

MAYTAG

Jenn-Air

**Dishwasher
Service Manual**

16000113
Issued 1990
Revised 3/97

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INTRODUCTION

This service manual is intended to assist you in diagnosing conditions which may develop in the Jenn-Air Jetstream model dishwasher. Electrical component testing is for the most part, made with an appliance test meter and consists of checking for open or closed circuits. Mechanical checks are made through sight and sound, along with the use of a clamp-on ammeter.

This manual is designed for the technician who is familiar with the operation and construction of Jenn-Air products. Information contained in this manual is intended for use by a qualified service technician, familiar with proper and safe procedures to be followed when repairing an electrical appliance. All tests and repairs should be performed by a qualified service technician equipped with proper tools and measuring devices. All component replacements should be made by a qualified service technician, using only MAYCOR replacement parts.

Improper assembly or adjustment may occur if service or repair is attempted by persons other than qualified service technicians or if parts other than MAYCOR replacement parts are used. Improper assembly or adjustment can cause hazardous conditions.

There can be risk of injury or electrical shock while performing services or repairs. Injury or electrical shock can be serious or even fatal.

The first and most important step of any service call is to accurately determine what the complaint is. This is best accomplished by questioning the customer, finding out what the product is or isn't doing and why they feel a problem exists.

Section 1 covers Electrical Test Equipment for use on the dishwasher. This section also covers general use of the equipment, in addition to providing specific information on amperage, wattage and resistance readings which should be seen.

Section 2 covers Electrical-Mechanical Troubleshooting and provides a list of possible complaints. Find the complaint which you feel best matches that provided by the customer and turn to the appropriate page(s). You will find a list of possible electrical and mechanical problems for the complaint, which have been listed in their order of:

1. Ease in checking.
2. Probability.

Systematically eliminating these possibilities will allow you to find and correct the problem.

Section 3 covers Service Procedures. This section will provide information on location of components, disassembly and/or reassembly procedures, the purpose and/or function of the part and in some instances specific checks to be made.

Section 4 covers General Information such as brief specifications, cycle descriptions and schematics.

This publication was issued September 1990.

Model numbers covered in this manual are:

DU486

DU506

DU598

SECTION 1. ELECTRICAL TEST EQUIPMENT

The equipment required to service Jenn-Air products depends largely upon the condition encountered. Locating a malfunction will often require the use of electrical testing equipment such as:

- Appliance Test Meter
- Clamp-on Ammeter
- Motor Test Cord

APPLIANCE TEST METER

An Appliance Test Meter is a multi-purpose tester combining an AC-DC voltage tester with a multi-range ohmmeter.

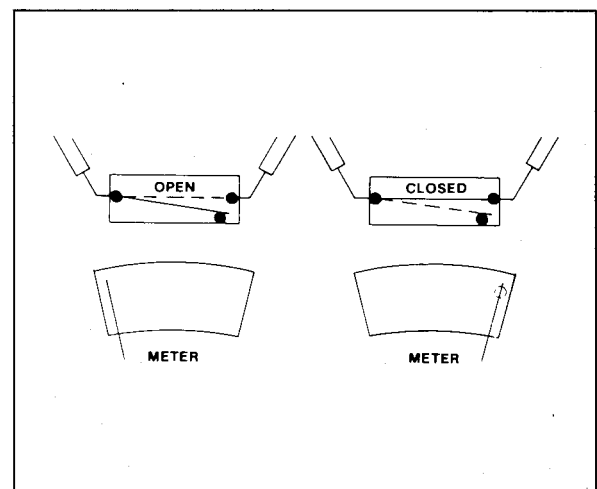


Probably the easiest means of testing electrical components is "continuity testing" with an appliance test meter. Continuity is a complete or continuous path from one point in an electrical circuit to another point.

The obvious advantages of being able to check electrical components and circuits without power applied is one of the features of the ohmmeter. Multiple ranges allow accurate determination of resistances of both single components and entire circuit paths. Resistance is measured in "ohms".

Set Meter For Use as Follows:

1. Calibrate meter by touching test probes together and turning adjusting dial until meter reads "0" on the ohm scale. Recheck calibration whenever adjusting dial for ohms settings is changed. (Replace battery if adjustment will not bring meter reading to "0".)
2. Select the scale most easily read and place test probes on respective terminals. When checking a switch, the reading would normally be either open or closed. A reading of 70 on the R x 10 scale would for example be 700 ohms resistance.



CAUTION:

Always be sure the power has been disconnected before making resistance measurements. Failure to do so will result in damage to your meter! Internal batteries provide all the power needed to make resistance checks. They should be checked at least once a year and replaced as needed.

For the most part, we will only be concerned with continuity. Is there a path or not? References are made between a "closed" (continuity) reading and an "open" (no continuity) reading. One note, when you get an "open" reading, try a higher resistance range (setting). A very high resistance appears as an "open" on the lower ranges. For best accuracy always "re-zero" meter when changing ranges and/or the physical position of the meter.

Continuity testing, as related to an electrical component, is the check of a part for an "open" or "closed" circuit.

Electrical components fall into two general categories:

1. **Loads** - Devices that *use* or consume electricity. Examples would include drive motor, heating elements, lamps, timer and solenoid coils.
2. **Switches** - Devices that *control* the supply of electricity to the load or loads in a circuit. Examples include door switches, timer contacts, selector switch and relay contacts.

Continuity tests of "load" devices will show varying levels of resistance from very low for some transformer and motor windings to very high for some timer motors and components on electronic control boards. Usually it is more important to know if there is a path for

current flow through a device (continuity) than to know the exact resistance (ohms) of the device.

Continuity tests of switches will show virtually no resistance across closed contacts. Resistance, even low values, indicates burned or dirty contacts in a switch.

Continuity testing is a process of eliminating those electrical components involved in a given function of the appliance, until the inoperative part is found. By reviewing the list of possible electrical problems under a given condition, and then performing appropriate continuity checks on the parts involved, you should be able to locate the electrical component which is inoperative.

When checking components or circuit paths for continuity, external wiring should be disconnected to eliminate false readings through external paths. Isolate what you want to test.

DISHWASHERS

Heating Element	18 Ohms
Timer Motor	2700-3000 Ohms
Advance Relay Coil	350 Ohms
120 Volt AC Water Valve Solenoid Coil	900 Ohms
24 Volt DC Water Valve Solenoid Coil	140-160 Ohms
Rinse Cond. Dispenser Solenoid	200 Ohms

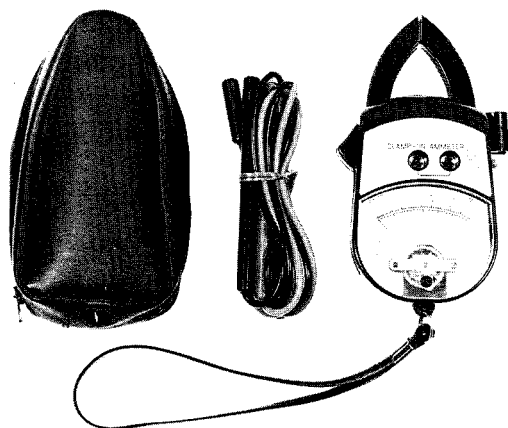
These values are provided so that you may have an idea of the resistance that you can see in testing. These resistances are not meant to be used as the exact values to determine whether a

component should be replaced. They are provided so that you may have an idea of the resistance that you can see in testing components.

DETERGENT CUP BI-METAL RELEASE

In these models, the bi-metal itself is a (warp switch) heater. **Do not test this component with line voltage.** The resistance is so low (about 1/4 of 1 ohm) that it will appear to be a direct short.

CLAMP-ON AMMETER



Each circuit in an appliance has a "normal" current draw which is an indication of the performance of that circuit. Current draw levels, less than or more than normal, give clues to malfunctions. The clamp-on ammeter measures these currents without breaking the circuit by measuring the strength of the magnetic field developed around each conductor. Current is read by sepa-

rating the conductors and clamping the jaws of the ammeter around each conductor on which current is to be read. Low amperage readings indicate problems such as damaged heating elements, etc. High amperage readings indicate the unit being tested is operating under an increased mechanical or electrical load.

Note: Overloads on a circuit breaker or fuse can be traced to the product being tested or the circuit breaker (or fuse) by checking the product's current draw. If the amperage reading is less than the breaker reading, the breaker or fuse box is at fault.

USE OF AMMETER ON DISHWASHER

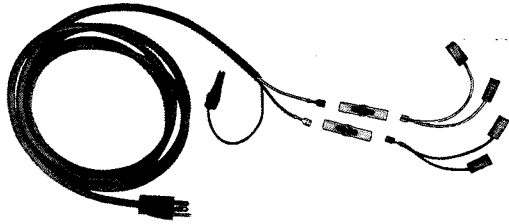
1. **Motor Current** -The reading can be taken at the leads on the motor start relay or at the molex connector.
2. **Heating Element Current** -The reading can be taken using either lead to the element.
3. **Bi-Metal Switch (Detergent Cup)** -The reading can be taken at the detergent cup.

AMPERAGE CHART

Jenn-Air Jetstream Dishwasher:

Wash	5 1/2 Amps
Drain (Start)	6 1/2 Amps
Circulate Heat	12 1/2 Amps
Heat Only	6 1/2 Amps
Heater and Blower	6 1/2 Amps

MOTOR TEST CORD



A motor test cord may be used to electrically check operation of the various electrical components without removing them from the unit. Testing in this manner merely determines whether or not the part will function independently of other electrical components. In order to make accurate tests, proper connection of the motor test cord is important. With the aid of the drawings under Drive Motor Test; installation of the motor test cord may be done quickly and accurately.

Note: Always plug test cord into a grounded receptacle.

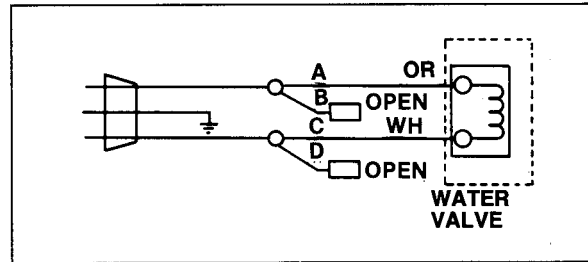
WATER VALVE TEST

The water valve may be checked without removing it from the dishwasher.

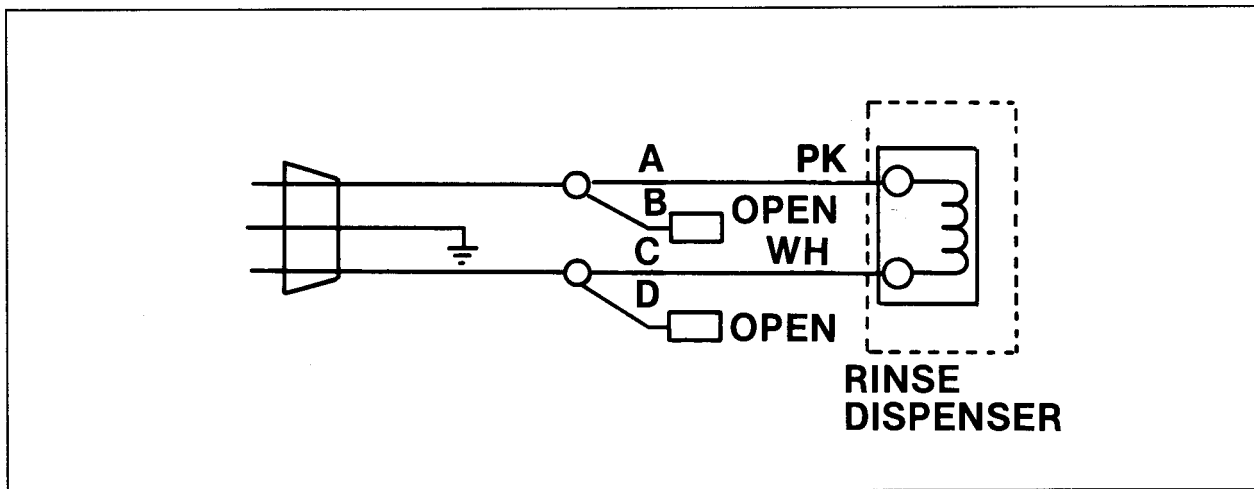
CAUTION:

The water valve on the microprocessor models is a 24-volt DC valve. Do not check this valve using a motor test cord as damage to the valve will result.

To check the water valve for operation hook up the test cord as follows.



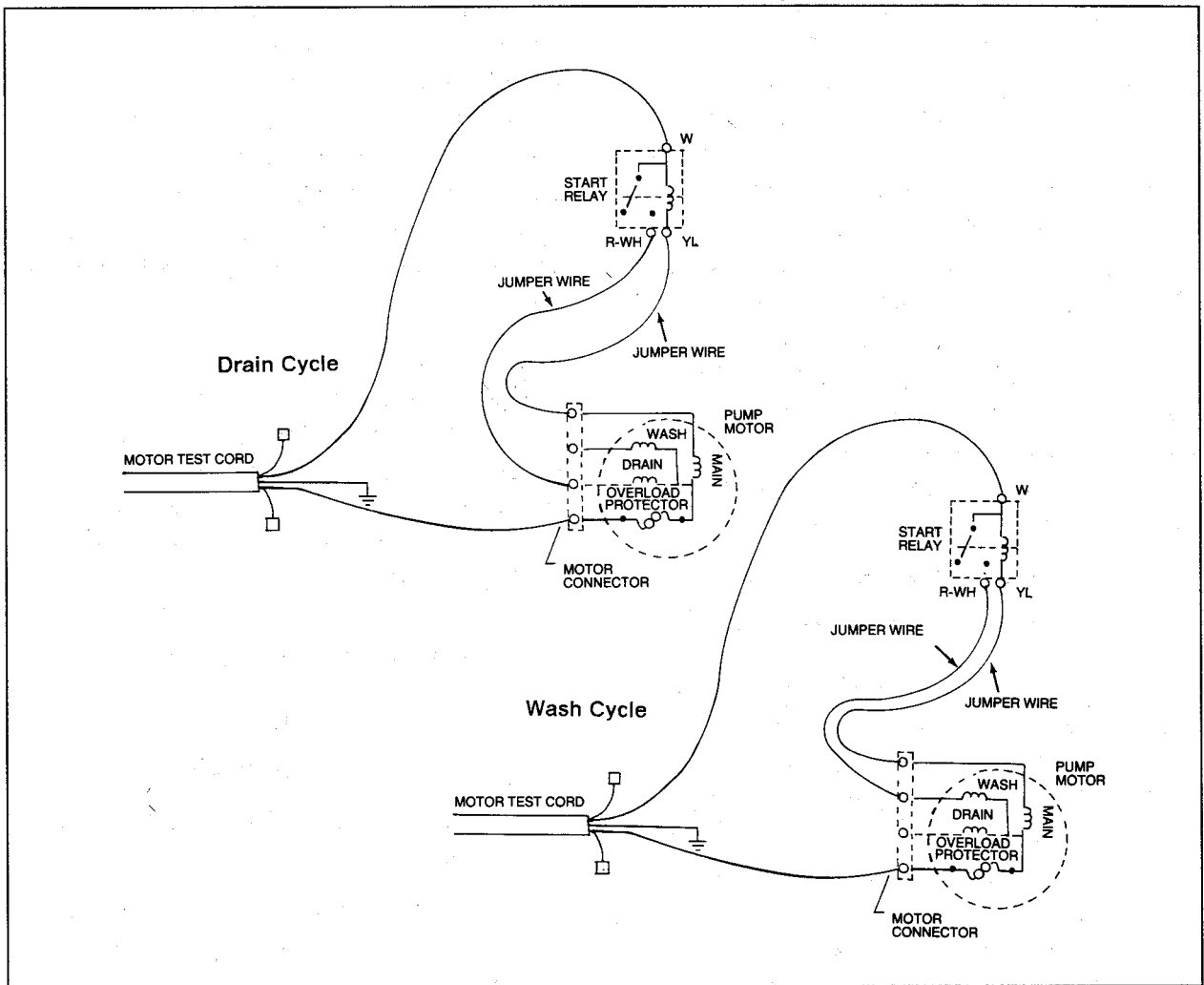
RINSE DISPENSER TEST



The rinse dispenser may be checked without removing it from the dishwasher. Two test leads are required to check operation of the rinse dispenser.

To check the rinse dispenser for operation hook up the test cord as shown in the previous illustration.

DRIVE MOTOR TEST



CAUTION:

Damage to the motor will result if the start relay is bypassed and the test cord is connected directly to the motor connector.

Testing the motor on this series dishwasher is somewhat different than on previous models because of two changes made on the dishwasher. An external start relay has been added to take the place of the centrifugal switch on the motor and a molex connector is used to couple the wire harness to the motor wires.

The start relay is mounted on the right hand tub support and consists of a coil and a switch. The coil is in series with the main winding in the motor. When the motor is first energized, the current draw in this series circuit is enough to close the switch in the start relay. This closed switch provides a path for neutral to the wash or drain start winding and depending on what part of the cycle the dishwasher is in, starts the motor in that direction. Once the motor is up to speed, the current draw decreases and the coil can no longer hold the switch closed. When the switch opens, the wash or drain start winding drops out of the circuit.

Note: The relay has to be in an upright position to work properly.

To test the motor we need to separate the molex connector. This can be done by twisting the connector side to side and pulling at the same time. The following drawings will help in making the proper connections for testing.

Note: Because of different vendors, the wires on the motor side of the molex connector may not be the same

color as the wires on the wire harness side of the molex connector.

Plug test cord into properly polarized and grounded receptacle.

VOLTAGE CHECKS

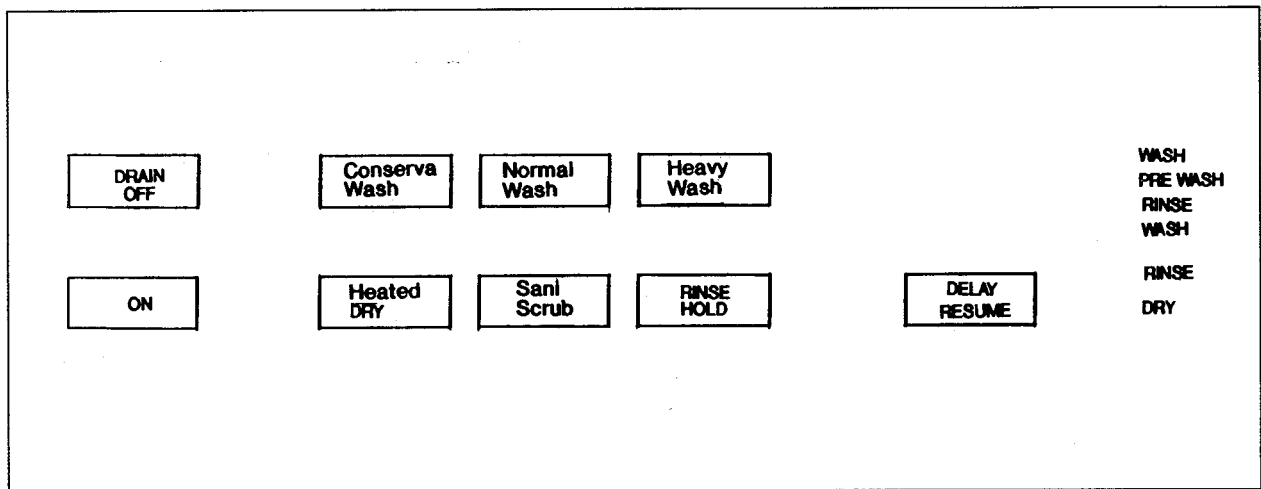
For the most part these checks will consist of taking readings at the wall receptacle in order to determine the availability of voltage to the product. Voltage checks on individual components of a product are not recommended due to the possibility of electrical shock. Component part testing is best accomplished through continuity checks with an **appliance test meter**.

Note: Use of the meter on voltage higher than the indicated range may cause permanent damage to the meter. To prevent damage, first select highest range and then lower the range for readings which fall within the lower scale.

