DEXTER®
LAUNDRY

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

DEXTER LAUNDRY

N-Series Vended & OPL Washers
WCN_ _

WCN18AA
WCN18AB
WCN18AADX
WCN18ABDX

Non-Express

8533-034-003 5/22

Equipment Safety Warnings
Symbols and Terminology Used in this Equipment

⚠ DANGER	**Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury.**
⚠ WARNING	**Indicates a potentially hazardous situation, which if not avoided could result in death or serious injury.**
⚠ CAUTION	**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.**
NOTICE	**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. TO REDUCE THE RISK OF DAMAGE OR INJURY, refer to accompanying documents; follow all steps or procedures as instructed.**
	**This is the electrical hazard symbol. It indicates that there are DANGEROUS HIGH VOLTAGES PRESENT inside the enclosure of this product. 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**
	**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.

⚠ DANGER	**Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury.**
⚠ WARNING	**Indicates a potentially hazardous situation, which if not avoided could result in death or serious injury.**
⚠ CAUTION	**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.**
NOTICE	**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. TO REDUCE THE RISK OF DAMAGE OR INJURY, refer to accompanying documents; follow all steps or procedures as instructed.**
	**This is the electrical hazard symbol. It indicates that there are DANGEROUS HIGH VOLTAGES PRESENT inside the enclosure of this product. 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**
	**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

	**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.**

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

Notes

Dexter Safety Guidelines

WARNING

These washers are equipped with devices and features relating to their safe operation. To avoid injury or electrical shock, do not perform and service, unless qualified to do so.

FOR SAFETY

1. Always shut off power and water supply and also discharge capacitors before servicing.
2. Do not overload the washer.
3. Do not attempt to open door if cylinder is in motion or contains water.
4. Do not mechanically force or override door lock in any way.
5. Do not bypass any safety devices of this washer.
6. Do not use volatile or flammable substances in or near this washer.
7. Keep all panels in place. They protect against shock and injury and add rigidity to the washer.

A machine should not be allowed to operated if any of the following occur:

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

To activate your warranty, be sure to return your red warranty form to the factory. Please have serial number and model ready when calling for assistance.

Table of Contents

Notes

Notes

Section 1:

Machine Mounting

Specifications for below models are outlined in this book:

WCN18AA 120 volts 60Hz Single Phase
WCN18AB 208-240 volts 60Hz Three Phase

Cycle Times	Prewash & 3 Rinses	Prewash & 2 Rinses	No Prewash & 3 Rinses	No Prewash & 2 Rinses
Preswash	4 minutes	4 minutes	Not Used	Not Used
Drain	40 seconds	40 seconds	Not Used	Not Used
Wash	8 minutes	8 minutes	8 minutes	8 minutes
Drain	40 seconds	40 seconds	40 seconds	40 seconds
Rinse 1	3 min. 45 sec.	Not Used	3 min. 45 sec.	Not Used
Drain	40 seconds	Not Used	40 seconds	Not Used
Rinse 2	3 min. 45 sec.	3 min. 45 sec.	3 min. 45 sec.	3 min. 45 sec.
Drain	40 seconds	40 seconds	40 seconds	40 seconds
Int. Spin	50 seconds	50 seconds	50 seconds	50 seconds
Rinse 3	3 min. 45 sec.	3 min. 45 sec.	3 min. 45 sec.	3 min. 45 sec.
Drain	40 seconds	40 seconds	40 seconds	40 seconds
Extract	4 minutes	4 minutes	4 miinutes	4 minutes
Tumble	16 seconds	16 seconds	16 seconds	16 seconds
Total*	32 minutes	27.5 minutes	27 minutes	23 minutes

*Cycle times are approximate.

Water Usage (T-300)	Wash & 2 Rinses	Prewash & 2 Rinses	Wash & 3 Rinses	Prewash & 3 Rinses
Preswash	Not Used	12 gallons	Not Used	12 gallons
Wash	13.75 gallons	9.25 gallons	13.75 gallons	9.25 gallons
Rinse 1	Not Used	Not Used	8.35 gallons	8.35 gallons
Rinse 2	8.2 gallons	8.2 gallons	8.2 gallons	8.2 gallons
Int. Spin				
Rinse 3	11.5 gallons	11.5 gallons	11.5 gallons	11.5 gallons
Total	33.45 gallons	40.95 gallons	41.8 gallons	49.3 gallons

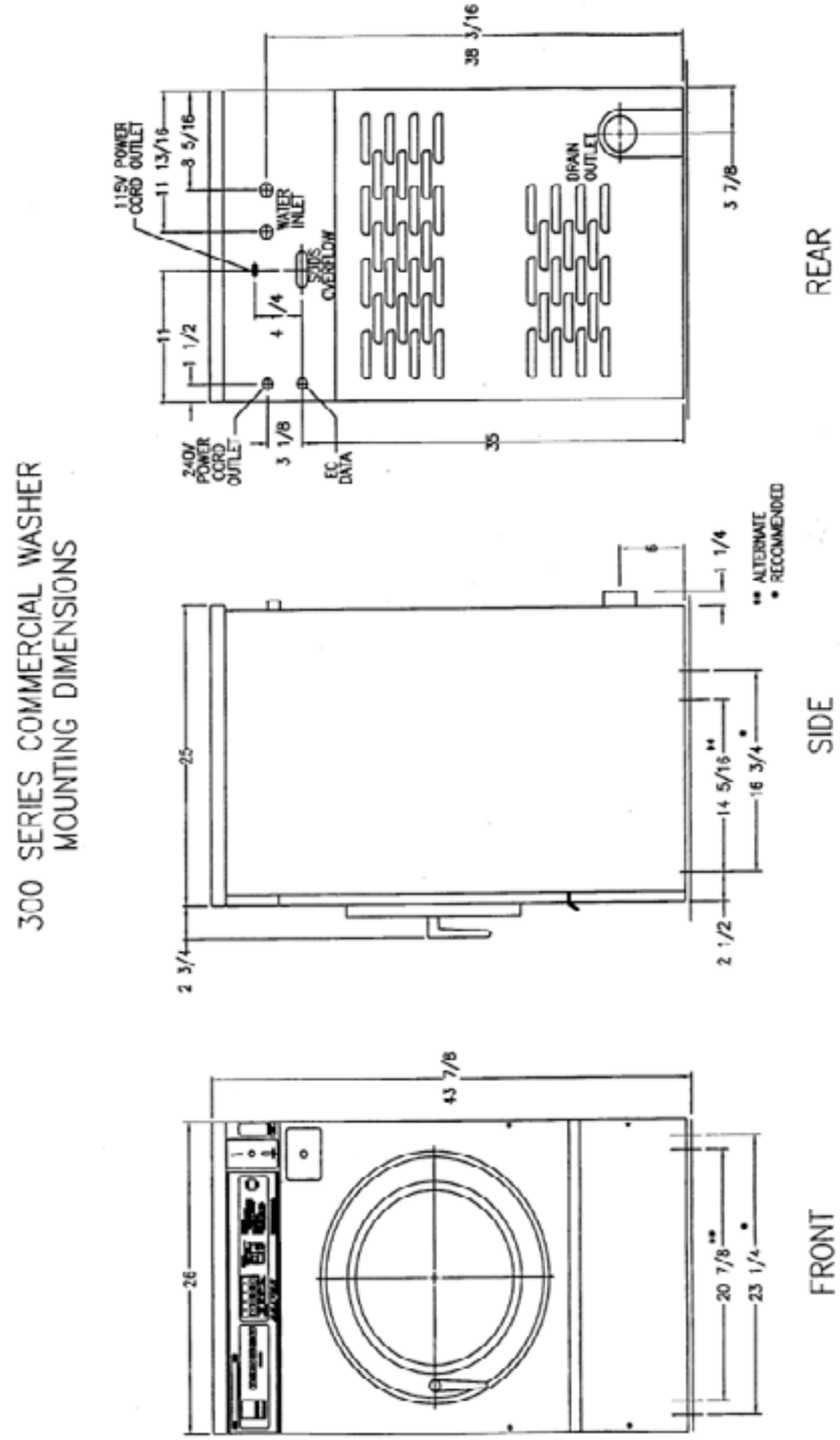
Water Temp	Heavy Duty	Normal	Perm Press	Delicates
Preswash	Hot	Warm	Warm	Cold
Wash	Hot	Warm	Warm	Cold
Rinse 1	Cold	Cold	Cold	Cold
Rinse 2	Cold	Cold	Cold	Cold
Rinse 3	Cold	Cold	Cold	Cold

*Rinses can be converted to warm by moving the Brown/Orange wire on TB-11 to TB-9 (TB-# relates to a terminal number on the large terminal block located in the electrical control trough). Disconnect electrical power before moving wire.

Specifications
T-400 Coin Washer

Capacity	18lbs.
Dimensions	
Cylinder Depth	13 1/2"
Cylinder Diameter	21"
Cylinder Volume (cubic feet)	2.7
Door Opening	12 1/4"
Door Height (floor to bottom of door)	14 3/4"
Overall Height	14 3/4"
Cabinet Width	43 7/8"
Overall Depth	26"
Drain Diameter (O.D.)	24 13/16"
Drain Height (floor to center of outlet)	2 1/4"
Recommended Clearance Between Machines (min)	1/2"
Necessary Service Clearance Behind Machine	6"
Cylinder RPM	
Tumble Speed	55
Extract Speed	560
Extract Speed G-Force	94
Cylinder Direction in Extract	clockwise
Motor H.P.	
Wash Single Phase	0.18
Wash Three Phase	0.18
Extract Single Phase	0.6
Extract Three Phase	0.6
Amperage (avg. measured on L1)	
Wash Single Phase	5.75
Wash Three Phase	2.25
Extract Single Phase	7
Extract Three Phase	1.25
Running Amps (Maximum)	
Single Phase	13
Three Phase	3.5
Circuit Breaker (Amps)	
Single Phase	20
Three Phase	15
Built-in Controls Circuit Breaker	Yes
Built in Motor Protection	Yes

Voltage 60Hz.	
Single Phase	120
Three Phase	208-240
Service	
Single Phase	cord provided
Three Phase	3 wires + ground
Wire Size (Minimum)	
Single Phase	12
Three Phase	cord provided
Water	
Avg. Water Usage Normal Cycle with Full Load	34 gallons
Max Hot Water Usage Hot Cycle with Full Load	10.5 gallons
Recommended Hot Water (degrees)	140
Water Pressure (min/max)	30-120psi
Water Inlet Size (hose thread)	3/4"
Water Flow Rate (gallons/minute)	5
Wash Cycle	
Normal Wash-Including Fill Time	24 min 20 sec
Wash Temperatures	Hot, Warm, & Cold
Rinse Temperatures	Cold-Std; Warm-Opt
Mounting Hole Dimensions	
Left to Right	23 1/4"
Front to Cabinet to First Hole	2 1/2"
First Hole to Second Hole	16 3/4"
Second Hole to Third Hole	N/A
Mounting Bolt Diameter	1/2"
Hole Diameter in Base	9/16"
Concrete Thickness (min)	6"
Recommended Mounting Height	8"
Weight	
Shipping (lbs.)	361/1p 351/3p
Net (lbs.)	333/1p 323/3p



Notes

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 8 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.

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 2 1/4" outside diameter on a T-300. 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 WCN18AA (1 phase 120 volts) series 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.

Dexter WCN18AB (3 phase 208-240 volts) series washers are intended to be permanently installed appliances. The machines should be connected to an individual branch circuit not shared by lighting or other equipment. The electrical connection should be sheathed in waterproof flexible conduit, or equivalent, with conductors of the proper size and insulation (suggested size below). A power cord is not provided. The following diagrams show the proper power connections to the rear terminal block for 3 phase machines.
Wiring should be performed by a qualified person.

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.

Terminal Block 3 ph

Suggested Minimum Wire Size --12 Ga.

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

1 Phase 20 amp
3 Phase 15 amp

3 Phase
208-240 volts, 60 Hz.
3 wire plus ground

Controls Transformer
This transformer is mounted at the back of the control trough and steps a range of 208 to 240 volts down to 115 volts for the controls. There are two terminals on the controls transformer for incoming power. One terminal is for 208 to 220 volts and the other is for 221 to 240 volts.

Note: All 60 Hz. three phase washers have a controls transformer. Single phase washers do not require a controls transformer. Always check the incoming voltage_ and use the appropriate transformer terminal when installing three phase washers.

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

Final Check Out

Always disconnect electrical power to the machine before opening the top. Avoid contact with
capacitor or other electrical terminals.

Open the top of the machine as follows:

A. Remove the four screws that hold the dispenser to the top panel.
B. Unlock the top panel, slide to the rear to release and remove the top panel from the machine.

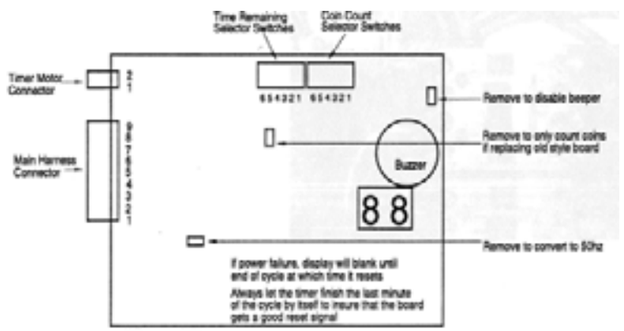
Setting the Accumulator

Always disconnect electrical power to the machine before setting the accumulator. Avoid contact with capacitor or other electrical terminals.

The accumulator board contains the digital coin count and time remaining display and is attached to the front of the machine. The amount to start is set by depressing the 6 small switches on the top edge of the accumulator in the correct combination for the desired number of coins. The time remaining is set by depressing the other six small switches on the top edge of the accumulator in the correct combination for the desired cycle time. (See chart for correct combinations) The switch numbers and names are printed on the clear cover over the coin accumulator circuit board. The switches are actuated by pushing the switch operator toward the back of the machine. As the switches are very small, a golf tee or some other nonmetallic tool is desirable for this process.

Note: For use in Canada, the com acceptor magnet must be removed. See drop coin acceptor in Service Procedures Section for location of magnet.

Setting the Operating Mode (Program length)



# of Coins or Mins	Switch Numbers					
	1	2	3	4	5	6
1	x					
2		x				
3	x	x				
4			x			
5	x		x			
6		x	x			
7	x	x	x			
8				x		
9	x			x		
10					x	
11	x				x	
12		x			x	
13	x	x			x	
14			x		x	
15	x		x		x	
16		x	x		x	
17	x	x	x		x	
18				x	x	
19	x			x	x	
20						x
21	x					x
22		x				x
23	x	x				x
24			x			x
25	x		x			x
26		x	x			x
27	x	x	x			x
28				x		x
29	x			x		x
30					x	x
31	x				x	x
32		x			x	x
33	x	x			x	x
34			x		x	x
35	x		x		x	x
36		x	x		x	x
37	x	x	x		x	x
38				x	x	x
39	x			x	x	x

See the Cycle Time Chart in Section 1 for the four available Cycle Times.

The operating mode can be selected by connecting the orange/white wire, located under the main timer, to the wires listed below. Machines are shipped with the orange/white wire connected to the blue/orange wire giving no prewash and 2 rinses. Reconnecting the end of the orange/white wire with the plastic housing from the blue/orange wire to the following wires gives these selections:
-No wire, tape up end of orange/white wire gives prewash and 3 rinses
-Connecting to blue/red wire gives prewash and 2 rinses
-Connecting to blue/yellow wire gives no prewash and 3 rinses
-Connecting to blue/orange wire gives no prewash and 2 rinses

After changing the operating mode (program length), refer to Setting the Accumulator on the previous page to reset the cycle time remaining for the correct length of time for the new cycle.

Close top, replace screws in dispenser, lock top and reconnect power.

After all mounting, plumbing and. electrical work is completed, the washer should be run through a cycle and checked for water leaks and proper functioning.

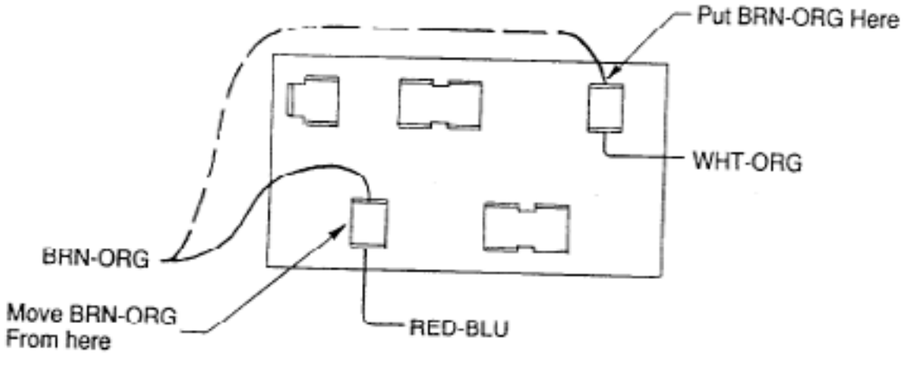
Connections for Injection Systems and Rinse Conversions

Signals for the connection of chemical injector systems are available at the connection points listed below. These points will give 120VAC signals.

DESCRIPTION	TERMINAL LOCATION
Prewash	This connection maybe made at the prewash light at the front of the machine. The wire color to piggyback on is yellow/black.
Bleach	This connection maybe made at the bleach light at the front of the machine. The wire color to piggyback on is yellow/green.
Wash	This connection maybe made at the wash light at the front of the machine. The wire color to piggyback on is yellow/orange.
Rinse	This connection maybe made at the rinse light at the front of the machine. The wire color to piggyback on is yellow/blue. Be sure not to use the final rinse light.
Final Rinse	This connection maybe made at the final rinse light at the front of the machine. The wire color to piggyback on is yellow/white.

Connection for Warm Rinses
As shipped from the factory all rinses are cold. Rinses can be converted to warm by moving the brown/orange wire on the terminal block from the front left terminal with the red/blue wire to the back right terminal with the white/orange wire. Disconnect electrical power before moving the wire.

Terminal Block



Operating Instructions

Accumulator
Prior to operation, the coin accumulator should be set for both the number of coins to start and the number of minutes in the cycle. (see Setting the Accumulator)

Starting the Washer

A. 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.

B. 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.

C. Using the buttons on the front, select the wash cycle having the desired temperature.
D. Insert the preset number of coins as shown in the coin display to start the machine. The washer will automatically start and the red on light will glow. The clothes door will lock and remain locked until the end of the cycle.
E. At the correct time in the cycle the green ADD BLEACH light will come on indicating the time and location for adding bleach if desired.

End of Cycle
When the cycle is completed, the end of cycle beeper will sound and the on light will go off. The loading door can now be opened by turning the door handle to the indicated position and pulling. Leave the clothes door open when the machine is not in use. Also, at the end of cycle the coin count display will reset to the original number of coins required to start.

Detergent Measurements By Washer Model

Maxi Load T-300 Washer

Notes

Section 3:

Electrical Wiring Diagrams & Schematics

Vended Electrical Path Circuit Schematics

Timer Sequence Chart

The timer sequence charts are used in conjunction with the wiring diagrams to trace the circuitry during the timer cycle. The timer contacts and the operation or component that each contact controls are listed down the left side of the chart. The phases of the complete cycle are shown across the bottom of the chart.
The timer switch increments are numbered across the top of the chart. The solid horizontal bars in the chart denote when tne various contacts are closed during the cycle.

To use the timer sequence chart to trace the circuitry:

1. Locate the particular part of the cycle on the sequence chart.
2. Determine which timer contacts are closed during that particular step of the cycle by noting the solid vertical bars in that step across the chart.
3. Draw in the gap of the respective contacts on the wiring diagram with a soft dark pencil, to illustrate the contacts as being closed.
4. Similarly, determine which switch contacts are closed, by the switch chart, and illustrate them as closed on the wiring diagram.
5. The circuitry during the particular step of the cycle may then be easily traced on the wiring diagram, since all contacts and switches are then properly illustrated as being open or closed.

Start Circuit

Power travels into the machine on L1 & L2 (3 phase) or L1 & N (1 phase). On 3 phase, 240VAC goes to a Control Transformer that steps the voltage down to 120VAC for the controls. 120VAC then travels to the 1.5 amp Circuit Breaker. On 1 phase, 120VAC goes directly to the 1.5 amp Circuit Breaker. There is no need for a step-down transformer.

