



***DEXTER***<sup>®</sup>  
***LAUNDRY***

**PLEASE USE THE TABS LOCATED ON THE  
RIGHT AND LEFT SIDES OF THE DOCUMENT  
TO ADVANCE TO EACH SECTION.**



**DEXTER**  
LAUNDRY











WCAD-Series Vended Washers  
T300, T400, T600 (100G)  
& T350, T450 (Express Washers 200G)

Parts & Service Manual

## Equipment Safety Warnings

### Symbols and Terminology Used in this Equipment

	Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury.
	Indicates a potentially hazardous situation, which if not avoided could result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. Minor burns, pinch points that result in bruises and minor chemical irritation.
	Indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.
	This is the user caution symbol. It indicates a condition where damage to the equipment resulting in injury to the operator could occur if operational procedures are not followed. <b>TO REDUCE THE RISK OF DAMAGE OR INJURY, refer to accompanying documents; follow all steps or procedures as instructed.</b>
	This is the electrical hazard symbol. It indicates that there are <b>DANGEROUS HIGH VOLTAGES PRESENT</b> inside the enclosure of this product. <b>TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, do not attempt to open the enclosure or gain access to areas where you are not instructed to do so. REFER SERVICING TO QUALIFIED SERVICE PERSONEL ONLY</b>
	Caution! There are sharp edges on various sheet metal parts internal to the enclosure. Use safety consciousness when placing or moving your hands while working in the interior of this equipment.
	Caution! To reduce the risk of damage to the Water Inlet Valve, do not supply inlet water with a temperature that exceeds 70° C.  Caution! To reduce the risk of fire or explosion, do not operate this equipment in any hazardous classified (ATEX) environment.

## Equipment Safety Warnings Symbols and Terminology Used in this Equipment



Warning! Do not operate equipment if door glass is damaged in any way.



Warning! Keep clear of rotating parts.



Prohibited! Do not enter this equipment or space.



Prohibited! Do not step or stand on this equipment.



Prohibited! Do not operate without all guards and covers in place.



Prohibited! Do not operate without all guards and covers in place.



Prohibited! Do not wash clothing impregnated with flammable liquids (petrochemical).



Prohibited! Do not allow children to play in or around equipment.

<b>DANGER</b>	Indicates an imminently hazardous situation, which if not avoided, <b>will result</b> in death or serious injury.
<b>WARNING</b>	Indicates a potentially hazardous situation, which if not avoided <b>could result</b> in death or serious injury.
<b>CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, <b>may result</b> in minor or moderate injury. It may also be used to alert against unsafe practices. Minor burns, pinch points that result in bruises and minor chemical irritation.
<b>NOTICE</b>	Indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.
	This is the user caution symbol. It indicates a condition where damage to the equipment resulting in injury to the operator could occur if operational procedures are not followed. <b>TO REDUCE THE RISK OF DAMAGE OR INJURY, refer to accompanying documents; follow all steps or procedures as instructed.</b>
	This is the electrical hazard symbol. It indicates that there are <b>DANGEROUS HIGH VOLTAGES PRESENT</b> inside the enclosure of this product. <b>TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, do not attempt to open the enclosure or gain access to areas where you are not instructed to do so. REFER SERVICING TO QUALIFIED SERVICE PERSONEL ONLY</b>
	Caution! To reduce the risk of fire or explosion, do not operate this equipment in any hazardous classified (ATEX) environment.



## WARNING



- All washers must be installed in accordance to all applicable electrical, plumbing and all other local codes.
- These installation and operation instructions are for use by qualified personnel only. To avoid injury and electrical shock, do not perform any servicing other than that contained in the installation and operation instructions, unless qualified.



Do not install washers in an explosive atmosphere.



- Care must be stressed with all foundation work to ensure a stable unit installation, eliminating possibilities of excessive vibration.
- Foundation must be level within 13 mm to ensure proper washer operation.



Do not operate washer if door glass is damaged in any way.



Do not wash clothing impregnated with flammable liquids (petrochemical).



## WARNING



Children should be supervised to ensure they do not operate or play in or around equipment.









Keep all panels in place to protect against electrical shock and injury and add rigidity to washer.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

A washer should not be allowed to operate if any of the following occur:

- Excessive high water level.
- Machine is not connected to a properly earthed circuit.
- Door does not remain securely locked during the entire cycle.
- Vibration or shaking from an inadequate mounting or foundation

	<b>Warning! Do not operate equipment if door glass is damaged in any way.</b>
	<b>Warning! Keep clear of rotating parts.</b>
	<b>Prohibited! Do not enter this equipment or space.</b>
	<b>Prohibited! Do not step or stand on this equipment.</b>
	<b>Prohibited! Do not operate without all guards and covers in place.</b>
	<b>Prohibited! Do not operate without all guards and covers in place.</b>
	<b>Prohibited! Do not wash clothing impregnated with flammable liquids (petrochemical).</b>
	<b>Prohibited! Do not allow children to play in or around equipment.</b>

	<b>Prohibited! Do not attempt to open, touch, or proceed before referring to the manual or unless qualified.</b>
	<b>Mandatory! Read all supporting documentation before operating or maintaining equipment.</b>
	<b>Mandatory! Disconnect power before servicing equipment.</b>
	<b>Mandatory! Lock out and tag out before servicing this equipment.</b>
	<b>Mandatory! Disconnect water supply before servicing equipment.</b>
	<b>Mandatory! Children should be supervised to ensure they do not operate equipment.</b>



Top Panel Removal.....	46	PCB Transformer Step Down.....	58
Front Panel Removal .....	46	Controls Transformer.....	58
Back Panel Removal.....	46	Main Relay Printed Circuit Board .....	58
Drain Valve Access.....	46	Pressure Switch .....	58
Drain Valve Cleaning .....	46	Power Connection Terminal Block .....	59
Masking Ring (Door Lock Cover)		LED Printed Circuit Board Temperature & Start/ Display Push Button.....	59
Removal.....	46	Emergency Stop Button & Switch Assembly.....	59
Detergent Dispenser .....	46	Add Bleach LED .....	59
Vacuum Breaker/ Air Gap.....	47	Delta Variable Frequency Drive .....	60
Water Valves .....	47	Delta VFD Motor Leads.....	60
Door Lock Assembly Operation .....	47	Delta VFD Dynamic Braking	
Adjustment for the Door Lock		Resistors .....	60
Assembly .....	47 & 48	Delta VFD Cooling Fan .....	60
Adjusting the Loading Door .....	49		
Loading Door Removal .....	49	<b>Section 7:</b>	
Loading Door Hinge Removal.....	49	Machine Electrical & Wiring Schematics	
Loading Door Disassembly .....	50	Start Circuit .....	62
Loading Door Reassembly .....	50	Fill Circuit .....	62 & 63
Control Panel Name Plate Decal.....	50	Wash Circuit .....	63
Name Plate Removal .....	50	Drain, Rinse 1 & 2 & Final Rinse Circuit .....	63
Re-Installation of Name Plate.....	50	Extract Circuit.....	63
Outer Cabinet Removal .....	51	Thermoactuator and Shake Out Circuit....	63 & 64
Door Locking Solenoid .....	52	End of Cycle Circuit.....	64
Door Locking Gear Motor.....	52	Machine Electrical & Wiring Schematics	
Thermoactuators .....	52	.....pages 66 - 75	
Lock Thermoactuator .....	52		
Unlock Thermoactuator .....	52	<b>Section 8:</b>	
Drive Belt Removal.....	52	<b>Parts Data</b>	
Tub Back, Bearing and Cylinder Assembly .....	53	A-Series Accessories.....	78
Basket Pulley, Bearing Housing,		Harness by Model.....	79
Water Seals & Tub Back.....	54 & 55	Cabinet and Front Panel Group Part #	
Drive Motor Removal.....	56	by Model .....	80 & 82
T-300 Bolt Torque Chart .....	56	Rear View Access Part # by Model.....	84 & 85
T-350, T-400, T-450 & T-600		Cylinder, Seals & Bearings Part #	
Bolt Torque Chart .....	56	by Model .....	86 & 87
		Door Lock Part # by Model .....	88 & 89
<b>Section 6:</b>		Loading Door Part # by Model .....	92 & 94
Control Mounting Trough.....	58	Water Inlet Valve Breakdown Part # by Model	95
Main Data Communication Cable.....	58	Water Inlet Part # by Model.....	96 & 97
Circuit Breaker/Fuse .....	58	Drain Valve Group Part # by Model.....	98
Main Control Printed Circuit Board.....	58		

Chassis and Drain Part # by Model ....	100 & 101
Electrical Components -	
Top Compartment .....	102 & 103
Control Panel Part # by Model.....	104 & 105
Labels and Diagrams All WCAD Models .....	106

## Section 9:

### Coin Handling

Coin Handling Group Part # by Micro switch	
.....	108 & 109
Coin Drop Acceptor Optical switch .....	110
Kit Electronic Acceptor.....	111
Electronic Drop Switch Settings (U.S. & Canada).	
.....	112
Matianace Electronic Drop .....	113-116
Schematics & Diagrams .....	118-157

## Section 10:

### EasyCard Interface

Integrated Easy Card Control Panel Part #	
by Model .....	160 & 161
Schematics & Diagrams .....	162 - 171

## Section 11: 50 Hz Models

Parts.....	174 - 176
Wiring Diagrams & Schematics .....	178 - 185

## Section 12: Maintenance

Preventative Maintenance .....	188
--------------------------------	-----

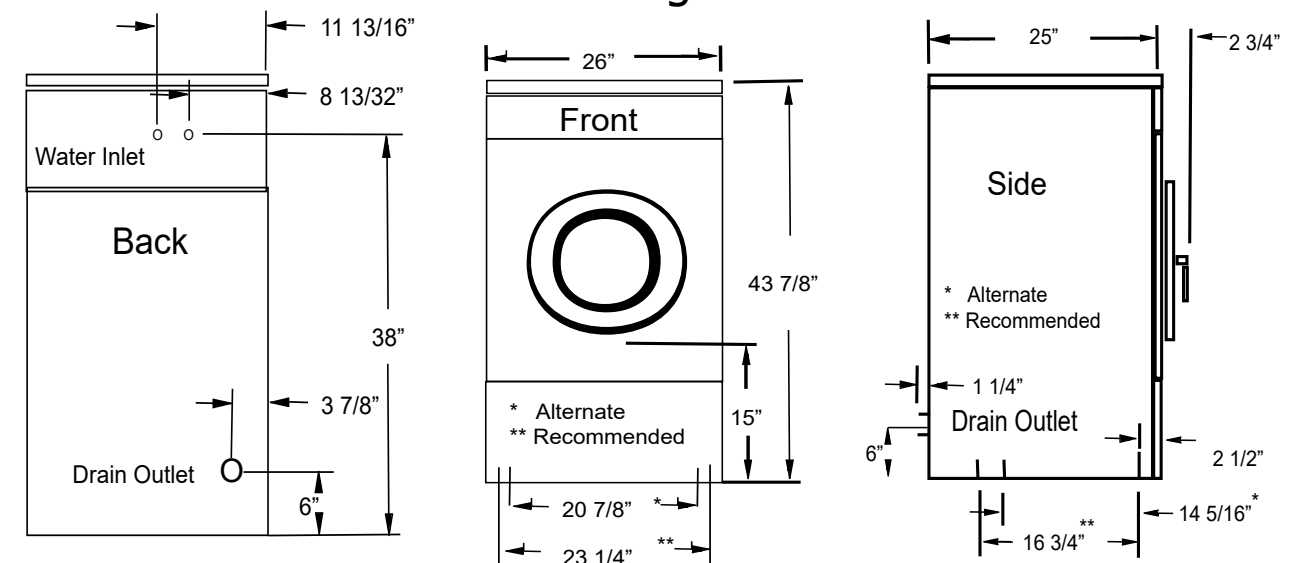
# Section 1:

## Machine Mounting

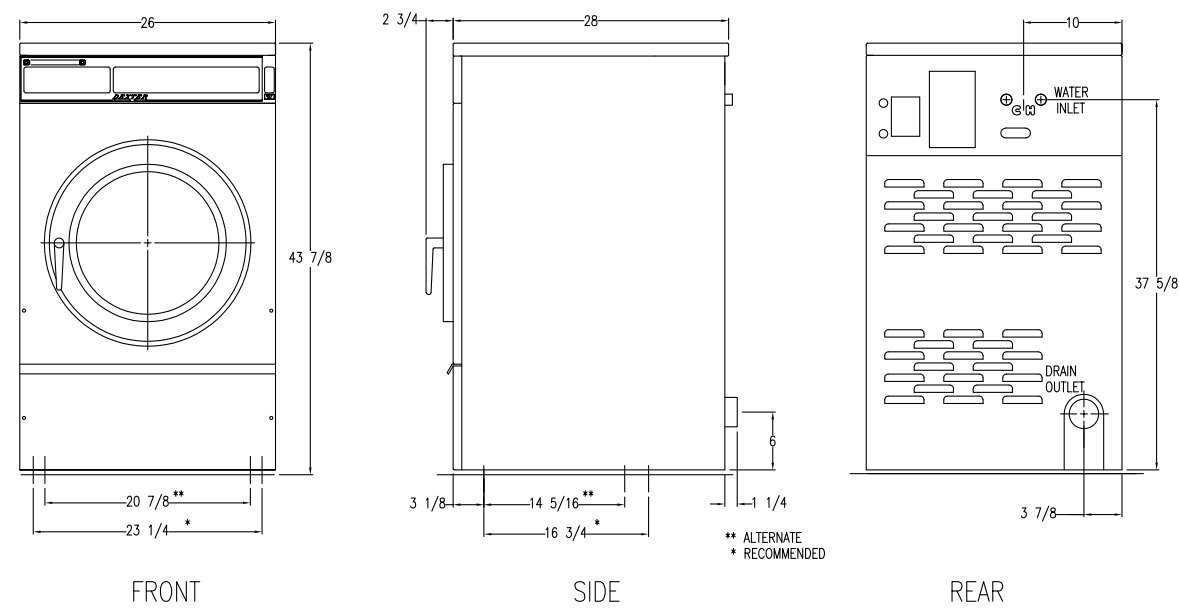
### Specifications for below models are outlined in this book:

T-300	WCAD20-KCS-10	120 V	60 Hz	Phase 1
T-300	WCAD20-KCB-10	120 V	60 Hz	Phase 1
T-300	WCAD20-KCX-10	120 V	60 Hz	Phase 1
T-300	WCAD20-KCS-10 EC	120 V	60 Hz	Phase 1 Easy Card
T-300	WCAD20KCB-21	230V	50 HZ	Phase 1
T-300	WCAD20KCB-59	230V	50 HZ	Phase 1
T-300	WCAD20-KCS-12	208-240 V	60 Hz	Phase 1 & 3
T-300	WCAD20-KCS-12 EC	208-240 V	60 Hz	Phase 1 & 3 Easy Card
T-350	WCAD20-KCS-12SZ	208-240 V	60 Hz	Phase1&3
T-350	WCAD20-KCB-12SZ	208-240 V	60 Hz	Phase 1 & 3
T-350	WCAD20-KCX-12SZ	208-240 V	60 Hz	Phase 1 & 3
T-350	WCAD20-KCS-12SZ EC	208-240 V	60 Hz	Phase
T-400	WCAD30-KCS-12	208-240 V	60 Hz	Phase 1 & 3
T-400	WCAD30-KCS-12 EC	208-240 V	60 Hz	Phase 1 & 3 Easy Card
T-450	WCAD30-KCS-12SZ	208-240 V	60 Hz	Phase 1 & 3
T-450	WCAD30-KCS-12SZ EC	208-240 V	60 Hz	Phase 1 & 3 Easy Card
T-600	WCAD40-KCS-12	208-240 V	60 Hz	Phase 1 & 3
T-600	WCAD40-KCS-12 EC	208-240 V	60 Hz	Phase 1 & 3 Easy Card

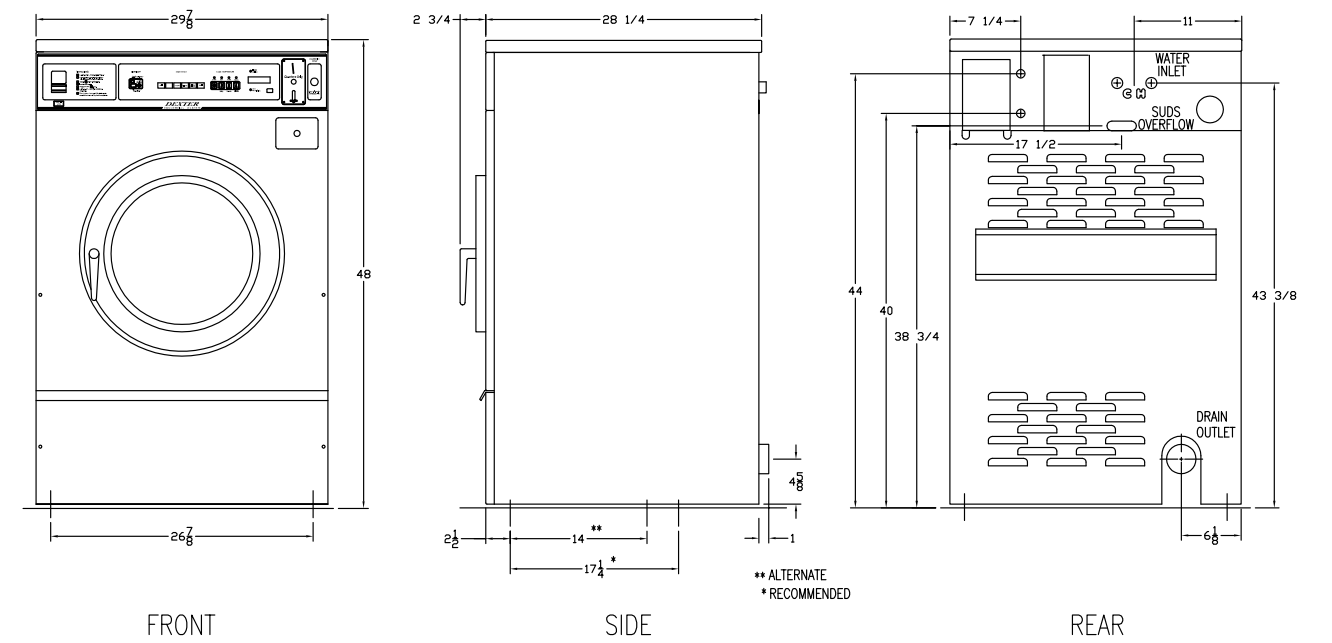
T-300 Mounting Dimensions



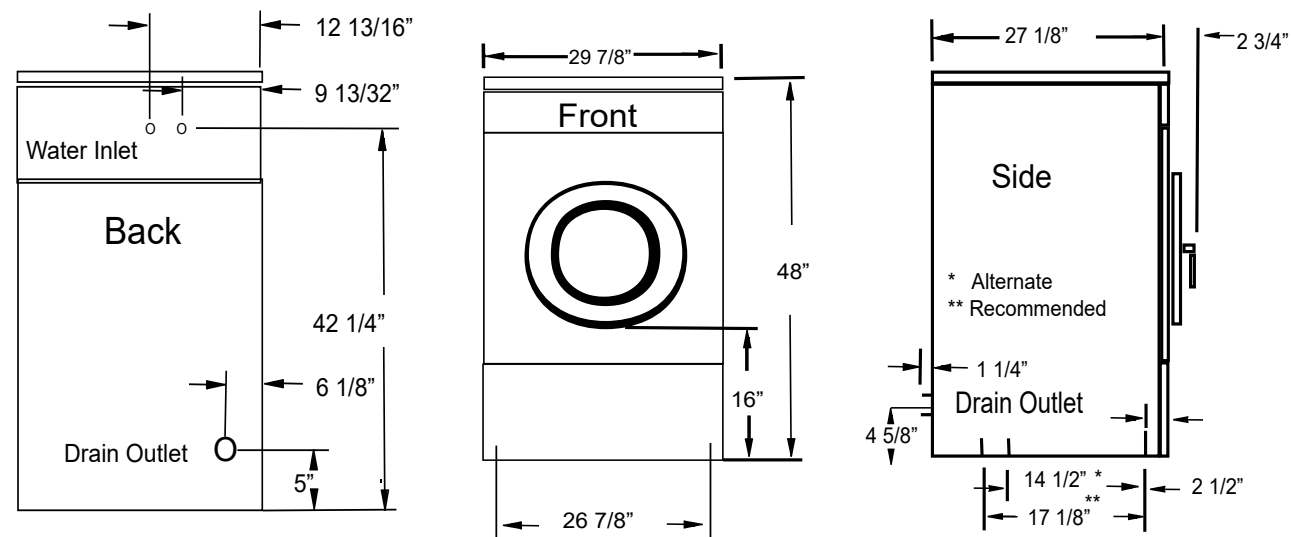
## T-350 Mounting Dimensions



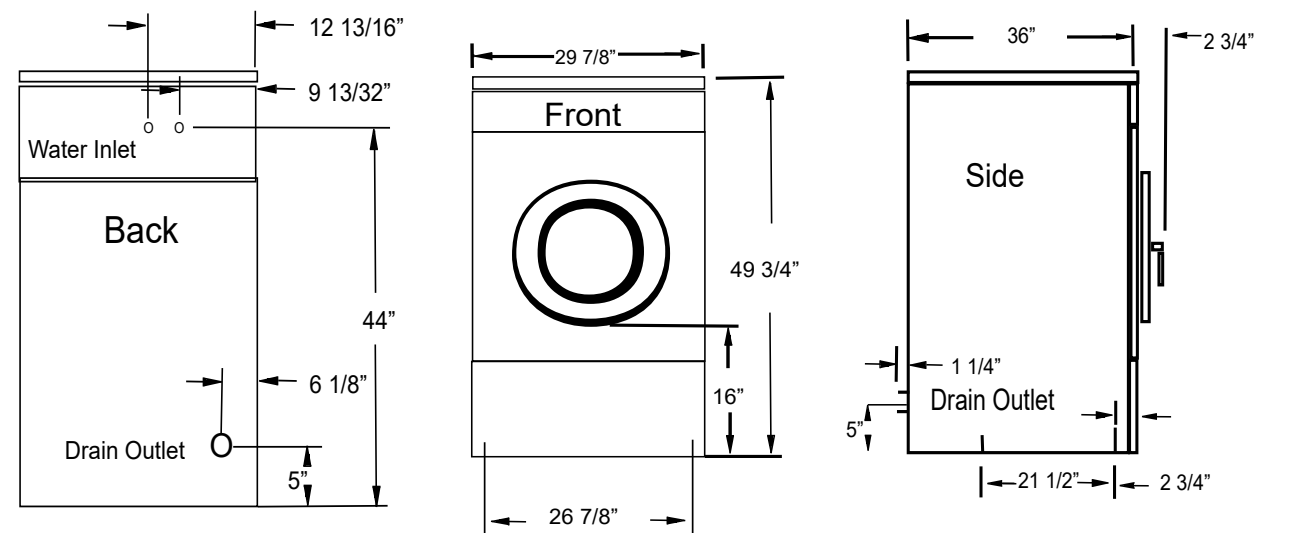
## T-450 Mounting Dimensions



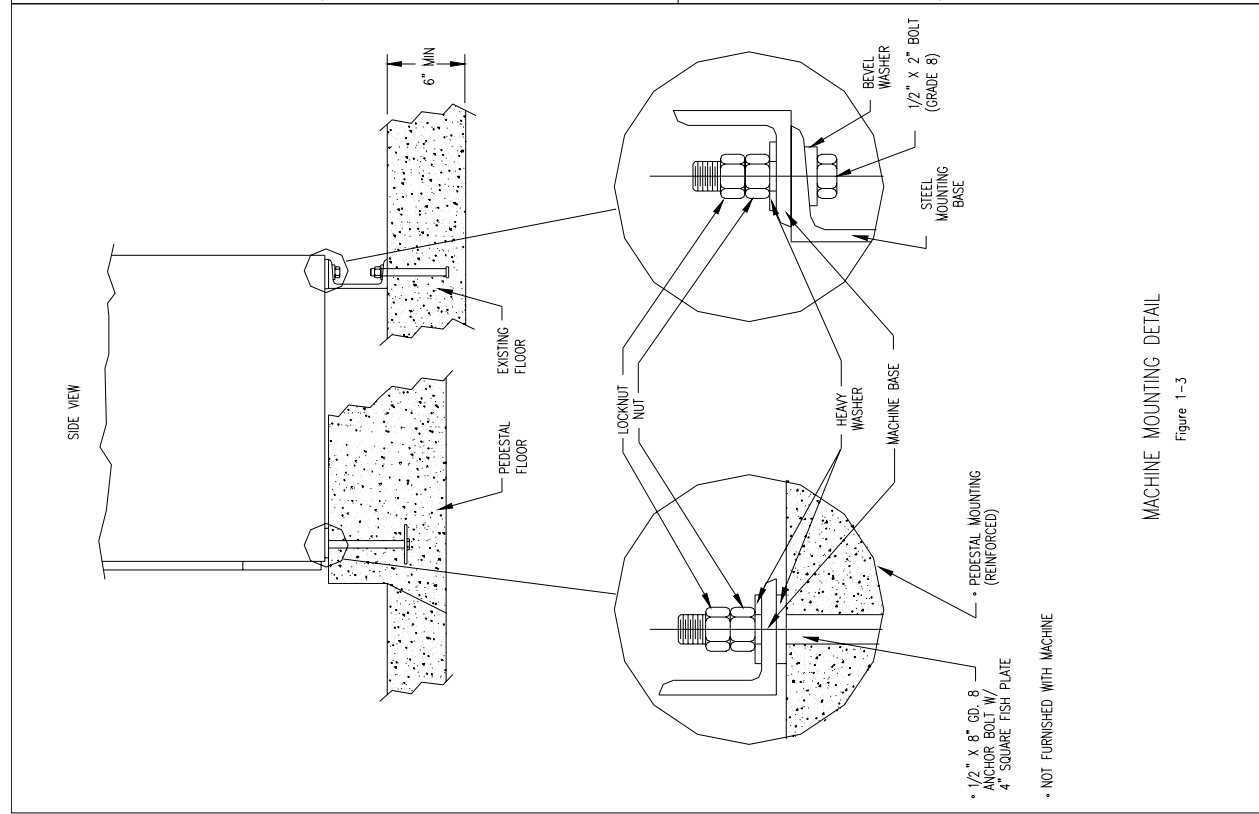
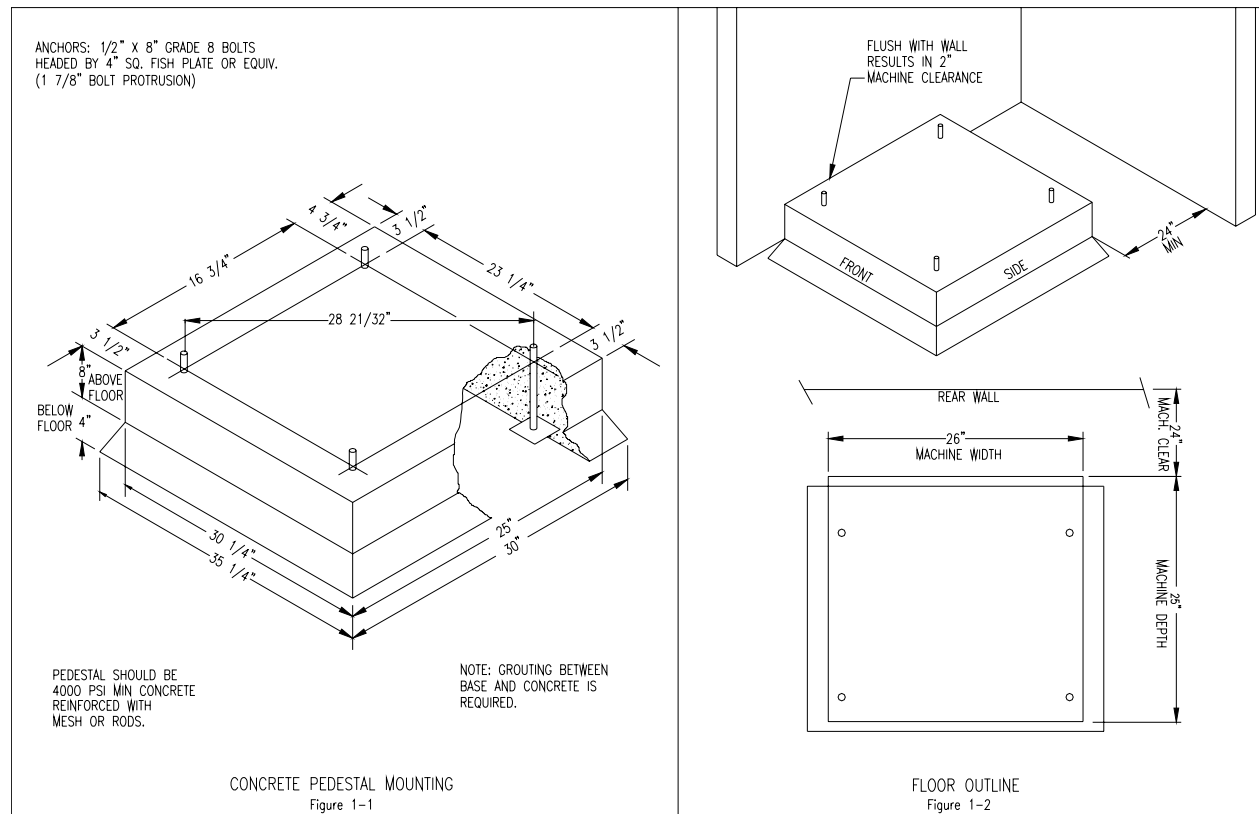
## T-400 Mounting Dimensions



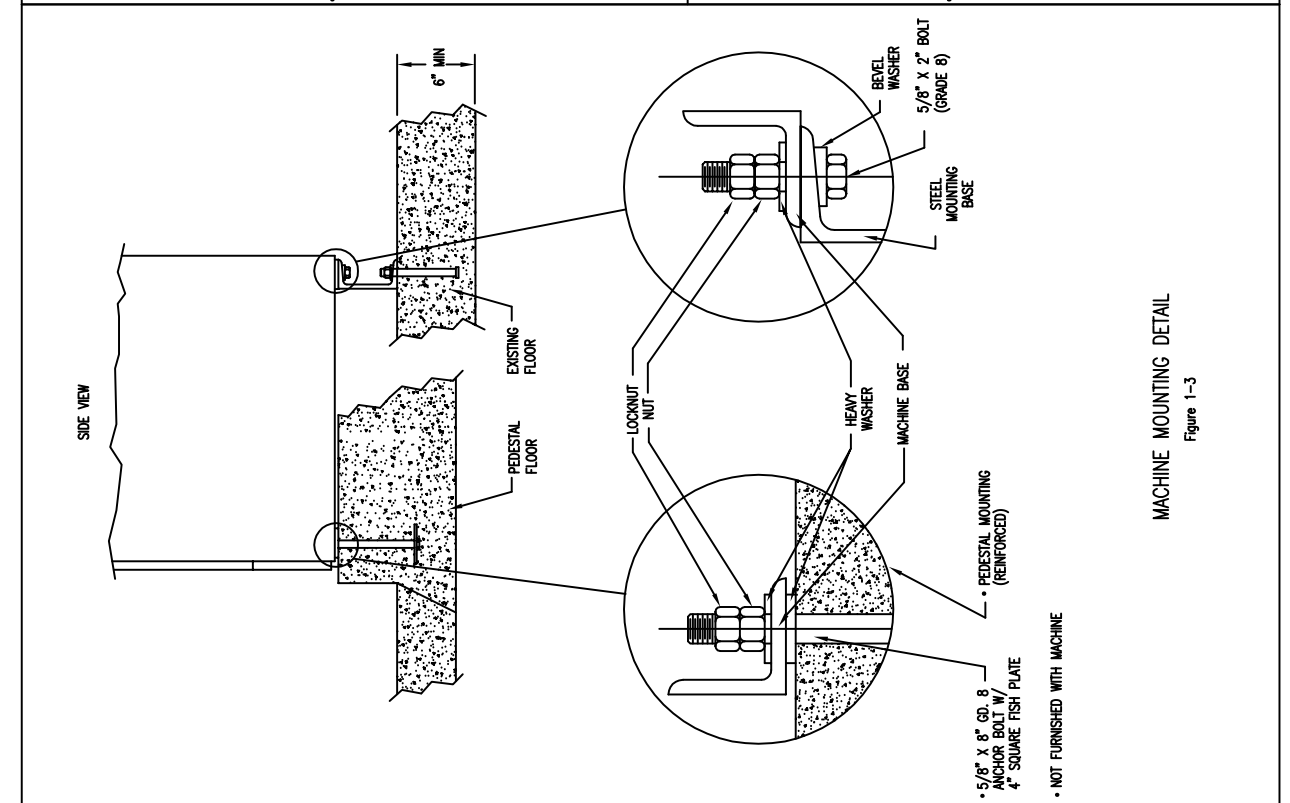
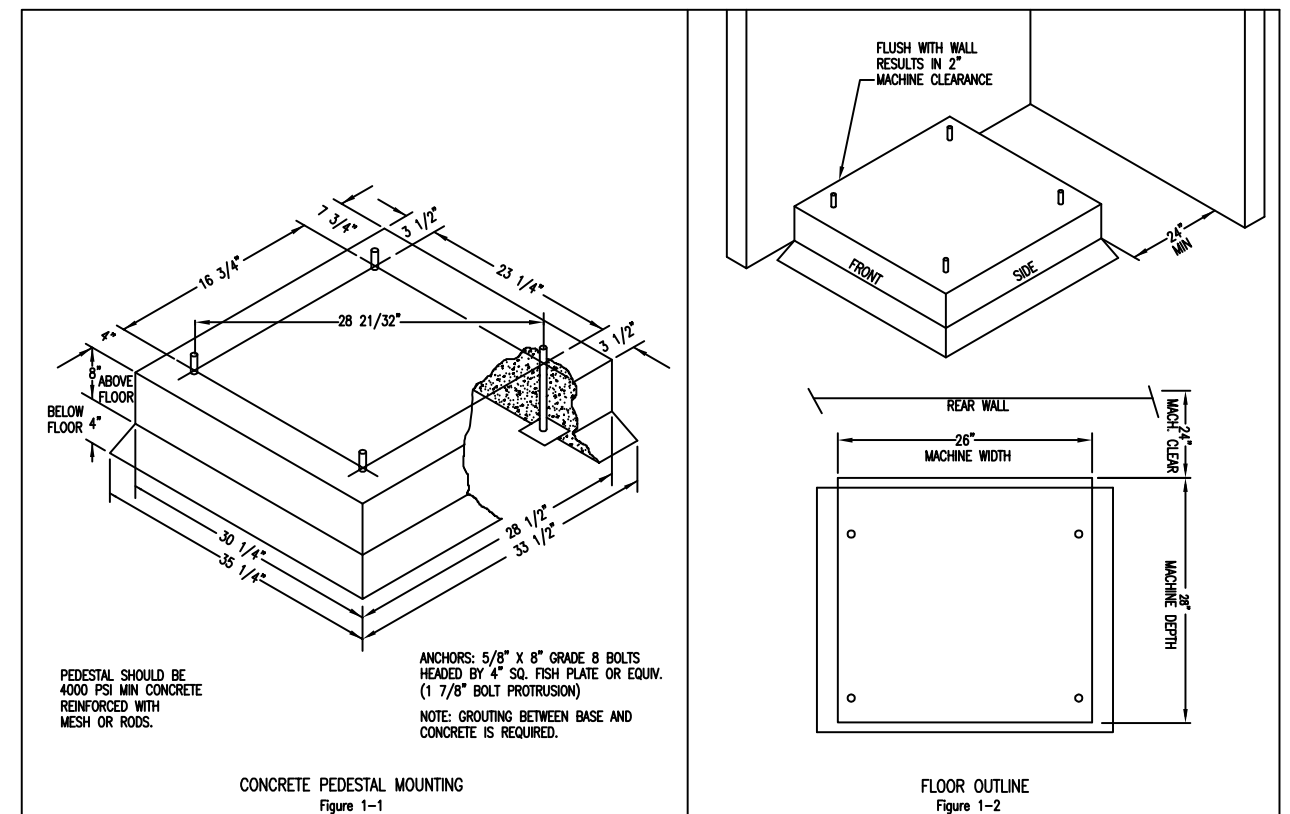
## T-600 Mounting Dimensions



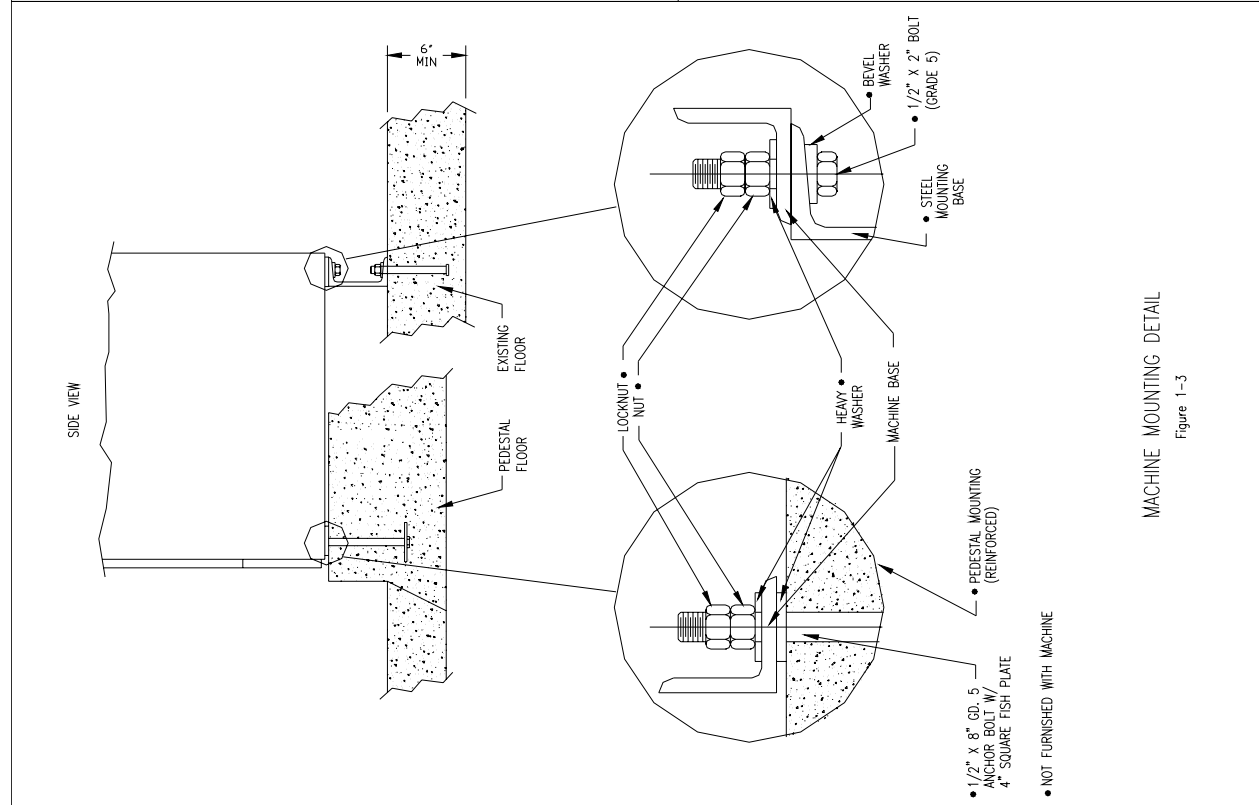
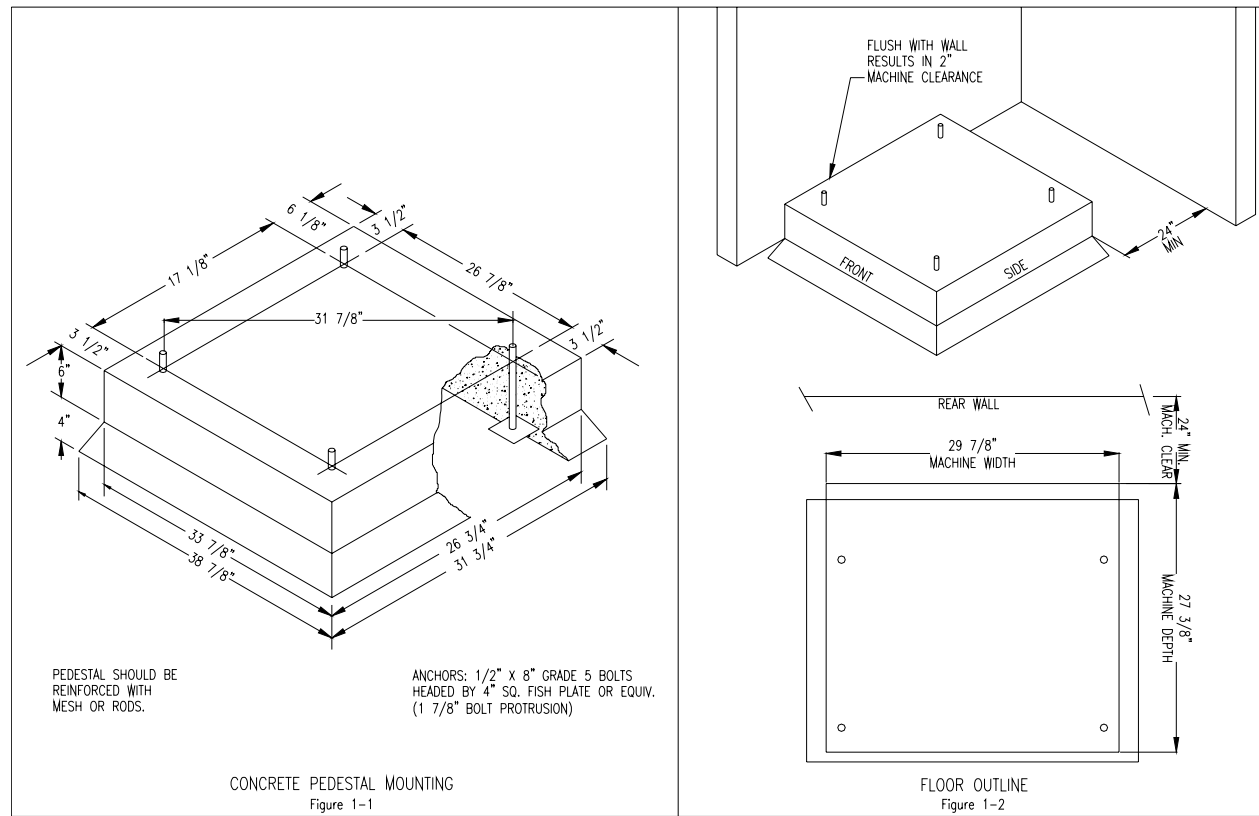
# T-300 Mounting Dimensions



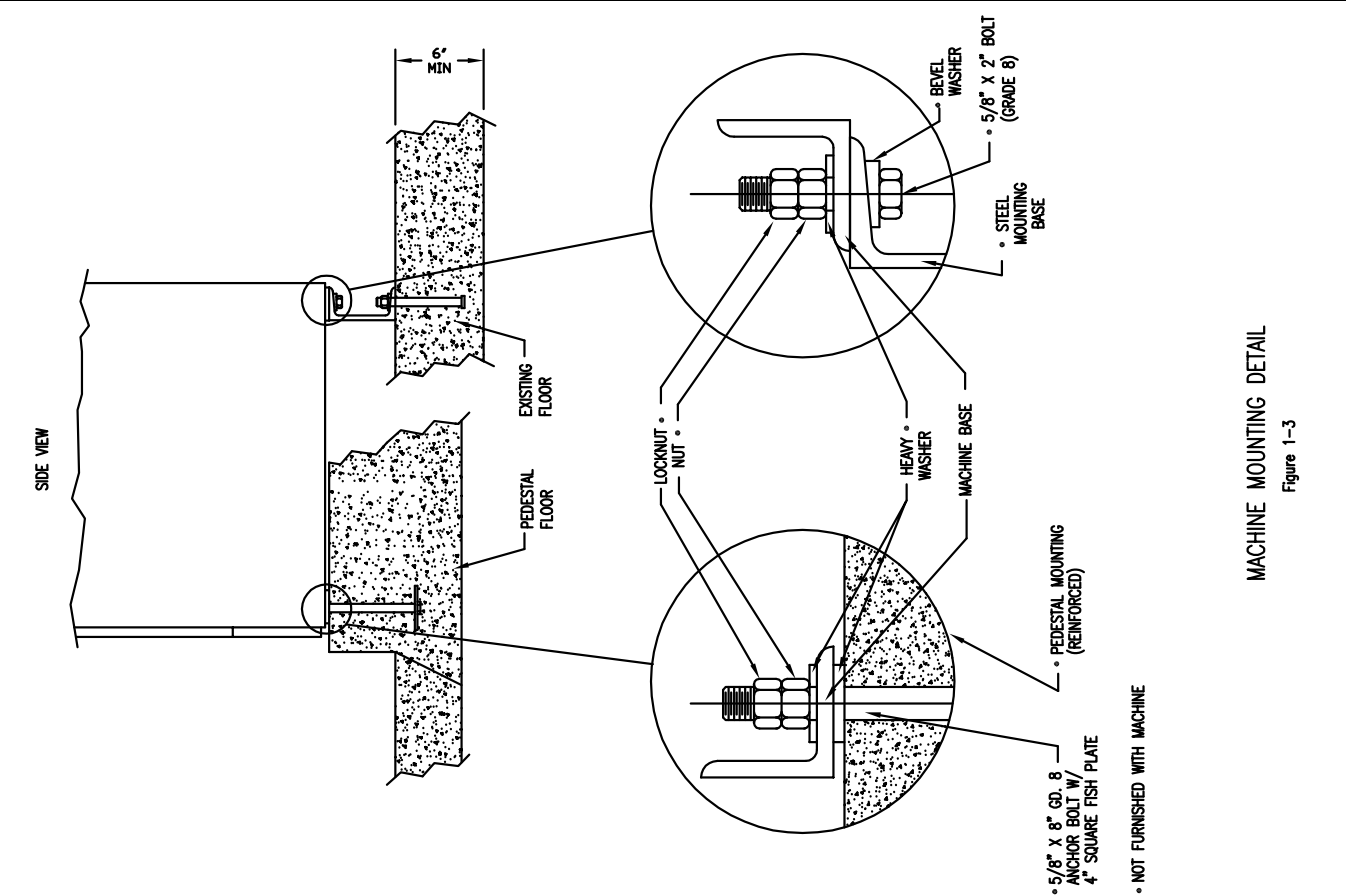
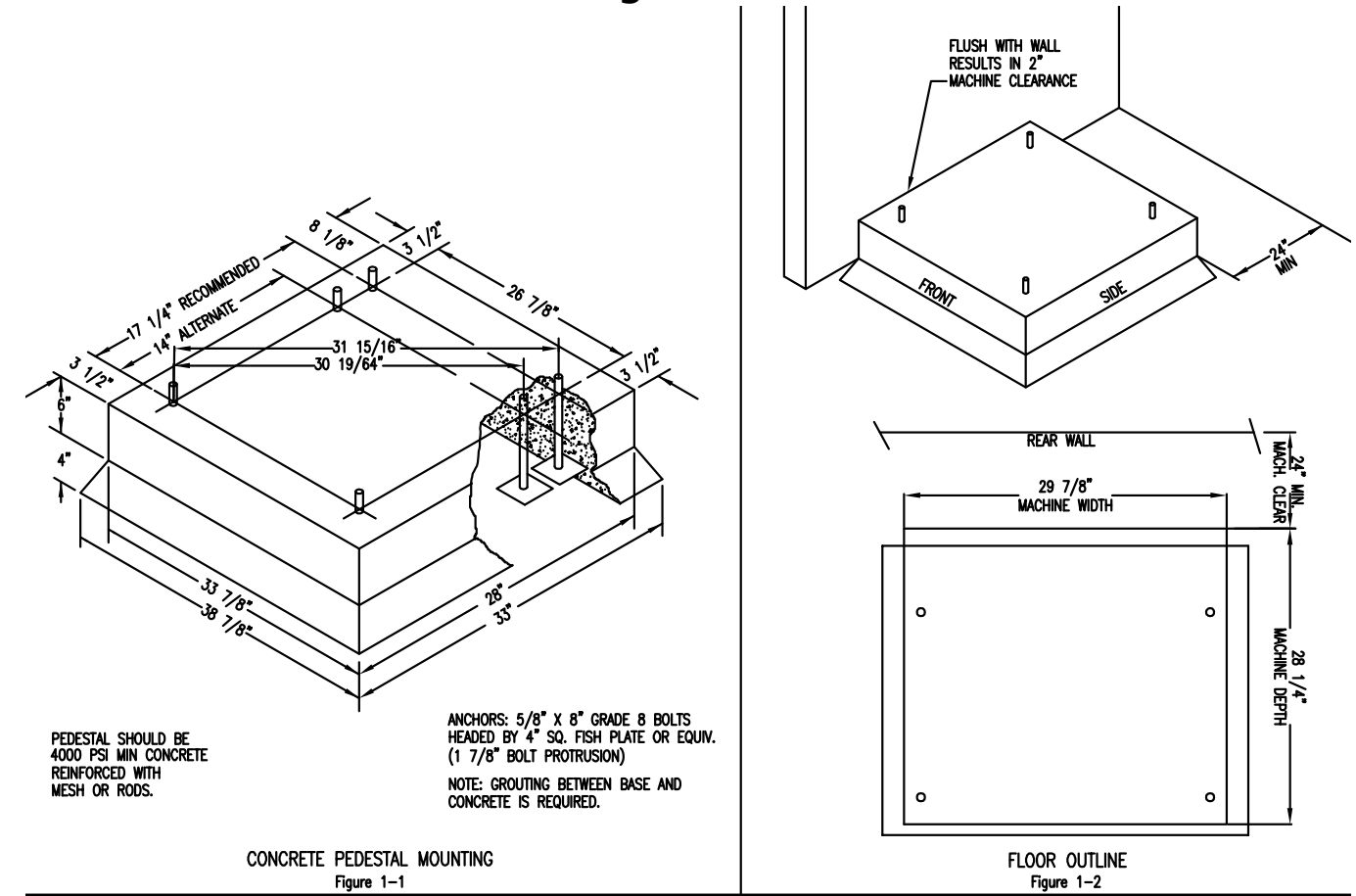
# T-350 Mounting Pad Dimensions



# T-400 Mounting Dimensions



# T-450 Mounting Pad Dimensions





---

# Section 2:

## Machine Installation & Operating Instructions

---

## Installation & Operation

**All washers must be installed in accordance with all local, state and national building, electrical, and plumbing codes in effect in the area.**

### Foundation Requirements

The washer must be securely bolted to a substantial concrete floor, or mounted upon a suitable base which is in turn securely bolted to a substantial concrete floor. Care must be stressed with all foundation work to insure a stable unit, eliminating vibration. All installations must be made on sound concrete floors. See mounting dimensions for each model being installed.

### Mounting

A concrete pad or steel base which elevates the machine 4 to 6 inches above the floor level. To provide easy access to the loading door, it is recommended to allow a minimum of 24" of clearance behind the rear of the machine for service as is shown. Dexter highly recommends the use of a dry expansion grout mix.

### Proper Machine Grout Installation

Grout should be installed between base (if used) and concrete floor on all side rails and crossmembers. If using a base you should grout between base top and machine frame and all side rails and crossmembers. (Grouting between the machine base and the floor is absolutely required for all 200G Express Models)

### Mounting Holes

See mounting dimensions for the machine model you are installing in previous section. They also show a typical concrete pad arrangement. It is highly recommended that you use all mounting holes supplied with each model. Note: Mounting bolts should be checked frequently to insure that they remain tight. The machine should be checked with a spinning load to be sure there is no unusual vibration or movement between the machine and the base or floor. Please note: Machine grouting is highly recommended as grouting insures stability and longevity.

### Plumbing

Water supply hoses are furnished with each machine. The threaded connections on the hoses are standard garden hose type thread. Separate hot and cold water lines with shut off valves or faucets for inlet hose connections must be provided, maintaining 30 to 120 p.s.i. water flow pressure. Maximum water temperature is 180 degrees.

### Drain

The drain outlet tube at the rear of the machine is 3" in outside diameter on models T-400, T450, & T-600. The drain outlet tube at the rear of the machine is 2 1/4" outside diameter on a T-300 and T350 models. All Drains are gravity Drain. Adequate fall must be maintained for proper drainage.

### Protective Film

The machine may have protective adhesive film on the front escutcheon area and the front and side stainless steel panels. The film may be peeled off before putting the machine into service.

### Electrical

Dexter single/three-phase 208-240VAC 60 Hz washing machines are intended to be permanently installed appliances. No power cord is provided. The machine should be connected to an individual branch circuit not shared by lighting or other equipment. The connection should be sheathed in liquid tight flexible conduit, or equivalent, with conductors of the proper size and insulation. A qualified technician should make such connections in accordance with the wiring diagram.

T-300 WCAD20KCS-10 model (1 phase 120 volts) washers are equipped with an electrical cord with a 3 prong grounded plug. A U.L. approved receptacle, which has been properly grounded in accordance with local electrical codes must be used with the machine. Each unit should be connected to an individual branch circuit not shared by lighting or other equipment. Conductors of the proper size and insulation (suggested size below) should be used.

### To Make Electrical Connections

Disconnect all power to the washer. Remove screw and lift out the cover located in the upper left corner of the machine (as viewed from the back).

