



Model B-IR-18/20 Operation Instructions



FOR YOUR SAFETY

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

Purchaser to post in a prominent location instructions to be followed in the event the user smell gas.

This information shall be obtained by consulting the local gas supplier.

WARNING

Improper installation, adjustment, 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.

302 Spencer Lane • P.O. Box 5369

(800) 525-8130 • (210) 731-5000 • Fax: (210) 731-5099

www.ultrafryer.com

San Antonio, Texas 78201

PREFACE

This manual was written and published by the Ultrafryer Systems Engineering Department for use by personnel who will operate a Model B-IR-18/20 Premix Gas Fryer equipped with an Ultrastat 23 Computer in a commercial cooking environment. Proper use of a manual will allow store employees to operate, clean and maintain equipment properly, thereby reducing service call expenses.

This appliance is intended for professional use and is to be operated by qualified personnel.

The manual is to be retained for future reference

Throughout this manual, **NOTES**, **CAUTIONS** and **WARNINGS** are used to alert the operator to items of special circumstances. These items are identified as follows:

NOTES:

These items will be indented from the main text, the word "NOTE" will be in capital letters. These items alert the operator to items of special concern to achieve a desired result.

Examples:

NOTE

Adequate clearances must be provided for servicing and proper operation.

CAUTIONS: These items will be indented from the main body of text, the word "CAUTION" will be in bold, capitalized print and the entire text will be enclosed by a border. These items identify steps or procedures that if not adhered to could result in product, equipment malfunction or failure and the entire text will be enclosed by a bold border. These items identify steps or procedures that if not adhered to could result in property damage, injury or death.

CAUTION

PRIOR TO PROCEEDING TO THE NEXT STEP, DON SAFETY GOGGLES, NEOPRENE-INSULATED GLOVES AND AN APRON.

WARNINGS: These items will be indented from the main body of text, the word "WARNING" as well as the text will be in bold, capitalized print.

WARNING

DISCONNECT THE ELECTRICAL POWER TO THE FRYER.

DANGER: These items will be indented from the main body of text, the word "DANGER" as well as the text will be in bold, capitalized print.

DANGER

THE FRYER MUST BE CONNECTED TO THE TYPE OF GAS IDENTIFICATION ON THE RATING PLATE!

This manual is intended as a guide for all model B-IR-18/20 Premix Gas Fryers, regardless of configuration and controllers. It is to be used in conjunction with the applicable controller manual that is included with the fryer.

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GENERAL INFORMATION

B. DESCRIPTION

The Ultrafryer 18"/20" (457mm /508mm) IR premix gas fryer was designed by Ultrafryer Systems® to operate as an energy-efficient, gas-fired fryer and is design-certified by the Canadian Standards Association (CSA) and the National Sanitation Foundation (NSF). It is manufactured to operate on either NATURAL or PROPANE gas according to the following Operational Requirements. Each fryer is shipped completely assembled with the accessories packed inside the fryer vat, and each fryer has been adjusted, tested and inspected prior to shipment. This gas fryer is designed to be used in a commercial food preparation environment after it is properly installed as outlined in this manual.

C. SAFETY

The major safety concern associated with the Ultrafryer Premix Gas fryer is burns from hot shortening. In order to prevent serious burns, good housekeeping habits are required. The floor in front of and the area around the fryer should be kept clean and dry. Whenever anything is placed into a fryer vat, care should be used not to splash the hot shortening. Product should always be "PLACED" into the shortening, not thrown. Safety goggles, neoprene insulated gloves, and an apron must be worn while boiling-out a fryer vat. Electrical controls used in the gas fryer operate on 120 volts single phase electrical power, and no adjustments or replacement of electrical controls should ever be attempted without first disconnecting electrical power. The fryer should never be operated with wet hands or while standing in water. To do so can result in serious electrical shock or death.

D. AUTOMATIC SAFETY FEATURES

1. High Limit thermostat to shut off gas to the main burners by opening a solenoid –activated safety valve in the combination gas control valve.
2. Combination gas control valve which includes a built-in pressure regulator.
3. Air pressure switch to open the 24 volt electrical circuit to the gas control valve, which turns gas to the fryer OFF if a Blower Motor becomes inoperable.
4. Sensing Circuit within the spark ignitor module to turn gas OFF if a burner FLAME OUT occurs.
5. A Current Sensor and Air Pressure Switch which, combined, provide an air Proof System for the fryer.
6. A drain valve safety switch and a default to OFF circuit that will disable the fryer each time the drain valve is opened.

E. RATING PLATE

The Rating Plate is located on the inside of the Service Access door and contains the following information: the model and serial numbers, BTU/HR input rating of the burners, gas manifold pressure in inches W.C. , minimum inlet gas required and gas type. This data is essential for proper identification when communicating with ULTRAFRYER SYSTEMS or requesting special parts or information.



THE FRYER MUST BE CONNECTED ONLY TO THE TYPE OF GAS IDENTIFICATION ON THE RATING PLATE !

DANGER:

F. SPECIFICATIONS

**MODEL 18"/20" (457mm/508mm) IR PREMIX GAS FRYER
OPERATIONAL REQUIREMENTS**

<u>SPECIFICATION ITEM</u>	IR-18"	IR-20"
Overall Width	19.375" (492mm) Each vat	21.375" (543mm) Each vat
Overall Depth	42.73" (1085mm)	48.73" (1085mm)
Work Height	36.40" (924mm)	36.40" (924mm)
Oil Capacity High Level Low Level	100 lbs (45.4 liters) 70 lbs (31.75 liters)	125 lbs. (63.7 liters)
Vat Container Size	18.00" x 18.00" (457mm x 457mm)	20.00"x20.00" (508mmx508mm)
Gas Pressure (inlet to fryer) Natural Gas Propane	7" (178mm) W.C. 14" (355mm) W.C.	7" (178mm) W.C. 14" (355mm) W.C.
Gas Rating Natural Gas Propane Natural Gas Propane	80,000 BTU/hr (84.35 MJ/hr) 80,000 BTU/hr (84.35 MJ/hr) 110,000 BTU/hr (116.06 MJ/hr) 110,000 BTU/hr (116.06 MJ/hr)	80,000 BTU/hr (84.35 MJ/hr) 80,000 BTU/hr (84.35 MJ/hr)
Power Input	120 Volt, 1.2 Amps, each vat + 3.1 Amps with pump motor, 60Hz, 1 Phase	120 Volt, 1.2 Amps, each vat + 3.1 Amps with pump motor, 60Hz, 1 Phase

FT³/HR (M³/HR) VALUES May vary due to heating value and specific gravity of gas supplied by local Gas Company

NOTE:

Test start-up, operation, cooking, filtering and boil-out procedures of a 18"/20" model IR Premix gas fryer in the manual are based on the Ultrastat 23 cooking computer.

G. INLET GAS LINE SIZING - The Table below is to be utilized to calculate the size (diameter) of the inlet gas line from the building regulator to the fryer manifold.

INLET GAS LINE REQUIREMENTS									
PIPE LENGTH	PIPE DIAMETERS (inches & (mm equivalents)) Maximum Allowable Flow (Shown in ft ³ /hr (M ³ /hr))								
	Feet (Meters)	½" (13mm)	¾" (19mm)	1" (25mm)	1¼" (32mm)	1½" (38mm)	2" (51mm)	2½" (64mm)	3" (76mm)
15 (4.6)	62 (1.7)	108 (4.7)	350 (9.8)	620 (17.4)	960 (26.9)	2,000 (56.0)	3,500 (98.0)	5,400 (151.2)	11,200 (313.6)
30 (9.1)	43 (1.2)	120 (3.4)	245 (6.9)	430 (12.0)	680 (19.0)	1,400 (39.2)	2,450 (68.6)	3,800 (106.4)	7,900 (221.2)
45 (13.7)	35 (1.0)	98 (2.7)	200 (5.6)	355 (9.9)	530 (14.8)	1,150 (32.2)	2,000 (56.0)	3,200 (89.6)	7,900 (182.0)
60 (18.3)	30 (0.8)	84 (2.4)	175 (4.9)	310 (8.7)	480 (13.4)	1,000 (28.0)	1,760 (49.3)	2,700 (75.6)	5,600 (156.8)
75 (22.9)	27 (0.8)	76 (2.1)	155 (4.3)	275 (7.7)	430 (12.0)	890 (24.9)	1,560 (43.7)	2,450 (68.6)	5,000 (140.0)
90 (27.4)	25 (0.7)	70 (2.0)	145 (4.1)	250 (7.0)	395 (11.1)	810 (22.7)	1,430 (40.0)	2,260 (63.3)	4,550 (127.4)
105 (32.0)	23 (0.6)	64 (1.8)	132 (3.7)	232 (6.5)	370 (10.4)	750 (21.0)	1,300 (36.4)	2,100 (58.8)	4,200 (117.6)
120 (36.6)	21 (0.6)	60 (1.7)	125 (3.5)	215 (6.0)	340 (9.5)	700 (19.6)	1,200 (33.6)	1,950 (54.6)	4,000 (112.0)
150 (45.7)	19 (0.5)	54 (1.5)	110 (3.1)	195 (5.5)	310 (8.7)	630 (17.6)	1,080 (30.2)	1,750 (49.0)	3,550 (99.4)
180 (54.9)	17 (0.5)	49 (1.4)	100 (2.8)	175 (4.9)	280 (7.8)	570 (16.0)	960 (26.9)	1,600 (44.8)	3,200 (89.6)
210 (64.0)	16 (0.4)	44 (1.2)	94 (2.6)	165 (4.6)	260 (7.3)	530 (14.8)	890 (24.9)	1,450 (40.6)	3,000 (84.0)
240 (73.2)	15 (0.4)	43 (1.2)	88 (2.5)	155 (4.3)	240 (6.7)	500 (14.0)	840 (23.5)	1,350 (37.8)	2,800 (78.4)
270 (82.3)	14 (0.4)	40 (1.1)	83 (2.3)	145 (4.1)	230 (6.4)	470 (13.2)	780 (21.8)	1,300 (36.4)	2,650 (74.2)
300 (91.4)	14 (0.4)	38 (1.1)	79 (2.2)	138 (3.9)	215 (6.0)	440 (12.3)	750 (21.0)	1,250 (35.0)	2,500 (70.0)
450 (137.2)	11 (0.3)	31 (0.9)	64 (1.8)	112 (3.1)	176 (4.9)	360 (10.1)	630 (17.6)	1,000 (28.0)	2,050 (57.4)
600 (182.9)	10 (0.3)	27 (0.8)	56 (1.6)	97 (2.7)	152 (4.3)	315 (8.8)	530 (14.8)	860 (24.1)	1,750 (49.0)

NOTE: 1) FT³/HR (M³/HR) values may vary due to heating value and specific gravity of gas supplied by local companies.
 2) To determine the inlet gas line diameter for the distance between the fryer and main gas regulator, locate the FT³/HR (M³/HR) of gas required for the fryer and pipe length and read the pipe diameter on the top row. For example: a bank of fryers containing three (3) Par-3-14 fryer operating on Natural gas requires 257.13 FT³/HR (7.29 M³/HR) <3x85.71 (2.43)>. If the fryer bank is located 60 feet from the building gas regulator, a 1¼" (32mm) diameter gas line **MUST** be installed between the fryer gas manifold and the building

H. FLEXIBLE GAS LINE LENGTHS

The Flexible Gas Line used to connect the gas manifold to the building gas supply line must be rated for the BTU/Hr (MJ/Hr) designated for the Fryer. Flexible gas lines and their ratings stocked by Ultrafryer Systems are listed below:

FLEXIBLE GAS LINES STOCKED BY ULTRAFRYER SYSTEMS		
NUMBER	DESCRIPTION	RATING BTU/HR (MJ/HR)
24322	3/4" (19mm) Diameter Flexible Gas Line (w/quick connect couplings) 48" (1219mm) long. Connect-It SSGC75-48-UCQ	225,000 (238)
24323	1" (25mm) Diameter Flexible Gas Line (w/quick connect couplings) 48" (1219mm) long. Connect-It SSGC100-48-UCQ	435,000 (459)
24456	1 (32mm) Diameter Flexible Gas Line (w/quick connect couplings) 48" (1219mm) long. Connect-It SSGC125-48-UCQ	875,000 (924)

PRE-INSTALLATION

A.GENERAL:

Safe and satisfactory operation of a Model B-IR-18"/20" premix gas fryer depends on its proper installation. Installation must conform to local codes or, in the absence of local codes, with the current National Fuel Gas Code ANSI Z223.1/NFPA 54 (latest edition). In Canada, gas installation shall be in accordance with the current CSA B 149.1 and .2 installation codes and/or local codes. Each Model B-IR-18"/20" premix gas fryer should be installed as follows:

1. Placed beneath a properly designed exhaust hood
2. Installed by a licensed electrician and plumber.
3. Connected to the type gas for which the unit was fabricated as shown on the rating plate.
4. Connected to the proper size pressure regulator installed in the gas supply line and adjusted to the proper manifold pressure.
5. Connected to the main gas supply line with the proper size supply line.
6. Restrained by use of a restraining device to avoid splashing of hot liquid and to assure tension cannot be placed on the flexible gas line or electrical line fittings. **CLEARANCES:** The appliance must be kept free and clear of all combustibles. The minimum clearance from combustible and non-combustible construction is 6" (152 mm) from the sides, and 6" (152 mm) from rear. The fryer may be installed on combustible floors.

NOTE:

Adequate clearances must be provided for servicing and proper operation.

B. STANDARDS: Installation must be planned in accordance with all applicable state and local codes, taking into account the following standards:

1. The fryer and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at pressures in excess of 1/2 psig (3.45kPa). In Canada, gas installation shall be in accordance with the current CSA B 149.1 and .2 installation codes and/or local codes.
2. The fryer must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at pressures equal to or less than 1/2 psig (3.45kPa).
3. When installed the fryer must be electrically grounded in accordance with local codes, or in the absence of local codes, in accordance with the current National Electrical code ANSI/NFPA 70 (latest edition). In Canada electrical installation must be in accordance with the current CSA C22.1 Canadian Electrical Code and/or local codes.
4. Other applicable nationally recognized installation standards such as:
 - a. National Fuel Gas Code ANSI Z223.1/NFPA 54 (latest edition)
American Gas Association
 - b. NFPA Standards #54, #94 and #221 (latest edition)
National Fire Protection Association
 - c. ANSI Z21.69/CSA-6.16 AND ANSI Z21.41/CSA 6.9
5. Exhaust vent hood, when installed must conform to the current NFPA 54-1 and Canadian Standards (latest edition)

NOTE:

Local building codes will usually not permit a fryer with its open tank of hot oil to be installed immediately next to an open flame of any type, whether a broiler or an open burner or range. Check local codes before beginning installation.

C. AIR SUPPLY AND VENTILATION: The area around the appliance must be kept clear of any combustible or flammable products and avoid any obstruction to the flow of ventilation air as well as for ease of maintenance and service. **NOTHING** is to be stored in the interior of the fryer's cabinet.