From the Circuit Breaker, 120VAC travels on the white/red wire to the Coin Accumulator Transformer where it is stepped down to 12VAC. This 12VAC powers the Coin Accumulator Board via the gray wire. With the board now powered up, the insert coins light will be illuminated and it's ready to count coins. 120VAC is also supplied to the Main Timer Start and On-Off Contacts on the white/red wire. The Start Contact is closed before the machine has been started so 120VAC travels through the Start Contact and is supplied to the Coin Accumulator Board Start Relay. The S4 Coin Switch counts the quarters and sends a signal to the Coin Accumulator Board. When the coin count is satisfied, the Coin Accumulator Board closes the Start Relay and sends a short 120VAC signal on the orange/white wire to the Rapid Advance Timer Motor. This timer motor starts advancing the Main Timer to the preselected starting position. A few seconds after the Coin Accumulator Board sends the start signal to the Rapid Advance Timer Motor, the Coin Accumulator Start Relay opens, the display goes blank and the On-Off Contact in the Main Timer closes and provides 120VAC to the S1 Door Switch. The On-Off Contact also provides 120VAC to the On Light on the red wire. With the S1 Switch closed (door is latched) the Door Lock Solenoid is now powered with 120VAC via the white/red wire. The Door Lock Solenoid pulls in, locking the door and closing the S2 and S3 Switches. The S2 Switch is a backup to the S1 Switch so that the adjustment on S1 isn't as critical. The S3 Switch provides 120VAC to Timer Contact RA-3 to power the Rapid Advance Motor again and the Main Timer is allowed to advance on to the preselected start
position. The blue wire furnishes the neutral for the controls.

Fill Circuit-Warm

120VAC is supplied to the controls through the S1, S2, and S3 Door Switches. The On Light and the Door Lock Solenoid (discussed in Start Circuit) will remain on throughout the cycle as well as the Main Timer Motor. The Lock Thermoactuator Contact in the Main Timer is closed and provides the neutral side to operate the Lock Thermoactuator. This contact cycles open and closed keeping the Lock Thermoactuator activated until 1 1/2 minutes before the end of the cycle. At this point the contact opens and removes power to the Lock Thermoactuator. 120VAC is provided to the Lock Thermoactuator on the orange wire

from the S3 Door Switch. The Drain Contact in the Main Timer is closed and provides 120VAC to the Drain Valve on the brown/ yellow wire which closes the valve. The Wash Motor Contact in the Main Timer is closed and provides 120VAC to the Reversing Timer and the Reversing Timer Motor on the blue/black wire. This will start the Reversing Timer operating which will alternately open and close the Micro Switches that provide the direction of tumble for the wash basket. The Wash Light Contact in the Main Timer is closed and provides 120VAC to the Wash Light. The orange wire coming from the S3 Door Switch provides power to the Wash Water Contact in the Main Timer. 120VAC connects from the Wash Water Contact to the Wash Temperature Contact via an internal timer connection.

With 120VAC on the orange wire & neutral on the orange/yellow wire, the Coin Accumulator Board turns on the Time Remaining Light & starts counting down in minutes. (If delay fill kit is installed, time count down is stopped during fills.)

Now a cycle must be selected with the Selector Switch. We'll use Normal Wash. The washer fills the tub through the back of the machine with either one or both the C1 Cold and H1 Hot Water Valves. At the beginning of the cycle, the detergent dispenser flushes the detergent into the tub. This is accomplished with the Wash Dispenser Contact in the Main Timer. 120VAC travels through the closed Wash Dispenser Contact and is supplied to the H2 Hot Water Valve Solenoid by the red/orange wire. As the washer fills with water, the Wash Basket will tumble one direction for 19 seconds, pause, and then reverse direction for 19 seconds.

120VAC travels from the Wash Water Timer Contact to the Heavy Duty Contact in the Selector Switch via the white/black wire. 120VAC goes through the closed Heavy Duty Contact in the Selector Switch and energizes the C1 Cold Water Valve Solenoid via the white/orange wire. 120VAC also travels to the closed Wool/Delicate Contact in the Selector Switch. This closed contact provides power to the H1 Hot Water Valve Solenoid via the red/yellow wire. When the water reaches the predetermined level the Pressure Switch moves to the full position and opens the neutral side of the line to the Water Valves. This shuts the Water Valves off.

Wash Circuit

As the washer fills the tub through the back of the machine with either one or both the C1 Cold and H1 Hot Water Valves, the Wash Basket will tumble one direction for 19 seconds, pause, and then reverse direction for 19 seconds. This is accomplished through the use of a Reversing Timer. 120VAC is supplied to the Reversing Timer Motor on the blue/black wire from the Wash Motor Timer Contact in the Main Timer. The Reversing Timer will alternately open and close the two Wash Micro Switches and provide 120VAC to the R1A (brown/white wire) and R1B (orange/green wire) Wash Contactor Coils. These coils open and close the Contactor Switches to operate the Drive Motor.

As discussed in Start and Fill, the Thermoactuator, Drain Valve, On Light, and Main Timer Motor are all operating throughout the Wash Cycle.

Drain, Rinse 1 & 2, and Final Rinse Circuit

The Drain Contact in the Main Timer opens removing power to the Drain Valve. The normally-open spring-loaded Drain Valve opens and empties the tub.

For Rinse 1 & 2, the Rinse Light Contact in the Main Timer closes and provides 120VAC to the Rinse Light. The Rinse Water Contact in the Main Timer also closes and provides 120VAC to the C1 Cold Water Solenoid. The tub will fill until the predetermined level is achieved at which time the Pressure Switch Contact will open the neutral side of the line shutting off the C1 Cold Water Solenoid.

For the Final Rinse, the Final Rinse Light Contact in the Main Timer closes and provides 120VAC to the Final Rinse Light. Rinse water is the same as in Rinse 1 & 2 above.

Extract Circuit

The Spin Contact in the Main Timer closes to provide 120VAC to the Spin Light. The Wash Motor Contact remains closed and provides 120VAC to the closed Clockwise Micro Switch on the Reversing Timer. 120VAC is then fed to the Counter Clockwise Micro Switch via a jumper wire. Power is then sent through the Counter Clockwise Micro Switch to the Delay Spin Micro Switch. The Delay Spin Micro Switch provides 120VAC to the Spin Motor Contact in the Main Timer on the blue/white wire. The Spin Motor Contact is closed for spin and the voltage continues on to the R2 Spin Motor Contactor Coil on the red/black wire. With 120VAC to the R2 Spin Motor Contactor Coil the Contactor is pulled down (closed) and two things happen. With the R2 Contactor closed, 120VAC is now provided from the orange wire directly to the Contactor eliminating the Reversing Timer and the Micro Switches from the circuit.

The second thing that happens when the R2 Contactor is closed is that voltage is provided directly to the Spin Winding in the motor on 3 phase machines and the washer spins.

On 1 phase washers, the R2 Contactor provides 120VAC to the Main Spin Winding and also provides 120VAC to the Solid State Start Switch Terminal #2. 120VAC goes out of the Solid State Start Switch on the #3 Terminal to the Spin Capacitor. The Spin Capacitor then provides 120VAC to the Phase Spin Winding until the Spin Motor comes up to speed. Within a few seconds of start up, the Solid State Start Switch senses that the Spin Motor Current has dropped (motor is up to speed) and opens the circuit on #3 Terminal on the Solid State Start Switch. This eliminates voltage to the phase winding (start winding) and the motor continues to run on the Main Winding.

Unlock Thermoactuator and Shake Out Circuit

The Lock Thermoactuator Contact in the Main Timer opens 1 1/2 minutes before the end of the cycle removing the neutral to the Thermoactuator. This allows the Thermoactuator time to retract by the end of the cycle.

To insure that the Lock Thermoactuator has retracted by the end of the cycle, 1 minute prior to the end of the cycle, the Unlock Thermoactuator is powered with 120VAC through the Unlock Thermoactuator Contact in the Main Timer.

The Spin Motor Contact in the Main Timer opens, stopping voltage to the R2 Spin Motor Relay & the motor. The basket will coast to a stop. The Wash Motor Contact in the Main Timer closes providing power to the Reversing Timer once again (discussed in Wash Cycle). The washer will tumble for approximately 30 seconds to let the clothes shake loose and then stop.

End of Cycle Circuit

The On-Off Contact in the Main Timer opens removing power to the Door Lock Switches and Contactors. The machine is now stopped. The Start Contact on the Main Timer is closed providing 120VAC to the Coin Accumulator Board on the white/green wire. The End Of Cycle Contact in the Main Timer is closed sending a 120VAC signal to the Coin Accumulator Board on the white/yellow wire telling it that the cycle is over. This resets the Coin Accumulator Board and it is now ready to count coins again.

OPL Electrical Path Circuit Schematics

Timer Sequence Chart

The timer sequence charts are used in conjunction with the wiring diagrams to trace the circuitry during the timer cycle. The timer contacts and the operation or component that each contact controls are listed down the left side of the chart. The phases of the complete cycle are shown across the bottom of the chart. The timer switch increments are numbered across the top of the chart. The solid horizontal bars in the chart denote when the various contacts are closed during the cycle.

To use the timer sequence chart to trace the circuitry:

1. Locate the particular part of the cycle on the sequence chart.
2. Determine which timer contacts are closed during that particular step of the cycle by noting the solid vertical bars in that step across the chart.
3. Draw in the gap of the respective contacts on the wiring diagram with a soft dark pencil, to illustrate the contacts as being closed.
4. Similarly, determine which switch contacts are closed, by the switch chart, and illustrate them as closed on the wiring diagram.
5. The circuitry during the particular step of the cycle may then be easily traced on the wiring diagram, since all contacts and switches are then properly illustrated as being open or closed.

Start Circuit

Power travels into the machine on L1 & L2 (3 phase) or L1 & N (1 phase). On 3 phase, 240VAC goes to a Control Transformer that steps the voltage down to 120VAC for the controls. 120VAC then travels to the 1.5 amp Circuit Breaker. On 1 phase, 120VAC goes directly to the 7 amp Circuit Breaker. There is no need for a step down transformer.

From the Circuit Breaker, 120VAC travels on the black/red wire to the Main Timer Start and On-Off Contacts. The Start Contact is closed before the machine has been started so 120VAC travels through the Start Contact and is supplied to the Start switch. When the Start switch is closed a 120VAC signal is supplied on the orange/white wire to the Rapid Advance Timer Motor. This timer motor starts advancing the Main Timer to the preselected starting position. The On-Off Contact in the Main Timer closes and provides 120 VAC to the S1 Door Switch. The On-Off Contact also provides 120VAC to the On Light on the red wire. With the S1 Switch closed(door is latched) the Door Lock Solenoid is now powered with 120VAC via the white/red wire. The Door Lock Solenoid pulls in, locking the door and closing the S2 and S3 Switches. The S2 Switch is a backup to the S1 Switch so that the adjustment on S1 isn't as critical. The S3 Switch provides 120VAC to Timer Contacts RA-1,2, 3,or 4 to power the Rapid Advance Motor again and the Main Timer is allowed to advance on to the preselected start position based on which cycle number selected. The blue wire furnishes the neutral for the controls.

Fill Circuit-Warm

120VAC is supplied to the controls through the S1, S2, and S3 Door Switches. The On Light and the Door Lock Solenoid (discussed in Start Circuit) will remain on throughout the cycle as well as the Main Timer Motor. The Lock Thermoactuator Contact in the Main Timer is closed and provides the neutral side to operate the Lock Thermoactuator. This contact cycles open and closed keeping the Lock Thermoactuator activated until 1 1/2 minutes before the end of the cycle. At this point the contact opens and removes power to the Lock Thermoactuator. 120VAC is provided to the Lock Thermoactuator on the orange wire from the S3 Door Switch. The Drain Contact in the Main Timer is closed and provides 120VAC to the Drain Valve on the brown/yellow wire which closes the valve. The Wash Motor Contact in the Main Timer is closed and provides 120VAC to the Reversing Timer and the Reversing Timer Motor on the blue/black wire. This will start the Reversing Timer operating which will alternately open and close the Micro Switches that provide the direction of tumble for the wash basket. Depending on the cycle selected either the Wash Light Contact, the Prewash Light Contact, in the Main Timer is closed and provides 120VAC to these Lights. The orange wire coming from the S3 Door Switch provides power to the Wash Water Contact in the Main Timer.

120VAC connects from the Wash Water Contact to the Wash Temperature Contact via an internal timer connection.

Now a water temperature must be selected with the Temperature Selector Switch. We'll use #2 Warm Wash. The washer fills the tub through the back of the machine with both the C1 Cold and H1 Hot Water Valves. In the wash cycle, the detergent dispenser flushes the detergent into the tub. This is accomplished with the Wash Dispenser Contact in the Main Timer. 120VAC travels through the closed Wash Dispenser Contact and is supplied to the H2 Hot Water Valve Solenoid by the red/orange wire. As the washer fills with water, the Wash Basket will tumble one direction for 19 seconds, pause, and then reverse direction for 19 seconds. 120VAC travels from the Wash Water Timer Contact to the Heavy Duty Contact in the Selector Switch via the white/black wire. 120VAC goes through the closed Heavy Duty Contact in the Selector Switch and energizes the C1 Cold Water Valve Solenoid via the white/orange wire. 120VAC also travels to the closed Wool/Delicate Contact in the Selector Switch. This closed contact provides power to the H1 Hot Water Valve Solenoid via the red/yellow wire. When the water reaches the predetermined level the Pressure Switch moves to the full position and opens the neutral side of the line to the Water Valves. This shuts the Water Valves off.

Wash Circuit

As the washer fills the tub through the back of the machine with either one or both the C1 Cold and H1 Hot Water Valves, the Wash Basket will tumble one direction for 19 seconds, pause, and then reverse direction for 19 seconds. This is accomplished through the use of a Reversing Timer. 120VAC is supplied to the Reversing Timer Motor on the blue/black wire from the Wash Motor Timer Contact in the Main Timer. With 3 phase power, the Reversing Timer will alternately open and close the two Wash Micro Switches and provide 120VAC to the R1A (brown/white wire) and R1B (orange/green wire) Wash Contactor Coils. These coils open and close the Contactor Switches to operate the Drive Motor. With 1 phase power, there are no Wash Relays. 120VAC is provided directly to the motor by the Reversing Timer. 120 VAC on the black/orange wire is for counter clockwise and 120VAC on the black/white is for clockwise direction.

As discussed in Start and Fill, the Thermoactuator, Drain Valve, On Light, and Main Timer Motor are all operating throughout the Wash Cycle.

Drain, Rinse 1 & 2, and Final Rinse Circuit

The Drain Contact in the Main Timer opens removing power to the Drain Valve. The normally-open spring-loaded Drain Valve opens and empties the tub.

For Rinse 1 & 2, the Rinse Light Contact in the Main Timer closes and provides 120VAC to the Rinse Light. The Rinse Water Contact in the Main Timer also closes and provides 120VAC to the C1 Cold Water Solenoid. The tub will fill until the predetermined level is achieved at which time the Pressure Switch Contact will open the neutral side of the line shutting off the C1 Cold Water Solenoid.

For the Final Rinse, the Final Rinse Light Contact in the Main Timer closes and provides 120VAC to the Final Rinse Light. Rinse water is the same as in Rinse 1 & 2 above.

Extract Circuit

The Spin Contact in the Main Timer closes to provide 120VAC to the Spin Light. The Wash Motor Contact remains closed and provides 120VAC to the closed Clockwise Micro Switch on the Reversing Timer. 120VAC is then fed to the Counter Clockwise Micro Switch via a jumper wire. Power is then sent through the Counter Clockwise Micro Switch to the Delay Spin Micro Switch. The Delay Spin Micro Switch provides 120VAC to the Spin Motor Contact in the Main Timer on the blue/white wire. The Spin Motor Contact is closed for spin and the voltage continues on to the R2 Spin Motor Contactor Coil on the red/black wire. With 120VAC to the R2 Spin Motor Contactor Coil the Contactor is pulled down (closed) and two things happen. With the R2 Contactor closed, 120VAC is now provided from the orange wire directly to the Contactor eliminating the Reversing Timer and the Micro Switches from the circuit.

The second thing that happens when the R2 Contactor is closed is that voltage is provided directly to the Spin Winding in the motor on 3 phase machines and the washer spins.

On 1 phase washers, the R2 Contactor provides 120VAC to the Main Spin Winding and also provides 120VAC to the Spin Capacitors. The Spin Capacitors then provide 120VAC to the Phase Spin Winding.

Unlock Thermoactuator and Shake Out Circuit

The Lock Thermoactuator Contact in the Main Timer opens 1 1/2 minutes before the end of the cycle removing the neutral to the Thermoactuator. This allows the Thermoactuator time to retract by the end of the cycle.

To insure that the Lock Thermoactuator has retracted by the end of the cycle, 1 minute prior to the end of the cycle, the Unlock Thermoactuator is powered with 120VAC through the Unlock Thermoactuator Contact in the Main Timer.

The Spin Motor Contact in the Main Timer opens, stopping voltage to the R2 Spin Motor Relay & the motor. The basket will coast to a stop. The Wash Motor Contact in the Main Timer closes providing power to the Reversing Timer once again (discussed in Wash Cycle). The washer will tumble for approximately 30 seconds to let the clothes shake loose and then stop.

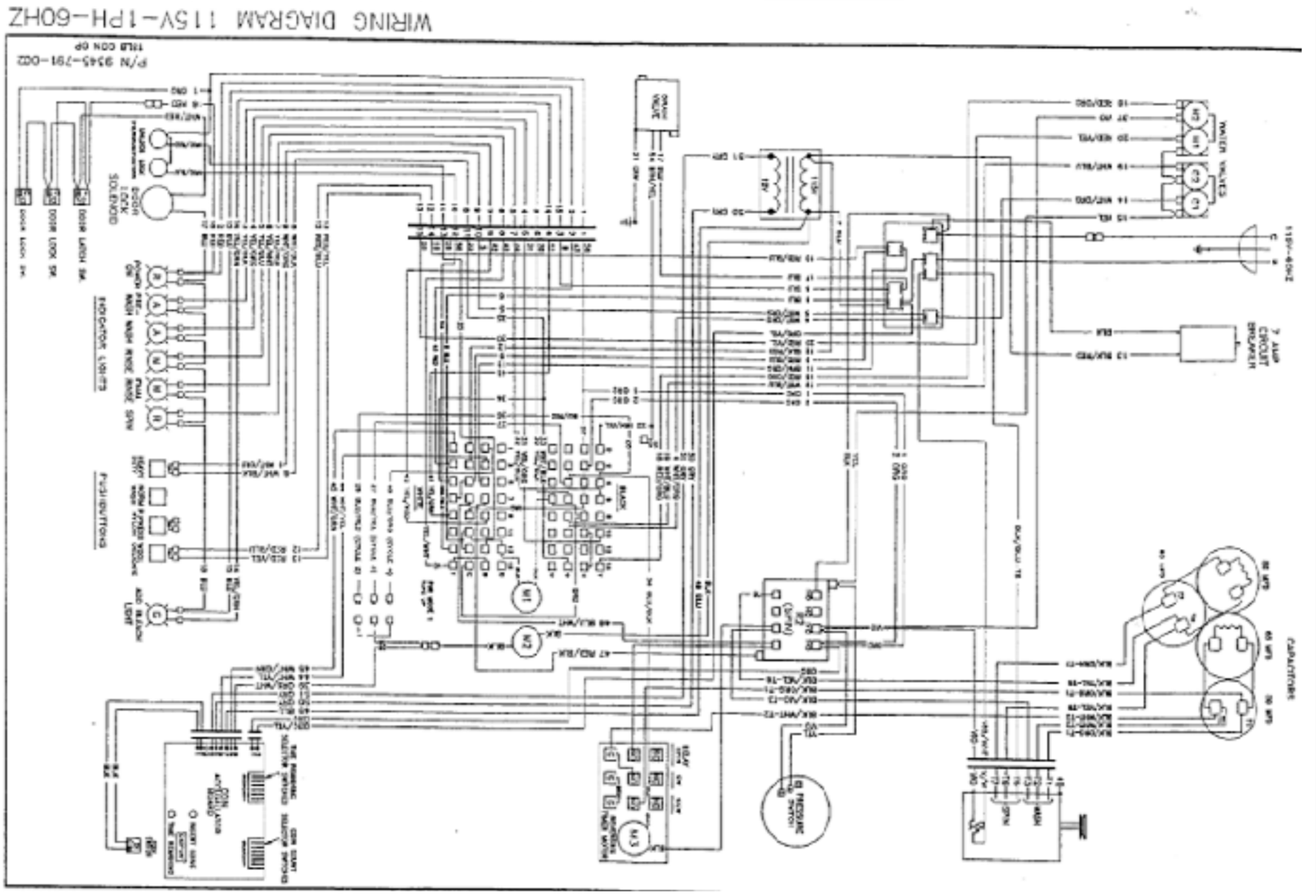
End of Cycle Circuit

The On-Off Contact in the Main Timer opens removing power to the Door Lock Switches and Contactors. The machine is now stopped. The Start Contact on the Main Timer is closed providing 120VAC to the Start switch on the wht/grn wire. The machine is now ready to start a new cycle.