Set Up Meter for Use as Follows:

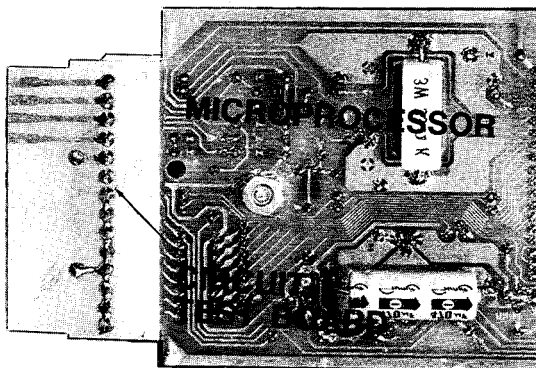
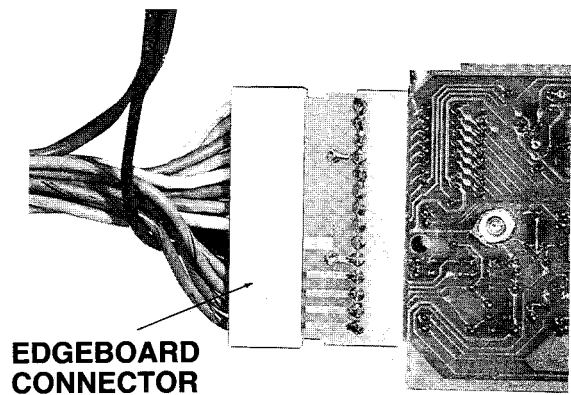
1. Turn selector knob to desired meter function and appropriate range.
2. Plug black lead into socket marked (-) (black).
3. Plug red lead into socket marked (+) (red).
4. Place test leads into receptacle in order to determine voltage available.

CIRCUIT TEST BOARD



This circuit test board is for use on some microprocessor models only. To use:

1. Shut off electrical power to dishwasher.
2. Unplug edgeboard connector from microprocessor board.
3. Plug circuit test board into microprocessor board.



4. Plug edgeboard connector into circuit test board.

5. Turn on electrical power to dishwasher.
6. Depress "On" pad. Digital read-out display should show flashing "O".
7. Depress "Diagnostic" pad. Digital read-out display should read "88" and all LED and indicator lights should be lit. Digital read-out display should then flash "Gd" which would indicate the board checks good, or "bd" which indicates the board checks bad.

Note: The Diagnostic mode pad is unmarked. It is located at the intersection of an imaginary line between the "Drain-Off" and "Heated Dry" pads and the "Conserva Wash" and "On" pads. Depress and hold for two seconds.

WATTAGES

Jenn-Air Jetstream Dishwasher:

Circulate (wash)	500-600
Drain	700 dropping to 200
Dry*	790
Sani (Scrub) Cycle	1250-1350

*Add an average of 39 watts when blower is operating. Range 35-42.

GROUNDING & POLARITY

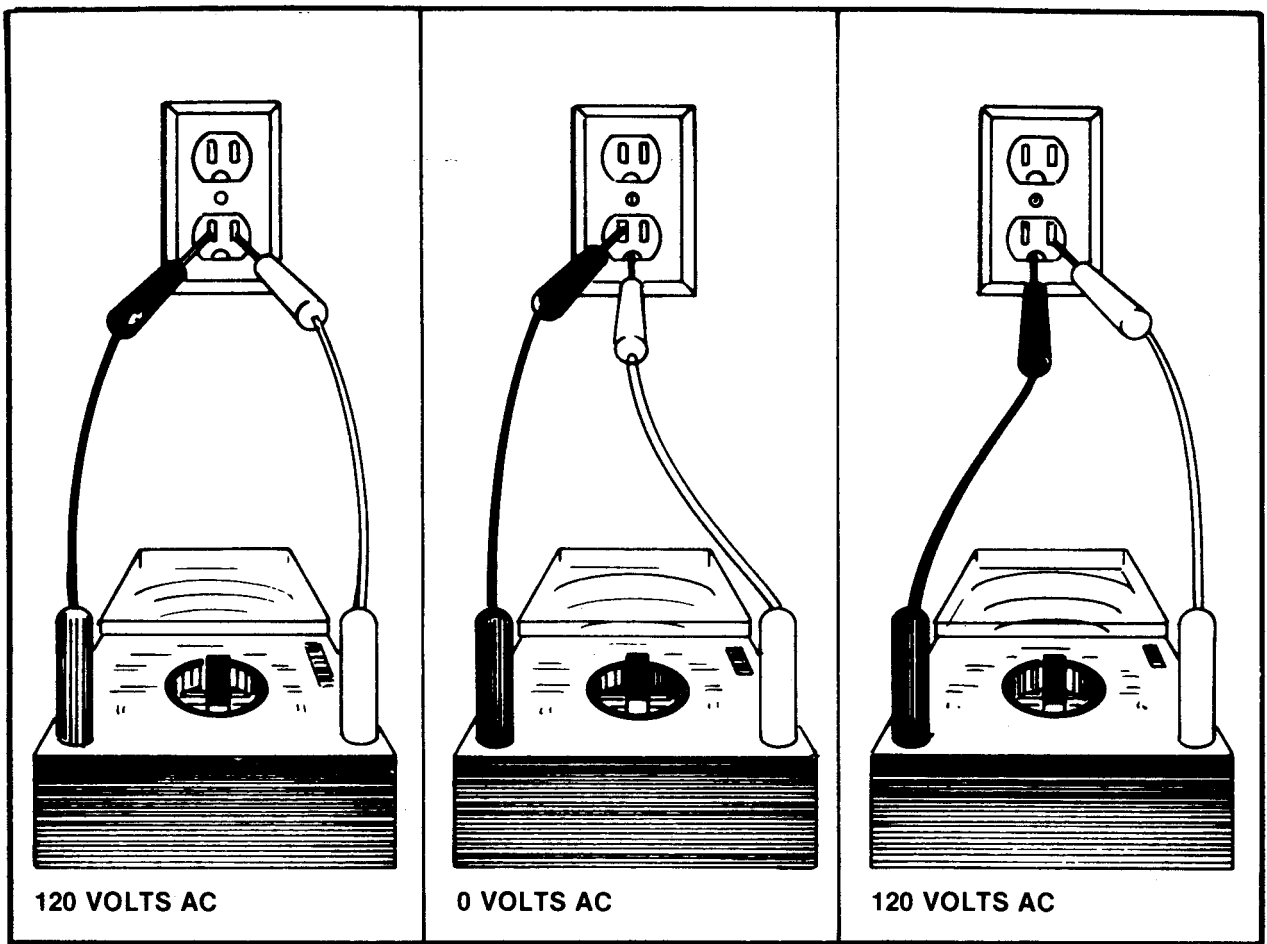
The receptacle used for all products operating on 120 volt AC must be properly grounded and polarized.

The power cord used on the appliances is equipped with a three (3) prong polarized grounding plug for protection against shock hazard and should be plugged directly into a properly grounded and polarized receptacle.

Do not cut or remove the grounding prong from this plug.

It is the responsibility of the person installing the appliance to assure it is adequately grounded and polarized at the point of installation taking into consideration local conditions and requirements. In cases where only a two (2) prong receptacle is available, it is the personal responsibility of the customer to have it replaced with a properly grounded and polarized 3 prong receptacle. All grounding and wiring should be done in accordance with national and local codes. **Use of adapters is not recommended by the Jenn-Air Company.**

Insure that the wall outlet is properly polarized and grounded.



For your safety and to protect the test equipment, be sure that the wall outlet is properly polarized and grounded.

SECTION 2. ELECTRICAL - MECHANICAL TROUBLESHOOTING

GENERAL TROUBLESHOOTING

CAUTION:

Always disconnect power supply before making any electrical checks.

DISHWASHER WON'T FILL

- Check for blown fuse or circuit breaker with voltmeter.
- Be sure water is turned on and available.
- Is door latched?
- Check for restricted water valve screen. If screen is restricted, replace screen.
- Low water pressure. Water pressure should be between 18 and 120 psi.
- Check for a float stuck in the full position. Clean or replace float and float stem.
- Check between door switch terminals for continuity with door closed and latched. No continuity, replace door switch.
- Check between float switch terminals for continuity. No continuity, replace float switch.
- Check for continuity between water valve terminals. No continuity, replace water valve.
- Fill hose kinked. Remove kink.
- Selector switch. Check continuity per schematic.
- Timer. Check continuity per schematic. No continuity, replace timer.

DISHWASHER OVERFLOWS

- Sediment build-up on float stem and float. Clean or replace float stem and float.
- Float switch. With float in raised position, check for continuity between float switch terminals. If you receive continuity and float is not sticking, replace float switch.
- Float switch bracket. Make sure actuator on bracket is not sticking. Clean or replace float switch bracket.
- Turn electrical power on and allow dishwasher to begin to fill. While filling, turn power off. If dishwasher continues to fill with electrical power turned off, water valve is stuck open. Replace water valve.

Note: Low water pressure may result in failure of the valve to close properly.

SLOW FILL

- Sediment on water valve filter screen. Clean or replace screen.
- Fill hose kinked. Straighten kinked hose.

- Low water pressure. Water pressure should be between 18 and 120 psi.

Water Won't Stay in Dishwasher (Siphoning)

- Be sure drain hose is elevated 32". If drain hose is not elevated, elevate hose.
- Drain and upper spray arm hoses are reversed. The lowest outlet on the power module is for the drain hose.
- Slow draining. When water is not completely drained from unit during allotted time and the next fill begins, the dishwasher will continue to drain.

Not Enough Water In Dishwasher

- Dishwasher is filling too slow. See "Slow Fill".
- Water is being siphoned from dishwasher. See "Water Won't Stay In Dishwasher".

WILL NOT WASH (All Models)

Dishwasher Won't Circulate - Wash

- Drive motor. Hook up motor test cord. If motor does not run when hooked to test cord, replace motor.
- Module Assembly. Repair or replace module assembly.
- Selector switches. Check continuity between selector switch terminals as per schematic. No continuity, replace switch.
- Timer. Check for continuity between the timer terminals required as per schematic. No continuity, replace timer.

Timer Won't Advance From Wash to Drain

- Timer motor not running. Replace timer motor.
- Timer. Replace timer.
- Drive Motor. Check for bad drain winding by operating motor on motor test cord. If dishwasher will not drain with motor test cord, replace motor and power module.

Poor Circulation

- Clogged upper or lower spray arms. Clean jets. Clogged spray arms may indicate food particles are getting by the filter screen. Reseal filter if required.
- Upper or lower spray arm binding. Repair as necessary.
- Low water level. Water level should be at the level of the heating element. If not, see "Dishwasher Won't Fill".
- Filter screen plugged. Clean or replace screen. Also, check for binding lower spray arm.
- Foreign object lodged in power module. Remove object.
- Power module inoperative. Repair or replace module.

Dishes Not Coming Clean

- Check to be sure dishwasher is circulating properly. If dishwasher is not circulating as intended, see "Poor Circulation".
- Check to be sure detergent cup is opening. If detergent cup is not opening, see "Detergent Cup Will Not Trip".

- Rinse dispenser. Check to be sure the dispenser is full. If dispenser is full, check continuity between the solenoid terminals. No continuity, replace dispenser.

Detergent Cup Will Not Trip

- Make sure wires to bi-metal switch are connected.
- Check for a burr in the cam latch. If a burr exists, file burr off.
- Lubricate cam notch with center seal grease.
- Be sure spring for detergent cup is not unhooked or broken.
- Timer. No continuity as per schematic, replace timer.
- Take an amperage reading around either Red/Black or Orange at the detergent cup during the increment in which heat is being generated to the bi-metal switch. If less than 5 1/2 amps is recorded the bi-metal switch will not open. Check wiring to bi-metal and heating element. Also, check for burned out element. If no amperage is recorded, check for broken wires or connections.
- Bi-metal switch. Replace switch.

Rinse Dispenser Won't Work

- Be sure rinse dispenser is full of rinse additive.
- Check for continuity between rinse dispenser solenoid terminals. No continuity, replace solenoid.

- Check rinse dispenser outlet for rinse additive build-up. Clean outlet.
- Timer. Check for continuity between timer terminals as per schematic. No continuity, replace timer.

DISHWASHER WILL NOT DRAIN

Won't Drain, Will Circulate Properly

- Check to be sure drain and upper spray arm hoses are not reversed. Drain hose will be attached to the lowest outlet on the power module.
- Drive motor. Hook up motor test cord. If motor will not operate with test cord, replace drive motor and power module.
- Timer. Check for continuity with timer set in drain cycle between timer terminals as per schematic. No continuity, replace timer.
- Selector switch. Check for continuity between switch terminals as per schematic. No continuity, replace switch.
- Check for an object lodged between drain impeller and power module. Remove object and replace any components damaged.
- Drain hose kinked or restricted. Remove restrictions and reroute drain hose.
- House drain is plugged. Have drain cleaned.
- Module assembly damaged. Repair or replace power module assembly.

Slow Drain

- Drain hose kinked or restricted. Reroute drain hose and remove any restrictions.
- Inadequate house drain. House plumbing should be checked and repairs done as recommended.

Dishwasher Tries to Drain, Motor Shuts Off on Overload Protector.

- Check line voltage when dishwasher begins to drain. If voltage drops below 105 volts, have house wiring checked.
- Module assembly locked. Repair or replace power module assembly.
- Drive motor. Replace drive motor and power module or start relay.

Dishwasher Won't Advance From Drain to Off

- Timer motor. Determine if timer motor is operating. If timer motor is not operating, replace timer motor.
- Timer motor is running, but timer will not advance, replace timer.

DISHES WILL NOT DRY (All Models)

Dishwasher Won't Dry

- Low water temperature. Water temperature should be between 140 ° F and 150 ° F. If water temperature is below 140 ° F turn water heater up.
- Check for damaged blower and blower impeller. Repair as necessary.

- Blower motor. Check for continuity between blower motor terminals. No continuity, replace blower motor.
- Check vent flapper to make sure it is moving freely inside vent on door.
- Rinse additive. Make sure rinse additive is being used to assist in sheeting of water. Also refer to "Rinse Dispenser Won't Work".
- Timer. Check for continuity per electrical schematic checks. No continuity, replace timer.
- Selector switch. Check for continuity between selector switch terminals as per electrical schematic. No continuity, replace selector switch.
- Heating element. Check for continuity between heating element terminals. No continuity, replace heating element.
- Thermostat. On select models check for continuity between thermostat terminals with thermostat in closed position. No continuity, replace thermostat.

MISCELLANEOUS (All Models)

Dishwasher Leaks

- Be sure all hose clamps are tight. Tighten any loose clamps.
- Blower. Check for leaks around blower. Make sure blower valve is reseating properly. Replace blower valve if necessary.
- Inlet, drain or upper spray arm hose leaking. Replace hose that is leaking.
- Weep hole in module leaking. Water leak from weep hole would indicate possible problem with O-ring seal or boot seal in module. Replace seals.

- Check to be sure there are no holes in module housing. Replace power module assembly.
- Module gasket. Check for leak between module assembly and tub. If gasket is leaking, replace gasket.
- Water valve. If water valve body is leaking, replace water valve.
- Door gasket. Check for proper door latch adjustment. If latch is adjusted properly, check for torn or damaged door gasket. Replace gasket if torn or damaged.
- Check gasket between lower spray arm and module assembly. If out of position or damaged, reposition or replace.
- Upper or lower spray arm cracked. Check and replace if necessary.
- Check for proper door alignment and door latch adjustment.
- Make sure unit is leveled properly. If back is higher than front, water can leak out around door gasket.

Dishwasher Noisy

Before servicing unit, check to be sure noise is not normal operating sound.

- Chattering. Replace water valve.
- Banging. Loose upper or lower spray arms. Replace nut holding upper spray arm to upper spray arm support. Tighten spray nozzle for lower spray arm.
- Ticking during dry cycle. Object caught in blower impeller or impeller is loose on shaft. If impeller is loose, secure impeller to shaft with a small amount of Loc-Tite.
- Thumping or banging. Object in path of spray arm. Remove object.

- Thumping. Object in power module.
- Humming. Water valve solenoid. Replace water valve.
- Humming. Drive motor. Replace drive motor and power module.
- Buzzing timer. Replace timer or timer motor if buzzing is severe.

Water Pipes Vibrating (Water Hammer)

- Water valve. Anti-water hammer device in valve has failed. Replace valve.
- Check for loose water pipes. Secure pipes if loose.

MICROPROCESSOR CONTROL MODELS

Following are Electrical checks for the Microprocessor models. For Mechanical checks refer to respective section covering all dishwashers.

WILL NOT PROGRAM

Depress "ON" pad. Display should read flashing "0". Depress cycle selection pad. Display should show correct number of minutes for the cycle selected (see Cycle Chart). If either does not occur check the following.

Varistor: If visual inspection shows damage varistor, transformer should be checked. If transformer checks okay the varistor should be replaced.

Transformer: Check primary coil, BLK to WHITE and Secondary coils, RD-BLK to RD-BLK and BLU-BLK to BLU-BLK. No continuity on any check, replace transformer.

Door switch - 24 volt: With door latched should show continuity Brown to White. No continuity, replace switch.

Microprocessor: Replace.

Touch pad: If above components check okay and unit still won't program, replace touch pad.

WILL NOT FILL

Make sure unit is programmed. See "Will Not Program".

Float switch: Check for continuity (OR to OR) between float switch terminals. No continuity, replace switch.

Water valve: Check both coils (OR to White) for continuity. No continuity of either coil, replace water valve.

CAUTION:

Do not test water valve with a motor test cord as this valve operates on low voltage.

Microprocessor: Replace.

Refer to respective section covering all dishwashers for mechanical checks.

Hot Water Temperature Too Cool

Thermostat: Check for continuity between thermostat terminals. No continuity, replace thermostat.

Heating element: Check for continuity between heating element terminals. No continuity, replace heating element.

Heater relay: Use caution as this is an electrically hot check.

Check relay coil, White to Yellow, for continuity. No continuity, replace heater relay. With the relay coil energized check for line voltage from Yellow on relay switch to White on heating element. No voltage, replace heater relay.

Microprocessor: Replace.

Touch pad: If LED indicator does not light when "Sani Scrub" is selected and microprocessor checks okay, replace touch pad.

Refer to respective section covering all dishwashers for mechanical checks.

Dishwasher Overflows

Float switch: With float in raised position check for continuity, Orange to Orange, between switch terminals. Continuity should NOT be seen, if noted replace float switch.

Refer to respective section covering all dishwashers for mechanical checks.

Slow Fill

Refer to respective section covering all dishwasher for checks.

Water Won't Stay in Dishwasher (Siphoning)

Refer to respective section covering all dishwashers for checks.

WILL NOT WASH

Door switch - 120 volt: With door latched check for continuity between switch terminals, Black to Black. No continuity, replace 120 volt door switch.

Motor direction relay: Use caution as this is an electrically hot check.

Check relay coil, Red to White, for continuity. No continuity, replace motor start relay. Check for line voltage from White-Black on the relay switch to White on the heating element. No voltage, replace the motor direction relay.

Motor relay: Use caution as this is an electrically hot check.

Check relay coil, Blue to White, for continuity. No continuity, replace motor relay. With relay coil energized check for line voltage from Blue on the relay switch to White on the heating element. No voltage, replace the motor relay.

Drive motor: Hook up motor test cord. See section on Electrical Testing Equipment. If motor does not run when hooked to the test cord, replace motor and power module.

Microprocessor: Replace.

Refer to respective section covering all dishwashers for mechanical checks.

Poor Circulation

Refer to respective section covering all dishwashers for checks.

Dishes Not Coming Clean

Refer to respective section covering all dishwashers for checks.

Detergent Cup Will Not Trip

Detergent cup bi-metal: Check for continuity between bi-metal terminals, Yellow to White-Orange. No Continuity, replace bi-metal.

Detergent cup relay: Use caution as this is an electrically hot check.

Check relay coil, White to White-Orange for continuity. No continuity, replace detergent cup relay. With the relay coil energized check for line voltage from White-Orange on relay switch to White on the heating element. No voltage, replace detergent cup relay.