1. A means must be provided for any commercial, heavy duty-cooking appliance to exhaust combustion wastes outside of the building. It is essential that a fryer be set under a powered exhaust vent hood or that an exhaust fan be provided in the wall above the unit, as exhaust temperatures are in the vicinity of 400°F (204°C).

NOTE:

Strong exhaust fans in a hood or in the overall air conditioning system can produce slight air drafts in the room, which can interfere with burner performance and be hard to diagnose. Air movement should be checked during installation and if burner problems persist, make-up air openings or baffles may have to be provided in the room.

2. Exhaust temperature, in addition to the open tank of hot oil, make the storage of anything on shelving over or behind the fryer unsafe.
3. Filters and drip troughs should be part of any industrial hood, but consult local codes before constructing and installing any hood.
4. Provisions must be made for an adequate supply of fresh air and adequate clearance must be maintained for air openings into the combustion chamber.

RECEIVING AND INSTALLING

- A. UNPACKING:** Check that the container is upright. Use an outward prying motion – **DO NOT USE A HAMMER** - to remove the carton. Check the fryer for visible damage; if such damage has occurred do not refuse shipment, but contact the carrier and file the appropriate freight claims.
- B. INSTALLING:** Roll the assembled fryer into the building, to its operating location.

WARNING:



IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE, OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY, OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE

C. LEVELING:

1. When the fryer is placed in its operating location, check to be sure it is level. If not, loosen the casters and insert the appropriate number of shim plates between leg and caster plates then retighten the caster bolts.
2. If the floor is smooth and level, adjust to the high corner and measure with a spirit level. If the floor is uneven or has a decided slope, level the unit with metal shims.

NOTE:

A caster may not return exactly to the same position after being moved, which may require re-leveling after each move.

3. Connect the gas manifold to the building gas supply line by means of a CSA Group APPROVED flexible gas line as shown in the figure below.

NOTE:

CONNECT-IT Inc. 3/4" (19mm), 1" (25mm) and 1 1/4" (32mm) flexible gas hose 4 feet long (1219mm) with a quick disconnect coupling on one end is available from Ultrafryer Systems under PN 24322 (3/4" (19mm) hose), PN 24323 (1" (25mm) hose) and PN 24456 (1 1/4" (32mm) hose). These hoses are equipped with a fusible link, which melts at 361°F (183°C) that will SHUT OFF the gas supply when it melts. Reference Installation Instructions sheet provided with hose for additional information. A 44" (1119mm) long restraining device is also available under PN 24324. Install as shown below between the wall and the fryer using existing mounted hardware or add hardware to the wall and fryer making a secure connection at each ends.

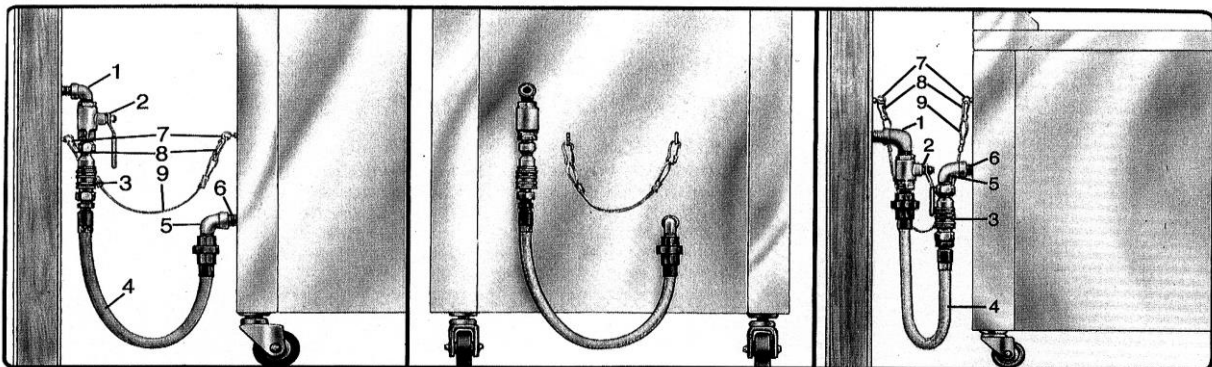
CAUTION:



THE BUILDING GAS SUPPLY LINE MUST BE SIZED TO PROVIDE THE VOLUME OF GAS REQUIRED FOR PROPER OPERATION AS EXPLAINED ON THE PREVIOUS PAGE.

TYPICAL GAS CONNECTION

- | | |
|--------------------------------|------------------------------|
| 1. BUILDING GAS SERVICE LINE | 6. APPLIANCE MANIFOLD/NIPPLE |
| 2. MAIN GAS CUT-OFF VALVE | 7. EYELET FASTENERS |
| 3. CONNECT-IT QUICK-DISCONNECT | 8. SPRING HOOK |
| 4. FLEX-CON CONNECTOR | 9. RESTRAINING CHAIN |
| 5. ELBOW | |



WARNING:



THE RESTRAINT DEVICE (ITEM 9) MUST BE INSTALLED TO ASSURE TENSION CANNOT BE PLACED ON THE FLEXIBLE GAS LINE OR FITTING.

D. GAS CONNECTION: The gas supply (service) line must be the same size or greater than the inlet line of the appliance. **THE GAS SUPPLY LINES MUST BE SIZED TO ACCOMMODATE ALL THE GAS FIRED EQUIPMENT THAT MAY BE CONNECTED TO THAT SUPPLY.** Refer to the Inlet Gas Line Sizing Table and inlet gas requirements.

NOTE:

Sealant used on all pipe joints must be resistive to natural and propane gas.

1. Manual shut off valve: This supplier-installed valve must be installed in the gas service line ahead of the appliance and in a position where it can be reached quickly in the event of an emergency.
2. Pressure regulator: All commercial cooking equipment must have a pressure regulator on the incoming service line for safe and efficient operation, because service pressure may fluctuate with local demand. External regulators are not required on this fryer, as that function is performed by a combination gas control valve, however if the incoming pressure is in excess of 1/2 psig, a step-down regulator will be required.
3. Natural gas: Natural gas fryers require 7" (178mm) water column (W.C.) "inlet" pressure to the fryer's combination gas control valve for proper operation, when all gas units are operating simultaneously. Propane gas fryers require 14" (355mm) water column (W.C.) "inlet" pressure to the fryer's combination gas control valve for proper operation, when all gas units are operating simultaneously. This "inlet" pressure **MUST** be checked with a manometer **PRIOR** to placing the fryer in operation.

WARNING:

IF THE "INLET" GAS PRESSURE AT THE FRYER'S COMBINATION GAS CONTROL VALVE "EXCEEDS" 1/2 lb/in² (.035 kg/cm²) OR APPROXIMATELY 11" (280mm) W.C., AN EXTERNAL REGULATOR MAY BE NEEDED TO PREVENT DAMAGE TO THE COMBINATION GAS VALVE, AND VOIDING OF WARRANTY.



4. Combination gas control valve: The correct combination gas control valve and orifice is installed at the factory for **NATURAL** and **PROPANE** units based on each Purchase Order. This valve should be **CHECKED/ADJUSTED** by qualified service personnel using proper test equipment for the following "**OUTLET**" gas pressure **PRIOR** to start-up of a fryer. **NATURAL GAS FRYERS 7" (178mm) W.C. PROPANE FRYERS 14" (355mm) W.C.**
5. Rigid connections: Check any installer-supplied intake pipe(s) visually and/or blow them out with compressed air to clear dirt particles, threading chips or any other foreign matter before connecting to the service line as these particles may clog the orifice when gas pressure is applied. All connections must be tested with a soapy solution before lighting the fryer. **DO NOT USE AN OPEN FLAME TO CHECK FOR LEAKS!** Putting an open flame beside a new connection is not only dangerous, but will often miss small leaks that a soapy solution would find.
6. Flexible Couplings and Connectors: The installation is to be made with a connector that (1) complies with the **Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 (CSA 6.16)**, and a quick-disconnect device that complies with the **Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 (CSA 6.9)** (2) adequate means must be provided to limit the movement of the appliance without depending on the connector and the quick disconnect device or its associated piping to limit the appliance movement and (3) the location(s) where the restraining means may be attached to the appliance shall be specified. **DOMESTIC CONNECTORS ARE NOT SUITABLE!!!**
7. Fryer Service: The fryer is equipped with swivel casters. To service the fryer:
 - a) Remove / unplug power supply from fryer
 - b) Turn "OFF" gas supply at the supply source.
 - b) Disconnect the flexible gas line quick-disconnect
 - c) Disconnect restraint means and roll fryer out for rear service access.
 - d) When the fryer is re-positioned, be sure to reconnect the restraint and level the fryer.

E. ELECTRICAL CONNECTION: The MAXIMUM current draw per vat at Initial Start-up or during a

Warm-up Cycle will be 3 Amperes at 120 Volts. When running the Filter System simultaneously allow for an additional 3 Amperes. Refer to the wiring diagram attached to the inside of the Service Access door for internal electrical connections.

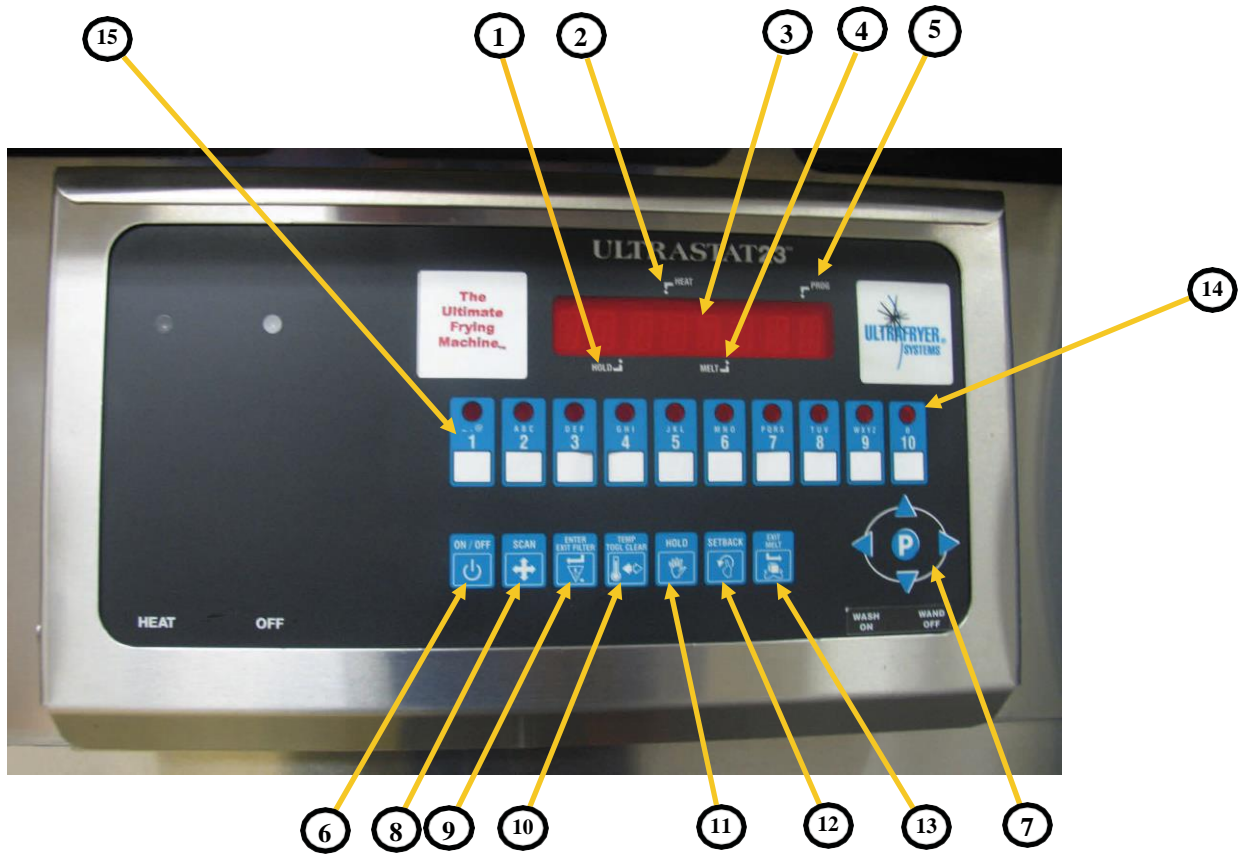
WARNING:

(ELECTRICAL GROUNDING INSTRUCTIONS)
THIS APPLIANCE IS EQUIPPED WITH A THREE-PRONG (GROUNDING) PLUG FOR YOUR PROTECTION AGAINST SHOCK HAZARD AND SHOULD BE PLUGGED DIRECTLY INTO A PROPERLY GROUNDED THREE-PRONG RECEPTACLE. DO NOT CUT, REMOVE OR OTHERWISE BYPASS THE GROUNDING PRONG ON THIS PLUG!



F. Ultrastat 23 Cooking Computer

The Ultrastat 23 Cooking Computer is a high performance, microprocessor-based electronic controller designed for use in commercial appliance temperature and timing control applications. Utilizing a microcontroller board, membrane switch front panel with a digital LED readout and display board, the Ultrastat 23 Cooking Computer has been customized for Ultrafryer Systems applications by the addition of up to 10 stage cooking profiles for each of the 10 product keys; features can be programmed to cook products under “Flex” or “Straight” timing modes. Operation of the Ultrastat 23 Cooking Computer is covered in its Instruction Manual PN 30A216 provided with the Fryer.





COMPUTER PANEL KEY DESCRIPTIONS


1. HOLD LAMP
When lit (bright) indicates a product hold time is being tracked.
2. HEAT LAMP
When lit (bright) indicates the computer is calling for heat.
3. DISPLAY
Displays modes, functions and operations of the computer.
4. MELT LAMP
When lit (bright) indicates the computer is in the melt cycle.
5. PROGRAM LAMP
When lit (bright) indicates the computer is in the program mode.
6. ON/OFF KEY
Turns the computer ON and OFF when the fryer power switch is in the ON position and the drain valve lever is in the closed UP position.
7. PROGRAM KEY
 - a. In “operating” mode, allows access to the programming mode.
 - b. In “programming” mode, allows access to the operating mode and general navigation function.
8. SCAN KEY
 - a. In “operating” mode, displays the remaining cook time on every product currently in a cook cycle and lights the respective products “LED” for 2 seconds.
 - b. In “programming” mode, steps to the next function to be programmed.
9. ENTER EXIT FILTER KEY
This key will force the fryer into the filter mode. This key is an optional feature.
10. TEMP/TOGGLE CLEAR KEY
 - a. In “operating” mode, displays the actual temperature followed by the programmed “set” temperature.
 - b. In “programming” mode, will “clear” values from a data field.
11. HOLD KEY
 - a. In “operating” mode, used to view remaining hold times.
12. SET BACK
 - a. In operating mode forces setback . Display will show “setback” and appliance will be controlled to **set back** temperature instead of **set point** temperature.
13. EXIT/MELT KEY
 - a. In “operating” mode, used to manually exit the shortening melt cycle.
14. PRODUCT LED
 - a. When lit (bright) in the “operating” mode, identifies the product data being displayed.
 - b. When lit (bright) in the “programming” mode, identifies the product being programmed.
15. PROGRAMMING AND PRODUCT COOK KEY
 - a. In “operating” mode, used to start and stop a product’s cook cycle.
 - b. In “programming” mode, used to enter numerical values 1 to 10.