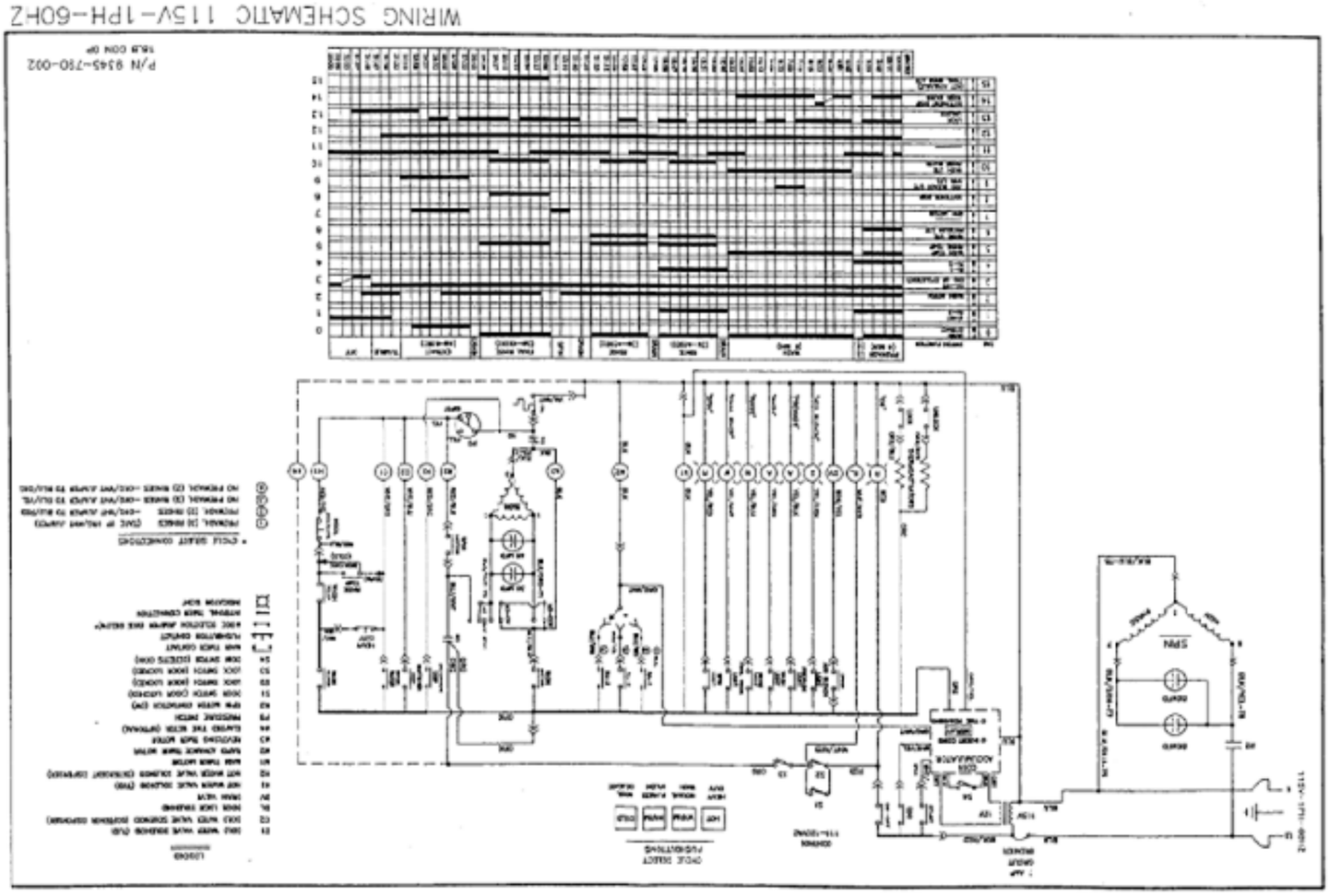
Advance Cycle Switch

The Advance switch located on the front panel will allow the operator to advance through any step to the next drain. YOU CANNOT ADVANCE PAST A DRAIN.The main timer must control drain operation through the drain cycle.120 VAC will come from the drain valve on the brn/yellow wire at the Advance switch (when switch is activated) to the org/wht wire to power the rapid advance timer through that step.

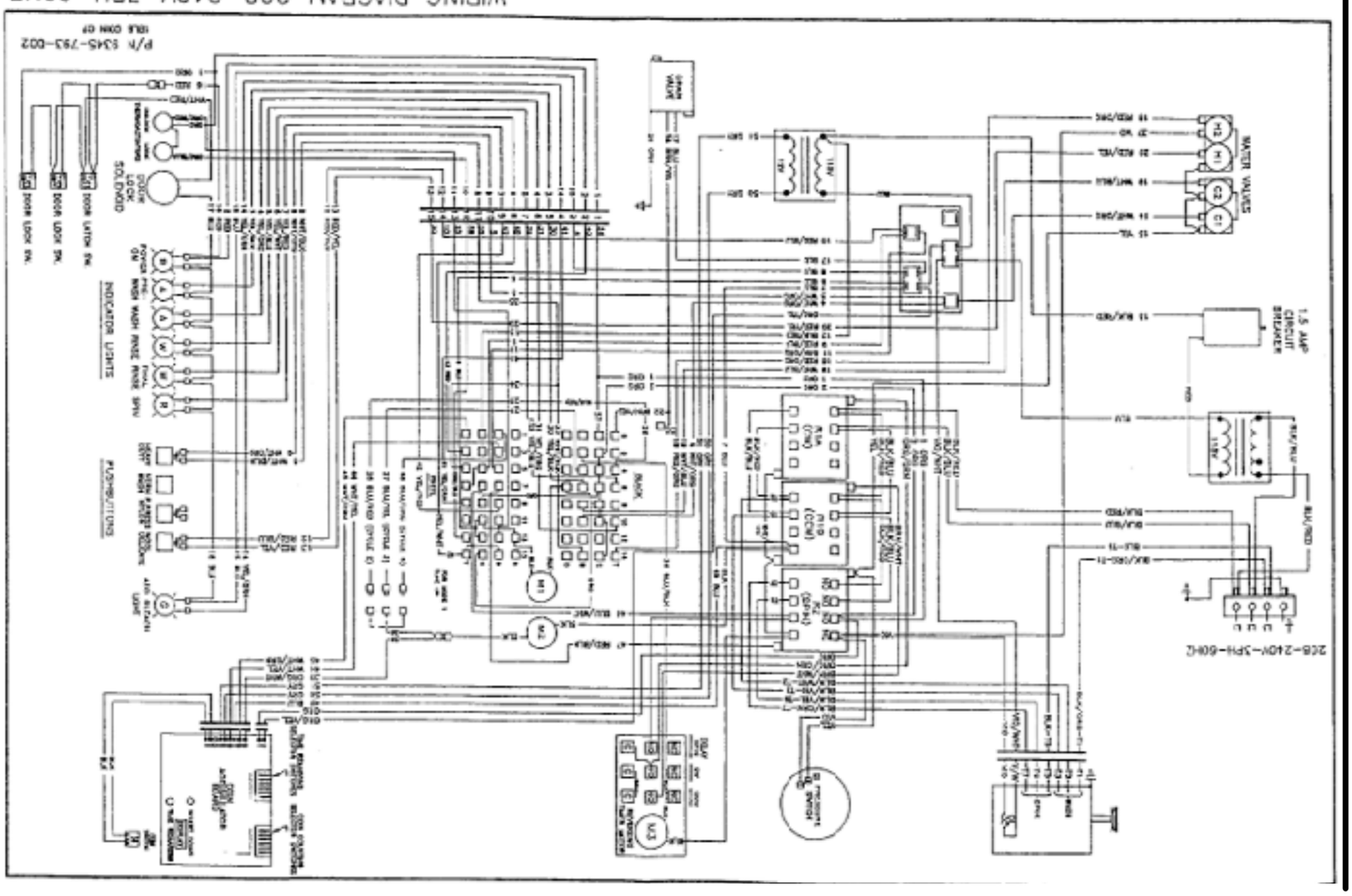
T-300 Vended Single Phase Wiring Diagram