Microprocessor: Replace.

Refer to respective section covering all dishwashers for mechanical checks.

Rinse Dispenser Won't Work

Rinse dispenser: Check for continuity between Pink and White on the rinse dispenser solenoid. No continuity, replace rinse dispenser.

Rinse dispenser relay: Use caution as this is an electrically hot check.

Check relay coil, White to Pink, for continuity. No continuity, replace rinse dispenser relay. With the relay coil energized check for line voltage from Pink on relay switch to White on the heating element. No voltage, replace rinse dispenser relay.

Microprocessor: Replace.

Refer to respective section covering all dishwashers for mechanical checks.

DISHWASHER WILL NOT DRAIN

Drive motor: Hook up motor test cord, see section on Electrical Testing Equipment. If motor will not operate with test cord, replace motor and module assembly.

Motor start relay: Use caution as this is an electrically hot check.

Check relay coil, White to Red, for continuity. No continuity, replace motor start relay. With relay coil energized check for line voltage from Red on relay switch to White on the heating element. No voltage, replace motor start relay.

Microprocessor: Replace.

Refer to respective section covering all dishwasher for mechanical checks.

Slow Drain

Refer to respective section covering all dishwashers for checks.

Dishwasher Tries to Drain, Motor Shuts Off on Overload Protector.

Refer to respective section covering all dishwashers for checks.

DISHWASHER WILL NOT DRY

Thermostat: Check for continuity between thermostat terminals. No continuity, replace thermostat.

Heating element: Check for continuity

between heating element terminals. No continuity, replace heating element.

Blower motor: Check for continuity between blower motor terminals. White to Purple. No continuity, replace blower motor.

Blower relay: Use caution as this is an electrically hot check.

Check relay coil, Purple to White, for continuity. No continuity, replace blower relay. With relay coil energized check for line voltage from Purple on relay switch to White on the heating element. No voltage, replace blower relay.

Microprocessor: Replace.

Touch pad: If LED indicator does not light when "Heated Dry" is selected and microprocessor checks okay, replace touch pad.

Refer to respective section covering all dishwashers for mechanical checks.

MISCELLANEOUS

Dishwasher Leaks

Refer to respective section covering all dishwashers for checks.

Dishwasher Noisy

Refer to respective section covering all dishwashers for check.

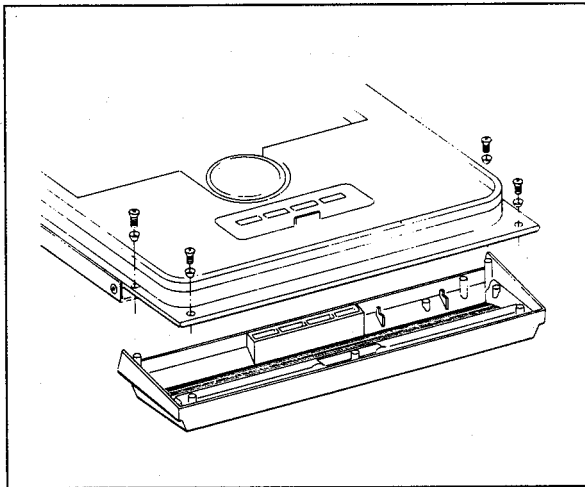
Water Pipes Vibrating (Water Hammer)

Refer to respective section covering all dishwashers for checks.

SECTION 3. SERVICE PROCEDURES

CONTROL PANEL ASSEMBLY

The control panel assembly holds various electrical and mechanical components. Regardless of the model, all control panels are removed from the door in the same manner.



CONTROL PANEL ASSEMBLY

To Remove Control Panel Assembly:

CAUTION:

Always shut off electrical power to the dishwasher before beginning any service procedure.

1. Remove door latch knob. Refer to Door Latch Mechanism as needed.
2. Remove four screws which secure control panel to door.

Note: There is a plastic washer on each screw. This washer is

designed to act as a cushion to reduce the chance of porcelain damage when the screw is tightened.

When leaving wires attached to electrical components, some support should be provided to the control panel assembly. This will prevent damage to terminals, receptacles or wiring.

Also, to reduce the chance of damage to the front panel, a cloth, towel, etc., should be draped from the door panel or the front panel should be removed.

If the control panel is to be completely removed from the dishwasher, remove all wires from electrical components and unplug the green ground wire from receptacle located on the control panel.

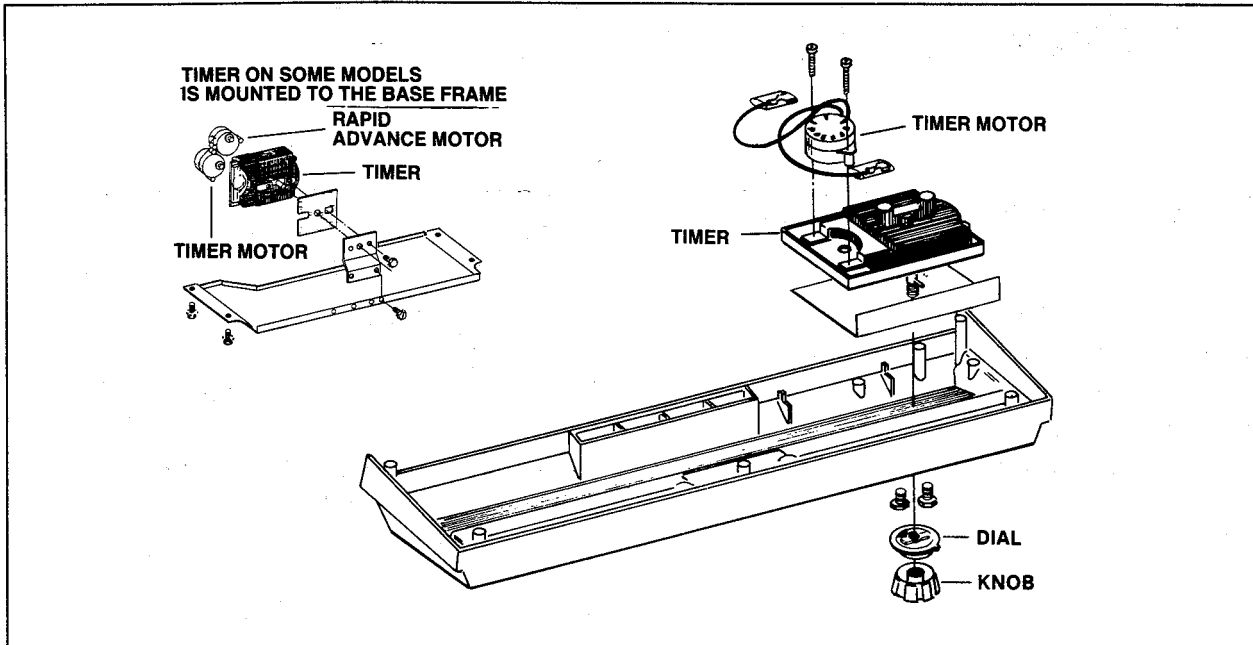
TIMER

A timer is a motor driven package of switches used to control the various functions of product operation. In the case of the dishwasher, these functions would include fill, circulate, drain and dry.

Where timer knob is visible, timer is mounted to Control Panel. All other models have timer mounted on base frame.

CAUTION:

Always shut off electrical power to the dishwasher before beginning any service procedure.



TIMER AND TIMER MOTOR

To Remove Timer When Behind Control Panel:

1. Remove control panel.
2. Unscrew timer knob (counterclockwise) and remove knob and dial.
3. Remove two mounting screws holding timer to control panel.
4. Remove wires from Timer.

Note: All wires are coded to indicate their correct connection to corresponding timer terminals.

To Remove Timer When Mounted On Base Frame:

1. Remove four screws securing access and toe panels. Refer to Front Panel, Access and Toe Panels as needed.
2. Remove two screws securing timer mounting bracket to base frame.
3. Slide the timer to the left, tip back and rotate counterclockwise to remove from dishwasher.

4. Remove two screws securing timer to mounting bracket and remove barrier.
5. Remove wires from timer.

Note: All wires are coded to indicate their correct connection to corresponding timer terminals.

To Check Timer:

Shut off electrical power to the dishwasher. We recommend continuity checks be performed in order to determine whether the switches in the timer are open or closed. Use of an ohmmeter will allow completion of the continuity check. Should you have questions on use of an ohmmeter or performing continuity checks, refer to the Electrical Test Equipment section in this manual. With the aid of a Electrical Schematic perform switch checks.

TIMER MOTOR (All Models)

The timer motor is used to advance the timer into and through the various portions of the wash cycle. The timer motor is mounted to the timer body. Connect power cord direct to Timer Motor. If it won't run, replace it.

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Timer Motor:

1. Remove timer.
2. Remove two screws securing timer motor to timer.
3. Remove both wire leads.

RAPID ADVANCE MOTOR

(Where timer is mounted on base frame.)

The rapid advance motor is used to rapidly advance the timer from the "off" position to the "start" of the wash cycle selected. Once the timer is advanced to the beginning of the cycle, power to the rapid advance motor is lost and the timer motor takes over. The rapid advance motor is mounted to the timer body. Connect power cord direct to rapid advance motor leads. If it won't run, replace it.

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Rapid Advance Motor:

1. Remove timer.
2. Remove two screws holding rapid advance motor to timer.
3. Remove both wire leads.

KNOB AND DIAL

To Remove Knob and Dial:

Unscrew timer knob (counterclockwise) and remove knob and dial.

Note: The dial has an offset ramp slot to insure proper installation upon its replacement.

CONTROL SWITCHES (All Models)

Control switches are used to allow the option of selecting specific product functions or in some instances, the various wash cycles. All control switches are located on the control panel assembly. Removal of the control panel from the door is therefore necessary in order to service these control switches.

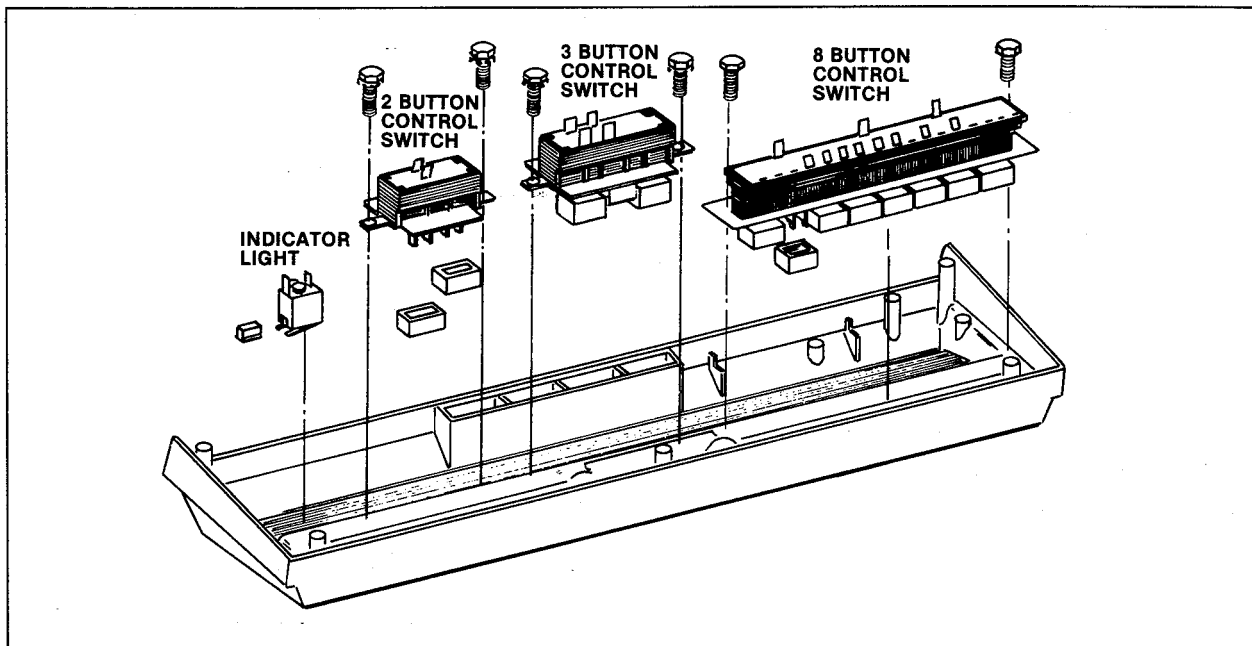
CAUTION:

Always shut off electrical power to the dishwasher before beginning any service procedure.

To Remove Control Switch:

1. Remove two screws holding switch to control panel.
2. Remove wires from switch.

Note: All wires are coded to indicate their connection to corresponding switch terminals.



CONTROL SWITCHES (All Models)

To Check Control Switch:

Shut off electrical power to dishwasher.

We recommend continuity checks be performed in order to determine whether the switch is in the open or closed position. Use of an ohmmeter will allow completion of these continuity checks. Should you have questions on use of an ohmmeter or performing continuity checks, refer to the Electrical Schematic on the product.

INDICATOR LIGHTS

To Remove Indicator Light:

1. Remove wires from light.
2. Hold lens from outside of control panel and slide light off to disengage from lens.

MICROPROCESSOR BOARD

The microprocessor board is an electronic circuit board which is located behind the touch pad on the control panel. It is used to control the various cycles and functions of the dishwasher. Removal of the control panel from the door is necessary in order to service the microprocessor board.

CAUTION:

Always shut off the electrical supply to the dishwasher before beginning any service procedure.

To remove Microprocessor Board:

1. Lift locking pin on edgeboard connector and disconnect edgeboard connector from microprocessor board.
2. Remove three nuts securing microprocessor board to the touch pad assembly and lift off.

Note: Handle the microprocessor board by the edges only. Component parts of the board can be damaged by static electricity.

- Carefully remove the touch pad connecting strip by pulling it out of the connecting strip connector located on the microprocessor board.

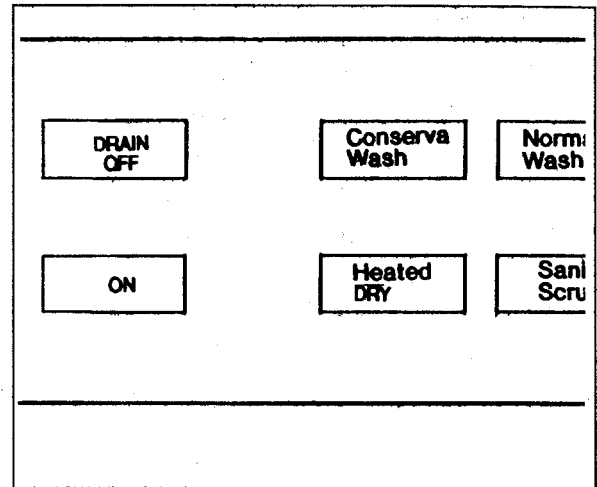
When replacing the microprocessor board, be sure all three spacers are in place on the mounting bolts of the touch pad assembly.

Also, the touch pad connecting strip should be pushed securely into the connector on the microprocessor board.

To Check Microprocessor Board:

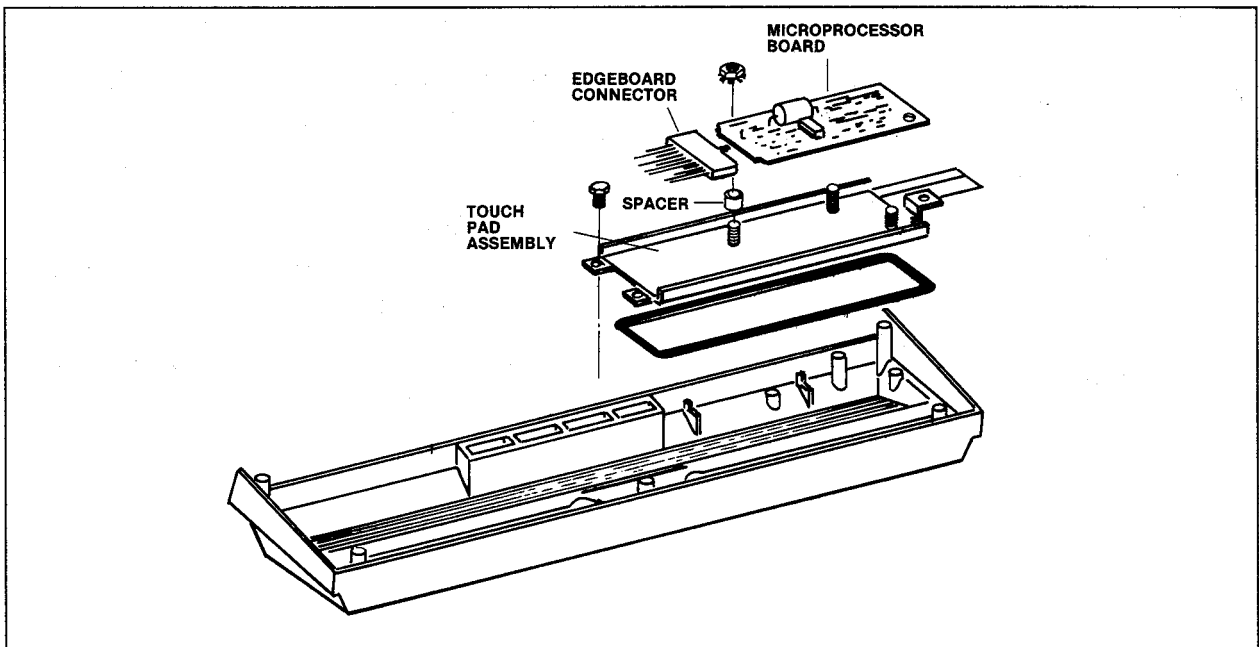
On some models the microprocessor board has the capability of diagnosing itself. (Check test board instructions provided with the board for correct models.) This self-test feature is activated by first installing a circuit test

board and then depressing the diagnostic mode pad, as shown.



Note: The diagnostic mode pad is unmarked. It is located at the intersection of an imaginary line between the "Drain-Off" and "Heated Dry" pads and the "Conserva Wash" and "On" pads.

Note: A troubleshooting sheet of instructions is located behind the front panel, on some models.



MICROPROCESSOR BOARD

GENERAL TROUBLESHOOTING - Microprocessor Products

There is no diagnostic test board available for checking the microprocessor on some model dishwashers since these machines do not have LED read-outs. Therefore, the following information is made available for testing.

It is the same information that is found on the schematics which accompany each product when manufactured; and of course, sold. This information is tucked behind the front panel insulation.

TROUBLESHOOTING

The dishwasher may be advanced to the desired portion of a cycle by depressing the diagnostic mode pad. Advancement will start after 2 seconds and continue until the pad is released.

Note: The rapid advance mode pad is unmarked, it is located at the intersection of an imaginary line between the "Drain-Off" and "Heated Dry" pad and the "Conserva Wash" and "On" pads.

Before making basic function checks for "Fill, Wash, Drain, etc." make sure the dishwasher is ready to begin the cycle. To do this depress the "ON" pad. The Power Light should be on. If not, check...

1. Varistor (visual inspection for damage)

2. Transformer
3. Microprocessor
4. Touch Pad

BASIC FUNCTION CHECKS

Push "On" pad and select cycle. Power light and cycle selected light should both be lit. In addition, the "wash" light will be lit. However, if "Rinse & Hold" is selected the "rinse" light will come on. If not, check...