- If power is 208-240-3PH-60Hz, connect L1, L2, L3 and ground. If there is a high leg it must be connected to L3. It is highly recommended to use a TVSS.
- If power is 208-240-1PH-60Hz, connect L1, L2 and Ground. If power is 120 -1PH-60Hz. Use a UL approved receptacle with proper external ground.

NOTE: It is important that the grounding screw next to the power terminal block TB-1 be connected to a good external ground.

### Controls Transformer

The controls transformer is located inside the control trough and steps a range of 208 to 240 volts down to 115 volts. There are two terminals on the controls transformer for the primary (incoming) power. Use the terminal marked "208V" for power supplies between 200 and 215 volts. Use the terminal marked "230V" for power supplies between 216 and 240 volts.

NOTE: transformer must be set at proper tap for proper operation.

### Electrical Connections

Electrical power connections are made to the small terminal block located in the rear of the control trough. The terminal block is accessed by opening the top panel of the machine.

- 1 Phase or 3 Phase connections
- 208-240 volts, 60 Hz.
- 3 wire plus ground
- Suggested Minimum Wire Size -- 12 Ga.

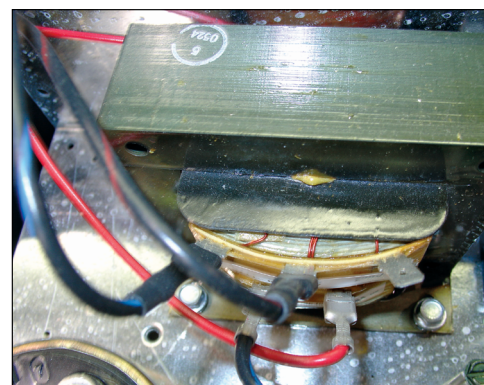
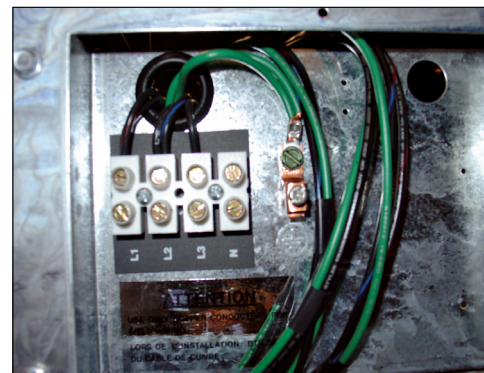
### Fusing Requirements:

Dual element time delay fuse or equivalent breaker of amperage specified below.

- 1 Phase or 3 Phase 15 amp , 208-240v
- WCAD-20-12, WCAD20-12SZ, WCAD-30-12, WCAD-30-12SZ , WCAD-40-12SZ
- 1 Phase 20 amp , 120 volt
- WCAD-20-10

Rotation in extract as viewed through glass door at front of washer models WCAD-30,WCAD-40,WCAD-60,WCAD-80will be counter- clockwise.

Rotation in extract as viewed through glass door at front of washer model WCAD-20 will be clockwise.



# WARNING

**Always disconnect electrical power to the machine before performing any adjustments or service.**

## Emergency Stop / Safety Door Lock

This machine is equipped with a Safety Door Lock that locks the door closed from when the cycle is started until the cycle is complete. The door lock prevents opening the door for up to 3 minutes if the power is interrupted during the cycle.



The Emergency Stop button pauses the washer and allows the door to be opened during the cycle after the Safety Door Lock releases. When the Emergency Stop button is pressed an alarm will sound and the display will begin counting down from "3". If the button is released before 3 seconds elapse, the alarm will stop and the cycle will continue normally. If the Emergency Stop is held down for 3 seconds, the display will count down to "0" and the washer will begin stopping movement and water flow and begin draining water from inside the washer. Though the machine may stop wash movement quickly, it may take up to 3 minutes for the door to unlock. During that time the alarm will continue to sound. When the alarm stops, the door may be opened. The washer may be restarted by closing and latching the door, and pressing the Start button. If the washer was stopped during final extract, the cycle will be ended. If the washer is stopped for more than 1 hour, the cycle will be terminated. If the emergency stop is triggered a second time during the cycle, the cycle will be terminated.

## Operating Instructions

### Microprocessor

Prior to operation, the micro computer should be set to display the amount of vend price being offered and the cycle to be given to the user. NOTE: Should a power loss occur during cycle and when power returns, P U S H will be displayed in window and customer must push the START button to continue the cycle.

### Starting the Washer

- Load the clothes loosely in the cylinder and latch the door securely. Be sure clothing does not get caught between the door gasket and tub front when closing the door.
- Pour low-sudsing powdered detergent in the amount shown below into the detergent dispenser on top of the machine. Rinse conditioners may also be added to the dispenser. The correct location is shown on the dispenser lid.

NOTE: To close the door the handle must be in the horizontal position and then moved to the vertical position . After moving the door to the closed position, the handle must be turned down to the vertical position to latch the door for machine operation.

- Using the TEMPERATURE SELECT buttons on the front, select the desired temperature. If temperature pricing is being used you will display price changes as you push the desired temperature selection. This selection must be made before inserting coins to satisfy temperature price selected.If coins or value are added after extended plus cycle vend price is met it will be lost without credit. If water temperature pricing feature is active and vend price met and machine started the customer

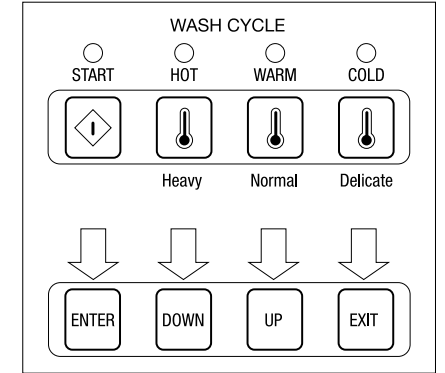


# Section 3:

## Machine Programming Instructions

### Programming Instructions

Programming can be accomplished manually using the machine controls or by connecting to the machine control using a PDA (personal digital assistant). For instructions on using a PDA with this washer control, please contact your local Dexter distributor. Please read below for manual programming instructions.



The washer has two levels of programming. The Washer Cycle Programming allows the owner complete access to the wash cycle parameters: add/remove a bath, bath times, spin times, water temperatures, etc. The Coin/Price Programming allows the owner to set the price for the washer features and the values of the coins. To enter the programming modes, the top of the washer must be unlocked and slid toward the back of the washer a few inches.

### Coin Price Programming

While the washer is in the Idle mode, push the Programming pushbutton on the controller. The Idle mode is when the washer is not running a cycle and the price of the bath is displayed. The Programming pushbutton is a very small button located on the upper center of the controller directly behind the display. There are seven stages in the Coin/Price Programming mode.

To step through to the desired stage, repeatedly push the Start button until the desired stage is blinking on the display. To exit the Coin/Price programming mode, push and hold the Cold temperature button for 5 seconds.

**#1 Right Coin:** The display will blink first an "r" indicating right coin and then a coin value (\$1.00: default). The display will blink back and forth between the "r" and the value. To change the value, use the Hot temperature button to decrease and the Warm temperature button to increase. The value will change in 1¢ steps. The range of values is from \$00.00 to \$99.99. When the desired right coin value is displayed, push Start button once to store the new value and a second time to move to the next Coin/Price programming step. To exit the Coin/Price programming mode, push the Cold temperature button for 5 seconds.

**#2 Left Coin:** The display will blink first a "L" indicating left coin and then a coin value (\$0.25– default). The display will blink back and forth between the "L" and the value. To change the value, use the Hot temperature button to decrease and the Warm temperature button to increase. The value will change in 1¢ steps. The range of values is from \$00.00 to \$99.99. When the desired left coin value is displayed, push the Start button once to store the new value and a second time to move to the next Coin/Price programming step. To exit the Coin/Price programming mode, push the Cold temperature button for 5 seconds.

**#3 Wash Price:** The display will blink first a "P" indicating wash price and then present wash price. The display will blink back and forth between the "P" and the price. To change the value, use the Hot temperature button to decrease and the Warm temperature button to increase. The value will change in 1¢ steps. The range of values is from \$00.00 to \$99.99. When the desired price is displayed, push the Start button once to store the new value and a second time to move to the next Coin/Price programming step. To exit the Coin/Price programming mode, push the Cold temperature button for 5 seconds. FREE START can be set by dropping the wash price to \$0.00.

### Water Temperature Pricing

The washer can be set for different levels of pricing for Cold, Warm and Hot water. The Cold water setting is considered as the base price, which is the normal washer cycle price.

**#4 Warm Water Price:** The next step in the pricing program is to set the additional price for Warm water usage. The display will blink first "CH P" indicating cold/hot water mix price and then "00.00". To change the value, use the Hot temperature button to decrease and the Warm temperature button to increase. The value will change in 1¢ steps. The range of values is from \$00.00 to \$99.99.

**NOTE:** To not use this feature, set the price to "00.00".

When the desired price is displayed, push the Start button once to store the new value and a second time to move to the next Coin/Price programming step. To exit the Coin/Price programming mode, push the Cold temperature button for 5 seconds.

**#5 Hot Water Price:** The next step in the pricing program is to set the additional price for Hot water usage. The display will blink first "H P" indicating hot water price and then "00.00". To change the value, use the Hot temperature button to decrease and the Warm temperature button to increase. The value will change in 1¢ steps. The range of values is from \$00.00 to \$99.99.

**NOTE:** To not use this feature, set the price to "00.00".

When the desired price is displayed, push the Start button once to store the new value and a second time to move to the next Coin/Price programming step. To exit the Coin/Price programming mode, push the Cold temperature button for 5 seconds. The Coin/Price programming mode will automatically exit and return to the Idle mode if no buttons are pushed for one minute.

**#6 Plus Cycle Price:** The next step in the programming sequence is the Plus Cycle feature. The Plus Cycle adds three (3) minutes of wash time to the wash bath only. The controller can be programmed to charge a fee for this or the feature can be turned off. The default setting is off (\$0.00).

The display will blink first a "PC P" indicating Plus Cycle price and then price (back and forth). To change the value, use the Hot temperature button to decrease and the Warm temperature button to increase. The value will change in 1¢ steps. The range of values is from \$00.01 to \$99.99. When the desired price is displayed, push the Start button once to store the new value and a second time to move to the next Coin/Price programming step. To exit the Coin/Price programming mode, push the Cold temperature button for 5 seconds.

**#7 Decimal Point:** The next step in the programming sequence is the Decimal Point. The display will blink "dP" and Default value is ON. The value "on" for enable or "off" for disable. Once a pushbutton is pressed, the display will stop blinking and show the decimal point value. The decimal point value will display and change with the Hot and Warm buttons. When desired value is reached press Start button.

---

## Wash Cycle Programming

To change a feature of the wash cycle, push and hold the Hot temperature button and then push the programming pushbutton on the controller. The Washer must be in the Idle mode to enter the Wash Cycle Programming mode. When entering the cycle programming mode the Bleach LED will start to blink and continue to blink as long as you are in the Cycle Programming mode. The display will show "C 0". This is the default cycle number.

**NOTE:** The washer can be returned to the factory default settings by holding the right Warm button and then pressing the left Warm button. The display must show "C 0" to do this. When the cycle default values are loaded, the washer will automatically exit the programming mode.

**NOTE:** The Wash Cycle programming mode will automatically exit and return to the Idle mode if no buttons are pushed for one minute.

To change the washer cycle, push the Hot temperature button once. The display will change to "C 1", indicating cycle one is selected. The temperature buttons are used to make changes to the program. In the program mode, these buttons will do as displayed in drawing below.

When the display shows "C 1", push Enter. The display will show "b " and the PreWash mode light will blink. Use the Up/Down buttons to move to the bath that will be changed. As Up/Down buttons are pushed, the next bath mode light turns on.

When the Up button is pushed, the lit bath mode changes from Prewash to Wash. With each additional push of the Up button, the lit bath mode changes from left to right: Prewash, Wash, Rinse and Final Rinse. As there are two possible Rinse bathes, for Rinse 1 the Rinse LED and the display changes to "b" in the left digit and "r1" in the two right hand digits. For Rinse2, the display changes to "b" in the left digit and "r2" in the two right hand digits. Note that the Spin light is not used. When the Down button is pushed, the lit bath mode changes from Prewash to Final Rinse, etc.. There is a wrap around feature on the display in both directions. When the desired bath mode light is on, push Start.

### Bath Cycle Time

The selected bath LED begins to blink. The display shows the letters "ct" in the left two digits and the bath cycle time in the right two digits. Again the up/down buttons change this value. The range is shown below. If zero time is entered, then the bath will be skipped and the program will return to the bath selection. When the desired cycle time is selected, push Start.

### Bath Water Temperature

The display shows the letter "t" in the left digit and the letters "CC" appear in the right two digits. This is the bath water temperature. The selection choices are shown below but for the coin washer the value is defaulted to CC. As it is not selectable with a coin washer, the owner pushes Start to continue.

### Bath Water Level

The display shows the letter "L" in the left digit and the letters "LO" appear in the right two digits. This is the bath water level. The selection choices are shown below but for the coin washer the value is defaulted to LO. As it is not selectable with a coin washer, the owner pushes Start to continue.

### Bath Delay Fill

The display shows the letters "dF" in the left two digits and the letter "t" appears in the right digit. This is the bath delay fill. The selections are "t" for decrementing bath time during the fill or "d" for delay the bath time until water level is reached. When the desired selection is made, push Start.

### Bath Spin

The display shows the letter "S" in the left digit and the bath spin time in the right two digits. Again the up/down buttons change this value. The range is shown below. When the desired spin time is selected, push Start. The display shows the letters "IS" in the left two digits and the injection selection appears in the right digit. For the coin washer the default value is "0" and cannot be changed. Push COLD.

The display will show "b" and the bath LED lights will stop blinking. Again use the up/down buttons change the bath selection. To exit the programming mode, push and hold COLD until price is displayed. The cycle will be stored when exiting the programming mode.

## Coin Washer Cycle Parameter Ranges

The range of each cycle parameter is shown below:

Bath Cycle Time "ct"
0 to 15 minutes for Prewash, Rinse1 and Rinse 3 to 15 minutes for Wash and Final Rinse. For the baths that can, if the time is set to zero, then that bath will be eliminated from the cycle.
Bath Water Temperature "t"
HH – hot, CH – warm, CC – cold, EE – no water. The owner can set the bath default. For the wash bath, the default is over ridden for that cycle by the customer when the temperature is selected.
Bath Water Level "L"
LO – low The owner can change the displayed value, but for a coinwasher only LO will be put into the cycle.
Bath Delay Fill "dF"
The selections are "d" for delay the bath time until water level is reached or "t" for decrement bath time during the fill.
Bath Spin Time "S"
0 to 10 minutes for Prewash, Wash, Rinse1 and Rinse2 1 to 10 minutes for Final Spin.
Bath "IS"
The owner can change the displayed value, but for a coin washer only 0 will be put into the cycle.

## Coin Washer Default Cycle (Preset at Factory)

The following table shows the complete details for the coin washer default cycle.

Bath	Bath Cycle Time (min.)	Water Temp.	Water Level*	Delay Fill	Spin Time (min.)	IS *
Prewash	0					
Wash	9	CH	LO	t	0	
Rinse 1	4	CC	LO	t	0	0
Rinse 2	0					
Final Rinse	5	CC	LO	t	4	0

\*NOTE: These default values are preset and cannot be changed.

## Rapid Advance Mode

To enter the Rapid Advance mode, push and hold the Cold water temperature button and then push the programming button on the controller. There will be no observed change to the washer or the display. The Rapid Advance mode can be entered from either the Idle mode or during the cycle. To rapid advance to the next step in the wash cycle, push both Start and Warm temperature buttons at the same time. The display will show an "Ad" (advance) in the display. The washer will advance to the next bath segment. The water will drain before the advance will occur.

To exit the Rapid Advance mode, push and hold the Cold temperature button for 5 seconds or more.

NOTES:

**Step 1:** When the Rapid Advance mode is used, the cycle time will no longer be correct.

**Step 2:** By skipping steps with rapid advance, the door may not open immediately at the end of the cycle.

## Main Control Printed Circuit Board

This control has a battery that allows memory retention in case of main power loss. The battery may need replacing if time of day options are not functioning properly.

### Remove power from machine and lockout safely.

Remove battery from socket on circuit board and reinstall new battery (#8612-001-001).

**CAUTION:** Do not soft reset this machine when installing new battery. This will reset internal clock and not allow re-startup of internal clock, possibly causing programming trouble.



## Section 4: Trouble Shooting

## Common Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
Machine does not start	Power Supply	Check these areas: Circuit breakers, Voltage, Power leads, Power connections. Is front display LED showing a dollar amount.
	Door Switch	Check for continuity through door switch when door is closed. If no continuity, adjust or replace door switch.
	Control Breaker or Fuse	Check 1.5 amp (T-1200. uses 2.5amp) breaker or fuse for continuity. If no continuity, replace breaker or fuse.
	Control Transformer	Check voltage output from control transformer for 120VAC. If voltage is incorrect, replace transformer.
	Coin Acceptor	Check coin switch to make sure coins trip switch and give continuity across switch when closed. If no continuity, adjust or replace switch.
	Check PCB board	Check all wire connections for sure contacts.
	Check wiring between PCB	Check data cable phone type connectors unplug and VFD and replug with power removed.
	Check Relay PCB	Check all wire connections for sure contact.
	Check Door Solenoid	Check that 120 v power is at solenoid after start button is pushed.
Machine will not accept and count coins	Coin Acceptor	Check coin acceptor switch for any type of blockage or damage. Clean, adjust or replace the acceptor.
	Power Supply	Check these areas: Circuit breakers, Voltage, Power leads, Power connection
	Door Closed Safety Switch	Check door closed switch at door hinge for proper operation.
	Door Handle Closed Switch	Check single door closed switch at left side of door handle to close when handle is vertical.
	Control Breaker or fuse	Check 1.5 amp (T-1200 uses 2.5 amp) breaker or fuse for continuity. If no continuity, replace breaker.
	Main PCB	Replace
Door does not lock	Check display for fault code	Does F1 show on the front of display. If yes follow tests described in fault code section.
	Door locking solenoid	Check to insure that solenoid is receiving 120VAC from main relay PCB. If it is, replace solenoid.
	Door Switch	Check for continuity through door latch switch when door closed. If no continuity, adjust or replace door switch.
Door will not open	Thermoactuator	Check to see if thermoactuator(s) and/or its mechanism is stuck or binding and not allowing the door lock solenoid to open. Check to be sure that the locking thermoactuator is not receiving 120VAC during the last 1 1/2 minutes of the cycle. Also check to see that the unlocking thermoactuator is receiving 120VAC during the last minute of the cycle. If the thermoactuators do not receive voltage at the correct times, change the timer. If the timing and voltage are correct, replace the thermoactuator.

Symptom	Probable Cause	Suggested Remedy
Door will not open	Door Rod	Check to see that door rod from solenoid to lock ass'y is long enough to allow lock ass'y to disengage. If not, adjust rod.
	Door Lock Solenoid	Check that door lock solenoid is not stuck closed. If stuck, replace solenoid.
No hot water in detergent dispenser	Water Valve Coil	Check coil continuity at terminals and replace if no continuity. 120 V power only on for 20 second in wash bath.
	Water Inlet	Check water inlet screens for blockage and clean screens if necessary.
	Water	Check to insure that water is turned on and operating.
	P-20 Wire Harness	Check black & white harness.
Hot water does not enter tub in wash	Water Valve Coil	Check coil continuity at terminals and replace if no continuity. Check for 120 V power from main relay PCB
	Water Inlet	Check water inlet screens for blockage and clean if necessary screens
	Water	Check to insure that water is turned on and operating.
	Blk or Wht wire at main controller	Check black or white wires at Molex plug on PCB at main controller and at relay PCB.
	Pressure Switch	Check pressure switch continuity between terminals . If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
No cold water to tub in wash	Water Valve Coil	Check coil continuity at terminals and replace if no continuity.
	Water Inlet Screens	Check water inlet screens for blockage and clean if necessary.
	Water	Check to insure that water is turned on and operating.
	Blk or whit wire at controller and main relay PCB	Check black or white wires at Molex plug on PCB at main controller and at relay PCB.
	Pressure Switch	Check pressure switch continuity between terminal contacts. If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
Water comes in but level does not rise	Drain Valve (open)	Check these areas • Drain valve blockage • Drain valve motor and gear train. If power but drain valve does not close, replace valve. • Power to the drain valve. If no power to drain valve, check (brn/yel) circuit for power.
	Blk or whit wire at controller	Check black and white wires at molex plug on main PCB controller and at main relay PCB
Water does not flush softener compartment.	Water Valve Coil	Check coil continuity at terminals and replace if no continuity.
	Water Inlet Screens	Check water inlet screens for blockage and clean if necessary.
	Water	Check to insure that water is turned on and operating.

## Common Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
Water does not flush softener compartment.	Pressure Switch	Check pressure switch continuity between terminals. If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
Water level too high	Pressure Switch	Check for blockage in pressure switch hose. Check for pressure switch opening circuit across terminals . Replace switch if contacts do not open.
Water drains slowly	Drain System	Check hoses and drain valve for blockage. Clean of inadequate size. if necessary. Check building drains for blockage
Machine does not turn	VFD	Check VFD by removing inspection panel and record any numbers or letters displayed. If no display turn power off to machine at breaker for 2 minutes and turn power back on to reset. If still no display replace VFD
Machine tumbles in one direction	VFD	Remove inspection cover at rear and record in only numbers or letters displayed. See fault code section for more info.
	VFD	Inspect yellow enable wires from main relay PCB and at VFD
Excessive vibration	Mounting System	Check these areas: • Strength of mounting structure, concrete or base. • Mounting bolts may be loose and need tightening.
	Drive Belt	Worn drive belt can cause vibration and noise.
	Loading	Note: Small loads contribute to out of balance loading and increase vibration.
Machine does not spin	Pressure Switch	Check pressure switch for continuity across terminals #21 & #22 indicating pressure switch has reset to the empty position. If no continuity, change pressure switch.
Machine starts and does not operate	VFD	Check yellow enable wires from relay PCB P13 & motor P14to VFD advances through cycle are connected. Check fault code on VFD before removing power from the drive. Check orange P-15 wire for signal from door switches.
Machine does not stop	Main PCB	Main PCB controls time cycle at end of cycle
	Braking Resistors	Check braking resistors for continuity. Verify ohms resistance by Molex.
Water leakage around loading door	Door Adjustment	Door may need adjustment due to abuse or wear. Check tightness around perimeter using a dollar bill. Adjust left to right tightness by shims at door lock or hinge side. It is important to center gasket to tub opening before tightening door to hinge bolts. Chalk may be used on tub front to show point of contact with tub. If gasket is deformed, worn, or damaged, replace. Refer to parts section for door gasket expander kit.

## Troubleshooting Machine Fault Errors

Displayed on front of washer

The following pages are a description of fault codes that will appear on the front of the washer. There is a chart format that shows what fault code that will be displayed at washer front. These codes displayed may stop machine operation or may not stop machine. Please check chart before removing power to reset. PLEASE NOTE: CHECK DRIVE FAULT CODE BEFORE POWERING MACHINE DOWN!

Fault#	Description	Customer Action
<b>F1</b>	The door failed to close and lock or The door failed to remain locked during the cycle.	Check VFD fault code before turning off. Check to hear if door solenoid engaged. Turn off the power to the washer. Check wire connections to door /lock switches. Check wire connections from switches to controller. Check P-4 wire connections at PCB controller. Adjust the door lock mechanism. (See service manual)
<b>F2</b>	The washer tub does not fill with water within 7 minutes. The wash cycle will continue. The F 2 will flash three times, then wait for 30 seconds. The error will clear at the end of the cycle.	Turn off the power to the washer. Check the operation of the water valves. Check the incoming water pressure. Check for blocked or restricted water flow. Check to ensure the drain valve is functioning properly. This error will occur on 18# washers when water level is set for high (the pressure switch in 18# washer is only one level).
<b>F3</b>	Memory error in controller. The memory checksum is wrong.	Check VFD fault code before turning off power. Try to clear the fault with the Palm. Try a soft Reset of the controller with the white button. If problem. Replace PCB controller.
<b>F4</b>	Washer controller communication error	Check VFD fault code before turning off power. Try the data cable first. Move around cable and remove any side loading tension from data cable connector ends. Check connection P25/24/23 to P15. Turn power back on to the washer. If the problem returns, replace the PCB washer controller.
<b>F5</b>	Pressure Switch error (only OPL) - when the high level sensor indicates full but the lower one indicates empty. The wash cycle will continue. The F 5 will flash three times, then wait for 30 seconds. The error will clear at the end of the cycle.	Check VFD fault code before turning off power. Check the pressure switch.(Ohm out contacts). Check pressure switch connections to ensure they are all making good contact. Check the Molex type harness connector to ensure no wire been pushed out of the Molex type housing that it is shorting or not connecting.

Fault#	Description	Customer Action
<b>F6</b>	Wrong washer size for drive type.	Check VFD fault code before turning off power. If the controller was installed in a different size machine before being installed in this machine, a problem can occur. If someone has been doing repairs on the washer, check for the correct size drive. It can also be caused by pressure switch harness. Check to ensure the correct harness is installed. The control can be reset by holding program button on controller during startup (soft reset). Check orange wire at Molex connector on controller coming from pressure switch or replace pressure switch harness.
<b>F7</b>	Wrong size drive installed	Check VFD fault code before turning off power. Check to ensure all the harnesses are properly connected to the controller. Check to ensure the VFD drive horsepower is proper for this size of washer. The control can be reset by holding program button on controller during startup (soft reset) Check orange wires at molex connector on controller coming from pressure switch.
<b>F8</b>	The washer tub does not empty within 7 minutes. The wash cycle will continue. The F 8 will flash three times, then wait for 30 seconds. The error will clear at the end of the cycle.	Check VFD fault code before turning off power. Check to ensure the drain valve is operating properly (slow drain has potential to cause this code). Check to ensure the pressure switch tube is clear of any blockage, and the pressure switch is operating properly. Check the pressure switch harness.
<b>F9</b>	The washer tub does not reach the spin target frequency within 150 seconds. The wash cycle will continue. The F9 will flash three times, then wait for 30 seconds. The error will clear at the end of the cycle.	Check VFD fault code before turning off power. Check to ensure the drain valve is operating properly (slow drain has potential to cause this code). Check to ensure the pressure switch tube is clear of any blockage, and the pressure switch is operating properly. Check the pressure switch harness.
<b>F10</b>	After a spin the washer tub does not stop within 150 seconds.	Check VFD fault code before turning off power. Inspect the braking resistors and measure the resistance. Check connecting wiring from braking resistor to the drive mounted in the top of the washer. Reset the drive and try again. Possibly incorrectly programmed drive.
<b>F11</b>	The drive size setting has changed.	Check VFD fault code before turning off power. Check to ensure all the harnesses are properly connected to the controller. Check to ensure the drive horsepower is proper for this size of washer. If no one has worked on machine very recently then PCB controller or VFD may need to be replaced. Do a soft reset before and after either VFD replaced.
<b>F12</b>	Washer controller internal error	Check VFD fault code before turning off power. Turn off the power to the washer. Wait one to two minute. Turn on the power to the washer. If problem reappears, contact your Dexter Authorized Representative.

Fault#	Description	Customer Action
<b>F13</b>	The variable frequency drive (VFD) and the washer computer are not communicating.	<p>Check the data communication cable between the washer computer and the variable frequency drive (VFD).</p> <p><b>Step 1:</b> Make sure the cable did not become unplugged during operation.</p> <p><b>Step 2:</b> Make sure that the cable is not being pulled sideways at either the washer controller, or the VFD, plug end. If both ends of the communications cable are plugged in the washer computer and VFD and there is no tension on the communications cable pulling it from side to side, then replace the cable.</p> <p><b>Step 3:</b> Inspect both female connection points at PCB controller and at VFD. These may need replacement if they cannot be reset.</p>
<b>F14</b>	Over-current on the drive or motor.	<p><b>Step 1:</b> Check to make sure the washer cylinder turns freely by hand. If it turns freely, continue to step 2. If it does not, remove the belt and see if the motor turns freely by hand. If the motor turns freely, then check for obstructions in the cylinder or check the bearings. If the motor does not turn freely, replace the motor.</p> <p><b>Step 2:</b> Check the motor wires for a short circuit between leads. If there are motor leads that have conductors touching, separate them and insulate them. If the wires are broken, splice them together or replace the motor.</p> <p><b>Step 3:</b> Check braking resistors to see if they measure the correct resistance. If a resistor does not measure the proper value, replace it.</p>
<b>F15</b>	The variable frequency drive (VFD) senses that the internal voltage is too high. The source of the problem can originate from two different areas. Area 1: The input voltage can be too high, or there may be a high level of electrical noise. Area 2: The motor can be generating a voltage that is acting like an input to the VFD output motor terminals.	<p><b>Step 1:</b> Measure the supply voltage to the VFD on the L1, L2 (or N), and L3 (if connected to three phase power). the supply voltage should be from 187 to 264 VAC or 108 to 132 VAC for a 120 VAC VFD. Also make sure the supply wires on L1, L2 (or N) and L3 (if connected to three phase power are securely connected.</p> <p><b>Step 2:</b> Check the braking resistor connections at the VFD. The terminal screws should be tight. Once of the braking resistor wires should be connected to terminal B2.</p> <p><b>Step 3:</b> Measure each braking resistor separately to make sure they are the correct resistance. (200 for 1 and 2 Hp VFD and 160 for 3 Hp VFD).</p> <p><b>Step 4:</b> If you have a 240 VAC, high leg voltage supply, try disconnecting the high leg. If this cures the problem, either leave the high leg disconnected, connect a transient voltage surge suppressor (with some form of filtering) at the voltage supply panel, connect a line choke on the high leg or install a VFD filter.</p>

Fault#	Description	Customer Action
<b>F16</b>	The temperature sensor inside of the variable frequency drive detects that the internal temperature is too high.	<b>Step 1:</b> Make sure the cooling fins on the VFD heatsink and the ventilation louvers on the VFD cooling fan cover are clean. <b>Step 2:</b> Start a washer cycle and make sure the VFD cooling fan operates after the cylinder starts turning.
<b>F17</b>	Overload of the drive or motor	(Check drive fault code before powering down). Check the washer motor to ensure it turns freely. Check the wiring for loose connections to the drive and motor. Measure the braking resistor values. Check for damaged motor wires. Check V-Belt tension and adjust to 1" deflection at center. Check braking resistors.
<b>F18</b>	Ground Fault to the drive	Check VFD fault code before turning off power. Check the wiring connections to the drive and motor. Check the ground wiring of the drive, motor and incoming connection to ensure a proper ground is present. Check for damaged motor wires.
<b>F19</b>	Low Voltage to the drive	Check VFD fault code before turning off power. Turn the power off to the washer. Check the wiring connections to the drive and motor. If no problem is observed, turn on power to the washer and test. (See Note) Measure the incoming line voltage.
<b>F20</b>	Internal drive error	Check VFD fault code before turning off power. Turn the power off to the washer. Wait one minute. Turn the power on to the washer. If problem reappears, contact your Dexter representative.
<b>F21</b>	Data error on communications between the controller and drive Internal drive error # 32. This error also has CEXX errors associated with it that are presented on the drive display.	The CE errors are communications errors. Data Cable noise can cause the majority of these errors. Check VFD fault code before turning off power. Check the data cable between the controller and the drive. Replace data cable if it appears damaged and fault appears again. Please note that this fault will occur if you turned main power off and on to quickly. (See Note below)
<p><b>Warning codes F22 - F28: These codes indicate that a component (VFD, relay PCB, injection relay PCB, water valve) has been replaced, added, or removed and you will need to <u>soft reset</u> the PCB controller board to reset the main controller to operate properly.</b></p>		
Fault#	Description	Customer Action
<b>F22</b>	MS300 Drive Conversion Only	Retighten the screw down connections on the lower terminal bar of the VFD for DC1, B1, and B2. Check the wire connections on B1 and B2 for Braking Resistors.
<b>F23</b>	VFD has been replaced, disconnected, or removed.	Soft reset control.
<b>F24</b>	Injection relay PCB has been removed or loose connection.	Soft reset control.
<b>F25</b>	Optional water valve PCB removed or water valve has been replaced .	Soft reset control.

Fault#	Description	Customer Action
F26	VFD unit has been added or loose connection.	Soft reset control.
F27	Injection relay PCB has been added to machine or loose connection.	Soft reset control.
F28	Optional water valve PCB has been added or loose connection	Soft reset control.

**Note:** Whenever power is turned off to the washer, it must remain off for three minutes for drive to reset. The washer will not operate correctly if this is done improperly. This will allow most fault codes to reset that are displayed at washer front. A fault code F-13 or F-21 will appear on front display if this procedure has not been reset correctly. Note: Should a power loss occur during cycle and then power returns, P U S H will be displayed and customer must push a temperature selection button to continue the cycle.

## Drive Motor Inverter Type Motor-Winding Resistance Chart

### 20lb A-Series Washer (both voltages 115/208-240)

Motor	Winding	Wire #	Resistance	
			Minimum	Maximum
20lb 1ph or 3ph 60hzMain (wash & spin)		T1 & T2	3.91	4.60
Dexter #9376-307-001		T2 & T3	3.91	4.60
Marathon		T1 & T3	3.91	4.60

### 20lb A-Series Express Washer (208-240 only)

Motor	Winding	Wire #	Resistance	
			Minimum	Maximum
60lb 1ph or 3ph 60hzMain (wash & spin)		T1 & T2	3.71	4.09
Dexter #9376-307-001		T2 & T3	3.71	4.09
Marathon		T1 & T3	3.71	4.09

### 30lb A-Series Washer

Motor	Winding	Wire #	Resistance	
			Minimum	Maximum
30lb 1ph or 3ph 60hzMain (wash & spin)		T1 & T2	2.45	2.71
Dexter #9376-305-001		T2 & T3	2.45	2.71
A.O. Smith #19343600		T1 & T3	2.45	2.71

### 30lb A-Series Express Washer

Motor	Winding	Wire #	Resistance	
			Minimum	Maximum
60lb 1ph or 3ph 60hzMain (wash & spin)		T1 & T2	2.45	2.71
Dexter #9376-305-001		T2 & T3	2.45	2.71
A.O. Smith #19343600		T1 & T3	2.45	2.71

### 40lb A-Series Washer

Motor	Winding	Wire #	Resistance	
			Minimum	Maximum
40lb 1ph or 3ph 60hzMain (wash & spin)		T1 & T2	2.45	2.71
Dexter #9376-305-001		T2 & T3	2.45	2.71
A.O. Smith #19343600		T1 & T3	2.45	2.71

NOTE: Resistance values are measured at the stator. Values at the end of the motor wiring harness may be slightly higher.

## Variable Frequency Drive Control Digital Readout Faults

Fault#	Description	Customer Action
CE1	VFD received an illegal command. Possible controller problem	Reset drive.
CE2	Illegal data address, VFD received an address not available to the controller.	Reset drive.
CE3	Illegal data value received at VFD. Possible controller problem.	Reset drive.
CE4	VFD unable to perform the requested action. Possible controller problem.	Reset drive.
CE6	Time frame between commands is too short. Possible controller problem.	Reset drive.
CE9	Internal checksum error. VFD problem.	Reset drive.
CE10	Watch dog timer. Command not received from the controller every 6 seconds	Reset drive.
CE11	Frame error. Possible Baud rate issues between VFD and controller	Reset drive.
CE12	Command message is too short. Possible controller problem	Reset drive.
CE13	Command message is too long. Possible controller problem	Reset drive.
CE14	Command message includes unused characters. Possible controller problem.	Reset drive.

Normal operation of the VFD: VFD display shows operating frequency first very quickly then changes to F0.0 at time power is returned. This will stay displayed until the VFD receives a command from main control PCB. (Pushing start button) A CE-10 fault will display at drive if improper communication between PCB and VFD has occurred.

**Note:** Resetting a fault code on front of washer: Turn the power off to machine (machine will need to remain off for up to three minutes).

SOFT RESET : is accomplished by pushing the white button located on the Main controller PCB board and simultaneously turning power on to machine. This will reset main controller to factory default settings.

Please record any modified information that has been inserted in memory before attempting to Soft Reset the PCB.

CE5, CE7 and CE8—Reserved by DELTA

---

# Section 5:

## Machine Service Procedures

---

### Top Panel Removal

- Step 1:** Remove 4 screws that hold detergent dispenser to top panel.
- Step 2:** Unlock top panel lock.
- Step 3:** Raise top panel, slide to the rear to release from back clips and lift off.

### Front Panel Removal

- Step 1:** Remove 2 screws between front panel top and front (located behind control panel).
- Step 2:** Remove the two screws in the middle of the front panel.
- Step 3:** Pull panel out at the bottom to about a 45 degree angle to detach the top lip and remove.

### Back Panel Removal

- Step 1:** Remove all screws holding back panel in position except the bottom row.
- Step 2:** The bottom row of screws are slotted and only need to be loosened and to lift off panel.

**NOTE:** The back panel is not only a safety requirement but also contributes to the rigidity of the cabinet.

### Drain Valve Access

For access to drain valve, remove lower service panel. The drain valve is a ball type and is powered closed by the drain valve motor. It is mounted under the washer tub on the left side. It is spring loaded open. If power is interrupted to the washer, the motor releases the sealing ball, allowing the drive spring to open the valve. With the valve open, all water in the washer will drain out.

### Drain Valve Cleaning

- Step 1:** Loosen the clamp on the tub hose at the drain valve end and remove the hose from the drain valve.
- Step 2:** Loosen the drain hose clamp on the back of the drain valve. Remove two drain valve mounting ratchet screws from the frame of the washer.
- Step 3:** **Disconnect brown/yellow & blue wire connection at clear connector.**
- Step 4:** Remove the drain valve and bracket assembly. Unplug the wiring after the drain valve is removed from the washer.

### Masking Ring (door lock cover) Removal

- Step 1:** Remove front panel.
- Step 2:** Remove 4 nuts (3/8" socket) that retain masking ring.
- Step 3:** Move it to the left and off.

### Detergent Dispenser

Remove top panel to access dispenser. (see Removing Top Panel) Detergent is flushed from the front of the compartment and fabric softener is flushed from the back. There will be a small amount of water left in the fabric softener compartment after each use.

## Vacuum Breaker (also called an air gap)

In the left rear of the cabinet is the vacuum breaker. It guides the water to the tub and dispenser and prevents a back flow of water.

## Water Valves

Remove top panel to access water valves. (see Removing Top Panel) The two dual outlet water valves are mounted to the rear channel with two screws each. Always check inlet screens to be sure that they are clean. Disassembly requires the removal of two solenoid screws and three valve body screws. Below the solenoid coil is a solenoid guide, armature, armature spring and diaphragm. All valve parts are available individually or as a complete unit.

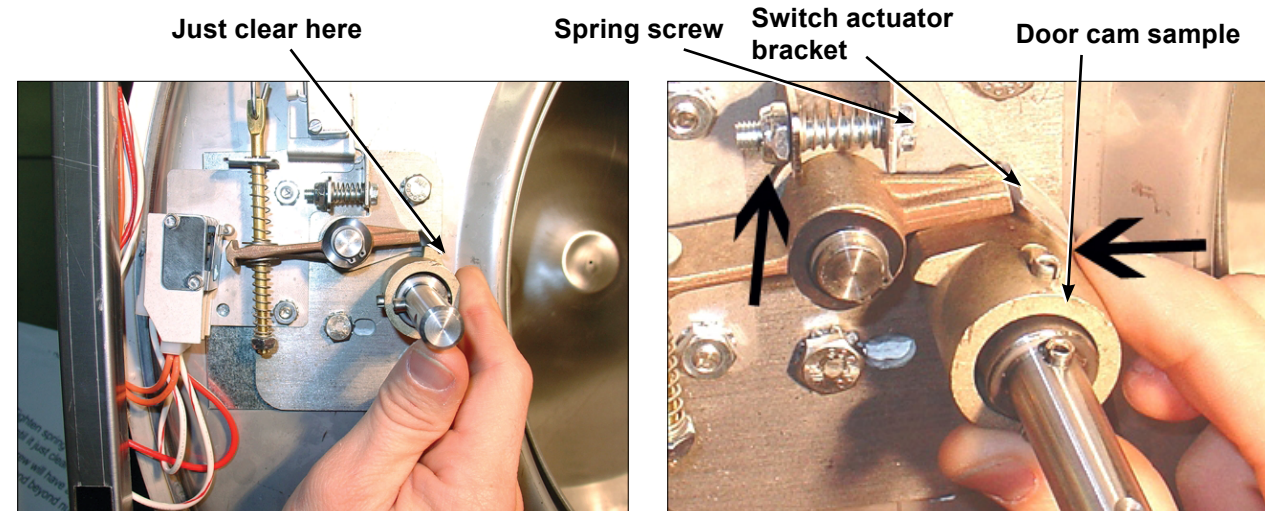
## Door Lock Assembly Operation

After loading the clothing, the door should be closed and latched. The locking cam on the door contacts the latching switch actuator which closes the latching switch. The specified number of coins should now be added to start the washer. The solenoid pulls up on the locking pawl by use of a linkage rod. The locking pawl has two jobs. The first is to lock the door. This is accomplished by blocking the locking cam on the door so that it can't rotate to unlock. The second job is to close the two piggyback lock sensing switches. These switches control power to all of the controls. If the door unlocks for any reason, these two switches will stop the machine. When the door handle is 1/4 to 1/2 of an inch from its fully closed position, the latching switch should close. The two piggyback lock sensing switches should be open when the door is unlocked and should be closed when the door is locked.

## Accessing the Door Lock Assembly

After removing the front panel and masking ring, the door lock assembly can now be accessed.

## Adjustment for Door Lock Assembly

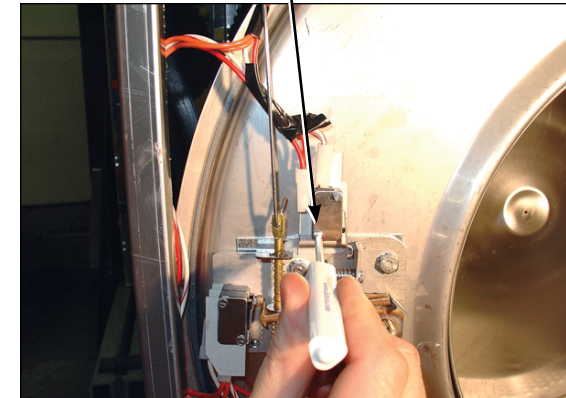


**Step 1:** Set door cam over pin. Here you can see the door cam away from the door lock assembly.

**Step 2:** Tighten spring screw on switch actuator bracket arm until it just clears cam OD. at base of door lock assembly.

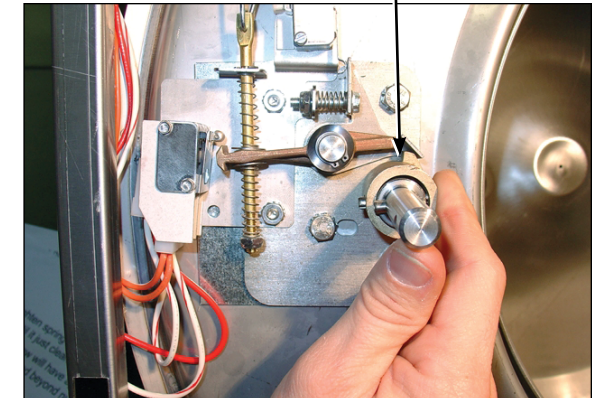
**Adjustment to this bracket usually is not necessary as next step is used more in field.**

Flat blade screw on door switch latching



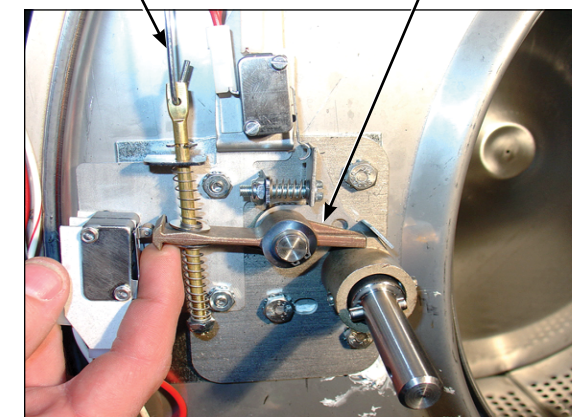
**Step 3:** With switch actuator bracket adjusted you will now need to adjust single switch by loosening 2 flat brade screws and allowing swivel of switch. Move switch towards above bracket until it actuates. Now tighten flat blade screws. Use a .040 thickness guage to insert between bracket and switch and the switch should close and open again upon removal of thickness guage.

Door cam check position



**Step 4:** Check for switch actuation at partial turn of cam as in operation above. Door handle goes from horizontal to six o'clock vertical.

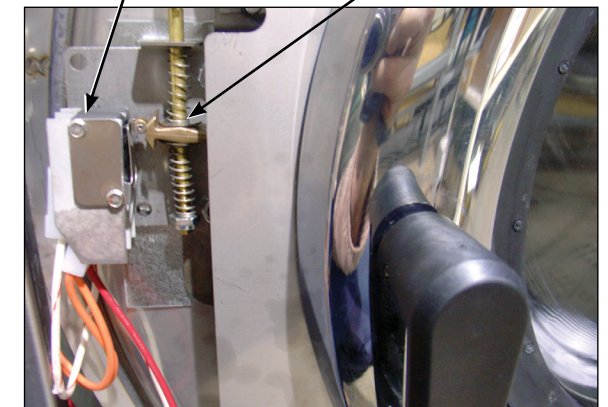
Door lock rod Locking pawl blocking



**Step 5:** Check that lock pawl arm swings to cam lobe to lock position.

Adjustment screw for (piggyback switches)

Top of flat end of locking pawl.



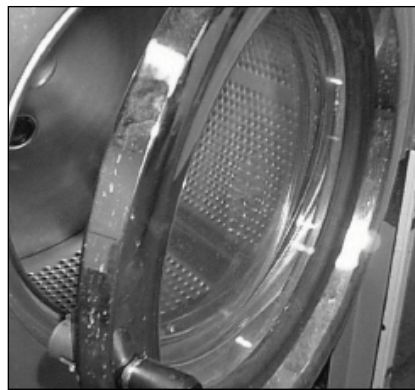
**Step 6:** The lock stacked switches (piggyback) must be adjusted as door lock solonoid pulls up on door rod and locking pawl is now blocking door cam from turning and is in full up position. The stacked swtiches (piggyback) have a single actuator arm and it must actuate when single actuator roller wheel rolls to flat side of locking pawl. You will also notice a .040 gap between actuator arm and switch bodies.

Note: Both stacked switches must operate together!

## Adjusting the Loading Door

The door can be adjusted by changing the number of shims behind the door hinge and the door lock assembly. The vertical fit of the door to the tub can be altered by loosening the door hinge bolts and raising or lowering the door before retightening. It is important for the door to be centered on the tub front. By chalking the front of the tub and closing the door to transfer that line to the gasket, the centering can be evaluated. It is also important for door pressure to be similar around the door perimeter. Door pressure can be evaluated by inserting a dollar bill in several positions and tugging on it. See Parts Section for kit to increase door sealing pressure.

### Loading Door Removal

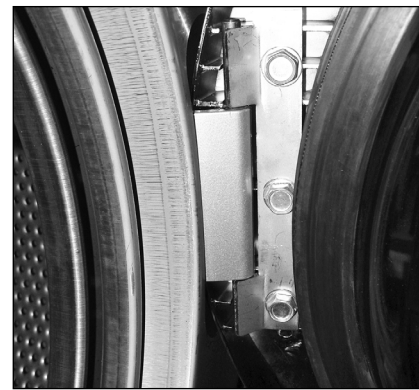


**Step 1:** Support door to prevent dropping.

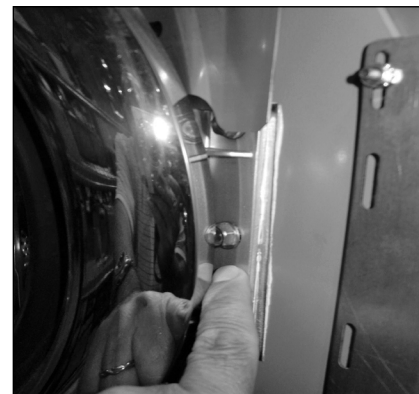


**Step 2:** Remove 3 bolts holding hinge retainer clamp and set door off.

### Loading Door Hinge Removal



**Step 1:** First remove loading door, front panel, and trim ring.



**Step 2:** Remove 3 screws holding door hinge. Shims may be present between hinge and tub front. The number may be increased or decreased to adjust right side door pressure.

**NOTE:**  
Door hinge mounting bolts penetrate tub front and require silicone sealer applied to holes when reinstalling.

## Loading Door Disassembly

**Step 1:** Remove the loading door as outlined above. Lay the door on a flat surface with the glass down.

**Step 2:** While holding down on the door glass, lift up on the door ring and roll back the lip of the gasket with your fingers.

**Step 3:** Work all the way around the gasket and the glass is out.

## Loading Door Reassembly

**Step 1:** Lay the door ring face down on a flat surface. Start the glass into one side of the door gasket.

**Step 2:** Use one hand underneath to push the gasket out and the other hand on the top pulling the gasket in place.

**Step 3:** The front lip of the door gasket should be checked for proper seating.

## Control Panel Name Plate Decal

The name plate on washer front is adhesive backed.

## Control Panel Name Plate Removal

The name plate may be removed by simply peeling it off.

## Re-Installation of Name Plate

**Step 1:** Remove any remaining glue from the control panel.

**Step 2:** Before removing the paper backing from the name plate, check fit to the control panel. The program push buttons are the locating guides.

**Step 3:** Remove the paper backing from the right side of the name plate, position it on the panel and press right end into place. Peel the backing from the left end and press into place.

## Outer Cabinet Removal

T-300, T350, T-400, T450, T-600

### Removal of Cabinet T-300, T-400, T-600

- Step 1:** The power supply, water hoses, and drain connection must all be disconnected before proceeding with the disassembly.
- Step 2:** Now remove the lower service panel and the top panel assembly.
- Step 3:** Remove the left and right lower front panel screws that retain the panel to the chassis.
- Step 3:** Remove the bottom row of back panel screws.
- Step 4:** Remove the loading door.
- Step 5:** Remove the screws along the bottom of each side panel. When reinstalling these screws do not overtighten.
- Step 6:** Remove clamp and soap dispenser hose where it attaches to the tub inlet. Disconnect the door lock wires from all switches and the door lock solenoid.
- Step 7:** Disconnect pull rod between solenoid and door lock assembly. Disconnect the wires to the dump valve at the bottom of the machine.
- Step 8:** Disconnect the wires to the drive motor from the VFD T1, T2, T3.
- Step 9:** Remove the clamp and the hose from the vacuum breaker where it connects to the inlet on the back of the tub.
- Step 10:** Remove the pressure switch hose from the bottom of the switch.
- Step 11:** It should now be possible for two people to lift the cabinet up and off of the front of the machine and set it aside.

### Door Locking Solenoid (Original Models)

The door locking solenoid is powered shut with control voltage to lock the door and releases when voltage is removed. It is located in the left front corner of the washer.

### Door Locking Gear Motor Assembly (Newer Models)

The door locking gear motor is rotated shut with control voltage to lock the door and releases when voltage is removed. It is located in the left front corner of the washer. (Original locking solenoid models can be converted to the new assembly)

### Thermoactuators

The thermoactuators are a safety device that keeps the door from immediately unlocking if power is lost while the machine is operating. They are mounted under the door locking solenoid.

### Lock Thermoactuator

Control voltage is applied to the lock thermoactuator at the beginning of the cycle making it extend and block the door locking solenoid. This keeps the door locked for approximately two minutes after a power failure occurs. The lock thermoactuator does not delay the door opening at the end of a normal cycle.

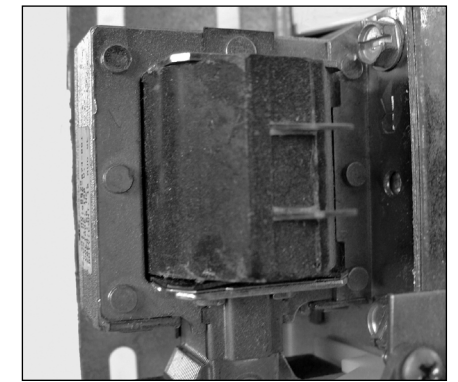
### Unlock Thermoactuator

To insure that the lock thermoactuator has retracted by the end of the cycle, one minute prior to the end of the cycle, the unlock thermoactuator is powered with control voltage making it extend and unblock the door locking solenoid.

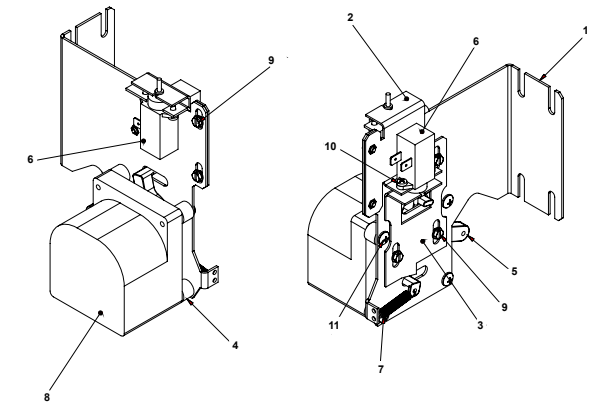
### Drive Belt Removal

Turn the drive belt(s) off the basket pulley first and then remove from the motor pulley.

