

# **SERIES**






**X-Series Vended Stack & Single Pocket Dryers  
Reversing and Non-Reversing Service Manual**



**DEXTER<sup>®</sup>**  
**LAUNDRY**

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

<b>⚠ DANGER</b>	Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury.
<b>⚠ WARNING</b>	Indicates a potentially hazardous situation, which if not avoided could result in death or serious injury.
<b>⚠ CAUTION</b>	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.
<b>NOTICE</b>	Indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.
	This is the user caution symbol. It indicates a condition where damage to the equipment resulting in injury to the operator could occur if operational procedures are not followed. 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 PERSONNEL 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.

 <b>DANGER</b>	Indicates an imminently hazardous situation, which if not avoided, <u>will result</u> in death or serious injury.
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	Caution! To reduce the risk of fire or explosion, do not operate this equipment in any hazardous classified (ATEX) environment.

 <b>WARNING</b>	
	<ul style="list-style-type: none"> <li>All washers and dryers must be installed in accordance to all applicable electrical, plumbing and all other local codes.</li> <li>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.</li> </ul>
	Do not install equipment in an explosive atmosphere.
	<ul style="list-style-type: none"> <li>Care must be stressed with all foundation work to ensure a stable unit installation, eliminating possibilities of excessive vibration.</li> <li>Foundation must be level within 13 mm to ensure proper operation of equipment.</li> </ul>
	Do not operate washer or dryer if door glass is damaged in any way.
	Do not wash or dry 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.

# 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.



## WARNING

**For your safety, the information in this manual must be followed to minimize the risk of fire or explosion or to prevent property damage, personal injury or loss of life.**

IF YOU SMELL GAS:

- Do not try to light any appliance.
- Do not touch any electrical switch: do not use any telephone in your building.
- Clear the room, building or area of all occupants.
- Immediately call your gas supplier from a neighbor's telephone.
- Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

**Dry only fabrics washed in water to avoid the risk of fire, including spontaneous combustions, do not dry:**

- Items containing foam rubber, or any similarly textured rubber-like materials.
- Any items on which you have used a cleaning solvent or which contain flammable liquids or solids, such as naphtha, gasoline, or other oils or waxes.

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.

# Other Technical Documents for Touch Series Vended Dryers:



## INSTALL, MOUNTING, & OPERATION

This information is available in the Operators Manuals linked here:  
[Single Pocket Ops Manual](#)  
[Stack Dryer Ops Manual](#)



## PROGRAMMING

Programming information available in the Programming Guide linked here:  
[Programming Guide](#)



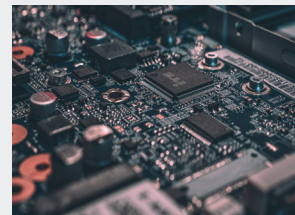
## TROUBLESHOOTING

Troubleshooting & Error Codes information available in the Troubleshooting Guide linked here:  
[Troubleshooting Guide](#)



## MAINTENANCE

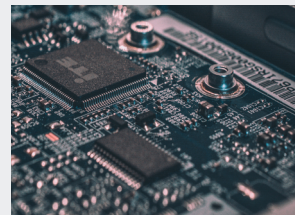
Preventative Maintenance information available in the Maintenance Guide linked here:  
[Maintenance Guide](#)



## 60HZ WIRING DOCUMENTS

This information is available on [Dexter.com/support/technical-information](#) and also linked below:

- [T-30](#)
- [T-50](#)
- [T-80 Non-Reversing](#)
- [T-80 Reversing](#)
- [T-120](#)
- [T-30X2 Reversing](#)
- [T-30X2 Non-Reversing](#)
- [T-50X2 Reversing](#)
- [T-50X2 Non-Reversing](#)



## 50HZ WIRING DOCUMENTS

This information is available on [Dexter.com/support/technical-information](#) and also linked below:

- [T-30](#)
- [T-50](#)
- [T-80 Non-Reversing](#)
- [T-80 Reversing](#)
- [T-120](#)
- [T-30X2 Reversing](#)
- [T-30X2 Non-Reversing](#)
- [T-50X2 Reversing](#)
- [T-50X2 Non-Reversing](#)