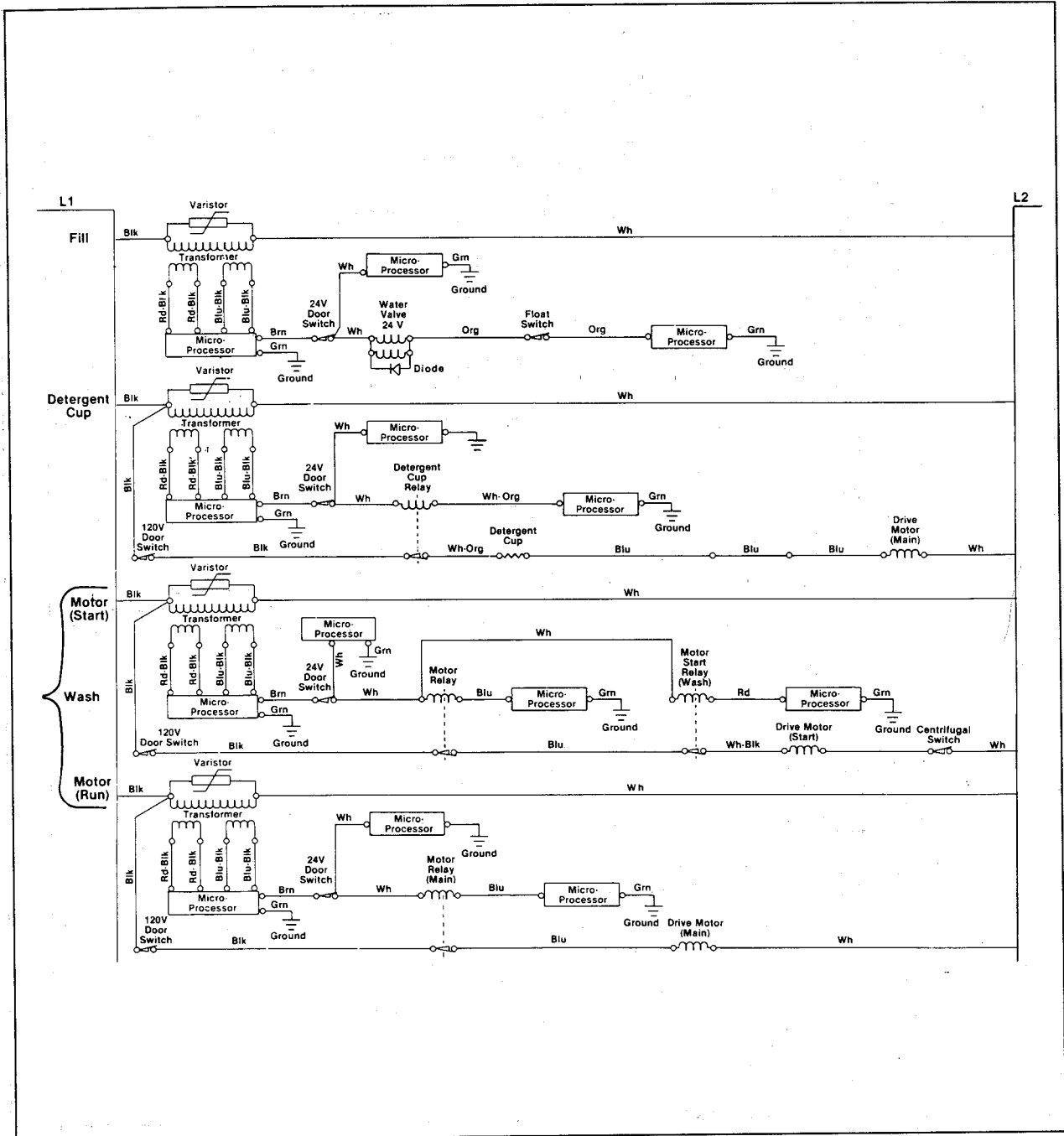
1. Varistor
2. Transformer
3. Microprocessor
4. Touch Pad

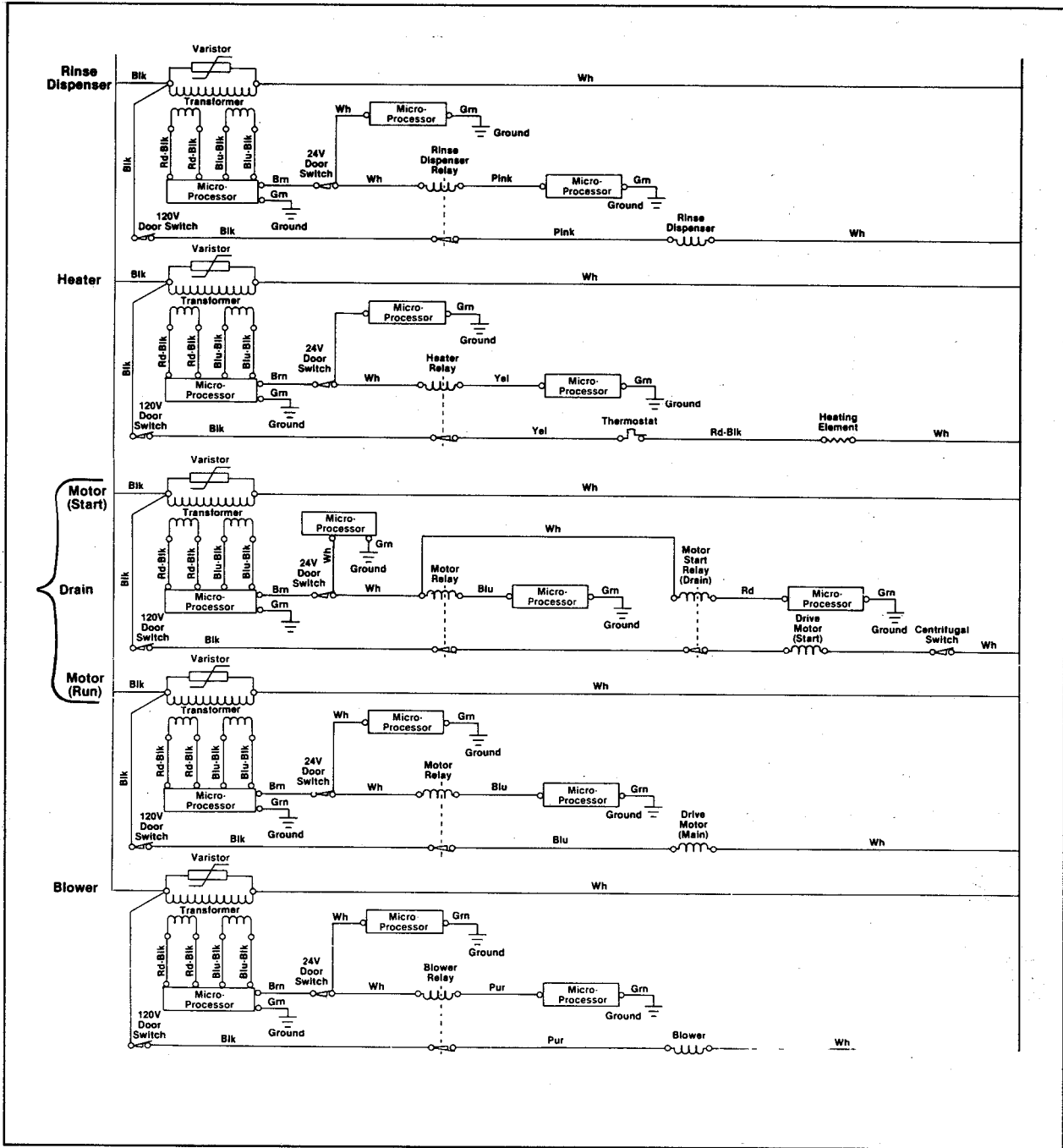
You are now ready to begin the basic function checks.

When using flow chart, please keep the following in mind.

- Fill -- This selection begins immediately when cycle is selected.
- Detergent Cup -- is activated shortly after first fill in "Low Energy".
- Motor -- Will begin following "fill".
- Rinse Dispenser -- This is an accessory item and it appears at the beginning of the last rinse.
- Heater -- This is activated when dry light is first lit.

FLOW CHARTS





CYCLE CHART

CYCLE	MINUTE			FUNCTION
	All Cycles Except Rinse & Hold	All Cycles Power Scrub Selected	Rinse & Hold	
Heavy Wash Cycle	9	9		Fill Fill-Wash* Wash* Wash*-Drain Drain
	7	7		Fill Fill-Wash* Wash* Wash*-Drain Drain
	16	29		Fill Fill-'Wash* } 13 Sec. Supplemental Fill 'Wash*-Detergent Cup } Following Start of Wash 'Wash*-Detergent Cup 'Wash* 'Wash*-Drain Drain
	8	8	9	Fill Fill-Wash* Wash* Wash*-Drain Drain
	19	19		Fill-Rinse Dispenser Fill-Wash* Wash* Wash*-Drain Drain
Normal Wash Cycle	20	20		Dry (Pause)-Heater (Heated Dry Select) Dry-(Pause)-Heater (Heated Dry Select)-Blower
	10	10		Heater (Heated Dry Select)-Blower Blower
Conserva Wash				

***Sani Scrub Selection Provides Heat During All Wash Periods And Adds 13 Minutes Of Wash To The Main Wash.**

Note: Sani Scrub and Heated Dry Options Are Not Available On Rinse and Hold Cycle.

TOUCH PAD

The touch pad provides a means to input cycle and function selections to the microprocessor board. The touch pad is mounted to the control panel and is connected to the microprocessor board through a connecting strip.

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Touch Pad:

1. Remove microprocessor board.

CAUTION:

The microprocessor board should be handled by the edges only. Component parts of the board may be damaged by static electricity.

2. Remove three spacers from microprocessor board mounting bolts.
3. Remove three screws securing touch pad to control panel and lift touch pad and trim out.

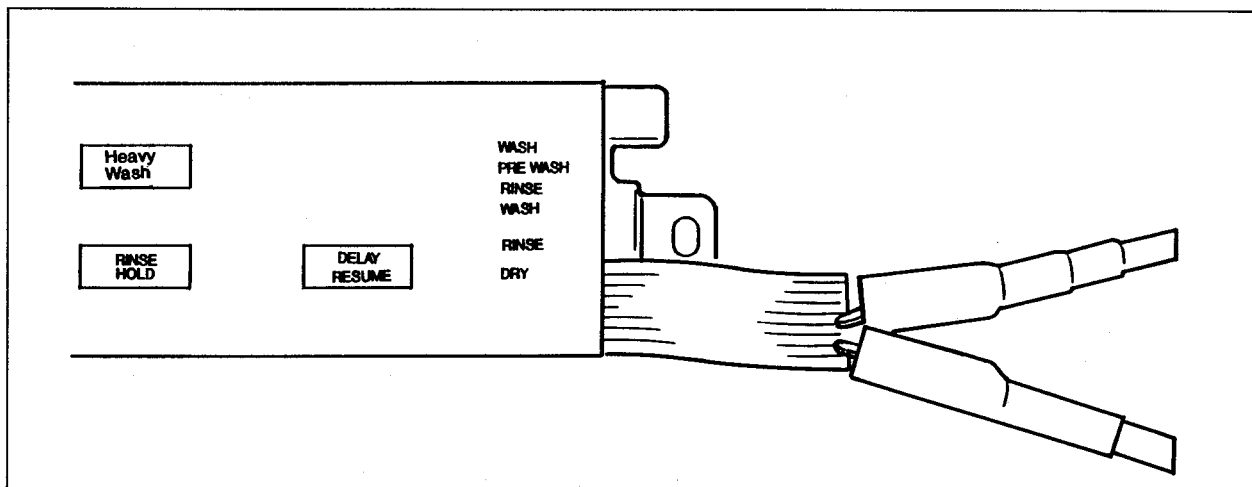
After replacing the touch pad, be sure all three spacers are in place on the microprocessor board mounting bolts. Additionally, the touch pad connecting strip should be pushed securely into the connector of the microprocessor board.

To Check Touch Pad - Touch Pad Checks:

Failure of the dishwasher to program properly can be related to the Touch Pad rather than the Microprocessor. Should you suspect the touch pad, it may be checked as follows:

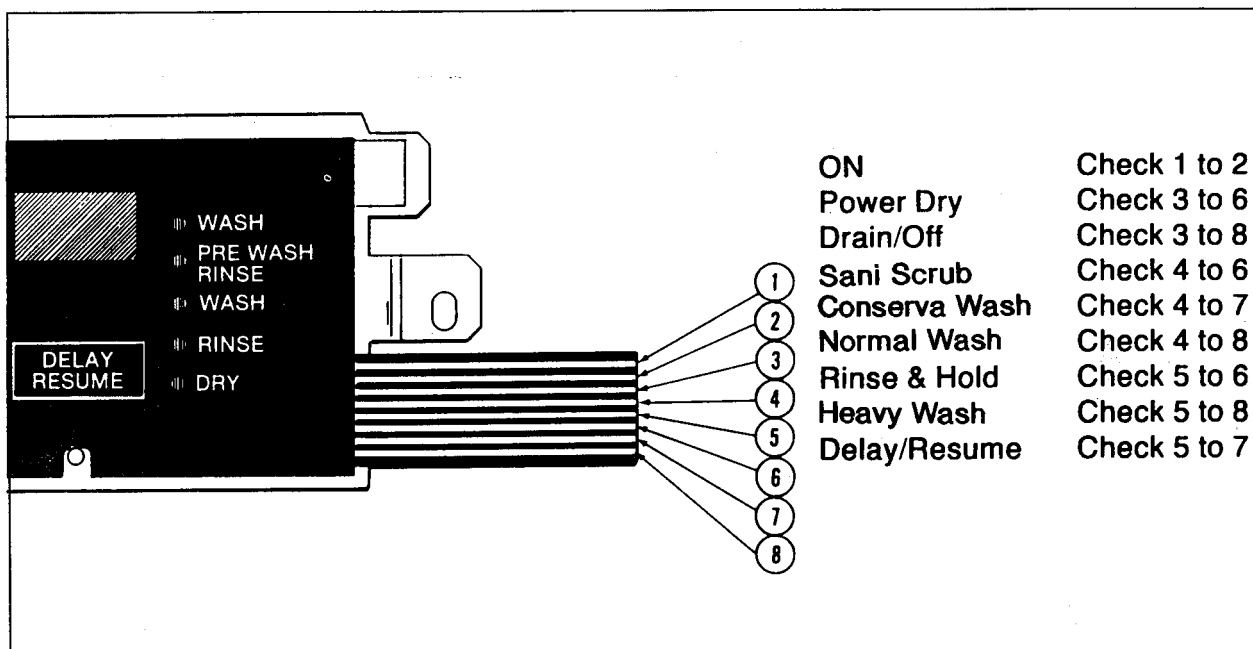
1. Use a volt ohmmeter to make the necessary checks, setting the meter on the (Rx1) scale.
2. Place the test prods of the meter on the appropriate ribbon leads. Depress and hold the pad being checked. A maximum of 200 ohms resistance should be seen. If no resistance measurement is noted or if an excess of 200 ohms is read, the touch pad should be replaced.

Note: As shown, use of alligator clips on the test prods will make checking the touch pad much easier.



TOUCH PAD

Following are the respective ribbon lead checks to be made for each touch pad selection.



RIBBON LEAD CHECKS

TRANSFORMER - Microprocessor Models

The transformer is used to provide the proper operating voltages to the microprocessor board. The transformer is mounted to the control panel. Removal of the control panel is therefore necessary in order to service the transformer.

CAUTION:

Always shut off electrical power to the dishwasher before beginning any service procedure.

To Remove Transformer:

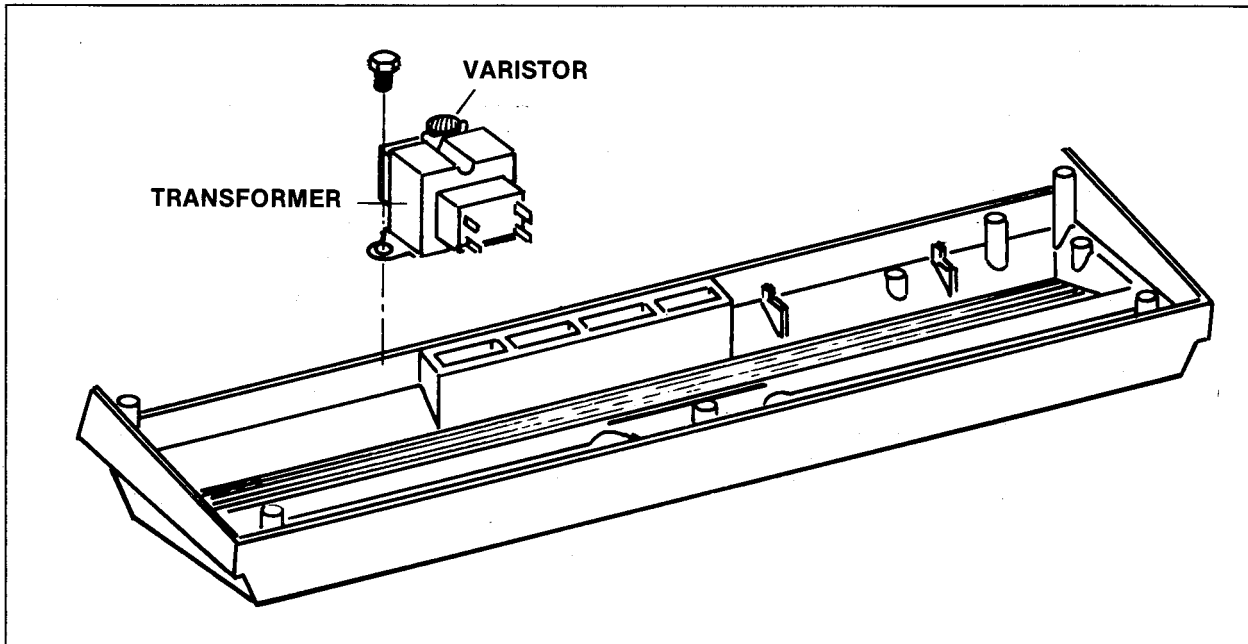
1. Remove wires.
2. Remove two screws securing transformer to control panel.

To Check Transformer:

Shut off electrical power to the dishwasher.

Because of the low resistance readings found on both the primary and secondary coils of the transformer, a continuity check across the transformer coils with an ohmmeter is recommended. A closed circuit (continuity) should be seen. If an open circuit (no continuity) is noted, the transformer should be replaced. Should you have questions on an ohmmeter or performing continuity checks, refer to the Electrical Test Equipment section in this manual.

Note: Live voltage checks on the transformer are not recommended due to the potential of electrical shock.

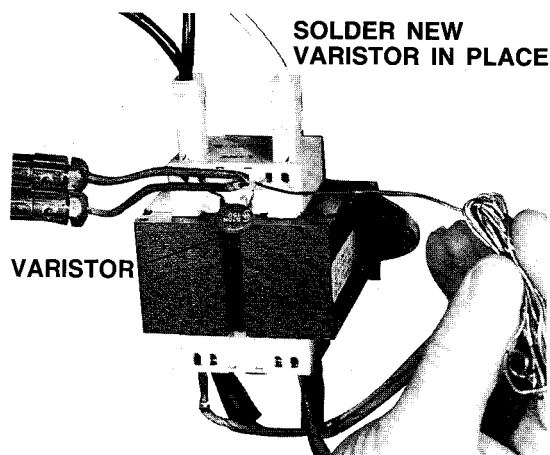


TRANSFORMER AND VARISTOR

VARISTOR - Microprocessor Models

The varistor is designed to protect the microprocessor board from excess voltage. At normal line voltage, the varistor shows extremely high resistance. When the line voltage exceeds the threshold of the varistor, its resistance decreases to a point of providing a voltage "bleed-off" path. This will prevent line voltage surges or "spikes" from reaching the microprocessor board.

The varistor is actually a part of the transformer. Because of this, if visual inspection shows damage to the varistor, the transformer and microprocessor board should be checked. If no damage to the transformer or microprocessor board is detected, the varistor may be cut out and a replacement varistor soldered in place.



VARISTOR/TRANSFORMER

START RELAY

The start relay is mounted on the right hand tub support and consists of a coil and a switch. The coil is in series with the main winding in the motor. When the motor is first energized, the current draw in this series circuit is enough to close the switch in the start relay. This closed switch provides a path for neutral to the wash or drain start winding and depending on what part of the cycle the dishwasher is in, starts the motor in that direction. Once the motor is up to speed, the current draw decreases and the coil can no longer hold the switch closed. When the switch opens, the wash or drain start winding drops out of the circuit.