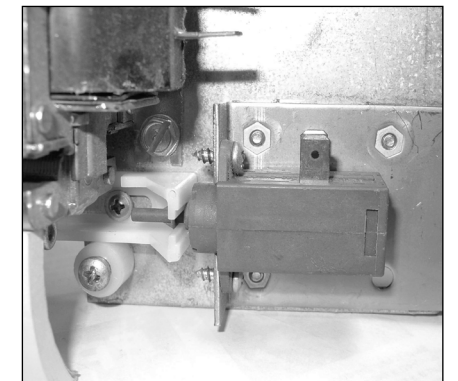
Reverse this procedure for installation.



Door Lock Solenoid



Door Lock Gear Motor



Thermoactuator



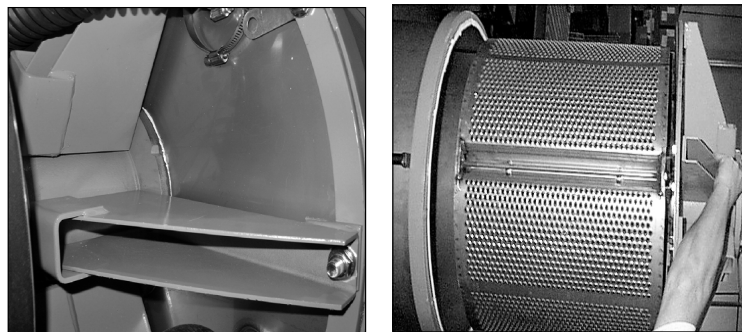
Drive Belt

## Tub Back, Bearing and Cylinder Assembly

Basket assembly T-300, T-350, T-400, T450, T-600

### Removal

- Step 1:** Remove the top and back panel as described.
- Step 2:** Move the rear channel, that the water valves mount to, forward by removing the five mounting screws.
- Step 3:** Remove the drive belt.
- Step 4:** Remove the overflow hose, tub fill hose and pressure switch hose from the back of the tub.
- Step 5:** Mark the tub back and bearing assembly for ease in assembly later. (see picture)
- Step 6:** Remove the 12 bolts and nuts from the perimeter of the tub back clamp ring. (Two of the twelve bolts are longer and go through the thicker part of the brace where it connects to the frame.)
- Step 7:** Remove the 2 bolts that fasten the clamp ring to the frame.
- Step 8:** The entire tub back and cylinder assembly may be lifted out of the tub (it may be necessary to break the adhesion of the silicone that seals the tub back to the tub). Blocks should be placed under the edges of the cylinder before setting it down to prevent damage to the cylinder flange.



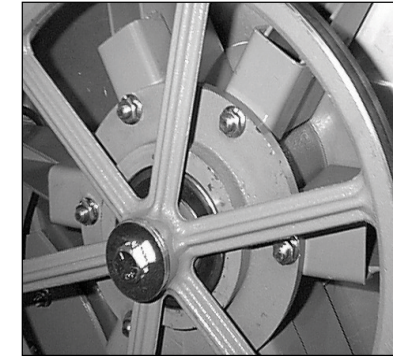
### Reassembly

Reverse the procedures to the left paying attention to the following areas

- Step 1:** Lay the washer on its front. Note: Put a thick pad across the front of the washer, above the door, to protect the handle and coin acceptor.
- Step 2:** Make sure the bearing housing weep holes are located at 12 o'clock and 6 o'clock.
- Step 3:** Clean the silicone rubber from the back of the outer tub and the perimeter of the tub back where the two meet. There is no gasket in this area.
- Step 4:** Apply a new bead of silicone rubber around the back of the outer tub. (see picture)
- Step 5:** Lower the tub back, bearing and cylinder assembly into the washer outer tub.
- Step 6:** Torque all bolts according to the following charts.
- Step 7:** Use a puller to remove the pulley from the shaft.

## Basket Pulley, Bearing Housing, Water Seals and Tub back

The cast iron basket pulley is retained by a bolt, locking washer and a flat washer.



### Removal

- Step 1:** Insert a large screw driver or punch through a spoke in the pulley into the bearing housing support. This keeps the pulley from turning.
- Step 2:** Remove the retaining bolt, lockwasher and flat washer and reinstall just the bolt
- Step 3:** Use a puller to remove the pulley from the shaft. Watch for tolerance ring.

### Reassembly

- Step 1:** Make sure that the tolerance ring is in place inside the pulley.
- Step 2:** The shoulder inside the pulley that holds the tolerance ring should face the back of the washer when installed correctly.
- Step 3:** Use a stack of flat washers and a longer bolt to press the pulley onto the basket shaft.
- Step 4:** Reinstall the retaining bolt, lock washer and flat washer. The shaft end bolt with washer should be installed with a torque value listed in charts in this manual.

## Removal of Bearing Housing From Basket Shaft, Bearings and Water Seals



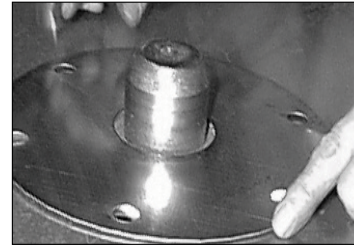
- Step 1:** To remove the tub back assembly, the 6 bolts attaching it to the bearing housing must be removed.
- Step 2:** Remove water seals from the seal mounting plate on the cylinder shaft. These are removed with your fingers.
- Step 3:** The retaining ring next to the front bearing must also be removed.
- Step 4:** The bearings are pressed into the housing and must be pressed back out.

### Reinstallation onto Basket Shaft

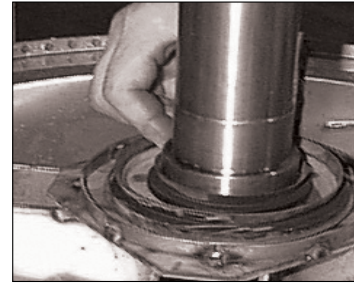
- Step 1:** Carefully set the assembly over the shaft engaging the bearings and bearing spacer.
- Step 2:** The tolerance ring that fits inside the pulley should be placed in position (see Basket Pulley Reassembly for correct positioning).
- Step 3:** The pulley should then be started onto the shaft. A stack of flat washers and a longer pulley bolt will be required to pull the basket shaft through the bearings and pulley.
- Step 4:** Install the shaft end bolt with washers and torque to specifications in Bolt Torque Chart.
- Step 5:** See Tub Back, Bearing and Cylinder Assembly for installation of complete assembly back into washer.

## Reassembly

**Step 1:** When installing new bearings into a bearing housing, first press the front (large) bearing into the housing until it bottoms. With the bearing spacer in place, press the rear bearing in until the spacer is snug between the two bearings. Be sure and reinstall the retaining ring in front of the front bearing (see picture).

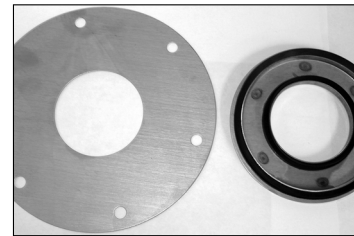


**Step 2:** The tub back assembly should be reattached to the bearing housing with the 6 mounting bolts and torqued according to the torque chart.  
**Note: The bead of silicone that seals each bolt to the tub back. This must be cleaned and replaced upon reassembly (see picture).**



If the 6 support assemblies have been removed from the bearing housing, the 6 rear bearing housing bolts should be torqued according to the chart also.

**Step 3:** The primary and secondary seals that mount on the sealing ring may be slid over the shaft and seated on the metal sealing ring. In the unlikely event that the metal ring that mounts these sealing rings were to be damaged or moved, a new one would need to be pressed on. The ring must be pushed against the stop on the shaft. Before installing the new sealing ring, a bead of silicone should be put on the basket shaft (see picture). After installing the seals, lubricate the faces of the seals with silicone grease (see picture).



## Drive Motor Removal

**Step 1:** Remove the drive belt as explained in previous instructions.

**Step 2:** Remove the tension spring and bracket.

**Step 3:** Disconnect the motor wires in the control area at the top of the machine. The motor wire retaining clamp should be removed and reused. There is a diagram showing where each motor wire plugs in so there is no need to mark them.

**Step 4:** Loosen the set screws on the motor support shaft.

**Step 5:** Remove the retaining bolt from the front of the support shaft.

**Step 6:** Remove the motor support shaft.

**Step 7:** Lift motor out of machine. Note: On larger washers it is advisable to put a board under the motor and slide it out rather than lifting it.

## T-300 Bolt Torque Chart

Bolt Size	Where Used	Torque	NUMBER BOLTS REQ.
1/2" bolt	Tub End of Bearing Housing 9545-017-009 GRADE #5	70-110 ft/lbs	6
1/2" bolt	Mounting of Tub to Cradle Assembly 9545-017-009 GRADE #5	70-110 ft/lbs	4
3/8" bolt	Tub Back Ring to Tub Back 9545-029-003 GRADE#8	45-80 ft/lb	12
3/8" bolt	Pulley End of Bearing Housing 9545-029-003 GRADE #8	45-80 ft/lbs	6
3/8" bolt	Mounting ring ends (front ) 9545-029-003 GRADE #8	20-30 ft/lbs	1
	Basket Pulley to Shaft(set screw) 9545-028-015 SQUARE HD. SET SCREW	190-200 in/lbs	1

## T350, T-400, T450 & T-600 Bolt Torque Chart

Bolt Size	Where Used	Torque
1/2"x 1 1/4" bolt	Tub End of Bearing Hsing. 9545-017-009	70-110 ft/lbs
5/8"x 1 1/2" bolt	Tub End of Bearing Hsing. 9545-060-001	120-150 ft/lbs
1/2"x 1 1/4" bolt	Mtg. of Tub to Cradle Asy. 9545-017-009	70-110 ft/lbs
5/8"x 2 1/2"bolt	Mtg. of Tub to Cradle Asy. 9545-060-001	120-150 ft/lbs
3/8"x 1 1/2" bolt	Tub Back Ring to Tub Back 9545-029-003	45-80 ft/lbs

# Section 6:

## Service Electrical Components

### Control Mounting Trough

Remove top panel to access control trough. (see Removing Top Panel) It sets on the right side of the machine and holds the control PCB's, transformers, and pressure switch.

### Main Data Communication Cable

Goes between front PCB board and Variable Frequency Drive unit mounted center rear of machine. It has telephone type connectors at each end and is inserted at Controller PCB and the Variable Frequency Drive.

### Circuit Breaker/Fuse

The fuse (optional circuit breaker) mounts to the rear channel. It carries all of the controls in the machine but does not include the motor. To reset the circuit breaker just push in the button. If you have a fuse then remove fuseholder and fuse and replace with a 1 1/2 amp fast blow type fuse.



Fuse Location

### Main Control Printed Circuit Board

Please be sure to be grounded to machine before removal of this board from machine. PC board mounted vertically behind front control panel. Remove hold down nuts in 4 corners and 1 at bottom center.

### PCB Transformer Step-down

Small transformer mounted at front of control trough that is powered with 120 VAC primary and two secondary outputs of 2.3 VAC and 24-27 VAC.

### Controls Transformer

This transformer is mounted at the back of the control trough and steps a range of 208 to 240 volts down to 120 volts for the controls. There are two terminals on the controls transformer for incoming power. One terminal tap is marked for 208 volts use this tap for measured voltage of 200 volts - 215 volts, and the other tap is marked 230 volts for 216 volts - 240 volts. Note: All washers have a controls transformer. Always check the incoming voltage and use the appropriate transformer terminal when installing ALL washers.

### Main Relay Printed Circuit Board

Please be sure to be grounded to machine before removal of this board. PCB mounting horizontal in control trough towards front of machine. Remove 4 mounting nuts.

### LED Printed Circuit Board Temperature & Start Display/Push-Button

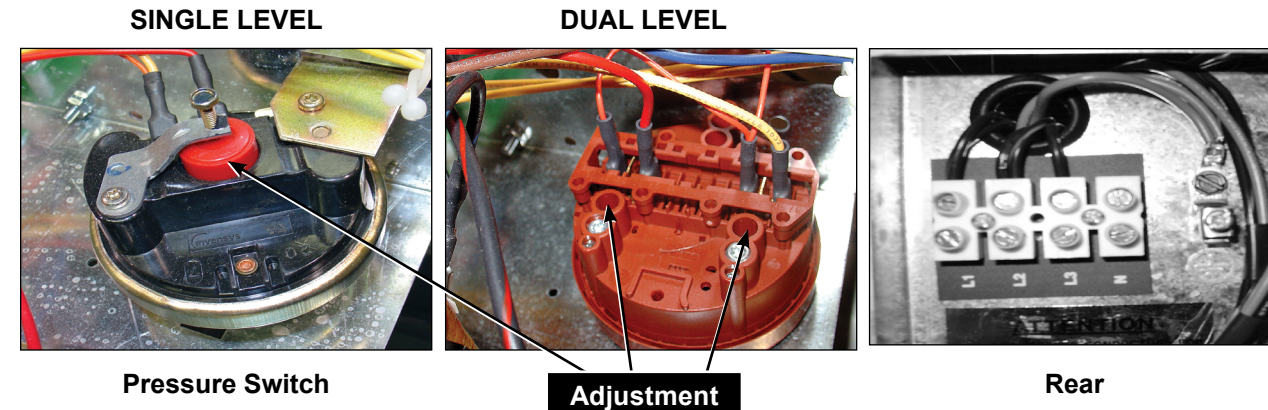
The selector switch is mounted in the center of the control panel and is held in place with five nuts. It allows the selection of hot, warm or cold water temperatures. Note: Do not over tighten on reinstallation as the switch can be damaged, stay pushed in and will cause erratic displays.

## Add-Bleach LED

This LED light indicates to the user the correct time to add bleach. This LED is polarity sensitive and must be connected correctly.

## Pressure Switch **Caution (Not recommended by Factory!) Changing Factory preset adjustment voids all factory water usage specifications.**

The pressure switch sets the water level in the washer. As the water level rises, it compresses the air in the pressure switch hose. When the washer reaches the desired water level, the compressed air in the pressure switch hose opens the contacts in the switch, shutting off the water. When at the empty level,



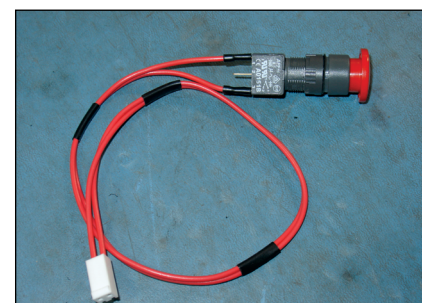
the pressure switch contacts are closed allowing the machine to either spin or fill with water. The 1/4" screw in the middle of the switch adjusts the water level. Counter clockwise will lower the water level, and clockwise will increase the water level. Before making any adjustments of the pressure switch, drain the tub and blow the hose clear of possible water bubbles which can cause erratic pressure switch operation.

## Emergency Stop Button Switch Assembly

The stop button is mounted on right side of machine. Remove the top and access the rear of button. Remove the plastic retainer by unthreading CCW. The switch assembly will have to be removed by pressing down on the plastic clip while pulling the switch body away from the stop button.



**Temperature and Start Display**



**Stop Button Switch Assembly**

## Power Connection Terminal Block

This terminal block sets at the very back of the control trough. Incoming power to the washer should connect here. (see Electrical under Installation and Operation Section for exact connections)

## Delta Variable Frequency Drive:

Main power is connected to terminals L1, L2, and L3 on the Delta drive. If the washer is connected to a three phase source, there should be voltage present on all three terminals. If the washer is connected to single phase power, there should be voltage present on terminals.

The voltage should measure 208 Volts to 240 Volts A.C. between phases and connected to (if connected to three phase). There is a tolerance of + 10% on the mains voltage (187 Volts to 264 Volts).

## Delta VFD Motor Leads:

The wires from the motor are connected to terminals T1, T2, and T3. Since this drive uses pulse width modulation, an accurate current or voltage reading is not possible. Although an accurate current reading is not possible, a balanced current reading should be present while the motor is running.

## Delta VFD Dynamic Braking Resistors:

Two, 160 Ohm or 200 Ohm braking resistors (Please check your washer model parts requirements and quantities), are connected in parallel and attached to the drive at terminals B1 and B2. These resistors allow voltage, which is generated by the motor when decelerating, to be dissipated. They will become hot while the motor is slowing down, so care should be taken so as not to come in contact with them. This will prevent an electrical shock and/or a physical burn.

## Delta VFD Cooling Fan:

There is a cooling fan attached to the bottom of the Delta drive. This fan will operate when the internal temperature of the drive reaches a predetermined level, the same way the radiator fan in a newer car operates. **THE FAN CAN OPERATE ANYTIME POWER IS APPLIED TO THE DRIVE!** Remove power to the drive if work is required around the fan.

---

# Section 7:

## Electrical Wiring Diagrams & Schematics

---

## Electrical Path Circuit Schematics

### Start Circuit

Power travels into the machine on L1 & L2 & (L3, if 3 phase used). L1 and L2 provide 208- 240VAC to the controls transformer which steps the voltage down to 120VAC for the controls. (The L1 connection at the controls transformer must be checked at start-up to coincide with machine operating voltage) The 120VAC travels out from the transformer on either [X-1 red wire directly to the 1.5 amp fuse] or [X-1 black/red wire to TB-4 and then through the red wire to the 1.5 amp fuse]. The controls transformer also creates a neutral on the X-2 black/blue wire that connects to TB-1. From the fuse holder, 120VAC travels on the red wire to the #6 terminal on the terminal strip and then through the black wire to another step-down transformer. From the terminal strip the blue wire will provide the neutral for solenoid, thermoactuators and all valves. The white wire provides the neutral from the terminal to the step down transformer.

120VAC is stepped down to 2.3VAC (blue wires), 24VAC (red wires), and a yellow center tap wire to the P-7 power connection on the main controller PCB. With the main control PCB now powered, 5VDC will be present between the (2) yellow wires and also the (2) brown wires for the coin switches. Both pairs will now be ready to count coins through the P-2 connection at the control PCB. 26.8 VAC goes out on the black wire of the P-4 connection from the main control PCB to the S5 door closed switch which mounted on the hinge side of masking ring. Closing the door will engage the door closed switches, sending the voltage to the red wire on the S1 door latched switch. Turning the door handle to the vertical latched position closes the S1 door latched switch, returning the voltage to the main control PCB on the white/red wire at the P-4 connection. 26.8VAC is now present at the S2 and S3 door locked switches.

26.8VDC is also at the black and white wires between P-21 at the main control PCB and the P-20 of the relay PCB. This voltage signals the relay PCB that the door is closed and latched making 120VAC available to the relays controlling the door lock solenoid, drain valve and water valves. A continuous 5VDC is sent on the red wire from the P-1 connector on the main control PCB, through the (normally closed) emergency stop button switch and returns on the second red wire back to the P-1 connector. Payment is added and the display counts down on the main control PCB display until the vend price is satisfied. The display will change to read PUSH and the green light over the start button will flash. Pressing the start button on the front of the main control PCB signals the relay PCB to lock the door and 120VAC will go to the door lock solenoid on the white/red wire from the P17 connector of the relay PCB. The door lock solenoid engages and pulls up on the door locking rod, locking the door and closing the S2 and S3 door locking switches.

The S2 locking switch is a backup to the S1 latching switch so that once the cycle starts the S1 isn't critical. The S3 locking switch provides 26.8VDC on the orange wire back to P4 connector at the main control PCB and the P15 connector at the relay PCB. This signals that the loading door is closed, locked and safe to continue wash operations. This activates the P-13 and P-14 yellow enable wires to the inverter drive to allow motion. If there is no signal on P-15 (orange wire) their will be no motion of the tub. S1, S2, S3 and S5 door switches are now closed. The green On LED and the door lock solenoid (discussed in start circuit) will remain on throughout the cycle.

### Fill Circuit-Warm

The relay PCB supplies 120VAC to the brown/yellow wire from P-17 to the drain valve which closes the valve. The lock thermoactuator also receives 120VAC on orange/blue from P17 of the relay PCB. This device prevents the door lock solenoid from dropping out and unlocking during the cycle in the event of a power loss. The 120VAC will cycle on and off keeping the lock thermoactuator engaged until 70 seconds before the end of the cycle. The main control PCB sends data commands to the VFD through the data cable connected at P-6. These commands control the wash basket which will tumble one direction for 12 seconds, pause, and then reverse direction for 12 seconds.

The prewash or wash LED will illuminate at this time, powered through the white wires from the P-3 con-

---

nection of the main control PCB to the LED printed circuit board. Using the factory preset cycle as an example: The washer fills the tub through the back of the machine with either one or both the C1 cold and H1 hot water valves. From the P19 connection of main relay PCB, 120VAC is sent out on the white/brown wire to the C1 cold water fill valve and the red/yellow wire to the H1 hot water fill valve depending on the temperature selected. After a 90 second delay from the beginning of the wash cycle bath only, the detergent dispenser flushes the detergent into the tub for 20 seconds. This is accomplished when 120VAC travels through the red/orange wire to the H2 hot water valve solenoid. During the machine fill, a 5VDC signal is sent on the red wire from the P5 connection of the main control PCB to the pressure switch contact and returns on the yellow and orange wires to the P5 connection of the main control PCB. When the water level in the basket reaches the preset level pressure, the switch moves the switch contacts to the full or open position. This causes the main control PCB to signal the relay PCB to shut off the water valve coils.

### **Wash Circuit**

Once the machine has achieved it's water level, the wash basket will continue to tumble one direction for 12 seconds, pause, and then reverse direction for 12 seconds. The time on the front display will count down as the bath progresses. The time of the bath is programmable up 15 minutes per bath. Note: When programming cycles, the wash bath must be programmed for 3 minutes or more.

### **Drain**

When the program bath time ends the main control PCB signals the relay PCB to remove 120 VAC power from brown/yellow wire at P17 going to the drain valve. The normally-open, spring-loaded drain valve opens allowing water to exit the machine. This resets the pressure switch back to an empty level and restores the 5VDC connection through the pressure switch from the red wires to the orange and yellow wires.

### **Rinse 1 & 2**

For Rinse 1 & 2, the rinse LED will illuminate, the drain valve will receive 120VAC and close. The basket will fill and tumble the same as the wash bath for the programmed time. The rinse water temperatures are programmable and factory default is cold.

### **Final Rinse Circuit**

The final rinse LED will illuminate, the drain valve will receive 120VAC and close. The basket will fill and tumble the same as the previous baths for the programmed time. The final rinse water temperatures are programmable. Note: When programming cycles, the final rinse bath must be programmed and cannot be set for less than 3 minutes. Also at the beginning of the final rinse bath, the main control PCB will signal the relay PCB to send 120V to the P-19 connector on the white/blue wire to the C2 cold water valve for 20 seconds to flush the fabric softener dispenser.

### **Spin Circuit**

The spin LED will illuminate and the main control PCB sends a signal to the variable frequency drive via the data cable at P6 to VFD RJ-11. The rotation as viewed from front during spin will be counter-clockwise. (The 18lb washers will extract in a clockwise direction) The time of the spin cycle can be programmed. Note: The final spin must be programmed into the final rinse bath and must be programmed for 1 minute or more.

---

### **Unlock Thermoactuator and Shake Out Circuit**

70 seconds before the end of the cycle the main control PCB signals the relay PCB to remove 120VAC from the orange/blue wire at the P-17 connector on the lock thermoactuator. This allows the lock thermoactuator time to cool and retract by the end of the cycle. To insure that the lock thermoactuator has retracted by the end of the cycle, 1 minute prior the end of the cycle, the unlock thermoactuator is powered with 120VAC through the orange/red wire from the P-17 connector of relay PCB. The unlock thermoactuator moves the complete bracket assembly away from the door lock solenoid allowing it to drop at the end of the cycle. The basket will come to a stop from spin speed with the assistance of dynamic braking resistors wired to the variable frequency drive. (See wiring diagrams for quantities and resistor ohm values). The washer will then tumble for 45 seconds to let the clothes shake loose from the basket and then stop.

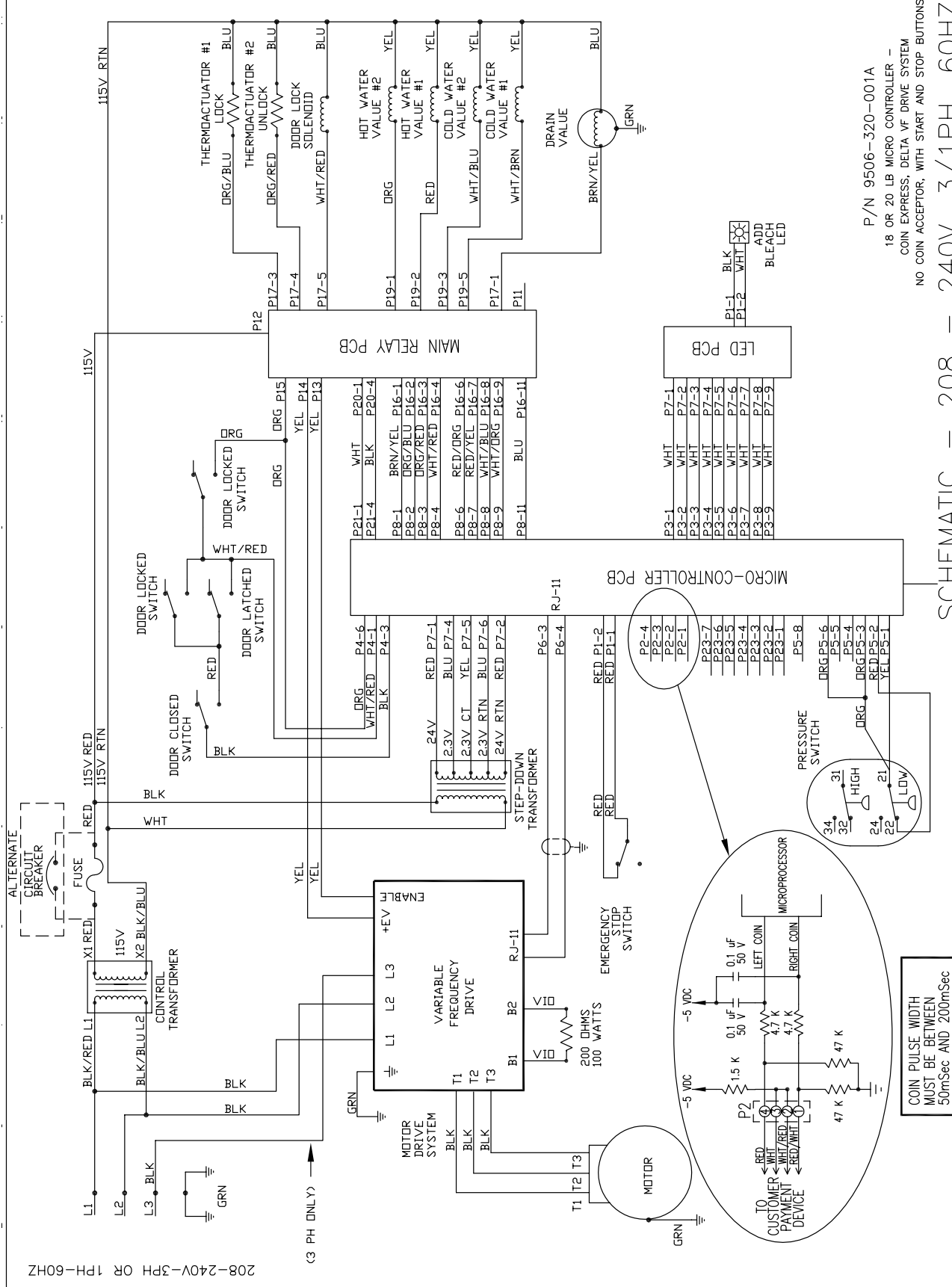
### **End of Cycle and Door Open Circuit**

Once the machine stopped, 3 things occur: 1. The beeper will signal for 5 seconds letting the user know that it is the end of the cycle. 2. The main control PCB signals the relay PCB to remove power from the white/red wire at P-17 which allows the door lock solenoid to unlock. 3. The main control PCB resets when the S1,S2,S3,S5 switches open and door is opened. The machine is now ready to accept coins again.

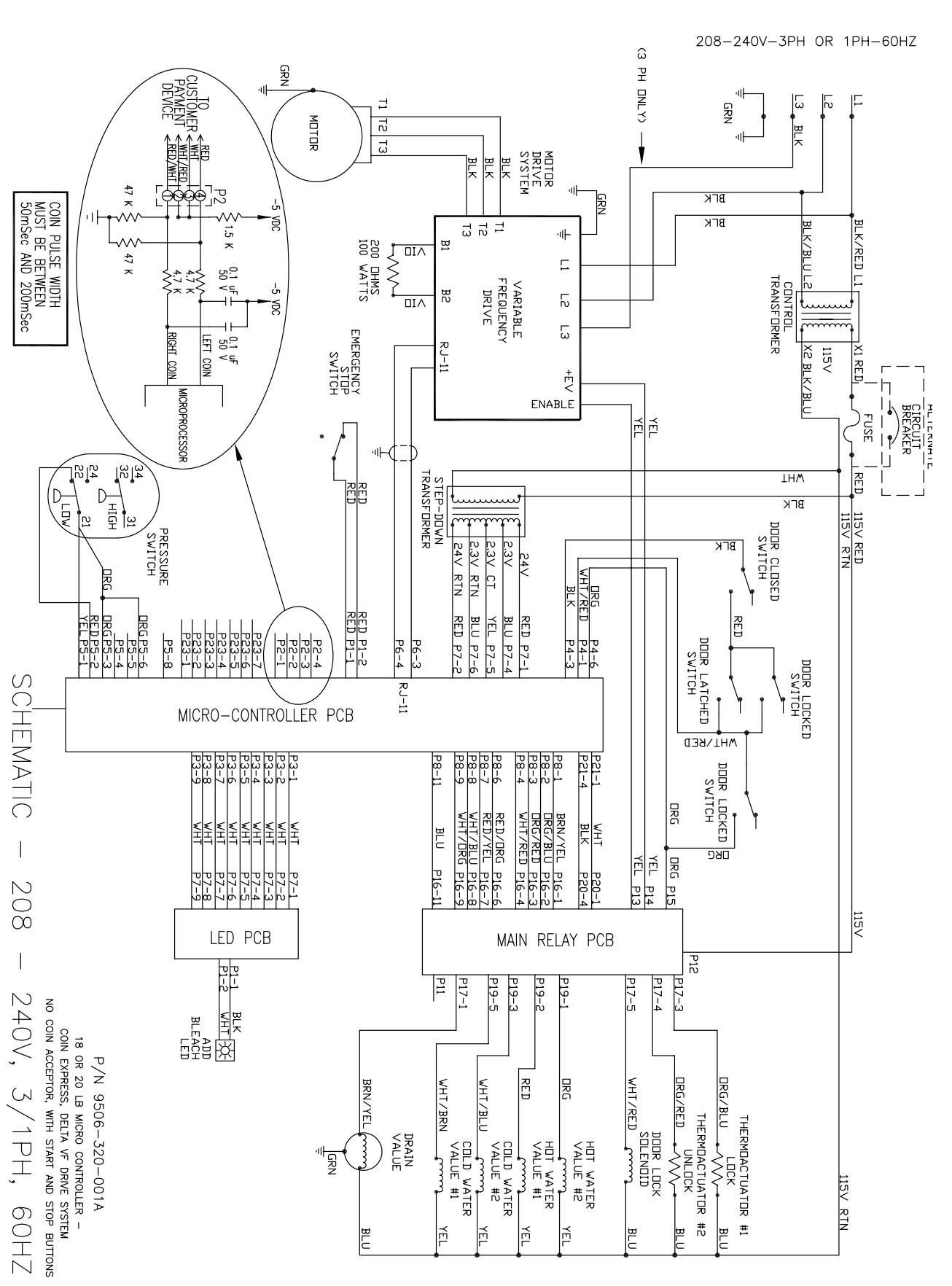




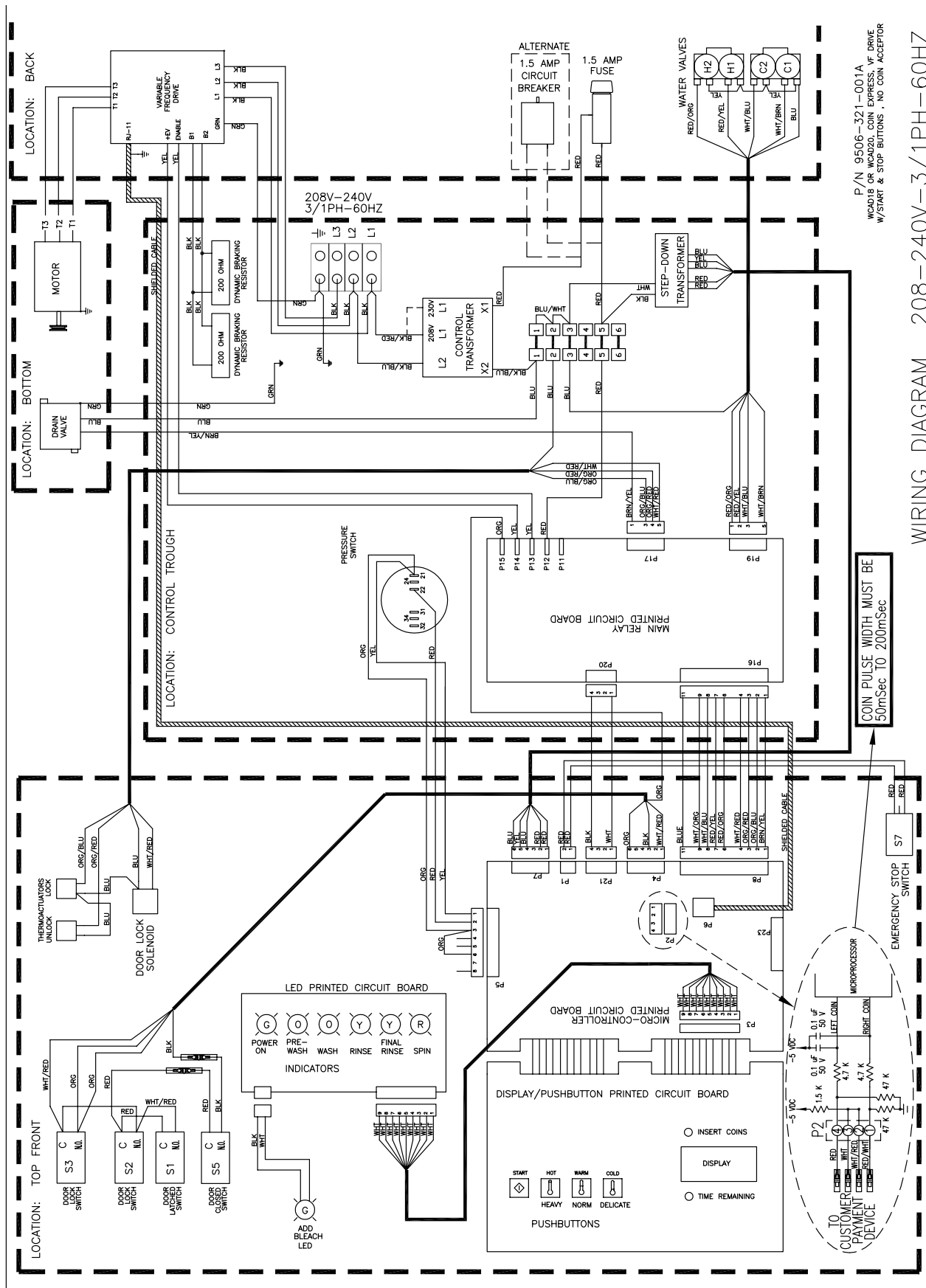
# CN (No Coin Acceptor) 20Lb. Non-Express: 208-240 Volt Wiring Diagram



# CN (No Coin Acceptor) 20Lb. Express: 208-240 Wiring Schematic

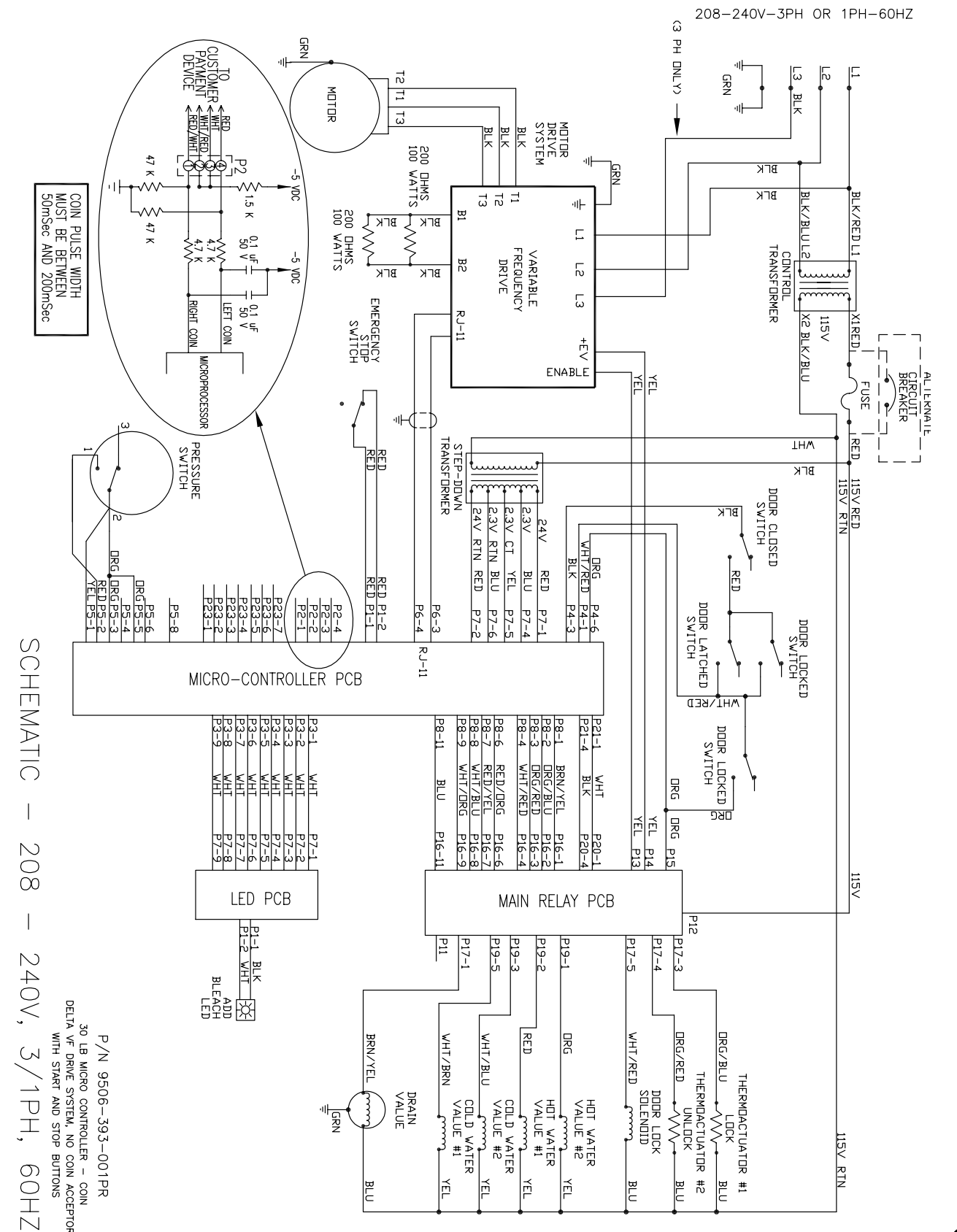


# CN (No Coin Acceptor) 20Lb. Express: 208-240 Wiring Diagram



WIRING DIAGRAM 208-240V-3/1PH-60HZ

# 30Lb. Express: Non-Express & Express: CN (No Coin Acceptor) Schematic 208-240



SCHEMATIC - 208 - 240V, 3/1PH, 60HZ







## Kits, Assemblies, & Common Parts

Coin Acceptor Components	Part Number
Optical Coin Acceptor	9021-092-002
Optical Coin Switch Replacement	9801-099-001
Coin Drop Screws	9545-053-002
Retainer, Coin Acceptor	9486-149-001
Loading Door & Door Lock Components	Part Number
Door Glass Gasket (Standard Door)	9206-419-001
Door Glass Gasket (Small Door)	9206-411-002
Door Handle Only (Small)	9244-080-003
Door Close Switch	9539-492-001
Door Lock Gear Motor Assembly	9922-015-001
Kit - Door Latching Assy. & Cam (replaces original Door Latching Assembly)	9732-347-001
Kit - Door Cam Replacement	9732-346-002
Kit - Locking Pawl Replacement	9732-346-001
Kit - Door Gasket Expander Kit (Small)	9732-139-001
Kit - Door Gasket Expander Kit (Large)	9732-139-002
Electrical Components	Part Number
Transformer, Main	8711-004-001
Transformer, Control	8711-009-001
Main Control Board	9473-009-005
Kit-Replacement, Pressure Sensor (Only)	9732-315-001
VFD & Breaking Resistors Components	Part Number
Breaking Resistor 200 Ohms	9483-004-002
Breaking Resistor 160 Ohms	9483-004-003
Delta E Drive Display	9150-044-001
Data Cable (56")	9806-015-003
Drain & Water Valve Components	Part Number
Kit - 3" Drain Valve Seal Replacement	9732-327-001
Drain Valve 3"	9379-202-001
Drain Valve 2"	9379-199-001
Water Valve (Dual)	9379-183-012
Diaphragm (Dual)	9118-049-003
Cabinet Components	Part Number
Front Panel Screw	9545-008-014
Front Panel Finisher Washer	8641-585-001
Front Panel Spring Nut	8640-399-008
Top Soap Box Screw (Regular Chassis Only)	9545-008-012
Top Soap Box Spring Nut (Regular Chassis Only)	8640-399-007
5/16 Hex Screw, Common	9545-008-026
Top Lock Key #6324	9306-025-001
Cylinder Plug (1.5" Plastic)	9456-041-007



## Section 8:

### Parts Data

WCAD-Series Vended Washers  
T300, T400, T600 (100G)  
& T350, T450 (Express  
Washers 200G)

## A-Series Accessories

WCAD20KCS-10	120 volts	60hz.	Single Phase
WCAD20KCS-12	208-240 volts	60hz.	Single Phase or Three Phase
WCAD20KCS-12SZ	208-240 volts	60hz.	Single Phase or Three Phase
WCAD30KCS-12	208-240 volts	60hz	Single Phase or Three Phase
WCAD30KCS-12SZ	208-240 volts	60hz	Single Phase or Three Phase
WCAD40KCS-12	208-240 volts	60hz	Single Phase or Three Phase

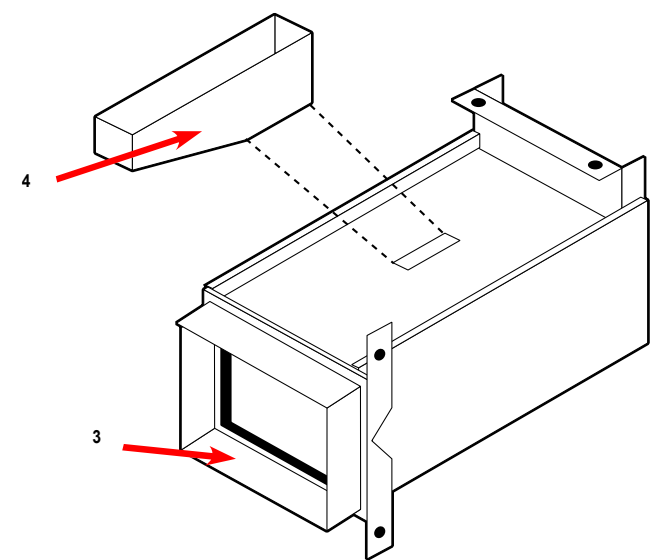
Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
*	Kit, Door Gasket Expander (large)	9732-139-002	9732-139-002	9732-139-002	9732-139-002	9732-139-002	
*	Kit, Door Gasket Expander (small)	9732-139-001	9732-139-001	9732-139-001	9732-139-001	9732-139-001	
*	Hose, Water Supply 3/8" I.D. x 48"	9990-027-011	9990-027-011	9990-027-011	9990-027-011	9990-027-011	2
*	Washer, Inlet Hose (furnished)	8641-242-000	8641-242-000	8641-242-000	8641-242-000	8641-242-000	2
*	Strainer, Inlet Hose (furnished)	9565-003-001	9565-003-001	9565-003-001	9565-003-001	9565-003-001	2
*	Bevel Washer for 5/8" bolt used in installations using angle iron bases	8641-586-002	8641-586-002	8641-586-002	8641-586-002	8641-586-002	
*	Bevel Washer for 3/4" bolt used in installations using angle iron bases	8641-586-003	8641-586-003	8641-586-003	8641-586-003	8641-586-003	
*	Sealing compound	8538-151-001	8538-151-001	8538-151-001	8538-151-001	8538-151-001	
*	TORX#20	8545-051-002	8545-051-002	8545-051-002	8545-051-002	8545-051-002	
*	Flow Restrictors (in dispenser )	9475-002-002	9475-002-002	9475-002-002	9475-002-002	9475-002-002	2
*	Battery (used on Control PCB)	8612-001-001	8612-001-001	8612-001-001	8612-001-001	8612-001-001	
*	VFD Filter options (1 phase) 120v	9732-233-001					
*	VFD Filter options (3 phase)	9732-234-001	9732-231-001	9732-231-001	9732-231-001	9732-231-001	
*	VFD Filter options (1 phase) 220VAC	9732-235-001	9732-232-001	9732-232-001	9732-232-001	9732-232-001	
*	Coin Bearing & Seal Kit	9732-219-001	9732-219-002	9732-219-002	9732-219-004	9732-219-004	
*	Coin Op CD with OS2 Platform for A Series Washers Only	9504-015-001	9504-015-001	9504-015-001	9504-015-001	9504-015-001	
*	Coin Box Assy, Blue Small	9807-099-001	9807-099-001	9807-099-001	9807-099-001	9807-099-001	1
	Coin Box Assy, Black Small	9807-099-003	9807-099-003	9807-099-003	9807-099-003	9807-099-003	1
*	Mode Light Support	9635-022-001	9635-022-001	9635-022-001	9635-022-001	9635-022-001	1
*	MS300 Display	9150-058-001	9150-058-001	9150-058-001	9150-058-001	9150-058-001	*
*	A to C Series Kit -12	9732-306-002	9732-306-003	9732-306-004	9732-306-005	9732-306-006	*
*	A to C Series Kit -10	9732-306-001					*

## Wiring Harness Part # by Model

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
*	Wiring Harness (Add Bleach Lite assy included)	9794-001-001	9794-001-001	9794-001-001	9794-001-001	9794-001-001	1
*	Wiring Harness, Door Lock	9627-791-003	9627-791-003	9627-791-003	9627-791-003	9627-791-004	1
*	Wiring Harness,CoinDrop Mech	9627-792-001	9627-792-001	9627-792-001	9627-792-001	9627-792-001	1
*	Wiring Harness, Drain,Thermo,DoorSol	9627-796-001	9627-796-001	9627-796-001	9627-796-001	9627-796-002	1
*	Data Cable	9806-015-001	9806-015-001	9806-015-001	9806-015-001	9806-015-001	1
*	Wiring Harness P20/P21	9627-793-001	9627-793-001	9627-793-001	9627-793-001	9627-793-001	1
*	Wiring Harness P8/P16	9627-794-001	9627-794-001	9627-794-001	9627-794-001	9627-794-001	1
*	Wiring Harness WaterValve/P19	9627-795-003	9627-795-003	9627-795-003	9627-795-003	9627-795-004	1
*	Wiring Harness LED PCB	9627-797-001	9627-797-001	9627-797-001	9627-797-001	9627-797-001	1
*	Wiring Harness P5/pressure	9627-800-001	9627-801-001	9627-801-001	9627-801-001	9627-802-001	1
*	Wiring Assembly Yel. 32"	8220-064-023	8220-064-023	8220-064-023	8220-064-023	8220-064-023	2
*	Wiring Assembly Red 20"	8220-001-282	8220-001-282	8220-001-282	8220-001-282		2
*	Wiring Assembly Vio. 24"	8220-118-001					2
*	Wiring Assembly Jumper Yel	8220-123-001	8220-123-001	8220-123-001	8220-123-001	8220-123-001	1
*	Wiring Assembly Red 28"					8220-062-025	2
*	Wiring Assembly Blk. 17"	8220-062-028	8220-062-026	8220-062-026	8220-063-026	8220-062-026	1
*	Wiring Assembly Red 17"	8220-062-027	8220-062-025	8220-062-025	8220-063-025	8220-062-025	1
*	Wiring Assembly Jumper BLK.		8220-117-002	8220-117-002	8220-117-002	8220-117-002	2
*	Wiring Assembly Red 7"	9631-381-018	9631-381-018	9631-381-018	9631-381-018	9631-381-018	1
*	Wiring Assembly Blu/Wht	8220-090-009	8220-090-009	8220-090-009	8220-090-009	8220-090-009	1
*	Wiring Assembly Blk/Blu	8220-001-231	8220-001-231	8220-001-231	8220-001-231	8220-001-231	1
*	Wire Assembly Green 7"	8220-001-478					1
*	Harness Power Terminal Block	9627-831-001	9627-831-001	9627-747-003	9627-747-003	9627-747-003	1
	Wire Assy-Red 29"	8220-065-030					1
	Wire Assy-Blue 29"	8220-065-031					1
	Wire Assy-Black 4"	8220-062-023					1

## Cabinet and Front Panel Group Part # by Model

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Panel, Side (Left or Right) - stainless			9732-359-006	9732-359-007	9732-359-008	2
1	Panel, Right Side-stainless	9989-639-001	9989-640-001				1
1	Panel, Left Side - stainless	9989-639-002	9989-640-002				1
2	Screw, (Side Panel to Base)	9545-018-018	9545-018-018	9545-018-013	9545-018-013		6
2	Screw, (Side Panel to Base)					9545-018-013	8
2	Nut, Hex 1/4-20 UNC	8640-414-006	8640-414-006	8640-414-006	8640-414-006		6
2	Nut, Hex 1/4-20 UNC					8640-414-006	8
*	Pad-Foam, Side Panel	0904-904-001	0904-904-001	0904-904-001	0904-904-001	0904-904-001	2
3	Vault Assembly, Coin	9942-033-008	9942-033-008	9942-033-009	9942-033-009	9942-033-009	1
*	Screw, #10B x 1/2	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	2
4	Chute-Coin	9119-031-001	9119-031-001	9119-031-001	9119-031-001	9119-031-001	1
*	Screw, 10B x 1/4	9545-008-001	9545-008-001	9545-008-001	9545-008-001	9545-008-001	1
*	Bracket, Side Panel under front panel	9029-066-001	9029-066-001	9029-165-001	9029-165-001	9029-165-001	1
*	Nut, Hex (to tub front)	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	2
*	Screw, #10B x 1/2	9545-008-031	9545-008-026	9545-008-026	9545-008-026	9545-008-026	2
5	Panel, Control (Mounts Nameplate) If Replacing before Serial # 530002 Will require 2 of Coin Mech Retaining Brackets # 9486-149-001	9989-522-001	9989-522-001	9989-523-001	9989-523-001	9989-524-001	1
*	Screw, Control Panel to Sides	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	4
6	Nameplate Decal, Control Panel (Blue)	9412-135-001	9412-156-001	9412-137-001	9412-159-001	9412-139-001	1
6	Nameplate Decal, Control Panel (Black)	9412-168-001	9412-169-001	9412-170-001	9412-166-001	9412-171-001	1
7	Label-Nameplate, RH (Blue)	8502-744-002	8502-744-002				1
7	Label-Nameplate, RH (Black)	8502-744-001	8502-744-001				1
*	Stop Button Mounting Plate	9452-725-001	9452-725-001	9452-725-001	9452-725-001	9452-725-001	1
8	Kit-Stop button with harness & Switch	9732-223-001	9732-223-001	9732-223-001	9732-223-001	9732-223-001	1
9	Acceptor, Coin-Optical switch w/harness	9021-092-002	9021-092-002	9021-092-002	9021-092-002	9021-092-002	1
*	Retainer-Dual coin Acceptor	9486-149-001	9486-149-001	9486-149-001	9486-149-001	9486-149-001	2
*	Screws, Coin Acceptor	9545-053-002	9545-053-002	9545-053-002	9545-053-002	9545-053-002	4
10	Panel Assy, Front	9454-781-001	9454-781-001	9454-659-001	9454-659-001	9454-669-001	1
11	Band, Edge Protector	9059-063-004	9059-063-004	9059-063-002	9059-063-002	9059-063-002	1
*	Screw, Hex- To Control Panel	9545-008-031	9545-008-031	9545-008-031	9545-008-031	9545-008-031	2
*	Nut, Spring- To Control Panel 10/32	8640-442-001	8640-442-001	8640-442-001	8640-442-001	8640-442-001	4
12	Screw, Flat Head- Front to Sides	9545-008-014	9545-008-014	9545-008-014	9545-008-014	9545-008-014	2
13	Washer, Finish	8641-585-001	8641-585-001	8641-585-001	8641-585-001	8641-585-001	2
*	Nut, Spring-To Front Panel	8640-442-001	8640-442-001	8640-442-001	8640-442-001	8640-442-001	2
14	Label, Door Opening-Blue	8502-723-001	8502-723-001	8502-723-001	8502-723-001	8502-723-001	1
14	Label, Door Opening-Black	8502-742-001	8502-742-001	8502-742-001	8502-742-001	8502-742-001	
15	Label, Warning Risk of Injury-Blue	8502-722-002	8502-722-002	8502-722-002	8502-722-002	8502-722-002	1
	Label, Warning Risk of Injury-Black	8502-741-001	8502-741-001	8502-741-001	8502-741-001	8502-741-001	1