## SPECIFICATION SHEETS

This information is available on [Dexter.com/support/technical-information](#) and also linked below:

- [T-30](#)
- [T-50](#)
- [T-80](#)
- [T-120](#)
- [T-30X2](#)
- [T-50X2](#)



## PARTS DATA

This information will be available on [Dexter.com/support/technical-information](#) for the following models coming soon:

- T-30
- T-50
- T-80 (Non-Reversing)
- T-80 (Reversing)
- T-120
- T-30X2 (Non-Reversing)
- T-30X2 (Reversing)
- T-50X2 (Non-Reversing)
- T-50X2 (Reversing)

USE THE TABS LOCATED ON THE RIGHT SIDE OF THE DOCUMENT TO ADVANCE TO EACH SECTION.

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## Section 2:

### Machine Electrical & Wiring

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# Section 1:

## Machine Service Procedures

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## Service Procedures

### Clothes Door Removal

1. The clothes door may be removed from the hinge bracket by unscrewing and removing the allen-head pivot screw located at the door upper hinge point.
2. Next lean the door out of the top of the hinge bracket and lift the door from the bottom hinge pin.

NOTE: The spacer between the bottom of the door and the hinge.

### Clothes Door Latch Adjustment

1. Loosen the lock nut on the latching stud. It is located directly behind the door handle.
2. Open the loading door.
3. Screw the door catch stud in or out as necessary and then retighten the lock nut.

### Door Switch Removal And Installation

1. Each door switch is located directly behind the hinge plate of the loading door assembly.
2. The entire switch can now be pulled from the front panel opening.
3. The switch has two clips that hold it in place on the rear of the switch.
4. With the panel removed, you can now squeeze the two clips and allow switch to be pushed back through panel and grasped from the front and switch removed.

### Installation Of Clothes Door Window And Gasket

1. Place the clothes door, with its face down, on a solid surface.

NOTE: Prewarming the gasket makes the installation much easier.

2. Install the window gasket on the clothes door flange. The wider lip of the gasket should be on the bottom side or front face of the clothes door and the ridges should be up.
3. Locate the seam at the latching stud.
4. Apply a soapy water solution or rubber lubricant to the gasket.
5. Slide the glass into the middle of the door ring and gasket with half of the glass above the door and half below.
6. While pressing down on the glass, stand the door up and use a modified screw driver with the end rounded off to install half of the glass. Lay the door down and install the other half.
7. At the six o'clock position, pry the glass gasket up enough to install the black spacer. (reuse from old door gasket)

### High Limit Thermostat Locations And Functions

**A. Burner Housing-** The hi-limit is located on the back side of each burner housing.

1. The thermostat opens the circuit to the main burners in the event of malfunction in the gas control area or temperature control. This thermostat will open quickly if there is a significant loss of air flow over the burner area.
2. It is covered by a guard and is held in place by two screws. There are spacers between the thermostat and bracket which must be used to give proper operation.

**B. Manual Reset Over Temperature Safety Thermostats-** The second hi-limit thermostat is located on the right side of each burner housing as you view from the back of the machine. It is just above the gas valve and covered by a guard with a small access hole.

1. The manually resettable thermostat limits the operating temperature a dryer can reach should some abnormal situation occur.
2. Should one of the thermostats be tripped, that particular tumbler will cease to heat until the thermostat is reset. Once the dryer cools, the thermostat may be reset by inserting a pencil or stick through the opening in the thermostat cover.

**REMOVAL:** To remove either the hi-limit thermostat on the rear of the burner housing or the over-temperature thermostat on the right side of the burner housing, remove the mounting screws holding its respective guard. Next, remove the terminal of each wires attached to the thermostat. Lastly, remove the mounting screws holding the thermostat to the burner.

### Pressure Regulator Adjustment

Use the following procedure whenever it is necessary to check the pressure regulator setting.

**NOTE:** Any adjustment of the pressure regulator must be made with a manometer attached at the plug in the main burner manifold.