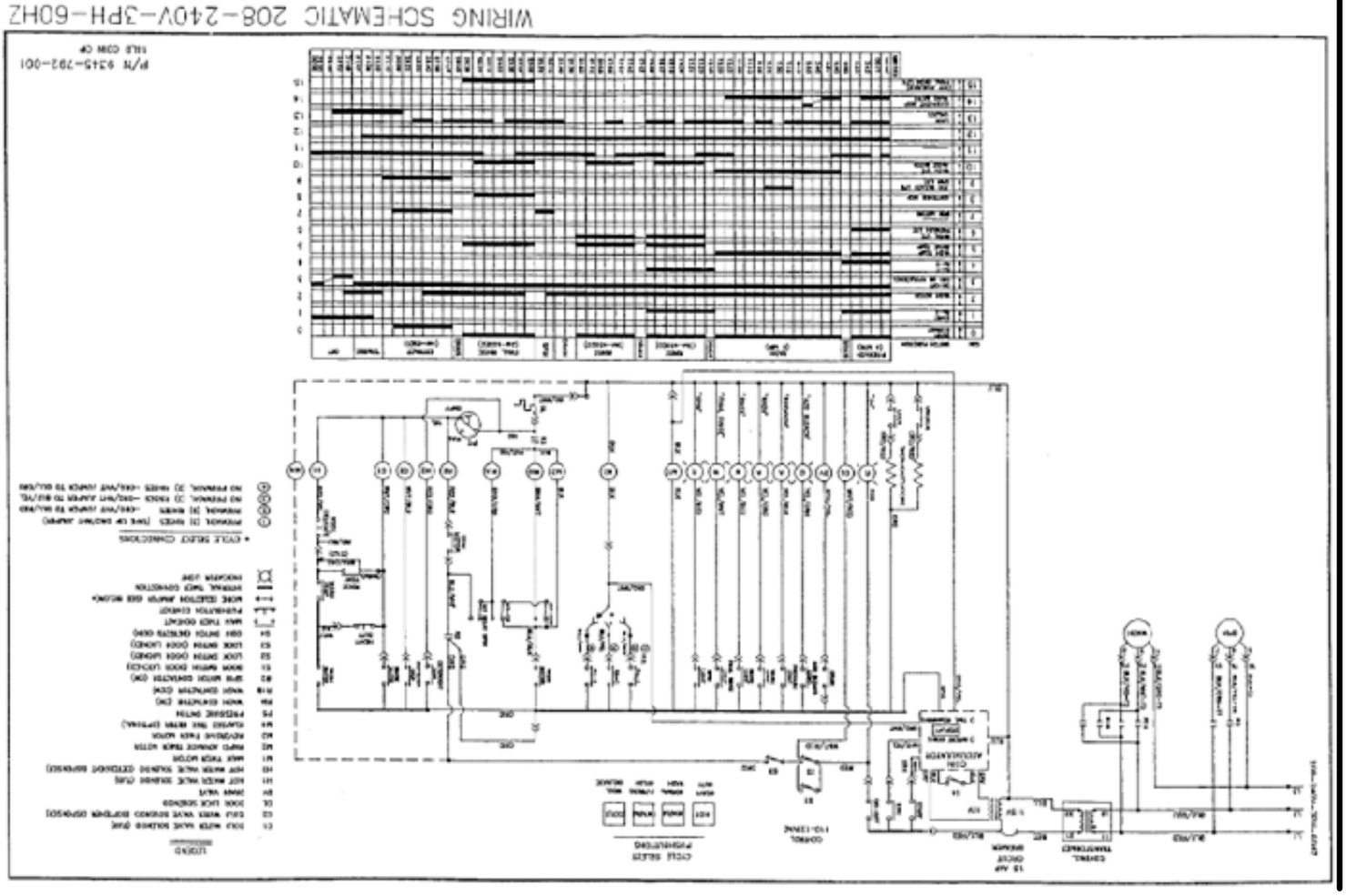
T-300 Vended Single Phase Schematic



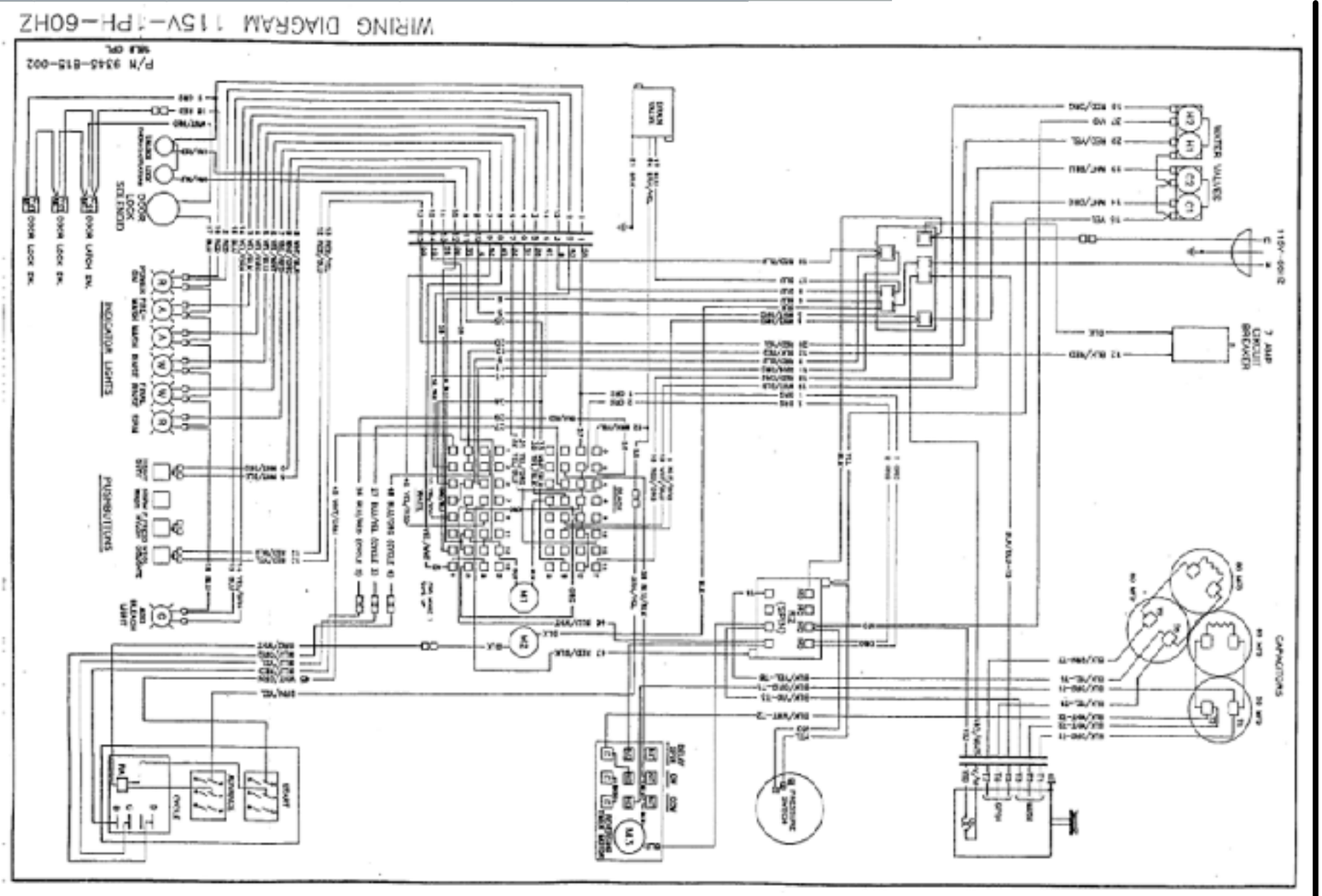
T-300 Vended Three Phase Wiring Diagram



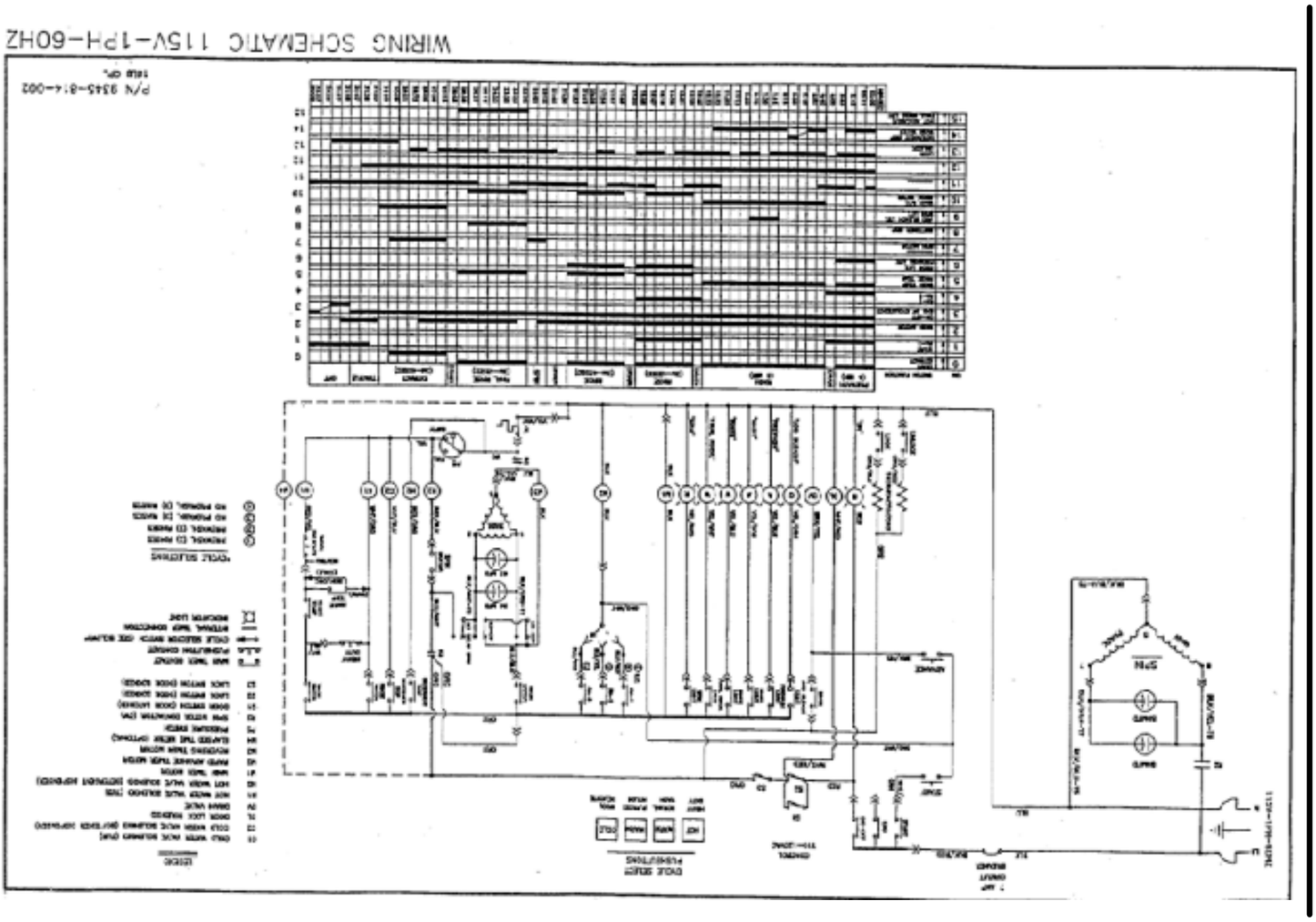
T-300 Vended Three Phase Schematic



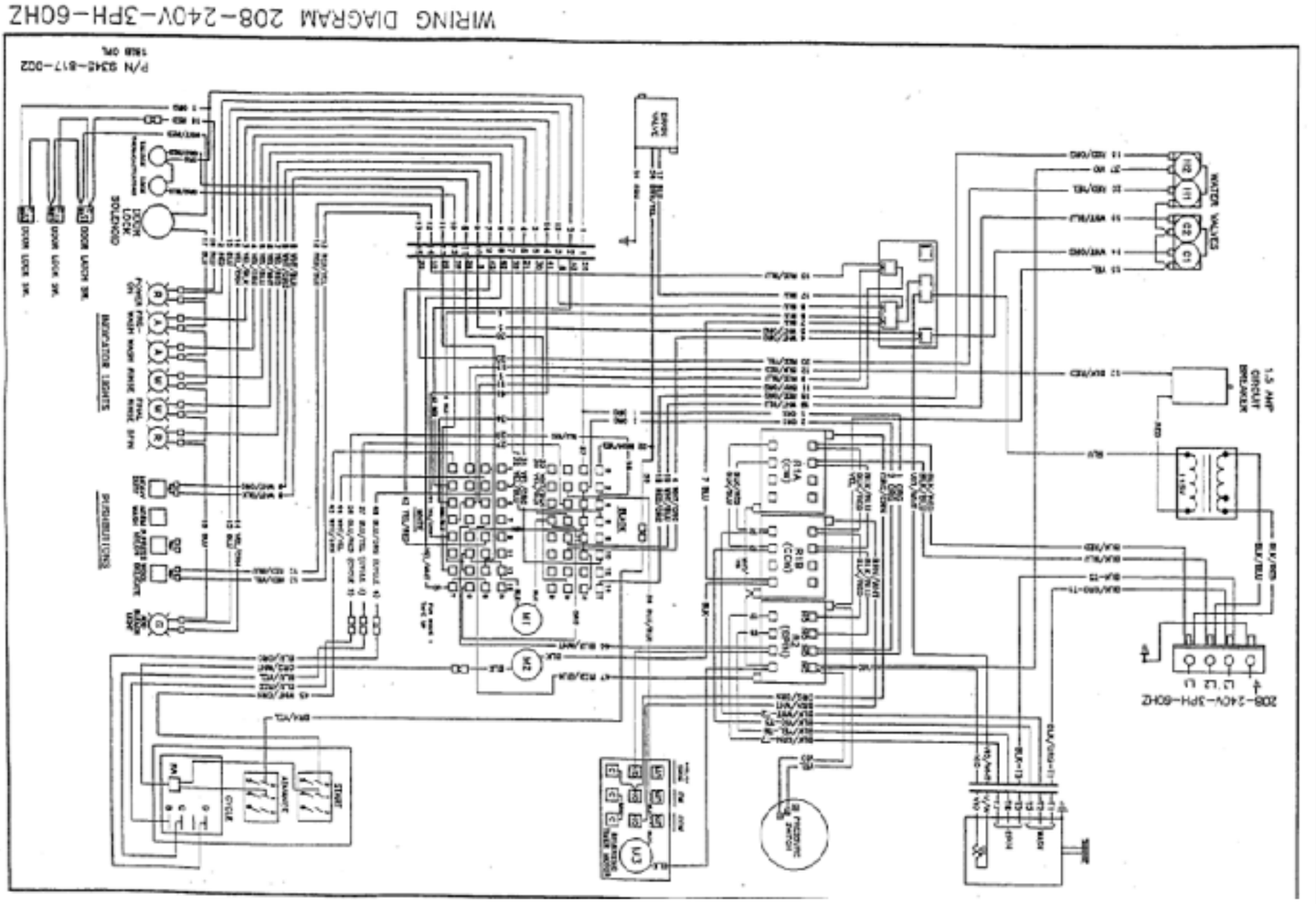
T-300 OPL Single Phase Wiring Diagram



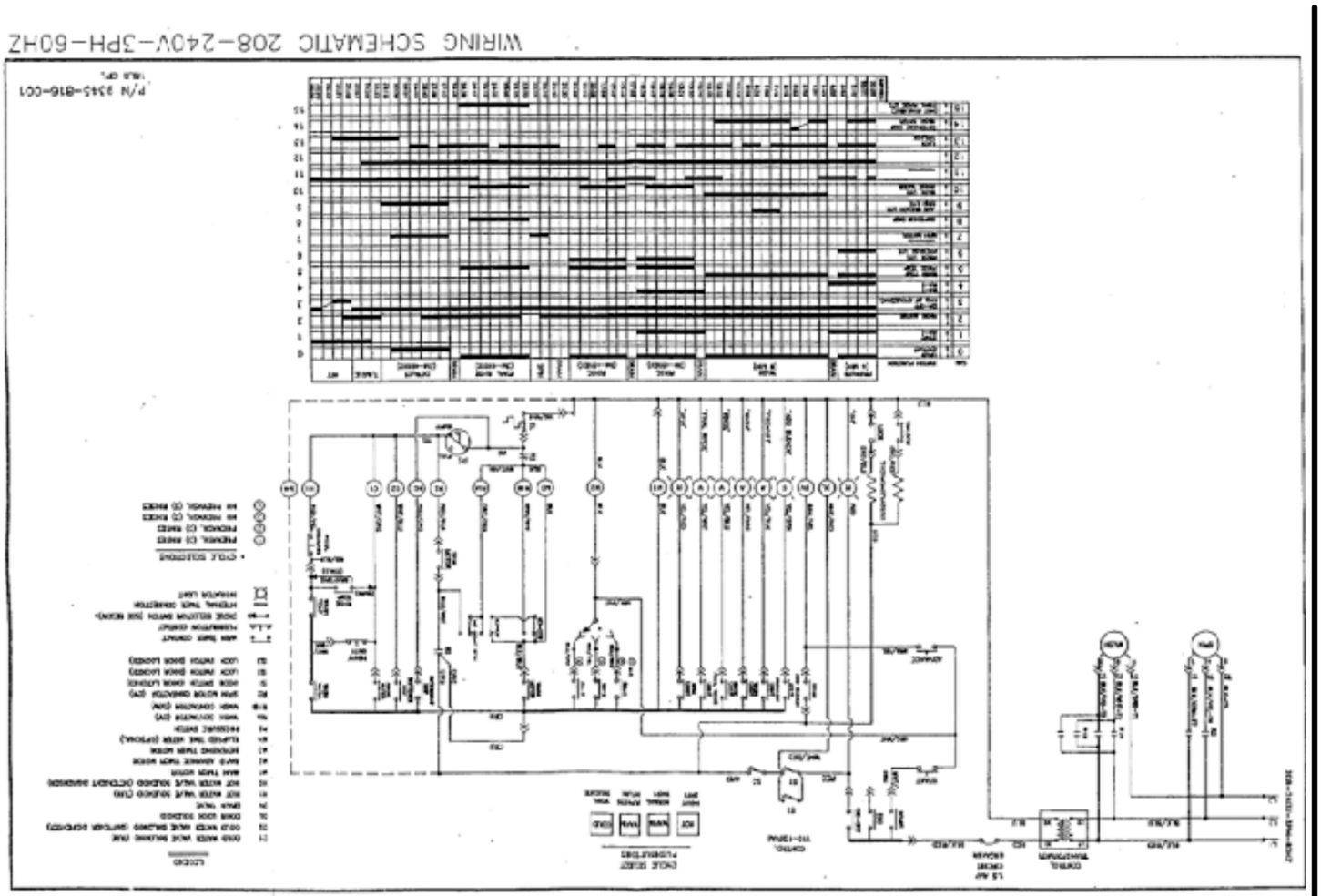
T-300 OPL Single Phase Schematic



T-300 OPL Three Phase Wiring Diagram



T-300 OPL Three Phase Schematic



Notes

Section 4:

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

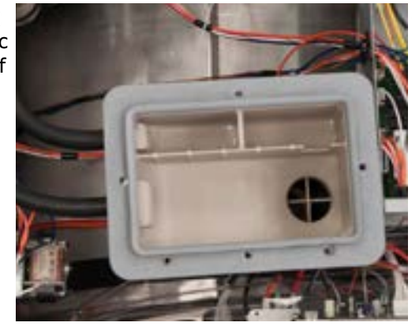
For access to drain valve, remove lower service panel. The drain valve is a ball type and is powered closed by the drain valve motor. It is mounted under the washer tub on the left side. It is spring loaded open. If power is interrupted to the washer, the motor releases the sealing ball, allowing the 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 racket screws from the frame of the washer.
Step 3: Remove the drain valve and bracket assembly.
Step 4: Unplug the wiring after the drain valve is removed from the washer.

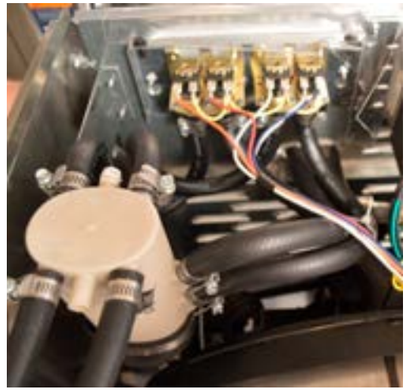
Detergent Dispenser

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 water valve mounting plate that is fastened to the rear channel. To remove the valves, loosen the 2 locking nuts on both sides of the mounting plate from the interior of the machine and then lift the plate and valves off of the back channel and pull the assembly into the machine. The valves can then be removed from the mounting plate by removing the 5/16 mounting screws.

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.

Masking Ring (door lock cover) Removal

A. Remove front panel.
B. Remove nuts that retain masking ring.
C. Move it to the left and off.

Door Lock Assembly Operation

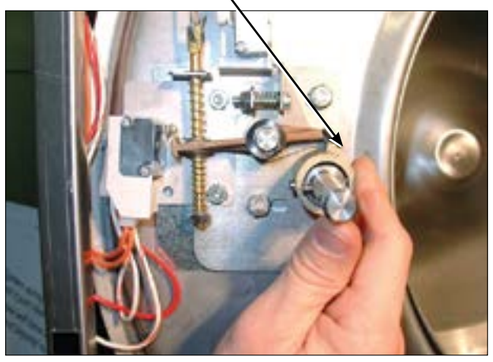
After loading the clothing, the door should be closed and latched. The locking cam on the door contacts the latching switch actuator which closes the latching switch. The specified number of coins should now be added to start the washer. The gear motor pulls up on the locking pawl by use of a linkage 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

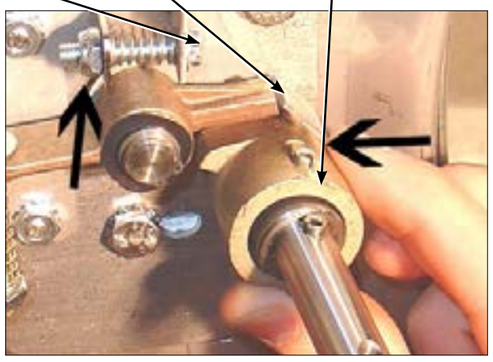
After removing the front panel and masking ring, the door lock assembly can now be accessed.

Adjustment for Door Lock Assembly

The latching switch and the piggyback lock sensing switches all have slotted mounting for easy adjustment.

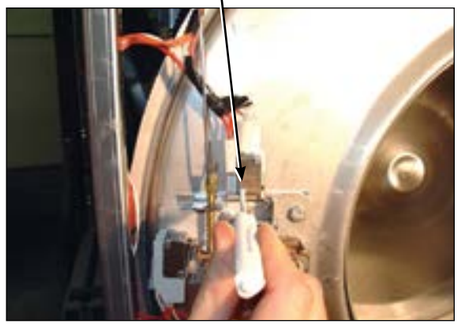


Step 1: Set door cam over pin. Here you can see the door cam away from the door lock assembly.

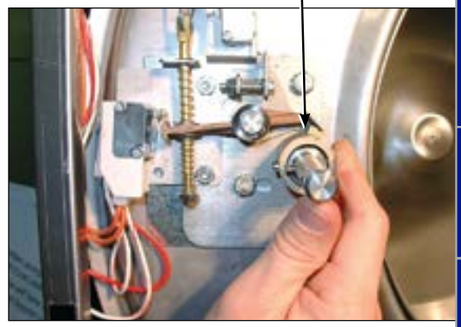


Step 2: Tighten spring screw on switch actuator bracket arm until it just clears cam OD. at base of door lock assembly.

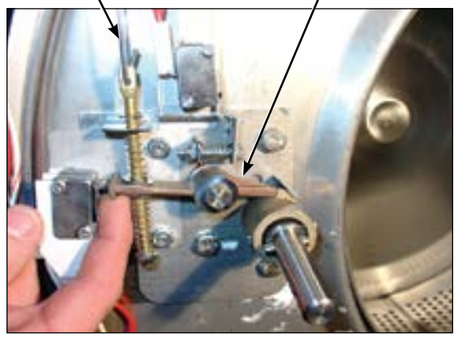
Adjustment to this bracket usually is not necessary as next step is used more in field.



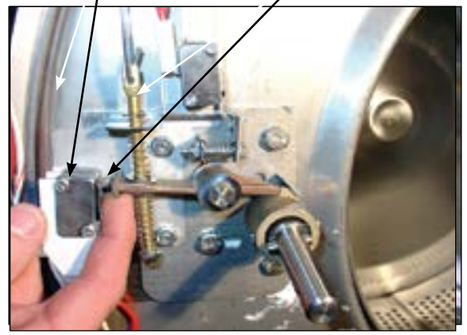
Step 3: With switch actuator bracket adjusted you will now need to adjust single switch by loosening 2 flat brade screws and allowing swivel of switch. Move switch towards above bracket until it actuates. Now tighten flat blade screws. Use a .040 thickness guage to insert between bracket and switch and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



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.



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



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!

Door Locking Solenoid
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.

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 ensure 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.

Loading Door Removal
A. Support door to prevent dropping.
B. Remove 3 bolts holding hinge retainer and set door off.

Loading Door Disassembly
A. Remove the loading door as outlined above.
B. Lay the door on a flat surface with the glass down.
C. While holding down on the door glass, lift up on the door ring and roll back the lip of the gasket with your fingers.
D. Work all the way around the gasket and the glass is out.

Loading Door Reassembly
A. Lay the door ring face down on a flat surface.
B. Start the glass into one side of the door. gasket.
C. Use one hand underneath to push the gasket out and the other hand on the top pulling the gasket in place.
D. The front lip of the door gasket should be checked for proper seating.

Loading Door Adjustment
The door can be adjusted by changing the number of shims behind the door hinge and the door lock assem bly. 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 nose 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 Hinge Removal
A. First remove loading door, front panel, and trim ring.
B. 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.

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.

Motor Relays
These relays are in the center of the control trough. The front relay is for spin. The other two are wash relays. The middle one is for counter-clockwise direction and the back one is for clockwise direction. Wires are removed using a straight blade screwdriver. The relays are removed by prying out on the mounting tab at the bottom of the relay with a straight blade screwdriver.

R1A Wash Motor Relay (clockwise)
The R1A Wash Motor Relay is mounted behind the R1B wash motor relay. The 120VAC coil on the wash relay is energized by the clockwise-wash micro switch in the reversing timer. the coil opens and closes the relay switches to operate the drive motor.

R1B Wash Motor Relay (counter-clockwise)
The R1B Wash Motor Relay is mounted behind the R2 spin motor relay. The 120VAC coil on the wash relay is energized by the counter-clockwise wash micro switch in the reversing timer. The coil opens and closes the relay switches to operate the drive motor.

R2 Spin Motor Relay
The R2 Spin Motor Relay is mounted in front of the R1B wash motor relay. The 120VAC coil on the spin relay is energized when the delay-spin micro switch in the reversing timer sends 120VAC to the spin motor contact in the timer. The coil opens and closes the relay switches to operate the drive motor.

Program Timer
This timer is located on the left side of the control trough directly behind the reversing timer and is held in place with two screws. It controls most machine functions. There are two drive motors on the program timer. The one towards the front of the machine advances the timer at the beginning of the cycle. The timer motor towards the rear drives the timer throughout the cycle. These two motors can be replaced individually. The program timer has a black knob that allows the timer to be manually turned to any portion of the cycle for diagnostic purposes.

Note: All single phase 251b. and 401b. washers have an electronic start switch and run and start capacitors. Three phase machines do not require these parts. ALWAYS DISCHARGE CAPACITORS BEFORE SERVICING.

Solid State Start Switch
This switch is located on the right side of the control trough directly behind the coin accumulator transformer. Its job is to switch the spin start capacitor on at the beginning of spin and to switch the spin start capacitor off when the motor achieves operating speed. To test the electronic start switch, clamp an ammeter around either single lead wire to the start capacitor (capacitor with plastic case). The switch should show starting current flow in the capacitor circuit momentarily at the start of spin. Continuous current flow means that the electronic start switch is stuck on and has failed. No current flow means that the switch is open and has failed.

Capacitors
The capacitors are located in the right rear corner of the control trough directly behind the start switch. The capacitor with the metal case is the wash run capacitor and the capacitor with the plastic case is the spin start capacitor.

Controls Transformer
This transformer is mounted at the back of the control trough and steps a range of 208 to 240 volts down to 115 volts for the controls. There are two terminals on the control transformer for incoming power. One terminal is for 208 to 220 volts and the other is for 221 to 240 volts.

Note: All 60 Hz. three phase washers have a controls transformer. Single phase washers do not require a controls transformer. Always check the incoming voltage and use the appropriate transformer terminal when installing three phase washers.

Pressure Switch
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. Turning it clockwise 1/8 of a turn will raise the water level 1/4 of an inch. Counter clockwise will lower 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. With no load, the water level should be approximately at the bottom to 1/2" up from the bottom of the glass on the T-600. With no load, the water level should be approximately 1/2" to 1" up from the bottom of the glass on the T-400.

Power Connection Terminal Block- Three Phase Only
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)

Cycle Indicator lights
The 120VAC indicator lights are mounted to the back of the control panel and are held in place with two tabs. They are removed by squeezing the tabs with a screw driver. The lights are replaced as a complete unit.

Temperature Selector Switch
The selector switch is mounted in the center of the control panel and is held in place with two 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.

Add-Bleach Light
This 120VAC light indicates to the user the correct time to add bleach. It is removed by squeezing two mount ing clips.

Lower Service Panel Removal
Remove 2 screws and pull forward to disengage from the locator studs.

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.

Note: The T-400 and T-600 have two belts that should be replaced in pairs.

Circuit Breaker
The 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.

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 many of the controls.

Coin Accumulator Transformer
This transformer that powers the coin accumulator board is mounted on the right side of the control trough. It steps control voltage down to a 12-volt AC output. It is held in place with two screws.

Coin Accumulator Board
This board displays the number of coins to start the washer, counts down the number of coins as they are added and starts the program timer when the preset coin amount is satisfied. With the preset coin amount satisfied, the coin accumulator closes a circuit sending control voltage.to the timer on the orange with a white striped wire and starts the washer. At the end of the cycle, the timer closes the end of cycle cam providing control voltage on the white with a yellow striped wire to the coin accumulator board. This signal from the timer resets the accumulator board so it is ready to count coins and the display goes back to the original amount of coins needed to start the washer. 12-volt AC power for the coin accumulator is supplied by the coin accumulator transformer discussed above. The board is retained by three nuts.

Reversing Timer
The reversing timer operates the wash and spin relays and is mounted on the left side of the control trough and retained with two screws. It has three cam operated switches. Two switches operate the Wash cycle by alternately engaging the wash relays to tumble counter-clockwise for 19 seconds, stop for 3seconds, reverse direction and tumble clockwise for j 9 seconds. The third switch engages the spin relay for the high speed spin portions of the cycle.