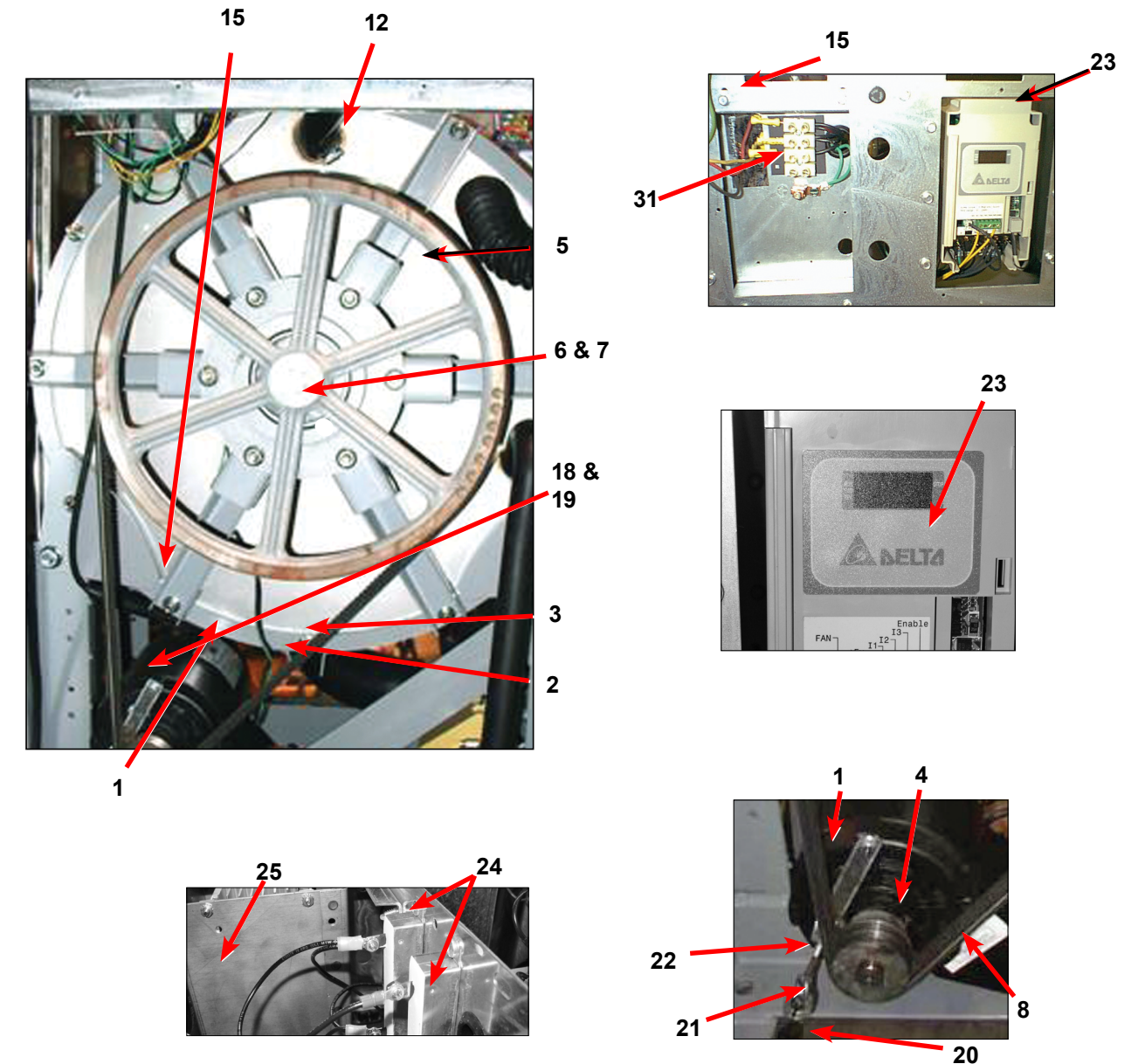


Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
16	Door, Lower Service (includes handle & Rivets)	9960-286-001	9960-286-001	9960-286-002	9960-286-002	9960-286-002	1
17	Handle (bumper guard)	9244-086-001	9244-086-001	9244-086-002	9244-086-002	9244-086-002	1
*	Rivet	9491-009-003	9491-009-003	9491-009-003	9491-009-003	9491-009-003	4
18	Screw Mtg., Flat Head	9545-008-014	9545-008-014	9545-008-014	9545-008-014	9545-008-014	2
19	Washer, Finish	8641-585-001	8641-585-001	8641-585-001	8641-585-001	8641-585-001	2
*	Nut, Spring	8640-399-008	8640-399-008	8640-399-008	8640-399-008	8640-399-008	2
	Coin Box Assy, Blue Small	9807-099-001	9807-099-001	9807-099-001	9807-099-001	9807-099-001	1
	Coin Box Assy, Black Small	9807-099-003	9807-099-003	9807-099-003	9807-099-003	9807-099-003	1



## Rear View Access Part # by Model

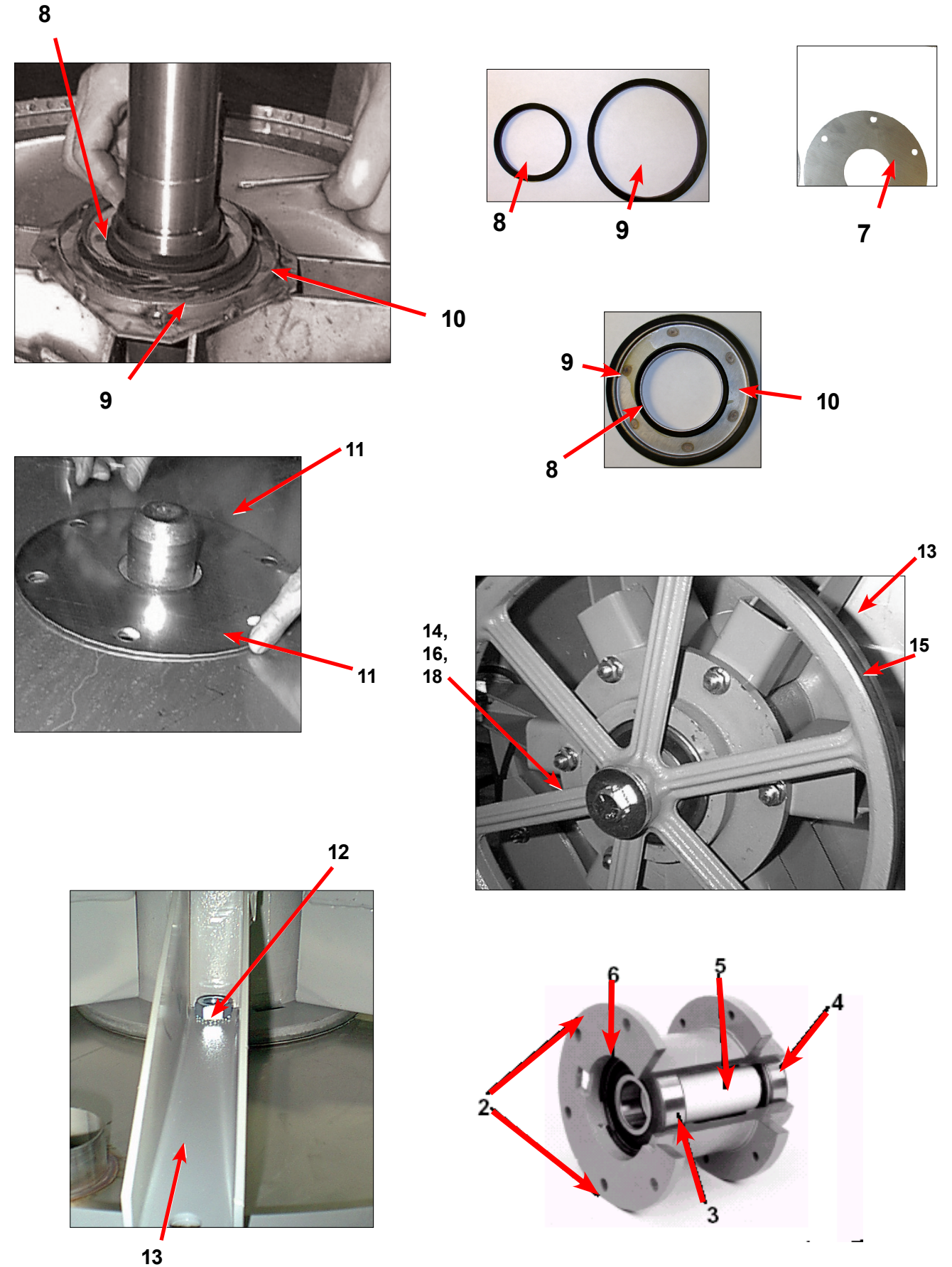
Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Drive Motor, 3 Phase (Inverter duty)	9732-127-011	9732-127-001	9732-127-012	9732-127-014	9732-127-012	1
	Drive Motor After Serial #483620	9732-225-001					
4	Pulley, Motor	9453-169-012	9453-180-001	9453-170-003	9453-181-001	9453-170-003	1
*	Set Screw,Sq.Hd(motor pulley)	9545-028-015	9545-028-015	9545-028-015	9545-028-015	9545-028-015	2
2	Rod, Motor Mtg	9497-222-002	9497-222-002	9497-222-002	9497-222-002	9497-222-004	1
*	Screw (end of motor rod)	9545-029-005	9545-029-005	9545-029-005	9545-029-005	9545-029-005	1
*	Lockwasher (end of motor rod)	8641-582-014	8641-582-014	8641-582-014	8641-582-014	8641-582-014	1
3	Collar, Shaft (w/set screws) removed starting #530726	9076-052-002	9076-052-002	9076-052-002	9076-052-002	9076-052-002	2
*	Motor Bushing (plastic)Before Serial # 530726	9053-074-002	9053-074-002	9053-074-002	9053-074-002	9053-074-002	2
*	Motor Bushing (Rubber) after Serial # 530726	9053-082-001	9053-082-001	9053-082-001	9053-082-001	9053-082-001	2
*	Clamp-Worm, 316SS, 1.5" (for Rubber bushing) Start #530726	8654-117-019	8654-117-019	8654-117-019	8654-117-019	8654-117-019	2
18	Strap Bracket, Motor Tension	9029-206-002	9029-206-001	9029-206-002	9029-206-002	9029-206-002	1
19	Nut, Strap to Motor 10/32 UNF	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	1
19	Washer #10	8641-581-006	8641-581-006	8641-581-006	8641-581-006	8641-581-006	1
20	Spring, Belt Tension	9534-319-002	9534-319-002	9534-319-002	9534-319-002	9534-319-002	1
5	Pulley, Driven	9908-041-002	9453-168-005	9453-168-004	9453-168-006	9453-168-003	1
*	Tolerance Ring driven pulley	9487-234-002	9487-234-001	9487-234-001	9487-234-003	9487-234-003	1
6	Screw 1/2-13x1 1/4"	9545-017-009	9545-017-009	9545-017-009			1
6	Screw 5/8-11x1/2" Driven pulley				9545-060-001	9545-060-001	1
6	Lockwasher 1/2"	8641-582-016	8641-582-016	8641-582-016			1
6	Lockwasher 5/8"				8641-582-018	8641-582-018	1
7	Washer, Flat 1/2"	8641-581-026	8641-581-026	8641-581-026			1
7	Washer, Flat 5/8x2 1/4"				8641-581-032	8641-581-032	1
8	Drive Belt	9040-076-004	9040-079-004		9040-079-005		1
8	Drive Belt			9040-076-005		9040-076-005	2
9	Channel, Rear	9081-132-001	9081-132-001	9081-135-001	9081-135-001	9081-134-001	1
*	Screw Mtg rear channel	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	4
*	Nut, Spring Rear Channel MTG	8640-399-008	8640-399-008	8640-399-008	8640-399-008	8640-399-008	4
23	VFD Delta "S" drive 120 volt	9732-345-015					1
23	VFD Delta "S" drive 208-240 volt	9732-345-010	9732-345-025	9732-345-001	9732-345-031	9732-345-002	1
24	Braking resistors (200 ohm)	9483-004-002					1
24	Braking resistors (200 ohm)		9483-004-002	9483-004-002	9483-004-002	9483-004-002	2
24	Braking resistors (160 ohm)						2
25	Bracket assembly (drive mounting)	9985-157-001	9029-157-001	9985-157-001	9985-157-001	9985-157-001	1
31	Terminal Block Channel Mount			9897-033-002	9897-033-002	9897-033-002	1
	Screw to Mtg Brake Resistor	9545-012-008	9545-012-008	9545-012-008	9545-012-008	9545-012-008	4
	Nut 10-32 Mtg Brake Resistor	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	4
	Drive Cover Plate			9074-267-001		9074-278-001	

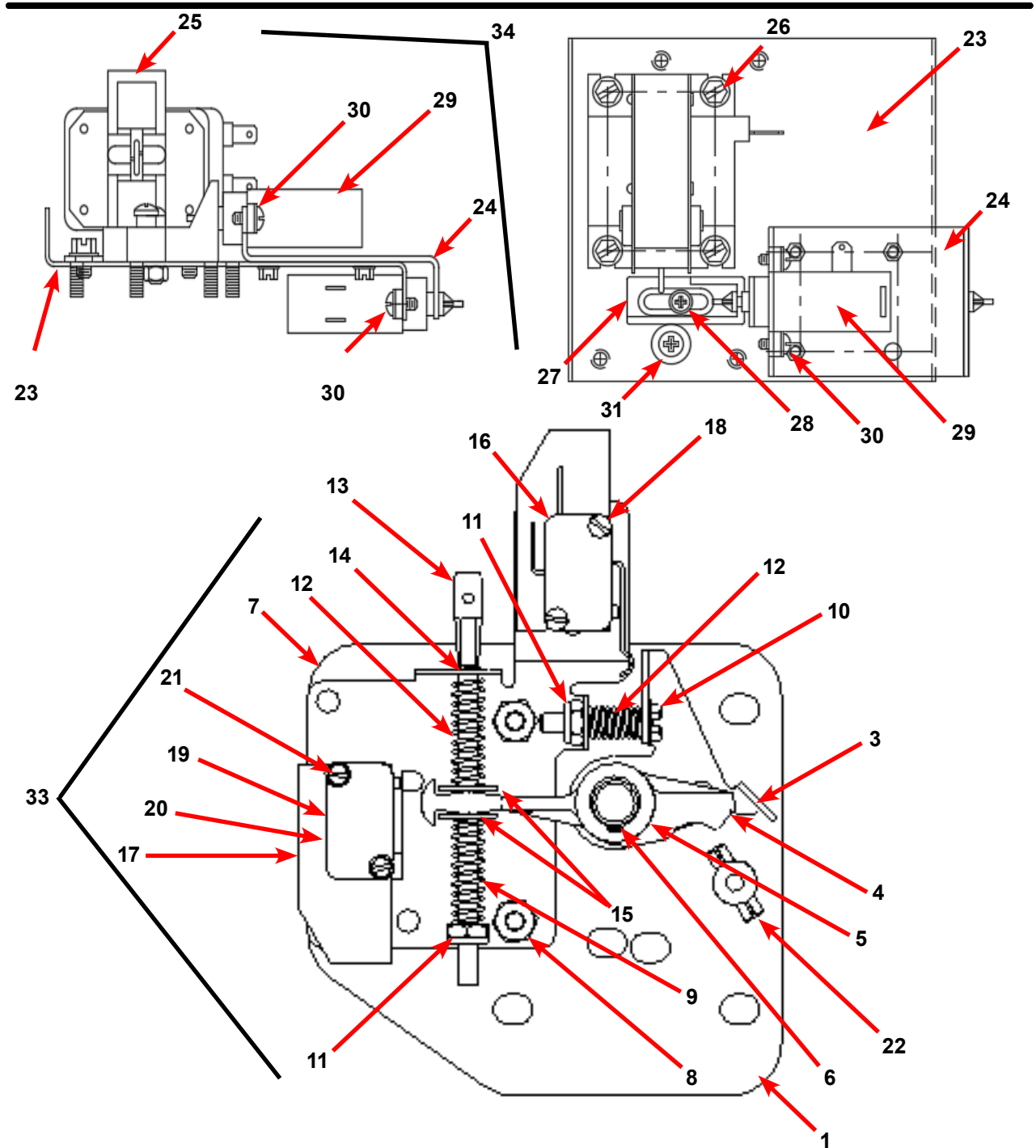


Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
12	Hose, Overflow Vent Top	9242-463-001	9242-463-002	9242-463-002	9242-463-003	9242-463-003	
12	Clamp, Hose Vent	8654-117-008	8654-117-008	8654-117-008	8654-117-008	8654-117-008	2
11	Hose, Overflow to drain	9242-449-002	9242-449-002	9242-449-002	9242-449-002	9242-449-002	1
11	Clamp, Hose overflow to drain	8654-117-018	8654-117-018	8654-117-018	8654-117-018	8654-117-018	2
15	Hose, Pressure Switch	9242-175-000	9242-175-000	9242-175-007	9242-175-007	9242-175-001	1
*	Clamp, Pressure Switch Hose	8654-117-015	8654-117-015	8654-117-015	8654-117-015	8654-117-015	1
	Vacuum Breaker Mtg Bracket	9029-065-001	9029-065-001	9029-065-001	9029-077-001	9029-077-001	1
13	Vacuum Breaker ALL	9610-001-001	9610-001-001	9610-001-001	9610-001-001	9610-001-001	1
*	Clamp, Hose to Vacuum Breaker	8654-117-014	8654-117-008	8654-117-008	8654-117-014	8654-117-014	1
16	Hose, Vacuum Breaker to tub	9242-458-001	9242-458-001	9242-458-002	9242-458-002	9242-458-002	1
14	Plastic Plug 7/8" Electrical Connection	9456-041-006	9456-041-006	9456-041-006	9456-041-006	9456-041-006	2
*	Panel Assy., Back	9454-632-001	9989-632-001	9989-446-002	9989-446-002	9989-446-001	1
*	Screw Panel Mtg.#10Bx1/2"	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	10
*	Nut, Spring	8640-399-007	8640-399-007	8640-399-007	8640-399-007	8640-399-007	6
*	Screw, To Base-1/4x3/4	9545-030-002	9545-030-002	9545-030-002	9545-030-002	9545-030-002	1

# Cylinder, Seals & Bearings Part # by Model

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
*	Bearing and Seal Kit	9732-219-001	9732-219-008	9732-219-003	9732-219-005	9732-219-005	1
*	Housing, Bearing- Assembly (items #2-#6)	9803-182-001	9803-179-003	9803-179-002	9803-186-001	9803-186-001	1
2	Housing, Bearing	9241-174-002	9241-169-002	9241-169-002	9241-180-002	9241-180-002	1
3	Bearing, Front (LARGE)	9036-159-001	9036-159-009	9036-159-002	9036-159-005	9036-159-005	1
4	Bearing, Rear (SMALL)	9036-159-003	9036-159-008	9036-159-001	9036-159-004	9036-159-004	1
5	Spacer, Bearing	9538-161-001	9538-158-001	9538-158-001	9538-167-001	9538-167-001	1
6	Ring, Bearing Retainer	9487-238-002	9487-238-001	9487-238-001	9487-238-003	9487-238-003	1
7	Tub Back Mating Ring	9487-261-001	9487-261-002	9487-261-002	9487-261-003	9487-261-003	1
8	Seal, Small	9532-140-005	9532-140-003	9532-140-003	9532-140-006	9532-140-006	1
9	Seal, Large	9532-140-010	9532-140-009	9532-140-009	9532-140-009	9532-140-009	1
10	Ring, Seal Mounting	9950-047-001	9950-042-001	9950-042-001	9950-048-001	9950-048-001	1
11	Back Assy, Tub 2 piece	9732-137-001	9732-137-002	9732-137-002	9732-137-003	9732-137-003	1
12	Bolt, Tub End of Bearing Housing (1/2" x 1 1/4")	9545-017-009	9545-017-009	9545-017-009			6
12	Nut 1/2"	8640-417-005	8640-417-005	8640-417-005			6
12	Lockwasher 1/2" (ext. tooth)	8641-582-016	8641-582-016	8641-582-016			6
12	Bolt 5/8-11x1 1/2" Tub end of bearing housing				9545-059-003	9545-059-003	6
12	Nut 5/8"				8640-425-001	8640-425-001	6
13	Support Arm Assy, Bearing Housing	9991-049-002	9991-057-002	9991-061-002	9991-056-002	9991-056-002	6
14	Bolt Pulley End of Bearing Housing (3/8" x 1 1/2")	9545-029-003	9545-029-003	9545-029-003			6
14	Nut, Flange Locking 3/8"	9640-415-004	8640-415-004	8640-415-004			6
14	Bolt Pulley end of bearing housing (7/16-14x2")				9545-059-002	9545-059-002	6
14	Nut, Flange Locking 7/16"				8640-416-005	8640-416-005	6
15	Pulley, Driven	9908-041-002	9453-168-005	9453-168-004	9453-168-006	9453-168-003	1
*	Ring, Tolerance	9487-234-002	9487-234-001	9487-234-001	9487-234-003	9487-234-003	1
16	Washer 1/2"	8641-581-026	8641-581-026	8641-581-026			1
16	Washer 5/8"				8641-581-032	8641-581-032	1
18	Bolt 1/2-13 x 1 1/4"	9545-017-009	9545-017-009	9545-017-009			1
18	Bolt 5/8-11x1 1/2"				9545-060-001	9545-060-001	1
20	Lockwasher 1/2" Ext. tooth	8641-582-016	8641-582-016	8641-582-016			1
18	Lockwasher 5/8 Ext. tooth				8641-582-018	8641-582-018	1
*	Cylinder Assy	9732-354-001	9732-354-002	9732-354-003	9732-354-004	9732-354-006	1
*	Tub and Cylinder Assy.	9869-006-001	9869-013-002	9869-021-001	9869-014-001	9869-017-001	1
*	Tub Assembly	9930-135-001	9930-143-001	9930-152-001	9930-142-001	9930-146-001	1





Door Latching Assembly Part # by Model

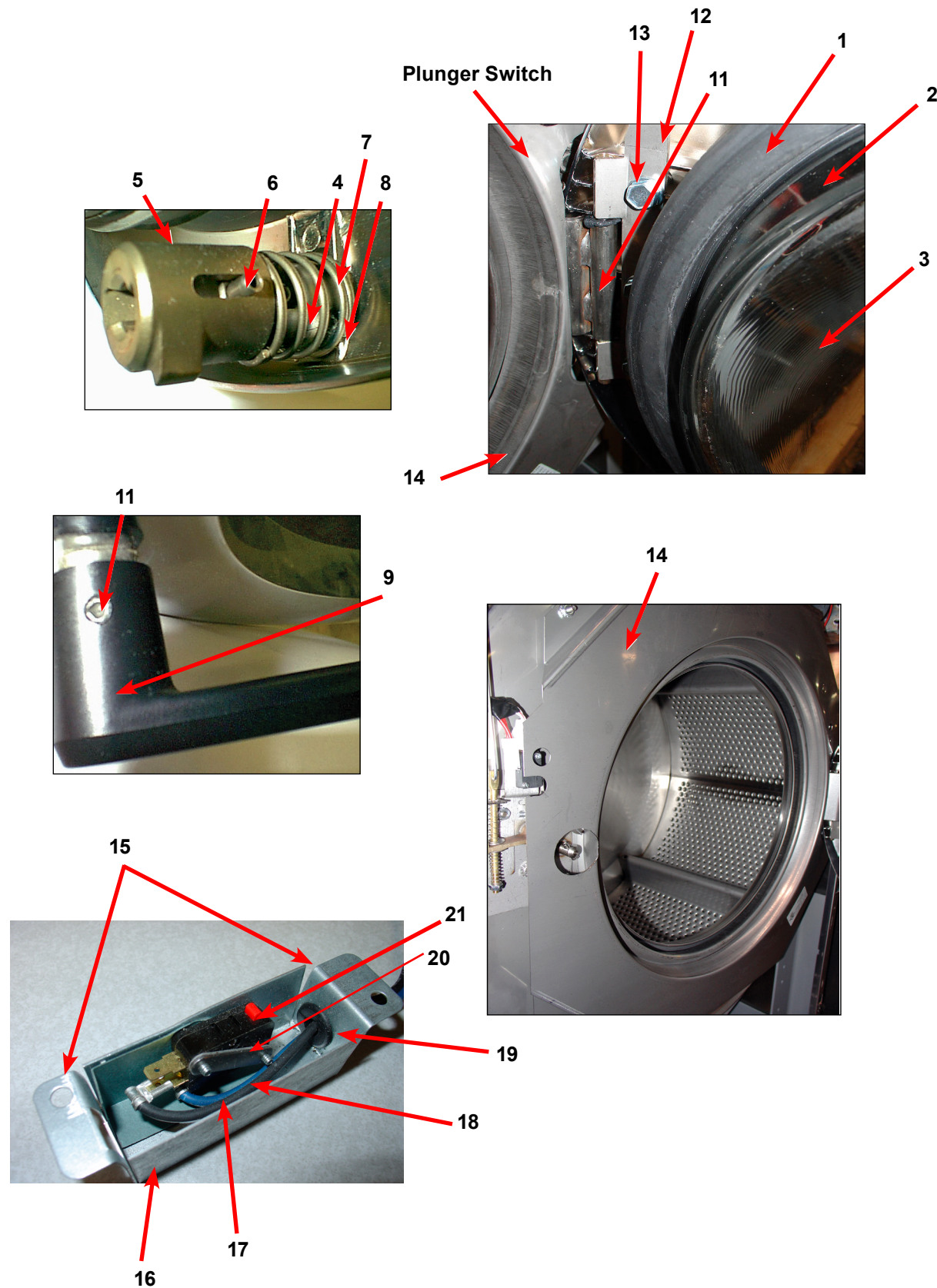
Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
33	Latching Assy, Complete (#1-22) (includes #1 thru #22)	9885-024-001	9885-024-001	9885-024-001	9885-024-001	9885-024-001	1
1	Plate Assy, Door Lock	9982-346-001	9982-346-001	9982-346-001	9982-346-001	9982-346-001	1
2	Washer, Flat	8641-581-030	8641-581-030	8641-581-030	8641-581-030	8641-581-030	1
3	Actuator, Latching Switch	9008-005-001	9008-005-001	9008-005-001	9008-005-001	9008-005-001	1
4	Pawl, Locking	9732-346-002	9732-346-002	9732-346-002	9732-346-002	9732-346-002	1
5	Washer, Spring	8641-569-003	8641-569-003	8641-569-003	8641-569-003	8641-569-003	1
6	Ring, Retaining	9487-200-004	9487-200-004	9487-200-004	9487-200-004	9487-200-004	1
7	Bracket Switch	9029-163-001	9029-163-001	9029-163-001	9029-163-001	9029-163-001	1
8	Nut, Hex 10-32 UNF	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	2
9	Spring, Actuating	9534-364-002	9534-364-002	9534-364-002	9534-364-002	9534-364-002	1

Original Solenoid Style Door Lock Part # by Model  
(continued)

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
10	Screw, Hx. 10-32 x 1"	9545-012-020	9545-012-020	9545-012-020	9545-012-020	9545-012-020	1
11	Nut, Elastic Stop 10-32	8640-413-004	8640-413-004	8640-413-004	8640-413-004	8640-413-004	2
12	Spring, Return	9534-364-001	9534-364-001	9534-364-001	9534-364-001	9534-364-001	2
13	Pin, Guide	9451-193-001	9451-193-001	9451-193-001	9451-193-001	9451-193-001	1
14	Ring, Retaining	9487-200-005	9487-200-005	9487-200-005	9487-200-005	9487-200-005	1
15	Washer	8641-581-031	8641-581-031	8641-581-031	8641-581-031	8641-581-031	1
16	Switch, Latching Sensing	9539-461-008	9539-461-008	9539-461-008	9539-461-008	9539-461-008	1
17	Shield, Switch	9550-169-003	9550-169-003	9550-169-003	9550-169-003	9550-169-003	3
18	Screw 4-40 x 5/8"	9545-020-001	9545-020-001	9545-020-001	9545-020-001	9545-020-001	2
18	Nut, Twin 4-40	8640-401-001	8640-401-001	8640-401-001	8640-401-001	8640-401-001	1
19	Switch, Locking Sensing	9539-461-007	9539-461-007	9539-461-007	9539-461-007	9539-461-007	2
20	Actuator, Switch Locking	9008-006-003	9008-006-003	9008-006-003	9008-006-003	9008-006-003	1
21	Screw 4-40 x 1 1/8"	9545-020-003	9545-020-003	9545-020-003	9545-020-003	9545-020-003	2
21	Nut, Twin 4-40	8640-401-001	8640-401-001	8640-401-001	8640-401-001	8640-401-001	1
22	Pin, Dowel	9451-181-004	9451-181-004	9451-181-004	9451-181-004	9451-181-004	1
*	Spacer Sensor	9538-182-001	9538-182-001	9538-182-001	9538-182-001	9538-182-001	*
*	Shim, Door Lock, Thin	9552-037-001	9552-037-001	9552-037-001	9552-037-001	9552-037-001	AR
*	Screw, Lock mtg 1/4"-20 x 3/4"	9545-018-004	9545-018-004	9545-018-004	9545-018-004	9545-018-004	3
*	Lockwasher 1/4" Ext tooth	8641-582-007	8641-582-007	8641-582-007	8641-582-007	8641-582-007	3
34	Solenoid Ass'y, Door Locking (includes 23 thru 32)	9922-011-001	9922-011-001	9922-011-001	9922-011-001	9922-011-001	1
23	Bracket, (Door Locking Solenoid)	9029-073-001	9029-073-001	9029-073-001	9029-073-001	9029-073-001	1
24	Bracket Ass'y, Solenoid Slide	9985-169-001	9985-169-001	9985-169-001	9985-169-001	9985-169-001	1
25	Solenoid 120V 60 hz	9536-074-001	9536-074-001	9536-074-001	9536-074-001	9536-074-001	1
26	Screw, Solenoid Mtg	9545-008-001	9545-008-001	9545-008-001	9545-008-001	9545-008-001	4
27	Stop, Door Lock Solenoid	9540-036-002	9540-036-002	9540-036-002	9540-036-002	9540-036-002	1
28	Screw, Shoulder	9545-061-001	9545-061-001	9545-061-001	9545-061-001	9545-061-001	1
28	Nut, Keps #6	8640-411-002	8640-411-002	8640-411-002	8640-411-002	8640-411-002	1
29	Thermoactuator 120 V	9586-001-001	9586-001-001	9586-001-001	9586-001-001	9586-001-001	2
30	Screw #6 x 5/16"	9545-031-011	9545-031-011	9545-031-011	9545-031-011	9545-031-011	4
31	Spacer, Plastic	9538-157-004	9538-157-004	9538-157-004	9538-157-004	9538-157-004	1
31	Spacer, Metal	9538-166-004	9538-166-004	9538-166-004	9538-166-004	9538-166-004	1
31	Screw, Cross Recessed	9545-010-001	9545-010-001	9545-010-001	9545-010-001	9545-010-001	1
31	Nut, Keps #8	8640-412-005	8640-412-005	8640-412-005	8640-412-005	8640-412-005	1
*	Nut, Sol. Brkt. to Control Panel	8640-412-005	8640-412-005	8640-412-005	8640-412-005	8640-412-005	3
*	Rod, Pull	9497-225-004	9497-225-004	9497-225-006	9497-225-006	9497-225-003	1



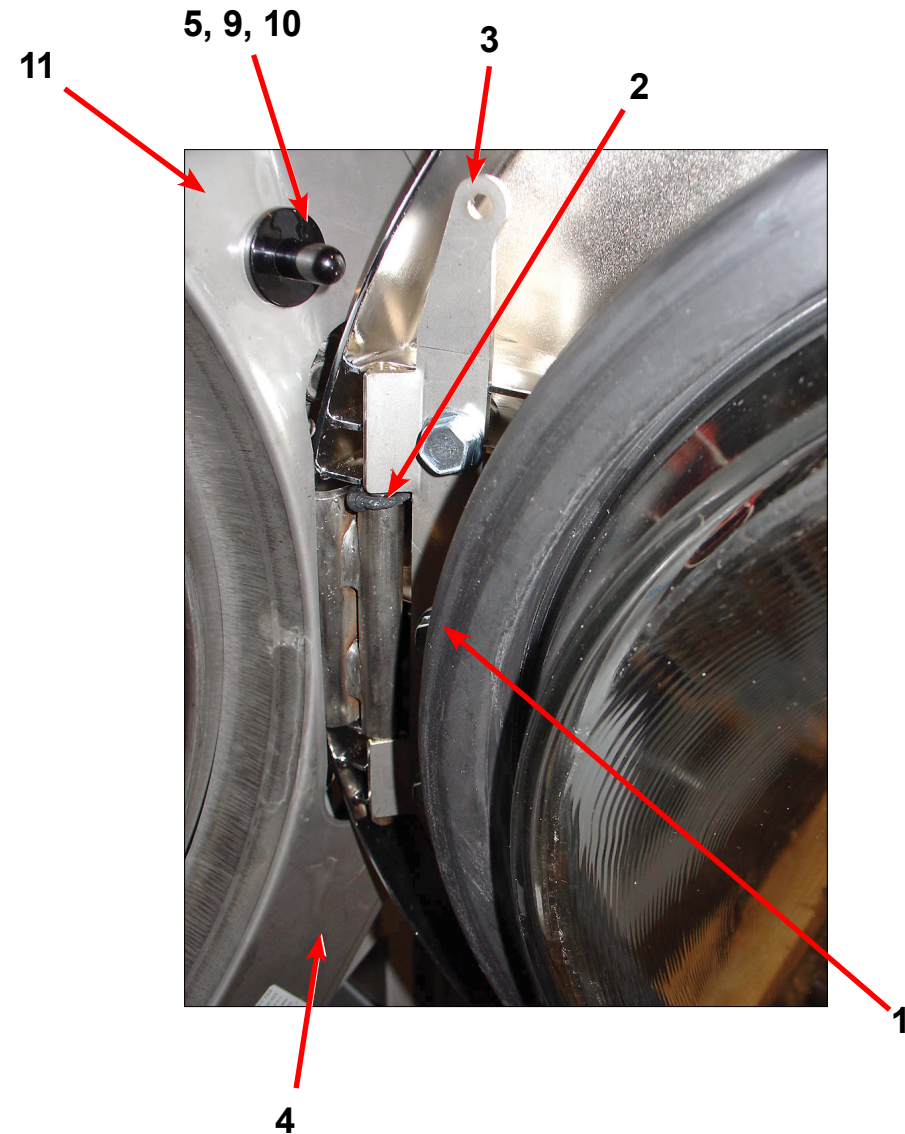
## Loading Door Part # by Model (Original Style Door Switch)



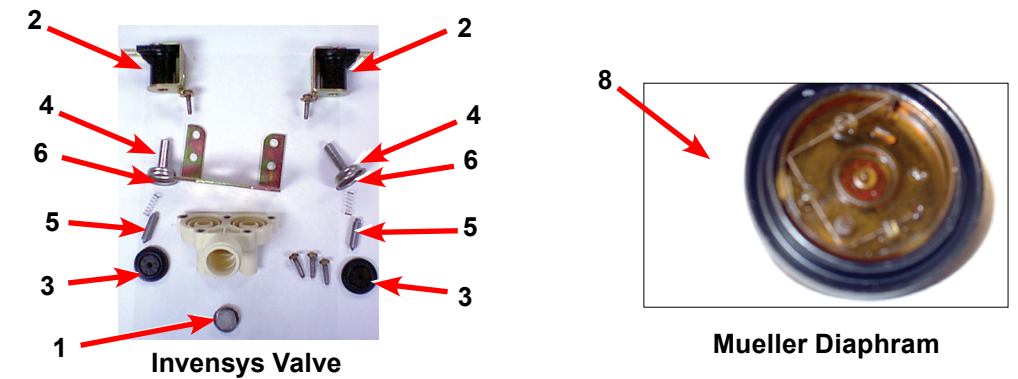
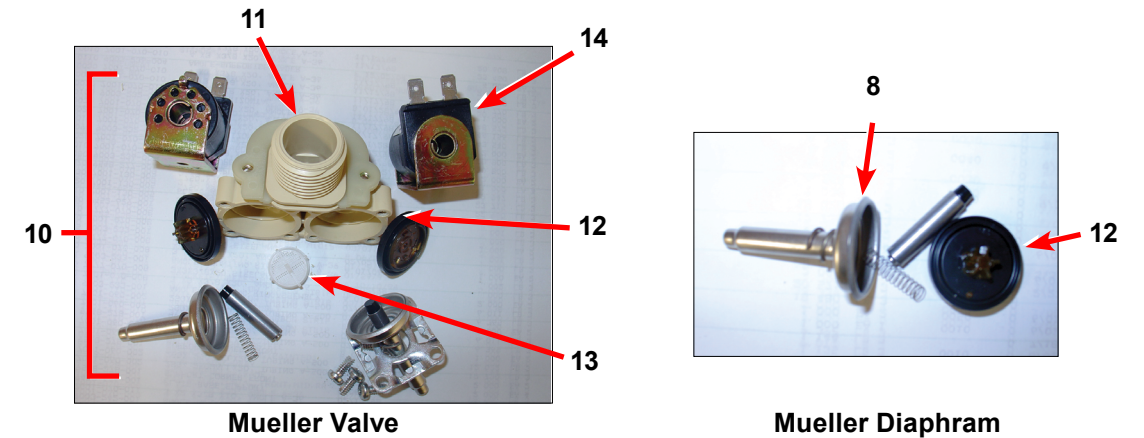
Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
*	Loading Door, Complete #1-10	9960-273-001	9960-273-00	9960-274-002	9960-274-002	9960-274-002	1
1	Loading Door, Ring	9487-264-001	9487-264-001	9487-265-001	9487-265-001	9487-265-001	1
2	Gasket, Loading Door	9206-411-002	9206-411-001	9206-419-001	9206-419-001	9206-419-001	1
3	Window, Loading Door	9635-018-001	9635-018-001	9635-016-001	9635-016-001	9635-016-001	1
*	Shaft Assy, Locking (includes 4 thru 7)	9913-134-003	9913-134-003	9913-134-003	9913-134-003	9913-134-003	1
4	Shaft, Door Locking	9537-195-002	9537-195-002	9537-195-002	9537-195-002	9537-195-002	1
5	Cam, Locking	9095-040-002	9095-040-002	9095-040-002	9095-040-002	9095-040-002	1
6	Pin, Groove (1 1/4)	9451-181-005	9451-181-005	9451-181-005	9451-181-005	9451-181-005	1
7	Pin, Groove (3/4)	9451-181-004	9451-181-004	9451-181-004	9451-181-004	9451-181-004	1
	Retaining Ring (c-clip)	8649-031-002	8649-031-002	8649-031-002	8649-031-002	8649-031-002	1
8	Spring, Lock Cam	9534-360-002	9534-360-002	9534-360-002	9534-360-002	9534-360-002	1
9	Handle, Door	9244-080-003	9244-080-003	9244-080-003	9244-080-003	9244-080-003	1
11	Pin, Door Handle (groove)	9451-181-006	9451-181-006	9451-181-006	9451-181-006	9451-181-006	1
*	Screw, Hinge Mtg 5/16" x 3/4"	9545-014-009	9545-014-009	9545-014-009	9545-014-009	9545-014-009	3
*	Lockwasher 5/16" Ext tooth	8641-582-009	8641-582-009	8641-582-009	8641-582-009	8641-582-009	3
*	Shim, Loading Door Hinge, Thin	9552-036-001	9552-036-001	9552-036-001	9552-036-001	9552-036-001	AR
10	Door Hinge Assembly Mounts to Tub Front	9955-029-002	9955-029-002	9955-029-002	9955-029-002	9955-029-002	1
13	Screw, Loading Door Mtg (5/16" TF)	9545-056-001	9545-056-001	9545-056-001	9545-056-001	9545-056-001	3
*	Rubber Edge (mounts to Front Panel)	9059-063-004	9059-063-004	9059-063-002	9059-063-002	9059-063-002	1
*	Nut, Keps	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	4
*	Wiring Harness doorlock safety switch assembly	9627-791-003	9627-791-003	9627-791-003	9627-791-003	9627-791-004	1
12	Loading Door Hinge Clamp w/ pin	9938-040-002	9938-040-002	9938-040-002	9938-040-002	9938-040-002	1
*	Loading Door Hinge Clamp (No Hinge Switch Pin) (NEW Style)	9079-122-003	9079-122-003	9079-122-003	9079-122-003	9079-122-003	1
14	Masking-Ring	9950-059-001	9950-059-001	9950-060-001	9950-060-001	9950-060-001	1
*	Nut, Keps #10-32 UNF	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	4
15	Switch Assembly Complete Door Close	9801-089-001	9801-089-001	9801-089-001	9801-089-001	9801-089-001	1
16	Switch Box	9041-087-001	9041-087-001	9041-087-001	9041-087-001	9041-087-001	1
17	Black Wire Door Close Switch	8220-063-026	8220-063-026	8220-063-026	8220-063-026	8220-063-026	1
18	Blue Wire Door Close Switch	8220-063-025	8220-063-025	8220-063-025	8220-063-025	8220-063-025	1
19	Bushing Insulating	9053-067-003	9053-067-003	9053-067-003	9053-067-003	9053-067-003	1
20	Nut Special Twin #4-40	8640-401-001	8640-401-001	8640-401-001	8640-401-001	8640-401-001	1
*	Screw 4-40 x 5/8	9545-020-001	9545-020-001	9545-020-001	9545-020-001	9545-020-001	2
*	Nut, Keps #10-32 UNF	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	2
*	Door Switch Actuator	9008-004-001	9008-004-001	9008-004-001	9008-004-001	9008-004-001	1
21	Switch,Door Hinge Close	9539-461-007	9539-461-007	9539-461-007	9539-461-007	9539-461-007	1

## Loading Door Hinge (Newer Style Door Switch) With No Pin On Clamp Or Leaf

Key	Description	T-300	T-350	T-400	T-450	T-600
1	Door Hinge Assembly (mounts to tub front)	9955-029-002	9955-029-002	9955-029-002	9955-029-002	9955-029-002
2	Loading Door Hinge Pin	9781-001-001	9781-001-001	9781-001-001	9781-001-001	9781-001-001
3	Loading Door Hinge Clamp (No Hinge Switch Pin)	9079-122-003	9079-122-003	9079-122-003	9079-122-003	9079-122-003
4	Masking Ring Assembly (For Newer Plunger Switch)	9487-272-001	9487-272-001	9487-273-001	9487-273-001	9487-273-001
5	Red Wire (Door Close Switch)	8220-063-025	8220-063-025	8220-063-025	8220-063-025	8220-063-025
9	Black Wire (Door Close Switch)	8220-063-026	8220-063-026	8220-063-026	8220-063-026	8220-063-026
10	Switch, Door Hinge Close (Plunger)	9539-492-001	9539-492-001	9539-492-001	9539-492-001	9539-492-001
11	Masking Ring	9487-272-001	9487-273-001	9487-273-001	9487-273-001	9487-273-001



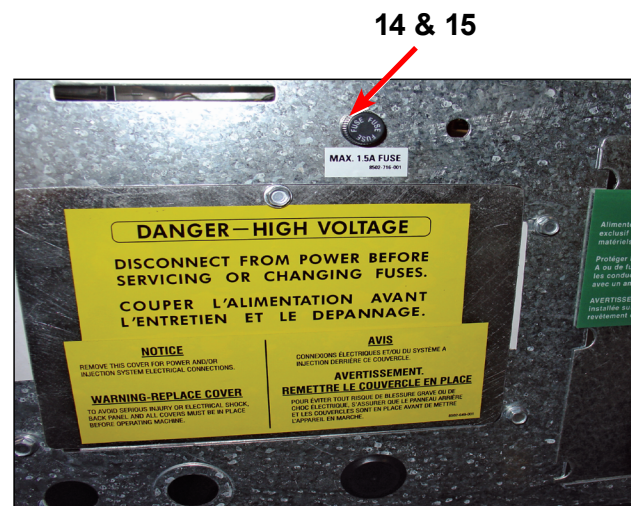
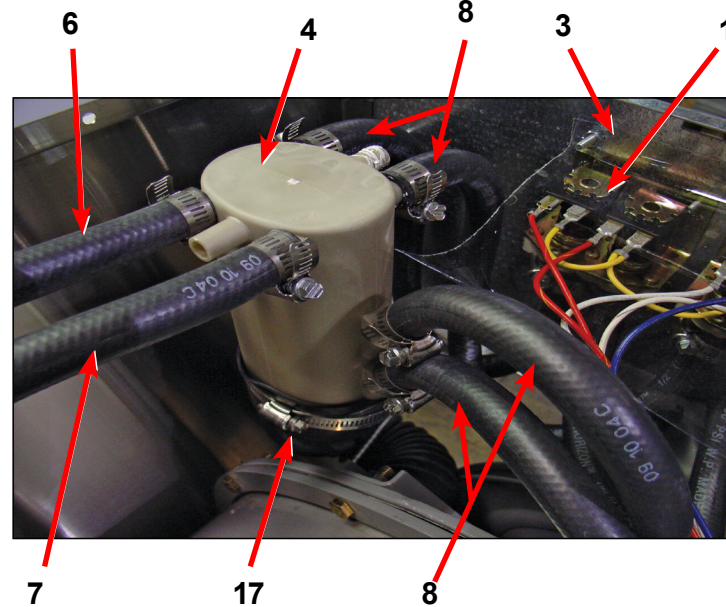
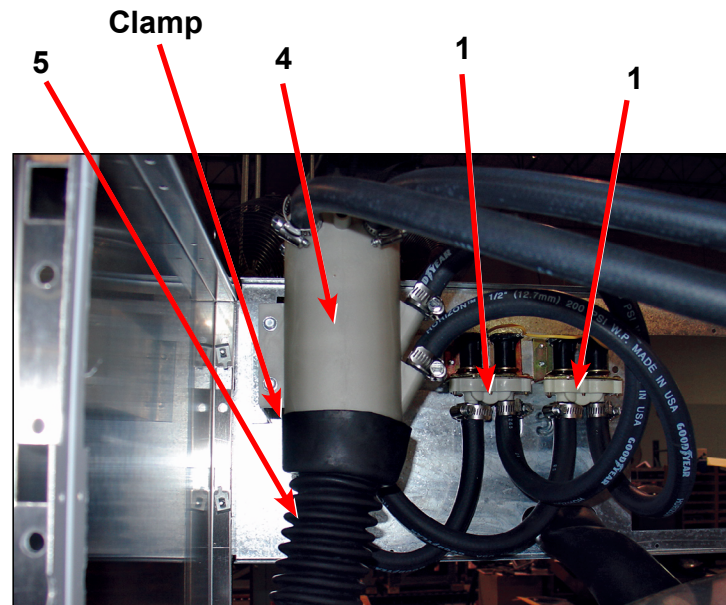
## Water Inlet Valve Breakdown Part # by Model



Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
*	Valve, Water Inlet (includes 1 thru 6)	9379-183-012	9379-183-012	9379-183-012	9379-183-012	9379-183-012	2
1	Screen, Inlet end of valve	9555-056-001	9555-056-001	9555-056-001	9555-056-001	9555-056-001	2
2	Coil Assy., 120 V Invensys	9089-017-001	9089-017-001	9089-017-001	9089-017-001	9089-017-001	2
3	Diaphragm Invensys (EPDM NSF)	9118-049-003	9118-049-003	9118-049-003	9118-049-003	9118-049-003	2
4	Guide, Solenoid Invensys	9211-021-002	9211-021-002	9211-021-002	9211-021-002	9211-021-002	2
5	Armature Invensys	9015-008-001	9015-008-001	9015-008-001	9015-008-001	9015-008-001	2
6	Spring, Armature Invensys	9534-298-001	9534-298-001	9534-298-001	9534-298-001	9534-298-001	2

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
10	Dual Coil Water Valve Mueller	9379-192-001	9379-192-001	9379-192-001	9379-192-001	9379-192-001	2
11	Valve Water Body Complete (no coil)	9379-192-002	9379-192-002	9379-192-002	9379-192-002	9379-192-002	
12	Diaphragm Mueller	9118-054-001	9118-054-001	9118-054-001	9118-054-001	9118-054-001	
13	Filter Mueller	9183-046-001	9183-046-001	9183-046-001	9183-046-001	9183-046-001	
14	Coil Mueller	9089-051-001	9089-051-001	9089-051-001	9089-051-001	9089-051-001	
16	Diaphragm Assembly Mueller	9785-001-001	9785-001-001	9785-001-001	9785-001-001	9785-001-001	

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
*	Dual Coil Water Valve Elbie	9379-191-001	9379-191-001	9379-191-001	9371-192-001	9379-191-001	2
*	Kit, Elbie water Valve w/bracket	9732-195-001	9732-195-001	9732-195-001	9732-195-001	9732-195-001	2



## Water Inlet Part # by Model

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Valve, Water Inlet (dual outlet) (see Water Inlet Valve Break-down for individual parts)	9379-183-012	9379-183-012	9379-183-012	9379-183-012	9379-183-012	2
*	Screw, Valve Mtg	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	4
*	Nut, Spring	8640-399-009	8640-399-009	8640-399-009	8640-399-009	8640-399-009	4
*	Screw, Valve M4x0.7x8mm						8
4	Vacuum Breaker	9610-001-001	9610-001-001	9610-001-001	9610-001-001	9610-001-001	1
*	Bracket, Vacuum Breaker	9029-065-001	9029-065-001	9029-065-001	9029-077-001	9029-077-001	1
*	Screw	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	4
3	Shield over Water Valves Plastic	9550-186-001	9550-186-001	9550-186-001	9550-186-001	9550-186-001	1
5	Hose, Vacuum Breaker to Tub	9242-458-001	9242-458-001	9242-458-002	9242-458-002	9242-458-002	1
*	Clamp, Tub End	8654-117-009	8654-117-009	8654-117-009	8654-117-009	8654-117-009	1
8	Hose, Valve to Vac. Braker	9242-453-020	9242-453-020	9242-453-020	9242-453-020	9242-453-020	4
7	Hose, Cold, Vac. Brkr. dispenser	9242-453-015	9242-453-015	9242-453-016	9242-453-016	9242-453-009	1
6	Hose, Hot, Vac. Brkr. dispenser	9242-453-016	9242-453-016	9242-453-017	9242-453-017	9242-453-020	1
*	Clamp, Hose-Worm	8654-117-015	8654-117-015	8654-117-015	8654-117-015	8654-117-015	12
13	Hose, (valve to vac. Brkr) 23"						4
*	Clamp, Hose-Spring (overflow from drain to tub back)	8654-117-018	8654-117-018	8654-117-018	8654-117-018	8654-117-018	2
*	Flow restrictor	9475-002-002	9475-002-002	9475-002-002	9475-002-002	9475-002-002	2
*	Circuit Breaker (optional)	5198-211-004	5198-211-004	5198-211-004	5198-211-004	5198-211-004	1
14	Fuseholder	9200-001-002	9200-001-002	9200-001-002	9200-001-002	9200-001-002	1
15	Fuse 1.5 amp	8636-018-001	8636-018-001	8636-018-001	8636-018-001	8636-018-001	1
16	Hose Tub to Drain Valve	9242-468-001	9242-468-001	9242-456-001	9242-456-001	9242-456-001	1
17	Clamp, Vacuum Breaker End	8654-117-014	8654-117-014	8654-117-014	8654-117-014	8654-117-014	1

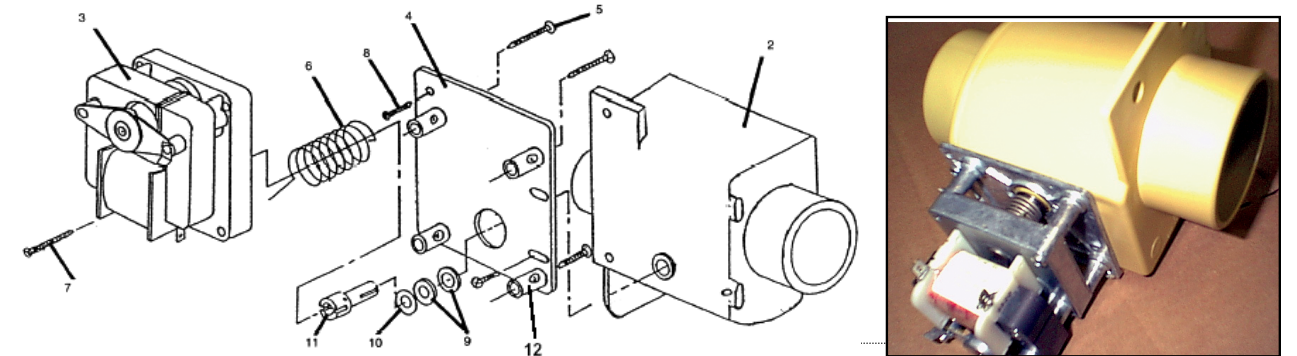


16

## Notes

## Drain Valve Group Part # by Model

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Valve, Drain (includes #2 thru #11)	9732-273-001	9732-273-001	9379-202-001	9379-202-001	9379-202-001	1
2	Body, Valve (w/ball)	9064-068-001	9064-068-001	9064-070-001	9064-070-001	9064-070-001	1
3	Motor & Gear Train (complete)	9914-137-012	9914-137-012	9914-137-011	9914-137-011	9914-137-011	1
4	Plate, Motor Mtg	9452-538-001	9452-538-001	9452-538-001	9452-538-001	9452-538-001	1
5	Screw	8639-994-001	8639-994-001	8639-994-001	8639-994-001	8639-994-001	3
6	Spring, Drive	9534-340-001	9534-340-001	9534-339-001	9534-339-001	9534-339-001	1
7	Screw	9545-054-001	9545-054-001	9545-054-001	9545-054-001	9545-054-001	2
8	Screw	9545-054-002	9545-054-002	9545-054-002	9545-054-002	9545-054-002	1
9	Seal, V Packer	9532-134-001	9532-134-001	9532-134-001	9532-134-001	9532-134-001	2
10	Washer	8641-584-001	8641-584-001	8641-584-001	8641-584-001	8641-584-001	1
11	Pin, Main Drive	9451-196-001	9451-196-001	9451-196-001	9451-196-001	9451-196-001	1
12	Plate (spacers needed for replacement motor mtg. plate)	9538-149-001	9538-149-001	9538-149-001	9538-149-001	9538-149-001	4
13	Stator and Coil Assembly	9089-036-004	9089-036-004	9089-036-004	9089-036-004	9089-036-004	1
*	Valve Drain before Serial # 482181	9379-177-006	9379-177-006	9379-187-001	9379-187-001	9379-187-001	1*
*	Motor Gear Train to Fit before Serial # 482181	9914-137-012	9914-137-012	9914-137-011	9914-137-011	9914-137-011	1
*	Replacement Seal Kti			9732-327-001	9732-327-001	9732-327-001	*