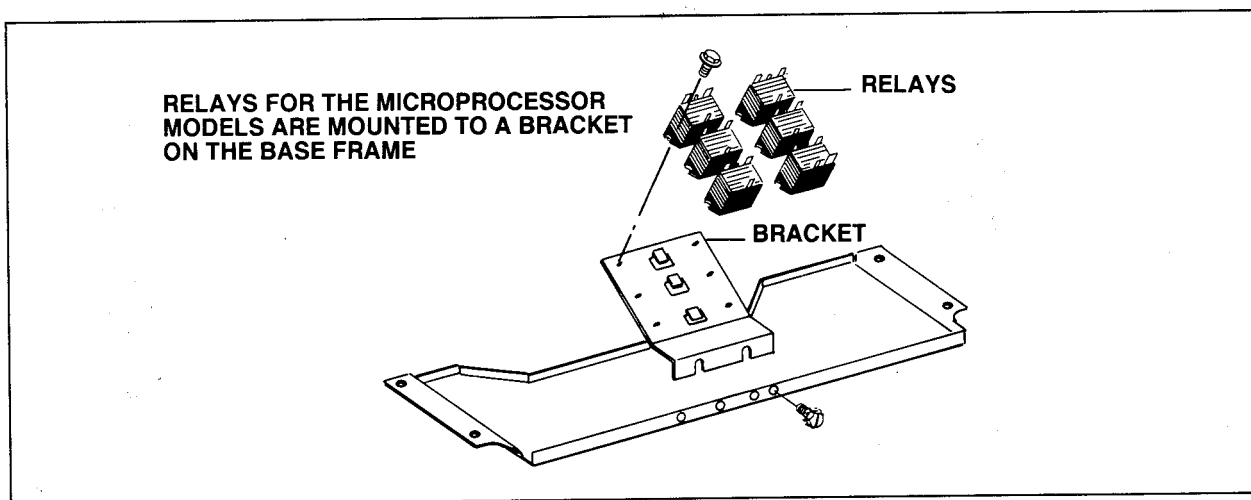
Note: The relay has to be in an upright position to work properly.

CHECK THE START RELAY

To check the relay, remove the three wires and the bolt that attaches the relay to the tub support. With an appliance meter, check for continuity across the coil from the yellow terminal to the white terminal. A good coil will show continuity across the terminals. If you have an open circuit, replace the relay. To check the switch part of the relay, turn the relay upside down. Check from the red-white terminal to both of the coil terminals for continuity. A good switch will show continuity across both terminals. If you have an open circuit, replace the relay.

Note: Do not make live voltage check across coil.

RELAYS - Microprocessor Models



The relays used are a coil-switch assembly designed to complete an electrical circuit to various components of the dishwasher at a specific, predetermined time.

The relay coils are energized by 24 volt DC (direct current) which is fed from the microprocessor board. Once the relay coil is energized, the relay switch will close, completing the circuit.

CAUTION:

Always shut off electrical power to the dishwasher before beginning any service procedure.

To Check Relays:

Shut off electrical power to the dishwasher.

Because of the low resistance readings found on the relay coil, a simple continuity check across the coil terminals with an ohmmeter is recommended. A closed circuit (continuity) should be seen. If an open circuit (no continuity) is noted, the relay should be replaced.

CAUTION:

The following is a live voltage check.

The switch portion of the relay may be checked once the coil is electrically energized. A voltage reading can be taken from the load side of the switch to neutral.

Note: A common neutral is found on the white lead of the heating element directly above the relays.

To Remove Relays:

1. Remove access and toe panels. Refer to Front Panel, Access And Toe Panels, as needed.
2. Remove two screws holding mounting bracket to base frame.
3. Move the relay assembly to the left and rotate out and away from dishwasher.

4. Remove wiring from relay being replaced.
5. Remove screw secure relay to mounting bracket.

TUB ASSEMBLY

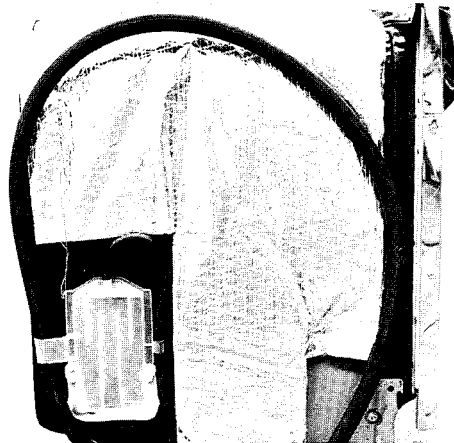
Unless otherwise noted, in order to gain access to many of the components to the tub assembly, it will be necessary to remove the dishwasher from the cabinet. This will involve disconnecting the electrical, water and plumbing services.

TUB

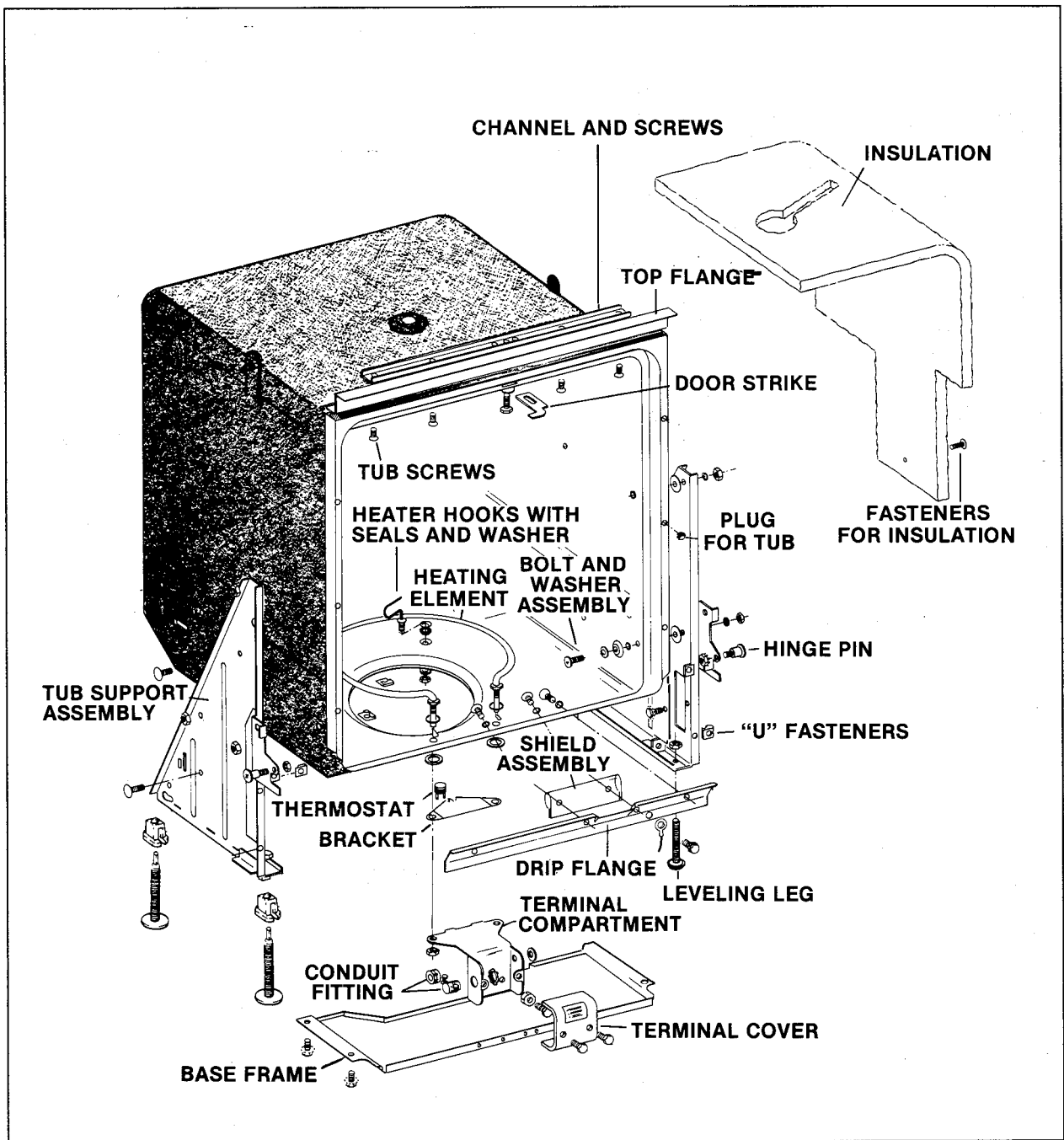
Replacement of the tub will require removal of all components covered in this section.

Note: In some cases, complete disassembly of the component is not required in order to remove it from the tub.

TUB INSULATION



FIBERGLASS INSULATION



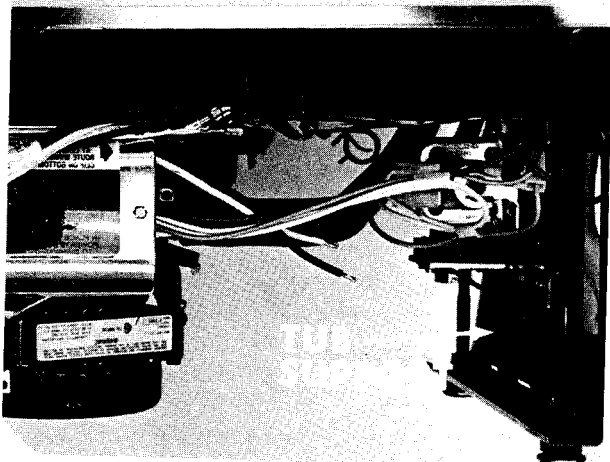
TUB ASSEMBLY

These models use a fiberglass insulation blanket which lays across the top and down both sides and extends the full depth of the tub. They serve a dual purpose--to deaden sound and retain heat.

To Remove Fiberglass Insulation:

Disengage wire retainer at rear of tub. Using a flatblade screwdriver, pry out the plastic fasteners (two on each side) holding the insulation to the side supports of the tub. If difficulty is experienced in removal of the fasteners, they may be cut off using a pair of wire cutters.

TUB SUPPORT ASSEMBLY



There is both a left and right tub support assembly. Each serves to support the tub and door hinges in addition to holding the front and rear leveling legs. The left tub support assembly also holds the water valve.

To Remove Tub Support Assembly:

1. Remove four screws holding access and toe panels.
2. Remove door springs and door.
3. Remove water valve.
4. Carefully lay dishwasher on its left side and roll dishwasher one-fourth turn so it is laying on its back.

CAUTION:

Do not tip dishwasher directly to its back as this can result in damage to the blower assembly and tub.

5. Remove four screws (two on each side) securing base frame to tub support. Microprocessor models only.
6. Remove three nuts securing each tub support to tub.

COMPONENTS OF TUB SUPPORT ASSEMBLY

FRONT AND REAR LEVELING LEGS

The front and rear leveling legs are threaded into the base frame and are secured by a "snap in" nut. The leg can be adjusted up or down using a 1/4" ratchet.

Refer to the installation instructions provided with each dishwasher for information regarding proper leveling of the dishwasher.

HINGE PIN

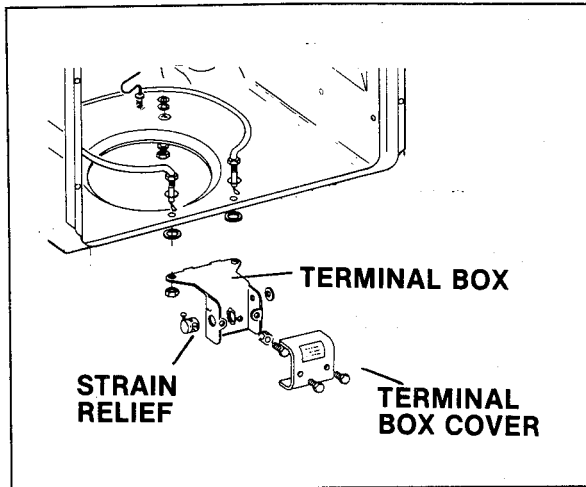
Each door hinge rides on a pin attached to the tub support assembly.

To Remove Hinge Pin:

1. Remove door assembly.
2. While holding the pin with a screwdriver, remove the nut using a 3/8" wrench or socket.

TERMINAL BOX

The terminal box houses the connection between the electrical supply and the dishwasher. Removal of the terminal box does not require removal of the dishwasher from its undercounter installation.



TERMINAL BOX

CAUTION:

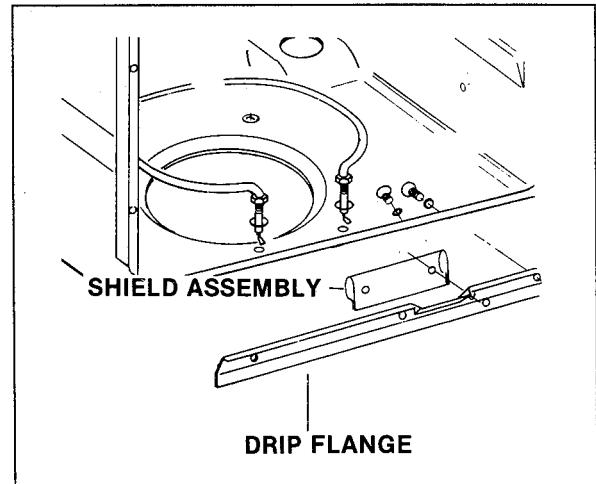
Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Terminal Box:

1. Remove four screws holding access and toe panels.
2. Remove two 1/4" screws securing cover for terminal box.
3. Disconnect electrical supply line and ground wire from dishwasher.
4. Remove nut holding strain relief and pull electrical supply line from terminal box.
5. Remove white and black wires out the right side of terminal box.
6. Remove wires from heating element terminals.
7. Remove nuts holding terminal box to bottom to tub.

DRIP FLANGE AND SHIELD ASSEMBLY

Removal of the drip flange and shield assembly can be accomplished without removing the dishwasher from its undercounter installation.



DRIP FLANGE AND SHIELD ASSEMBLY

To Remove Drip Flange And Shield Assembly:

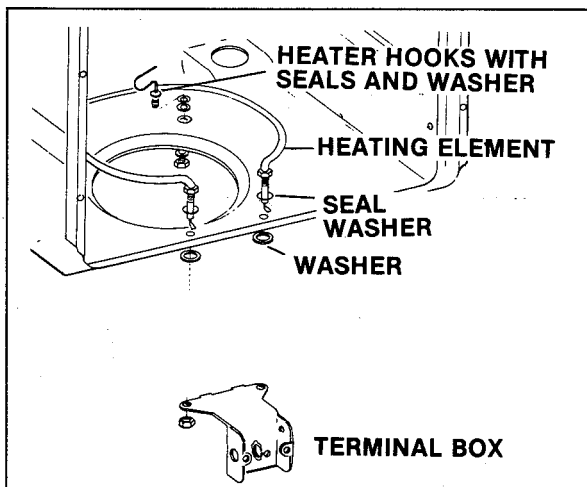
1. Remove four screws holding exterior door panel.
2. Remove four screws securing drip flange and shield to tub.

In the event you experience difficulty in replacing the drip flange and shield assembly, it may be necessary to remove the door. Removal of the door will require disconnecting and withdrawal of the unit from the installation.

HEATING ELEMENT

A low watt density heating element rated at 750 watts is used on the dishwasher. The element will assist in the drying process when the "Heated Dry" option is selected and on some models will maintain or increase the water temperature during the wash cycle.

Removal of the heating element does not require removal of the dishwasher from its undercounter installation.



HEATING ELEMENT

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Heating Element:

1. Remove four screws holding access and toe panels.
2. Remove wires from heating element terminals.
3. Remove two nuts (from bottom of tub) securing heating element to tub. The terminal box, which provides the ground connection for the heating element, and two washers will also be removed at this time.
4. Lift the heating element out of the tub and release the element from the two rear heater hooks. Note the sealing washer on each lead of the heating element.

When replacing the element, carefully inspect the sealing washers for the heater hooks and element. If there is any doubt as to the condition of these washers, they should be replaced.

To Check Heating Element:

Shut off electrical power to the dishwasher.

We recommend a continuity check be performed across the heating element terminals in order to determine whether or not a circuit is available through the element. (Continuity should be seen.) It is also suggested a continuity check be performed between the sheath of the element and dishwasher ground. (No continuity should be seen.) Use of an ohmmeter will allow completion of these checks.

WATTAGE READING

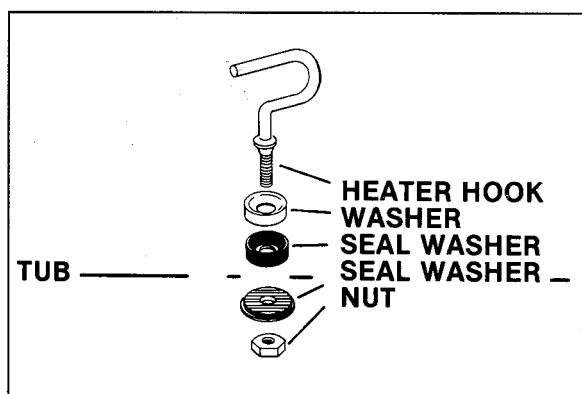
CAUTION:

The following are live voltage checks.

If a specific wattage reading is needed, take an amperage reading at Rd-Blk of the heating element and multiply the reading by available voltage (Amps x Volts = Watts). A normal amperage reading during dry cycle with power to the element is 6 1/2 amps.

Note: Refer to Electrical Test Equipment section of this manual if unfamiliar with use of an ammeter.

HEATER HOOK



CAUTION:

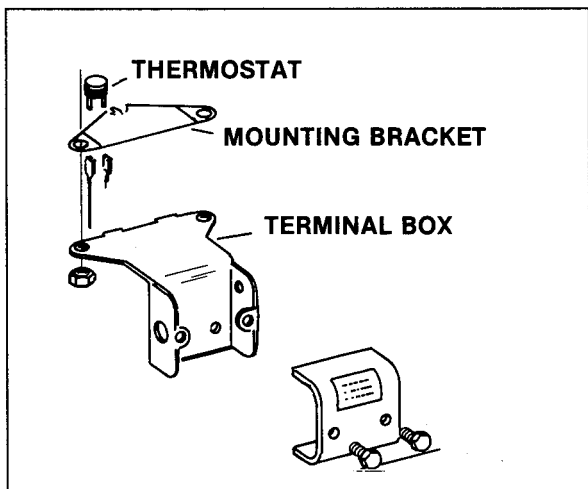
Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Heater Hook:

1. Remove four screws securing access and toe panels.
2. Remove nut and seal washer (bottom of tub) from heater hook and remove heater hook.

THERMOSTAT

A thermostat is used to maintain or increase the water temperature on certain models. On the microprocessor models, the thermostat serves to break the electrical circuit to the heating element, should a malfunction occur and the water continue to heat for an extended length of time.

**THERMOSTAT**

The thermostat is located directly behind the terminal box on the dishwasher and is mounted to the bottom of the tub.

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Thermostat:

1. Remove four screws securing access and toe panels.
2. Remove both wire leads to thermostat.
3. Slide thermostat out of bracket.

Note: On some models, removal of the timer or removal of the relay package will provide easier access to the thermostat.

To Check Thermostat:

Shut off electrical power to the dishwasher.

We recommend a continuity check be performed across the thermostat terminals in order to determine proper operation of the thermostat. On the microprocessor models, the thermostat should show a closed circuit (continuity). On other models which use a thermostat, you should see an open circuit (no continuity). See Schematic with dishwasher.

Use of a volt-ohmmeter will allow completion of the continuity check. Should you have questions on use of a volt-ohmmeter or performing a continuity check, refer to the Electrical Test Equipment section in this manual.

DOOR STRIKE

The door strike is secured to the tub and provides a means of locking the door in place once the door latch assembly is moved completely to the right.

To Adjust Door Strike:

Adjustment of the door strike provides a proper seal between the door gasket and the recessed surface of the tub. Adjustment is accomplished by loosening the 5/16" screw securing the door strike to the tub and moving the strike in or out. To provide more tension on the door gasket, tap the strike in. With the door properly adjusted, the porcelain part of the door should not make contact with any portion of the porcelain tub.