Drive Belt

Drop Coin 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)

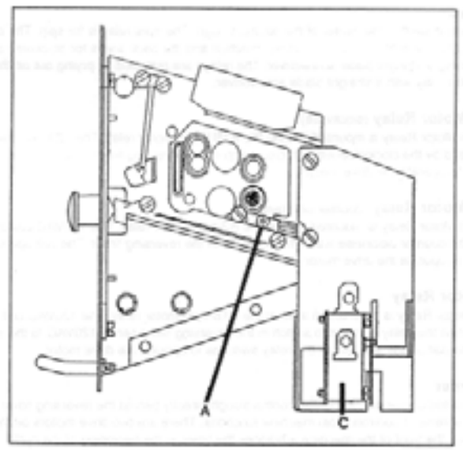
On the right side of the acceptor there is a coin thickness "adjusting· screw "A" with a locking nut. To allow for different thickness coins the screw can be turned in to accept thicker coins and turned out to reject thicker coins. Start with a quarter of a turn on this screw and be sure to retighten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

Coin Height Adjustment (see diagram)

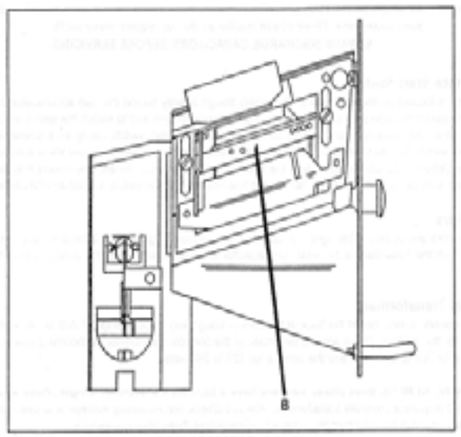
On the left side of the acceptor is a coin height adjusting bar "B". This bar is adjusted by loosening the two mounting screws and moving both ends of the bar up or down equal amounts. The bar should be raised as high as possible while still accepting the correct coins. If it is raised up too high, the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



COIN ACCEPTOR - right side



COIN ACCEPTOR - left side

Outer Cabinet Removal

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 4: Remove the bottom row of back panel screws.
Step 5: Remove the loading door.
Step 6: Remove the screws along the bottom of each side panel. When reinstalling these screws do not overtighten.
Step 7: Remove clamp and soap dispenser hose where it attaches to the tub inlet.
Step 8: Disconnect the door lock wires from all switches and the door lock solenoid. The following illustration of their locations should be consulted.
Step 9: Disconnect pull rod between solenoid and door lock assembly.
Step 10: Disconnect the wires to the dump valve at the bottom of the machine.
Step 11: Disconnect the wires to the drive motor. There is a motor harness connector in the left rear corner of the control trough. The connector may be removed from the side of the trough by releasing the retainer ears. The wires from the trough components to the motor harness may be removed from the top side of the connector. There is a label on the trough floor to aid in reconnection of the wires to the connector.
Step 12: Remove the clamp and the hose from the vacuum breaker where it connects to the inlet on the back of the tub.
Step 13: Remove the pressure switch hose from the bottom of the switch.
Step 14: It should now be possible for two people to lift the cabinet up and off of the front of the machine and set if aside

Outer Tub

Removal

Step 1: The outer tub can easily be removed when the tub back, bearing, and cylinder assembly have been removed as outlined.
Step 2: At that point only attachments to the chassis are the two front strap mounting bolts.

Reassembly

Step 1: Install outer tub in front strap leaving bolts loose.
Step 2: Install tub back assembly in washer (see Reassembly of Tub Back, Bearing, and Cylinder (basket) Assembly).
Step 3: With tub tback assembly bolted to washer frame and to the back of the outer tub, tighten front strap bolts.

Tub Back, Bearing and Cylinder Assembly

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.

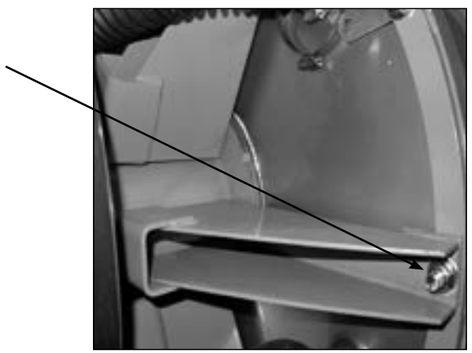
Step 3: Clean the silicone rubber from the back of the outer tub and the perimeter of the tub back where the two meet. There is no gasket in this area.

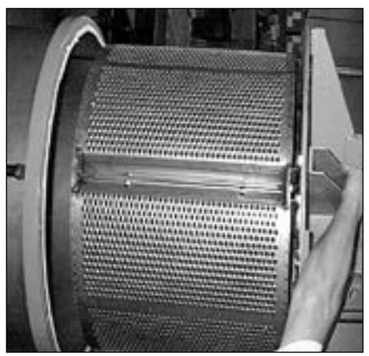
Step 4: Apply a new bead of silicone rubber around the back of the outer tub. (see picture)

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.

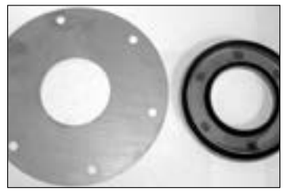
Step 4: Install the shaft end bolt with washers and torque to specifications in Bolt Torque Chart.

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.
Note: The T-400 and T-600 have two drive belts that should be replaced in pairs.

Step 2: Remove the tension spring and bracket.

Step 3: Disconnect the motor wires at the variable frequency drive unit. The motor wire retaining clamp should be removed and reused. It is good to notate the location of the T1, T2, and T3. (It is nornmal in most cases that the T1 and T2 wires are swapped at the variable frequency drive.

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
1/2" (9545-017-009)	Tub End of Bearing Housing	70-110
1/2" (9545-017-009)	Mounting to Tub Cradle Assembly	70-110
3/8" (9545-029-003)	Rear Mtg Ring to Tub Back	45-80
3/8" (9545-029-003)	Brg Hsg - Pulley End	45-80
3/8" (9545-029-003)	Mounting Ring Ends (Front)	20-30
(9545-028-015)	Basket Pulley to Shaft Set Screws	190-200

Notes

Section 5:

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	Check 1.5 amp (T-950 and T-1200 use 2.5amp) breaker or fuse for continuity. If no continuity, replace breaker or fuse.
	Control Transformer (3 Phase Only)	Check voltage output from control transformer for 120VAC. If voltage is incorrect, replace transformer.
	Coin Acceptor	Check coin acceptor to make surethere is no blockage or damage. clean or replace acceptor.
	Accumulator Transformer	Check accumulator transformer for 120VAC output to accumulator. If no voltage, replace transformer.
	Coin Accumulator	Check accumultor to see that display is showing correct number of coins to start. Check accumulator for short 120VAC output signal at orange/white wire when preset number of coins is reached. If no display or output signal, replace coin accumulator.
	Timer	Check to insure the timer is in the "off" position to supply 120VAC throught the Start cam to the coin accumulator board.
	Timer, Rapid Advance Motor	Check the rapid advance motor for continuity and replace if no continuity.
	"Start" Switch (OPL)	When actuated there must be continuity through the contacts on the start switch.
Machine will not accept and count coins (Vended)	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.
	Timer	Timer must be in "off" position, machine has to finish previous cycle to reset coin accumulator board.
	Coin Accumulator	Check accumultor to see that display is showing correct number of coins to start. if no display, replace.
	Control Breaker	Check 1.5amp breaker to continuity, if no continuity, replace.
Door does not lock	Timer Position	The following sequence must have taken place to advance the timer before the door locks: 1. Loading door closed 2. Proper number of coins inserted to start machine 3. Accumulator counted and credited coins to advance timer into cycle closing on-off timer contact.
	Door locking Solenoid	Check to insure that Solenoid is receiving 120VAC from main S1 door switch. 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.

Common Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
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 gear motor 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.
	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 Locking Solenoid	Check that door lock solenoid is not stuck closed. If stuck, replace solenoid.
	Timer	Make sure machine is in off position allowing Timer to authorize door unlock.
Machine starts but timer will not advance	Main Timer Drive Motor	If 120VAC is supplied to timer motor, but it doesn't operate, replace timer motor.
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 Screens	Check water inlet screens for blockage and clean if necessary screens
	Water	Check to insure that water is turned on and operating.
	Timer	Advance machine into wash cycle and check for 120VAC at red/blue wire coming from timer.
	Water Temp Selector Switch	Check switch for continuity between red/blue wire and red/yellow wire when Hot is selected. If no continuity, change switch.
	Pressure Switch	Check pressure switch continuity between terminals . If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
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 Screens	Check water inlet screens for blockage and clean screens if necessary.
	Water	Check to insure that water is turned on and operating.
	Timer	Advance to wash, check for voltage on red/org in from timer. If not voltage, replace timer.

Common Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
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.
	Timer	Choose cold cycle, advance to wash, check for voltage on white/black from timer. If no voltage, replace.
	Water Temp Selector Switch	Choose cold cycle, advance to wash and check wht/org wire from selector switch for 120VAC. If no voltage, change switch.
	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.
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
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.
	Pressure Switch	Check pressure switch continuity between terminals #1 & #4. If no continuity, check · pressure switch hose for obstruction. If hose okay, change pressure switch.
	Timer	Advance machine to final rinse and check for voltage at wht/blue wire coming from timer. If no voltage, replace timer.
Machine does not turn	R2 Spin Relay	Check continuity between terminals #13 & #14 on R2 relay.
	Wash Speed Capacitor (Single Phase Only)	Check capacitor and replce if failed.
Machine tumbles in one direction	Reversing Timer	Check to see that reversing timer is running. Check for alternating 120VAC at orange/green and at brown/white from reversing timer to signal reversing operation to wash relays. If not running or no voltage, replace reversing timer.
	Tumble Relays	Check R1A and R1B tumble speed relays. If one does not close during tumble speed, check coil continuity and power to the relay. If 120VAC to relay and no coil continuity, replace relay.

Common Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
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	Spin Relay	Check spin relay coil for continuity, replace if no coil continuity. Check relay contacts, replace if no continuity.
	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.
	Spin Start Capacitor (Single phase only)	Check capacitor and replace if failed.
	Solid State Start Switch (Single phase only)	Clamp an ammeter around either single lead wire to the start capacitor (capacitor with plastic case). The switch should show starting current flow in the capacitor circuit momentarily at the start of spin. Continuous current flow means that the electronic start switch is stuck on and has failed. No current flow means that the switch is open and has failed. If the switch has failed, replace it.
Machine starts and does not operate	Reversing Timer	Check to see that reversing timer is running. Check for alternating 120VDC at orange/green but and at brown/white from reversing timer to signal reversing operation to wash relays. If not running or no voltage, replace reversing timer.
Machine does not stop	Coin accumulator	Check for continuous output from terminal where orange-white wire connects to accumulator. If so replace accumulator.
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.

Notes

N-Series Accessories

WCN18AA 120 volts 60Hz. Single Phase
WCN18AB 208-240 volts 60Hz. Three Phase

Key	Description	Part Number
*	Hose, Water Supply (furnished) 3/8" I.D. x 48"	2
*	Hose, Water Supply (optional) 5/8" I.D. x 48"	9990-027-013
*	Washer, Inlet Hose (furnished)	2
*	Strainer, Inlet Hose (furnished)	2
*	Drain hose 10 ft. lenght x 2-1/4" I.D.	9242-417-001
*	Drain hose 1Oft. length x 3" I.D.	9242-417-003
*	Bevel Washer for 5/8" bolt used in installations using angle iron bases	8641-586-002
*	Bevel Washer for 3/4" bolt used in installations using angle iron bases	8641-586-003
*	Kit , Door Gasket Expander (large)	9732-139-001
*	Kit, Door Gasket Expander (small)	9732-139-002
*	Manual Operation Kit	9732-140-001
*	Switch, Blk/Red (included in kit)	9539-474-001
*	Switch, Blk/Wht (included in kit)	9539-474-002
*	Electrical Probe 100-600VAC	8545-055-002
*	Electrical Probe 24-90 VAC	8545-055-001
	Sealing compound	8538-151-001
	TORX#20	8545-051-002
	Special Tool For Removing Coin Acceptor Mounting Screws. (T-10 Torx)	8545-051-003
*	Puller to Remove Pulley and Bearing Housing from Shaft on T-300	Grip-O-Matic #1038

Section 6:

Parts Data

N-Series Vended

Regular Chassis

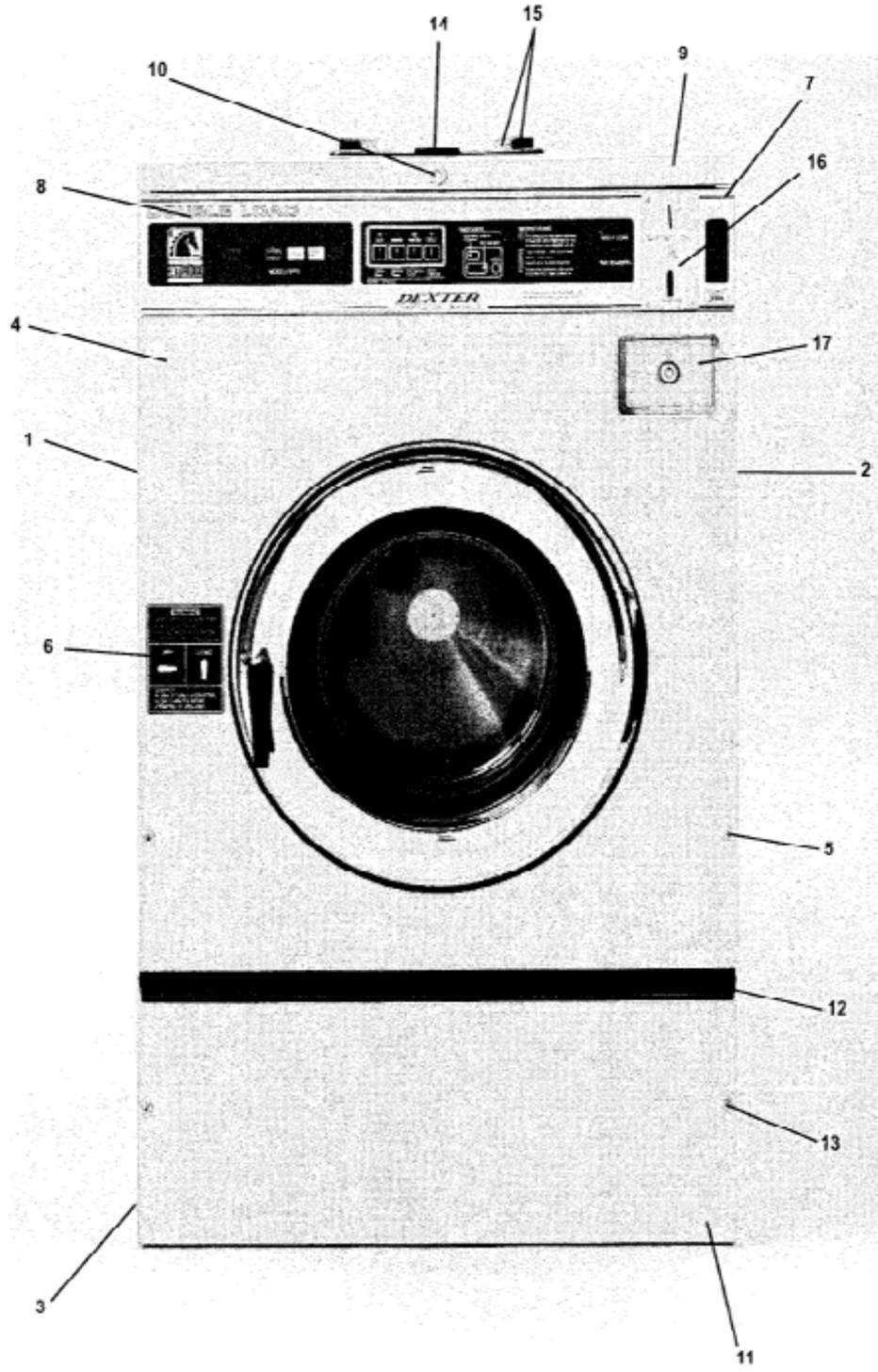
Models
WCN18AA
WCN18AB

Wiring Harness Part # by Model

Part Number	Description	Qty
9627-696-002	Wiring Harness, Main	1
9627-689-001	Wiring Harness, Control	1
9627-708-001	Wiring Harness, Coin accumulator (countdown)	1
8654-125-001	Clamp, Cable- 1/4 Dia	1

Cabinet and Front Panel Group Part # by Model
WCN18AA/WCN18AB

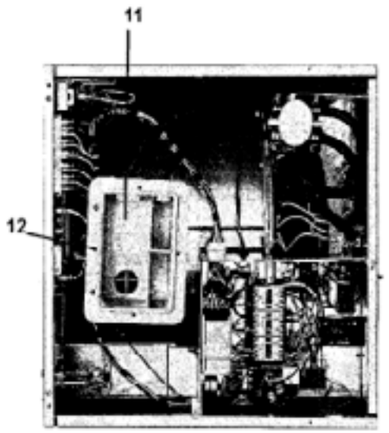
Key	Part Number	Description	Qty
1	9454-635-006	Panel, Side (Left) - Stainless	1
2	9454-635-005	Panel, Side (Right} - Stainless	1
3	9545-018-018	Screw, (Side Panel to Base)	6
*	8640-414-006	Nut, Hex	6
*	9029-066-001	Bracket, Side Panel	1
*	8640-413-002	Nut, Hex	2
*	9545-008- 026	Screw	2
4	9454-668-001	Panel Assy, Front	1
*	9059-063-004	Band, Edge Protector	1
*	8640-399-008	Nut, Spring (Attaches Top of Panel}	3
*	9545-008-026	Screw, Hex (Attaches Top of Panel}	5
5	9545-008-014	Screw, Flat Head	2
5	8641-585-001	Washer, Finish	2
*	8640-399-008	Nut, Spring-To Front Panel	2
*	9545-008-023	Screw, Guide	2
6	8502-624-002	Label, Door Opening	1
7	9989-451-001	Panel, Control (Mounts Nameplate)	1
*	9545-008-026	Screw, Control Panel Mtg	4
8	9412-074-003	Nameplate, Control Panel T-300	1
9	9454-662-001	Panel, Top	1
10	8650-012-003	Lock, Top (w/Key)	1
*	9306-025-001	Key, Top-6324	1
*	9095-038-001	Cam, Lock-Top	1
*	8640-426-001	Nut, 9/32	1
*	8641-581-008	Washer	1
11	9108-096-001	Door, Lower Service	1
12	9244-081-001	Handle (bumper guard)	1
*	9545-045-01 0	Screw	4
13	9545-008-014	Screw Mtg., Flat Head	2
13	8641-585-001	Washer, Finish	2
*	9545-008-023	Screw, Guide	2
14	9108-095-003	Door, Dispenser	1
*	9451-191-001	Pin, Plain ss	2
15	9467-025-001	Post, Door Mounting	2
*	9545-045-002	Screw, Dispenser Post Mtg	4
*	9545-008-012	Screw, Dispenser Mounting	4
*	8640-399-007	Nuts, Spring	4
*	9086-017-001	Catch, Top Panel	2
*	9467-024-001	Post, Top Locator	2
*	8640-411-003	Nut, Keps	2
*	9355-001-001	Locator, Panel	2
*	9545-008-025	Screw,#10	2
16	9021-001-010	Acceptor, Coin (25c)	1
17	9732-122-001	BoxAss'y Coin(see coin box group)	1

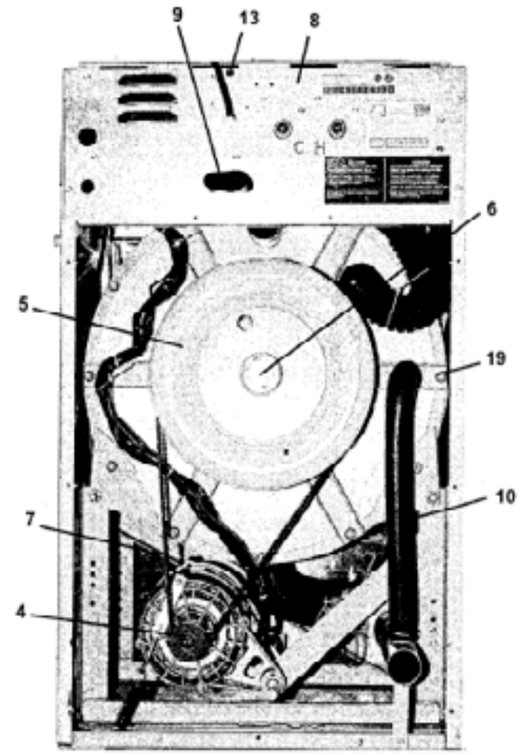


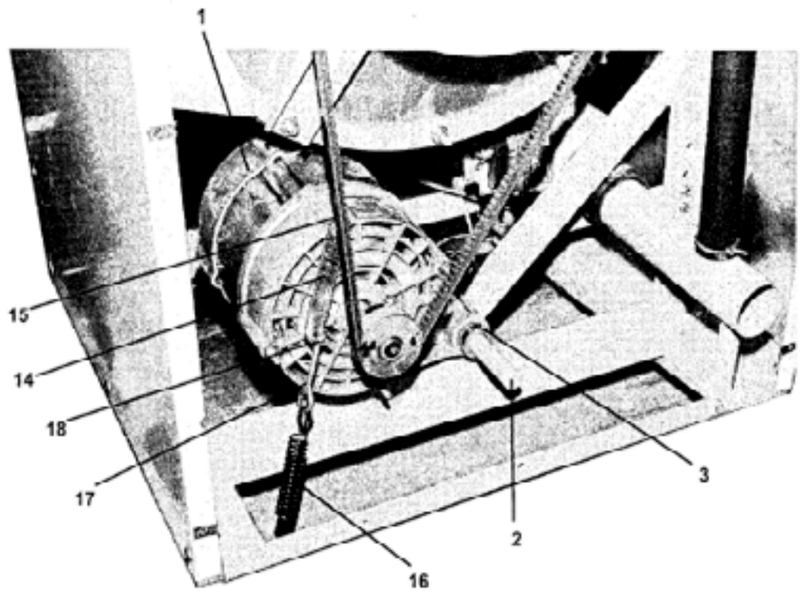
Rear View Access Part # by Model
WCN18AA/WCN18AB