1. Shut off the gas supply to the dryer.
2. Remove the 1/8" pipe plug from the end of the main burner manifold.
3. Attach a manometer to the manifold end.
4. Remove the pressure regulator cover screw on the gas valve.
5. Open the shutoff valve, and operate the dryer.
6. Adjust the pressure for a manometer reading of 3.5" water column gas pressure. (11.0" for L.P.)

**NOTE:** The main burners must be operating when adjusting the pressure regulator.

7. Shut off the gas supply to the dryer. Remove the manometer and install the 1/8" pipe plug in the manifold.
8. Open the shut off valve, start the dryer and check for gas leaks while the burners are ignited.

### Coin Acceptor Removal

Loosen the four screws (Torx #10 driver) mounting the coin acceptor to its retaining bracket.

Do not remove the screws or the retainer will fall behind the panel.

Shift the acceptor up and down to allow the retainer to slide through the panel opening. When removing, the bottom should be brought through the panel opening first. When reinstalling, the top should go in first.

### Heat Sensor

This unit takes the place of the regulating thermostat on a mechanical timer dryer. The Heat Sensor is a thermistor. The way these work is fairly simple. As the temperature goes up, the resistance in the thermistor (heat sensor) goes down. As the temperature drops, the resistance in the thermistor (heat sensor) goes up.

### Electronic Control Removal

Unlock the retaining lock in the control assembly. Slide the control out of the machine holding the control by the metal tray. There is enough wire length to allow removing the control tray from the machine before disconnecting the wires.

### Temperature Sensor Testing

If either tumbler display shows an "Open Temp Sensor" or "Shorted Temp Sensor, that is an indication of possible temperature sensor problems for that tumbler. Before replacing a sensor, check the wires and connections of the sensor for damage. The sensor lead wires are very small and care should be used in routing and connecting them. The sensors are located under the tumblers and may be viewed by removing the lint screen. The temperature sensor should have between 30,000 ohms and 60,000 ohms resistance at room temperature if okay.

### Temperature Testing

To check the temperature in the dryer tumbler, press and hold the progress circle on the screen for the tumbler being checked. The display will read out the current temperature.

### Temperature Sensor Removal

**UPPER -** First remove electronic control. Once the control is removed, disconnect temp sensor wires by removing the two gray wire nuts. Remove the two temp sensor mounting screws, 5/16 head, remove temp sensor bracket assy. Remove sensor from bracket and replace and reinstall in reverse operation.

**LOWER -** To remove the lower temp sensor and bracket it is necessary to remove the lower front panel; note you will have to loosen the upper panel to remove the lower panel, and disconnect the door switch wires. Next disconnect temp sensor wires by removing the two gray wire nuts. Remove the two temp sensor mounting screws, 5/16 head, remove temp sensor bracket assy. Remove sensor from bracket and replace and reinstall in reverse operation.

## Upper Front Panel Removal

The loading door does not have to be removed to remove the front panels on this model.

1. Remove the left two screws with finish washers.
2. Remove the right two screws with finish washers, at this time the front panel is loose but connected by the harness to the door switch.

## Lower Front Panel Removal

To remove the lower front panel a procedure similar to the upper may be used. However, the bottom of the upper panel must be loosened and pulled out to allow the upper flange of the lower panel clearance to be removed.

## Motor Belt Replacement

To replace the motor drive belt the final drive belt should be removed as above. Cut the motor belt and remove. The new motor belt fits inside three of the four motor mounting bolts. To achieve this, remove these three bolts one at a time and slide the belt past each in turn. In this way the motor is always supported by three bolts.

**NOTE:** All drive belts are self adjusting

**NOTE:** Always remove power from the machine before changing drive belts or working with the drive system.

## Tumbler Pulley Removal and Installation

Remove the 3/4" headed bolt and washer on the end of the shaft. Then using a wheel puller, using two 5/16" course threaded bolts, thread them into the holes on the pulley and remove pulley. When reinstalling the pulley it is recommended to replace the tolerance ring (9487-234-005). Reinstalling the pulley it is recommended using a 2 1/2" long fully threaded bolt, 1/2-13 x 2 1/2", and fender washers pressing the pulley back into position. Install pulley with new tolerance ring onto the end of the shaft and the bolt with one washer, tighten the bolt drawing the pulley in, once you feel resistance remove the bolt and add additional washers and repeat the process until the pulley is snug against the bearing housing spacer. Once tight remove bolt and washers and install original bolt and washers.