To Remove Door Strike:

Complete removal of the 5/16" screw will allow removal of the door strike.

Removal of the door strike does not require removal of the dishwasher from its undercounter installation.

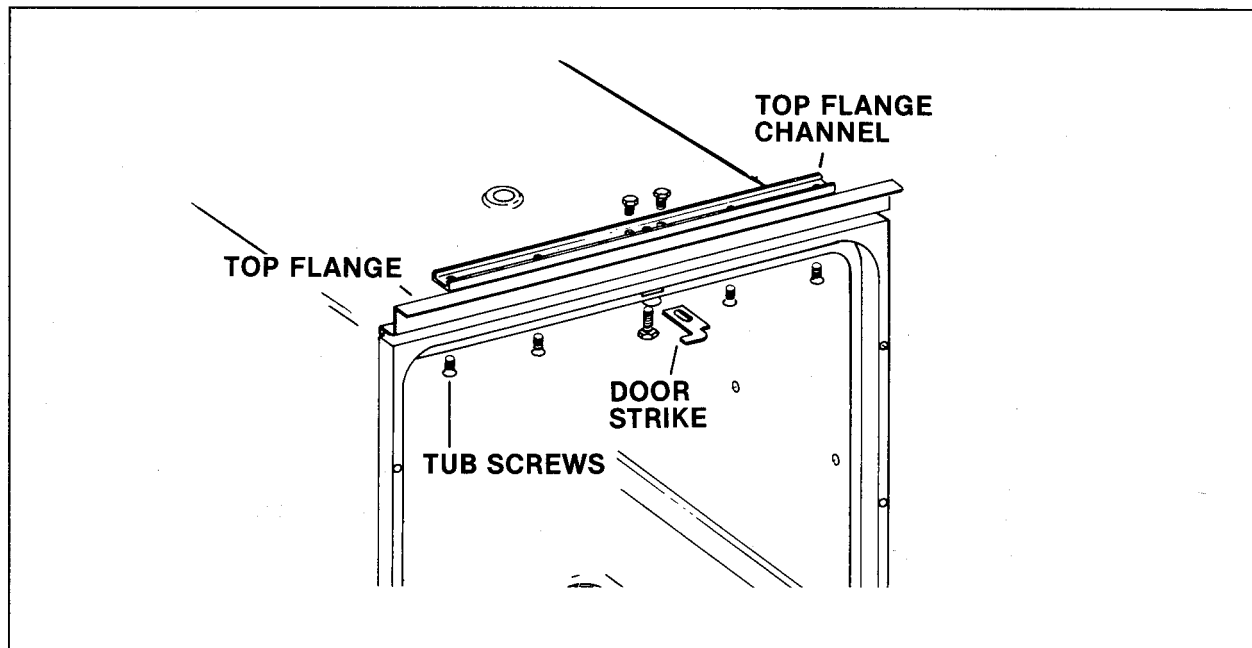
TOP FLANGE AND CHANNEL

Removal of the top flange and channel does not require removal of the dishwasher from its undercounter installation.

To Remove Top Flange And Channel:

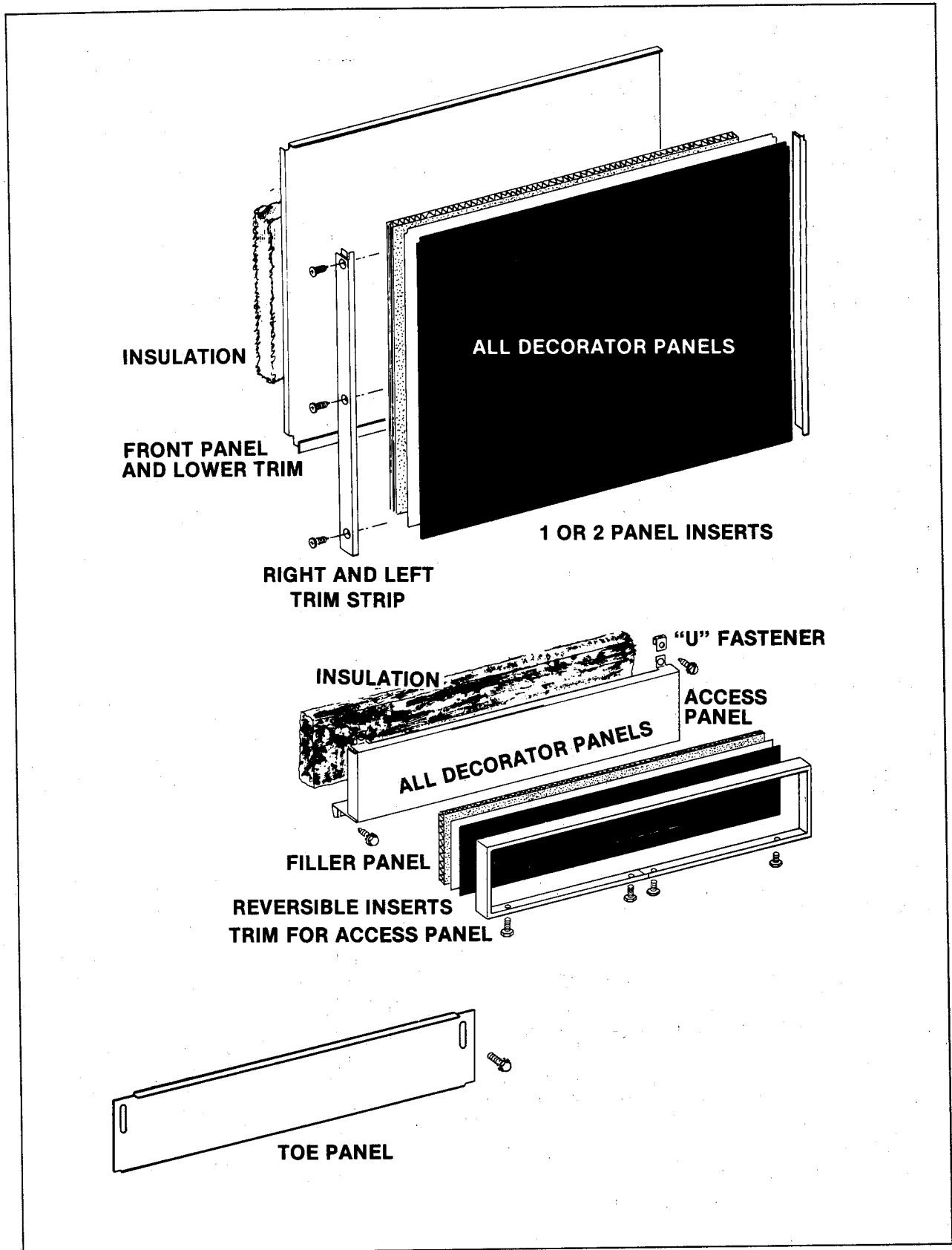
1. Remove three screws securing the top flange to the countertop.
2. Remove four screws securing top flange to tub.
3. Remove door strike and lift top flange off.

Note: The top flange channel is secured to the top flange by two screws.



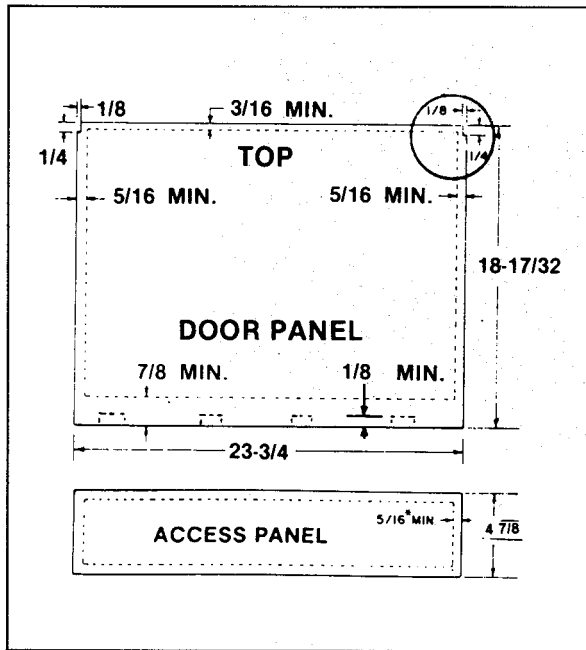
TOP FLANGE AND CHANNEL

FRONT PANEL, ACCESS PANEL AND TOE PANEL



FRONT AND ACCESS PANEL

The front and access panels have inserts which are reversible. Any custom designed insert made of wood, Formica, etc., should be cut to the dimensions shown.



THIN INSERTS

The stainless steel trim is designed for material of 1/4" maximum thickness. If panels of a thinner material are used, it will be necessary to make up the difference with filler panels.

THICK INSERTS

Overlay or embossed type insert panels may be used, provided the portion of the panel which is under the trim is not more than 1/4" thick. The area of the panels which must meet the 1/4" thick requirement is indicated by the dotted lines shown.

CAUTION:

Since there is moist air being discharged from the front of the dishwasher during the normal cycle, it is recommended that wood panels be finished with a moisture-resistant material on both sides and all edges. Do not use shellac as a final finish coat.

To Reverse Front Panel Inserts:

1. Remove either left or right-hand trim strip by removing screws.
2. Grasp panel inserts and flex out slightly.
3. Slide panels out about 2". Continue to flex insert panels enough to remove from upper and lower trim strips. Remove filler panel.
4. Select color preference and reinstall one or both insert panels. Place insert panels (notched corners at top) on the gray back-up panel as the bottom edge is under the lower chrome trim strip and in front of the rivets. Flex inserts enough to insert upper edge of panels under the control panel. Slide panels until leading edge is under the side trim which is still in place on the back-up panel.
5. Slide the filler panel behind the two inserts and next to the gray back-up panel.
6. Reinstall side trim strip.

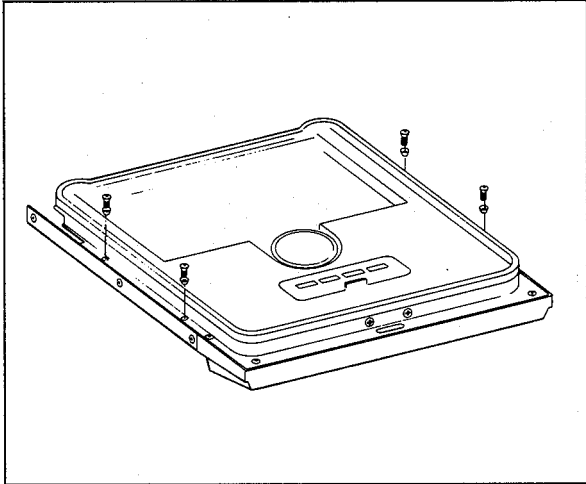
Note: Make sure upper notched corners of the inserts are under the control panel.

Note: When using factory inserts, always install one or both panels plus the cardboard filler panel. Never use more than two inserts.

To Remove Front Panel:

Remove four screws securing front panel to inner door.

Note: There is a washer on each screw. This washer is designed to act as a cushion to reduce the chance of porcelain damage when the screw is tightened.



FRONT PANEL

CAUTION:

To prevent damage to the door or access panel, the front panel should be supported while the screws are being removed.

To Reverse Access Panel Inserts:

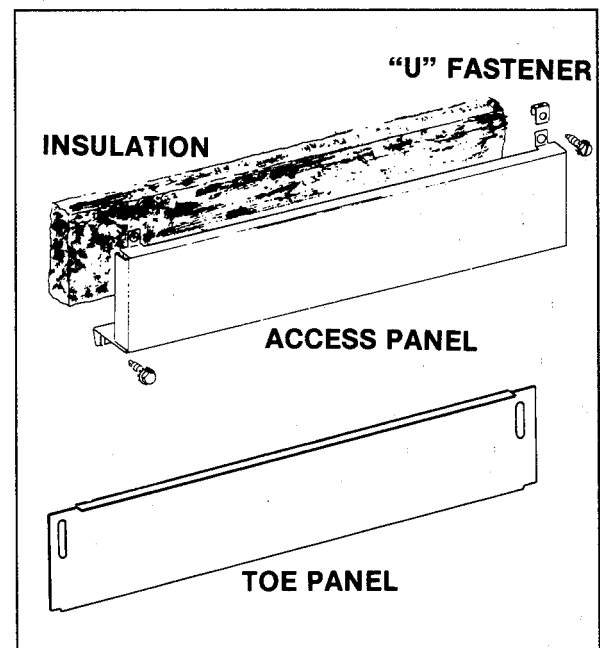
1. The access panel is held by four screws. With those screws removed, pull the access panel off.
2. Remove the four screws along the bottom of the trim and remove trim.
3. Remove inserts and select color to match door panel.
4. Lay the access panel trim face down on a protective surface. Place the side of the access panel insert you selected face down inside the wrap-

around trim. Lay the other insert panel and filler panel in place.

5. Tilt top of access panel so it fits under the short lip on top of trim and position panel inside wrap-around trim.
6. Fasten bottom ends of the trim to the access panel using the four screws previously removed.

To Remove Access And Toe Panels:

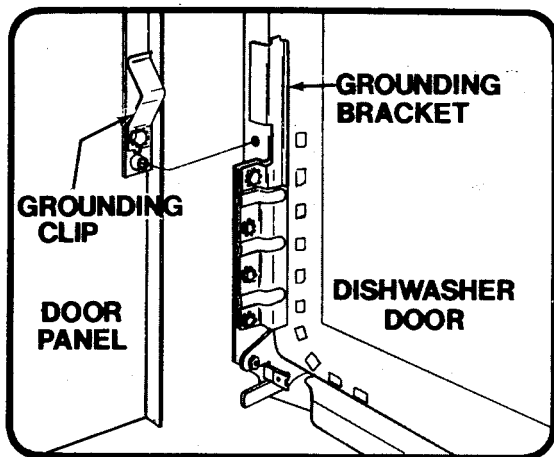
Remove four screws securing access panel to tub supports. The toe panel may be lifted off once the access panel is removed.



FRONT PANEL GROUNDING

A grounding bracket is installed on the door and a grounding clip on the front panel. With the front panel installed on the door, the grounding bracket and clip make contact, providing the ground.

Note: The front panel should always be properly grounded to the door.



GROUNDING BRACKET AND CLIP

INNER DOOR

Removal of the door will be much easier if the dishwasher is disconnected from the electrical, water and plumbing services and then pulled forward. This will aid in removal and replacement of the door springs.

Note: If the installation permits easy access for removal and replacement of the door springs, it is not necessary to remove the unit from its installation.

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

TO REMOVE DOOR

1. Remove front panel.
2. With the door closed, remove the door spring and/or springs from each door hinge. Be sure to retain the plastic grommet.

Note: Remove door spring from bottom of tub support first.

3. Disconnect all wiring.
4. Open door fully. Then bring door back up about one-fourth of the distance. Lift up on the bottom of the door to disengage the hinges from the hinge pins.
5. Continue closing the door while lifting until the hinges are clear of the tub.

DOOR ADJUSTMENT

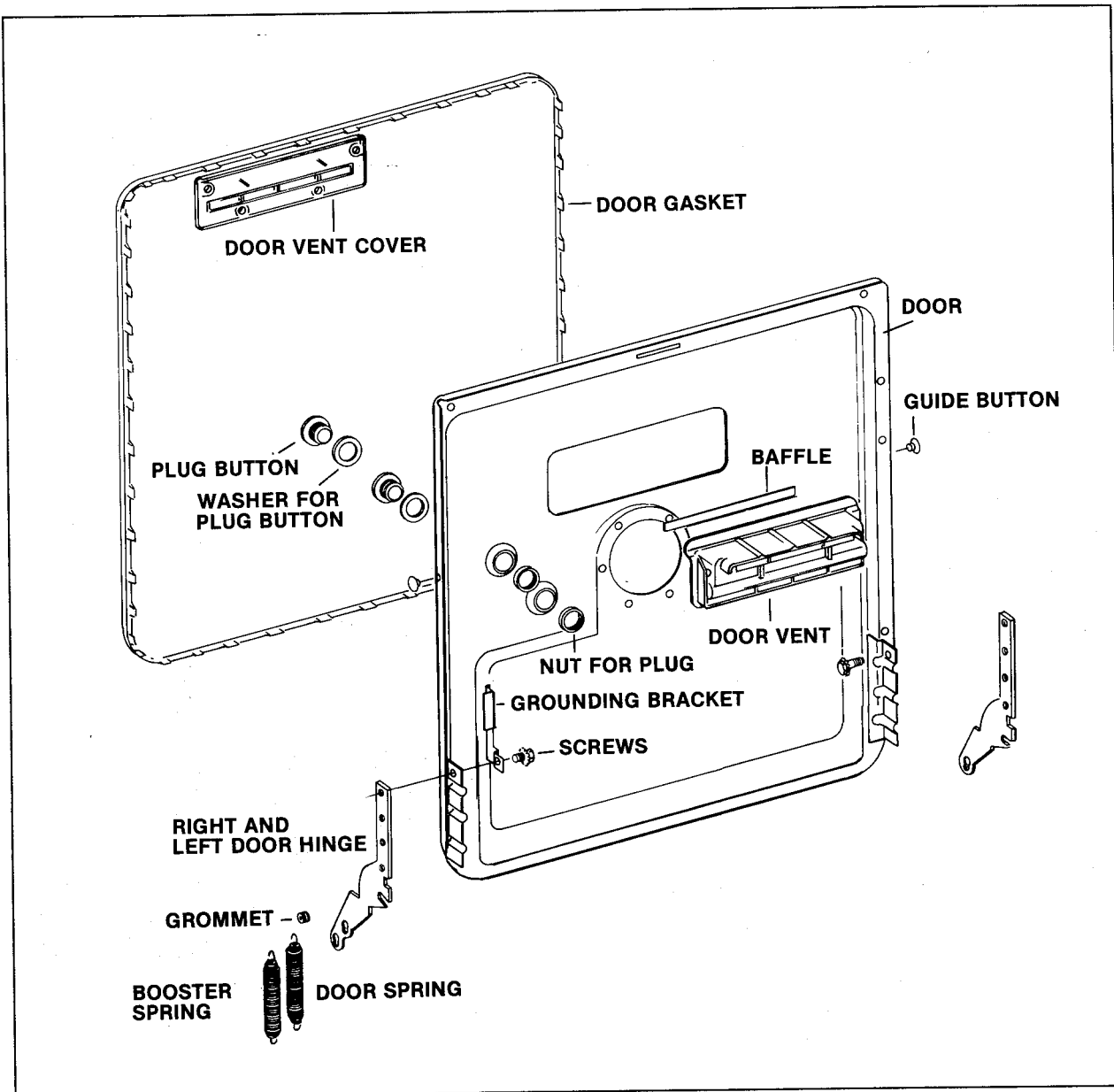
Whenever a door, door gasket or hinge is replaced, the door should be adjusted. There are two adjustments involved for centering and sealing the door.

The hinged mounts welded to the door liner are slotted to provide positioning the door up or down. This adjustment is used to position the door properly in the tub opening.

The proper seal between the door gasket and the recessed surface of the tub is adjusted by loosening the door strike and moving it in or out.

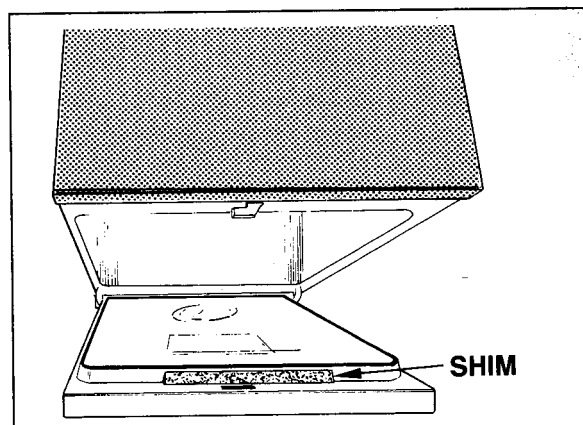
To Adjust Door (Up Or Down):

1. Remove front panel.
2. Loosen door hinge screws and remove springs on door.
3. Use a shim between the top of the door and tub to compress the gasket at the bottom. The shim can be made of material 1/8" thick, about 12" to 14" long and 1" to 1 1/2" wide. Taper along leading edge so door will close properly.