**18lb Drain Valve Replacement Kit**  
#9732-273-001 Breakdown

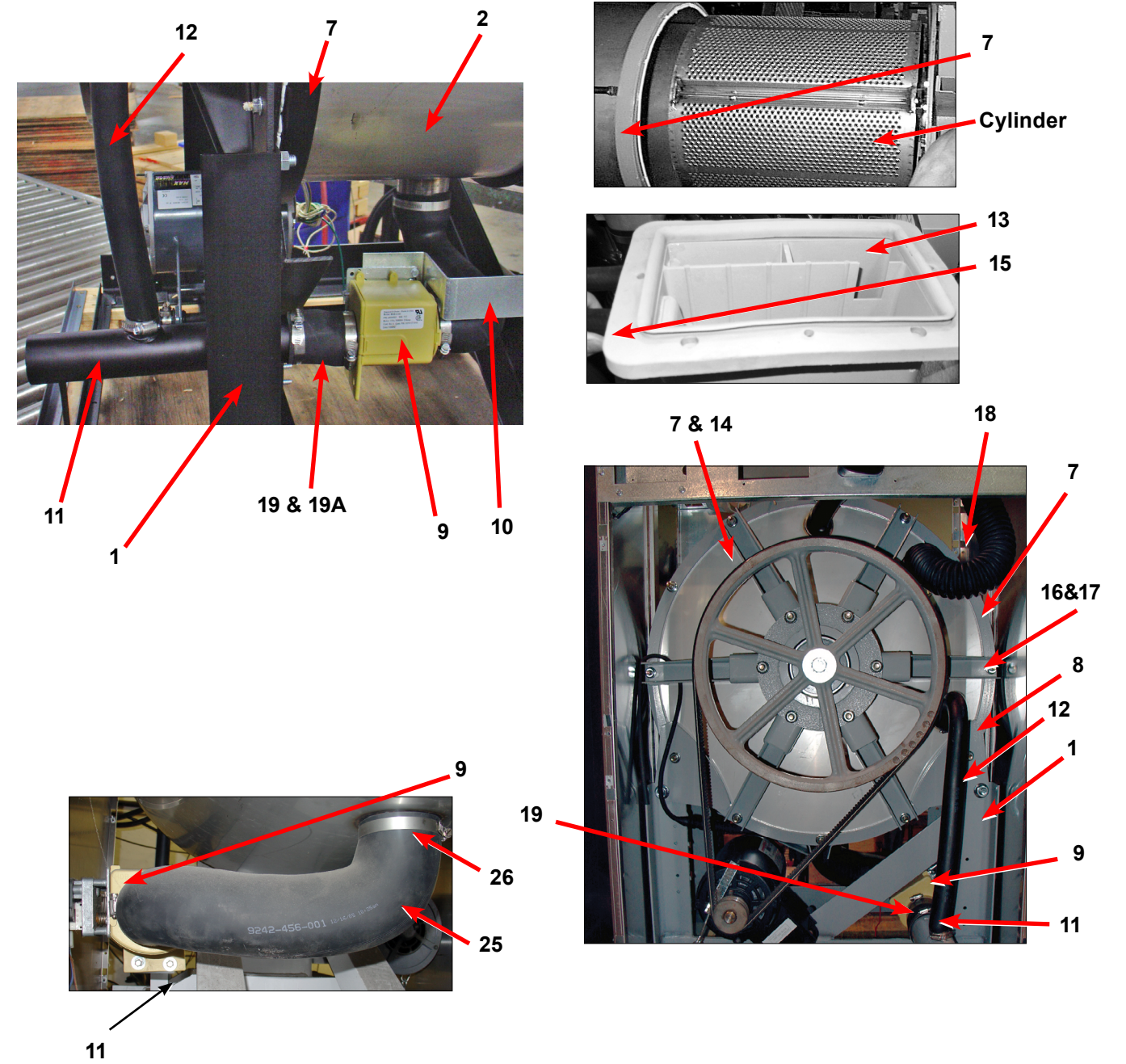
### #9732-273-001

18lb Drain Valve Replacement Kit	T-300
Drain Valve, 2" ball	9379-177-009
Hose	9242-468-001
Clamp	9242-117-009



## Chassis and Drain Part # by Model

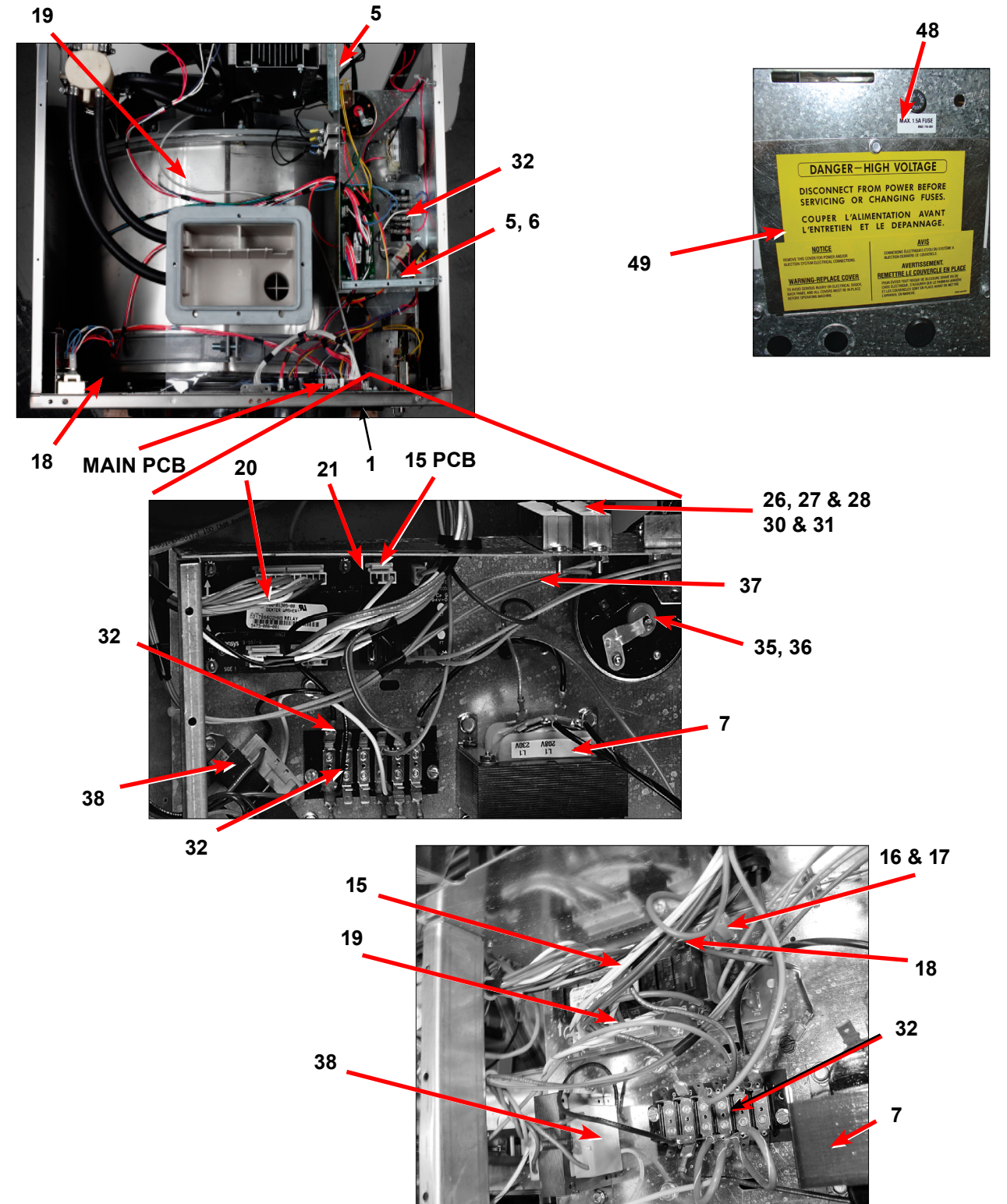
Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Base Assy,Frame	9945-093-002	9945-119-002	9945-087-002	9945-116-002	9945-097-002	1
2	Outer Tub Assy	9930-135-001	9930-143-001	9930-142-001	9930-142-001	9930-146-001	1
*	Tub & Cylinder Assy	9869-006-001	9869-013-002	9869-021-001	9869-014-001	9869-017-001	1
*	Ring Assy, Tub Mtg-Front	9950-045-002	9950-046-002	9950-051-004	9950-051-004	9950-051-004	1
7	Ring Assy.Clamp Tub Mtg.- Rear	9950-046-002	9950-058-002	9950-041-004	9950-056-002	9950-056-002	1
8	Bolt, 1/2" x 1 1/4 Rings to Base	9545-017-009					4
*	Washer	8641-581-018	8641-581-018	8641-581-018	8641-581-018	8641-581-018	1
25	Hose, Tub to Drain Valve	9242-468-001	9242-468-001	9242-456-001	9242-456-001	9242-456-001	1
26	Clamp, Hose (Tub to Drain Valve)	8654-117-014	8654-117-014	8654-117-014	8654-117-014	8654-117-014	2
9	Valve, Drain	9379-177-010	9379-177-010	9379-202-001	9379-202-001	9379-202-001	1
19	Hose, Drain Valve to Tube	9242-451-002	9242-451-002	9242-457-001	9242-457-001	9242-457-001	1
19A	Clamp, Hose (Drain Valve to Tube)	8654-117-014	8654-117-014	8654-117-014	8654-117-014	8654-117-014	2
10	Bracket, Drain Valve	9029-005-001	9029-005-001	9029-056-001			1
*	Screw, Valve to Bracket 12ABx1/2	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	2
11	Tube Assy, Drain	9915-116-004	9915-125-002	9915-119-002	9915-119-002	9915-118-002	1
*	Screw Tube (Bracket to Base 1/4Bx3/4	9545-030-002	9545-030-002	9545-030-002	9545-030-002	9545-030-002	2
12	Hose, Overflow to drain	9942-449-002	9942-449-002	9942-449-002	9942-449-002	9942-449-002	1
8	Lockwasher				8641-582-018	8641-582-018	4
8	Nut, Hex 5/8-11			8640-425-001	8640-425-001	8640-425-001	4
*	Shim, Support Assembly (thin)	9552-038-003	9552-038-003	9552-038-003	9552-038-001	9552-038-001	AR
18	Fill Hose, Vacuum Brkr. to Tub	9242-458-002	9242-458-002	9242-458-002	9242-458-002	9242-458-002	1
13	Dispenser Soap	9122-005-004	9122-005-004	9122-005-004	9122-005-004	9122-005-004	1
15	Gasket, Dispenser	9206-416-001	9206-416-001	9206-416-001	9206-416-001	9206-416-001	1
*	Nut Spring SS	8640-399-007	8640-399-007	8640-399-007	8640-399-007	8640-399-007	4
*	Hose, Dispenser to Tub	9242-450-002	9242-450-002	9242-450-002	9242-450-002	9242-450-001	1
*	Clamp, Dispenser Hose	8654-117-008	8654-117-008	8654-117-008	8654-117-008	8654-117-008	2
14	Back Ass'y, Tub	9732-137-001		9732-137-002	9732-137-003	9732-137-003	1
16	Bolt, 7/16" x 2" Tub Back to Tub	9545-029-003	9545-029-003	9545-029-003			12
17	Nut, Flange Lock	8640-415-004	8640-415-004	8640-416-005	8640-416-005	8640-416-005	12
	Hose, Pressure Switch	9242-175-000	9242-175-000	9242-175-007	9242-175-007	9242-175-001	1
	Clamp, Pressure Switch Hose	8654-117-015	8654-117-015	8654-117-015	8654-117-015	8654-117-015	1



## Electrical Components - Top Compartment

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Trough Assy,Controls 120 Volt (all parts below #2-#43 & trough)	9857-149-001					1
1	Trough Assy,Controls 208-240 volt (all parts below #2-#43 & trough)	9857-150-001	9857-157-003	9857-151-001	9857-151-003	9857-152-001	1
*	Trough only	9839-015-001	9839-015-001	9839-015-001	9839-015-001	9839-015-001	1
*	Screw, Trough Sides	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	4
*	Lockwasher #10	8641-582-006	8641-582-006	8641-582-006	8641-582-006	8641-582-006	4
5	Angle Support Trough	9003-270-001	9003-295-001	9003-270-001	9003-298-001	9003-271-001	1
6	Screw, Trough Bracket	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	3
7	Transformer, Control (Secondary Voltage to 115 volts)	8711-004-001	8711-004-001	8711-004-001	8711-004-001	8711-004-001	1
*	Screw, Mtg #10Bx1/2"	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	4
*	Lockwasher #10	8641-582-006	8641-582-006	8641-582-006	8641-582-006	8641-582-006	4
*	Screw GRN. #10-32x 1/2"	9545-008-027	9545-008-027	9545-008-027	9545-008-027	9545-008-027	1
*	Lockwasher #10	8641-582-006	8641-582-006	8641-582-006	8641-582-006	8641-582-006	1
*	Lug, Grounding	8652-130-037	8652-130-037	8652-130-037	8652-130-037	8652-130-037	1
12	Hose, Overflow Top Vent Rear	9942-449-002	9942-449-002	9942-449-002	9942-449-002	9942-449-002	1
15	PCB assembly Relay Main	9473-006-001	9473-006-001	9473-006-001	9473-006-001	9473-006-001	1
18	Harness Drain/Therm/Sol	9627-796-001	9627-796-001	9627-796-001	9627-796-001	9627-796-002	1
19	Harness P19/Water Valve	9627-795-003	9627-795-003	9627-795-003	9627-795-003	9627-795-004	1
20	Harness P8/P16	9627-794-001	9627-794-001	9627-794-001	9627-794-001	9627-794-001	1
21	Harness P20/P21	9627-793-001	9627-793-001	9627-793-001	9627-793-001	9627-793-001	1
*	Bushing , Wire 7/8	9053-067-002	9053-067-002	9053-067-002	9053-067-002	9053-067-002	2
*	Standoff Twistlock	9527-002-002	9527-002-002	9527-002-002	9527-002-002	9527-002-002	3
*	Standoff Twistlock	9527-002-003	9527-002-003	9527-002-003	9527-002-003	9527-002-003	2
26	Dynamic Braking Resistor	9483-004-002	9483-004-002	9483-004-002	9483-004-002	9483-004-002	2
27	Screws #10-32x1/2" (pnhdcr)	9545-012-008	9545-012-008	9545-012-008	9545-012-008	9545-012-008	4
28	Nuts, #10-32 UNF 2B	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	4
30	Screw #6-32x5/16"	9545-044-006	9545-044-006	9545-044-006	9545-044-006	9545-044-006	4
31	Nuts Hex #6-32	8640-411-003	8640-411-003	8640-411-003	8640-411-003	8640-411-003	4
32	Terminal Block Assy, POWER	9897-034-001	9897-034-001	9897-034-001	9897-034-001	9897-034-001	1
*	Screw, Mtg 8Bx3/8"	9545-045-007	9545-045-007	9545-045-007	9545-045-007	9545-045-007	2
*	Strip, Terminal Marker	9558-027-001	9558-027-001	9558-027-001	9558-027-001	9558-027-001	1
35	Switch, Pressure	9539-457-002	9539-491-001	9539-457-003	9539-491-001	9539-457-003	1
*	Electronic Pressure Switch Kit	9732-314-001	9732-314-001	9732-314-001	9732-314-001	9732-314-001	*
36	Screw, Mtg #8Bx1/4"	9545-045-001	9545-008-026	9545-045-001	9545-045-001	9545-045-001	2
37	Harness P5/Pressure	9627-800-001	9627-801-001	9627-801-001	9627-801-001	9627-802-001	1
38	Transformer, (Step Down) 120/2.3 VAC&24 VAC 50/60hz	8711-009-001	8711-009-001	8711-009-001	8711-009-001	8711-009-001	1
39	Screw, Transformer Mtg #10Bx1/2"	9545-045-001	9545-045-001	9545-045-001	9545-045-001	9545-045-001	2
40	Lockwasher #6 exttooth	8641-582-005	8641-582-005	8641-582-005	8641-582-005	8641-582-005	2
48	Label Fuse 1.5 amp Rear	8502-716-001	8502-716-001	8502-716-001	8502-716-001	8502-716-001	1
*	Fuseholder	9200-001-002	9200-001-002	9200-001-002	9200-001-002	9200-001-002	1
*	Fuse 1.5 amp	8636-018-001	8636-018-001	8636-018-001	8636-018-001	8636-018-001	1
49	Cover Electrical (Rear Main Terminal Block)	9074-267-001	9074-267-001	9074-267-001	9074-267-001	9074-267-001	1

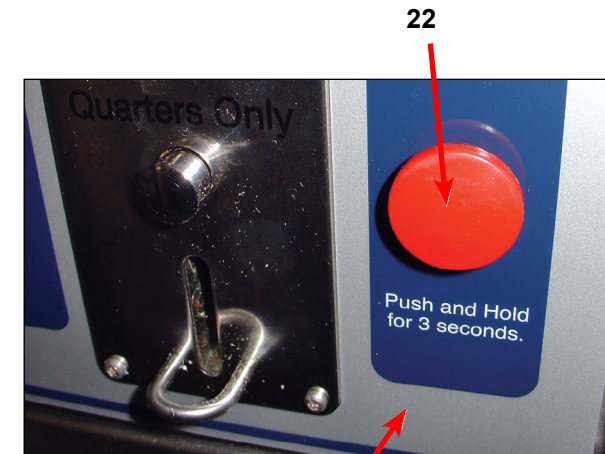
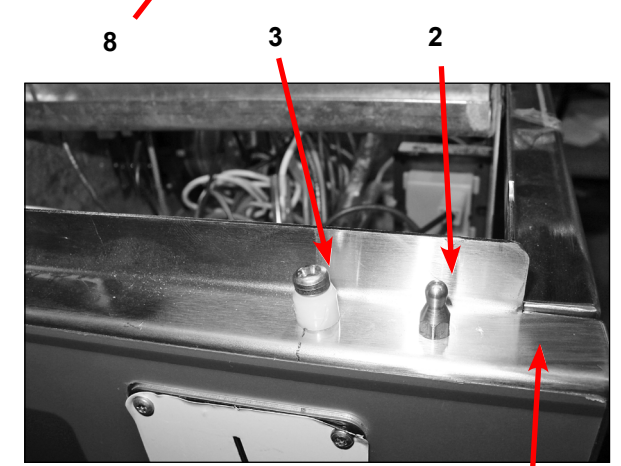
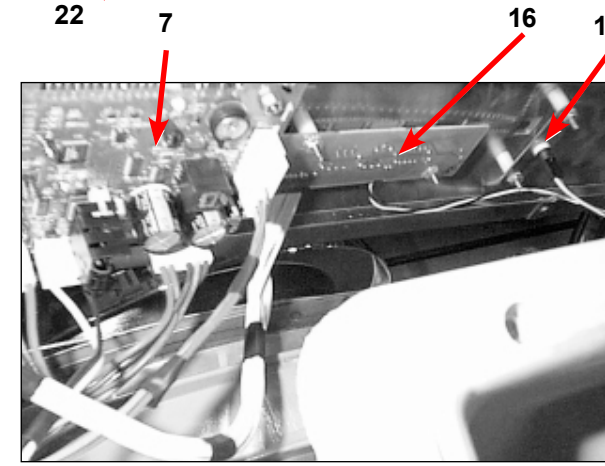
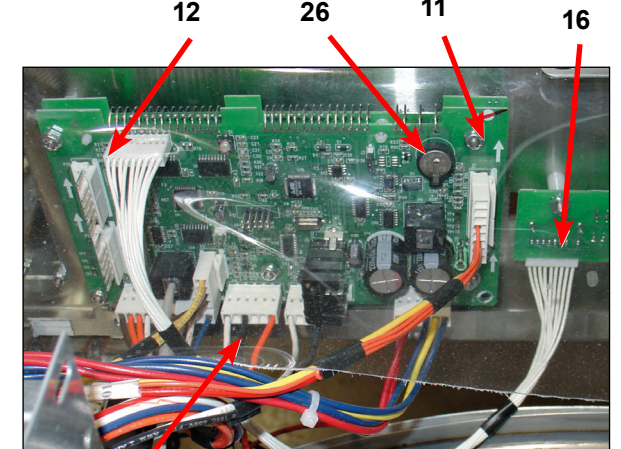
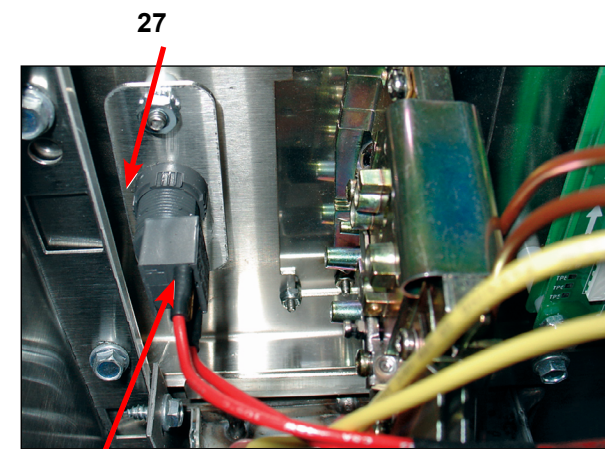
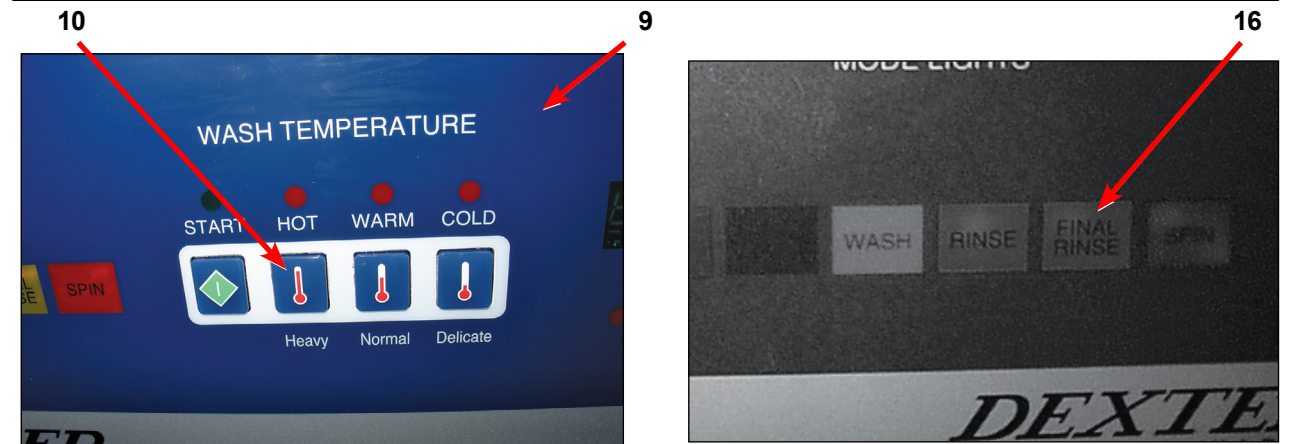
## Electrical Components - Top Compartment



Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
*	Screw 8B x 1/2	9545-045-002	9545-045-002	9545-031-010			2
*	Wiring Harness Power Terminal to VFD	9627-831-001	9627-831-001	9627-747-003	9627-747-003	9627-747-003	1
*	Plastic Shield Over Water Valve	9550-186-001	9550-186-001	9550-186-001	9550-186-001	9550-186-001	1

# Control Panel Part # by Model

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Panel Control Assembly(panel only)	9989-522-001	9989-522-001	9989-523-001	9989-523-001	9989-524-001	1
*	Screw, Hxwshrhnduct #10Bx 1/2"	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	4
2	Post Locator Top	9467-024-001	9467-024-001	9467-024-001	9467-024-001	9467-024-001	2
*	Nut Hexkeps #6-32	8640-411-003	8640-411-003	8640-411-003	8640-411-003	8640-411-003	2
3	Locator Panel	9355-001-001	9355-001-001	9355-001-001	9355-001-001	9355-001-001	2
*	Screw FillHDCR 10Bx1/2" Guide	9545-008-023	9545-008-023	9545-008-023	9545-008-023	9545-008-023	2
*	Spacer Pushbutton (Micro)	9538-178-001	9538-178-001	9538-178-001	9538-178-001	9538-178-001	1
*	Retainer Pushbutton (Micro)	9486-150-001	9486-150-001	9486-150-001	9486-150-001	9486-150-001	1
*	Nut Hexelasticstop #4-40	8640-424-002	8640-424-002	8640-424-002	8640-424-002	8640-424-002	2
10	Pushbutton Control (coin)	9035-062-001	9035-062-001	9035-062-001	9035-062-001	9035-062-001	1
7	PCB assembly Control /Display STOP	9473-009-002	9473-009-002	9473-009-002	9473-009-002	9473-009-002	1
11	Spacer Plastic #6x9/16	9538-157-018	9538-157-018	9538-157-018	9538-157-018	9538-157-018	5
11	Nut Elasticstop #6-32	8640-411-002	8640-411-002	8640-411-002	8640-411-002	8640-411-002	5
12	Harness LEDPCB	9627-797-001	9627-797-001	9627-797-001	9627-797-001	9627-797-001	1
8	Harness Doorlock, Switches	9627-791-003	9627-791-003	9627-791-003	9627-791-003	9627-791-004	1
16	PCB assembly Mode lights	9473-005-001	9473-005-001	9473-005-001	9473-005-001	9473-005-001	1
*	Spacer Plastic #6x9/16	9538-157-018	9538-157-018	9538-157-018	9538-157-018	9538-157-018	2
*	Nut Hexkeps #6-32	8640-411-003	8640-411-003	8640-411-003	8640-411-003	8640-411-003	2
19	Light, LED,ADD BLEACH As-sembly	9794-001-001	9794-001-001	9794-001-001	9794-001-001	9794-001-001	1
*	Spacer Plastic #6x9/16	9538-157-018	9538-157-018	9538-157-018	9538-157-018	9538-157-018	2
*	Nut Hexeps #6-32	8640-411-003	8640-411-003	8640-411-003	8640-411-003	8640-411-003	2
9	Nameplate,Control Panel (Blue)	9412-135-001	9412-156-001	9412-137-001	9412-159-001	9412-139-001	1
9	Nameplate,Control Panel (Black)	9412-168-001	9412-169-001	9412-170-001	9412-166-001	9412-171-001	1
9	Label Name Plate RH (Blue)	8502-744-002	8502-744-002	N.A.	N.A.	N.A.	1
	Label Name Plate RH (Black)	8502-744-001	8502-744-001	N.A.	N.A.	N.A.	1
22	Switch Assembly Emergency Stop (includes wire harness)	9732-223-001	9732-223-001	9732-223-001	9732-223-001	9732-223-001	1
*	Spacer Plastic #8x5/16 E-Stop	9538-157-020	9538-157-020	9538-157-020	9538-157-020	9538-157-020	2
*	Nut HexKep #8-32 E-Stop	8640-412-005	8640-412-005	8640-412-005	8640-412-005	8640-412-005	2
*	Solenoid Ass'y, Door Locking (see Door Lock Group for parts breakdown)	9922-011-001	9922-011-001	9922-011-001	9892-014-001	9922-011-001	1
*	Hex Nuts (mounting solenoid assy. to control panel)	8640-412-005	8640-412-005	8640-412-005	8640-412-005	8640-412-005	3
26	Battery	8612-001-001	8612-001-001	8612-001-001	8612-001-001	8612-001-001	1
*	Plastic Shield over main PCB	9550-184-001	9550-184-001	9550-184-001	9550-184-001	9550-184-001	1
27	Plate to mount e-stop button	9452-725-001	9452-725-001	9452-725-001	9452-725-001	9452-725-001	1



## Labels and Diagrams All WCAD Models

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
*	Wiring Diagram, Coin, Micro Switch (120 V)	9506-117-001 Rev A					1
*	Wiring Diagram, Coin, Optical (120 V)	9506-117-001 Rev C					1
*	Wiring Diagram, Coin, Electronic Acceptor (120 V)	9506-131-001					1
*	Wiring Diagram Easy Card (120 V)	9506-103-001					1
*	Wiring Diagram, CN, No Acceptor (120 V)	9506-390-001					1
*	Wiring Diagram, Coin Micro Switch	9506-119-001 Rev A	9506-239-001 Rev A	9506-121-001 Rev A	9506-121-001 Rev A	9506-125-001 Rev A	1
*	Wiring Diagram, Coin, Optical	9506-119-001 Rev C	9506-239-001 Rev C	9506-121-001 Rev C	9506-121-001 Rev C	9506-125-001 Rev A	1
*	Wiring Diagram, Coin, Electronic Acceptor	9506-133-001	9506-245-001	9506-135-001	9506-135-001	9506-139-001	1
*	Wiring Diagram (Easy Card)	9506-105-001	9506-241-001	9506-107-001	9506-107-001	9506-111-001	1
*	Wiring Diagram, CN, No Acceptor	9506-392-001	9506-321-001	9506-394-001	9506-394-001	9506-398-001	
*	Instructions Spin Direction	8507-273-001	8507-273-001	8507-274-001	8507-274-001	8507-274-001	1
*	Wiring Schematic, Coin Micro Switch (120 V)	9506-116-001 Rev A					1
*	Wiring Schematic, Coin, Optical (120 V)	9506-116-001 Rev C					1
*	Wiring Schematic, Coin, Electronic Acceptor (120 V)	9506-130-001					1
*	Wiring Schematic, Easy Card (120 V)	9506-102-001					1
*	Wiring Schematic, CN, (120V) No Acceptor	9506-389-001					1
*	Wiring Schematic, Coin Micro Switch	9506-118-001 Rev A	9506-238-001 Rev A	9506-120-001 Rev A	9506-120-001 Rev A	9506-124-001 Rev A	1
*	Wiring Schematic, Coin, Optical	9506-118-001 Rev C	9506-238-001 Rev C	9506-120-001 Rev C	9506-120-001 Rev C	9506-124-001 Rev A	1
*	Wiring Schematic, Coin, Electronic Acceptor	9506-132-001	9506-244-001	9506-134-001	9506-134-001	9506-138-001	1
*	Wiring Schematic, Easy Card	9506-104-001	9506-240-001	9506-106-001	9506-106-001	9506-110-001	1
*	Wiring Schematic, CN, No Acceptor	9506-391-001	9506-320-001	9506-393-001	9506-393-001	9506-397-001	1
*	Transient Voltage Surge Suppressor Infomational	8507-330-001	8507-330-001	8507-330-001	8507-330-001	8507-330-001	1
*	Label High Voltage Warning	8502-614-004	8502-614-004	8502-614-004	8502-614-004	8502-614-004	1
*	Label Fusing & Installation	8502-619-004	8502-619-004	8502-619-004	8502-619-004	8502-619-004	1
*	Label Quality	8511-001-002	8511-001-002	8511-001-002	8511-001-002	8511-001-002	1
*	Booklet Owners	8514-167-001	8514-169-001	8514-175-001	8514-177-001	8514-097-001	1

## Section 9:

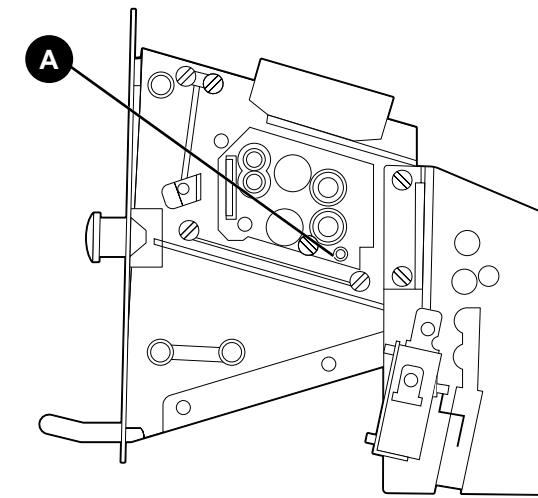
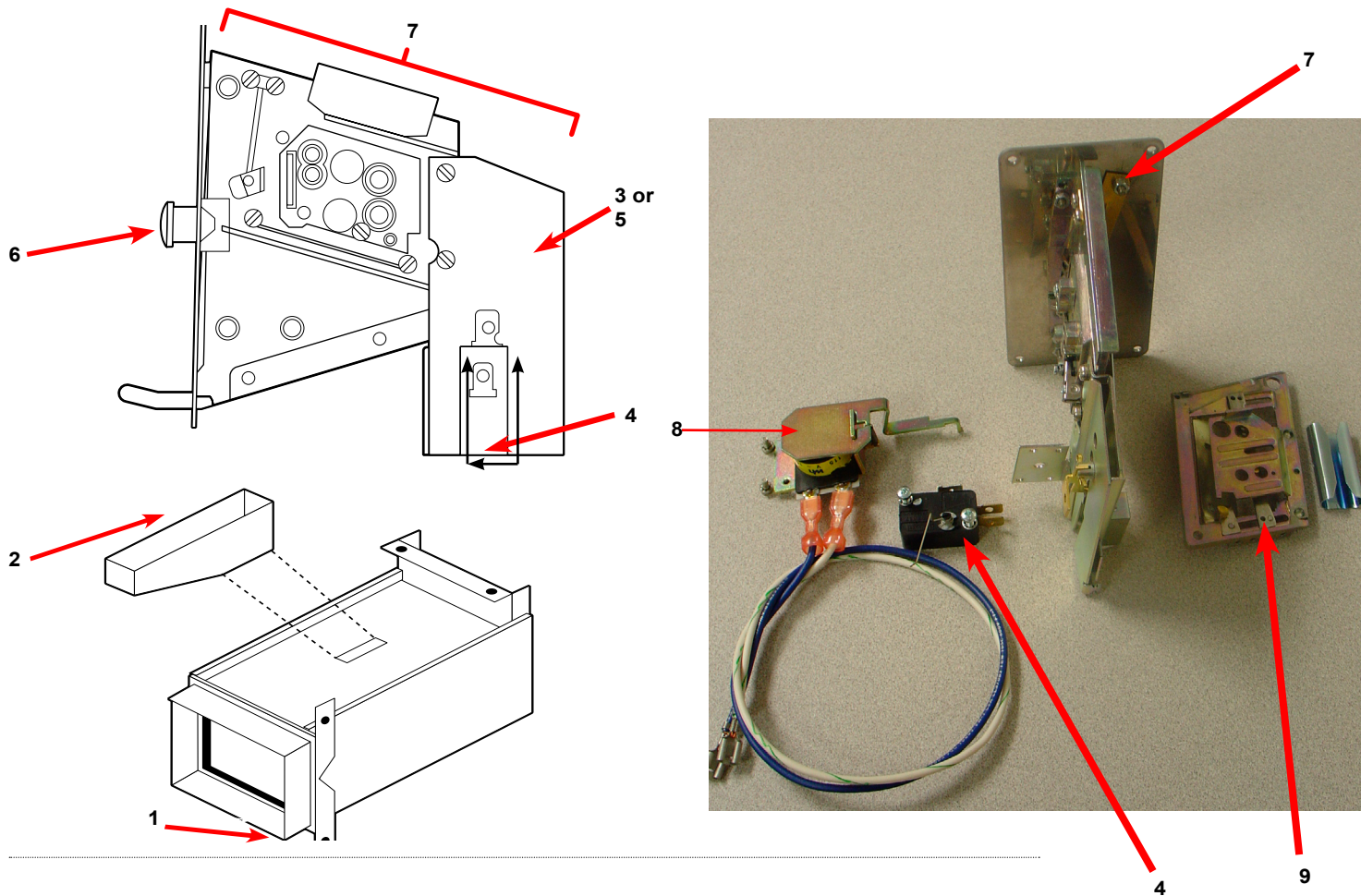
### Coin Handling

### Parts:

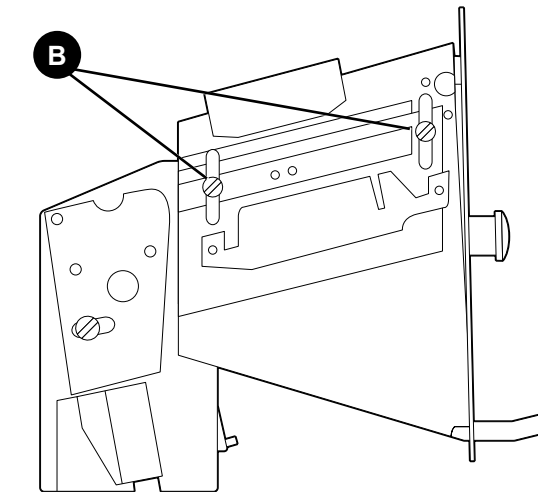
Wiring Diagrams  
& Schematics &  
maintenance Procedures

# Coin Handling Group Part # Micro Switch

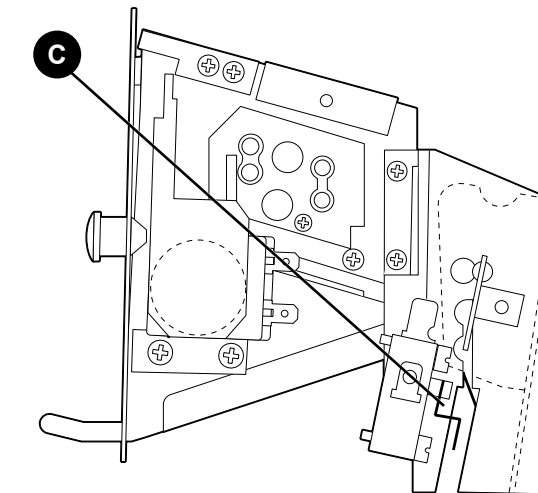
Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Vault, Assy Grey	9942-033-001	9942-033-001	9942-033-002	9942-033-002	9942-033-003	1
1	Vault, Assy. Black	9942-033-008	9942-033-008	9942-033-009	9942-033-009	9942-033-010	
*	Screw, 10Bx 1/2" Vault Mtg	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	2
2	Coin Chute Assy.	9119-031-001	9119-031-001	9119-031-001	9119-031-001	9119-031-001	1
*	Screw, Chute Mtg	9545-008-001	9545-008-001	9545-008-001	9545-008-001	9545-008-001	1
3	Coin Acceptor chute without penny rejector for mechanical drop (standard)	9119-025-002	9119-025-002	9119-025-002	9119-025-002	9119-025-002	1
*	Screw, Acceptor Mtg	9545-020-004	9545-020-004	9545-020-004	9545-020-004	9545-020-004	4
*	Nut	8640-424-002	8640-424-002	8640-424-002	8640-424-002	8640-424-002	4
4	Switch, Coin (fits single coin mechanical drop)	9732-126-001	9732-126-001	9732-126-001	9732-126-001	9732-126-001	1
5	Coin Acceptor chute with penny rejector for mechanical drop (optional)	9119-025-001	9119-025-001	9119-025-001	9119-025-001	9119-025-001	
6	Button Coin Return Retainer	9486-133-001	9486-133-001	9486-133-001	9486-133-001	9486-133-001	1
7	Coin Acceptor Mechanical Complete	9021-001-010	9021-001-010	9021-001-010	9021-001-010	9021-001-010	1
8	Solenoid, Coin Blocking (V-Series)						1
*	Screw, Highth Bar, 3mm	9545-039-002	9545-039-002	9545-039-002	9545-039-002	9545-039-002	2
*	Harness, Coin Switch V& A Series	9627-792-001	9627-792-001	9627-792-001	9627-792-001	9627-792-001	1



Left View Coin Drop Acceptor



Right View Coin Drop Acceptor



## Mechanical Acceptor

### Standard Coin Drop Acceptor

The drop style coin acceptor contains a coin switch that is actuated by each good coin that is accepted.

### Removal

The coin acceptor is removed by loosening the two Torx T-10 machine screws on the right side and by removing completely the two Torx T-10 machine screws on the left side (#T-10 Torx driver, Dexter Pt. No. 8545-051-003). There are locking nuts on the back side that will have to be held. Needle-nose pliers work well for this. Sliding the acceptor to the left will remove it from the slots in the front panel. This gives access to the coin switch and acceptor for adjustments.

### Coin Thickness Adjustment (see diagram)

On the right side of the acceptor there is a coin thickness adjusting screw "A" with a locking nut. To allow for different thickness coins the screw can be turned in to accept thicker coins and turned out to reject thicker coins. Start with a quarter of a turn on this screw and be sure to retighten the lock nut after adjustment.

### Coin Height Adjustment (see diagram)

On the left side of the acceptor is a coin height adjusting bar "B". This bar is adjusted by loosening the two mounting screws and moving both ends of the bar up or down equal amounts. The bar should be raised as high as possible while still accepting the correct coins. If it is raised up too high, the good coins will be rejected.

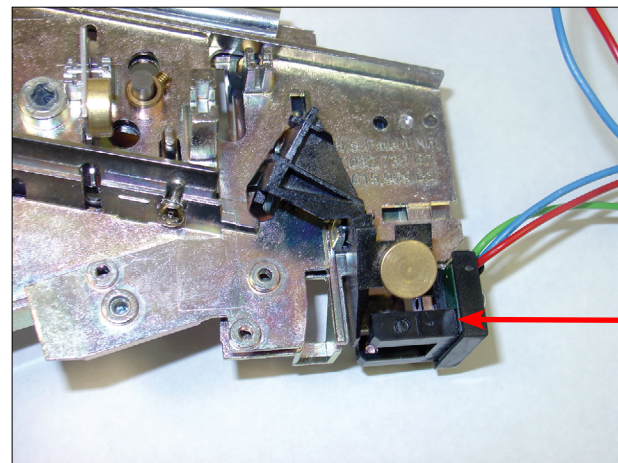
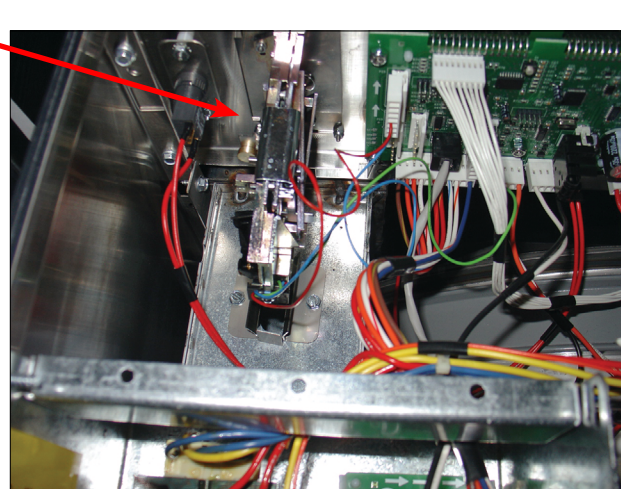
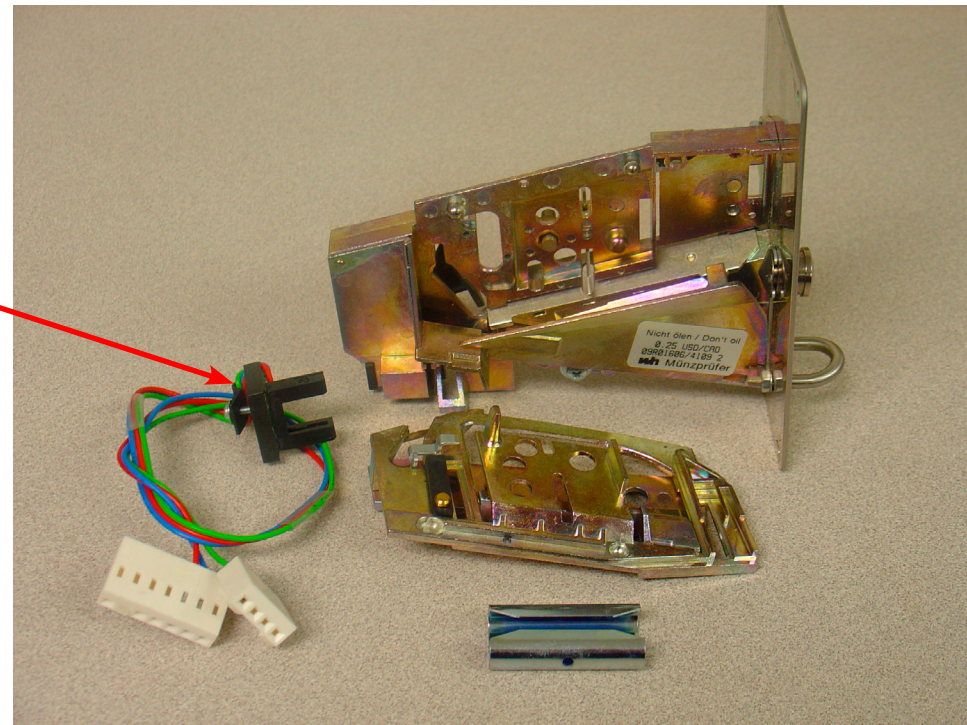
### Coin Switch Adjustment (see diagram)

The normally open coin switch "C" should click (close) soon after the coin hits the operator wire. However, there must be enough travel to allow the switch to reset (open) once the coin has passed. Adjustment should be made by bending the wire very close to its attachment point.

## Optical Coin Acceptor

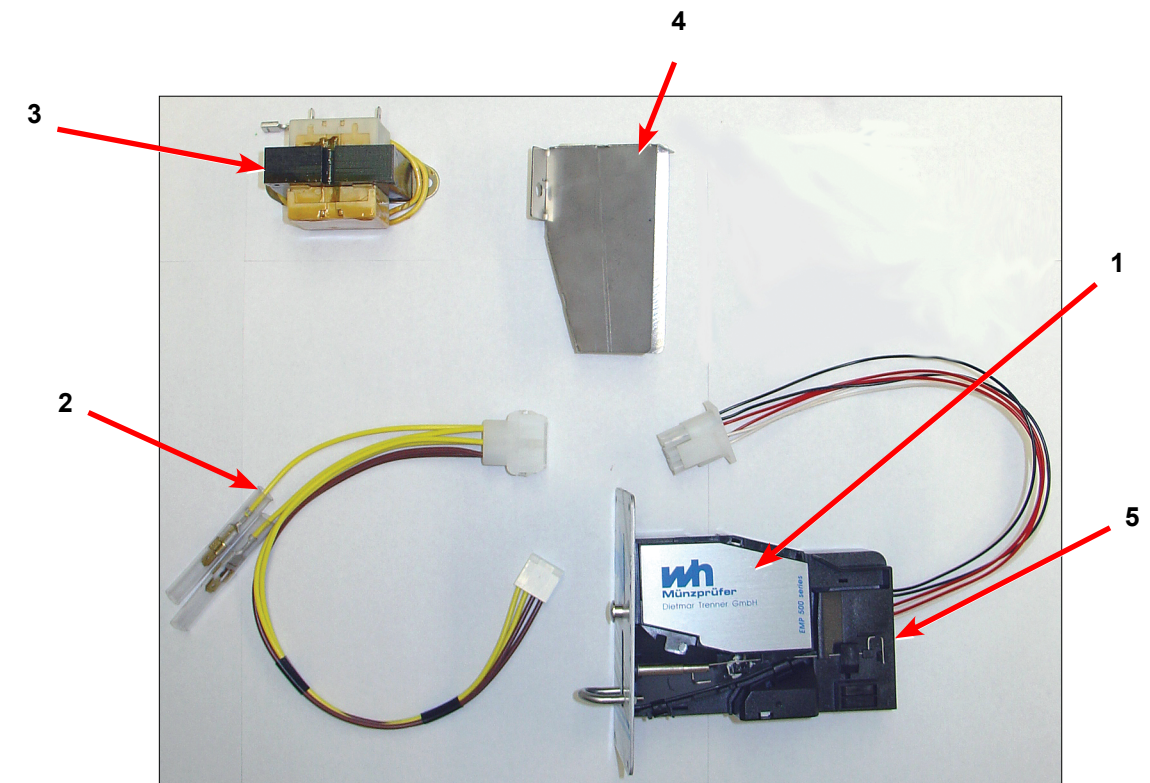
Starting after serial# 515483

Key-	Description	T-300	T-350	T-400	T-450	T-600	
1	Optical Coin Acceptor	9021-016-001	9021-016-001	9021-016-001	9021-016-001	9021-016-001	1
2	Replacement Optical Sensor	9801-099-001	9801-099-001	9801-099-001	9801-099-001	9801-099-001	1
*	Screw, Highth Bar, 3mm	9545-039-002	9545-039-002	9545-039-002	9545-039-002	9545-039-002	2



## Kit - Electronic Acceptor Conversion for WCAD (USA and Canada)

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
	KIT - Electronic Acceptor Conversion for WCAD (USA and Canada) Contact the Dexter Factory for Other Countries	9732-282-007	9732-282-007	9732-282-007	9732-282-007	9732-282-007	1
1	Electronic Coin Acceptor (USA and Canada)	9021-028-001	9021-028-001	9021-028-001	9021-028-001	9021-028-001	1
2	Harness for Electronic Coin Acceptor	9627-845-001	9627-845-001	9627-845-001	9627-845-001	9627-845-001	1
3	Transformer 120/18VAC	8711-015-001	8711-015-001	8711-015-001	8711-015-001	8711-015-001	1
*	Wire Assembly - Blue	8220-001-338	8220-001-338	8220-001-338	8220-001-338	8220-001-338	1
*	Wire Assembly - Orange/White	8220-001-235	8220-001-235	8220-001-235	8220-001-235	8220-001-235	1
4	Coin Chute for Electronic Drop	9119-028-001	9119-028-001	9119-028-001	9119-028-001	9119-028-001	1
*	Nut - Hex Elastic Stop	8640-424-002	8640-424-002	8640-424-002	8640-424-002	8640-424-002	1
*	Screw, Torx	9545-020-004	9545-020-004	9545-020-004	9545-020-004	9545-020-004	4
*	Screw, Hex	9545-045-001	9545-045-001	9545-045-001	9545-045-001	9545-045-001	4
*	Label, Informative	6102-017-001	6102-017-001	6102-017-001	6102-017-001	6102-017-001	2
*	Label, Warning	8502-730-001	8502-730-001	8502-730-001	8502-730-001	8502-730-001	1
*	Instructions, Installation	8507-367-001	8507-367-001	8507-367-001	8507-367-001	8507-367-001	1
5	Catch Spring (for Clean Out Door)	9534-367-001	9534-367-001	9534-367-001	9534-367-001	9534-367-001	1



# Electronic Acceptor Coin Drop

## Setting the electronic coin acceptor switches

Some washer models come equipped with an electronic coin acceptor. Follow the instructions below for setting the switches for the desired country and currencies.

1. The electronic coin acceptor has switch settings depending on the coins and country. See the table below for available values of the left and right coin inputs for the available countries.