**NOTE:** Not recommended to use power tools or torque gun for this process. (This may result in damage).

## Intermediate Pulley and Tension Arm Removal

1. The intermediate pulley is retained with a snap ring. Remove the snap ring and the pulley slides off the shaft
2. With the pulley off, there is access to the self adjusting tension arm assembly. The tension arm assembly may be removed by removing the snap ring that holds it to the tension arm support assembly pin. The arm assembly is replaced as a complete unit.
3. The grease fitting for the intermediate shaft should be greased annually.

## Tension Arm Support Assembly Adjustment

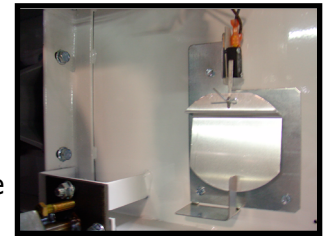
The tension arm support assembly may be adjusted for alignment of the intermediate pulley and also to align the belts. The three outer nuts allow the alignment of the pin to be adjusted by pivoting the assembly on the center bolt. The center bolt can be screwed in to allow bringing the complete assembly farther back if necessary for belt alignment.

## Motor Blower Assembly Removal And Installation

1. Remove back motor and pulley shields as necessary.
2. Unplug motor harness on side of control compartment. (Follow harness from motor to control housing).
3. Remove Tumbler belt and idler belts, and remove idler tension chain and spring.
4. Lift idler pulley straight up and block up or tie up in the extended position.
5. Remove the seven 7/16 nuts holding the blower motor assembly. Rocking the assembly to the left should allow you to remove the assembly.
6. To remove motor from the blower back plate you need to remove the blower fan from the motor shaft, the blower fan is held in place with two square headed set screws one set screw should go to the countersunk hole in the motor shaft and both screws need green loctite and torque to 165 in./ lbs, and remove the four bolts holding the motor to the plate. Reverse operation to reinstall.

## Air Flow Switch Operation And Adjustment

The air flow switch assembly is part of the ignition safety circuit and insures that the burners don't operate unless there is air flow. When the drive motor and blower are running the flat actuator is pulled in against the back of the dryer closing the switch. If this doesn't happen ignition will not occur. The air flow switch assembly is mounted by two screws through the bracket. It can be adjusted by loosening these mounting screws and moving the switch forward or backward.



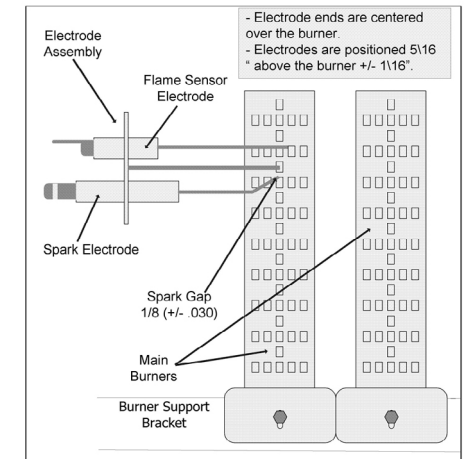
## Ignition Fuse

The 1 1/2 amp fuse protects the control Circuit. To remove it just twist and pull it out.

## Electronic Ignition Module

This machine uses an electronic spark ignition system to directly light the burners in each tumbler.

1. The electronic ignition module for each tumbler is located inside the electrical box. This is the metal box on the back of each tumbler area directly to the left of the final drive pulleys.
2. The red wire from the transformer traveling thru the 1.5 amp fuse and into the module supplies the 24VAC required to operate the entire direct ignition system.
3. The black colored hi-voltage wire (spark plug type) plugs onto the post connector on the module, and the multi-wire plug fits into the side of the module.