INNER DOOR

Lay the shim along the ledge of the door. Close door and lock the door latch. With door in this position, tighten door hinge screws and replace springs on the hinges.



SHIM

To Adjust Door (In Or Out):

1. Open door and loosen 5/16" screw securing door strike to tub.
2. To get more tension on the gasket, tap the strike in. With the door properly adjusted, the porcelain part of the door should not hit any portion of the porcelain tub.

DOOR SPRINGS

Some models use two main springs plus a booster spring. If an extremely heavy door panel is used, it may be desirable to add the booster spring to those models having only one door and one booster spring.

Removal of the door springs will be much easier if the dishwasher is disconnected from the electrical, water and plumbing services and then pulled forward.

To Adjust Door Springs:

The main springs would normally be in the first hole of the spring bracket. If the door does not close completely, it may be necessary to move the main springs back a hole or two.

Note: Check to make sure the upper and lower racks are not warped and making contact with the door. If contact is made, the rack should be removed and pressure exerted on the front of the rack to reform it.

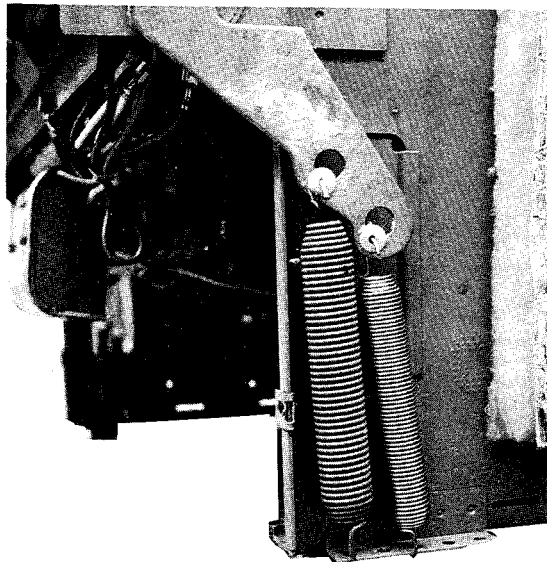
The booster spring can be adjusted to balance the door. Moving the booster spring toward the rear will slow the opening and improve on balance.

To Remove Door Springs:

1. Remove hook at bottom first.
2. Remove top part of spring from hinge. Retain plastic grommet for further use.

Note: When replacing the springs, make sure the hooks point inward at the bottom and outward at the top.

DOOR HINGE



To Remove Hinge:

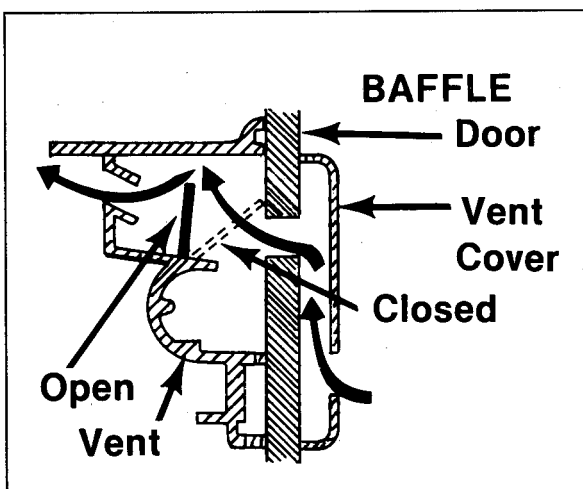
1. Remove front panel.
2. Remove door springs. See Door Springs.
3. Remove door.
4. Remove four screws securing door hinge to inner door, each side.

If a new hinge or door is installed, apply grease to hinge support where contact is made between the hinge and support.

DOOR VENT ASSEMBLY

The door vent assembly is located in the upper front of the door. It serves several functions.

1. The vent cover (located on the inside of the door) has a stop molded on it to stop the lower rack from sliding out too far.
2. There is a baffle inside of the vent assembly which seals off the vent opening during circulation and prevents water from escaping.



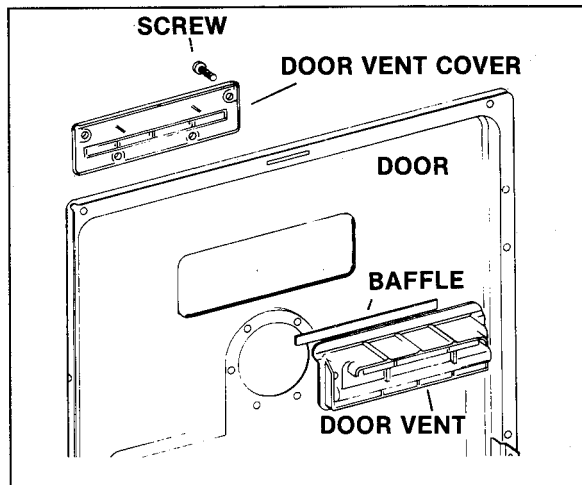
BAFFLE

3. When the blower is on, the baffle is moved up by the air from the blower, allowing air out the vent.

Note: The correct position of the baffle when it is installed; as shown.

To Remove The Vent Assembly:

1. Remove front panel.
2. Open door and remove four screws holding vent cover to inside of door.
3. Push the rest of the vent assembly away from the door opening. It is sealed by silicone rubber sealant.



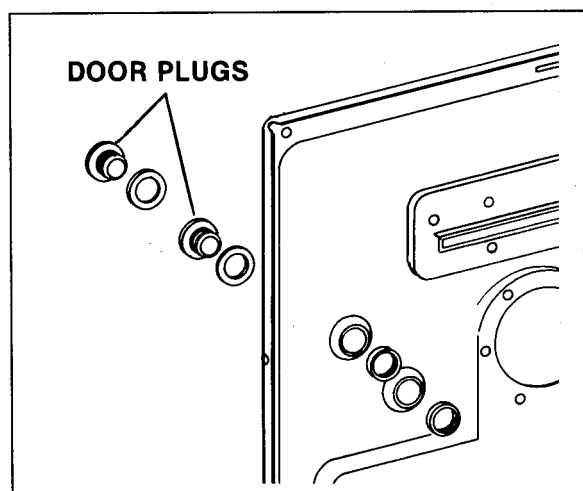
VENT ASSEMBLY

Note: When installing the vent assembly, remove old sealant and apply new sealant. Also make certain the baffle is installed in the correct position.

CAUTION:

An over application of sealant may cause baffle to become stuck in the "closed" position. This could result in a complaint of "poor drying" as moist air would not be forced out of the dishwasher.

DOOR PLUGS



DOOR PLUGS

The door plugs are used on those models where the rinse dispenser feature is not available.

To Remove Plugs:

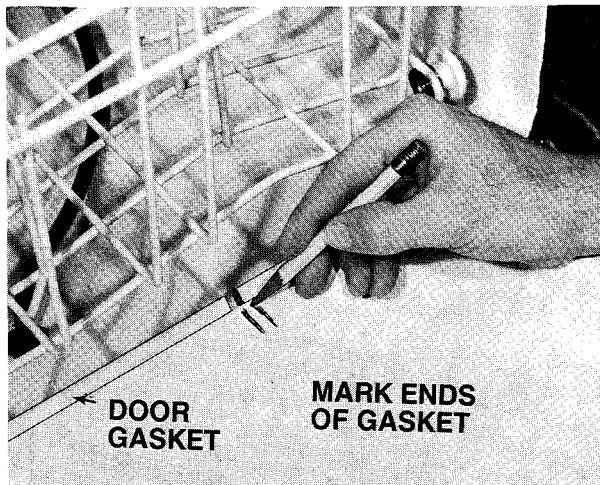
1. Remove front panel.
2. Remove plastic nut securing plug to door and remove plug and washer for plug.

DOOR GASKET

The door gasket provides a seal between the door and tub. Before replacing a door gasket, adjustment of the door should be attempted. Refer to Door Adjustment.

To Remove Door Gasket:

1. Remove front panel.
2. Open door and mark (using a pencil, etc.) the slots into which each end of the gasket goes.



3. Cut tabs of door gasket off and remove gasket or grasp gasket by one end and pull upward and off.
4. Remove any tabs remaining in the slots of the door.

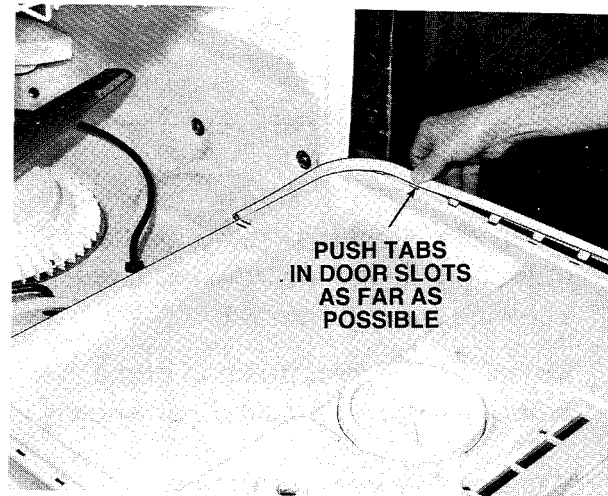
To Replace Door Gasket:

It is important the tabs of the gasket not be damaged or pulled off during the replacement. As such, we suggest removal of the door from the dishwasher for ease in gasket replacement. See Door Removal.

Note: If a pair of wide-tip needlenose pliers is available for use, removal of the door is not necessary.

Use of a portable blow dryer is recommended to assist in the gasket replacement. If a blow dryer is not available, the gasket should be placed in HOT soapy water so it becomes soft.

1. Place the gasket in position on the door and push tabs through the slots as far as possible. Be sure the gasket starts in the slot marked at the time of gasket removal.



Note: The gasket should always be installed so the two ends meet (a small gap is normal) in the center of the drip flange recess for the wire harness.

2. Using the blow dryer, apply moderate heat to the tabs of the gasket. Pull each tab through with a pair of wide-nose pliers.

CAUTION:

Do not overheat the tabs. Pull evenly in a back and forth motion. Do not jerk on the tabs or they will break off. Make sure the lip on each tab is pulled completely through.

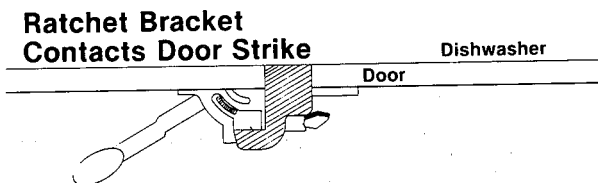
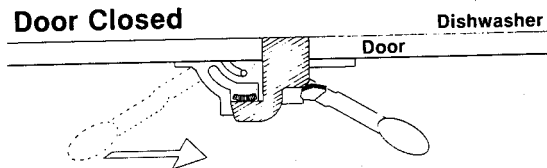
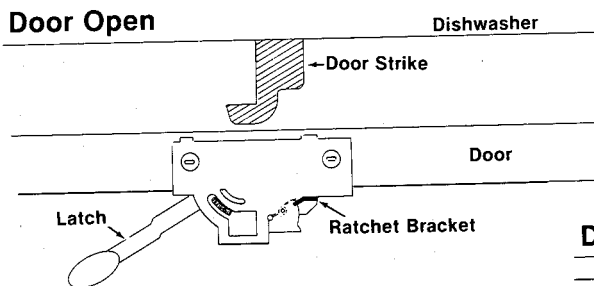
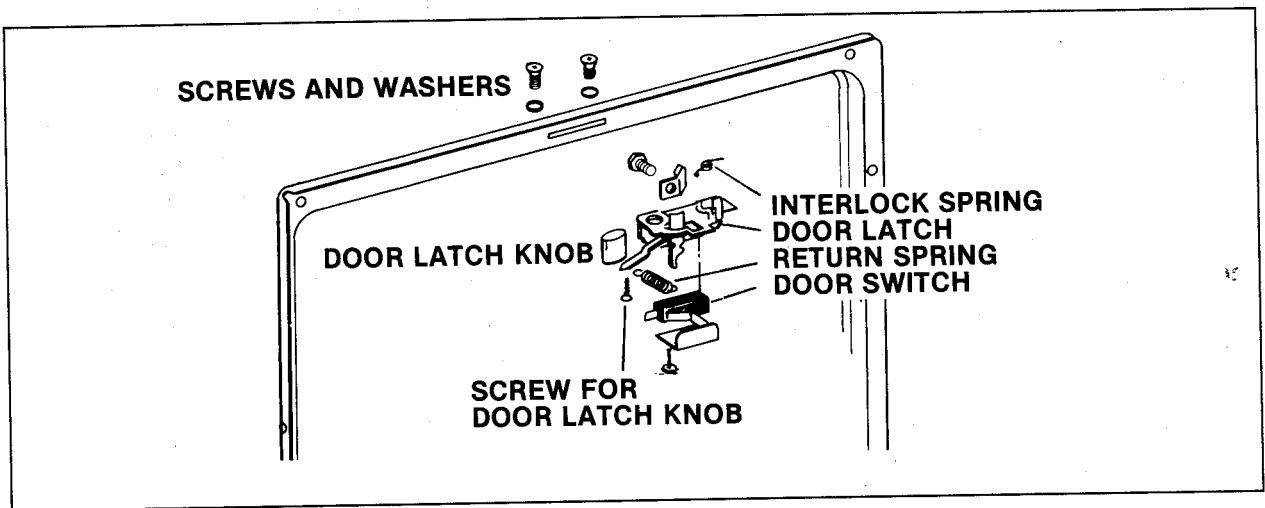
- 3. Always adjust door. See Door Adjustment.

DOOR LATCH MECHANISM AND DOOR SWITCH

The door latch mechanism and door switch are located behind the control panel. The door switch is mounted to

the door latch mechanism. The entire assembly is then mounted to the door, providing a means of locking the door in the closed position and completing an electrical circuit to the timer of the dishwasher.

Note: When the door is opened, the door latch cannot be moved enough to actuate the door switch. This is a feature which prevents operation of the door switch while the door is opened. With the door closed, the ratchet bracket makes contact with the door strike, depressing the bracket and allowing complete locking of the door latch mechanism, as shown.



CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

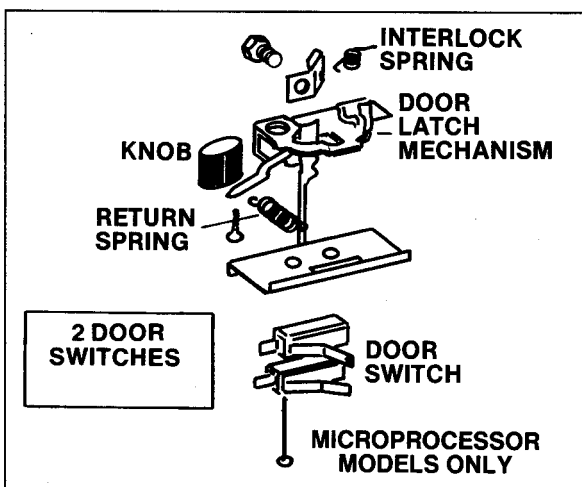
To Remove Door Latch Mechanism:

1. Remove screw securing knob to door latch.
2. Remove four screws holding control panel to door and remove control panel.
3. Remove two screws securing door latch mechanism to door.
4. Remove wire leads to door switch and ground wire to door latch.

DOOR SWITCH

Most dishwashers use a single door switch mounted to the door latch mechanism, which when activated completes an electrical circuit to the timer.

The microprocessor computer touch control dishwasher uses two door switches, one mounted on top of the other. The top door switch supplies 24 volts to the microprocessor board and the water valve. The bottom door switch supplies 120 volts to all other electrical components.

**CAUTION:**

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Door Switch:

1. Remove screw securing knob to door latch.
2. Remove four screws holding control panel to door and remove control panel. Refer to Control Panel, as needed.
3. Remove two screws securing door latch mechanism to door.
4. Remove wire leads to door switch and ground wire to door latch.
5. Remove two screws securing door switch to door latch mechanism.

When replacing the door switch wires on the microprocessor models, note the difference in the size of the terminals between the 24 volt switch (top) and 120 volt switch (bottom). This difference in terminal size will assist in correct placement of the wires on both switches.

To Check Door Switch:

Shut off electrical power to the dishwasher.

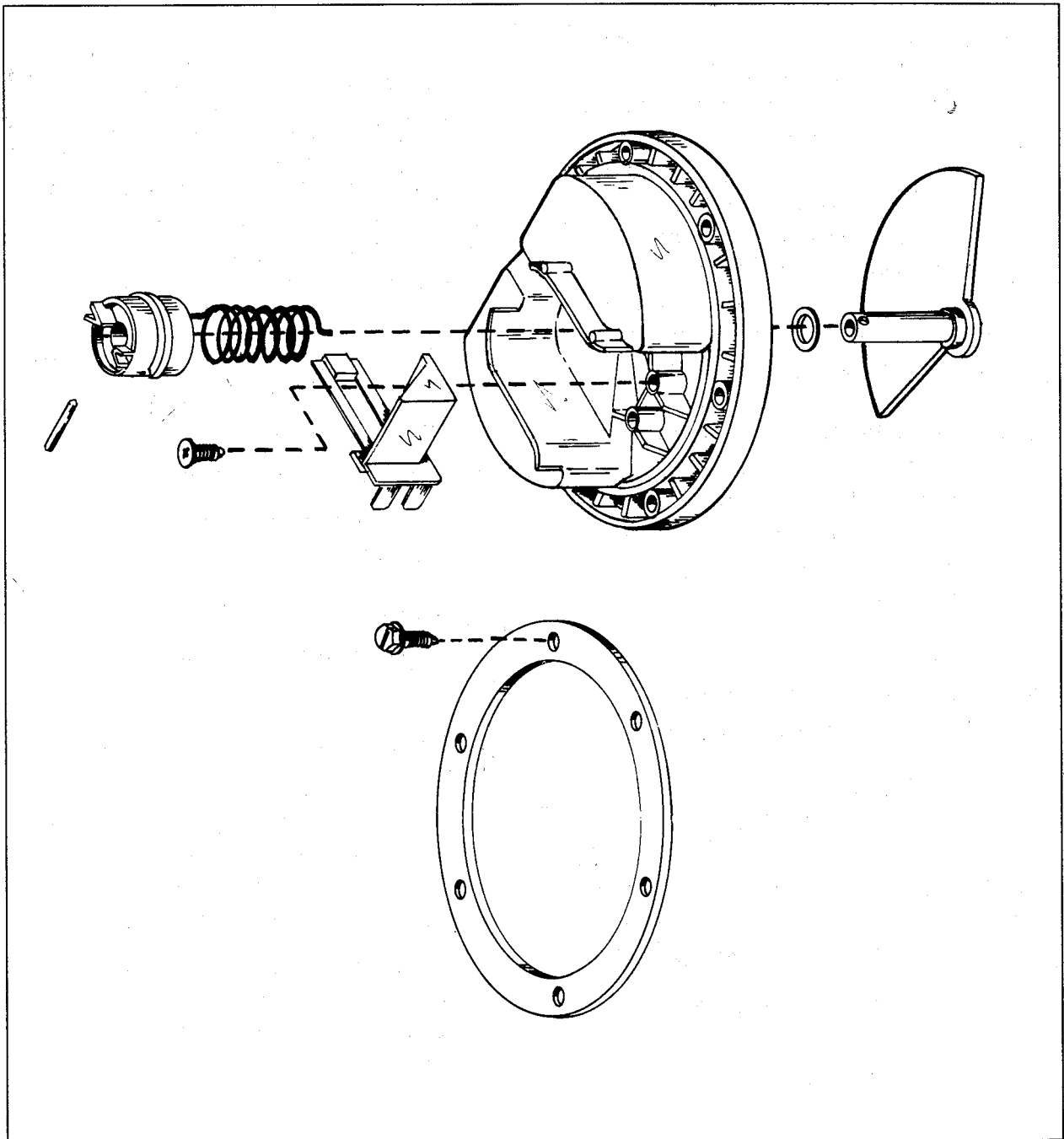
We recommend a continuity check be performed across the door switch terminals to determine whether or not the switch is functioning correctly. With the door closed and locked, a closed circuit (continuity) should be seen across the switch terminals. With the door open, an open circuit (no continuity) should be seen.

