60P | 1 |
| 8 | 36404 | WIRE BASKET - GM 8 HEAD | 4 |
| 9 | 36374 | ASSY - BASKET HANDLE WELD | 1 |
| 10* | 19923 | TRANSFORMER - LARGE - 480 VOLT | 1 |

√ recommended parts/* not shown



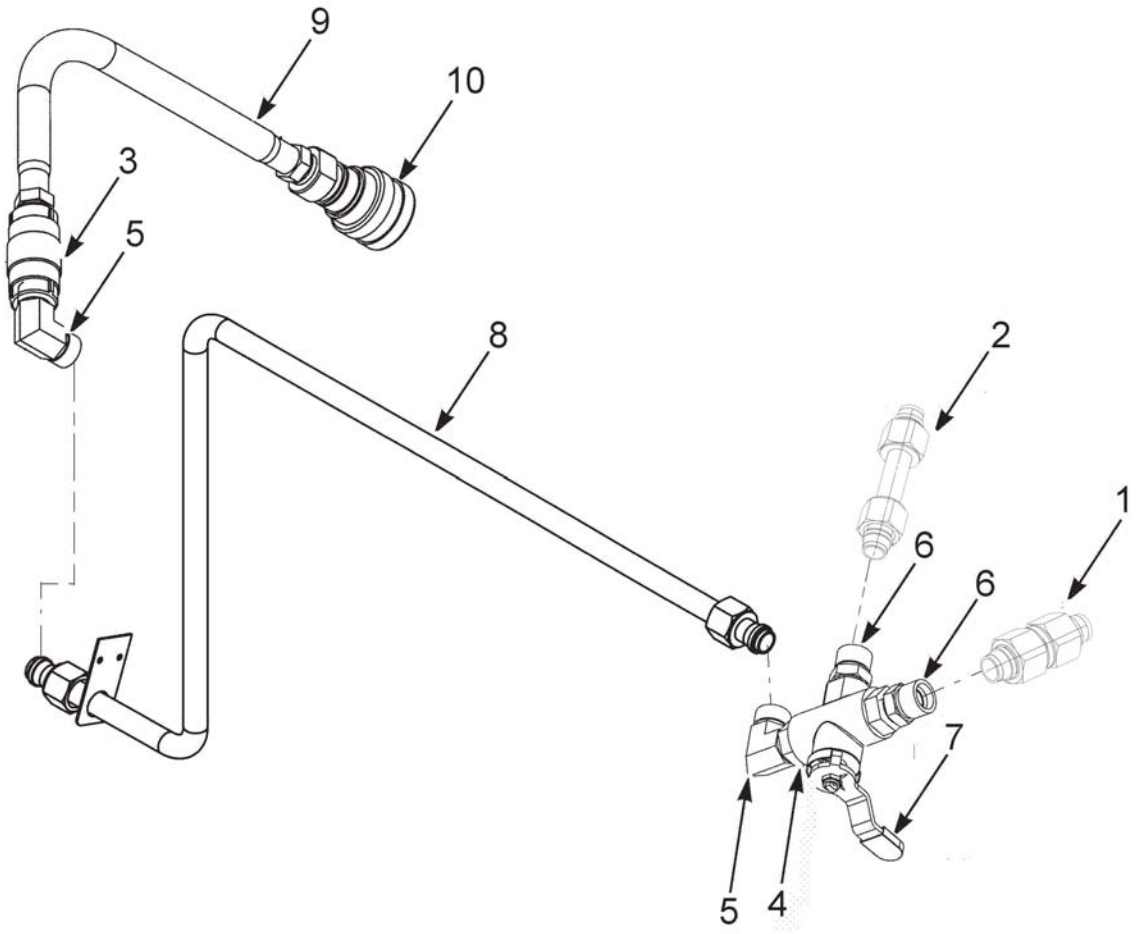

**3-11A. OPTIONAL RINSE HOSE ATTACHMENTS (BELOW SN: BE0401001)**

| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-11A | | OPTIONAL RINSE HOSE ATTACHMENTS | |
| 1 | 66677 | ASSY - RINSE HOSE - TUBE - 291 | 1 |
| 2 | 16807 | FITTING - MALE CONNECTOR | 1 |
| 3 | 17306 | PIPE TEE FITTING | 1 |
| 4 | FP02-024 | NIPPLE - 3/8 NPT - CLOSE B. I. | 3 |
| 5 | FP01-133 | ELBOW - 3/8 NPT X 45 - FEMALE | 1 |
| 6 | 17334 | RINSE HOSE DISCONNECT - MALE | 1 |
| 7 | FP02-042 | NIPPLE - 3/8 X 2 LG B. I. | 1 |
| 8 | 59185 | VALVE - FILTER (SMALL C HANDLE) | 1 |
| 9 | FP02-043 | NIPPLE - 3/8 NPT X 2.5 B. I. | 1 |
| 10 | 17319 | PIPE ELBOW - 3/8 | 1 |
| 11 | FP01-116 | NIPPLE - 3/8 NPT X 4” LG B. I. | 1 |
| 12 | 35472 | CHECK VALVE - PRESSURE | 1 |
| 13 | 03003 | DETACHABLE HOSE ASSEMBLY | 1 |




**3-11B. OPTIONAL RINSE HOSE ATTACHMENTS(SN: BE0401001 & ABOVE)**

| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-11B | | OPTIONAL RINSE HOSE ATTACHMENTS | |
| 1 | 66450 | ASSY -PUMP TO VALVE TUBE - 291 | 1 |
| 2 | FP01-170 | CON - 90 MALE 3/4 TUBE 3/4 NPT | 1 |