Ultrastat 23 Programming Guide


- 1** Turn Toggle ON/OFF switch to ON position and amber power indicator lamp will illuminate.
Then press power ON/OFF key.



- 2** Push and hold the "P" key for 3 seconds to enter PROGRAMMING MODE. PROGRAM will appear in display.



- 3** Push "P" key the second time to display CODE. Enter "1724" and push the "P" key. RECIPE will display.



- 4** Push "P" key and "PRODUCT" will display. Hit product key you want to program and hit "P" key



- 5** Display shows "ALL". Push "P" key to program each function and "NAME" appears. To change hit the "DOWN ARROW" and scroll to find the word you want in the library. Then push the "P" key to enter it and go to the next item.



- 6** "TIME 1" will display. To change the time hit "TOGGLE CLEAR" index the time you want on the number pad and press the "P" key to save



- 7** "TEMP 1" will display. To change hit "TOGGLE CLEAR" and key in the amount you want and hit the "P" key.



- 8** "FLEX" or "STRAIGHT"1 time will appear. To change from one to the other, hit the left arrow key. Then hit the "P" key to save it.



- 9** Display shows "TIME 2". Repeat steps 6, 7, and 8 for each profile. After the last profile, display will show "AL ARM TIME 1"


- 10** To change "ALARM TIME 1" hit "TOGGLE CLEAR" and index what you want on the number keys and hit the "P" key and the display will show "ALARM NAME".


- 11** To change "ALARM NAME" hit "DOWN ARROW" and scroll until you find the name you want. Then hit the "P" key. Repeat for alarm 2 and 3 if applicable.


- 12** Display will show "HOLD TIME 1". For most applications this is not used so exit at this point. To exit press the "DOWN ARROW" key repeatedly until "EXIT" shows on the display. Then hit the "P" key. "PRC DUCT" will show on the display.


- 13** Then hit the "UP ARROW" key and display will show "EXIT". Hit the "P" key and display shows "RECIPE". Hit the "UP ARROW" again then hit "P" key and "PREHEAT" or "READY" should appear. You are now out of program mode and ready to operate with the latest changes.



ULTRASTAT 23 START-UP AND COOKING COMPUTER OPERATION

NOTE:

- 1) The computer will keep the fryer in the melt cycle until the exit melt button is manually depressed.
- 2) The computer cannot be taken out of the shortening melt mode until the shortening temperature reaches the melt limit temperature. The melt limit temperature is factory set for a high exit temperature (135°F/57°C) or a low exit temperature (100°F/38°C).

The following are abbreviated operating procedures for a fryer equipped with an Ultrastat 23 Cooking Computer. The attached Ultrastat 23 Ultrafryer Computer Operating Instructions, Manual PN 30A216, contains DETAILED Operating, Filtering, Boil-Out and Programming Instructions.

START-UP and COOKING

ULTRASTAT 23 START-UP - Safely start-up an gas fryer equipped with an Ultrastat 23 Cooking computer as follows:

STEP	ACTION	RESPONSE
1	ENSURE the drain valve lever on the fryer is in the CLOSED position, shortening is at the proper level, then turn the fryer ON/OFF switch to the on position.	A. The AMBER Power lamp beside the ON/OFF switch will LIGHT. B. The fryer heat exchanger will power up and begin to heat the shortening.

CAUTION:



PRIOR TO PROCEEDING TO NEXT STEP, VISUALLY CHECK THAT THE HEAT EXCHANGER IS COVERED WITH AT LEAST 2" (51mm) OF SHORTENING.

2	Turn the Computer ON by depressing the computer ON/OFF button.	A. The MELT lamp will LIGHT to indicate the computer is in the SHORTENING MELT MODE. B. The HEAT lamp on the computer and the RED heat mechanism indicator lamp on the fryer will cycle ON and OFF indicating the heat mechanism is periodically being turned ON and OFF to gently heat the shortening.
3	Once the Melt Limit Temperature is reached depress the EXIT MELT BUTTON on the computer to cancel the SHORTENING MELT MODE.	A. "HEATING" will appear in the computer display indicating shortening temperature is more than 10°F (5°C) below the set-point temperature. B. The HEAT lamp on the computer and the RED heat mechanism indicator lamp will remain ON until the set-point temperature is reached.
4	When "READY" appears in the Computer display indicating the SET-POINT TEMPERATURE of the shortening has been reached, a COOK cycle can be initiated.	A. Stir the shortening several times to ensure that all the shortening has reached the set point temperature.

ULTRASTAT 23 COOKING COMPUTER PROGRAMMING

Program the Ultrastat 23 Cooking Computer according to the Computer Operating Instructions Manual (PN 30A216) provided with the Fryer.

NOTE

Programming of an Ultrastat 23 cooking computer should only be performed by a store manager or area supervisor.

GENERAL COOKING

Most products should be cooked with a shortening temperature about 350°F (177°C); however, each product should be cooked at the LOWEST temperature that produces a high quality product while obtaining maximum usage of the shortening.

WARNING:



I – DO USE A HIGH QUALITY SHORTENING TO ACHIEVE A CONSISTENT QUALITY PRODUCT AND LONG TERM SAVINGS

II – DO NOT SALT PRODUCTS OVER THE FRYER AS SALT QUICKLY DETERIORATES THE SHORTENING AND FLAVORS OTHER PRODUCTS COOKED IN THE SAME SHORTENING

III – DO FILTER SHORTENING AFTER THE LUNCH AND DINNER RUSH AND MORE OFTEN IN A HIGH SALE VOLUME STORE; AND BOIL-OUT THE FRYER EVERY 7 DAYS

NOTE:

Startup steps 1, 2, 3 and 4 will have to be repeated each time any of the following occurs:

Drain valve is open, fryer ON/OFF switch is turned OFF to filter shortening or boil-out a fryer. Fryer ON/OFF switch is turned OFF at closing or any other reason.

POWER FAILURE

This fryer cannot be operated during power failures. **DO NOT** attempt to bypass safety and manually operate fryer.

CAUTION:



THE FRYER HAS A RESTRAINT ATTACHED TO THE WALL TO LIMIT MOVEMENT AND TIPPING IN ORDER TO AVOID SPLASHING OF HOT LIQUID.

MOVING THE FRYER WITH HOT COOKING OIL IN THE VESSEL MAY CAUSE SPLASHING OF THE HOT LIQUID CAUSING SEVERE BURNS.

IF MOVING THE FRYER IS REQUIRED FOR CLEANING OR SERVICING. TAKE THE REQUIRED STEPS OF REMOVING THE RESTRAINT, POWER AND GAS CONNECTIONS BEFORE MOVING THE FRYER AND MAKE SURE THE COOKING OIL IN THE VESSEL IS COLD OR HAS BEEN REMOVED FROM THE VESSEL TO LIMIT ACCIDENTAL BURNS OR DAMAGE TO THE FRYER.

When the Computer is taken out of the SHORTENING MELT MODE each morning, shortening in the fryer vat will be heated to its SETPOINT temperature, "HEATING" will appear in the display to indicate the shortening temperature is MORE than 20°F (-6.6°C) BELOW the set point temperature. When shortening temperature rises to the SETPOINT temperature, "READY" will appear in the display indicating a COOK CYCLE can be started.

STARTING A COOK CYCLE

To start a cook cycle simply press the product key for the product you wish to cook. Cook time will be displayed "3:00" (example) and this time will immediately start to count down in minutes and seconds. It will count down to " :00" followed by a beeping signal. To turn this signal OFF and reset the Computer, press the same product key used to start the COOK CYCLE.

CANCELLING A COOK CYCLE

If a cook cycle was inadvertently started it may be cancelled two (2) ways:

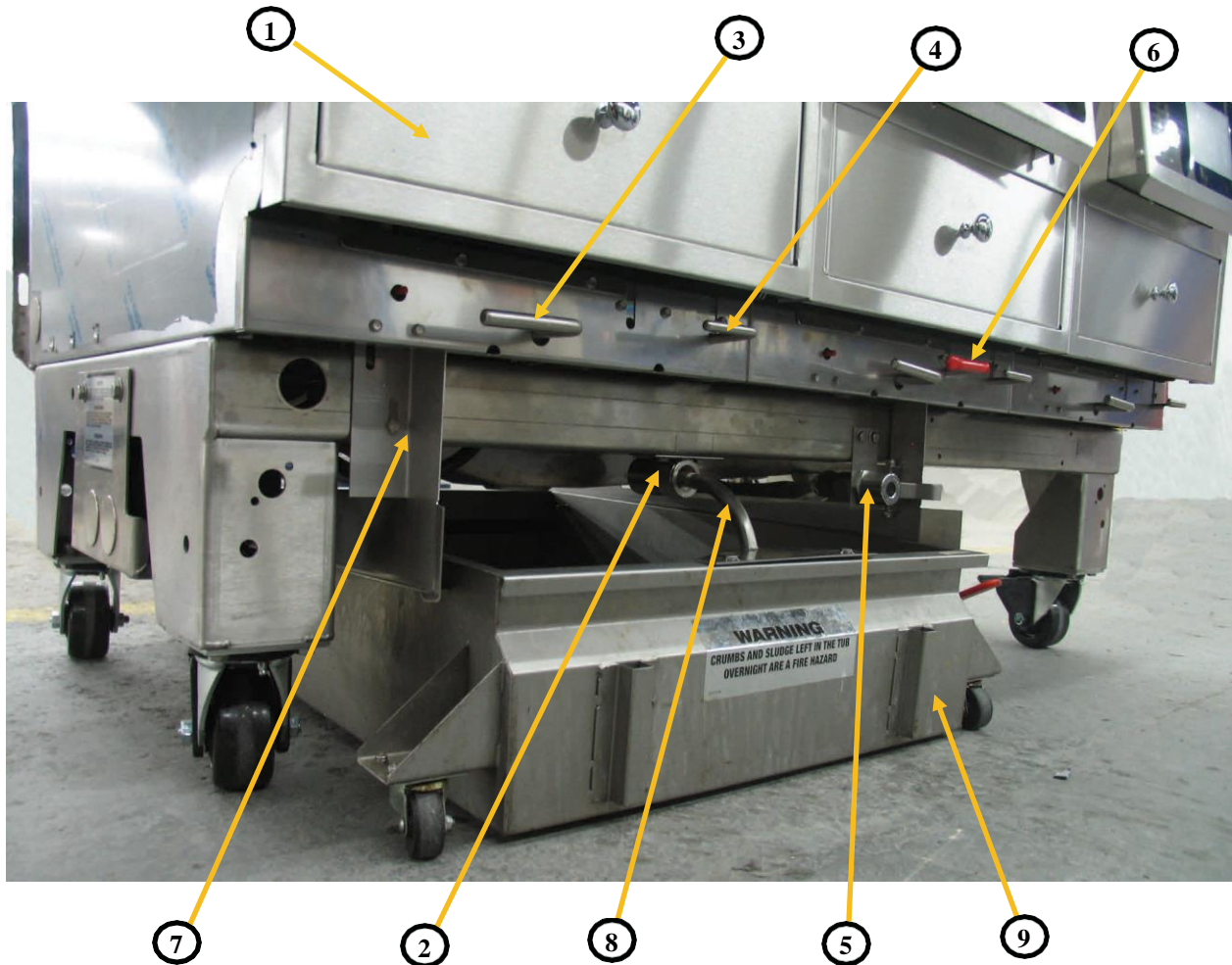
- 1) Press and hold the same product key used to start the cook cycle for 4 SECONDS. This prevents an accidental start of a cook cycle while a product is being cooked.
- 2) A cook cycle can be CANCELLED at any time by turning the fryer ON/OFF Switch to the OFF position.



**SHORTENING FILTRATION PROCEDURE &
WASH WAND OPERATION**

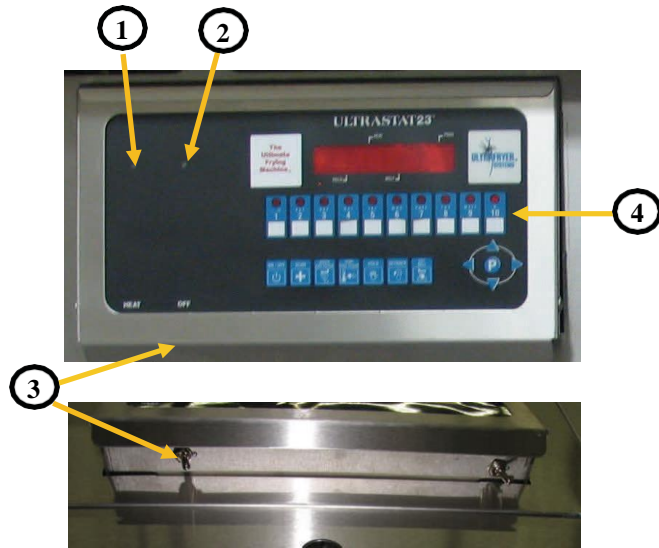
SHORTENING FILTRATION PROCEDURE

Fryer Filtration with Filter Tub and Suction Line Assembly



1	Service access Door
2	Suction Line Connection for Filter Pump (on bulkhead)
3	Shortening Drain Lever (one per vat)
4	Vat Return Lever (one per vat)
5	Wash Wand Connection
6	Red-Handled Lever for Wash Wand (one lever per fryer)
7	Filter Tub Guide
8	Suction Line Assembly
9	Filter Tub

COOK COMPUTER CONTROL PANEL



1	Amber "Power" Indicator Lamp
2	Red "Burner" Indicator Lamp
3	"Heat/Off" Toggle Switch
4	Cook Computer (Ultrastat 23 Computer shown)

Effective and safe filtration is accomplished as follows:

1. Turn on the computer on the vat that is to be filtered.
2. Turn the "HEAT/OFF" Switch (labeled "Cook/Filter" on earlier models) on the fryer vat to "OFF" (or to "Filter" on earlier models) and skim the shortening to remove any floating crumbs. Consult company's operational procedure on the recommended amount of FILTER AGENT in the fryer vat and then thoroughly stir the filter agent into the shortening using the skimmer.

CAUTION:



PRIOR TO PROCEEDING TO THE NEXT STEP, DON SAFETY GOGGLES, NEOPRENE-INSULATED GLOVES AND AN APRON.

3. Carefully open the drain valve on the vat to be filtered by turning the **Drain Lever** slightly Counterclockwise. When the bottom of the filter tub is covered
4. When all shortening in the vat has drained into the filter tub, use the **Drain Rod** to stand the wire rack on one side of the vat.
5. Use the drain rod to break up the sediment caked on the inside of the vat and to pull the sediment Toward and into the drain valve opening.
6. Use a scraper to remove encrusted material from the sides of the vat and a stropping pad to remove Carbon buildup from the top and sides of the heat mechanism.