## Spark Ignition Module Removal

If the ignition modules are mounted on a bracket, see section A. Otherwise, see section B.

### A: With mounting bracket

Remove the connector housing of the wiring harness attached to the ignition module. Then, remove the terminal of the hi-voltage cable attached to the ignition module. Next, remove the mounting screws holding the ignition module mounting bracket in the rear control box. Lastly, remove the nuts holding the ignition module on its mounting bracket.

### B: Without mounting bracket

Remove all of the terminals of the wiring harness attached to the ignition module. Then, remove the terminal of the hi-voltage cable attached to the ignition module. Lastly, remove the mounting screws holding the ignition module in the control box. If there is no spark or intermittent spark, check black hi-voltage lead wire for damage

**NOTE:** Proper grounding of the ignition system (yellow wires) is very critical for proper ignition sequence.

## Ignition System-Function & Sequence

During normal dryer operation, the following occurs:

1. The dryer electronic control calls for heat.
2. If the drive motor is running, the motor safety circuit provides power to the electronic control. If the control senses that the heat should be on, a circuit is closed allowing power through the high limit thermostat and air flow switch to the ignition transformer. The transformer provides 24VAC to the ignition module and sparking occurs at the ignition electrode. At the same time 24VAC is applied to the gas valve.
3. Once the flame is established, the sensing electrode detects the presence of flame and the sparking stops.
4. If for any reason the flame is not established in a period of 10 seconds, the electronic control will try this sequence for 3 tries. Normally the 10 seconds "Trial For Ignition" period is ample to establish and prove flame.
5. If the flame is shutdown or blown out during operation, the ignitor will immediately go into "Trial For Ignition" again for 10 seconds.
6. However, at the end of 3 separate retries of 10 seconds "Trial for Ignition", the flame is not established, the ignition system goes into "Safety Lock-Out" and will not reactivate the "Trial for Ignition" until there is a current interruption for a period of 15 seconds. This interruption can be provided by opening the dryer loading door and allowing the machine to come to a complete stop for 15 seconds.

## Ignition System-Checkout

1. If flame is present during "Trial For Ignition" period but the system shuts down, there may be an improper ground. The entire ignition system is grounded together including the electrode assembly, the electrode mounting bracket, the burners and the burner bracket. Shutdown can also occur if for some reason the system isn't sensing the flame. Check the sensor for damage and check the connections of the sensor lead.
2. If there is no spark or intermittent spark, check black hi-voltage lead wire for damage or cracks in insulation. (This lead wire must not be taped or connected to any metal edges along its length to prevent pinching and arcing. Also, do not bundle this wire with other wires.)

**NOTE:** Spark gap and electrode location are important. If the electrode is damaged or mounting is changed the spark gap may not be correct for ignition to occur. Check for cracks in the ceramic insulator. Replace electrode assembly if necessary. Also check for carbon or foreign material on the electrodes and clean if necessary.

## Spark Electrode Assembly-Removal

1. Remove electrode cover and disconnect wires to electrodes.
2. Remove two screws to detach electrode assembly.

## Gas Valve Removal (shut off manual gas valve to stop gas flow before removing gas control valve)

1. Disconnect union at gas valve and disconnect wires from gas valve operator coils.
2. Remove right manifold mounting bracket screws and slide manifold to remove from left bracket.

## Main Burner Orifice Removal

1. Remove manifold and gas valve assembly as above.
2. Using an open end wrench, remove orifices from manifold.

## Main Burner Removal

1. Remove the 4 screws securing the cover for the burner housing and the one screw mounting the high limit cover. With the burner housing cover removed, there is complete access to the burner assemblies.

## Recirculation Chamber Inspection

1. Remove Resettable manual overtemp sensor and remove inspection plate in burner chamber between main burners and rear back panel of dryer.

## Cylinder Removal

1. Remove the front panel in front of the cylinder.
2. Remove drive belt, pulley, and key from cylinder shaft.
3. Pull the cylinder from the front of the machine.