**WARNING:** turn power off before and leave power off when changing the switches of the electronic coin acceptor.

2. Turn power back on and test coins to ensure proper operation.

Acceptor P/N	Country	Left Coin	Right Coin	SWs 1-8	SWs 9-16
9021-028-001	Canada	25¢		↓↓↑↑↑↑↑↓	↓↑↑↑↑↑↓
	Canada		\$1	↑↑↓↑↓↑↓	↓↑↑↑↑↑↓
	Canada		\$2	↑↑↑↑↓↑↓	↓↑↑↑↑↑↓
				↓↓↑↑↑↑↑↓	↑↓↑↑↑↑↓
				↑↑↓↑↓↑↓	↑↓↑↑↑↑↓
				↓↓↑↑↑↑↑↓	↑↑↓↑↑↑↓
				↑↑↓↑↓↑↓	↑↑↓↑↑↑↓
				↓↓↑↑↑↑↑↓	↑↑↑↓↑↑↓
			Greenwald 118-1 Token	↑↑↑↑↑↑↓	↑↑↑↑↓↑↓
			Greenwald 118-5 Token	↑↑↑↑↑↑↓	↑↑↑↑↓↑↓
9021-011-001	U.S.A.	25¢		↓↓↑↑↑↑↑↓	↑↑↑↑↑↑↓
	U.S.A.		\$1	↑↑↓↑↓↑↓	↑↑↑↑↑↑↓
	Australia	10¢		↓↓↑↑↑↑↑↓	↑↓↑↑↑↑↓
	Australia	20¢		↑↑↓↑↑↑↓	↑↓↑↑↑↑↓
	Australia		\$1	↑↑↑↑↓↑↓	↑↑↓↑↑↑↓
	Australia		\$2	↑↑↑↑↑↑↓	↓↑↓↑↑↑↓
	New Zealand	10¢		↓↓↑↑↑↑↑↓	↑↓↑↑↑↑↓
	New Zealand	20¢		↑↑↓↑↑↑↓	↑↓↑↑↑↑↓
	New Zealand		\$1	↑↑↑↑↓↑↓	↑↑↑↓↑↑↓
	New Zealand		\$2	↑↑↑↑↑↑↓	↓↑↓↑↑↑↓
Hong Kong	\$5		↓↓↓↑↑↑↓	↑↑↑↓↑↑↓	
Hong Kong		\$10	↑↑↑↑↓↑↓	↑↑↑↓↑↑↓	
		Greenwald 118-1 Token	↑↑↑↑↑↑↓	↑↑↑↑↓↑↓	
		Greenwald 118-5 Token	↑↑↑↑↑↑↓	↑↑↑↑↓↑↓	

**NOTE:** Coins and tokens in the left coin column will result in one pulse to the left coin input.

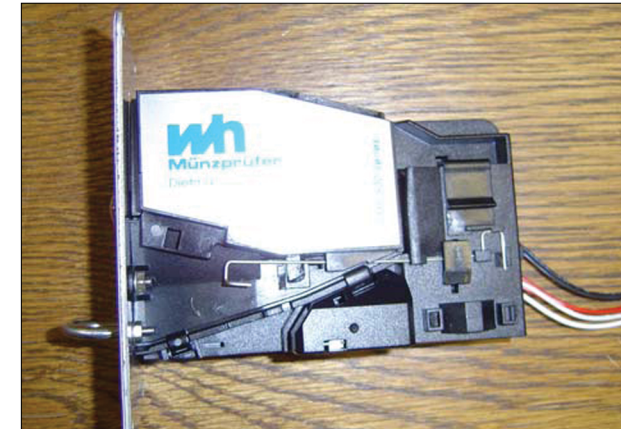
**NOTE:** The \$1, 500¥, 50NT, and \$10 coins in the right coin column will result in one pulse to the right coin input, while the \$2 coins will result in two pulses to the right coin input.

Note: Acceptance of multiple coins per country and multiple tokens is allowed. Only the down/off setting for each coin and token is required to accept that coin or token.

# Maintenance Instructions

## Electronic Acceptor

### 1. Instructions to open the flap of the coin selector



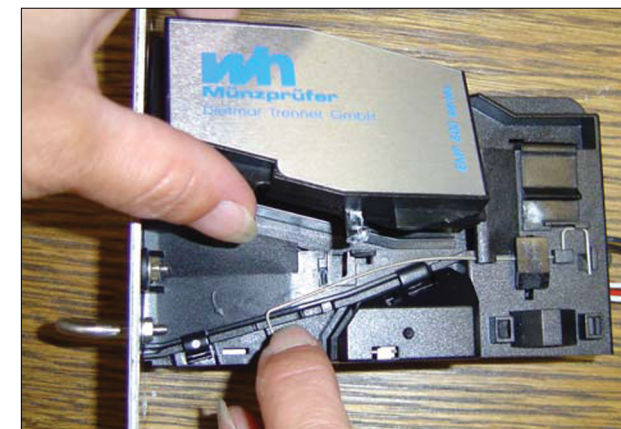
Original situation



Move spring downwards to free the catch.

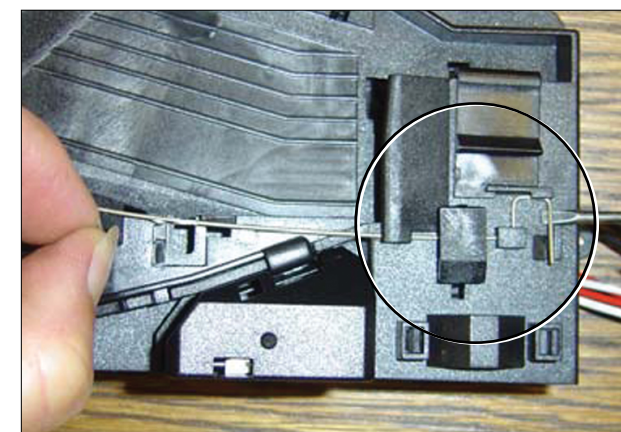
**NOTE:**

- Do not lift the spring
- Do not over bend the spring in any direction.

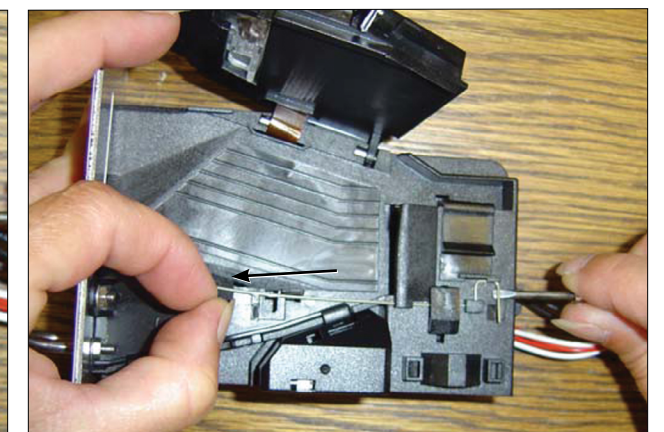


Open the flap of the coin selector.

### 2. Assembly instructions to change a spring

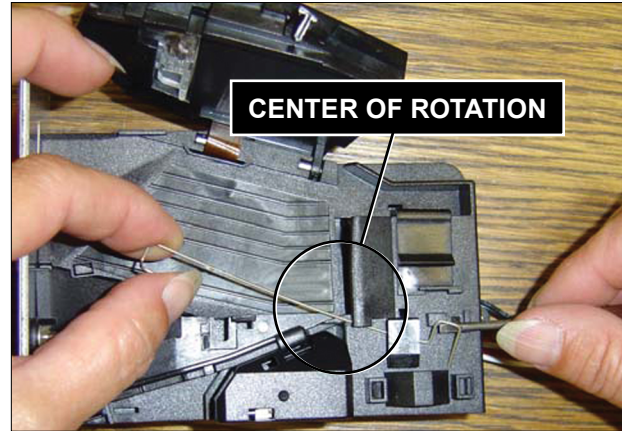


Lift the right end of the spring by means of a screw driver.

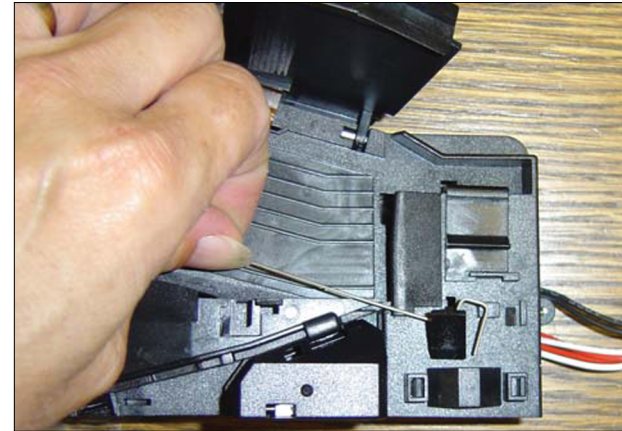


Pull the spring approximately 3 mm to the left.

## Electronic Acceptor

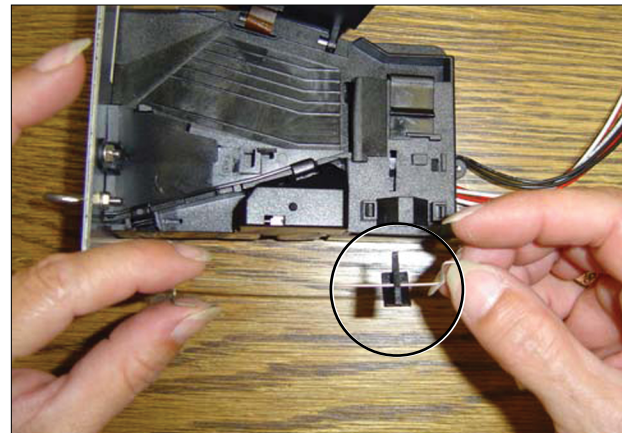


Rotate the spring clockwise for about 40 to 60 degrees until it becomes free of the protrusion.

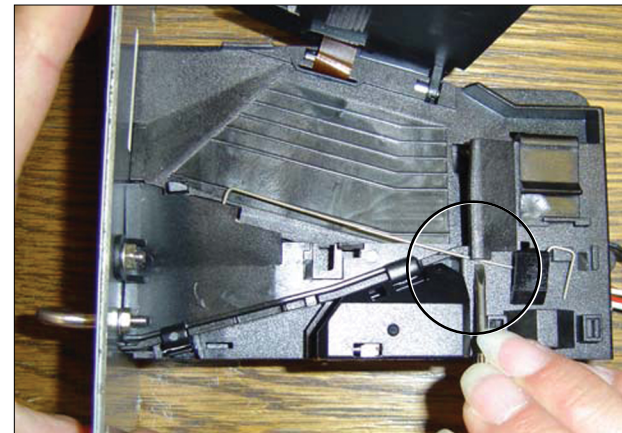


Lift off the spring with the attached plastic part.

### 3. Assembly of a new spring

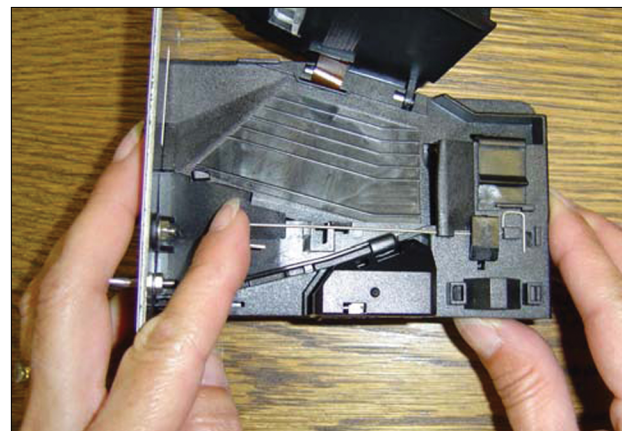


Attach the plastic part to the new spring.



Place the plastic part in its position (slot).

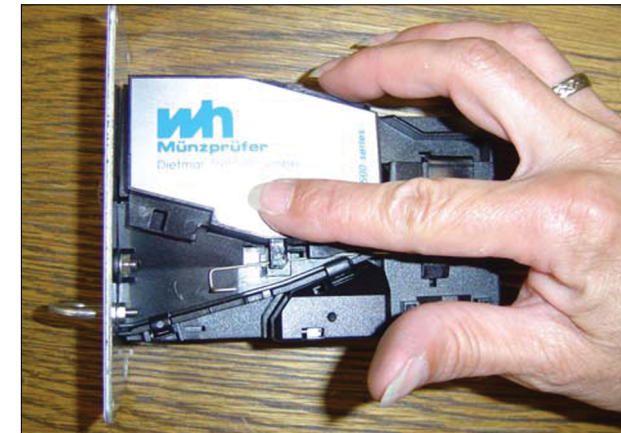
Push the spring below the protrusion by means of a small screw driver.



Push the spring lateral to the right until its snaps into its proper position.

## Electronic Acceptor

### 4. Close the coin selector



To shut the coin selector follow pictures 1 to 3 in reverse order.

### 5. Cleaning the electronic coin selector

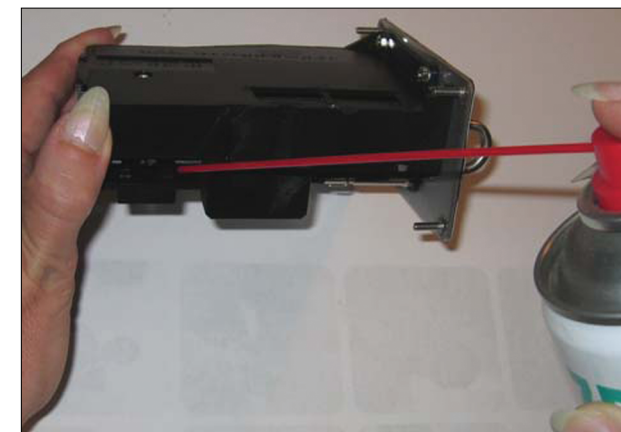
The EMP 500 v4 is an extraordinarily robust coin selector and operates relatively maintenance free. However, it should be cleaned at regular intervals (minimum once a year) especially if it is operating in an environment with high levels of dust, smoke or nicotine. The cleaning intervals are of course dependent on the level of air borne contaminants.



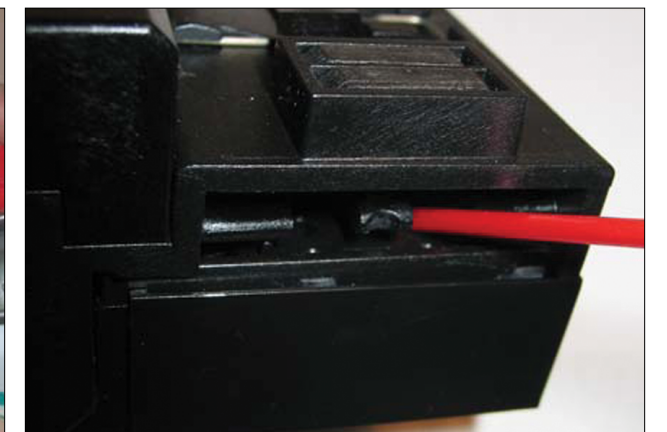
Clean the coin path with a soft brush and wipe the exposed surfaces. Use an alcohol moistened cloth.



tina) remove it with an alcohol moistened cloth.



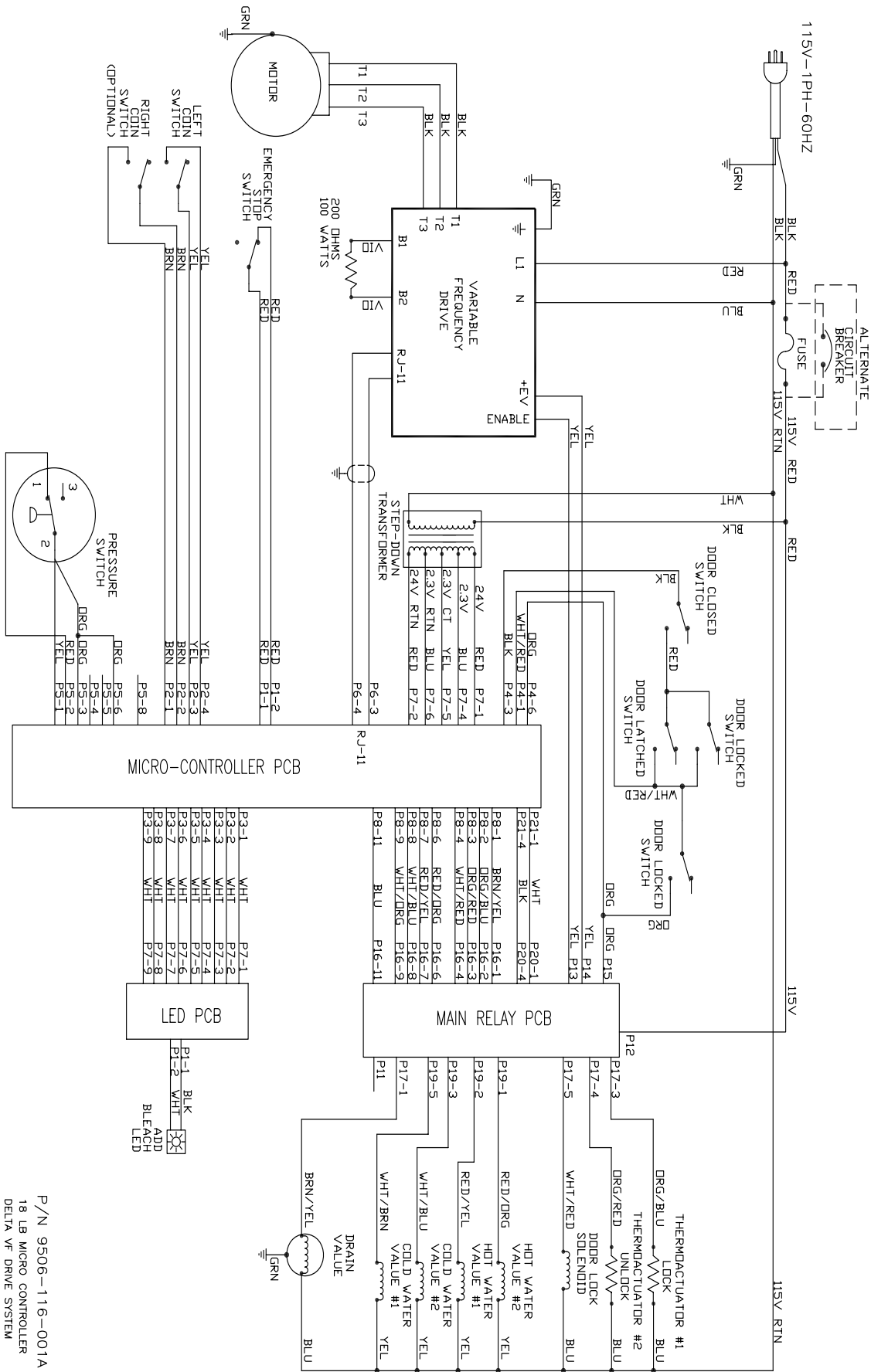
Optical sensors may be cleaned with a soft brush or very carefully with an air spray duster.



Location of the optical sensor within coin outlet.

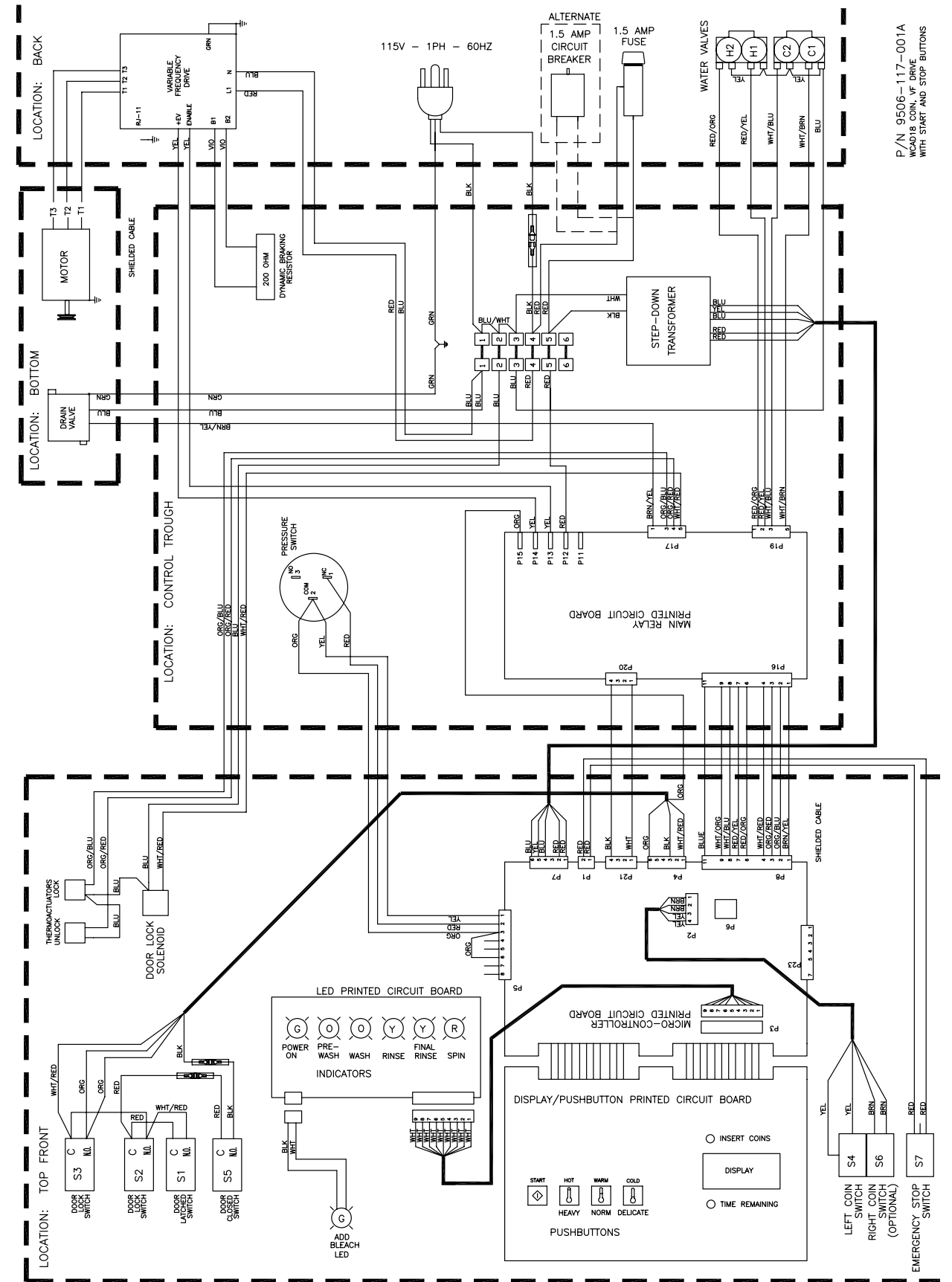


# Coin Micro Switch 20Lb. Non-Express: 120 Volt Wiring Schematic



P/N 9506-116-001A  
18 LB MICRO CONTROLLER  
DELTA V.F. DRIVE SYSTEM  
WITH START AND STOP BUTTONS

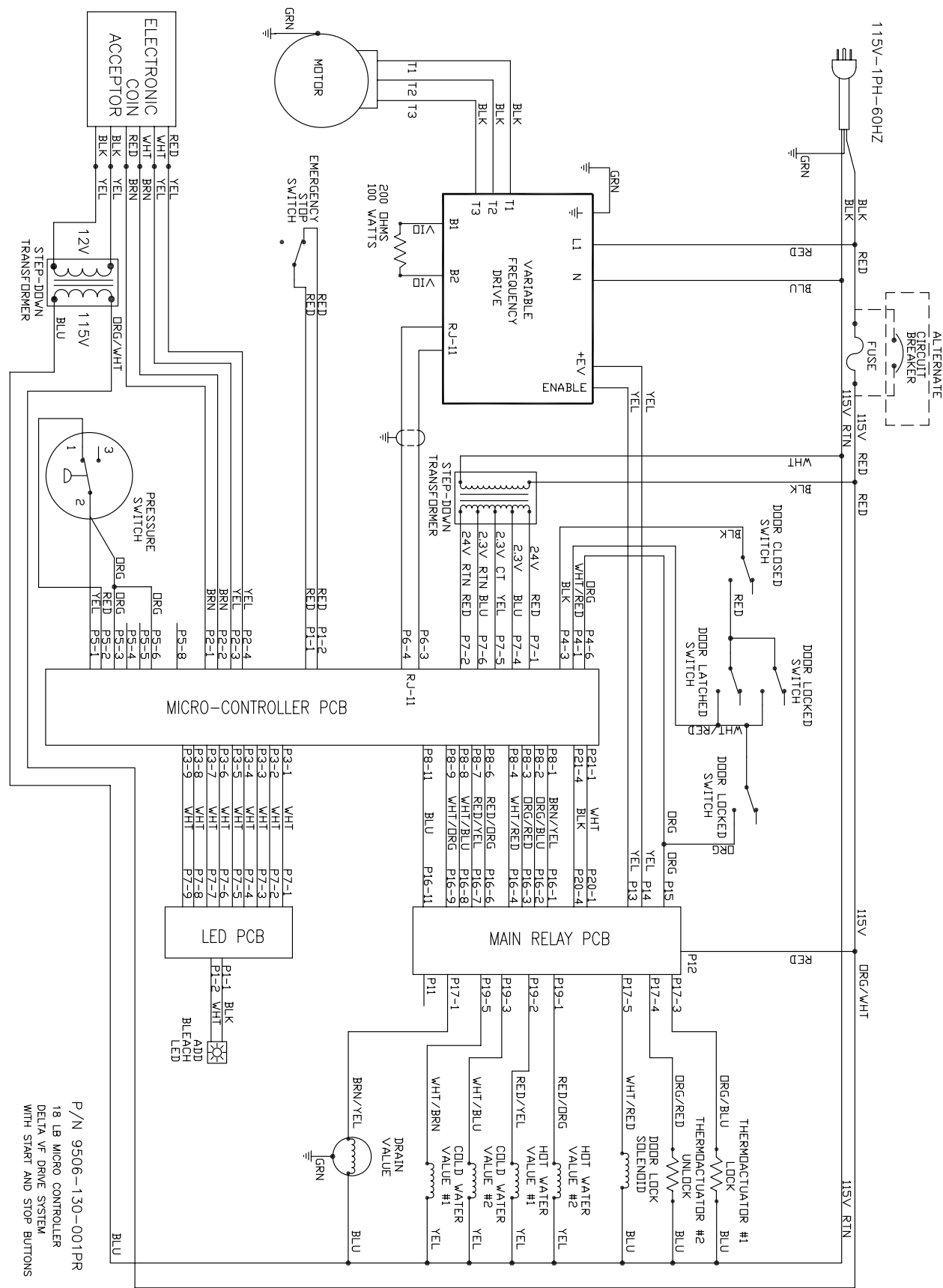
# Coin Micro Switch 20Lb. Non-Express: 120 Volt Wiring Diagram



P/N 9506-117-001A  
W/O 18 COIN, V.F. DRIVE  
WITH START AND STOP BUTTONS

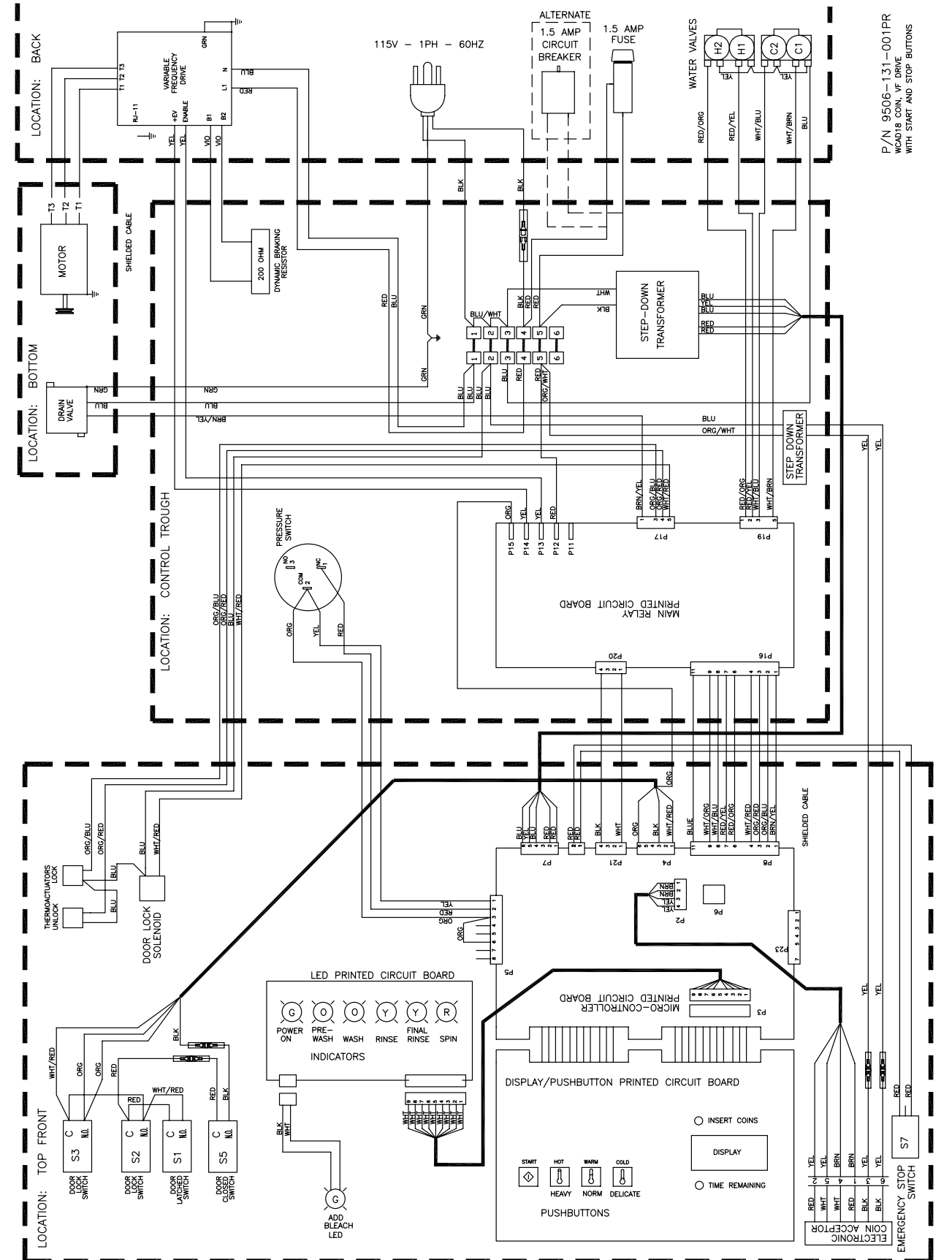


# 20lb Non-Express: Electronic Acceptor Schematic 120V



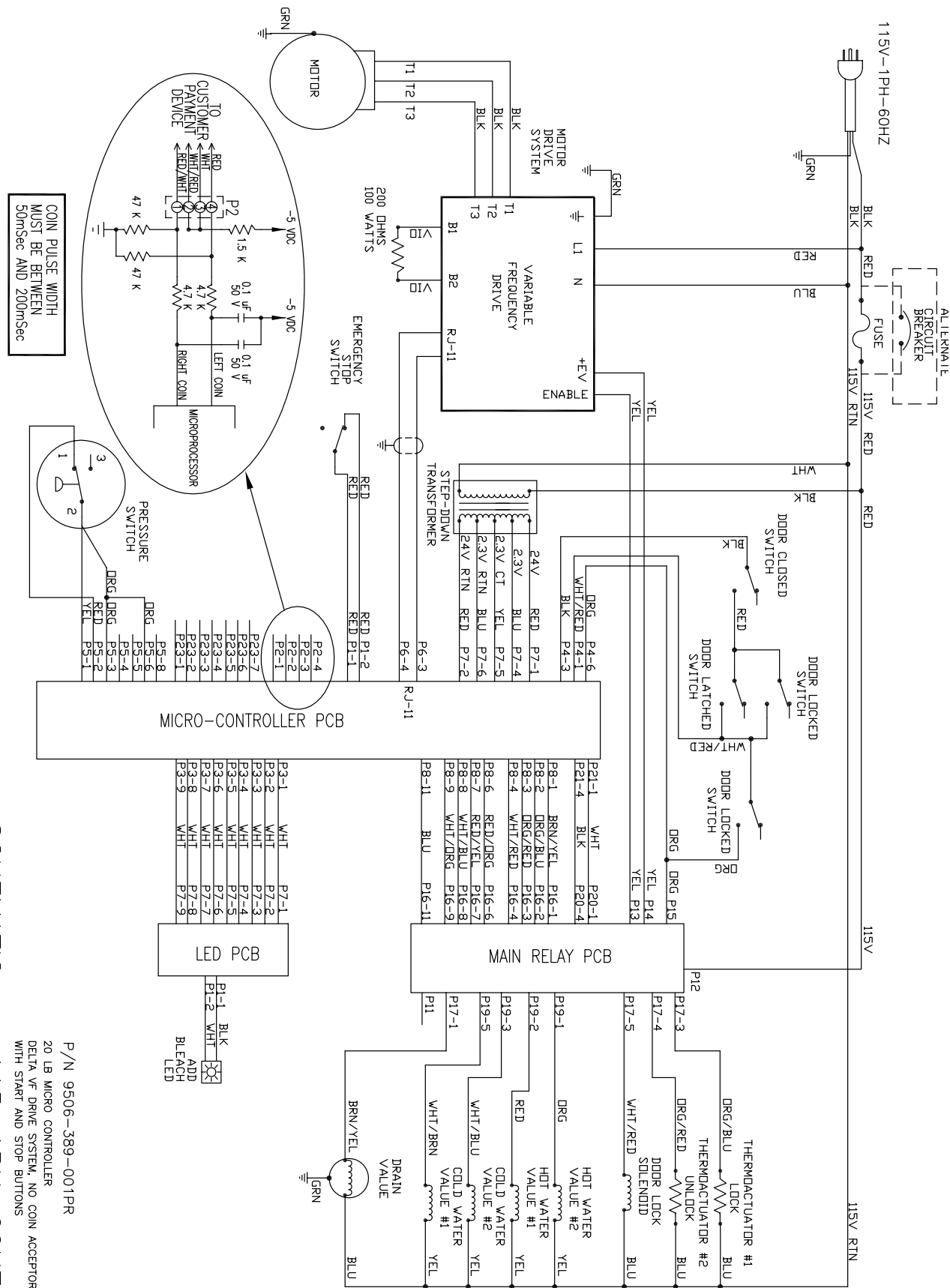
P/N 9506-130-001PR  
18 LB MICRO CONTROLLER  
DELTA VF DRIVE SYSTEM  
WITH START AND STOP BUTTONS

# 20lb Non-Express: Electronic Acceptor Wire Diagram 120V



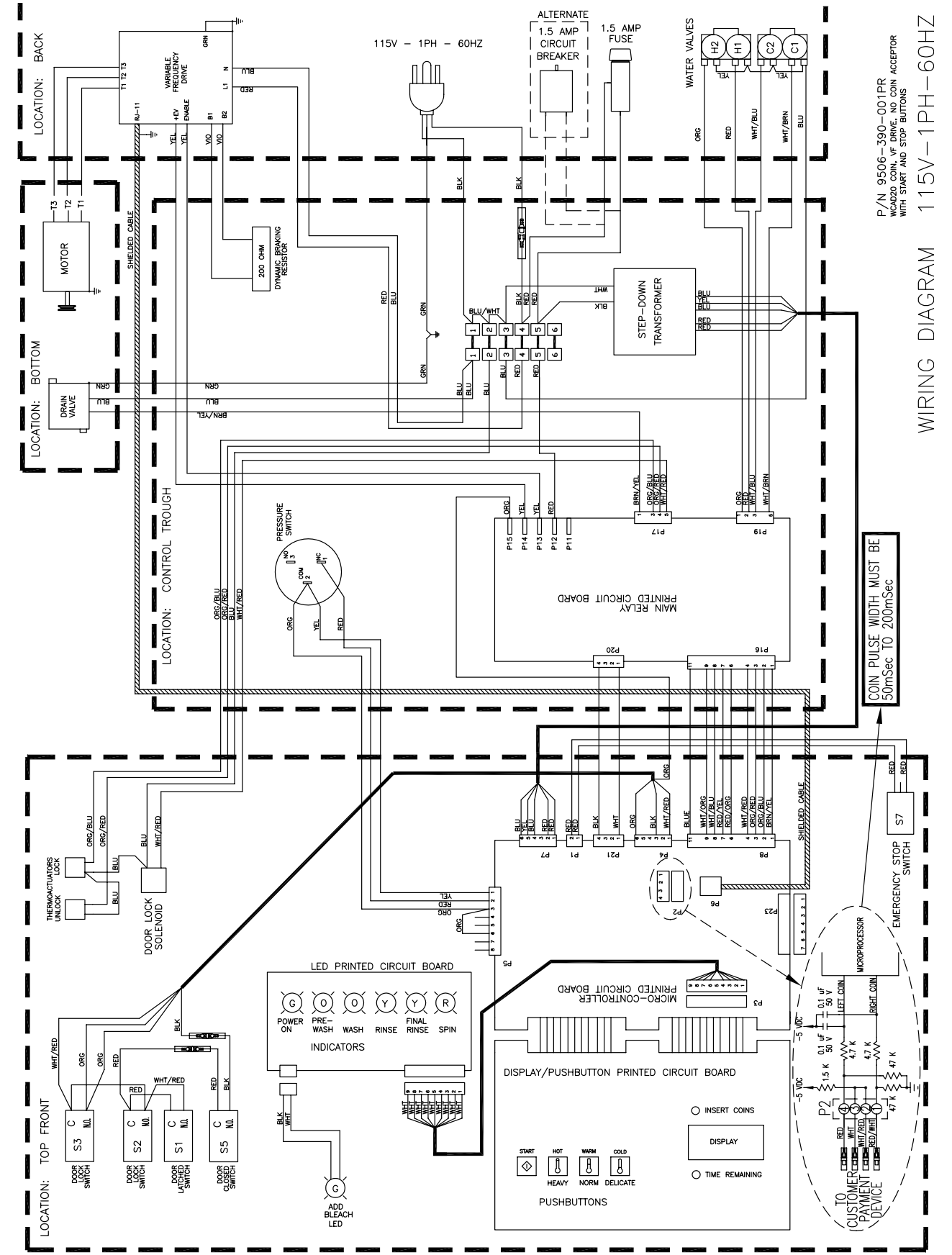
P/N 9506-131-001PR  
W/OA18 COIN, VF DRIVE  
WITH START AND STOP BUTTONS

# CN (No Coin Acceptor) 20Lb. Non-Express: 120 Volt Wiring Schematic



P/N 9506-389-001PR  
20 LB MICRO CONTROLLER  
DELTA V.F. DRIVE SYSTEM, NO COIN ACCEPTOR  
WITH START AND STOP BUTTONS

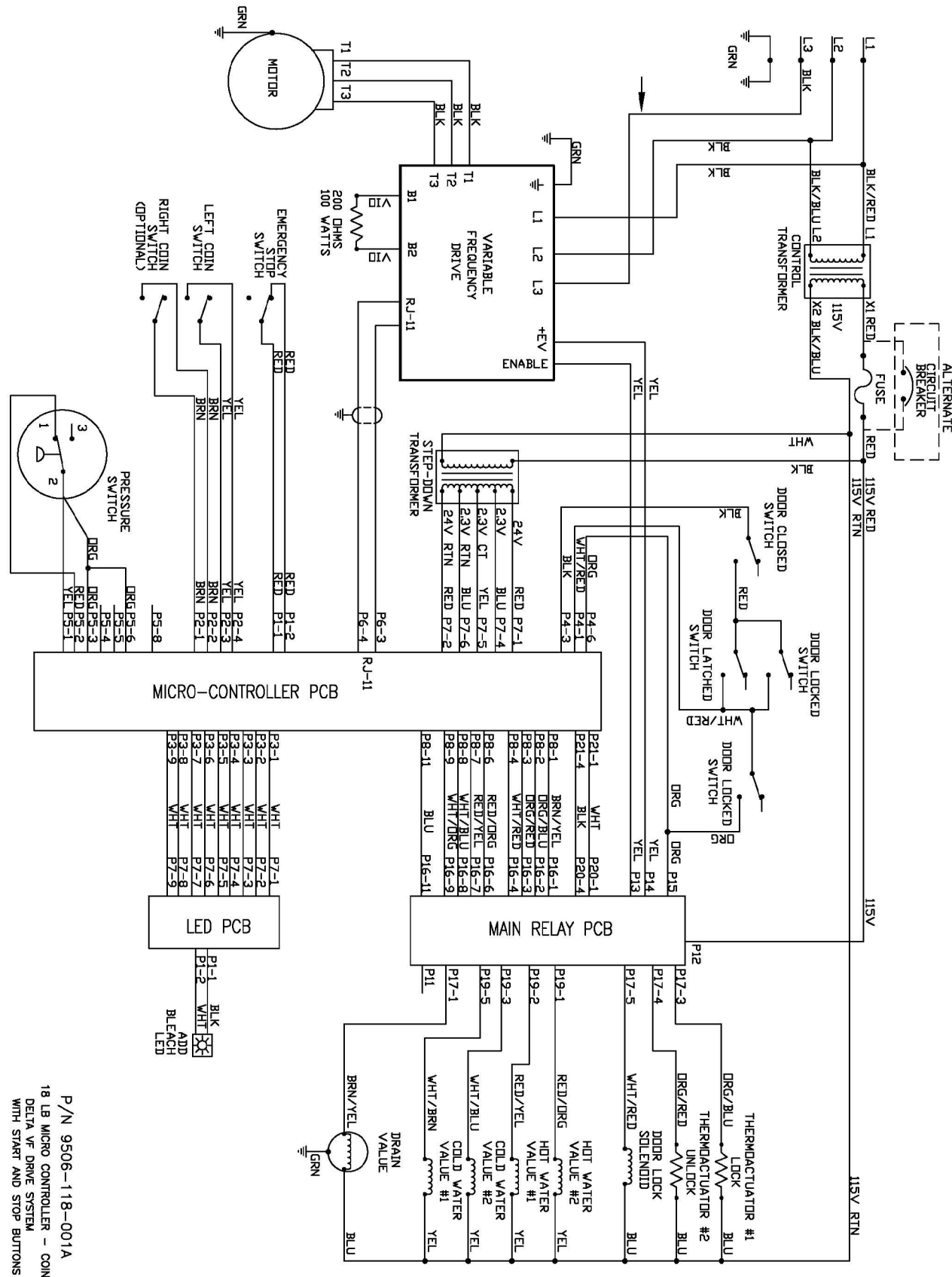
# CN (No Coin Acceptor) 20Lb. Non-Express: 120 Volt Wiring Diagram



P/N 9506-390-001PR  
WV4020 COIN, V.F. DRIVE, NO COIN ACCEPTOR  
WITH START AND STOP BUTTONS

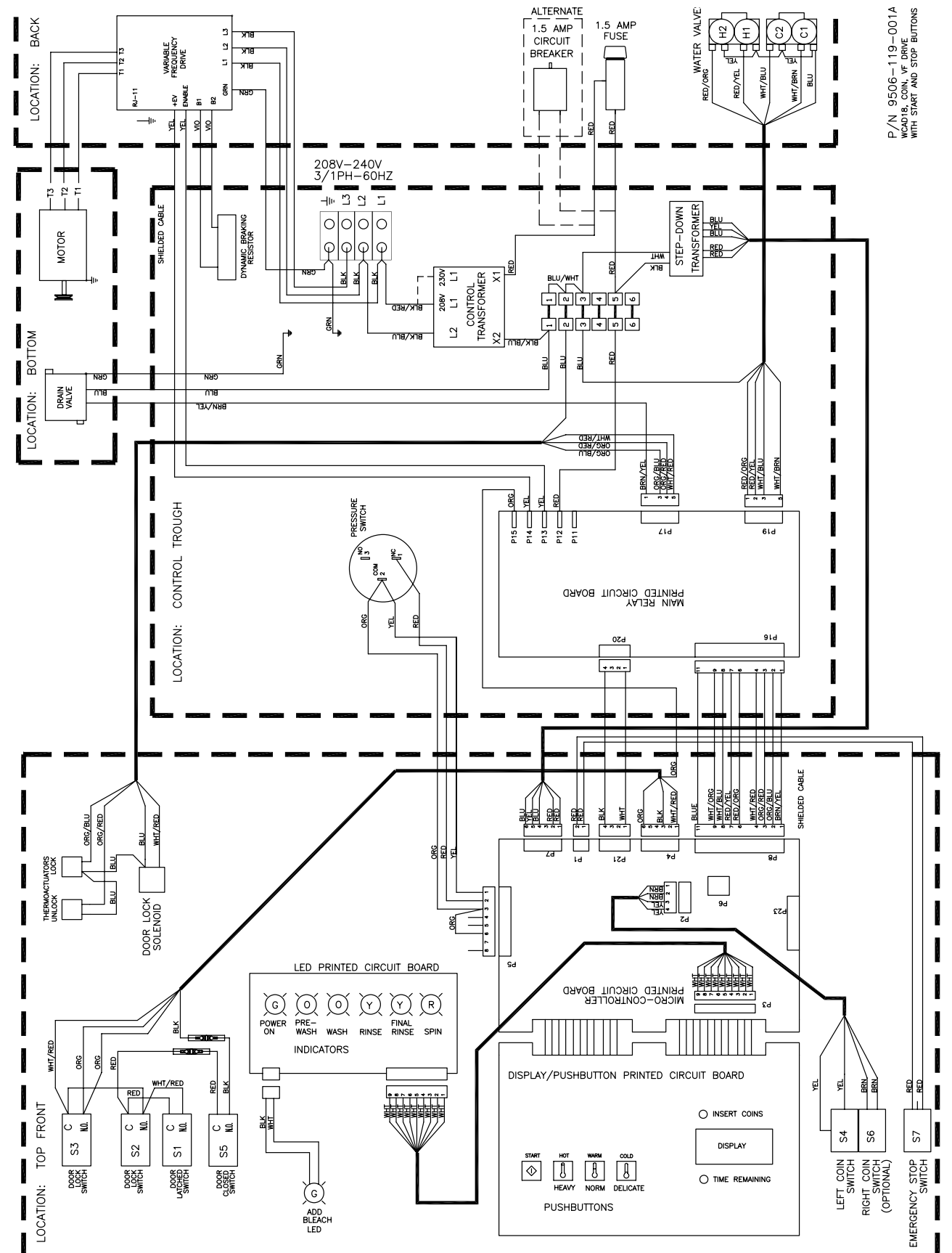
# Coin Micro Switch 20Lb. Non-Express: 208-240 Volt Wiring Schematic

208-240V-3PH OR 1PH-60HZ



P/N 9506-118-001A  
18 LB MICRO CONTROLLER - COIN  
DELTA VF DRIVE SYSTEM  
WITH START AND STOP BUTTONS

# Coin Micro Switch 20Lb. Non-Express: 208-240 Volt Wiring Diagram

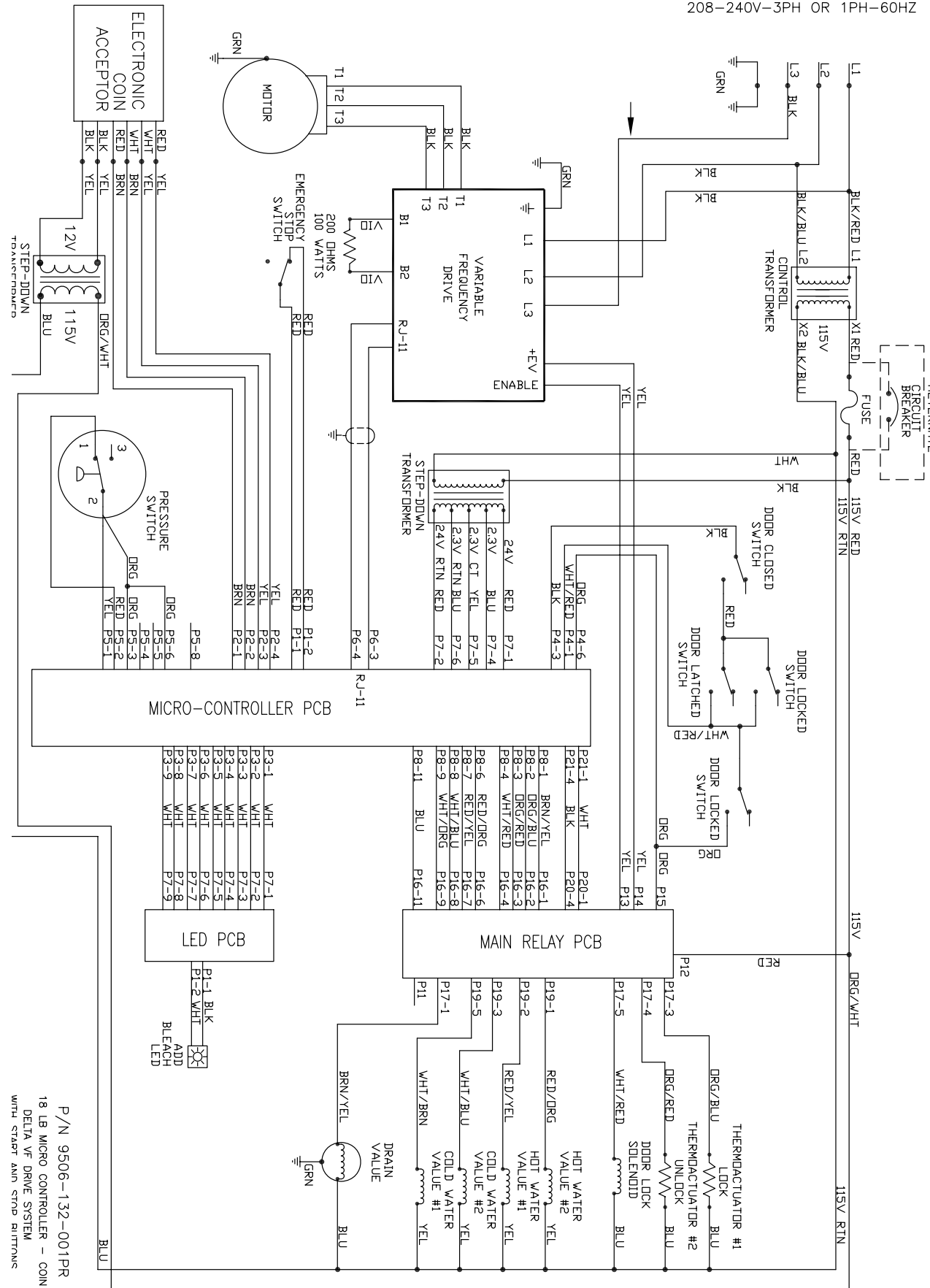


P/N 9506-119-001A  
W/COIN, COIN, VF DRIVE  
WITH START AND STOP BUTTONS



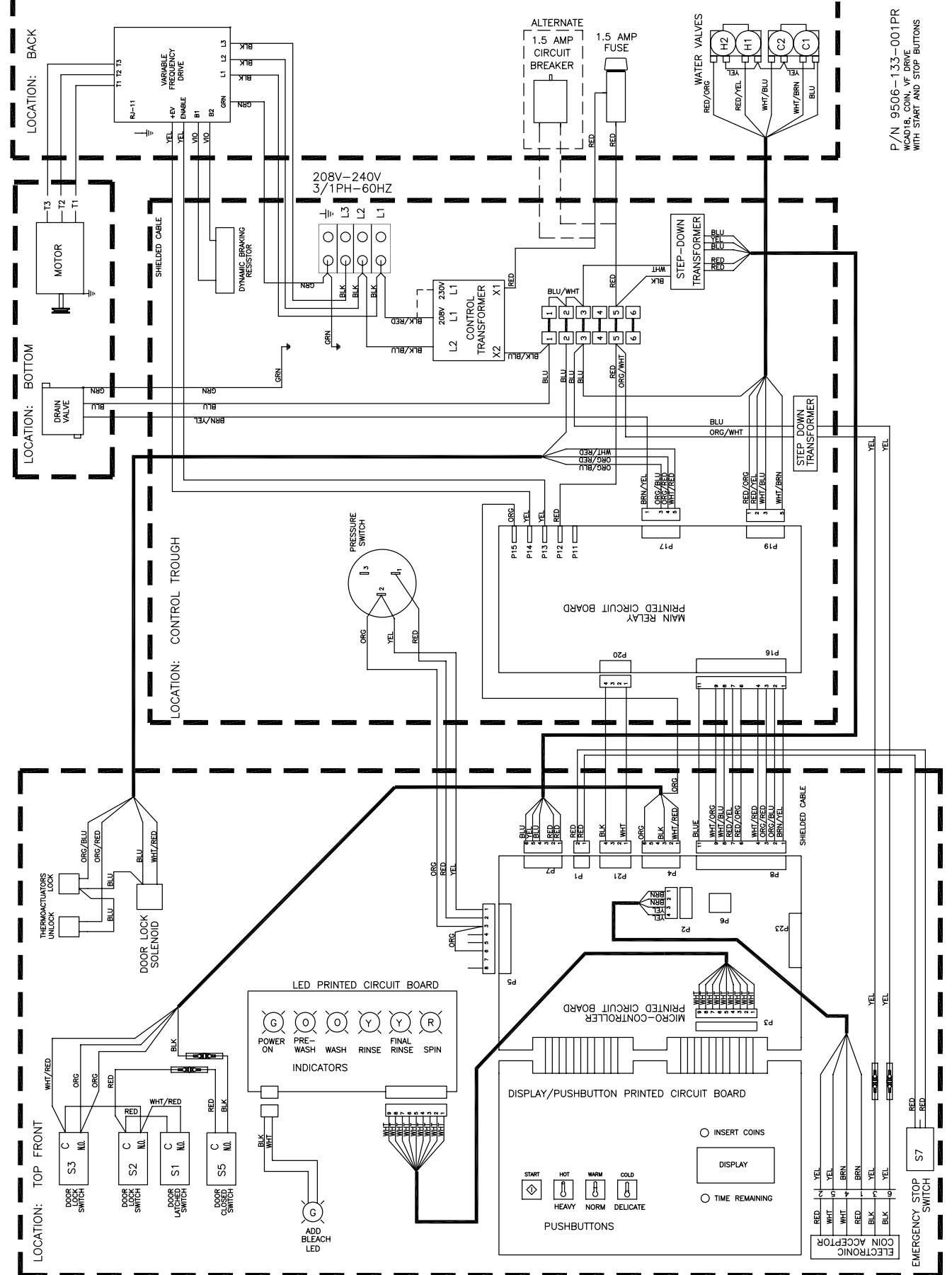
# 20lb. Non-Express: Electronic Acceptor Schematic 208-240V