| 3 | FP01-171 | TEE - 3/8 X 3/4 X 3/4 B. I. | 1 |
| 4 | FP01-172 | ELBOW - 45 STREET 3/8 NPT B. I. | 1 |
| 5 | FP02-024 | NIPPLE - 3/8 NPT - CLOSE B. I. | 1 |
| 6 | 17334 | RINSE HOSE DISCONNECT - MALE | 1 |
| 7 | FP02-044 | NIPPLE - 3/4 X 2 LG B. I. | 1 |
| 8 | 23430 | VALVE - 3/4 INLET - E34X | 1 |
| 9 | 16282 | NIPPLE - 3/4 X CLOSE | 1 |
| 10 | FP01-100 | ELBOW - STREET 3/4 NPT B. I. | 1 |
| 11 | 21800 | VALVE - 3/4 CHECK | 1 |
| 12 | FP02-021 | NIPPLE - 3/4 NPT X 3 IN LG B. I. | 1 |
| 13 | 03003 | DETACHABLE HOSE ASSEMBLY | 1 |




| Figure & Item No. | Part No. | Description | Qty. |
|---|---|---|---|
| 3-12 | 14638 | OPTIONAL DIRECT-CONNECT KIT ..... **(SN: BE0401001 & ABOVE only)** | 1 |
| 1 | 67695 | ASSY - TUBE DC POT TO DIVERTER ..... | 1 |
| 2 | 66450 | ASSY - TUBE DC DIVERTER TO POT ..... | 1 |
| 3 | 21800 | VALVE - 3/4 CHECK ..... | 1 |
| 4 | 68510 | VALVE - 3/4 DIVERTER W/O HANDLE ..... | 1 |
| 5 | FP01-169 | CON - 90 MALE 3/4 TUBE 3/4 NPT ..... | 2 |
| 6 | FP01-170 | CON - STR MALE 3/4 NPT ..... | 1 |
| 7 | 68126 | HANDLE - 8 HEAD DIRECT CONNECT ..... | 1 |
| 8 | 67692 | ASSY - DIRECT CONN TUBE 8 HEAD ..... | 1 |
| 9 | 21753 | HOSE - SHORTENING DISCARD ..... | 1 |
| 10 | 21612 | DISCONNECT - FEMALE ..... | 1 |