NOTE

In the event that the wash wand is required, make sure that the vat return lever is turned on to the "CLOSED" position before activating the wash wand, refer to the "Wash Wand Operation" section for further instructions.

7. Once all shortening and debris are drained, turn on the vat pump by turning the **Vat Return Lever** (previously "pump lever") counterclockwise. The pump will begin to return shortening into the vat.

8. Once the vat is filled, turn the **Vat Return Pump Lever** clockwise to the “closed” position to turn the pump off.
9. Repeat the above procedure for each vat.

NOTE:

If the return flow to the vat is decreased, scrape sediment from the filter screen or pad.

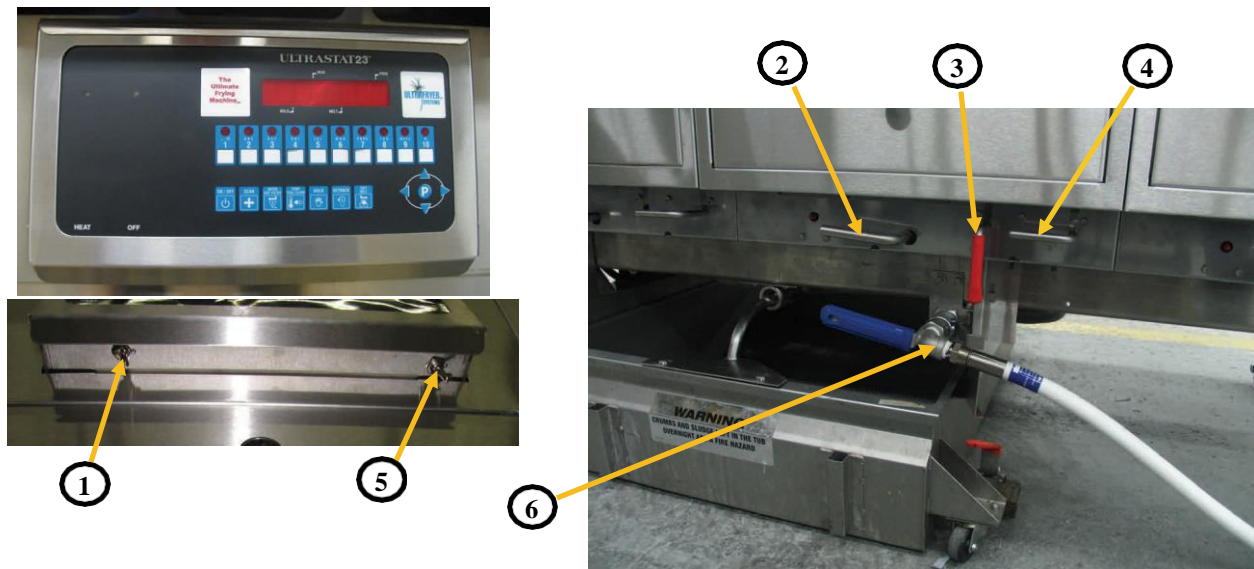
CAUTION:

NEVER USE THE SUCTION HOSE OR ANY OTHER DEVICE TO DRAW THE SHORTENING INTO THE PUMP AND FRYER PLUMBING WITHOUT FIRST GOING THROUGH THE FILTER MEDIA (FILTER SCREEN OR FILTER PAD OR FILTER PAPER). SUSPENDED PARTICLES THAT ARE NOT FILTERED OUT BEFORE ENTERING THE PUMP CAN DAMAGE THE PUMP AND CAUSE BLOCKAGES IN THE FRYER FILTER PLUMBING.




WASH WAND OPERATION

For fryers with “R” style filtration



Wash Wand and Filtration Controls

CAUTION:

1	“Heat/Off” Toggle Switch (labeled “Cook/Filter” on older models)	Must be switched to “off” (or to “filter” on older models) during wash wand operation.
2	Drain Lever	Operates the main drain valve, which drains the shortening from the vat to the drain trough to the filter tub.
3	Wash Wand (Red) Handle	(Shown in the “on” position) Causes shortening to flow into the Wash Wand. NOTE: The Pump Activation Switch (T&R Switch) must also be turned on for Wash Wand operation.  CAUTION: Wash Wand and shortening are HOT!
4	Vat Return Pump Lever	Turns on the pump to the Wash Wand .
5	Pump Activation Switch (T&R Switch)	Activates the pump to the Wash Wand. NOTE: On a 6-Vat fryer, the Pump Activation Switches (T&R Switch) are located under Vat #2 and Vat#5. On a 5-Vat fryer, the switches are located under Vat#2 and Vat#4. Each Pump Activation Switch (T&R Switch) operates independently from any other Pump Activation Switch (T&R Switch) that may be present on the fryer. NOTE: The Wash Wand (Red) handle must also be in the “open” position (handle pointing downward) for Wash Wand operation.
6	Wash Wand Connection	(Shown with Wash Wand installed) NOTE: The Wash Wand must be installed prior to turning the Wash Wand (Red) Handle and activating the Pump Activation Switch (T&R Switch).

Wash Wand Operation Procedure

1. Turn off the computer on the vat that is to be filtered.
2. Turn “Heat/Off” toggle switch to “Off” (if using an older model fryer, then switch the “Cook/Filter” toggle to “Filter”). This is the left-hand switch if the controller box has two switches.
3. Open the drain valve on the vat by turning the drain lever counterclockwise. Allow shortening to enter the drain trough.
4. Insert the wash wand hose end into the wash wand connection fitting. (This is the fitting that does not have the Suction line hose connected to the filter tub).
5. Place the wash wand hose nozzle into the fryer and hold the nozzle firmly against an inner wall. This will prevent the hose from recoiling upward when the filter pump is turned on.
6. Turn the wash wand (red) handle counterclockwise and then switch the **Pump Activation Switch (T&R Switch)** to the “on” position. Shortening will begin to flow into the wash wand.

NOTE:

If the wash wand handle is closed prior to the pump on, the pump motor’s thermal reset sensor will trip and disable the motor. Once this happens, it will be necessary to wait for the motor to cool and then to press the “Reset” switch on the end of the motor before the motor will be operational again.

NOTE:

A drain rod may be required to force sediment through the drain valve.

7. Once sediment is removed, turn the **drain lever** clockwise to the “closed” position. This will allow the vat to refill.
8. When the vat is filled, switch the **Pump Activation Switch (T&R Switch)** to “off”.

CAUTION:



ALWAYS POINT THE WASH WAND TOWARDS THE INNER SIDE WALL OF THE VAT AND AWAY FROM YOURSELF AND CO-WORKERS.

9. Turn the **wash wand (red) lever** clockwise to the “closed” position.
10. Disconnect the wash wand from the wash from the wash wand connection fitting.

NOTE:

When disconnected, let oil in the wash wand hose drain back into the filter tub.

11. Repeat the above steps for each vat.

NOTE:

If the return flow to the vat is decreased, scrape sediment from the filter screen or pad.

CLEANING

GENERAL CLEANING

Any item of equipment operates and lasts longer when kept clean and properly maintained, and the Ultrafryer is no exception. In order for this fryer to provide years of trouble-free service, it must be CLEANED and MAINTAINED according to the instructions listed below.

DAILY

- 1) Clean the fryer surfaces periodically during operating hours with a solution of sanitizer and hot water, and at closing with stainless steel cleaner. If necessary, use a dampened type 7447 RED or 7440 BROWN (heavy duty) Scotch brite pad to remove encrusted material. DO NOT use steel wool, abrasive cloths, cleaners, powders, metal knife, spatula or any metal object to scrape stainless steel! Scratches on stainless steel are almost impossible to remove.
- 2) Filter the shortening in each fryer once a day or according to Company Policy.

CAUTION:



DO NOT ALLOW ANY CLEANING SOLUTION / WATER TO SPLASH INTO THE VESSEL OF HOT COOKING OIL AS IT WILL CONTAMINATE THE OIL AND MAY CAUSE THE OIL TO SPLATTER, CAUSING SEVERE BURNS.

WEEKLY

- 1) BOIL-OUT the fryer vat using Boil Out Compound according to procedures in the cleaning manual provided by the chemical provider.
- 2) Perform steps 1 and 2 listed above under the Daily Cleaning.

PREVENTIVE MAINTENANCE AND TROUBLESHOOTING

Preventive Maintenance

Minimal maintenance is required on the fryer because of its design and the materials used in the manufacturing process. However, some preventive maintenance and inspection must be performed periodically to prevent break downs which could curtail food sales. Any preventive maintenance or inspection should be accomplished with **CAUTION** while the fryer is in operation since **HOT** liquid shortening could cause severe burns. If service or repair is required, all gas and electric power **MUST BE TURNED OFF PRIOR** to performing any service or repair. The following chart describes the minimum items to be inspected and the inspection interval:

Table 1. Daily Preventive Maintenance Inspection Schedule.

Item	Inspection Description
Grease Filters	Clean grease filters in the exhaust hood evening and allow them to dry overnight
Filter Tube	Thoroughly clean the filter tub assembly prior to leaving the store at closing.

Note: Ensure the wash down hose is hung in an upright position (by one end) so shortening can drain into a container.

Table 2. Weekly Preventive Maintenance Inspection Schedule.

Item	Inspection Description
Drain Valve & Shortening return levers	Determine that all levers are securely attached and that they can be easily operated.
Drain Hoses	Inspect the suction line, wash down and if applicable, the shortening disposal hose for any evidence of deterioration.
Plumbing Heat Tape	Ensure that the insulation and electric heat tape that wrapped around the plumbing directly behind the drain through has not been damaged.
Temperature Sensing Probes	During boil-out of the fryer, inspect the temperature and high limit sensing probes for any visual damage.

TROUBLESHOOTING

A. GENERAL: The problems and possible solutions listed in the troubleshooting chart below are typical problems that are frequently encountered. **ONLY** qualified repairmen are to use the troubleshooting chart to repair this fryer. In the event a main burner malfunction occurs, perform the following checks **PRIOR** to contacting a repairman:

1. Check that the fryer electrical plug is connected to an electrical receptacle.
2. Ensure the applicable Circuit Breaker is in the **ON** position and that the fryer ON/OFF switch is in the **ON** position.
3. Ensure the applicable fryer control has been placed in the **EXIT MELT** mode.
4. Ensure the gas supply line quick-disconnect coupling is **SEATED** on the gas manifold fitting.
5. Determine that the blower is operating.

B. TROUBLESHOOTING CHART: Should a problem occur that cannot be corrected after performing the above CHECKS, contact an **AUTHORIZED** repairman and/or Ultrafryer Systems Customer Service 1-800-525-8130 and provide the information acquired while performing these checks.

<u>ITEM</u>	<u>PROBLEMS</u>	<u>POSSIBLE SOLUTIONS</u>
1	Ignition Lockout	1.) Harness connection to gas valve 2.) Gas valve or gas pressure 3.) All harness connections 4.) Electrode 5.) Interconnecting wiring malfunction 6.) Ignition module malfunction 8.) Grounding Status
2	No spark, No blower	1.) Harness connections 2.) Probe lead wires 3.) Open probe 4.) Controller
3	“Puffing” during normal start up	1.) Incorrect gas pressure 2.) Cracked electrode 3.) Electrode gap exceeded
4	Burner lights but will not maintain flame	1.) Igniter / flame sense misalignment 2.) Insufficient gas pressure
5	Excessive Heat	1.) Incorrect temperature offset selected 2.) Set Temperature exceeding 400 deg F 3.) Temperature probe malfunction 4.) Cooking control malfunction 5.) Interface board malfunction 6.) Gas pressure incorrect
6	Low heat	1.) Incorrect temperature offset selected 2.) Cooking control malfunction 3.) Temperature probe malfunction 4.) High limit tripped 5.) Interface board malfunction 6.) Gas pressure incorrect
7	Intermittent problems	1.) High ambient temperatures 2.) Wiring connections loose
8	No power to cooking control, fryer does not heat	1.) Is display “OFF” when powered 2.) Main circuit breaker off 3.) Transformer inoperative 4.) Interconnecting wiring malfunction

TROUBLESHOOTING CHART CONTINUED:

Should a problem occur that cannot be corrected after performing the above CHECKS, contact an **AUTHORIZED** repairman and/or Ultrafryer Systems Customer Service 1-800-525-8130 and provide the information acquired while performing these checks.

<u>ITEM</u>	<u>PROBLEMS</u>	<u>POSSIBLE SOLUTIONS</u>
9	High limit thermostat shutting down system	1.) Shortening level below minimum fill line 2.) Probe malfunction 3.) Controller malfunction
10	Excessive time to melt shortening	1.) Melt cycle timing incorrect 2.) Insufficient gas pressure 3.) Probe malfunction 4.) Control malfunction
11	Dry fire fry tank	1.) No shortening in vat 2.) Control malfunction 3.) Probe malfunction

CAUTION:



ENSURE REPAIRMEN ARE ADVISED THAT FRYER RESTRAINTS MUST BE DISCONNECTED/CONNECTED. IF A FRYER IS TO BE MOVED DURING MAINTENANCE OR REPAIR, AND THAT ELECTRICAL POWER AND GAS MUST BE TURNED OFF PRIOR TO PERFORMING ANY MAINTENANCE OR REPAIR.

**TECHNICAL ASSISTANCE, WARRANTY PARTS &
REPLACEMENT PARTS ASSISTANCE**

**TECHNICAL ASSISTANCE - Contact an authorized service agent or the Customer Service Department, Ultrafryer Systems at 1-800-525-8130 for Technical Assistance.
E-Mail technical assistance at: techserv@ultrafryer.com**

**WARRANTY PARTS - Contact the Customer Service Department, Ultrafryer Systems at 1-800-525-8130 for Parts Assistance.
E-Mail Customer Service at: techserv@ultrafryer.com**

REPLACEMENT PARTS - Contact the Customer Service Department, Ultrafryer Systems at 1-800-525-8130 for Replacement Parts Assistance.