Key	Part Number	Description	Qty
1	9732-127-009	Drive Motor, 1 Phase	1
1	9732-127-010	Drive Motor, 3 Phase	1
2	9497-222-002	Rod, Motor Mtg	1
3	9545-029-005	Screw (end of motor rod)	1
3	8641-582-014	Lockwasher (end of motor rod)	1
3	9076-052-002	Collar, Shaft (w/set screws)	3
*	9053-074-001	Bushing, Motor Hangar	2
4	9453-169-006	Pulley, Motor	1
*	9545-028-015	Set Screw, Sq. Hd	2
5	9908-041-002	Pulley, Driven	1
6	9545-017-009	Screw	1
6	8641-581-026	Washer, Flat	1
6	8641-582-016	Lockwasher	1
7	9040-076-004	Drive Belt	1
8	9081-099-001	Channel, Rear	1
*	9545-008-026	Screw	4
*	8640-399-004	Nut, Spring	4
9	9242-463-001	Hose.Overflow 9”	1
10	9242-449-002	Hose, Overflow	1
*	8654-029-000	Clamp, Hose	2
11	9122-005-004	Dispenser--(washcompound)	1
12	9206-416-001	Gasket, Dispenser	1
*	9454-632-001	Panel Assy., Back	1
*	9545-008-026	Screw	10
*	8640-399-004	Nut, Spring	10
*	9242-175-000	Hose, Pressure Switch	1
*	8654-117-015	Clamp, Pressure Sw. Hose	1
13	5198-211-004	Circuit Breaker, 1.5 amp (3-phase)	1
*	5198-211-002	Circuit Breaker, 7 amp (1-phase)	1
14	9029-027-003	Strap, Motor Tension	1
15	8640-413-002	Nut, Strap to Motor	1
15	8641-581-008	Washer	1
16	9534-319-002	Spring, Belt Tension	1
17	9545-055-001	Bolt, Eye 1/4-20x2 1/2”	1
18	8640-414-003	Nut, 1/4 Elastic Stop	1
19	9545-029-003	Screw, 3/8”x 1 1/2”	12
*	8640-415-004	Nut, Flange Lock	12
*	9552-038-003	Shim	AR
*	9456-041-007	PLASTIC PLUG(inside cylinder)	1
*	9454-632-001	Back Panel	1

Rear View

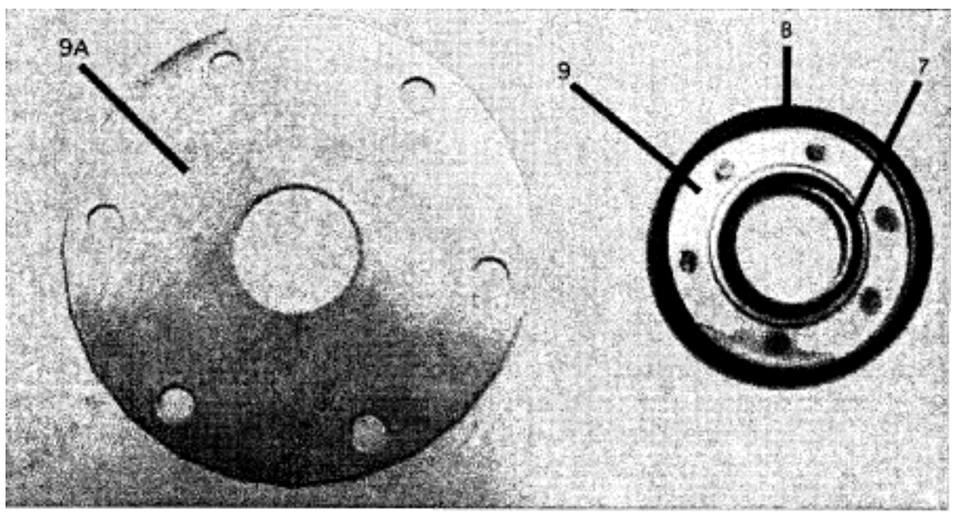




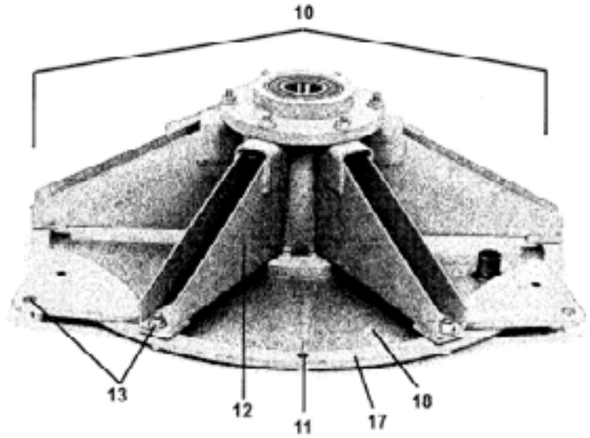


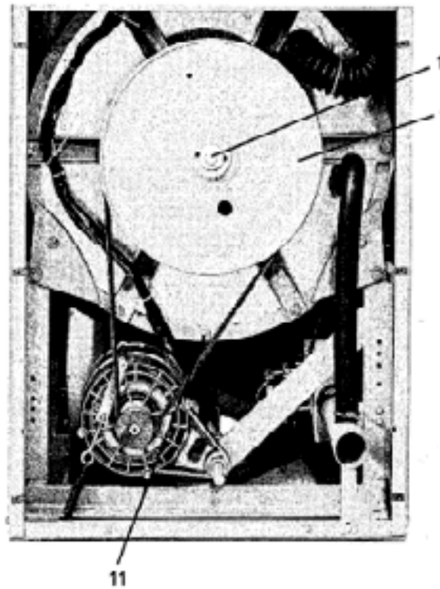
Cylinder, Seals & Bearings Part # by Model

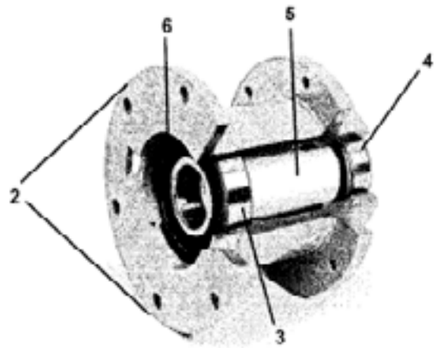
Key	Part Number	Description	Qty
*	9848-111-001	Cylinder, Assy	1
*	9803-182-001	Housing, Bearing-Assembly (includes items #2-#6)	1
2	9241-174-002	Housing, Bearing	1
3	9036-159-001	Bearing, Front	1
4	9036-159-003	Bearing, Rear	1
5	9538-161-001	Spacer, Bearing	1
6	9487-238-002	Ring, Bearing Retainer	1
7	9532-140-005	Seal, Secondary	1
8	9532-140-004	Seal, Primary	1
9	9950-047-001	Ring, Seal Mtg	1
9a	9732-137-001	Ring, Seal Ass'y Tub Back before serial number #425580	1
*	9487-261-001	New Style Ring Ass'y Tub Back after serial number# 425580	1
10		Back Assy, Tub	1
11	9545-017-009	Screw, 1/2 x 1 1/4 Grade 5	6
11	8640-417-002	Nut	6
11	8641-582-016	Lockwasher	6
12	9991-049-002	Support Assy., Bearing Housing	6
13	9545-029-003	Screw, 3/8 x 1 1/2 Grade 8	6
13	8640-415-004	Nut	6
14	9908-041-002	Pulley, Driven	1
15	9487-234-002	Ring, Tolerance	1
16	8641-581-026	Washer	1
16	9545-017-009	Screw	1
16	8641-582-016	Lockwasher	1
17	9950-046-002	Ring ass'y Tub Mtg. rear	1
18	9962-009-003	Tub Back Only before serial number# 425580	1
*	9962-012-001	Tub Back Only after serial number #425580	1



Bearing Housing and Pulley Group

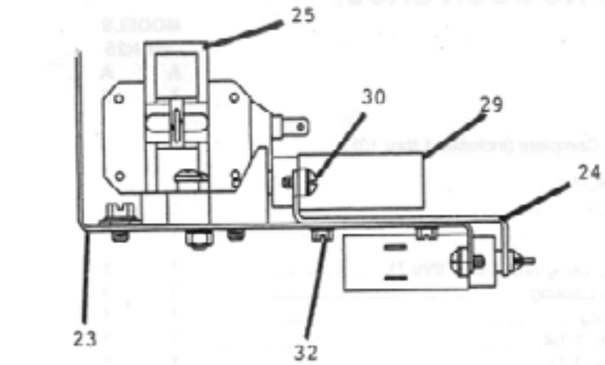


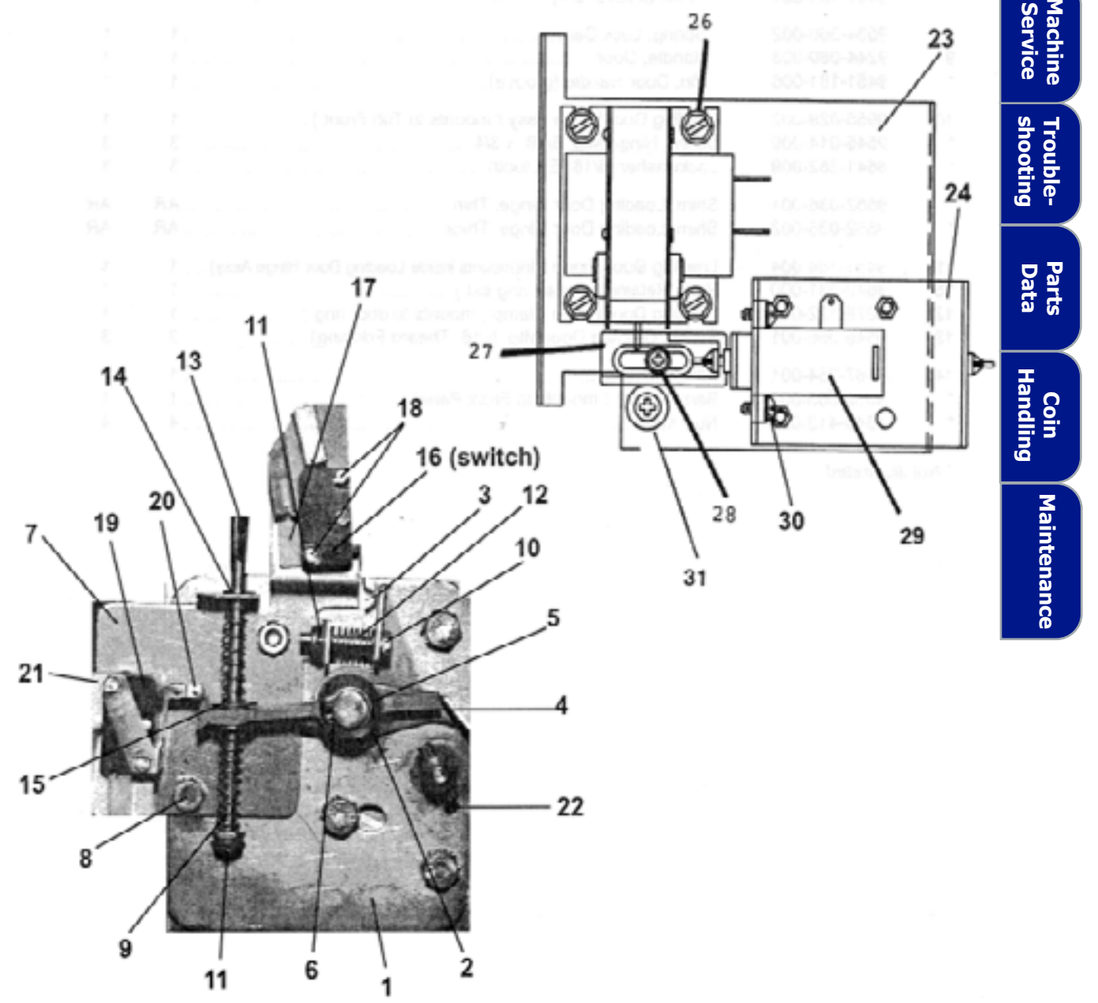




Door Latching & Solenoid Door Lock Assemblies by Part

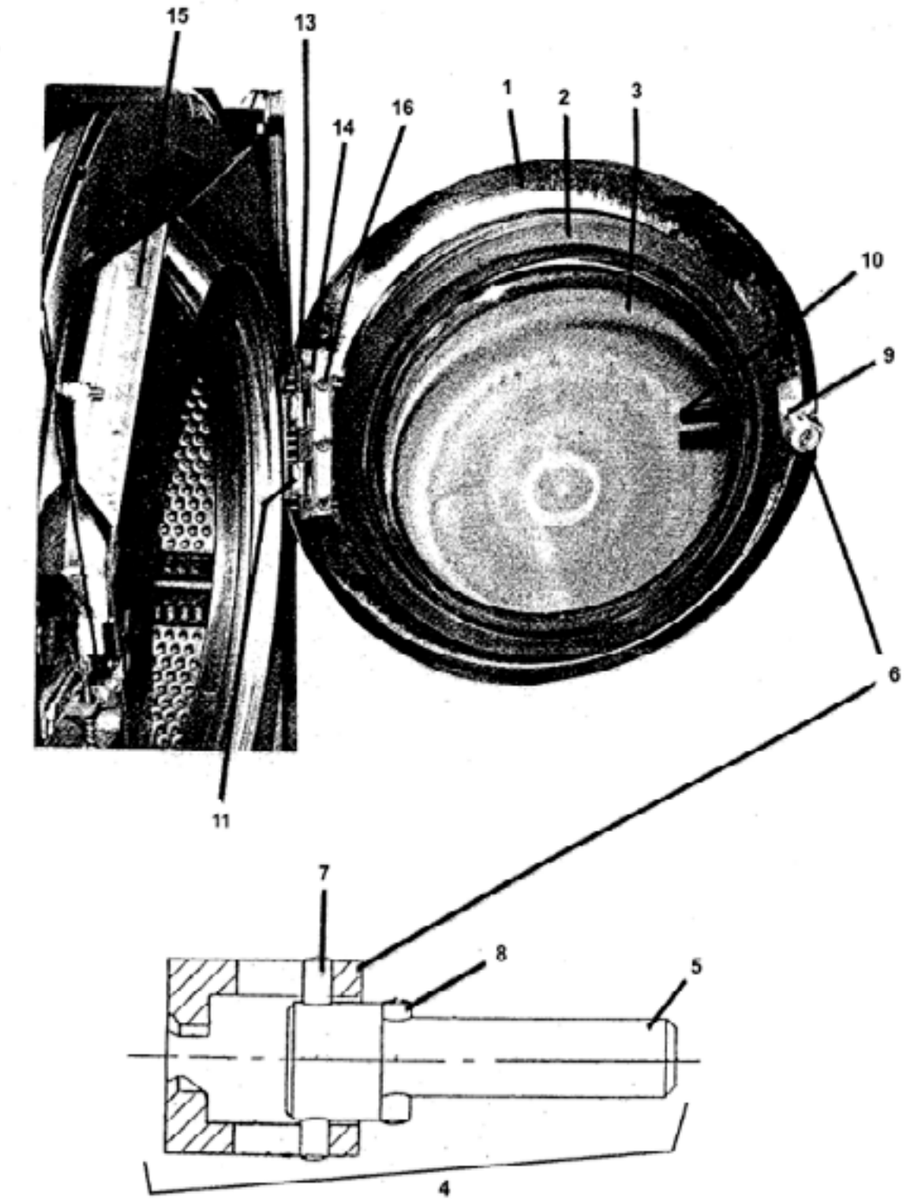
Key	Part Number	Description	Qty
*	9885-023-001	LockAssy, Complete (includes #1 thru #22)	1
1	9982-284-001	Plate Assy, Door Lock	1
2	8641-581-030	Washer, Flat	1
3	9008-005-001	Actuator, Latching Switch	1
4	9450-002-002	Pawl, Locking	1
5	8641-569-003	Washer, Spring	1
6	9487-200-004	Ring, Ret Jning	1
7	9029-035-001	Bracket; S0Wiitch	1
8	8640-413-002	Nut, Hex 10-32 UNF	2
9	9534-364-001	Spring, Actuating	2
10	9545-012-020	Screw, Hx. 10-32 x 1	1
11	8640-413-004	Nut, E.lastic Stop 10-32	2
12	9534-364-002	Spring, Return	1
13	9451-193-001	Pin, Guide	1
14	9487-200-005	Ring, Retaining	1
15	8641-581-031	Washer	2
16	9539-461-008	Switch, Latching Sensing	1
17	9550-169-003	Shield, Switch	3
18	9545-020-001	Screw 4-40 x 5/8	2
18	8640-401-001	Nut, Twin	1
19	9539-461-007	Switch, Locking Sensing	2
20	9008-006-002	Actuator, Switch	2
21	9545-020-003	Screw 4-40 x 1 1/8	2
21	8640-401-001	Nut, Twin 4-40	1
22	9451-181-004	Pin, Dowel	1
*	9552-037-001	Shim, Door Lock, Thin	AR
*	9552-037-002	Shim, Door Lock, Thick	AR
*	9545-018-014	Screw, Lock mtg 1/4 -20 x 3/4	3
*	8641-582-007	Lockwasher 1/4 Ext tooth	3
*	9922-011-001	Solenoid Ass'y, Door Locking (includes 23 thru 32)	1
23	9029-073-001	Bracket, {Door Locking Solenoid)	1
24	9985-169-001	BracketAss'y, Soienoid Slide	1
25	9536-074-001	Solenoid 120V 60 hz	1
26	9545-008-001	Screw, Solenoid Mtg	4
27	9540-033-002	Stop, Door Lock Solenoid	1
28	9545-061-001	Screw, Shoulder	1
28	8640-411-003	Nut, Keps #6	1
29	9586-001-001	Thermoactuator 120 V	2
30	9545-031-011	Screw. #6 x5/16	4
31	9538-157-004	Spacer, Plastic	1
31	9538-166-004	Spacer, Metal	1
31	9545-010-001	Screw, Cross Recessed	1
31	8640-412-005	Nut, Keps #8	1
32	8640-411-002	Nut, Keps#6	1
*	8640-412-005	Nut, Sol.Brkt. to Control. Panel	3
*	9497-225-006	Rod, Pull	1





Loading Door Part # by Model

Key	Part Number	Description	Qty
*	9960-259-003	Loading Door, Complete (includes #1 thru #10)	1
1	9487-245-001	Loading Door, Ring	1
2	9206-411-002	Gasket, Loading Door	1
3	9635-018-001	Window, Loading Door Glass	1
4	9913-134-003	Shaft Assy, Locking (includes #5 thru #8)	1
5	9537-195-002	Shaft, Door Locking	1
6	9095-040-001	Cam, Locking	1
7	9451-181-005	Pin, Groove (1 1/4)	1
8	9451-181-004	Pin, Groove (3/4)	1
9	9534-360-002	Spring, Lock Cam	1
10	9244-080-003	Handle, Door	1
*	9451-181-006	Pin, Door Handle (groove)	1
11	9955-029-001	Hinge Assy, Loading Door	1
*	9545-014-009	Screw, Hinge Mtg	3
*	8641-582-009	Lockwasher	3
*	9552-036-001	Shim, Loading Door Hinge, Thin	AR
*	9552-036-002	Shim, Loading Door Hinge, Thick	AR
13	9451-184-003	Pin, Loading Door Hinge	1
*	8649-031-000	Ring, Retaining	1
14	9079-122-001	Clamp, Loading Door Hinge Pin	1
16	9545-056-001	Screw, Loading Door Mtg	3
15	9487-251-001	Ring, Masking	1
*	8640-413-002	Nut	4
	9732-139-002	Kit Door Gasket Expansion (large)	
	9732-139-001	Kit Door Gasket Expansion (small)	