## Adjustment Of Cylinder Assembly With Front Panel Removed

1. Loosen the two top adjusting bolts and two bottom adjusting nuts and lock nuts holding the bearing housing to the drive plate.
2. Loosen the four mounting bolts on the side channels.
3. Open the clothes door and insert a 1/4" thick shim at the 3 and 9 o'clock positions and a 1/8" thick shim at the 6 o'clock position.
4. Tighten the two bottom adjusting nuts and tighten locking nuts.
5. Tighten the bottom right mounting bolt, then the top left mounting bolt. Tighten the remaining two bolts. (Shim where and if necessary.)
6. Tighten the two top adjusting bolts.
7. Remove all the shims from between the front panel flange and cylinder (3, 6, and 9 o'clock).8. Spin the cylinder to check for rubbing baffles, pressing down hard while rotating. If rubbing is detected, repeat procedure paying particular attention to placement of shims between bearing housing and side channels.

## Tumbler Through Bolt Access Cover

Remove 4 screws that mount the air flow switch to the back of the dryer. Remove 2 screws that retain access cover. With access cover removed, tightness on the tumbler through bolts can be checked and tumbler alignment can be adjusted.

## Bearing Housing Removal

After removing cylinder as previously outlined, simply unbolt the bearing housing and remove.

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# Section 2:

## Electrical Wiring Diagrams & Schematics

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## Reversing 60Hz. Wiring Schematic

### Dryer Idle - No Coins Added:

Single Pocket / Top Dryer Used For This Example

208/240VAC 60 Hz. power is supplied to the main power terminal block and comes out on BLK/BRN and BLK/ORG wire. 208/240VAC now passes to the motor control relay (R1&R2), to the multi-tap control step-down transformer, and also passes to the 12VDC power supply, which powers the control board. The same 208/240 VAC 60hz line voltage will also be supplied to the voltage inputs of both variable frequency drives. Power out of the transformer will travel through the 2.5A fuse on the orange wire for circuit protection. When there is power to the dryer, the computer board will be powered, and the display light from the 12VDC power supply. The 12VDC from here is also on one side of the door switches on two blue wires. Closing the upper loading door allows 12VDC to pass on to the computer board on one blue wire. The blue wire makes 12VDC available to the K4 relay, which when closed closes the loop in the orange wire from the fuse to the motor run relay (K2) on the control board and tells the control that the door is closed. The 12VDC is also available to the drive enable relay (K5), which is closed when the door is closed.

### Coins Added - Motor Starting and Running:

Single Pocket / Top Dryer Used For This Example

As each coin is added the coin optical sensor completes the coin drop circuit to the computer board. The computer board counts these signals and registers them against time. The time will display once the upper or lower is chosen and Start is selected, and the motor run relay closes on the computer. With this relay closed, 24VAC passes through to the ORG/BLU wire and is supplied to the motor control relay (R1) and also a ORG/GRN wire going down to the red blower motor centrifugal switch wire. The K2 relay on the computer board should be illuminated anytime the computer calls for the upper motor to operate. With the (R1) relay engaged and 208/240VAC passing through to the blower motor start switch, the incoming power 208/240VAC is supplied directly to the main run winding and through the start capacitor to the auxiliary winding (start winding). The heat circuit in the dryer cannot operate if the blower motor is not running. As the motor comes up to speed, the centrifugal switch inside motor opens the circuit to the start winding and closes the circuit to allow the 24VAC on the red wire to pass to through the centrifugal switch to the other violet wire and onto the gas relay on the computer board. At the same time the 12VDC signal closes the K5 relay on the control board, it closes the loop in the yellow wire from the variable frequency drive MI6 back to DCM on the WHT/YEL wire. Completing this circuit enables the drive to operate and allow motion. The main control PCB sends data commands to the VFD through the data cable connected at P2. From the factory, the motor will tumble one direction for 1 minute and then stop and tumble in the reverse direction for 1 minute. This will continue for the length of the cycle. The time of the reversing action can be programmed in the control settings.