RECOMMENDED SPARE PARTS

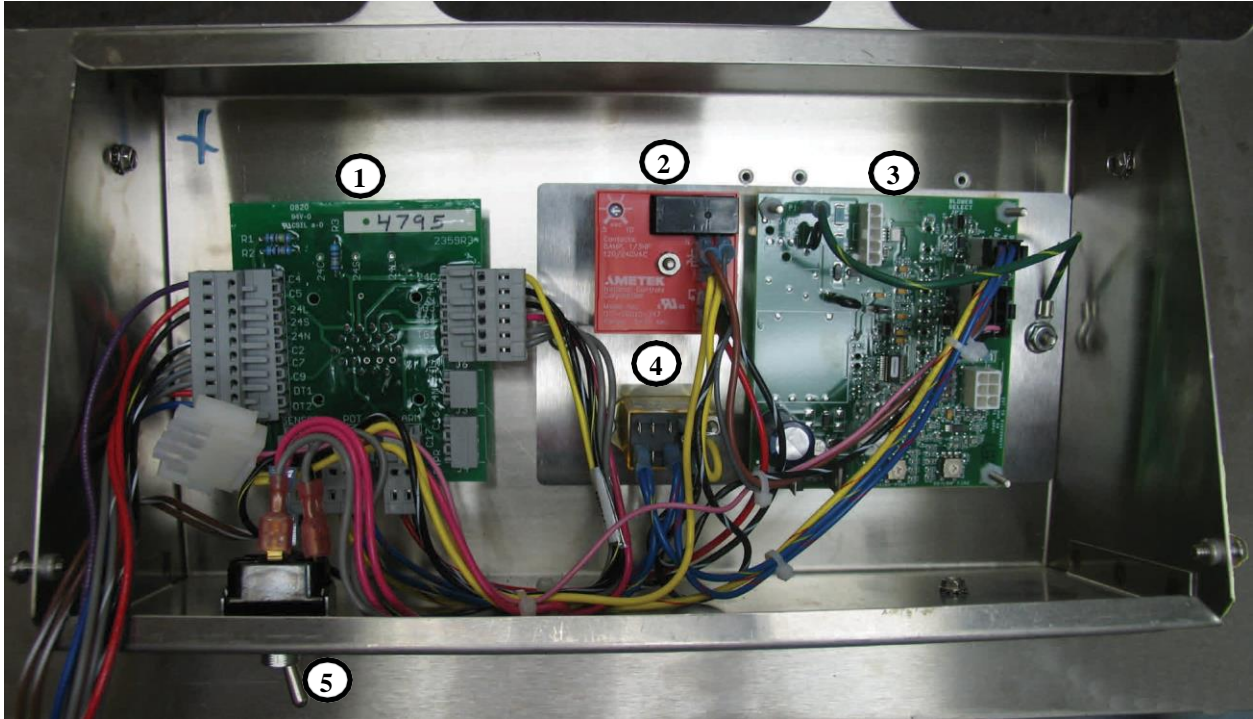
A. RECOMMENDED SPARE PARTS

To minimize downtime on the premix gas fryer upon failure of a component part, at least one (1) of the following items should be kept as a spare part in a local area:

PREMIX GAS FRYER RECOMMENDED SPARE PARTS LISTING	
<u>DESCRIPTION</u>	<u>PN</u>
Blower Premix 5.0 Power Burner and Gas Valve (80,000 BTU/hr (84.35 MJ/hr))	17A033
Blower Premix 5.0 Power Burner and Gas Valve (110,000 BTU/hr (116.06 MJ/hr))	17A031
Gasket, Blower Motor / Manifold IDE	22A810
Burner Infrared	22A818
Rod, Ignitor Infrared Burner F/22A818	18610
Gasket, Mount Infrared Burner	22A817
Module, Ignitor Spark Single	18A385
Relay, 24V AC Flange Mounted	18A034
Relay, 24V AC DELAY ON MAKE	18A102
Control, 24VAC Universal Gas Blower (PWM)	23A462
Switch, Air Pressure	18A291
Switch, HI Limit	19B783
Probe, Temp Thermistor	18A006

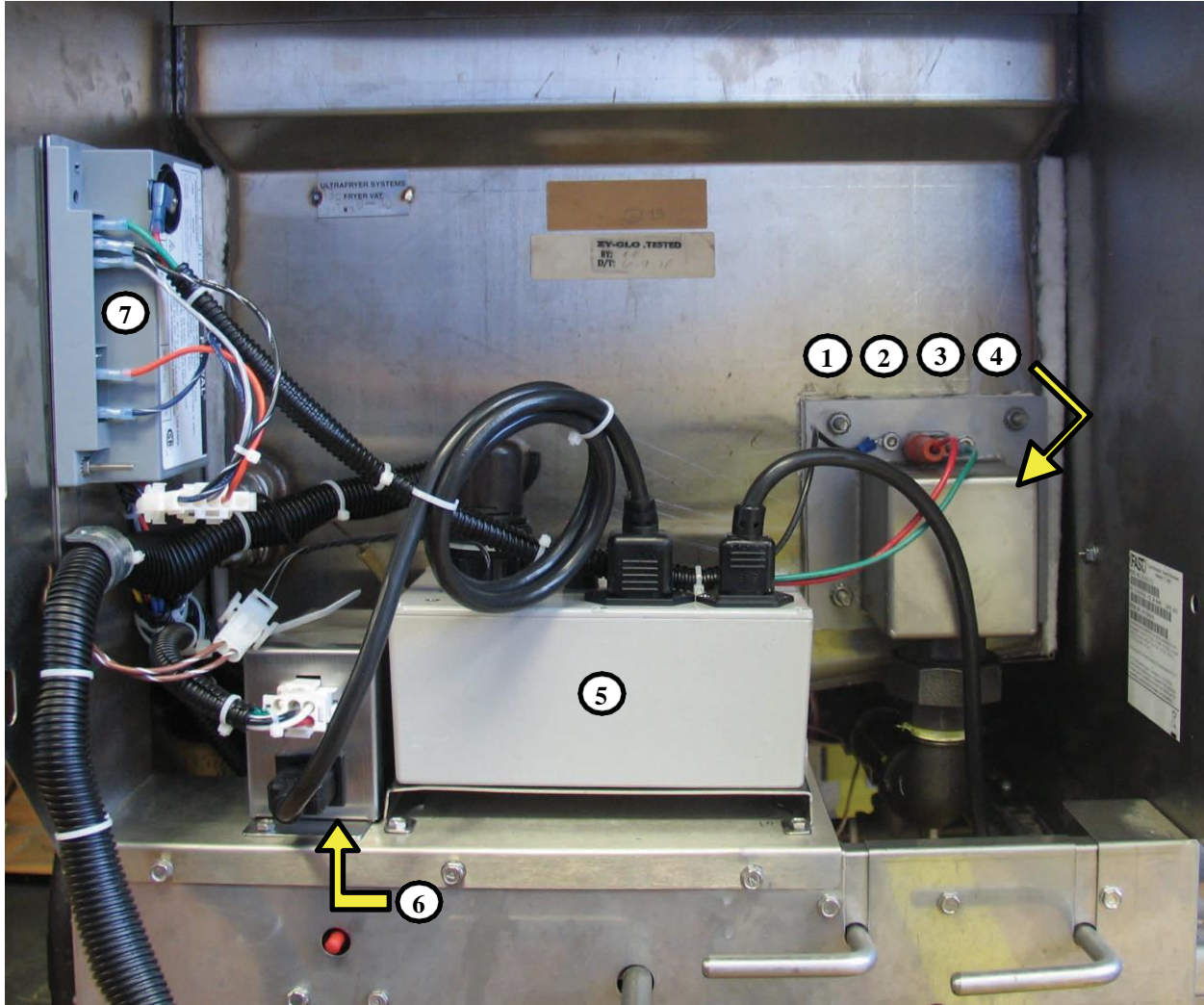
PARTS IDENTIFICATION

Inside Controller Box



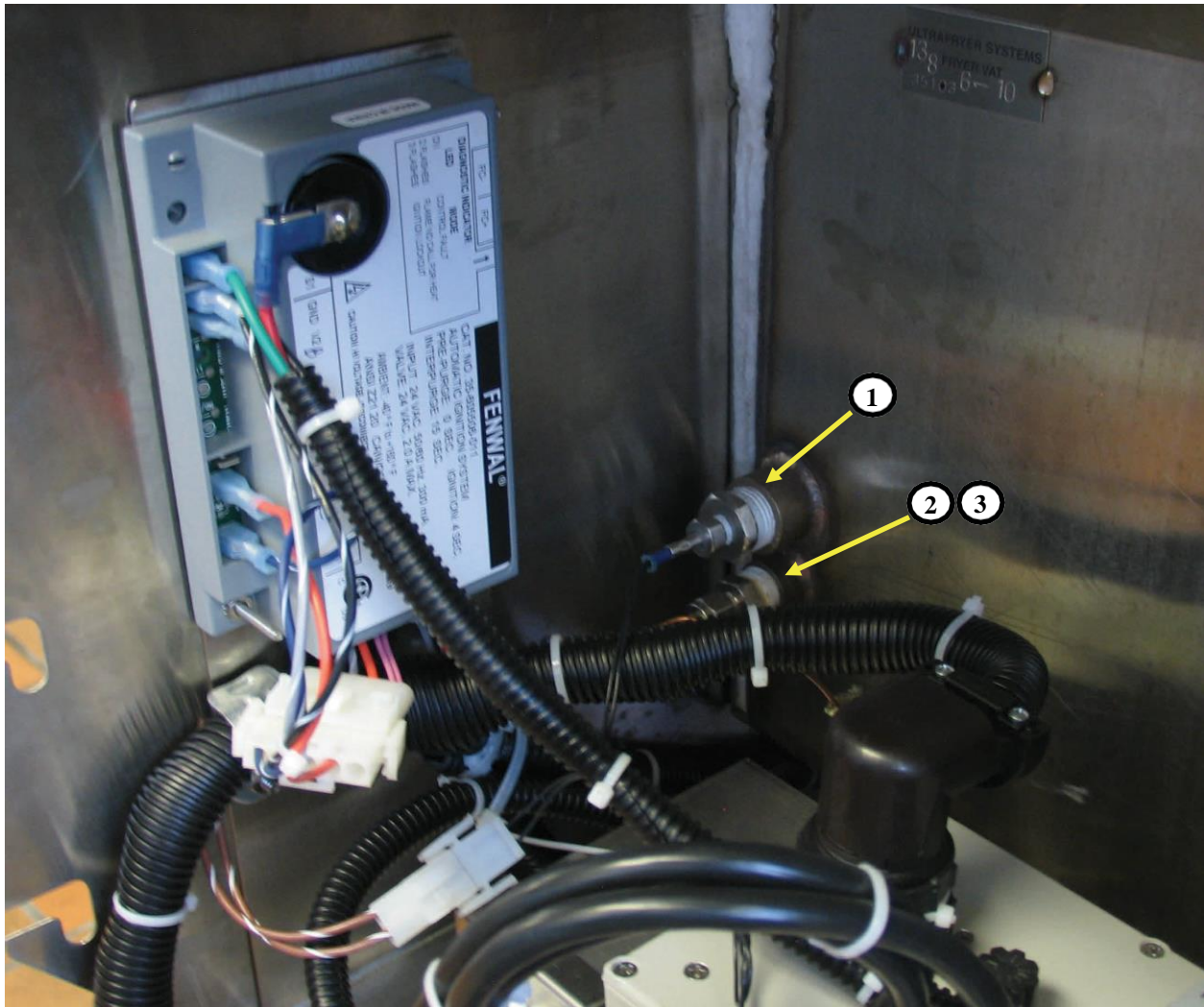
1	22A342	Board, Interface 24 pin CON PNP
2	18A102	Relay, 24 VAC Delay ON MAKE
3	23A462	Control, 24 VAC Universal Gas Blower (PWM)
4	18A034	Relay, 24 VAC Flange-mounted
5	18A081	Switch Toggle DPST 15A 125V

Cabinet Front View



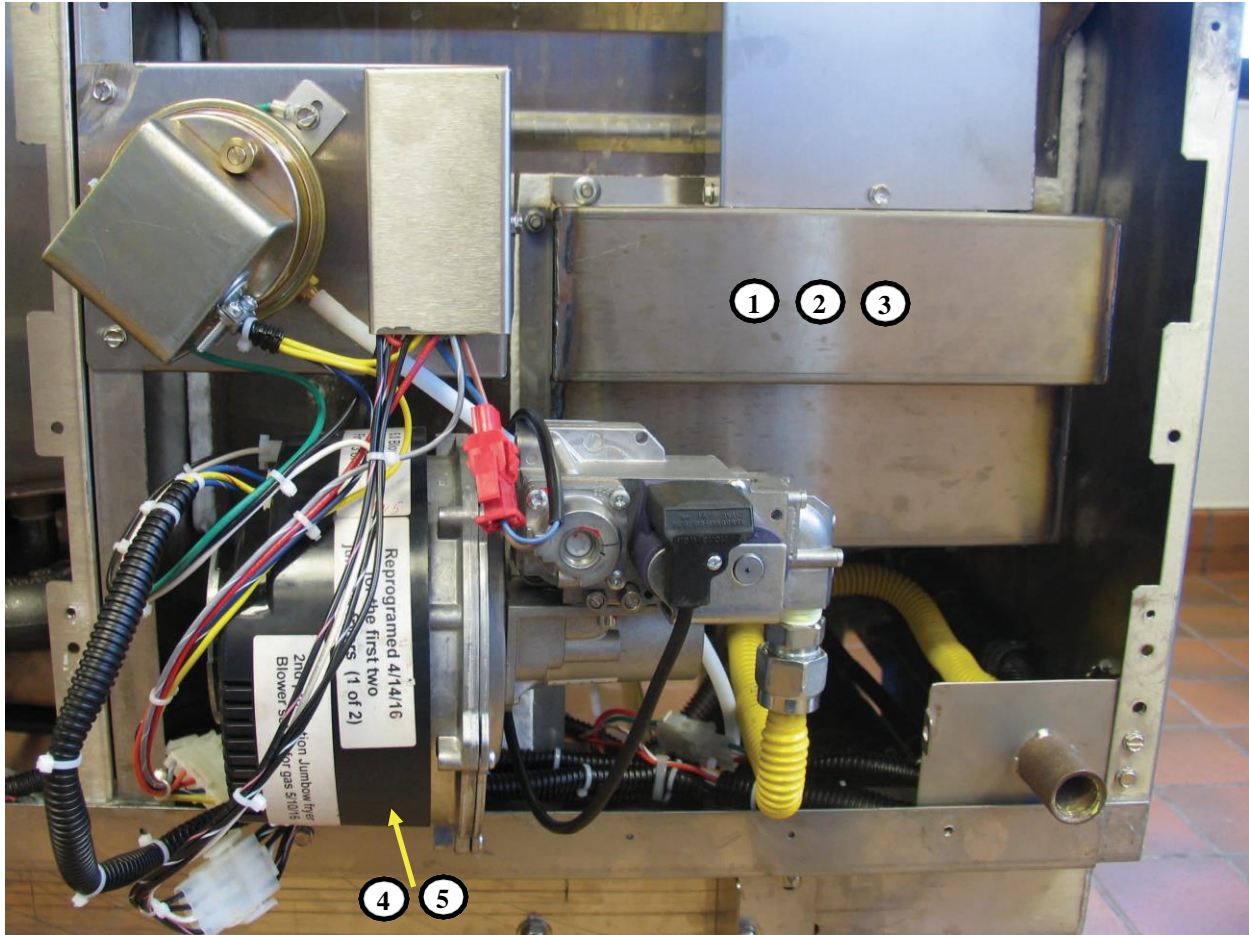
1	19D042	Box Mount, Infrared Burner
2	22A818	Burner Infrared
3	18611	Rod, Ignitor Infrared Burner
4	22A817	Gasket, Mount Burner Box
5	18A313	Box, Power Distribution No ACC PNP
6	12D132	Box Assembly, Pump Control
7	18A385	Module, Ignitor Spark Single