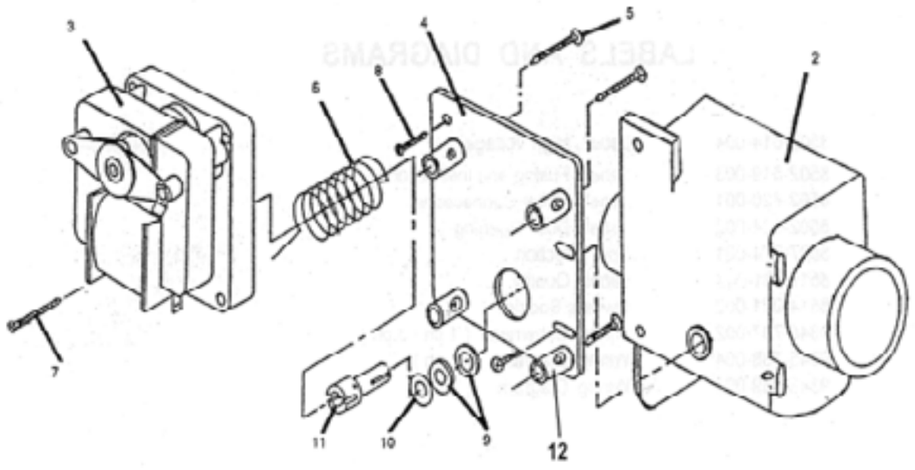


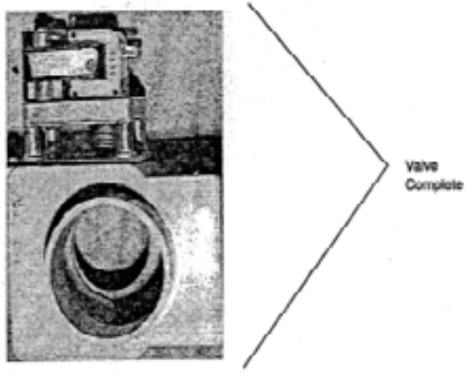
Notes

Drain Valve Group Part # by Model

Key	Part Number	Description	Qty
*	9379-177-006	Valve, Drain (includes #2 thru #11)	1
2	9064-068-001	Body, Valve (w/ball)	1
3	9914-137-001	Motor & Gear Train	1
4	9452-538-001	Plate, Motor Mtg	1
5	8639-994-001	Screw	3
6	9534-340-001	Spring, Drive	1
7	9545-054-001	Screw	2
8	9545-054-002	Screw	1
9	9532-134-001	Seal, V Packer	2
10	8641-584-001	Washer	1
11	9451-196-001	Pin, Main Drive	1
12	9538-149-001	Plate (spacers needed for replacement motor mtg. plate)	4

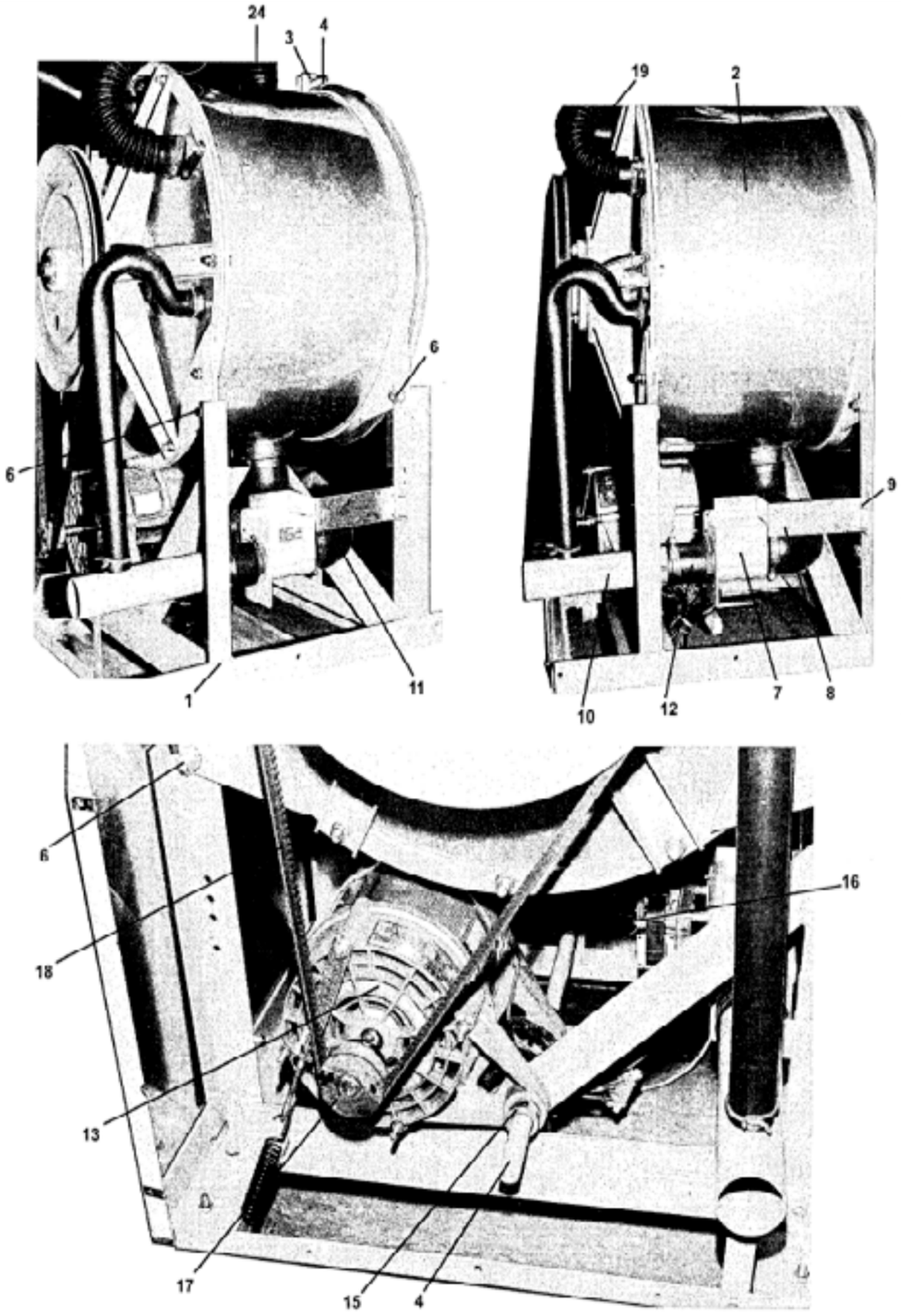
* Not illustrated





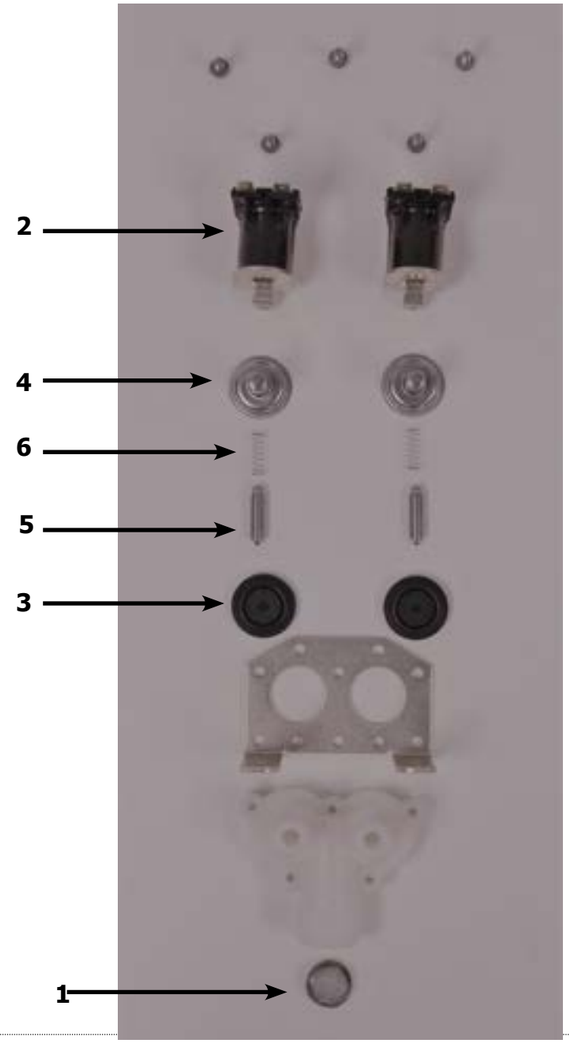
Chassis and Drain Part # by Model

Key	Part Number	Description	Qty
1	9945-093-002	Base Assy, Frame	1
2	9930-135-001	TubAssy	1
3	9950-045-002	Ring Assy, Tub Mtg-Front	1
4	9545-017-012	Bolt, Top Front Ring 1/2" x 3"	1
4	8641-582-016	Lockwasher	1
4	8640-417-002	Nut	1
6	9545-017-009	Screw, Front & Rear Rings to Base 1/2" x 1 1/4"	4
6	8641-582-016	Lockwasher	4
6	8640-417-002	Nut	4
7	9379-177-006	Valve, Drain (2 1/4" ball type)	1
8	9029-005-001	Bracket, Drain Valve	1
*	9545-030-002	Screw, Valve to Bracket	1
*	8641-581-018	Washer	1
9	9545-030-002	Screw, Bracket to Base	2
10	9915-116-004	Tube Assy, Drain	1
*	9545-030-002	Screw, Tube Mtg	2
11	9242-455-001	Hose, Tub to Drain Valve	1
12	9242-451-002	Hose, Drain Valve to Outlet	1
*	8654-117-014	Clamp, Hose	3
13	9732-127-009	Motor, Drive (1 PH)	1
13	9732-127-010	Motor, Drive (3 PH)	1
14	9497-222-002	Rod, Motor Mtg	1
15	9076-052-002	Collar, Shaft	2
16	9545-029-005	Screw, Motor Mtg Rod	1
16	8641-582-014	Lockwasher	1
17	9453-169-006	Pulley, Motor	1
*	9545-028-015	Set Screw, Sq. Hd	2
18	9040-076-004	Belt, Drive	1
*	9552-038-003	Shim, Support Assembly	AR
19	9242-458-001	Vacuum Breaker to Tub	
24	9242-450-002	Hose, Dispenser to Tub	1
*	8654-117-008	Clamp, Dispenser Hose	2



Notes

Water Inlet Valve Breakdown Part # by Model

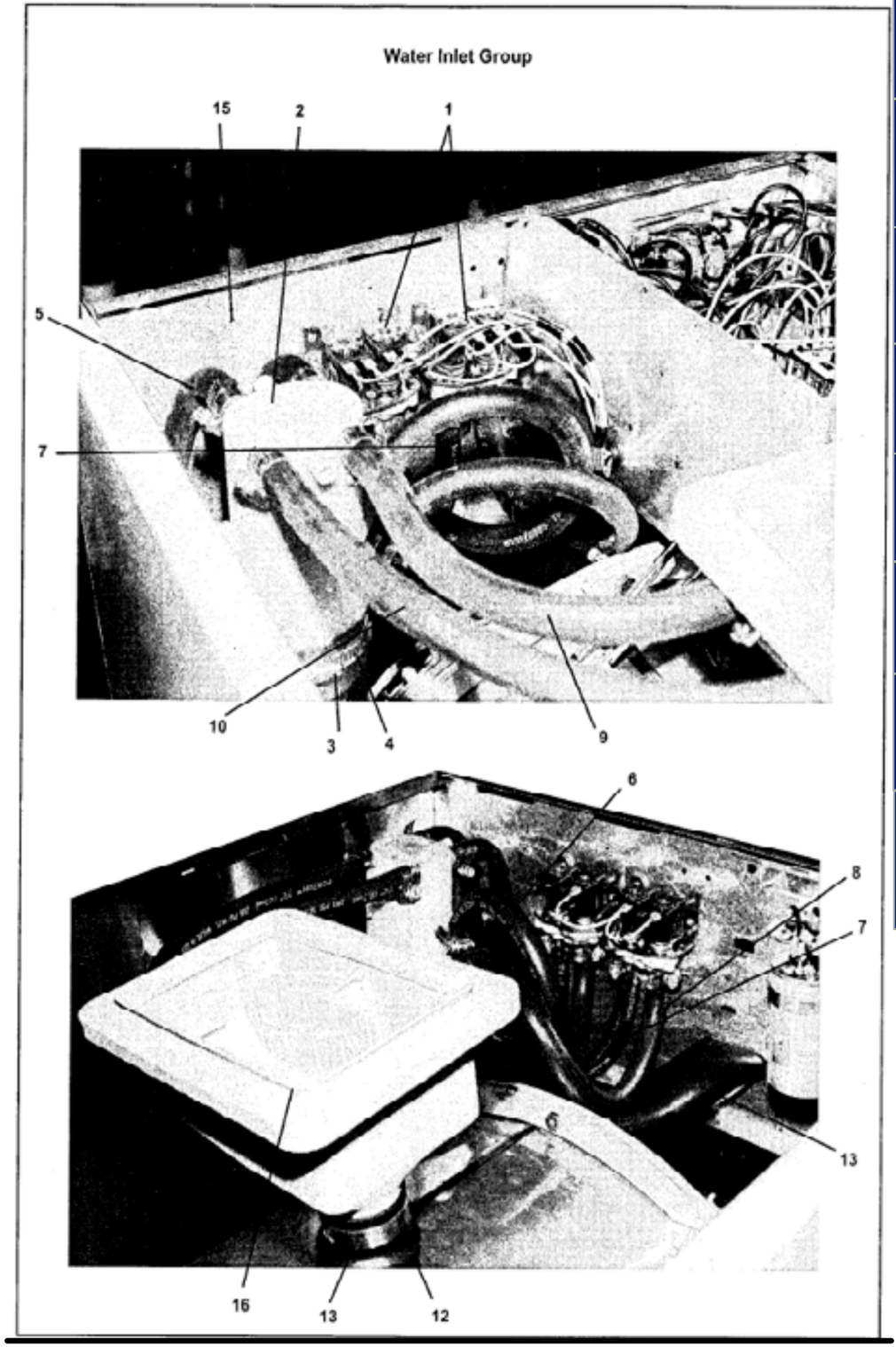


Key	Description	T300	T400	T600	QTY
*	Valve, Water Inlet (includes 1 thru 6)	9379-183-012	9379-183-012	9379-183-012	2
1	Screen, Inlet end of valve	9555-056-001	9555-056-001	9555-056-001	2
2	Coil Assy., 120 V Invensys	9089-017-001	9089-017-001	9089-017-001	2
3	Diaphragm Invensys (Viton)	9118-049-002	9118-049-002	9118-049-002	2
3	Diaphragm Invensys (EPDM)	9118-049-001	9118-049-001	9118-049-001	2
3	Diaphragm Invensys (EPDM NSF)	9118-049-003	9118-049-003	9118-049-003	2
4	Guide, Solenoid Invensys	9211-021-002	9211-021-002	9211-021-002	2
5	Armature Invensys	9015-008-001	9015-008-001	9015-008-001	2
6	Spring, Armature Invensys	9534-298-001	9534-298-001	9534-298-001	2

Water Inlet & Rear Channel

Key	Part Number	Description	Qty
1	9379-183-001	Valve, Water Inlet (see Water Inlet Valve Breakdown for individual parts)	2
*	9545-008-026	Screw, Valve Mtg	4
*	8640-399-009	Nut, Spring	4
2	9610-001 001	Vacuum Breaker	1
*	9029-065-001	Bracket, Vacuum Breaker	1
*	9545-008-026	Screw	4
3	9242-458-001	Hose, Vacuum Breaker to Tub	1
4	8654-117-014	Clamp, Vacuum Breaker End	1
*	8654-117-009	Clamp, Tub End	1
5	9242-453-0 0	Hose, Hot Valve to Vac. Brkr 18”	1
6	9242-453-020	Hose, Hot Valve to Vac. Brkr 18”	1
7	9242-453-020	Hose, Cold Valve to Vac. Brkr 18”	1
8	9242-453-020	Hose, Cold Valve to Vac. Brkr 18”	1
9	9242-453-015	Hose, Vac. Brkr. to Rinse Disp.12 5/16”	1
10	9242-453-016	Hose, Vac. Brkr. to Wash Disp.14 1/2”	1
11	8654-117-015	Clamp, Hose-Worm	12
*	5198-211-004	Circuit Breaker, 3 Phase	1
*	5198-211-002	Circuit Breaker, 1 Phase	1
12	9242-450-002	Hose, Dispenser to Tub	1
13	8654-117-008	Dispenser Clamp	2
14	9242-463-001	Overflow hose 9”	1
15	9081-099-001	Channel, Rear	1
16	9122-005-004	Dispenser	1
*	9206-416-001	Gasket, Dispenser	1

*Not illustrated



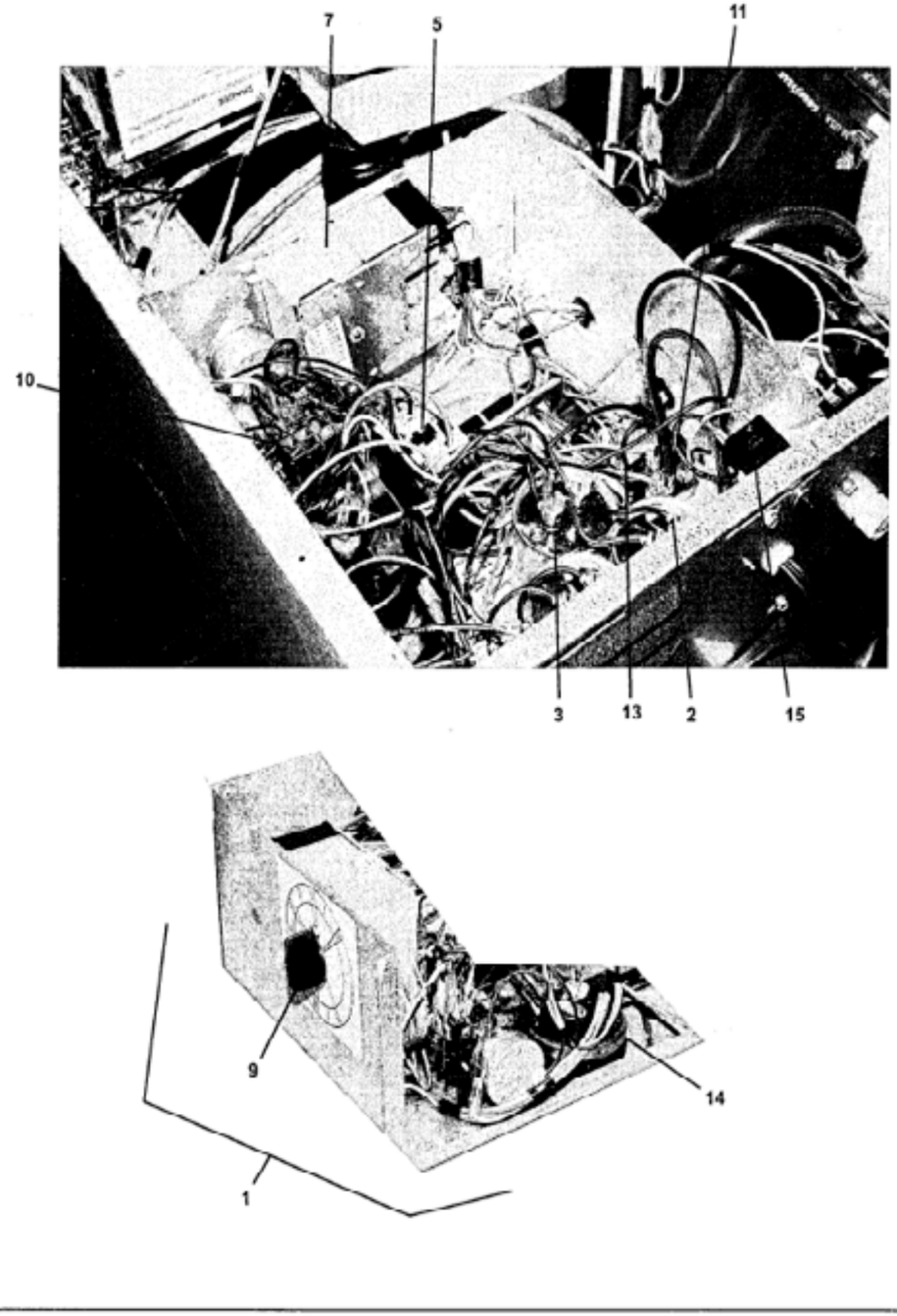
Electrical Components - Top Compartment

WCN18AA - Single Phase Only

Key	Part Number	Description	Qty
1	9575-034-001	Trough Assy, Mtg	1
*	9857-125-007		Control Assy
*	9545-008-026	Screw, Trough Sides	2
*	9802-037-007	Service Cord ass'y	1
2	5191-103-007	Capacitor, Spin-Start	2
3	5191-103 006	Capacitor, Run-Tumble	1
*	5192-103-008	Capacitor, Run-Tumble	1
4	9544-055-003	Strap, Capacitor Mtg	1
*	9545-045-001	Screw, Capacitor Strap	2
5	5192-286-008	Relay,	1
7	9571-362-001	Timer, Program	1
		(VERIFY PART NUMBER ON TIMER BODY)	
*	9376-295-002	Motor, Timer Main Drive	1
*	9376-286-004	Motor, Timer Rapid Advance	1
*	9545-012-001	Screw, Timer Mtg	2
8	9107-068-001	Dial, Timer (Decal)	1
9	9307-176-001	Knob, Timer (w/set screws)	1
10	9571-360-001	Timer, Reversing	1
*	9545-044-004	Screw, Reversing Timer	2
11	9897-026-001	Terminal Block, Power Connection	1
*	9545-045-002	Screw, Mtg	2
*	8502-619-003	Label, Fusing	1
13	8711-003-001	Transformer, (For Accumulator)	1
*	9545-045-001	Screw, Transformer Mtg	2
*	8641-582-005	Lockwasher	2
14	9539-457-001	Switch, Pressure	1
*	9545-045-001	Screw, Mtg	2
15	5198-211-002	Circuit Breaker, 7 amp	1
*	9483-002-001	Resistors, Motorstart	2