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## Heat Circuit

Single Pocket / Top Dryer Used For This Example

The temperature sensing probe is found under each tumbler in the lint tray area and sends resistance values back to the computer board for temperature sensing. If the computer control senses that the dryer needs heat input, The computer control closes the upper gas relay which passes the incoming 24VAC to the terminal block on an ORG/GRN wire. The 24VAC then flows through the upper overtemp thermostat on a ORG/GRN wire to the normally open air flow switch (sail switch) on a ORG/GRN wire. The air flow switch is pulled closed from the vacuum created when the blower fan is producing airflow. With the dryer running and the air flow switch closed, 24VAC is supplied to the terminal block on a ORG/GRN wire and then it is supplied to the upper high limit thermostat on a orange wire. The high limit thermostat is normally closed. (The high limit will open, turning off the heat circuit, if the flame starts moving to the back of the burner housing rather than being pulled into the burner housing due to airflow issues. In this case the high limit will reset on it's own once temperatures are reduced). From the high limit thermostat the 24VAC travels on the brown wire to the violet wire of the centrifugal switch. With the blower motor running, 24VAC is provided through the centrifugal switch on the red wire to the terminal block. The 24VAC then travels to the RC connection at the variable frequency drive. During tumble mode, this connection closes and the 24VAC then leaves the variable frequency drive through the RB connection on a ORG/GRN wire to the 1.5 amp fuse that fuses the upper ignition controller (grey box). With 24VAC now supplied to the upper ignition controller (grey box) it will then send high voltage to the spark ignition electrode via the high voltage lead wire (this lead looks like an automotive spark plug wire) and spark is created. The ignition control module (grey box) simultaneously sends 24VAC to the gas valve coil on the brown wire which opens the gas valve and allows gas to pass to the main burner. When the gas makes contact with the spark, ignition occurs. Once flame is on the burner tube, the flame sensor will send a signal back to the ignition control on the small black wire that the flame is sensed. At this point, the high voltage sparking stops and the ignition control module (grey box) will allow gas valve coil to remain energized and continue burner operation. If ignition does not occur, the ignition control module (grey box) will spark for 10 seconds before locking out. The control box will attempt 3 times total before a complete lock out in the event of no flame sense.

## Manual Reset Safety Shutoff Over-Temperature Thermostat

Single Pocket / Top Dryer Used For This Example

The over temperature thermostat is a safety backup for the entire heat circuit and located in the recirculation chamber area on the side of the burner housing. If the dryer over heats this over temperature thermostat opens the circuit to stop voltage from passing to the heat circuit which stops the flame. The computer board continues to count down and the drive motor remains powered and turning so the basket will cool down.

## Cool Down

Single Pocket / Top Dryer Used For This Example

Near the end of the cycle at the preprogrammed time (adjustable) the computer board will open the gas relay contact. This happens for the remainder of the cycle. The drive motor will continue to run but without heat. The gas light on the computer board should not be illuminated anytime the computer is in cool down mode. This cool down period allows the clothing (zippers, snaps, etc.) time to cool down to a temperature that is easily handled by customers.

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## End of Cycle

Single Pocket / Top Dryer Used For This Example

At the end of the cool down, the computer board opens the upper run relay, which removes power from the blower motor control relay (R1) and The control PCB sends a signal to the variable frequency drive via the data cable from P2 to the VFD RJ-11, which deactivates the variable frequency drive and motor. The motor light on the computer board should no longer be illuminated. The drive motor and tumbler stops and the computer board display will show, "CYCLE DONE THANK YOU" until the dryer loading door is opened. Once the dryer loading door is opened to remove the clothing the display goes back to vend price.

## Anti-Wrinkle

Anti-Wrinkle is a feature that periodically rotates the dryers after a cycle is complete. If the door was closed at the end of the cycle, and is left closed for 5 minutes, the enunciator will sound and the display begins scrolling "ANTI WRINKLE". 5 seconds later, the dryer motor will turn on for 55 seconds and then turn off. The gas valves will not be activated. The "ANTI WRINKLE" message will continue throughout the time that the motor is turned on. The user can choose to enable or disable this feature. This feature will continue to occur every 6 minutes until the door is opened or 120 anti-wrinkle cycles are exceeded.