Cabinet Side View



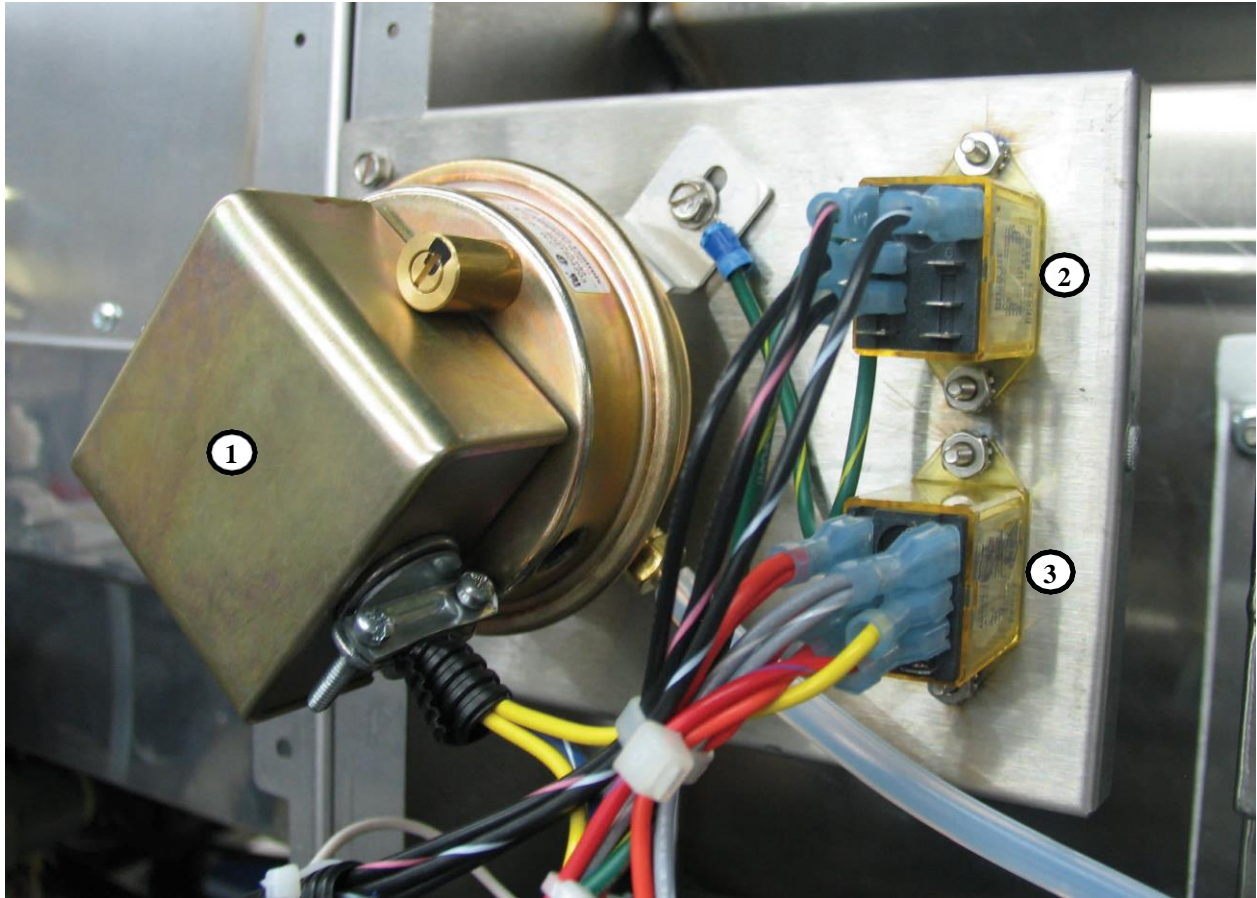
1	18A006	Probe, Temp Thermistor
2	19B783	Switch, Hi Limit
3	24A270	Fitting, Compression Male 3/8 NPT

Cabinet Rear View



1	19D059	Box, Blower w/Flue
2	22A819	Gasket, Blower Box
3	19D079	Baffle, Agitator Rear
4	17A033	Blower Premix 5.0 Power Burner/Gas Valve (80,000 BTU/hr (84.35 MJ/hr))
4	17A031	Blower Premix 5.0 Power Burner/Gas Valve (110,000 BTU/hr (116.06 MJ/hr))
5	22A810	Gasket, Blower Motor/Manifold
6	18A291	Switch, Air Pressure SMD 1204
7	18A034	Relay, 24 VAC Flange Mounted
8	18A034	Relay, 24 VAC Flange Mounted

**Cabinet Rear View
Without Relay Cover**



1	18A291	Switch, Air Pressure SMD 1204
2	18A034	Relay, 24 VAC Flange Mounted
3	18A034	Relay, 24 VAC Flange Mounted

SERVICE PROCEDURES AND ADJUSTMENTS

HARMONIC TONE

Harmonic Tone (hum) at First Start, fryer will begin heating in low fire and a few seconds later go to high fire. There will be a harmonic tone that is NORMAL to hear. As fryer continues to heat, harmonic tone will dissipate and become less noticeable.

GAS VALVE

WARNING:



DISCONNECT THE ELECTRICAL POWER TO THE FRYER.

WARNING:



SHUT OFF THE GAS BEFORE SERVICING THE FRYER.

The gas valve is considered part of the Blower Premix 5.0 Power Burner and Gas Valve assembly. If

WARNING:



ALL GAS JOINTS DISTURBED DURING SERVICING MUST BE CHECKED FOR LEAKS. CHECK WITH A SOAP AND WATER SOLUTION (BUBBLES). DO NOT USE AN OPEN FLAME

the gas valve fails and needs to be replaced, you must order a complete blower / gas valve assembly (burner). The reason for this is every blower / gas valve assembly (burner) is set up at the factory to operate at the most efficient level possible. This set up procedure can not be duplicated inn the field.

MODULATING GAS VALVE ADJUSTMENTS

WARNING:



DISCONNECT THE ELECTRICAL POWER TO THE FRYER.

WARNING:



SHUT OFF THE GAS BEFORE SERVICING THE FRYER.

The modulating gas valve is adjustable at the factory and requires no adjustments. If the modulating gas valve needs to be

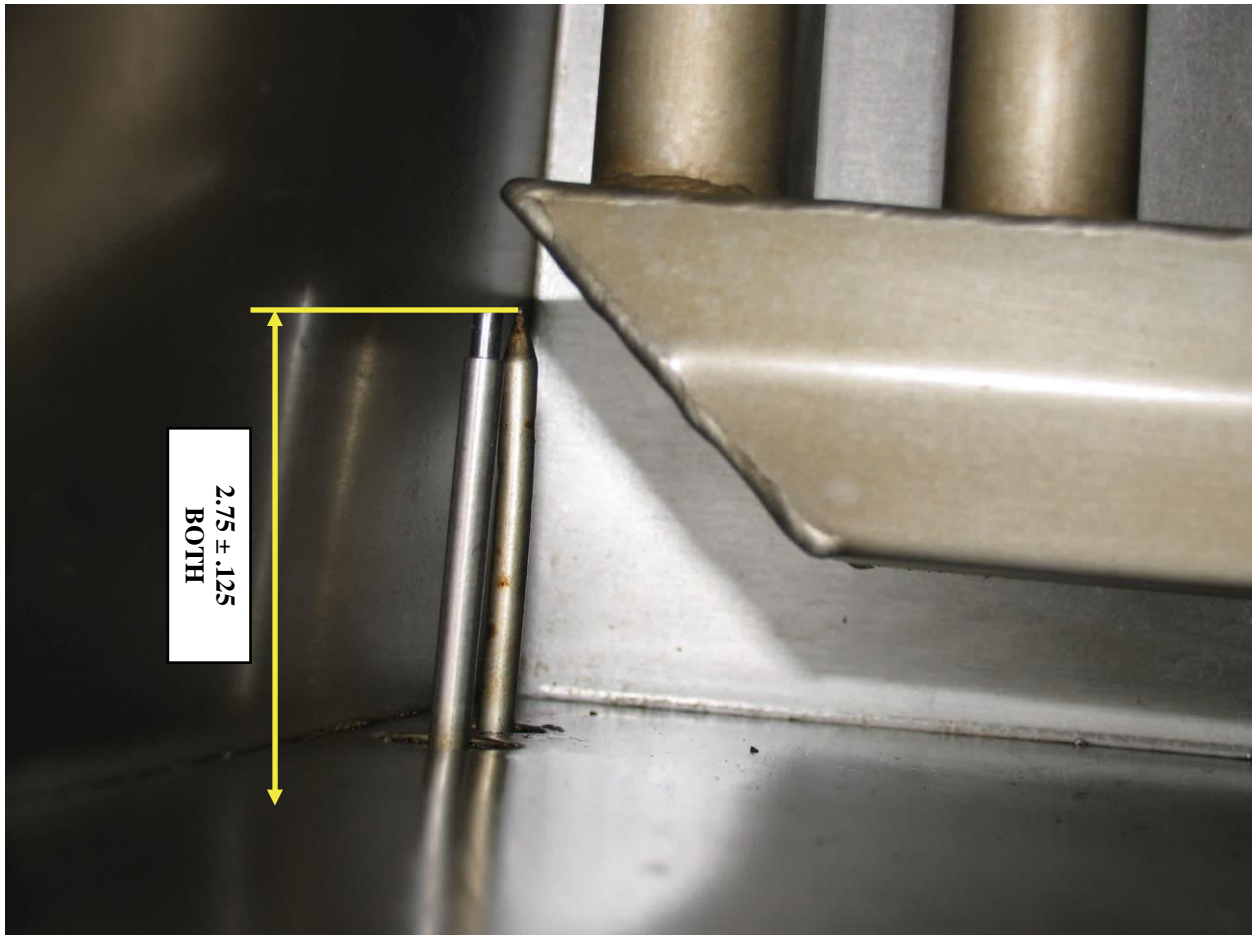
WARNING:



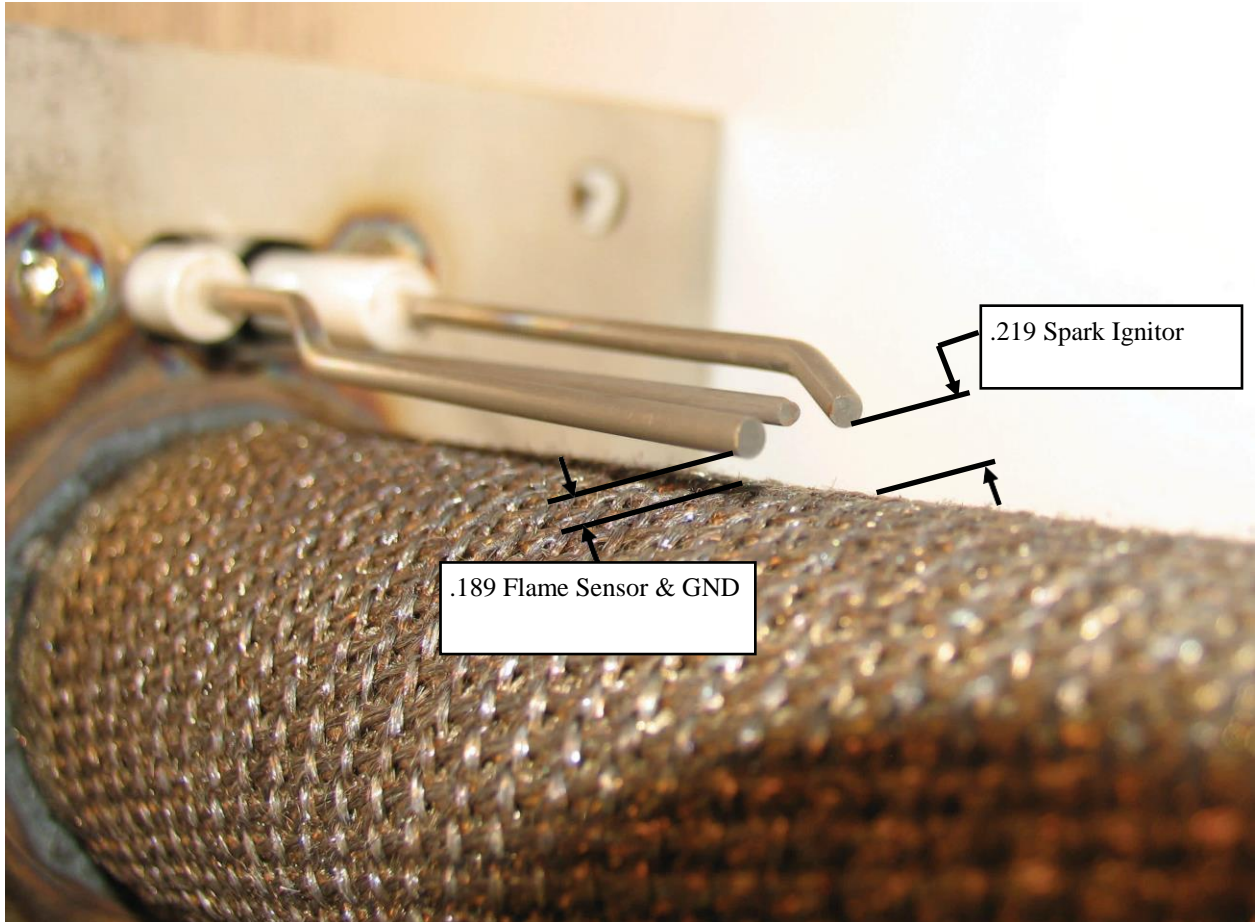
ALL GAS JOINTS DISTURBED DURING SERVICING MUST BE CHECKED FOR LEAKS. CHECK WITH A SOAP AND WATER SOLUTION (BUBBLES). DO NOT USE AN OPEN FLAME

replaced, the new gas valve from the factory will be adjusted properly and will only need to have the gas pressure verified coming into the gas valve