* Not Illustrated

Electrical Components-Top Compartment-1 Phase
(1 phase control trough)



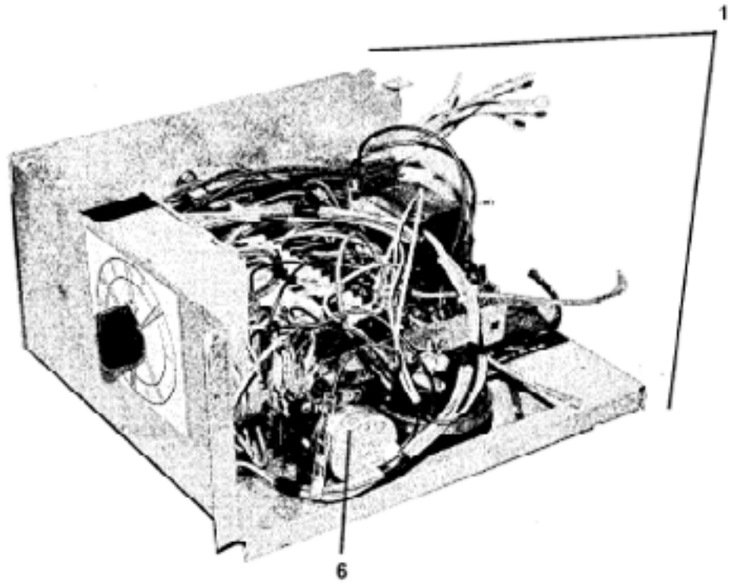
Electrical Components - Top Compartment

WCN18AB - Three Phase Only

Key	Part Number	Description	Qty
1	9575-034-001	Trough Assy, Mtg	
	9857-125-008	Control Assy	
*	9545-008-026	Screw, Trough Sides	2
2	5192-286-007	Relay, Tumble	2
3	5192-286-009	Relay, Spin	1
4	8711-004-001	Transformer, Control	1
*	9376-295-002	Screw, Mtg	1
*	8641-582-006	Lockwasher	1
5	9571-362-001	Timer, Program	1
		(VERIFY PART NUMBER ON TIMER BODY)	
*	9376-295-002	Motor, Timer Main Drive	1
*	9376-286-002	Motor, Timer Rapid Advance	1
*	9545-012-001	Screw, Timer Mtg	2
*	9107-068-001	Dial, Timer	1
*	9307-176-001	Knob, Timer (w/set screws)	1
6	9571-360-001	Timer, Reversing	1
*	9545-044-004	Screw, Reversing Timer	2
7	9897-035-002	Terminal Block, Power Connection (4 pole)	1
*	9545-045-002	Screw, Mtg	2
*	8502-619-004	Label, Fusing	1
8	9897-026-001	Terminal Block Assy, POWER	1
*	9545-045-002	Screw, Mtg	2
*	9558-029-002	Strip, Terminal Marker	1
9	8711-003-001	Transformer, (For Accumulator)	1
*	9545-045-001	Screw, Transformer Mtg	2
*	8641-582-005	Lockwasher	2
10	9539-457-001	Switch, Pressure	1
*	9545-045-001	Screw, Mtg	2
*	5198-211-004	Circuit Breaker, 1.5 amp	1

*Not illustrated

Electrical Components-Top Compartment-3 Phase

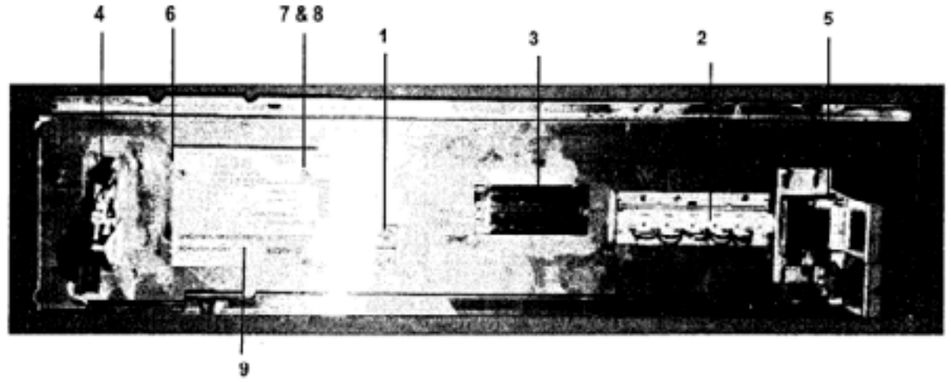


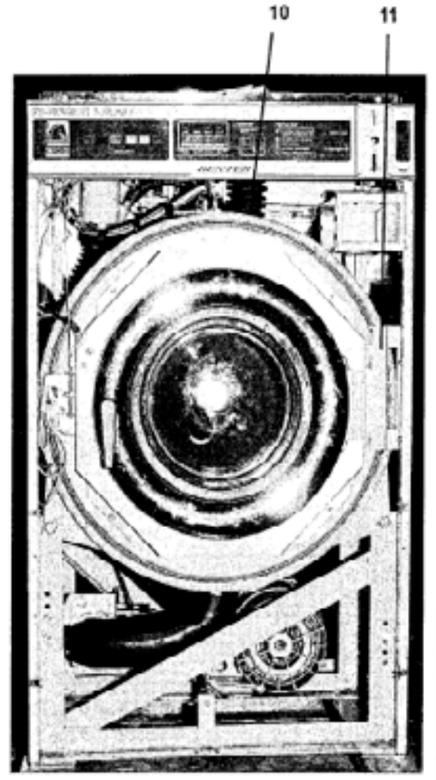
Control Panel Part # by Model
Vended WCN18AA/AB

Key	Part Number	Description	Qty
1	3310-042-001	Light, Bleach	1
2	3310-041-001	Light, Cycle Control	1
*	9206-100-001	Gasket, Light	2
3	9539-479-009	Switch, Push-button (cycle selector)	1
*	9412-074-003	Label, Complete (DOUBLE LOAD)	1
*	8640-412-005	Nut, Switch Mtg	2
*	9545-031-011	Screws # 6Tx 5/16	4
4	9021-001-010	Acceptor, Coin	1
*	9545-020-004	Screw, Acceptor Mtg	4
*	8640-424-002	Nut.	4
*	9627-682-001	Harness, Coin Accumulator Wiring.	1
*	9732-126-001	Switch, Coin	1
5	9029-073-001	Bracket, Solenoid (see Door Lock Group for breakdown)	1
6	9020-005-001	Accumulator, Coin	1
7	9538-157-003	Spacer	3
8	8640-412-005	Nut, Hx	6
9	9550-174-001	Shield, Circuit Board	1
10	9242-450-002	Hose, Dispenser to Tub	1
*	8654-117-008	Clamp	2
11	9029-066-001	Side Panel to Tub Front Bracket	1

*Not illustrated

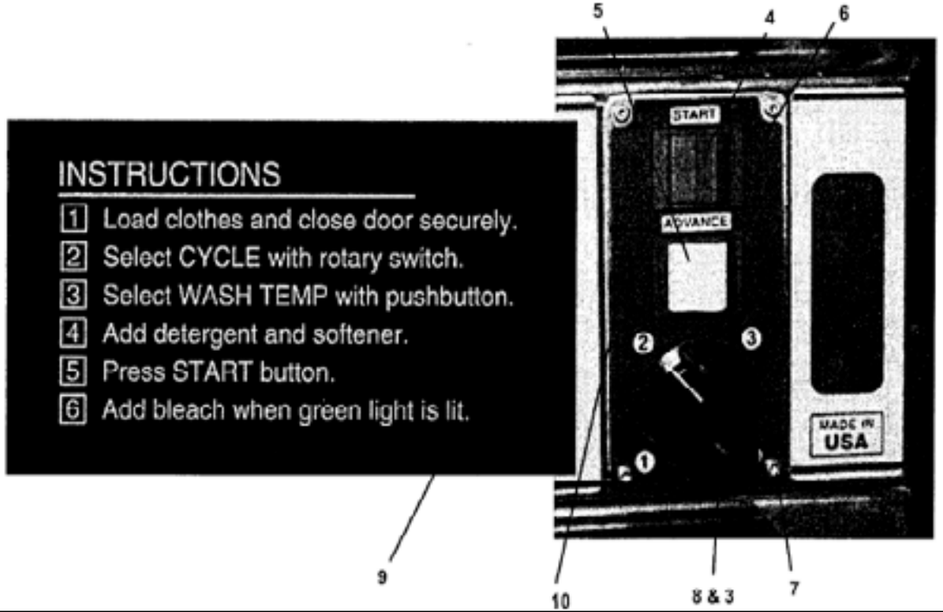
Control Panel Group





Control Panel Part # by Model
OPL WCN18AADX/ABDX

Key	Part Number	Description	Qty
2	9532-140-010	Primary Seal Vringa (opl epdm)	1
3	9539-471-001	Rotary Switch	1
4	9539-474-001	Rocker Switch Red	1
5	9539-474-002	Rocker Switch Wht.	1
6	9452-595-001	Switch Mounting Plate	1
7	9:A5-045-001	Screws-8Bx1/4”	6
*	8640-412-005	Nuts Hex-keps 8/32	6
*	9627-674-001	Wiring Harness OPL manual	1
*	8220-001-235	Wire Org./Wht.	2
*	8220-001-377	Wire Wht./Grn	1
8	9307-176-001	Knob	1
9	8502-651-001	Label Nameplate OPL	1
10	8502-615-002	Label Switch Mounting Plate	1
11	9454-668-002	Front Panel w/out coin box	1



Labels and Diagrams WCN Models

Vended WCN18AA/AB
8502-620-001 Label-Motor connection, Single Phase
8502-622-002 Label—Nameplate, Single Phase
8502-619-003 Label—Fusing & Installation, Single Phase
8502-619-004 Label-Fusing & Installation, 3 Phase
8502-614-004 Label--Warning, High voltage (Single Phase)
8502-624-002 Label---Warning, Door opening (Single Phase)
8507-273-001 Instructions---SPIN direction, Single Phase
8511-001-002 Label---QUALITY, Single Phase
9345-790-002 Label Wiring Schematic, Single Phase
9345-791-002 Label--Wiring Diagram, Single Phase
9345-792-001 Label--Wiring Schematic, 3 Phase
9345-793-002 Label--Wiring Diagram, 3 Phase
8507-230-001 Instructions-Transformer Connections, 3 Phase

OPL WCN18AADX/ABDX
8502-651-001 Label-Nameplate OPL
8502-615-002 Label-Switch Mounting Plate
9345-814-002 Wiring Schematic, Single Phase
9345-815-002 Wiring Diagram, Single Phase
9345-816-001 Wiring Schematic, Three Phase
9345-817-002 Wiring Diagram, Three Phase

Section 7:

Coin Handling Parts

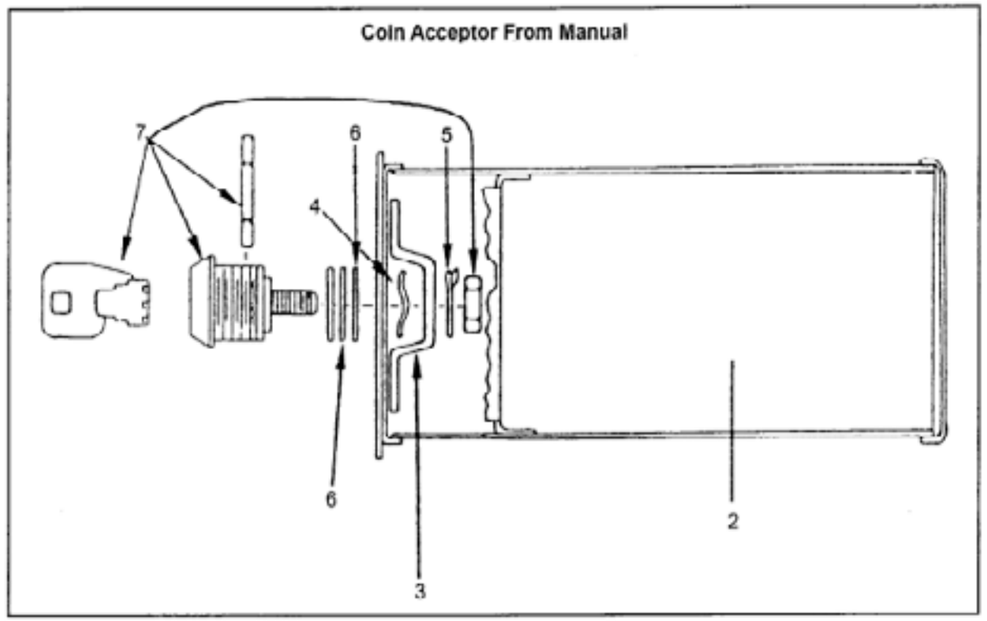
Coin Handling Group

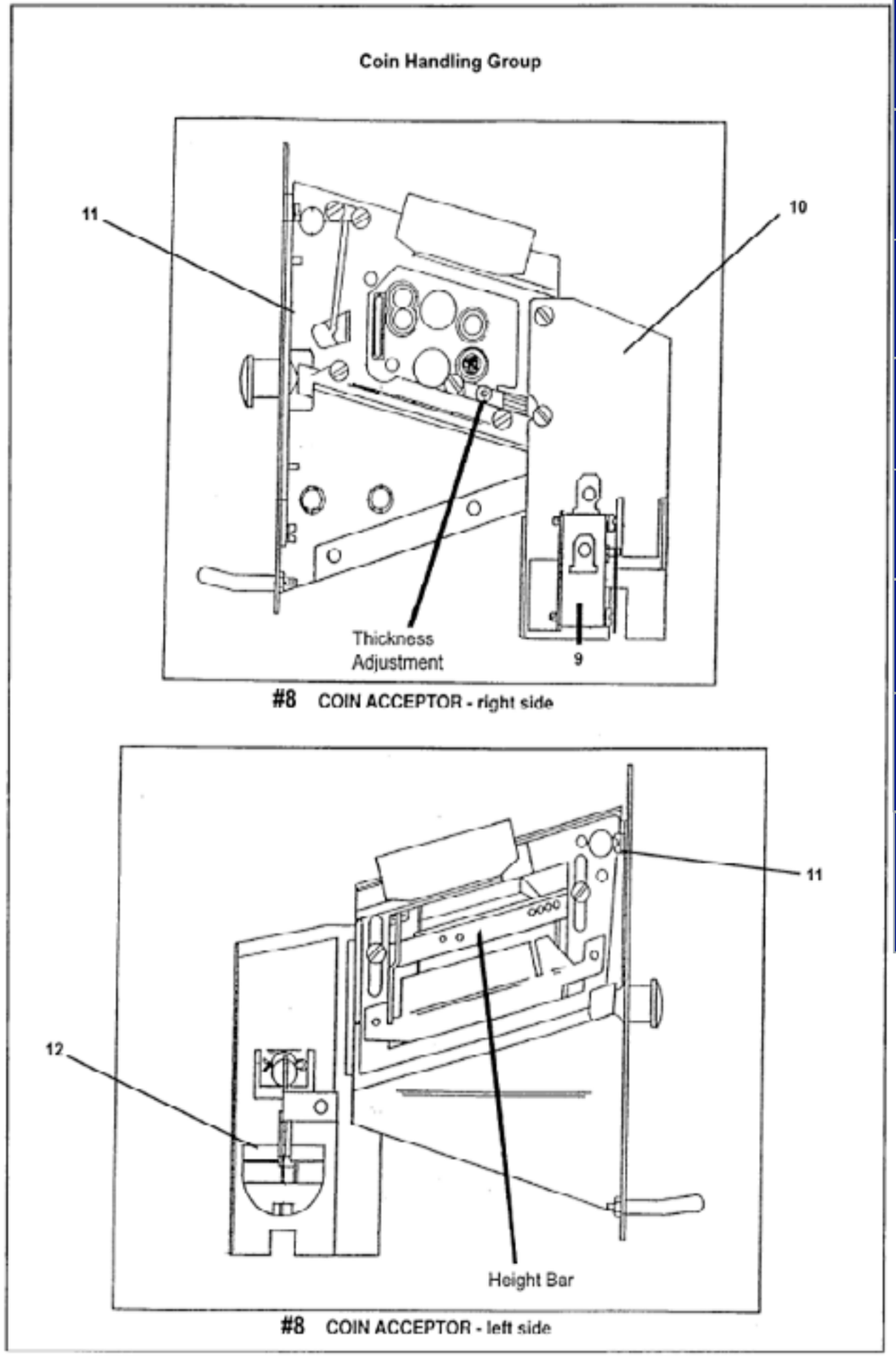
Key	Part Number	Description	Qty
*	9942-024-007	Vault, Assy	1
*	9545-008-026	Screw, Vault Mtg	4

NOTE: COIN BOX AND HARDWARE KIT AND COIN BOX LOCK NOT INCLUDED WITH MACHINE.

2	9732-122-001	Kit, Coin Box W/Hardware(#2-#6)	1
3	9349-033-001	Latch, Coin Box	1
4	8641-569-002	Washer, Wave	1
5	8641-583-001	Washer, Keeper	1
6	8641-581-008	Washer, Spacer- Thick	2
6	8641-581-010	Washer, Spacer- Thin	4
7	8650-012-003	Lock, Coin Box (w/key not included with 9732-122-001)	1
8	9021-001-010	Acceptor, Coin	1
*	9545-020-004	Screw, Acceptor Mtg	4
*	8640-424-002	Nut.	4
9	9732-126-001	Switch, Coin	1
10	9119-025-002	Acceptor Chute Assy w/o Penny Rejector (standard)	1
11	9486-133-001	Button Coin Returner Retainer	1
12	9119-025-001	Acceptor Chute Assy w/ Penny Rejector (optional)	1

*Not illustrated





Section 8:

Maintenance

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.