208-240V-3PH OR 1PH-60HZ



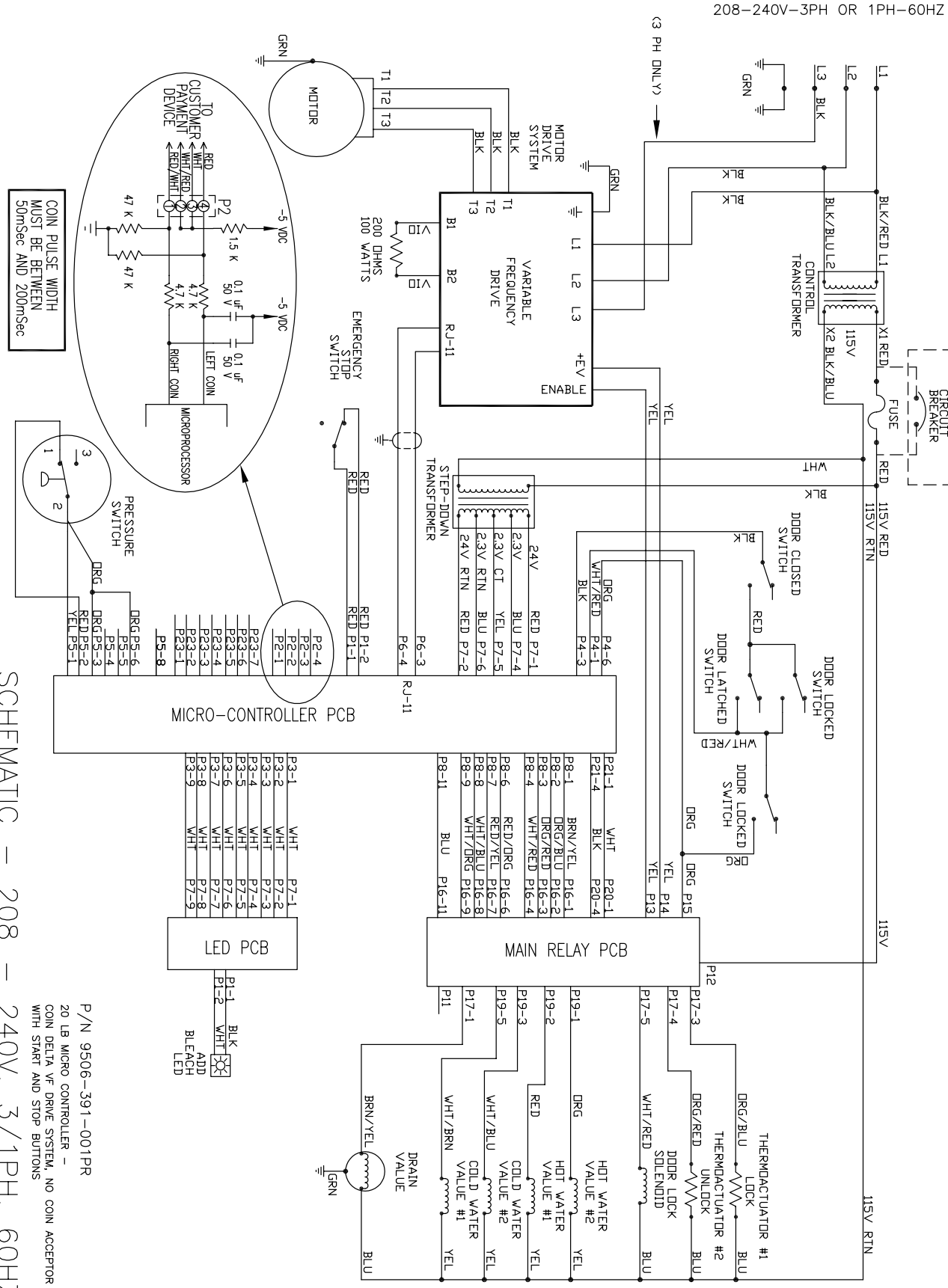
P/N 9506-132-001PR  
18 LB MICRO CONTROLLER - COIN  
DELTA VF DRIVE SYSTEM  
WITH START AND STOP BUTTONS

# 20lb. Non-Express: Electronic Acceptor Diagram 208-240V

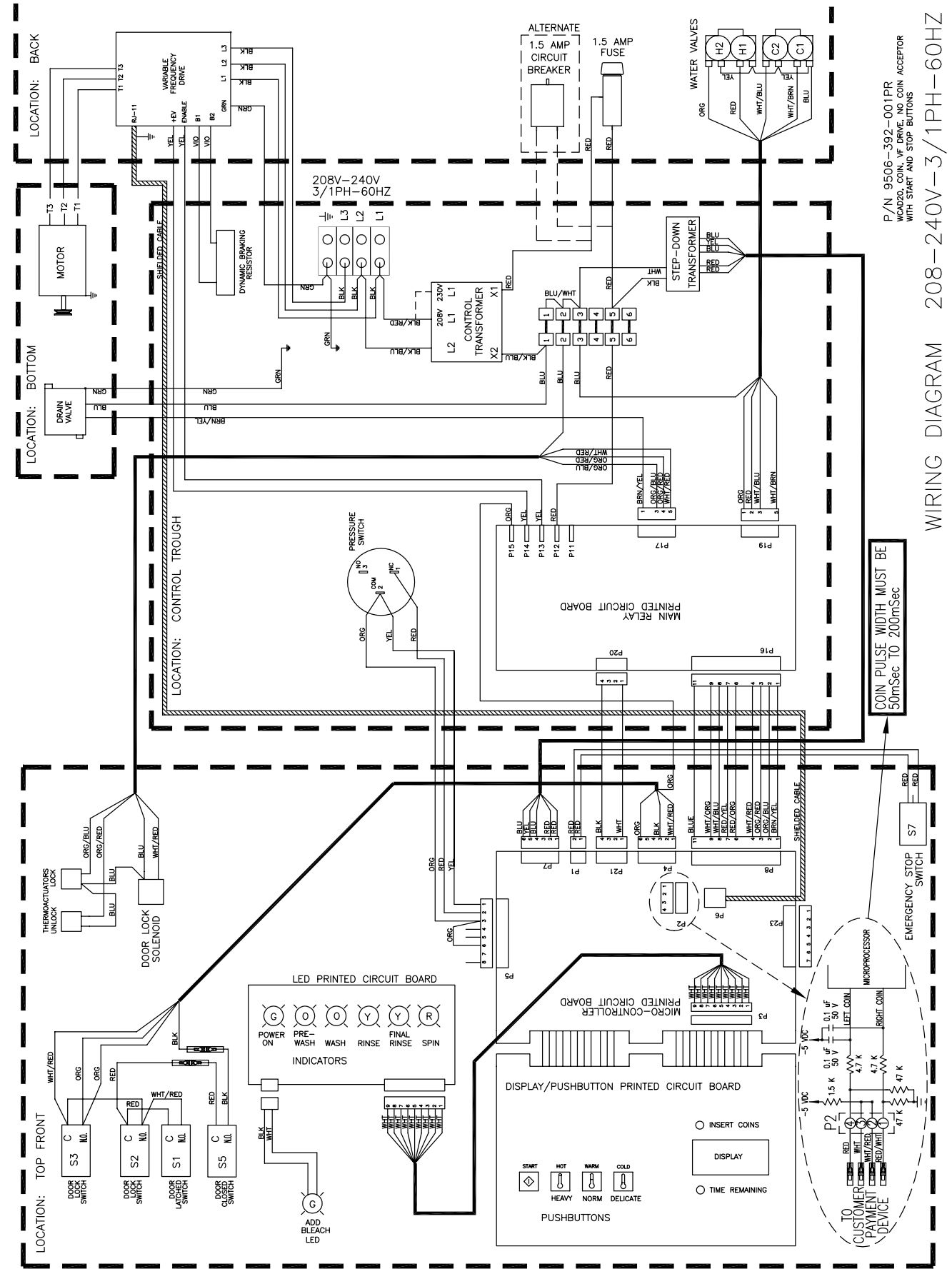


P/N 9506-133-001PR  
W/AD18, COIN, VF DRIVE  
WITH START AND STOP BUTTONS

# CN (No Coin Acceptor) 20Lb. Non-Express: 208-240V Schematic Volt Wiring Schematic



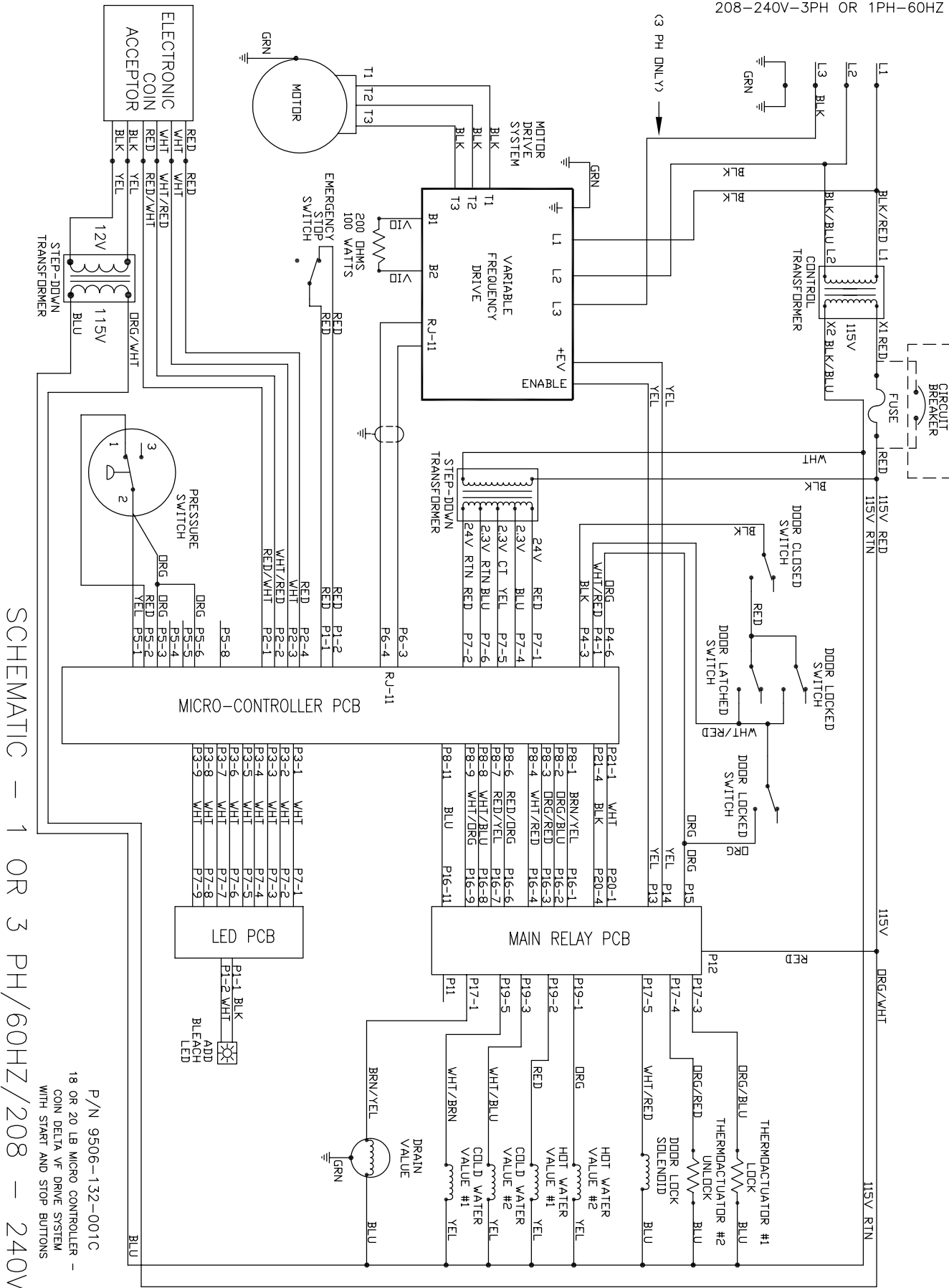
# CN (No Coin Acceptor) 20Lb. Non-Express: 208-240 Volt Wiring Diagram



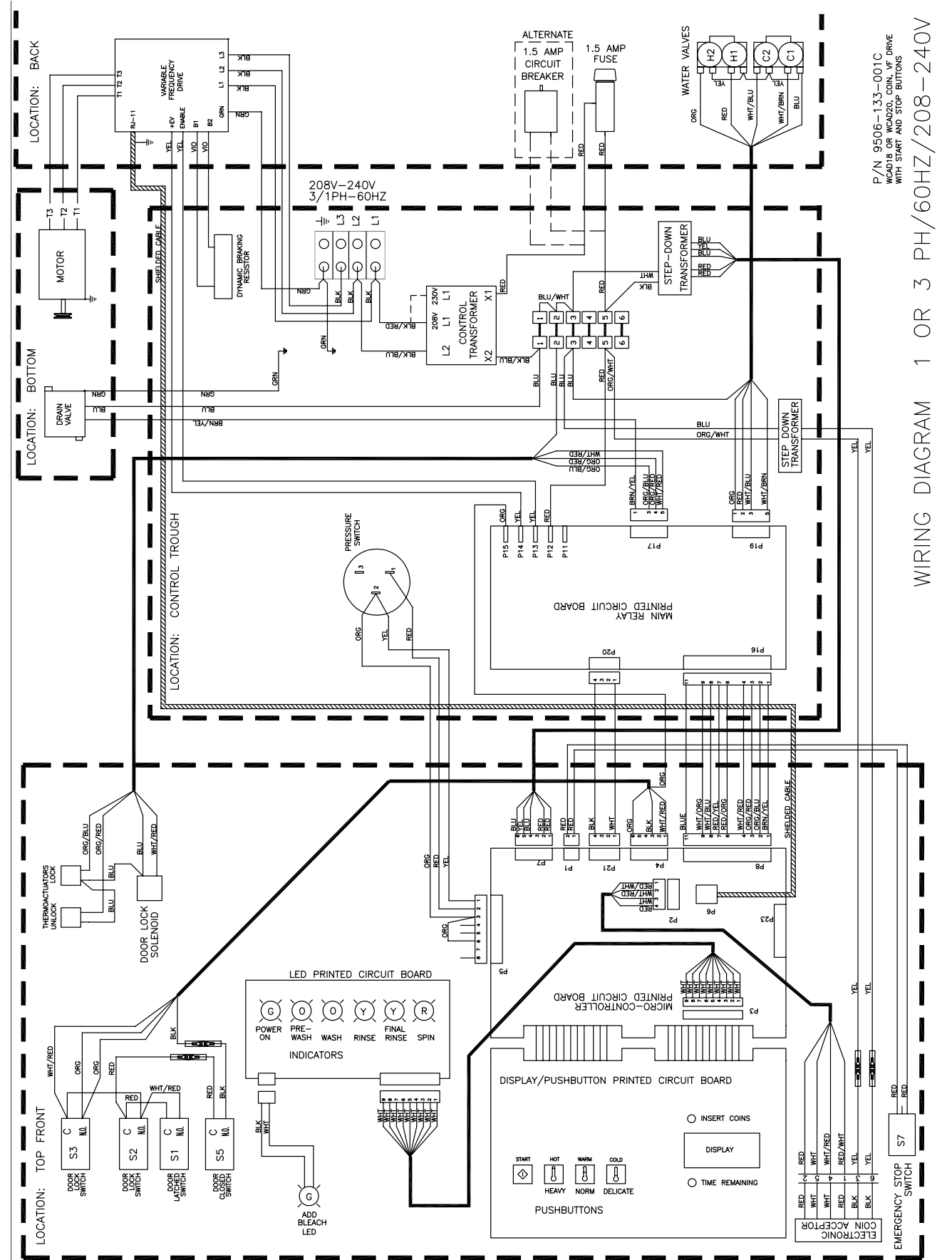




# 20lb Express: Electronic Acceptor Schematic 208-240V



# 20lb Express: Electronic Acceptor Diagram 208-240V



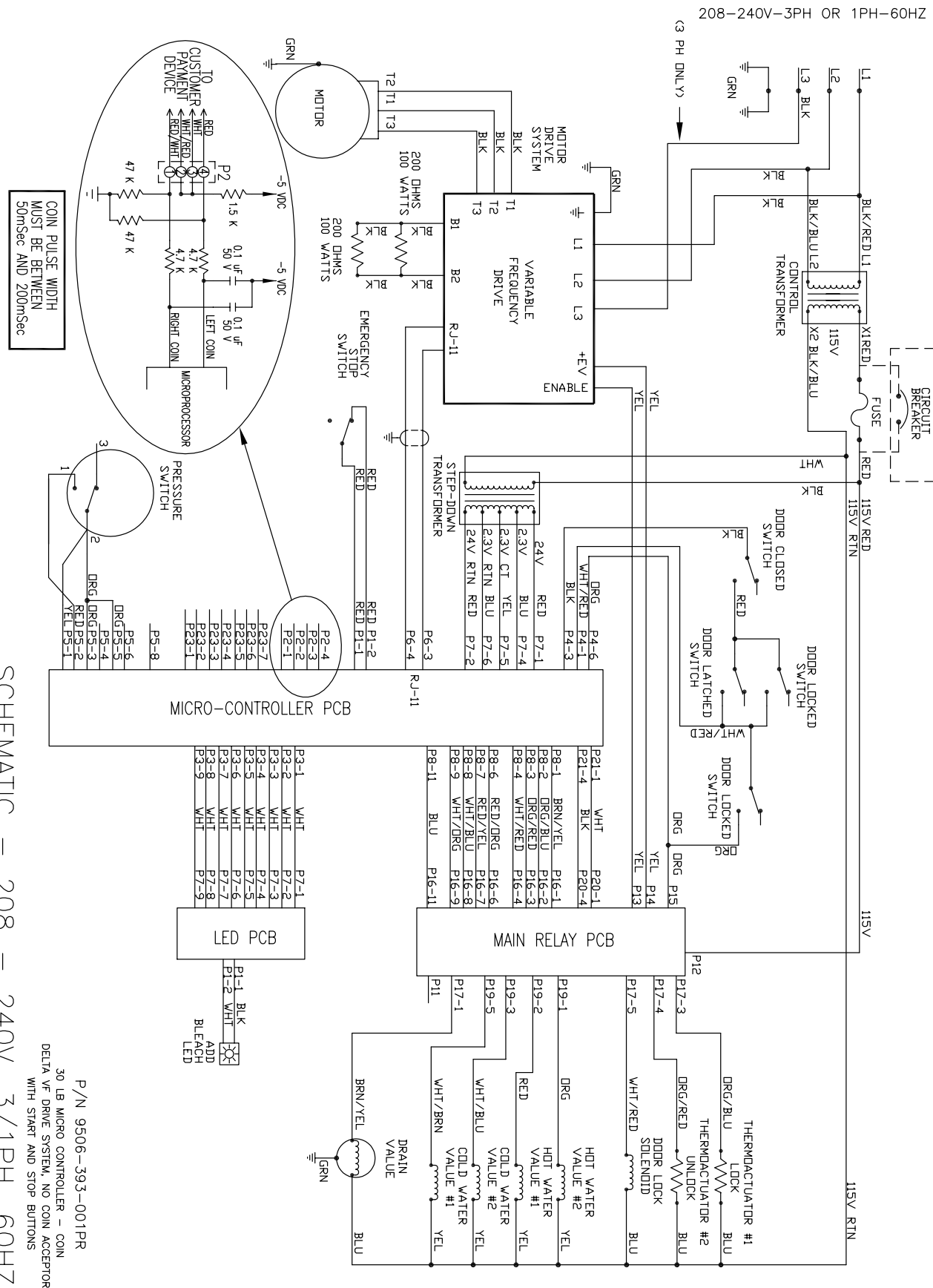




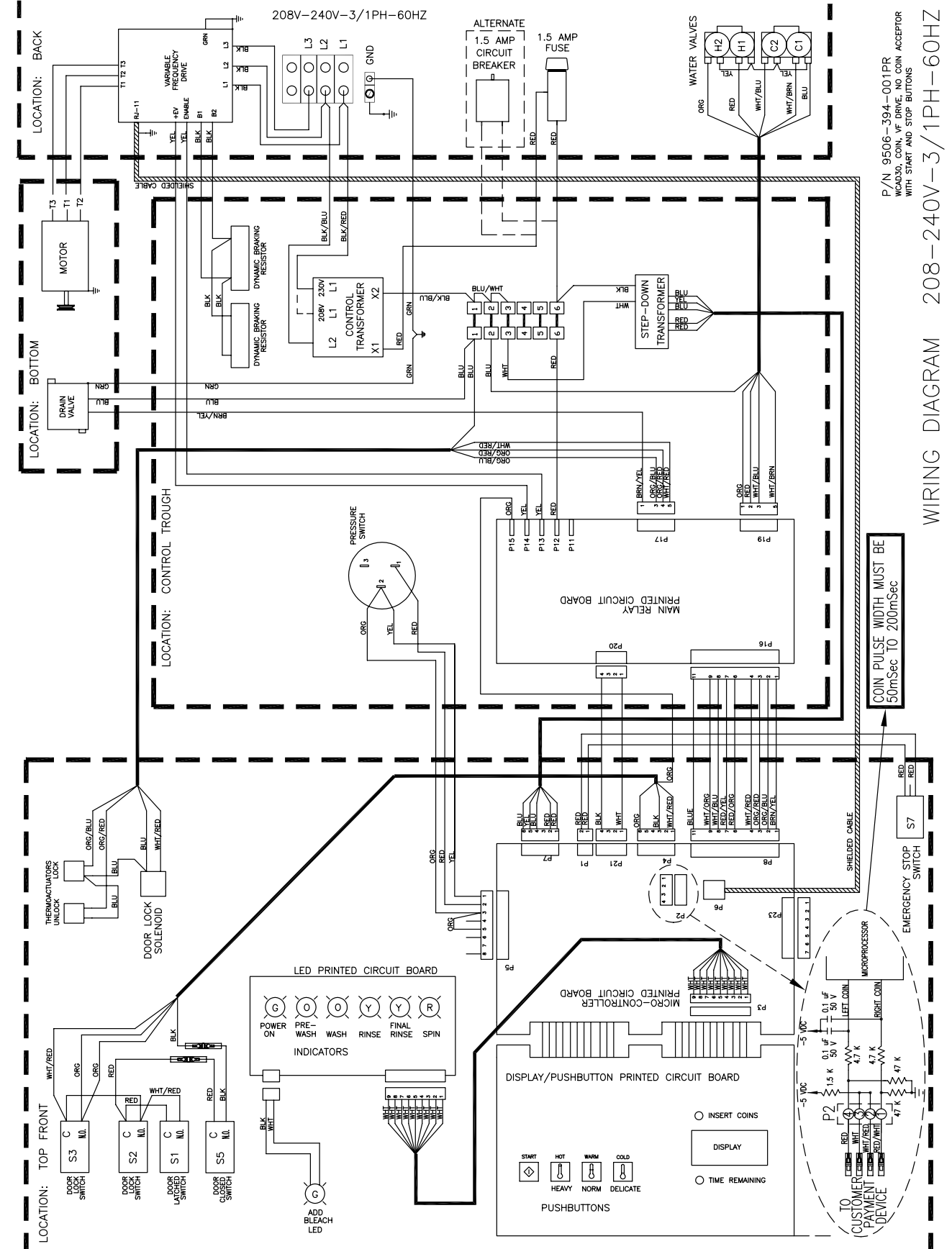




# 30Lb. Express: Non-Express: CN (No Coin Acceptor) Schematic 208-240 Volt Wiring

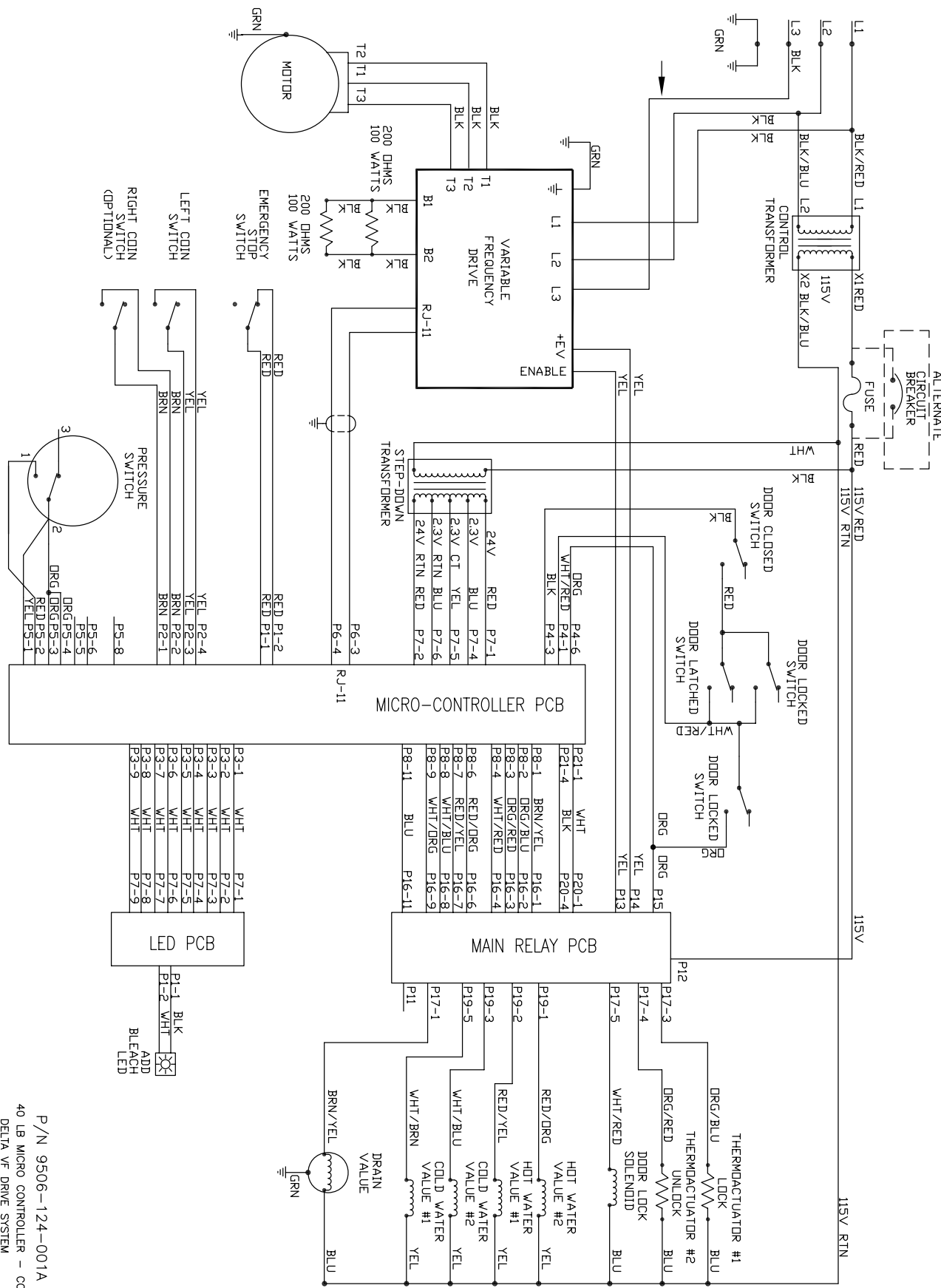


# 30Lb. Express: Non-Express: CN (No Coin Acceptor) Schematic 208-240 Volt Wiring



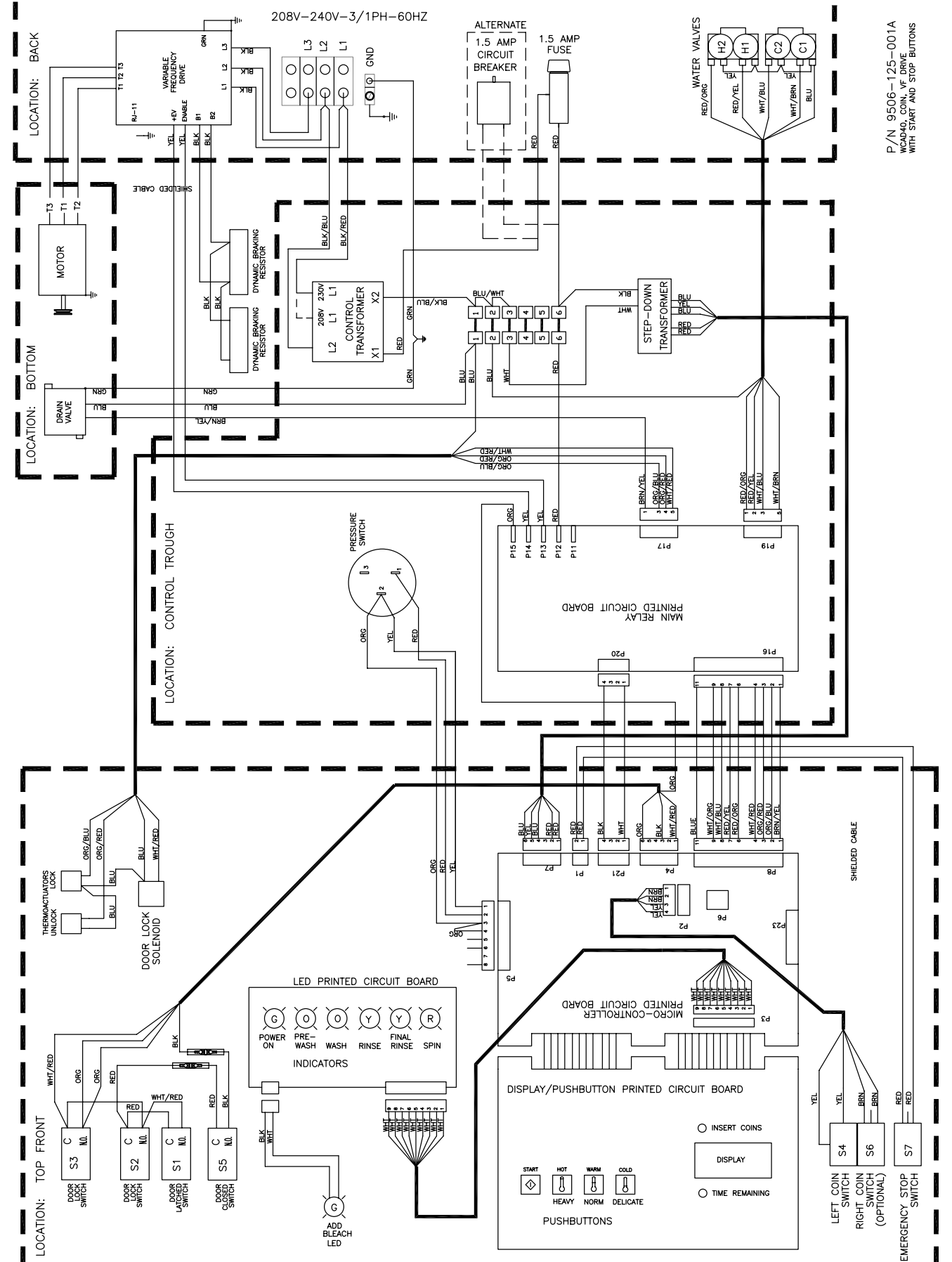
# 40Lb. Non-Express: Coin Micro Switch Schematic

208-240V-3PH OR 1PH-60HZ



P/N 9506-124-001A  
40 LB MICRO CONTROLLER - COIN  
DELTA VF DRIVE SYSTEM  
WITH START AND STOP BUTTONS

# 40Lb. Non-Express: Coin Micro Switch Diagram



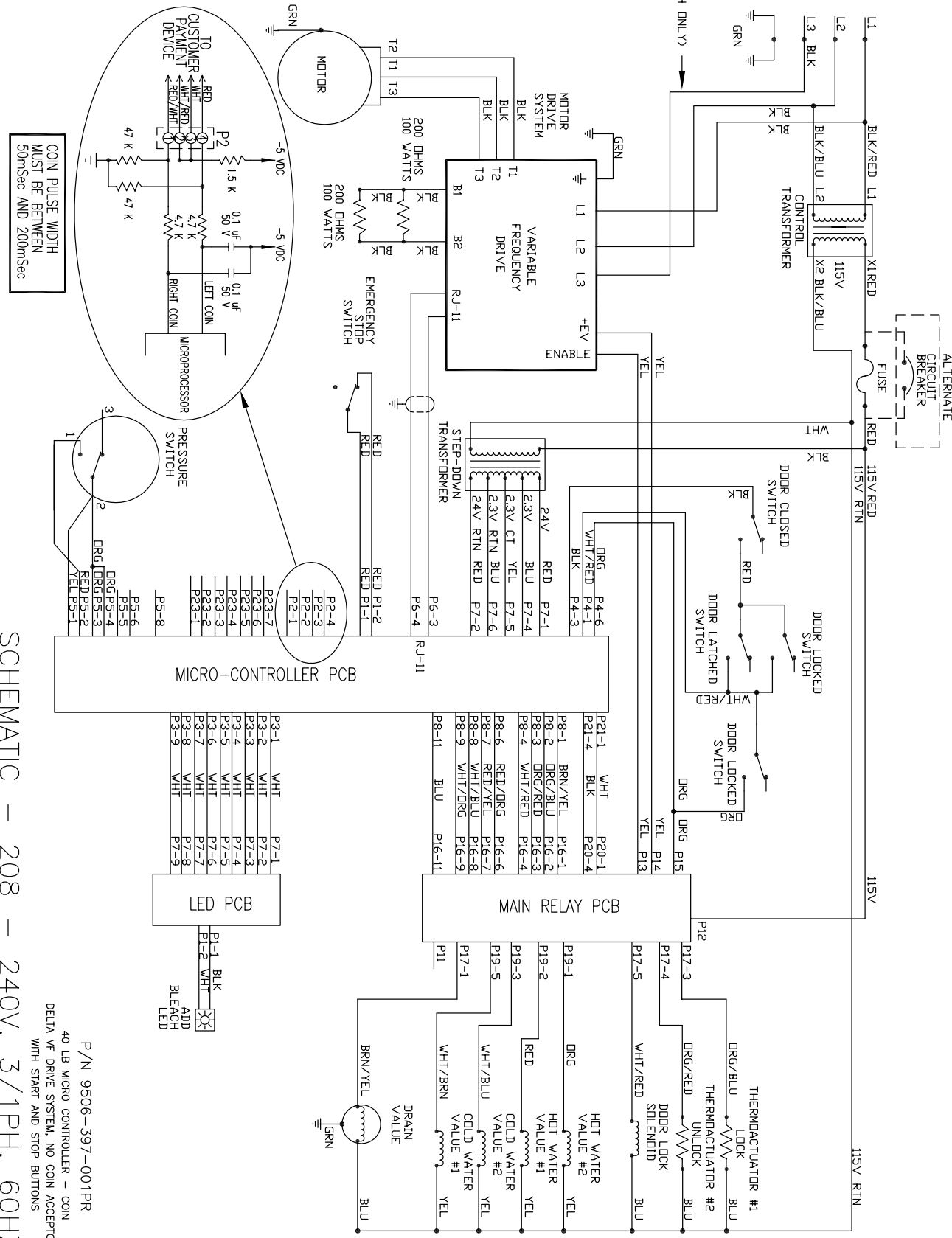
P/N 9506-125-001A  
W/40 LB COIN P/N 9506-124-001A  
WITH START AND STOP BUTTONS





# 40Lb. Express: Non-Express: CN (No Coin Acceptor) Schematic 208-240 Volt Wiring

208-240V-3PH OR 1PH-60HZ

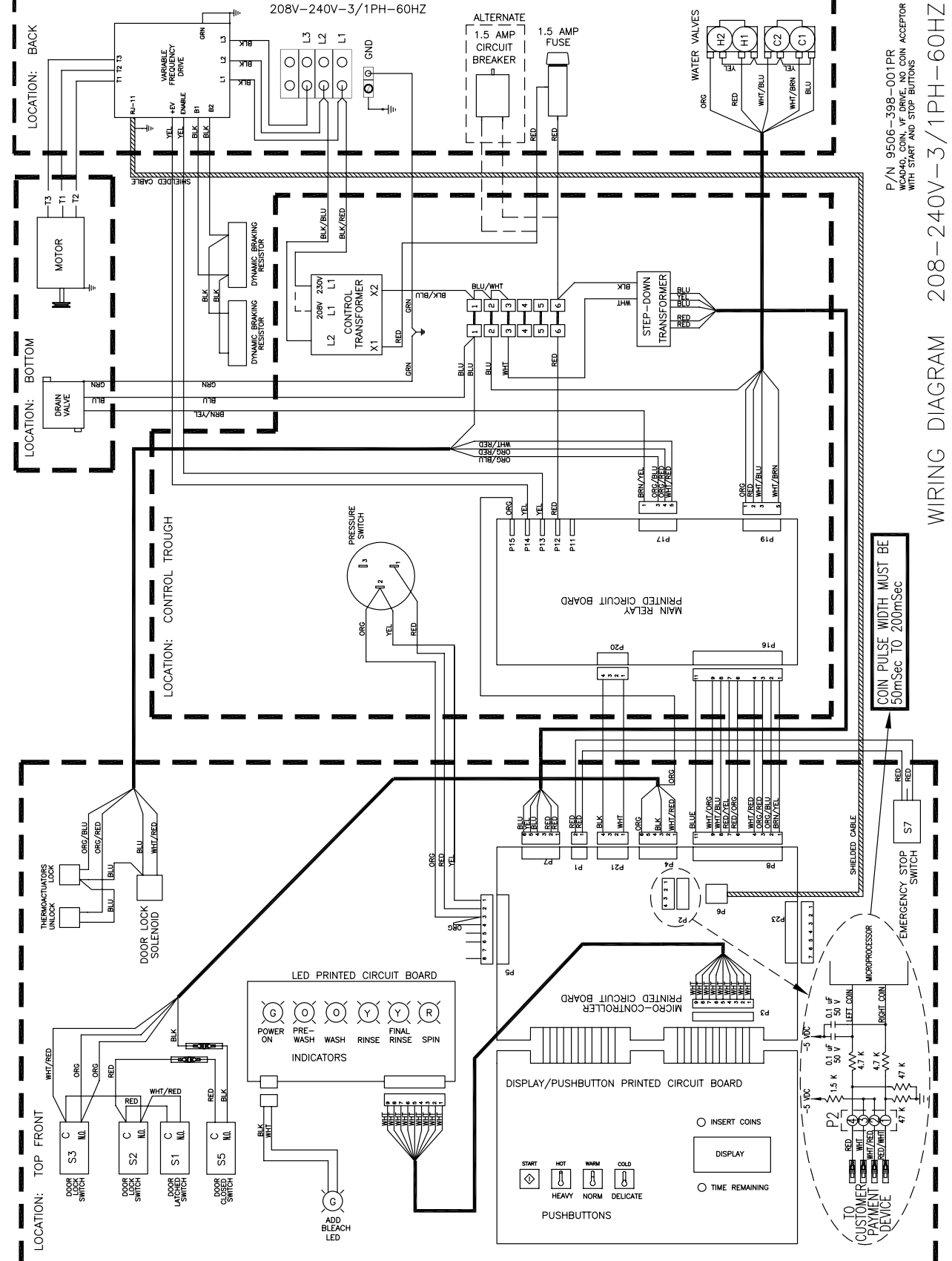


SCHEMATIC - 208 - 240V, 3/1PH, 60HZ

P/N 9506-397-001PR  
40 LB MICRO CONTROLLER - COIN  
DELTA V.F. DRIVE SYSTEM, NO COIN ACCEPTOR  
WITH START AND STOP BUTTONS

# 40Lb. Express: Non-Express: CN (No Coin Acceptor) Schematic 208-240 Volt Wiring

208V-240V-3/1PH-60HZ



P/N 9506-398-001PR  
WCO40, COIN, V.F. DRIVE, NO COIN ACCEPTOR  
WITH START AND STOP BUTTONS

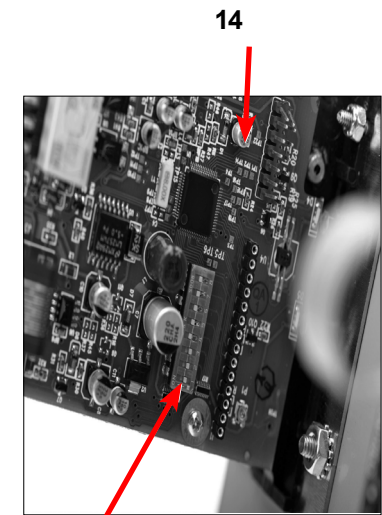
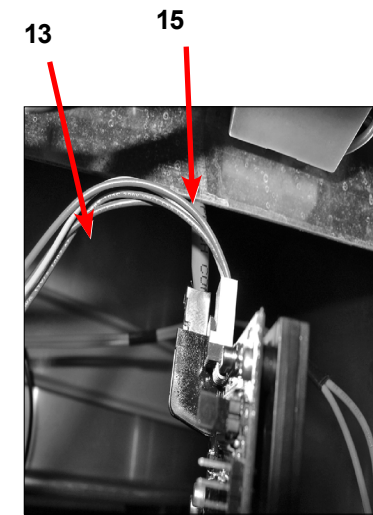
WIRING DIAGRAM 208-240V-3/1PH-60HZ

COIN PULSE WIDTH MUST BE  
50mSec TO 200mSec



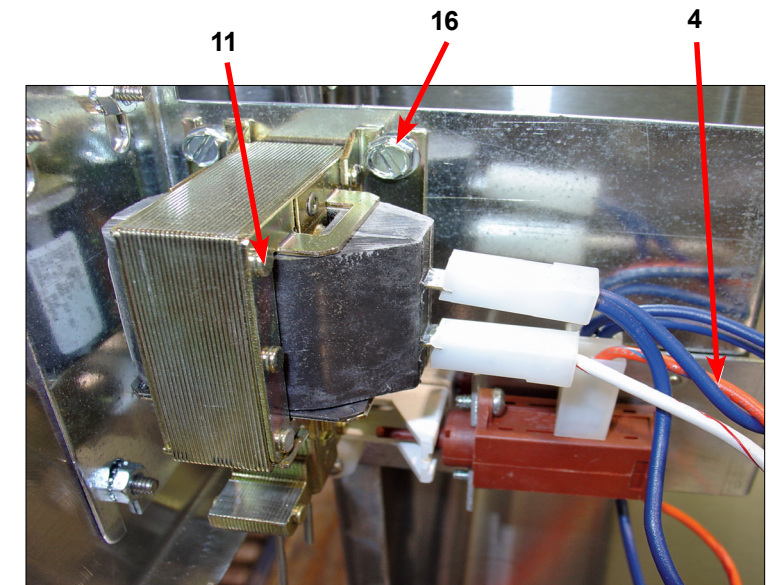
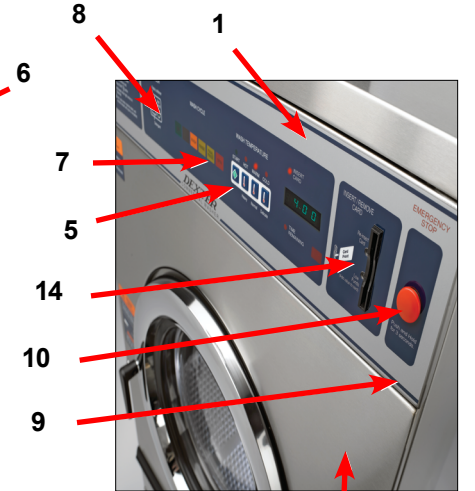
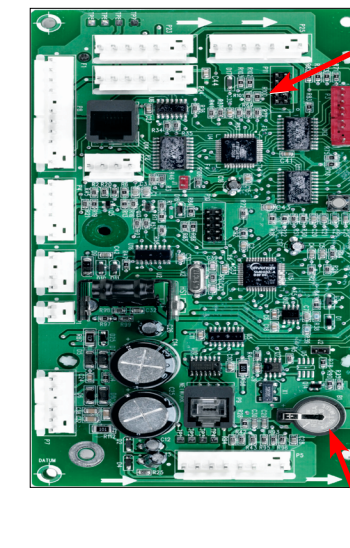
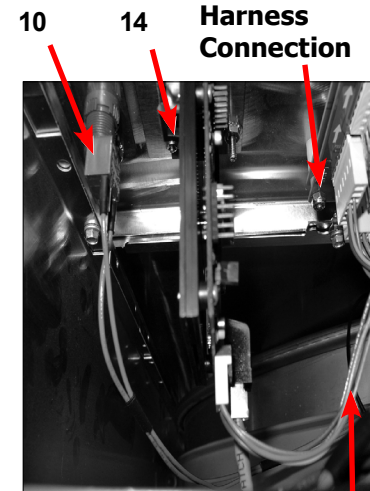
# Integrated Easy Card Control Panel Part # by Model

Key	Description	T-300	T-350	T-400	T-450	T-600	QTY
1	Panel Assembly (panel only)	9989-501-001	9989-501-001	9989-502-001	9989-502-001	9989-503-001	1
*	Screw, Hxwshrhnduct #10Bx 1/2"	9545-008-026	9545-008-026	9545-008-026	9545-008-026	9545-008-026	4
2	Front Panel	9454-781-002	9454-781-002	9454-659-002	9454-659-002	9454-669-002	1
*	Post Locator Top	9467-024-001	9467-024-001	9467-024-001	9467-024-001	9467-024-001	2
*	Nut Hexkeps #6-32	8640-411-003	8640-411-003	8640-411-003	8640-411-003	8640-411-003	2
*	Locator Panel	9355-001-001	9355-001-001	9355-001-001	9355-001-001	9355-001-001	2
*	Screw FillHDCR 10Bx1/2"	9545-008-023	9545-008-023	9545-008-023	9545-008-023	9545-008-023	2
*	Spacer Pushbutton (Micro)	9538-178-001	9538-178-001	9538-178-001	9538-178-001	9538-178-001	1
*	Retainer Pushbutton (Micro)	9486-150-001	9486-150-001	9486-150-001	9486-150-001	9486-150-001	1
*	Nut Hexelasticstop #6-32	8640-411-003	8640-411-003	8640-411-003	8640-411-003	8640-411-003	2
5	Pushbutton Control (coin)	9035-060-003	9035-060-003	9035-060-003	9035-060-003	9035-060-003	1
6	PCB assembly Control /Display STOP	9473-009-002	9473-009-002	9473-009-002	9473-009-002	9473-009-002	1
*	Spacer Plastic #6x9/16	9538-157-018	9538-157-018	9538-157-018	9538-157-018	9538-157-018	5
*	Nut Elasticstop #6-32	8640-411-002	8640-411-002	8640-411-002	8640-411-002	8640-411-002	5
*	Harness LEDPCB	9627-797-001	9627-797-001	9627-797-001	9627-797-001	9627-797-001	1
4	Harness Doorlock	9627-791-003	9627-791-003	9627-791-003	9627-791-003	9627-791-004	1
7	PCB assembly Mode lights	9473-005-001	9473-005-001	9473-005-001	9473-005-001	9473-005-001	1
*	Spacer Plastic #6x9/16	9538-157-018	9538-157-018	9538-157-018	9538-157-018	9538-157-018	2
*	Nut Hexkeps #6-32	8640-411-003	8640-411-003	8640-411-003	8640-411-003	8640-411-003	2
8	Light, LED,ADD BLEACH Assembly	9794-001-001	9794-001-001	9794-001-001	9794-001-001	9794-001-001	1
*	Spacer Plastic #6x9/16	9538-157-018	9538-157-018	9538-157-018	9538-157-018	9538-157-018	2
*	Nut Hexeps #6-32	8640-411-003	8640-411-003	8640-411-003	8640-411-003	8640-411-003	2
9	Nameplate,Control Panel (one piece)	9412-144-001	9412-158-001	9412-146-001	9412-146-001	9412-148-001	1
10	Switch Assembly Emergency Stop	9732-223-001	9732-223-001	9732-223-001	9732-223-001	9732-223-001	1
11	Solenoid Ass'y, Door Locking (see Door Lock Group for parts breakdown)	9922-011-001	9922-011-001	9922-011-001	9922-011-001	9922-011-001	1
16	Hex Nuts (mounting solenoid assy. to control panel)	8640-412-005	8640-412-005	8640-412-005	8640-412-005	8640-412-005	3
12	Battery	8612-001-001	8612-001-001	8612-001-001	8612-001-001	8612-001-001	1
13	Harness V-reader ALL MODELS	9627-827-001	9627-827-001	9627-827-001	9627-827-001	9627-827-001	1
14	Card Reader Assembly Complete	9797-007-003	9797-007-003	9797-007-003	9797-007-003	9797-007-003	1
15	Cable Assembly 4 twisted pair 12' shld/unshld reader to rear of machine	9806-013-002	9806-013-002	9806-013-002	9806-013-002	9806-013-002	1
*	Mounting plate for card reader	9982-337-001	9982-337-001	9982-337-001	9982-337-001	9982-337-001	1