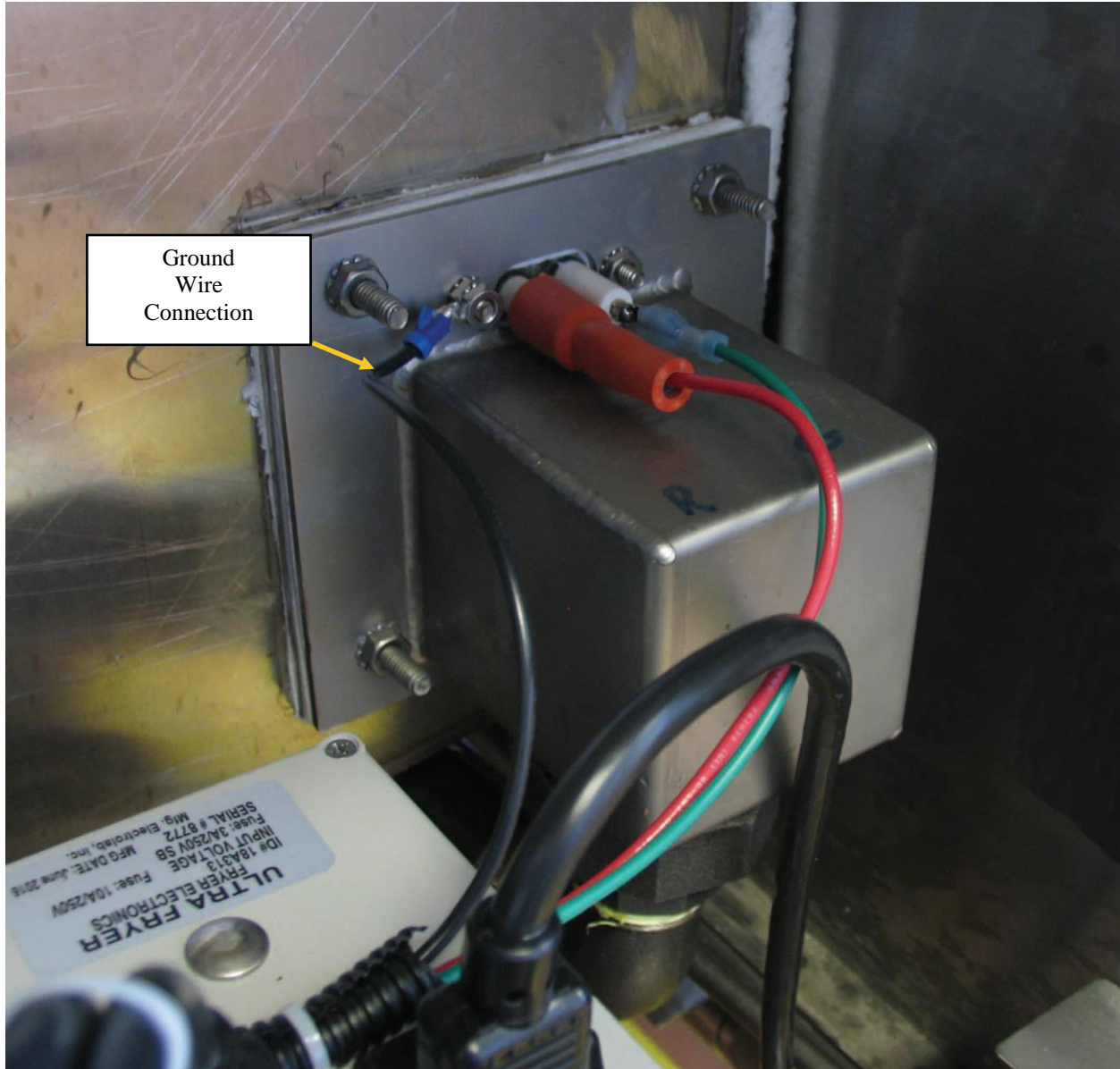
Temperature Probe & Hi Limit



Infrared Burner Spark Ignitor and Flame Sensor Settings



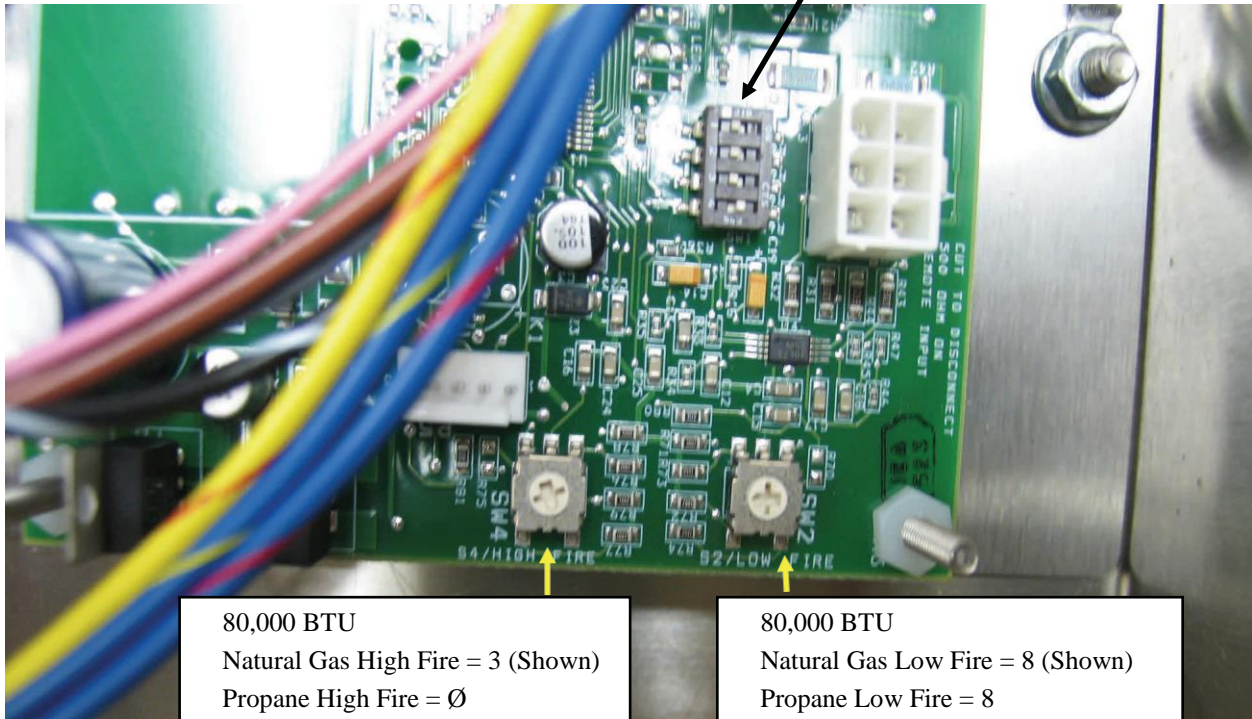
Ground Rod Ground Wire Connection



Control, 24 VAC Universal Gas Blower (PWM) Settings

Gas Blower Dip Switch Settings

- #1 OFF
- #2 OFF
- #3 OFF
- #4 ON



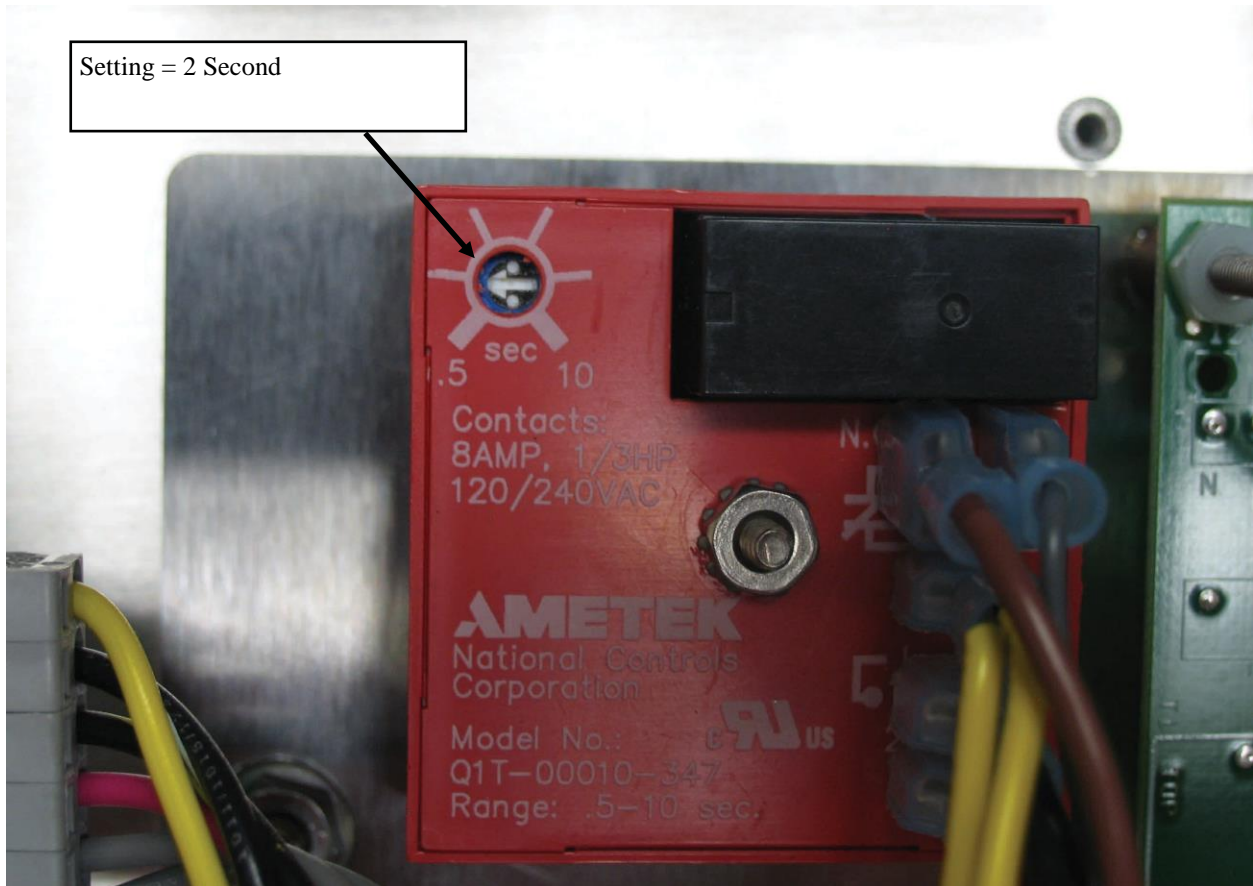
80,000 BTU
 Natural Gas High Fire = 3 (Shown)
 Propane High Fire = Ø

110,000 BTU
 Natural Gas High Fire = 9
 Propane High Fire = B

80,000 BTU
 Natural Gas Low Fire = 8 (Shown)
 Propane Low Fire = 8

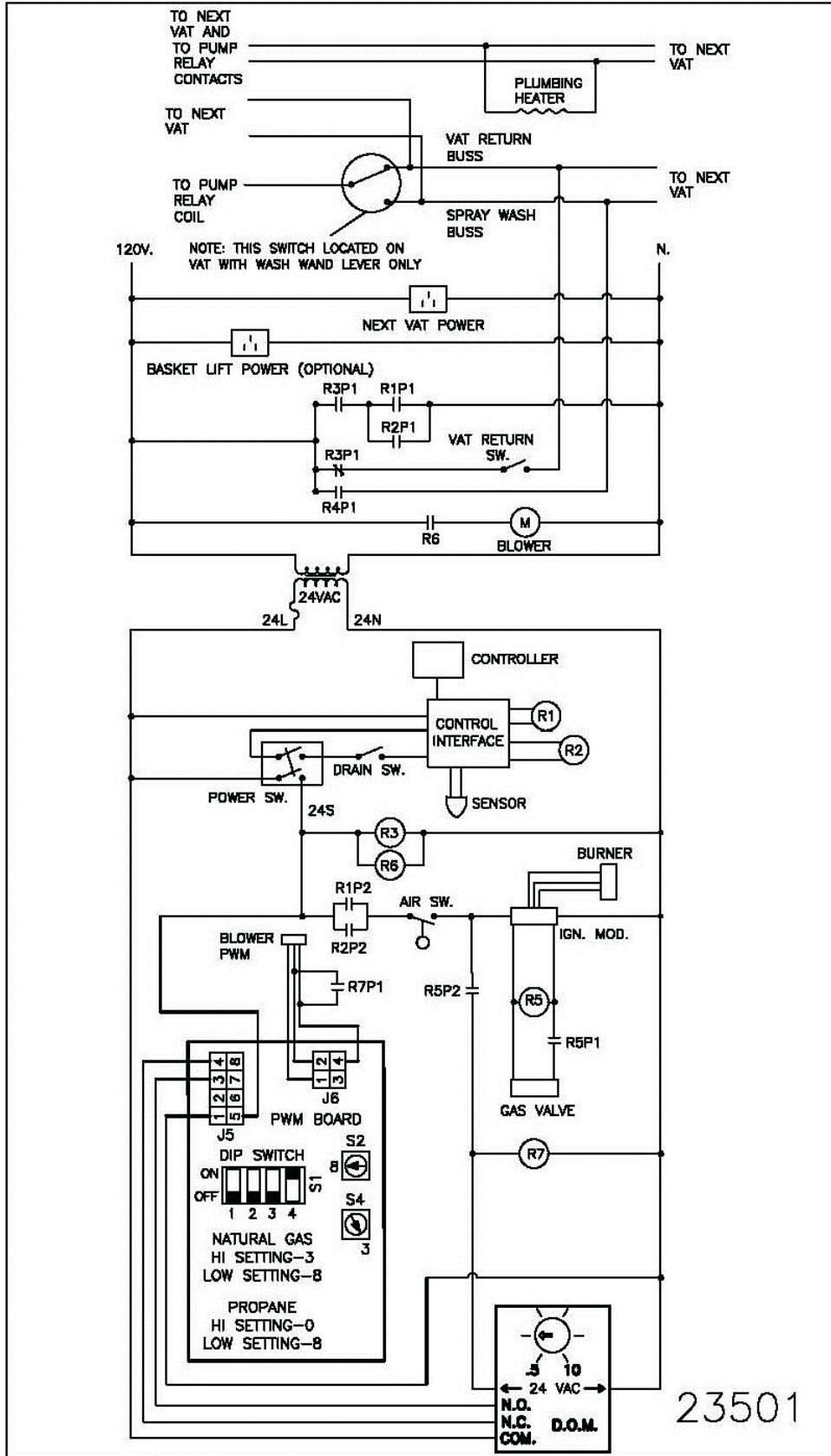
110,000 BTU
 Natural Gas Low Fire = 8
 Propane Low Fire = 8

Delay on Make Setting

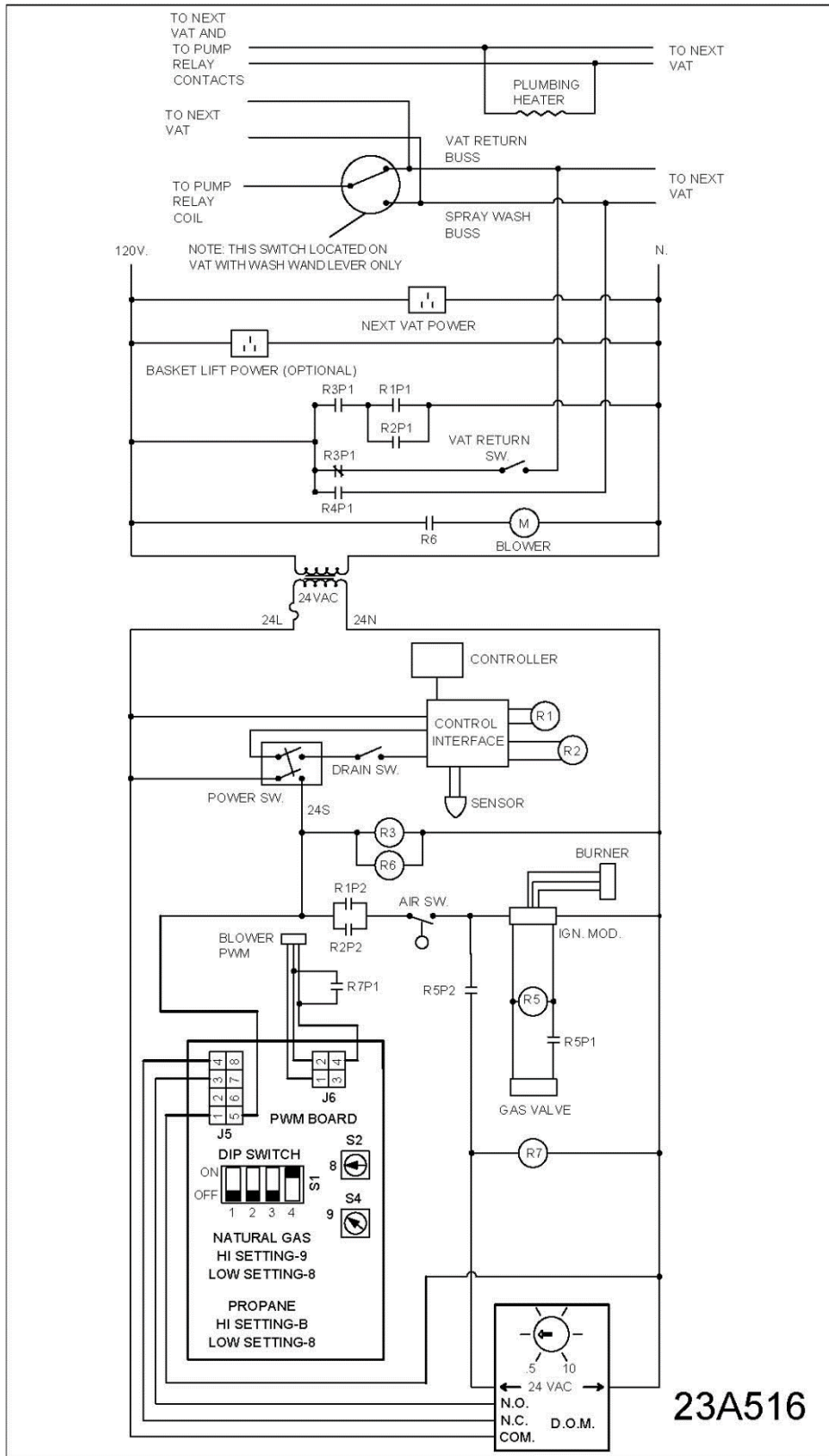


LADDER AND SCHEMATIC DIAGRAM

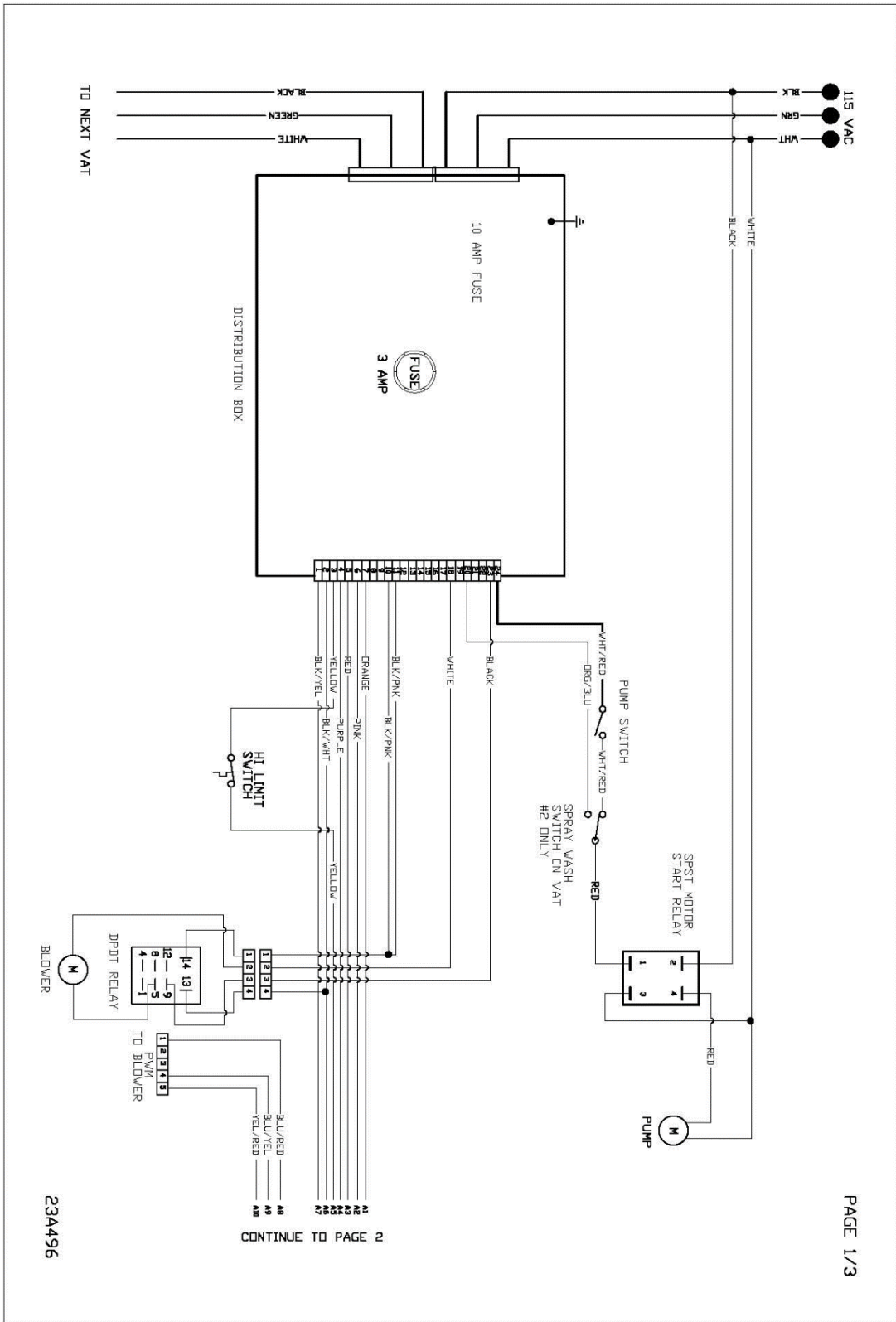
IR-18/20 80,000 BTU (84.35 MJ/hr)



IR-18 110,000 BTU (116 MJ/hr)

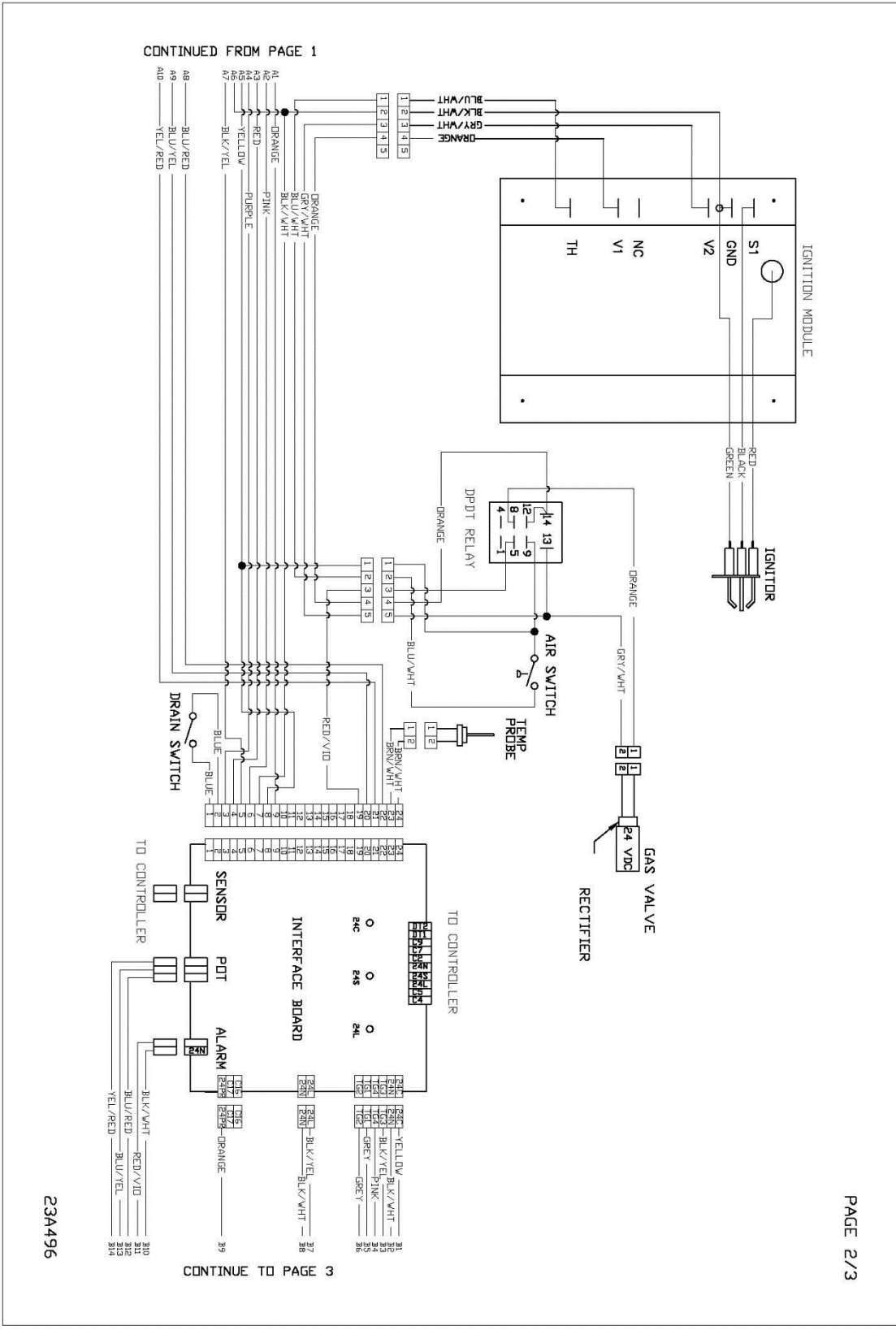


IR-18/20



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- 48 — BLU/RED
- 49 — BLU/YEL
- A10 — YEL/RED
- 41 — DRANG
- 42 — GRY/WHT
- 43 — BLU/WHT
- 44 — PURP.E
- 45 — YEL/VDV
- 46 — BLK/YEL

- 1 — BLU/WHT
- 2 — GRY/WHT
- 3 — DRANG
- 4 — BLU/WHT
- 5 — GRY/WHT

- 1 — RED
- 2 — BLU/ADK
- 3 — GREEN

- 1 — DRANG
- 2 — GRY/WHT
- 3 — BLU/WHT
- 4 — PURP.E
- 5 — YEL/VDV
- 6 — BLK/YEL

- 1 — BLU/WHT
- 2 — GRY/WHT
- 3 — DRANG
- 4 — BLU/WHT
- 5 — GRY/WHT

- 1 — BLU
- 2 — BLU

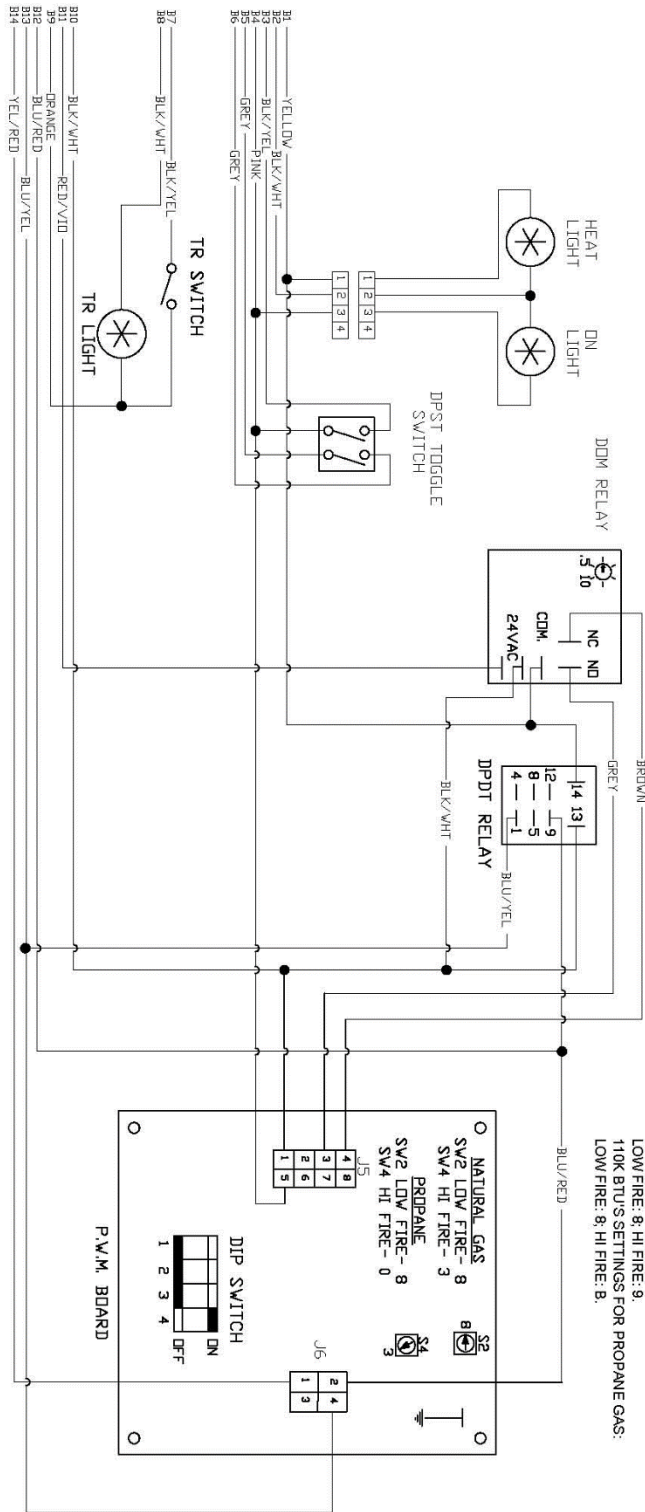
- 1 — BLU/WHT
- 2 — RED/VDV
- 3 — BLU/YEL
- 4 — YEL/RED
- 5 — BLU/YEL

- 37 — YEL/VDV
- 38 — BLK/YEL
- 39 — DRANG
- 40 — BLK/WHT
- 41 — GRY/WHT
- 42 — BLK/YEL/PNK
- 43 — GRY
- 44 — GRY Y

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NOTE:
 PMM SETTINGS ARE FOR 80K BTUS.
 110K BTUS SETTINGS FOR NATURAL GAS:
 LOW FIRE: 8; HI FIRE: 9;
 110K BTUS SETTINGS FOR PROPANE GAS:
 LOW FIRE: 8; HI FIRE: 8.