**Reader Wire Harness Connection**

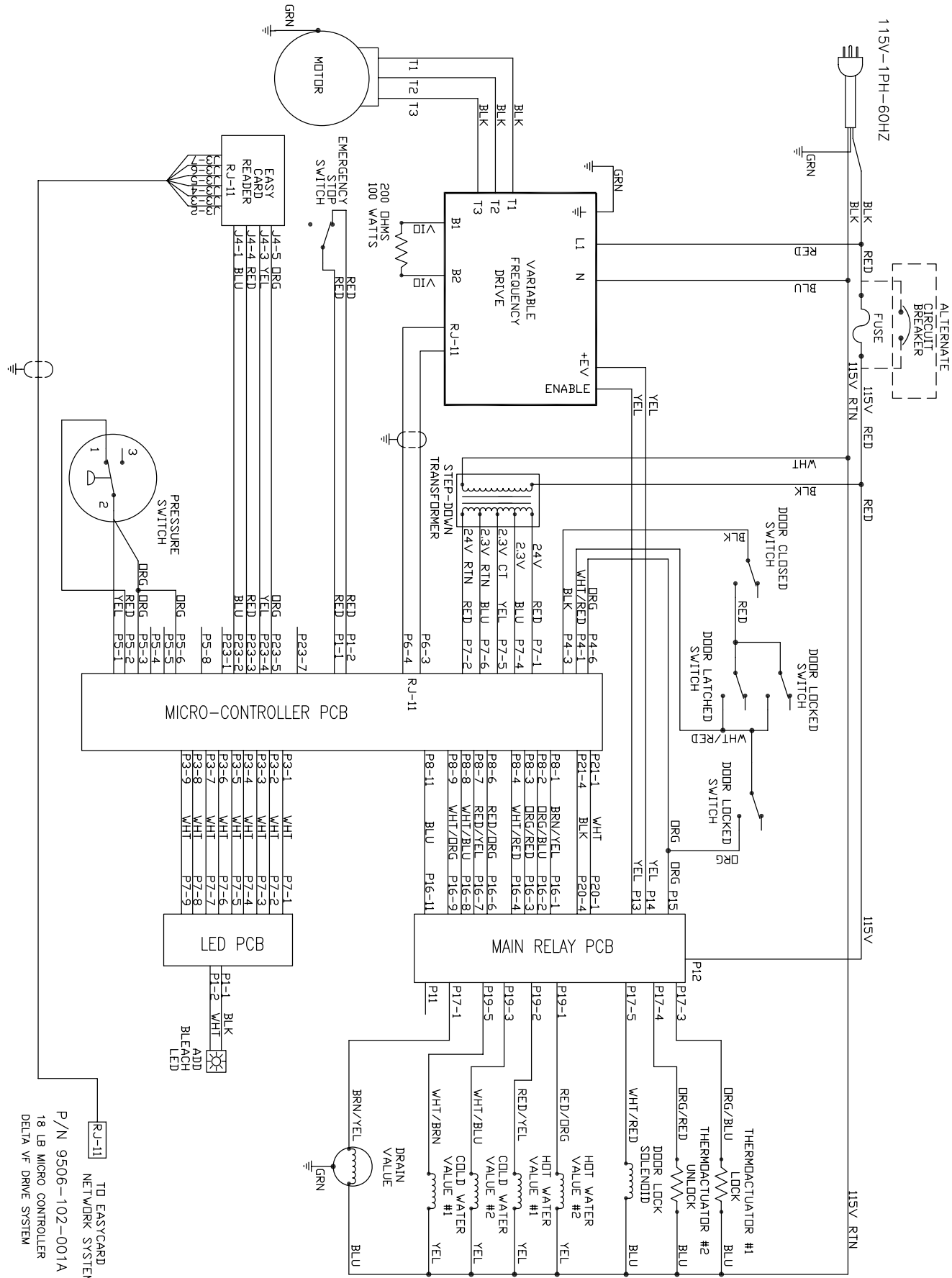
**Address Switch**



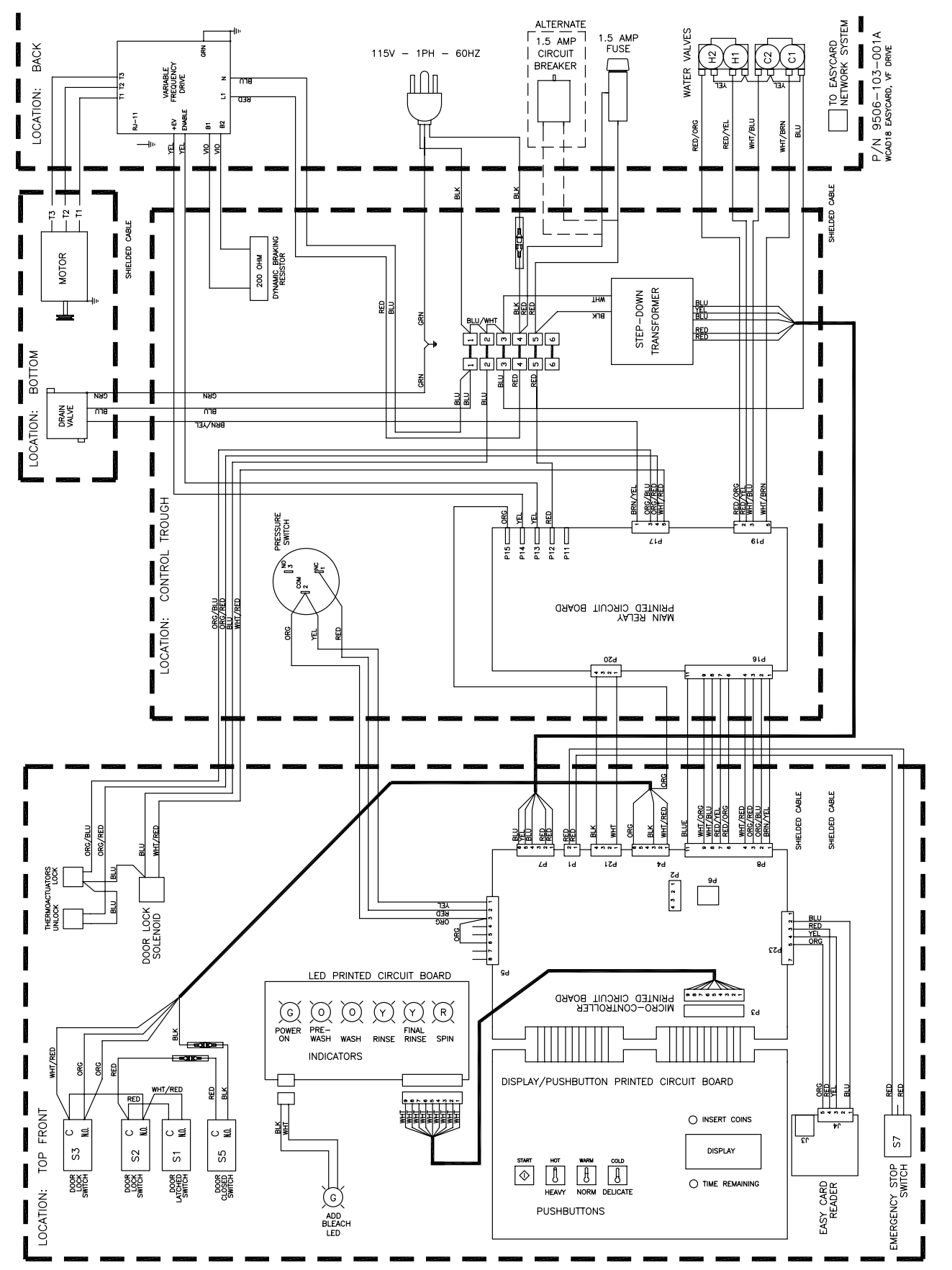
14

10

# IEC Double Load 20Lb. Non-Express: 120 Volt Wiring Schematic

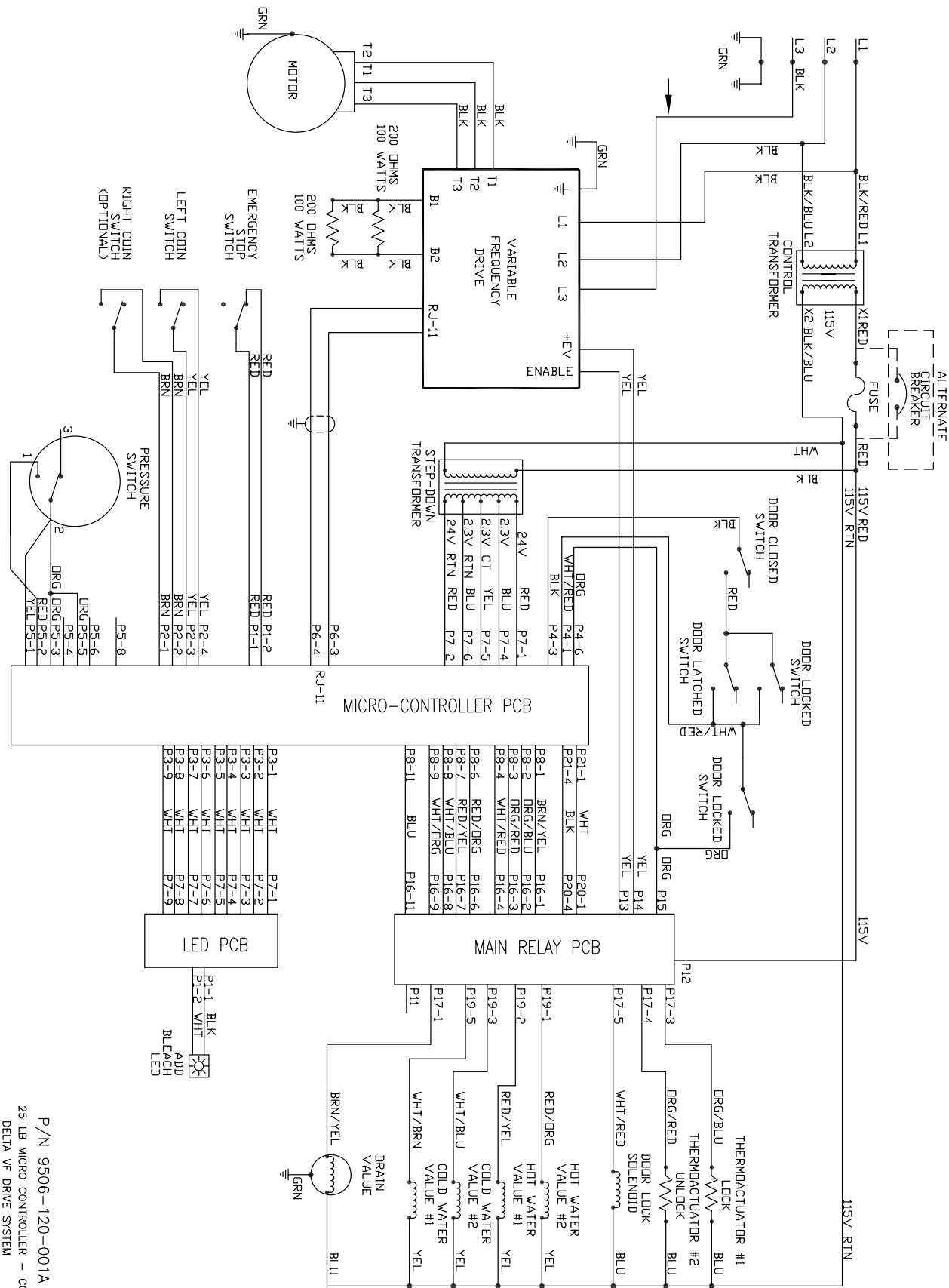


# IEC Double Load 20Lb. Non-Express: 120 Volt Wiring Diagram



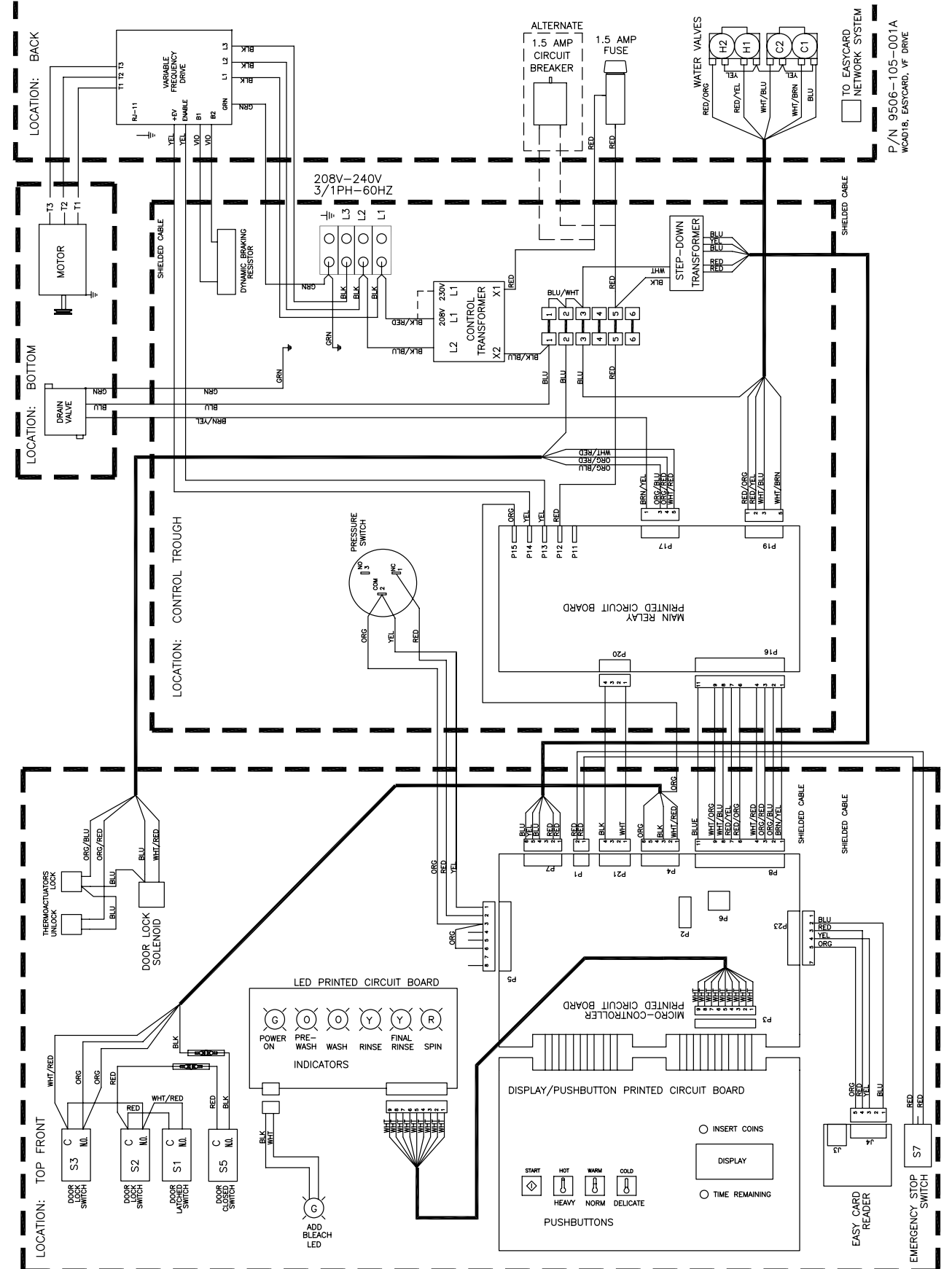
# IEC 20Lb. Non-Express: 208-240 Volt Wiring Schematic

208-240V-3PH OR 1PH-60HZ



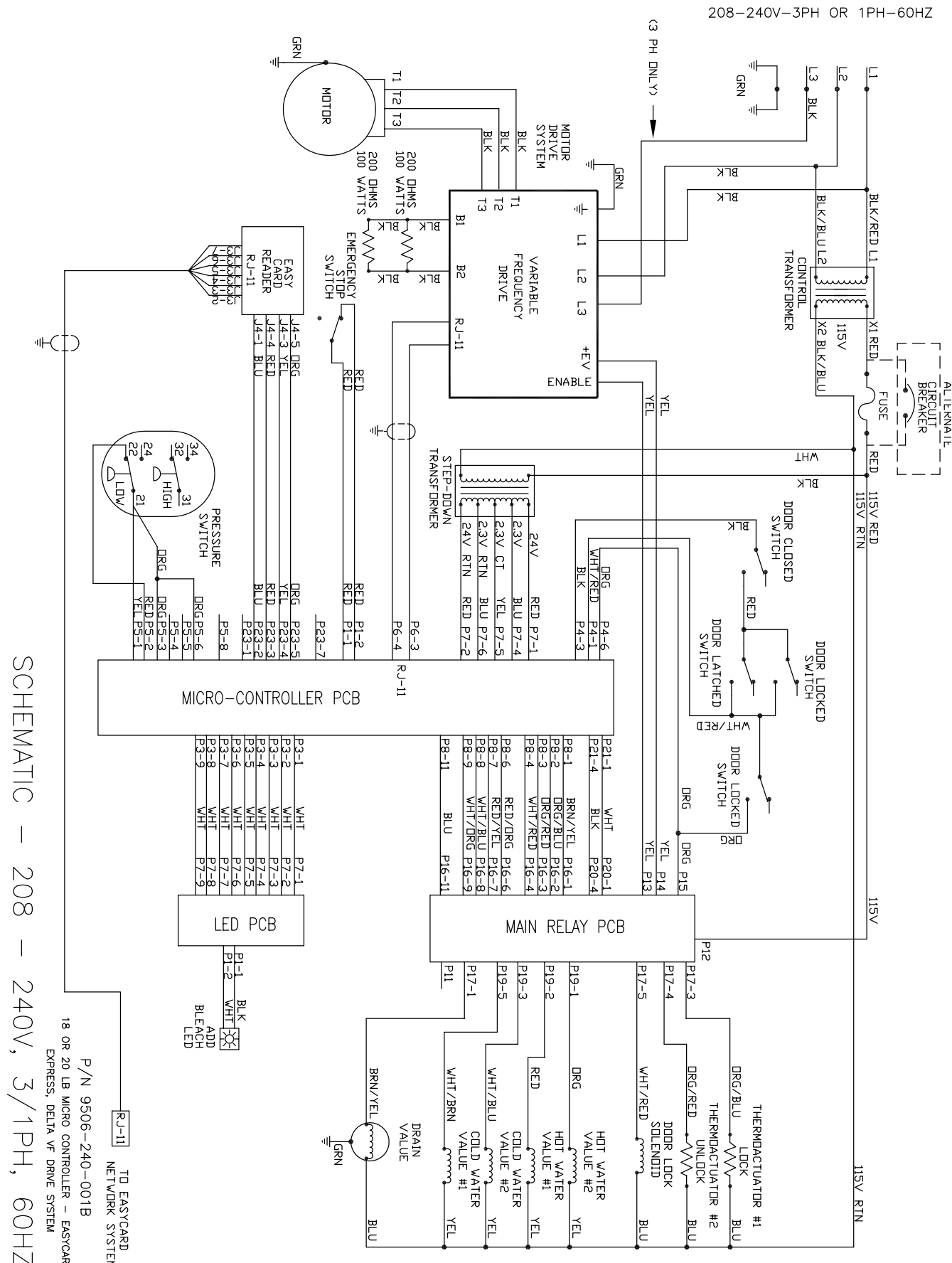
P/N 9506-120-001A  
25 LB MICRO CONTROLLER - CON  
DELTA VF DRIVE SYSTEM  
WITH START AND STOP BUTTONS

# IEC 20Lb. Non-Express: 208-240 Volt Wiring Diagram

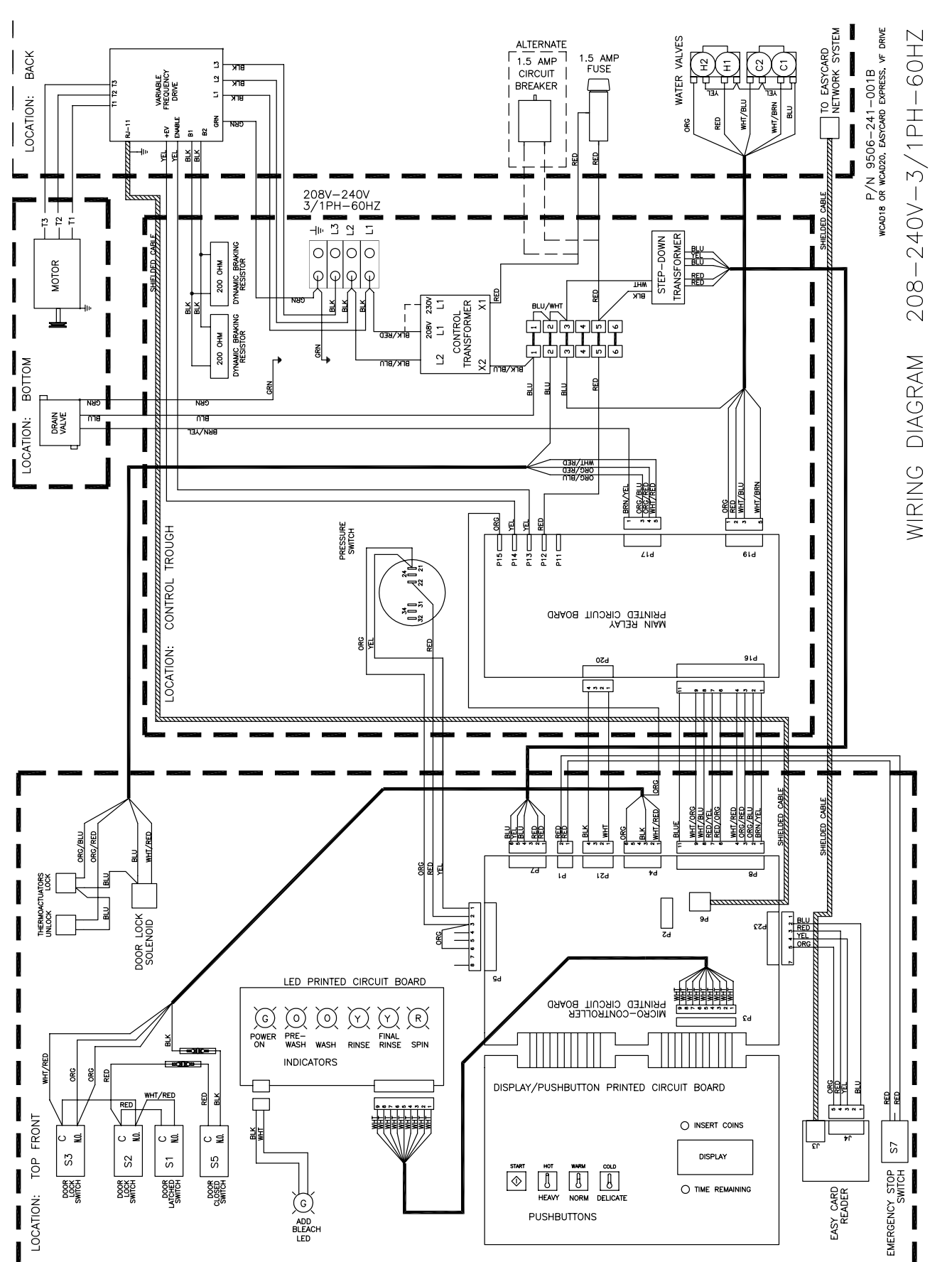


P/N 9506-105-001A  
W0401B, EASYCARD, VF DRIVE

# IEC 20Lb. Express: 208-240 Volt Wiring Schematic



# IEC 20Lb. Express: 208-240 Volt Wiring Schematic



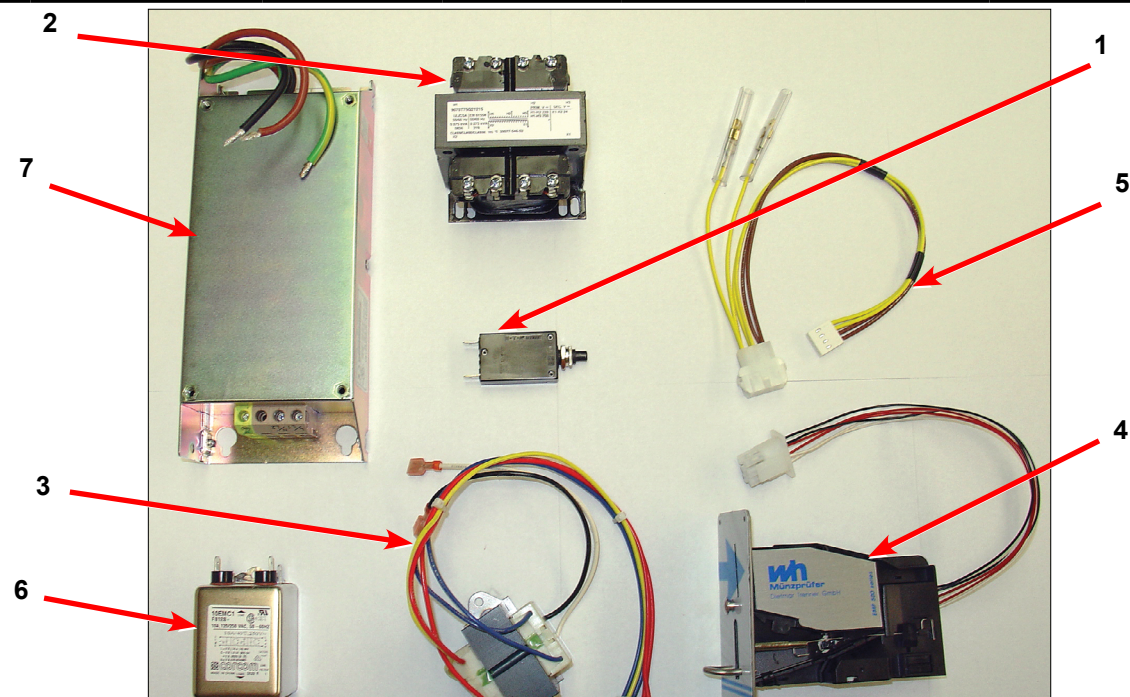






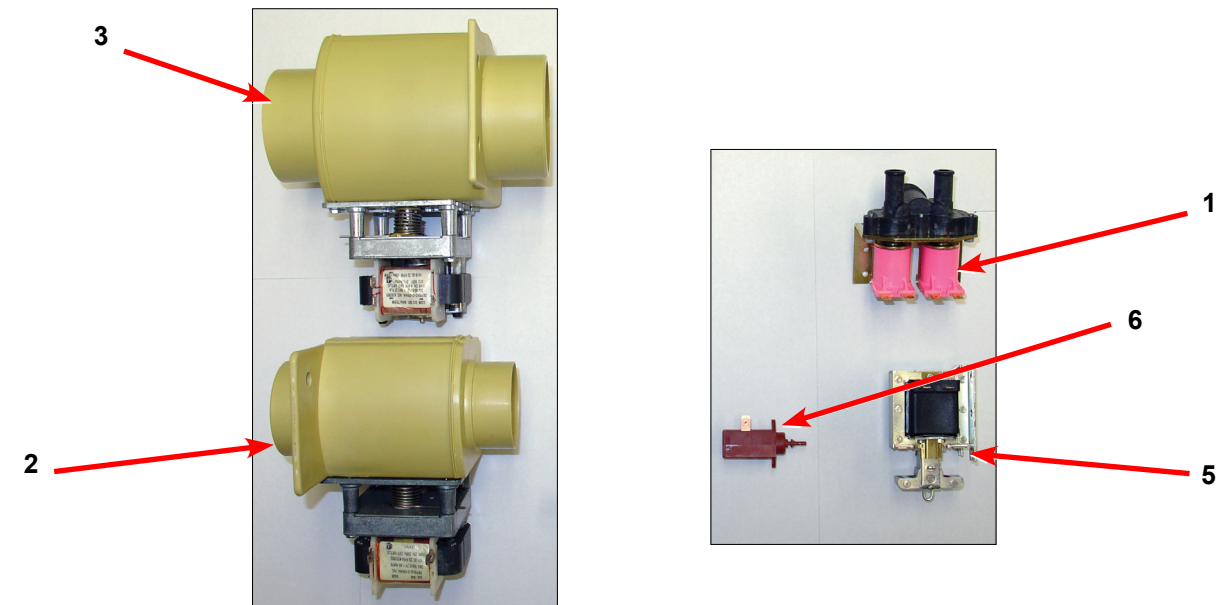
## Transformer, Electrical Filter and Coin Handling -59 models

Key	Component	WCAD20KCS-59	WCAD20KCS-59SZ	WCAD30KCS-59	WCAD30KCS-59SZ	WCAD40KCS-59	QTY
1	Circuit Breaker	5198-211-002	5198-211-002	5198-211-002	5198-211-002	5198-211-002	1
*	Wire Assembly Black / Red	8220-001-232	8220-001-232	8220-061-003	8220-061-003	8220-061-003	1
*	Wire Assembly Black / Blue	8220-001-233	8220-001-233	8220-061-004	8220-061-004	8220-061-004	1
*	Wire Assembly Red	8220-001-282	8220-001-282	8220-001-282	8220-001-282	8220-001-282	1
*	Wire Assembly Black / Blue	8220-065-007	8220-065-007	8220-065-007	8220-065-007	8220-065-007	1
*	Wire Assembly Red	8220-065-011	8220-065-011	8220-065-011	8220-065-011	8220-065-030	1
*	Instructions, Transformer Connect	8507-230-003	8507-230-003	8507-230-003	8507-230-003	8507-230-003	1
*	Owners Booklet	8514-168-001	8514-170-001	8514-176-001	8514-178-001	8514-124-001	1
*	Nut #8-32	8640-412-005	8640-412-005	8640-412-005	8640-412-005	8640-412-005	13
*	Nut #10-32	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	28
*	Lockwasher - Extooth #6	8641-582-005	8641-582-005	8641-582-005	8641-582-005	8641-582-005	2
2	Controls Transformer	8711-008-002	8711-008-002	8711-008-002	8711-008-002	8711-008-002	1
3	Transformer	8711-009-003	8711-009-003	8711-009-003	8711-009-003	8711-009-003	1
4	Coin Acceptor - Electronic	9021-011-001	9021-011-001	9021-011-001	9021-011-001	9021-011-001	1
5	Harness - Electronic Coin Acceptor	9627-845-001	9627-845-001	9627-845-001	9627-845-001	9627-845-001	1
*	Bracket Terminal/Filter Mounting	9029-188-001	9029-177-001	9029-170-001	9029-170-001	9029-170-001	1
*	Standoff, Twistloc	9527-002-002	9527-002-002	9527-002-002	9527-002-002	9527-002-002	6
*	Rear Channel 18lb OPL	9081-132-002	9081-132-002				1
6	EMI Line Filter	9183-030-003	9183-030-004	9183-031-002	9183-031-002	9183-031-002	1
7	EMI Filter 1 ph, 20 Amp	9183-040-001	9183-040-001	9183-040-001	9183-040-001	9183-040-001	1



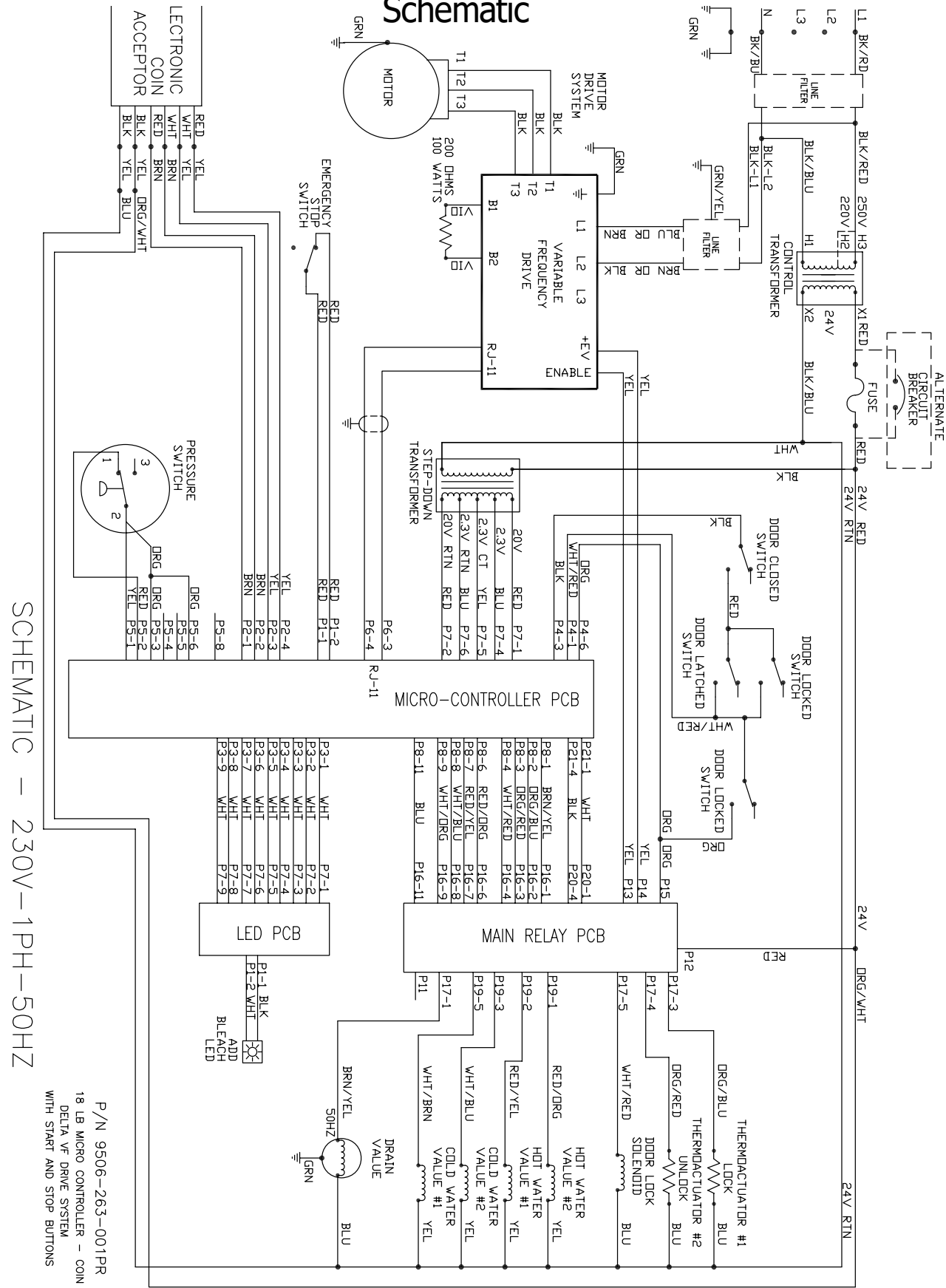
## Water Valve, Drain Valve and Door Locking -59 models

Key	Component	WCAD20KCS-59	WCAD20KCS-59SZ	WCAD30KCS-59	WCAD30KCS-59SZ	WCAD40KCS-59	QTY
1	Water Valve	9379-183-013	9379-183-013	9379-183-013	9379-183-013	9379-183-013	2
2	Drain Valve 2" inch	9379-199-002	9379-199-002				1
3	Drain Valve 3" inch			9379-202-002	9379-202-002	9379-202-002	1
*	Filter Mounting Plate	9452-758-001	9452-758-001	9452-747-001	9452-747-001	9452-747-001	1
*	Wiring Label , Schematic	9506-407-001	9506-411-001	9506-415-001	9506-419-001	9506-425-001	1
*	Wiring Label , Diagram	9506-408-001	9506-412-001	9506-416-001	9506-420-001	9506-426-001	1
5	Solenoid, Door Lock	9536-082-001	9536-082-001	9536-082-001	9536-082-001	9536-082-001	1
*	Screw #10B - 32 X 1/2	9545-008-026	9545-008-026				52
*	Screw #10-32 TT X1/2	9545-008-027	9545-008-027	9545-008-027	9545-008-027	9545-008-027	3
*	Screw #8-32 X3/8	9545-010-006	9545-010-006	9545-010-006	9545-010-006	9545-010-006	2
*	Screw Hex 8B X1/4	9545-045-001	9545-045-001	9545-045-001	9545-045-001	9545-045-001	4
*	Terminal Strip Marker	9558-027-001	9558-027-001	9558-027-001	9558-027-001	9558-027-001	1
6	Thermoactuator, 24V	9586-001-003	9586-001-003	9586-001-003	9586-001-003	9586-001-003	2
*	Wiring Harness, Power Terminal Block	9627-865-001	9627-865-001	9627-865-002	9627-865-002	9627-865-002	1
*	Controls Assembly - Trough,	9857-150-008	9857-150-010	9857-151-015	9857-151-016	9857-152-008	1
*	Door Lock Solenoid Assembly	9922-011-005	9922-011-005	9922-011-005	9922-011-005	9922-011-005	1
*	Filter Mounting Plate Assembly	9982-359-001	9982-349-001	9982-349-001	9982-349-001	9982-349-001	1
*	Nut #6-32	8640-413-002	8640-413-002	8640-413-002	8640-413-002	8640-413-002	4
*	EMI Filter 1 ph, 20 Amp	9183-040-001	9183-040-001	9183-040-001	9183-040-001	9183-040-001	1



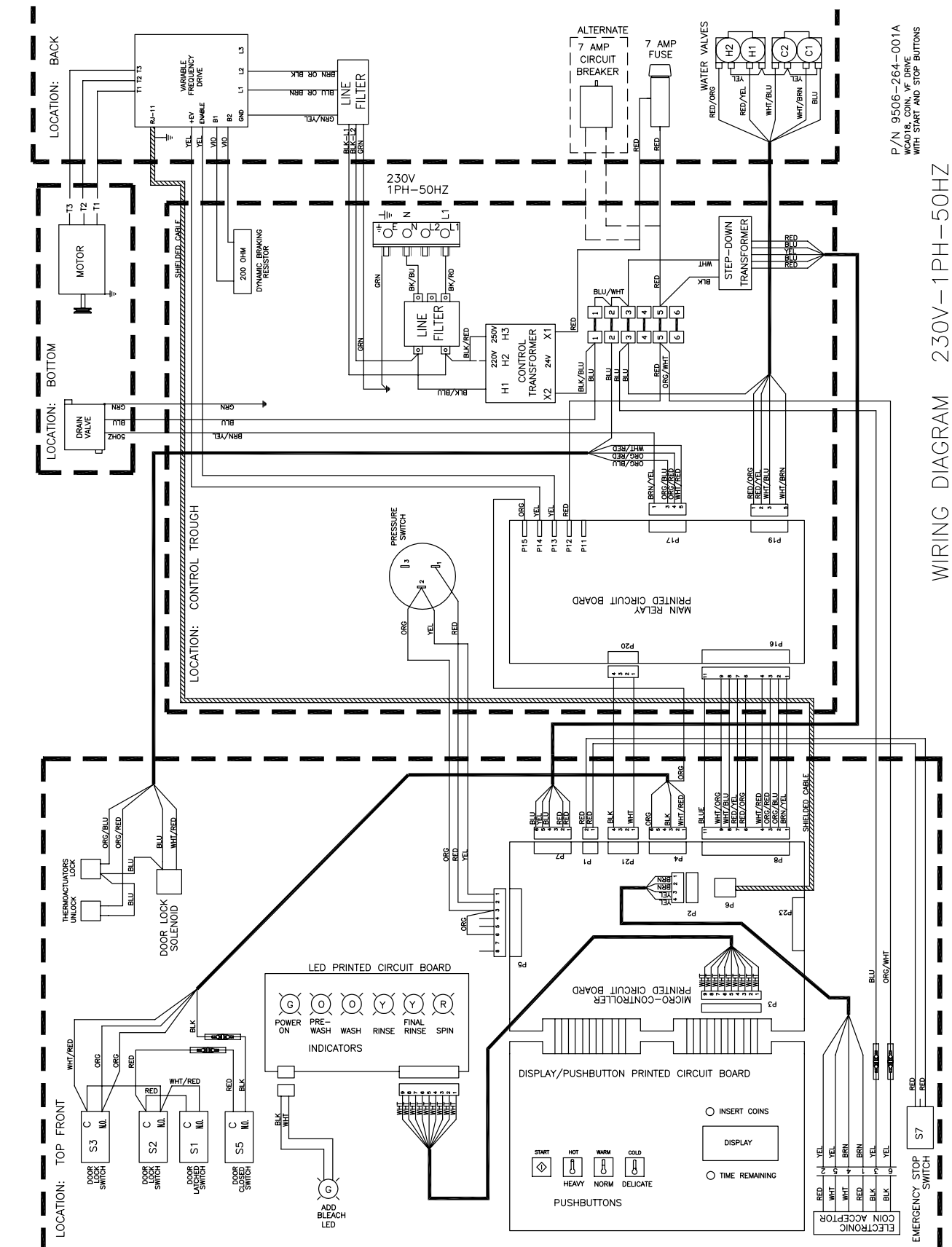


# Double Load 20lb Coin Non-Express: 230/50/1 Voltage Schematic



P/N 9506-263-001PR  
18 LB MICRO CONTROLLER - COIN  
DELTA VF DRIVE SYSTEM  
WITH START AND STOP BUTTONS

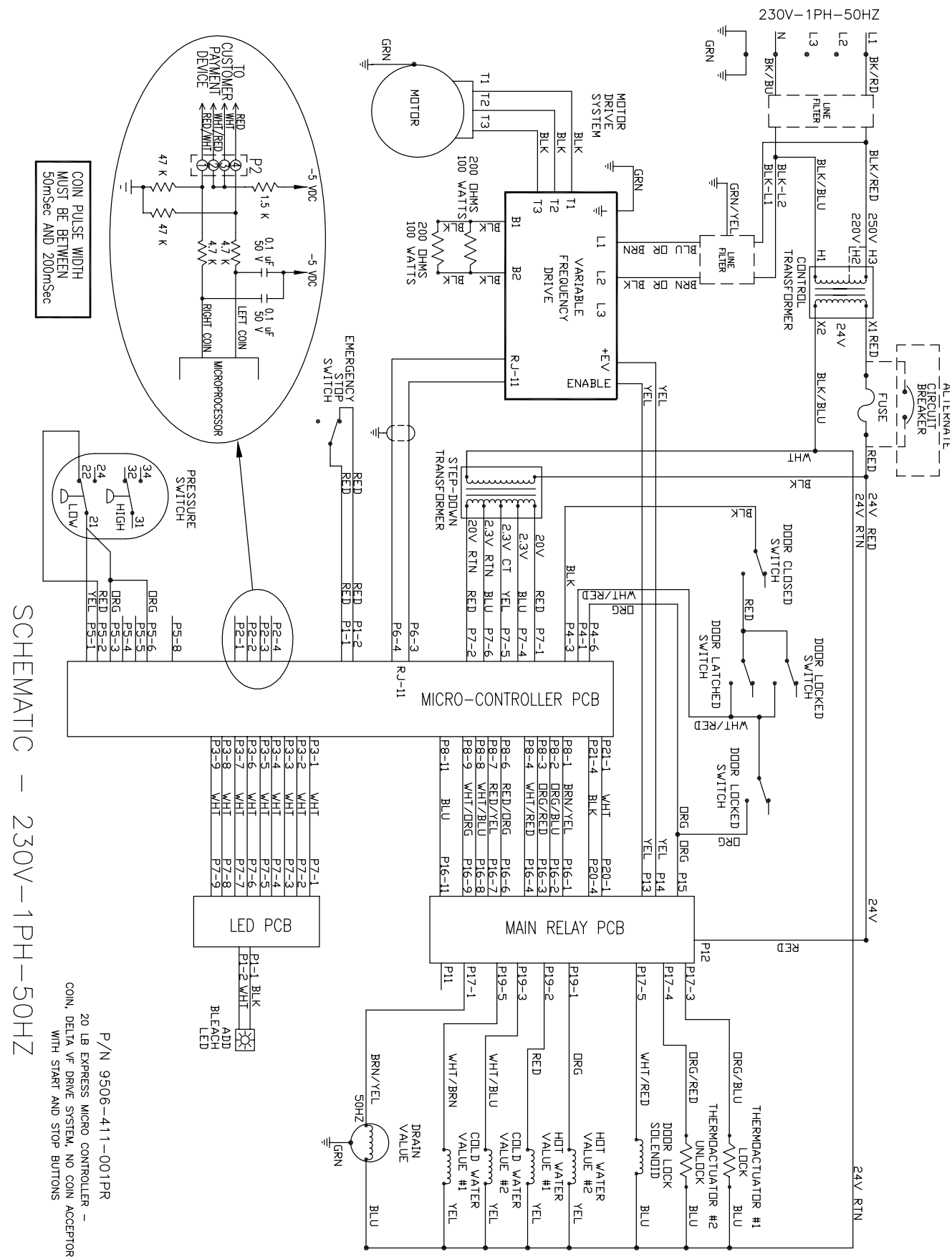
# Double Load 20lb Coin Non-Express: 230/50/1 Voltage Diagram



P/N 9506-264-001A  
W0418, COIN, VF DRIVE  
WITH START AND STOP BUTTONS

WIRING DIAGRAM 230V-1PH-50HZ

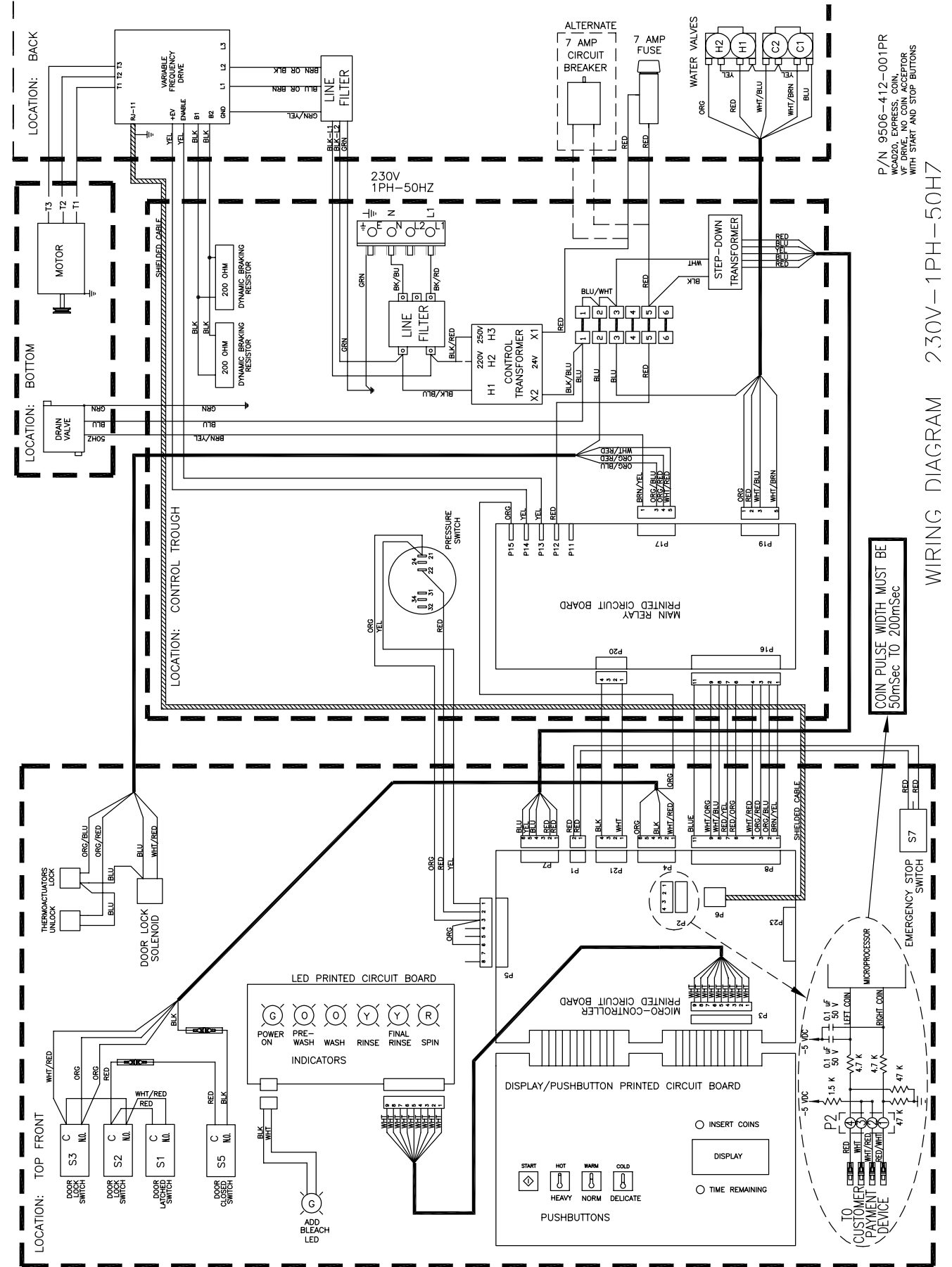
# Double Load 20lb Express: 230/50/1 Voltage Schematic



SCHEMATIC - 230V-1PH-50HZ

P/N 9506-411-001PR  
20 LB EXPRESS MICRO CONTROLLER -  
COIN, DELTA VF DRIVE SYSTEM, NO COIN ACCEPTOR  
WITH START AND STOP BUTTONS

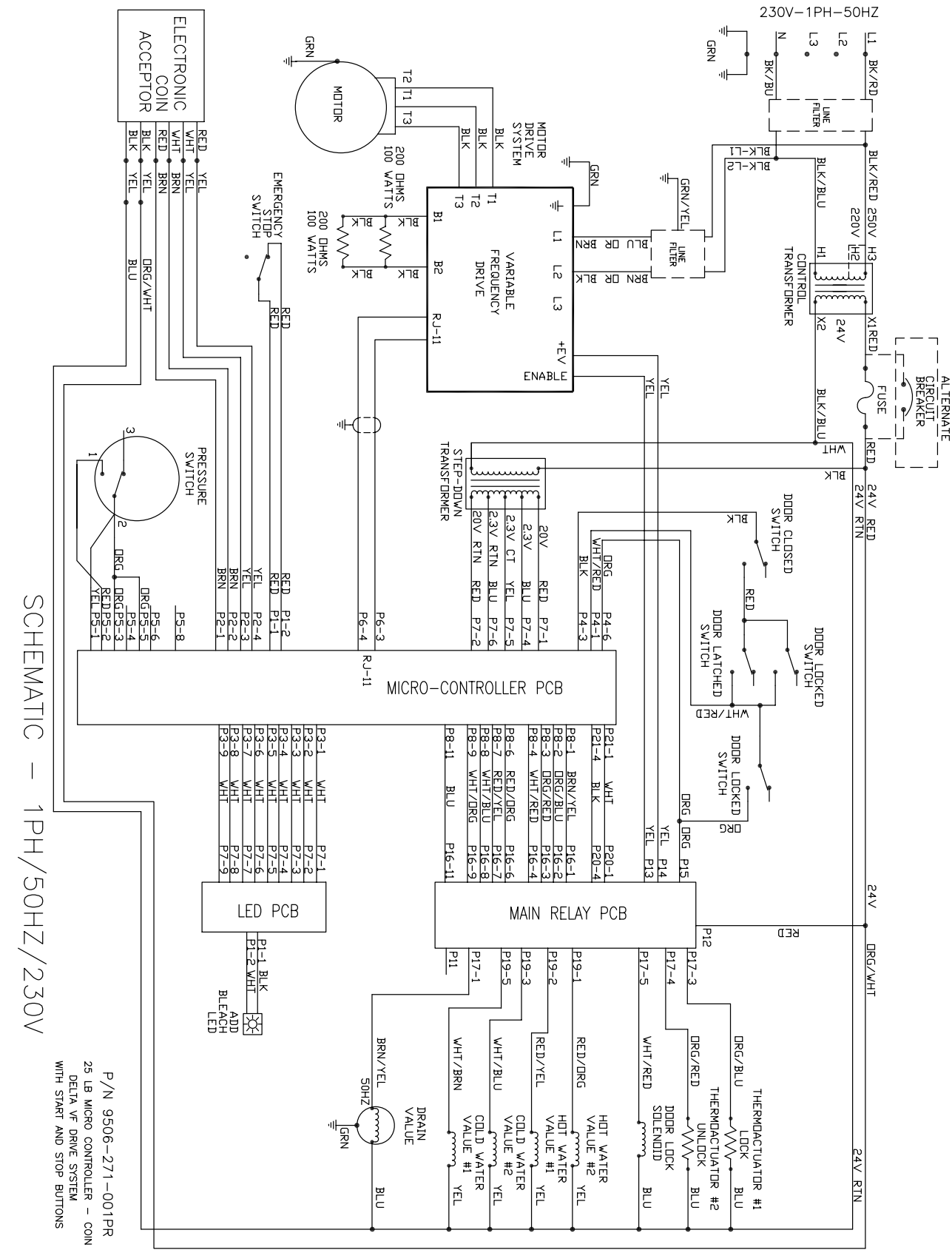
# Double Load 20lb Express: 230/50/1 Voltage Diagram



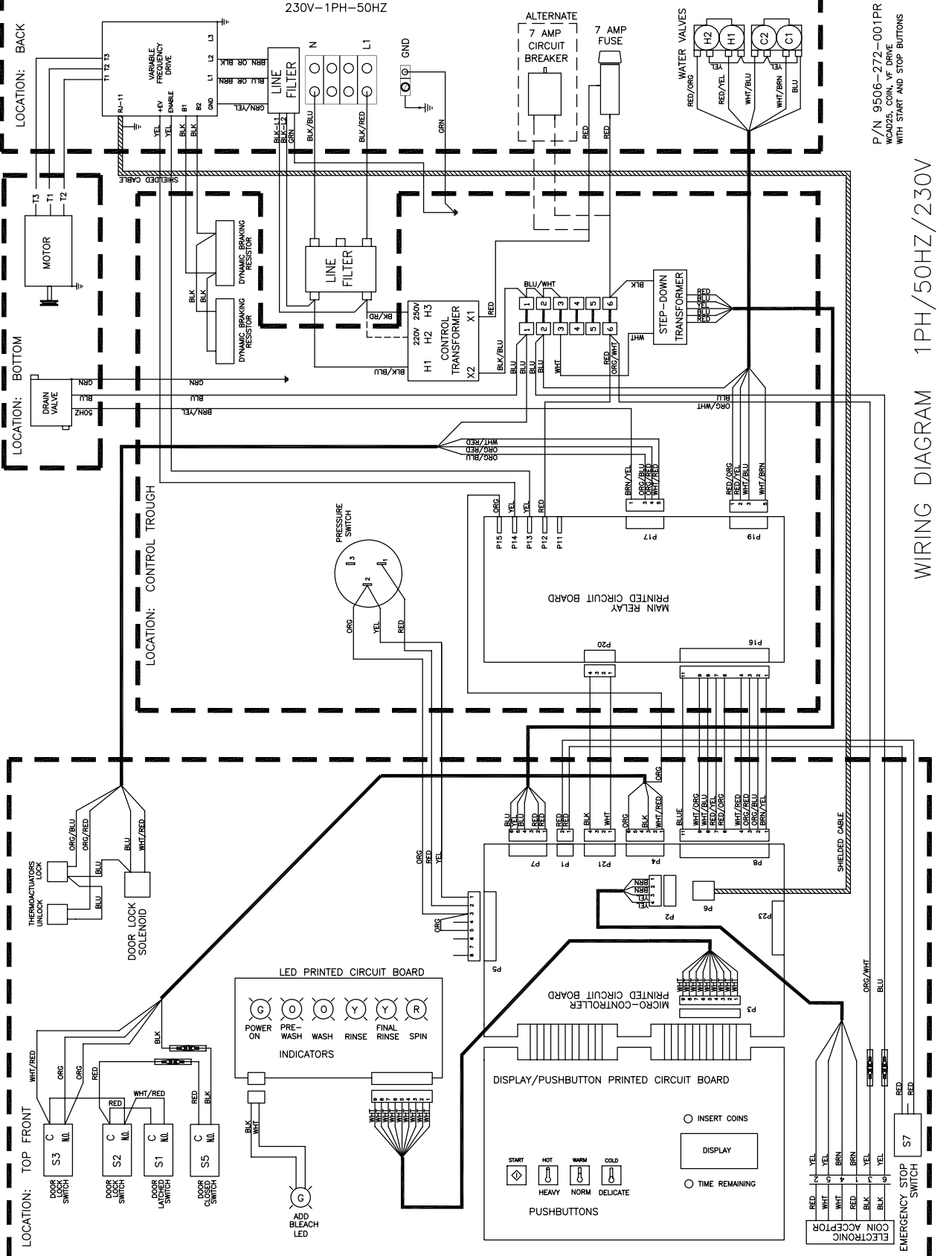
P/N 9506-412-001PR  
WABDO EXPRESS COIN  
VF DRIVE, NO COIN ACCEPTOR  
WITH START AND STOP BUTTONS

WIRING DIAGRAM 230V-1PH-50HZ

# Triple Load 30lb Non-Express & Express: 230/50/1 Voltage Schematic



# Triple Load 30lb Non-Express & Express: 230/50/1 Voltage Diagram







---

# Preventative Maintenance

## Daily

- Step 1:** Check that the loading door remains securely locked and cannot be opened during an entire cycle.
- Step 2:** Clean the top, front, and sides of the cabinet to remove residue.
- Step 3:** Clean the soap dispenser and lid and check that all dispenser mounting screws are in-place and tight.
- Step 4:** Check the loading door for leaks. Clean the door seal of all foreign matter.
- Step 5:** Leave the loading door open to aerate the washer when not in use.

## Quarterly

- Step 1:** Make sure the washer is inoperative by switching off the main power supply.
- Step 2:** Check the V-belts for wear and proper tension.
- Step 3:** Clean lint and other foreign matter from around motor.
- Step 4:** Check all water connections for leaks.
- Step 5:** Check the drain valve for leaking and that it opens properly.
- Step 6:** Wipe and clean the inside of the washer and check that all electrical components are free of moisture and dust.
- Step 7:** Remove and clean water inlet hose filters. Replace if necessary.
- Step 8:** Check anchor bolts. Retighten if necessary.