Use of an ohmmeter will allow completion of these continuity checks. Should you have questions on use of an ohmmeter or performing a continuity

check, refer to the Electrical Test Equipment section in this manual.

For specific electrical checks on the door switch, refer to a Electrical Schematic.

DETERGENT CUP ASSEMBLY



DETERGENT CUP ASSEMBLY

The detergent cup provides a means of automatically adding granular dishwasher detergent during the wash cycle. Each side of the detergent cup holds approximately 12 teaspoons of detergent.

Opening of the detergent cup is accomplished by routing heater current through the bi-metal release at the appropriate time. On all timer models, this would be at a specific timer increment. On the microprocessor models, this would be controlled by the microprocessor board and the detergent cup relay. Proper operation of the detergent cup is dependent upon adequate amperage draw (approximately 5 1/2 amps). Once the cover for the detergent cup is closed, the cam (which is secured to the cover) latches with the bi-metal. Amperage draw from the heater heats the bi-metal, causing it to warp and release the cam and cover. Low amperage draw (anything less than 5 1/2 amps) will not allow sufficient warpage of the bi-metal, resulting in failure of the cup to open.

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Detergent Cup Assembly:

If it should be necessary to remove the detergent cup because of a break or water leak, follow this procedure.

1. Shut off electrical power to dishwasher.
2. Remove front panel.

3. Remove two wires from bi-metal release.
4. Remove six screws holding detergent cup to door.

If there is a water leak around the detergent cup which cannot be corrected by tightening the six screws, check and if necessary replace the gasket or "O" ring on cover shaft.

Failure of the detergent cup cover to open completely would indicate a build-up of sediment on the shaft of the cover or the need for lubrication of the cam. Remove and clean the cover or lubricate the cam using a silicone grease applied to a cotton swab.

If either the cam or the detergent cup cover is to be removed:

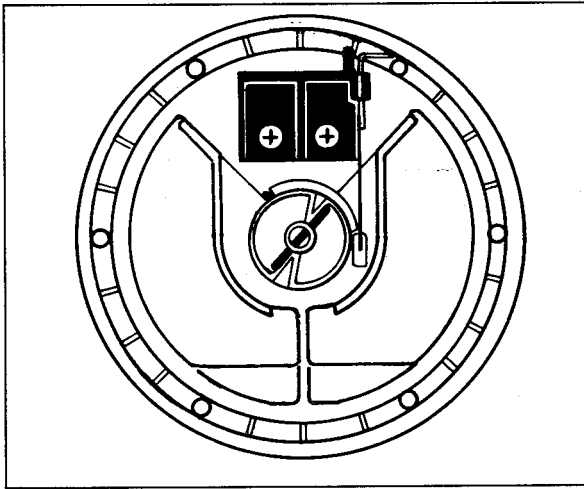
1. Depress the cam.
2. Pull roll-pin out of cam with pliers.
3. Remove cam spring and detergent cup cover.

CAUTION:

There is a compressed spring under the cam.

To Replace Detergent Cup Cover and Cam:

1. Insert detergent cup cover shaft through center cup hub. Rotate cover so that it is positioned left of the word DETERGENT on cup rim.
2. Install torque spring over cup shaft. Spring latch must be down in recess as shown and visible from top of cam.



CAM

3. Twist cam counterclockwise one full turn until bi-metal is in position to engage with cam.
4. Push down on cam and install roll-pin.

To Remove Bi-Metal Release:

1. Shut off electrical power to dishwasher.
2. Remove front panel. Refer to Front Panel, as needed.
3. Remove two wires from bi-metal.
4. Remove two screws securing bi-metal release to detergent cup.

DETERGENT CUP TEST

The timer/microprocessor places the detergent cup in series with the heating element in the second increment of the Light Wash Cycle. Current in this circuit warps the detergent cup's bi-metal switch enough to release the cam and cover. Testing can be done using an ohmmeter, motor test cord or ammeter.

An ohmmeter can be used to check for continuity in the detergent cup and heating element circuit.

Note: If unfamiliar with performing a continuity check, refer to the Electrical Test Equipment section in this manual.

1. Disconnect power to dishwasher.
2. Remove front panel.
3. Remove access panel and toe panel.
4. Isolate the circuit by removing the W-OR wire on the detergent cup and the WH wire on the heating element.
5. With the ohmmeter take a resistance reading from these two terminals. Reading should be approximately 18 ohms of resistance.
6. If reading is correct see schematic for checks on timer/microprocessor, detergent cup relay or control switch.

A motor test cord can be used to electrically test the operation of the detergent cup.

CAUTION:

This is a live voltage test. Use properly polarized and grounded outlet.

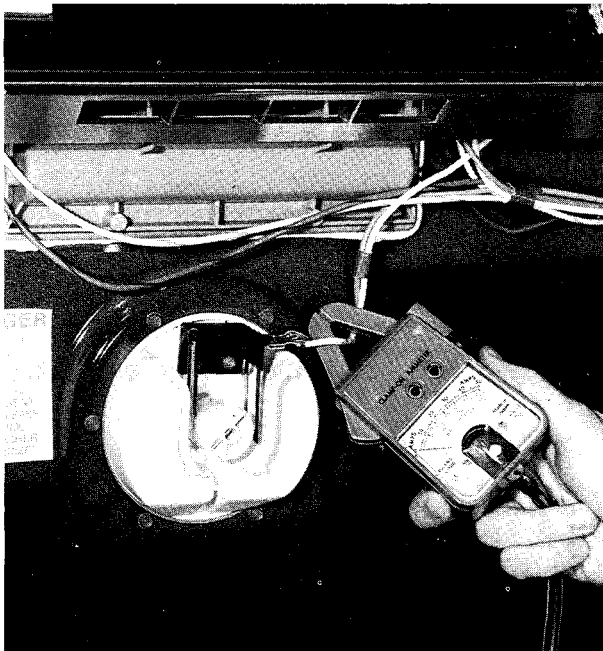
1. Disconnect power to the dishwasher.
2. Close cover over right hand cup on detergent cup.
3. Remove front panel.
4. Remove access panel and toe panel.
5. Remove the W-OR wire on the detergent cup and the WH wire on the heating element.
6. Attach one lead of the motor test cord to the spade terminal on the detergent cup and the other lead to the spade terminal on the heating element.
7. Plug motor test cord into outlet. Detergent cup should trip in approximately 15 seconds.

8. If detergent cup trips, bi-metal and heating element are okay. See schematic for checks on timer/microprocessor, detergent cup relay or control switch.

An ammeter can be used to take an amperage reading during the Light Wash Cycle.

CAUTION:

This is a live check.



AMPERAGE READING

This check must be made during the time when heat is being generated to the bi-metal (the second increment in the Light Wash Cycle). This is accomplished by placing a clamp-on ammeter over either wire at the detergent cup. If 5 1/2 amps are recorded, the bi-metal release should work as intended. If it

does not, check for a burr on the cam latch, sediment build-up around the cam latch and bi-metal or lack of lubricant on the cam (silicone grease). You may also want to try loosening the two screws securing the bi-metal release to the detergent cup and then tighten them, as the bi-metal may be binding. If the ammeter records less than 5 1/2 amps the bi-metal will not warp.

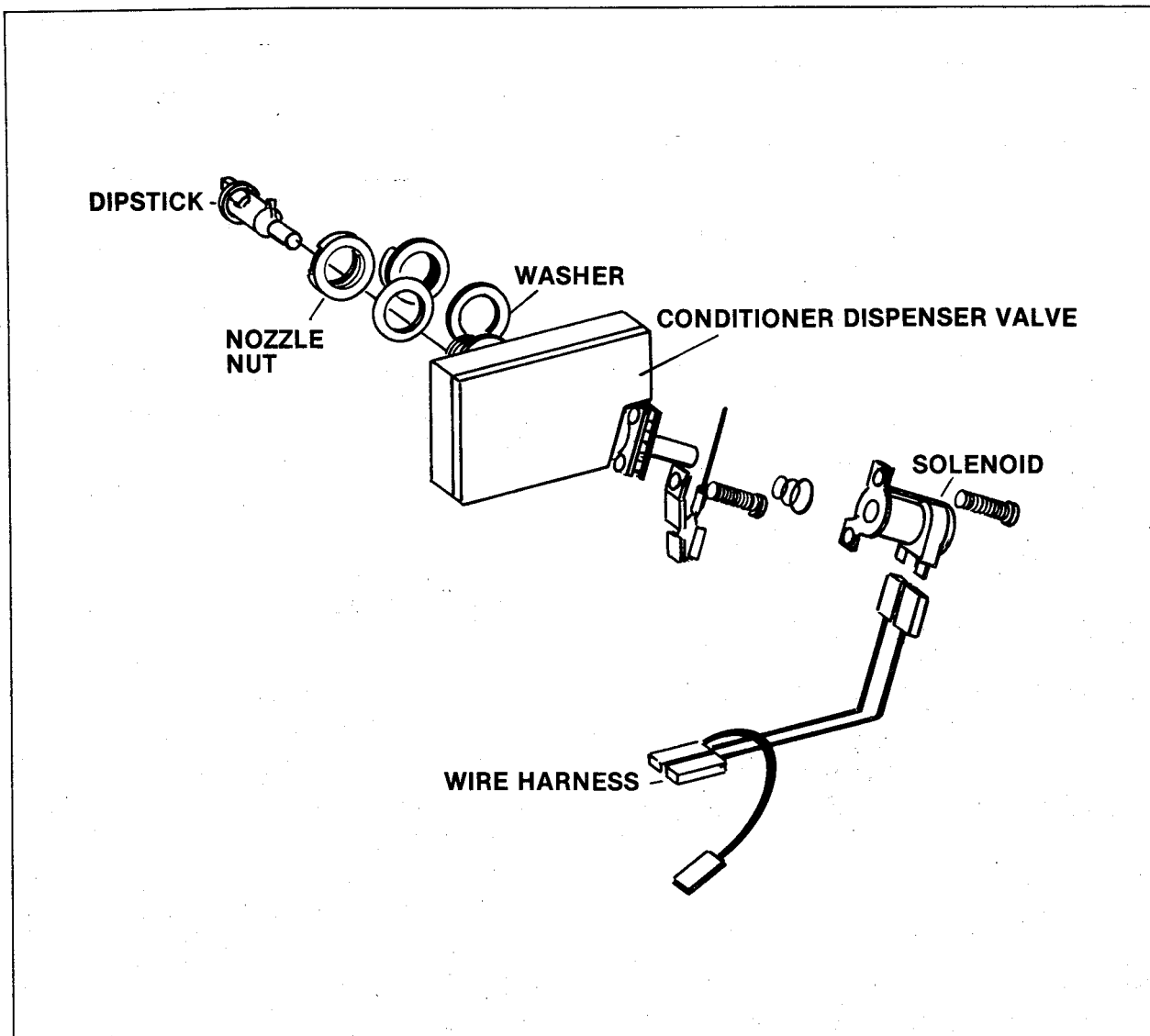
RINSE CONDITIONER DISPENSER

The rinse dispenser provides a means of automatically adding a liquid rinse conditioner to the rinse portion of the wash cycle. The rinse dispenser is solenoid energized, with the solenoid being powered at a predetermined increment through the timer.

Note: On the microprocessor models, this is controlled through the microprocessor board and rinse dispenser relay.

The dispenser is mounted to the inner door. Removal of the front panel will therefore be necessary in order to service the rinse conditioner dispenser.

Note: The rinse conditioner dispenser feature is available on certain models only. However, a rinse conditioner dispenser kit is available as an accessory for installation on models not having this feature.



RINSE CONDITIONER DISPENSER

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Rinse Dispenser:

1. Shut off electrical power to the dishwasher.
2. Remove front panel. Refer to Front Panel, as needed.
3. Remove both wires to solenoid and remove ground wire.

4. Remove nozzle nuts from inside of door panel.

Note: When replacing rinse dispenser, be sure to use the rubber sealing washer under each nozzle nut.

To Remove Solenoid:

1. Shut off electrical power to the dishwasher.
2. Remove front panel. Refer to Front Panel, as needed.
3. Remove both wires to solenoid and remove ground wire.
4. Remove two screws securing solenoid to rinse dispenser body. The ground receptacle will be removed with the solenoid. Be sure to reinstall the receptacle when replacing the solenoid.

To Check Rinse Dispenser:

If the rinse dispenser is not dispensing rinse additive, check to insure adequate supply of additive. If there is adequate additive, check the solenoid as follows:

Shut off electrical power to the dishwasher.

We recommend a continuity check be performed across the terminals of the solenoid using an ohmmeter. A closed circuit (continuity) should be seen. If an open circuit (no continuity) is noted, the solenoid should be replaced.

A resistance measurement across the solenoid terminals can also be performed. The following should be seen:

Rinse Dispenser Solenoid - 200 Ohms

Note: Use of a motor test cord hooked directly to the solenoid will provide a quick means of determining solenoid operation.

If unfamiliar with use of ohmmeter or motor test cord, or performing above checks, refer to Electrical Test Equipment section of this manual.

If adequate rinse additive is available and the solenoid is operating as intended, the rinse dispenser should be replaced.

FILL SYSTEM

All models covered in this service manual use a metered fill system. The metered fill will supply approximately 2 3/4 gallons of water to the dishwasher on each fill.

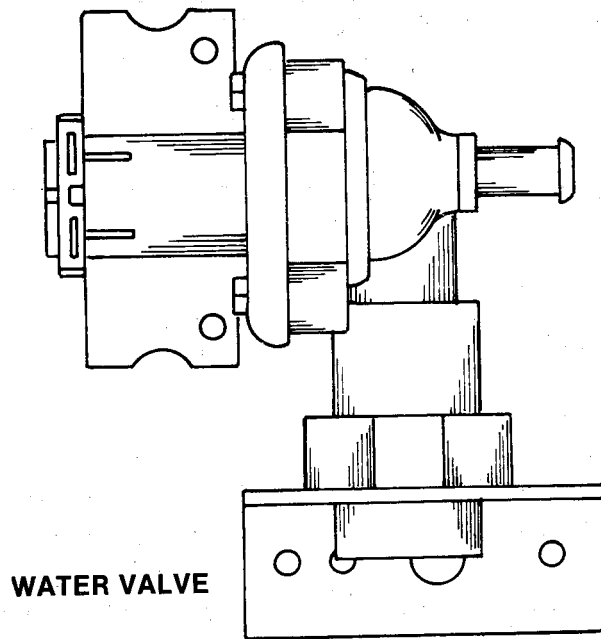
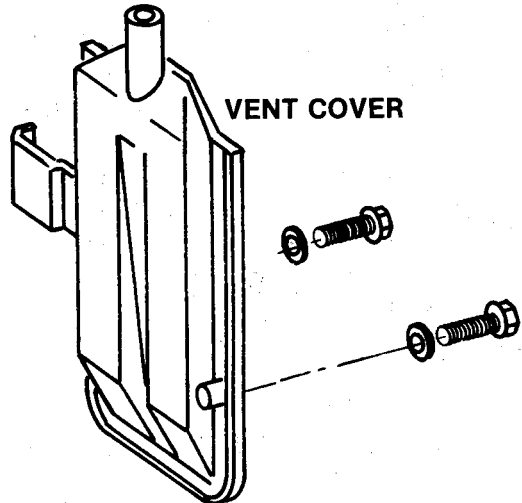
Note: There is a supplemental fill (10-15 seconds) at the beginning of each main wash cycle.

As a backup to the metered fill system, the timer will automatically drop the electrical circuit to the water valve after approximately 100 seconds. This is designed to prevent an overflow of the dishwasher should the float assembly or float switch fail.

Note: On the microprocessor models, the time element is controlled by the microprocessor board.

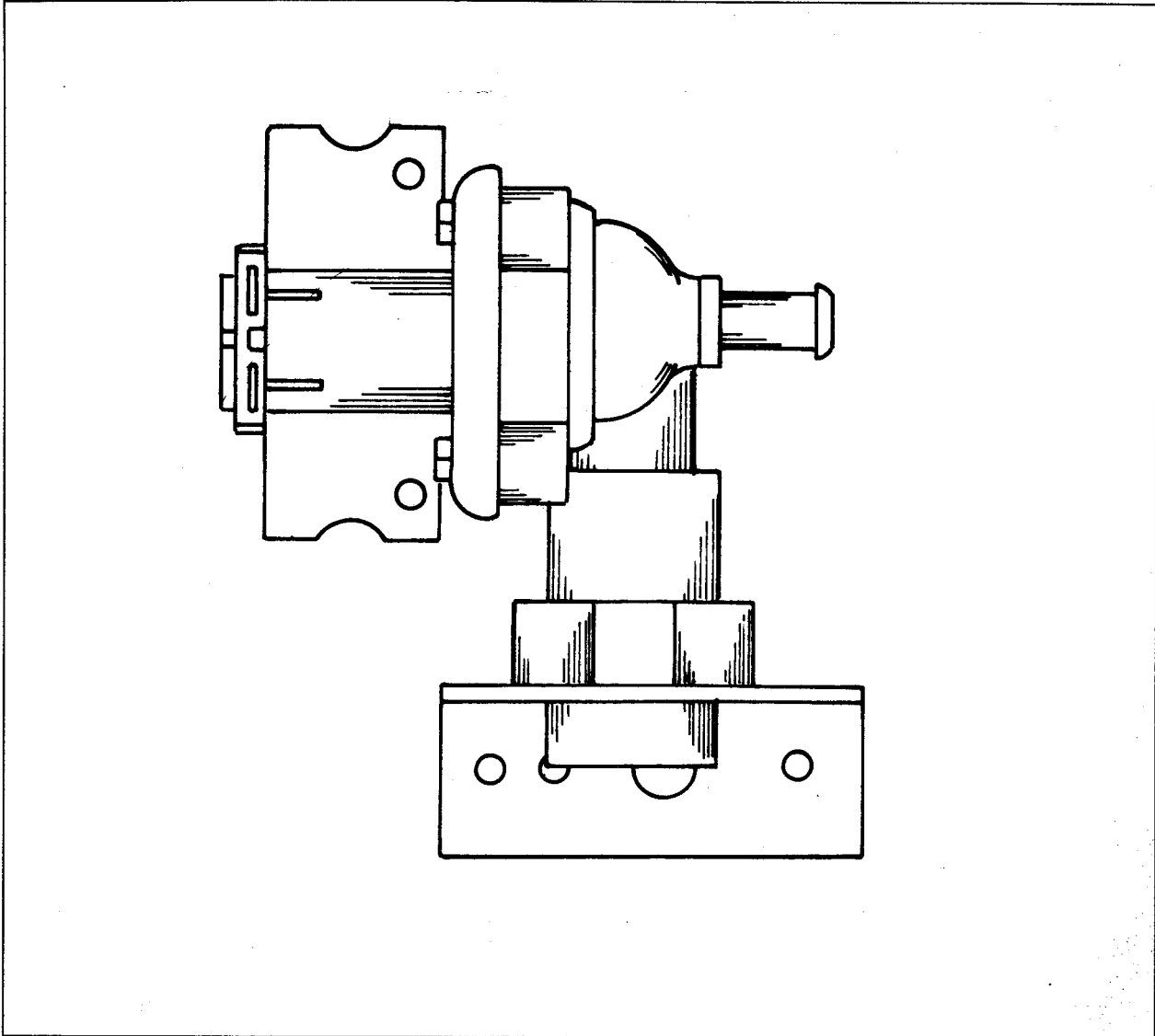
 INJECTOR HOSE

 HOSE CLAMP



FILL SYSTEM

WATER VALVE



The water valve is operated at timed intervals controlled by the timer.

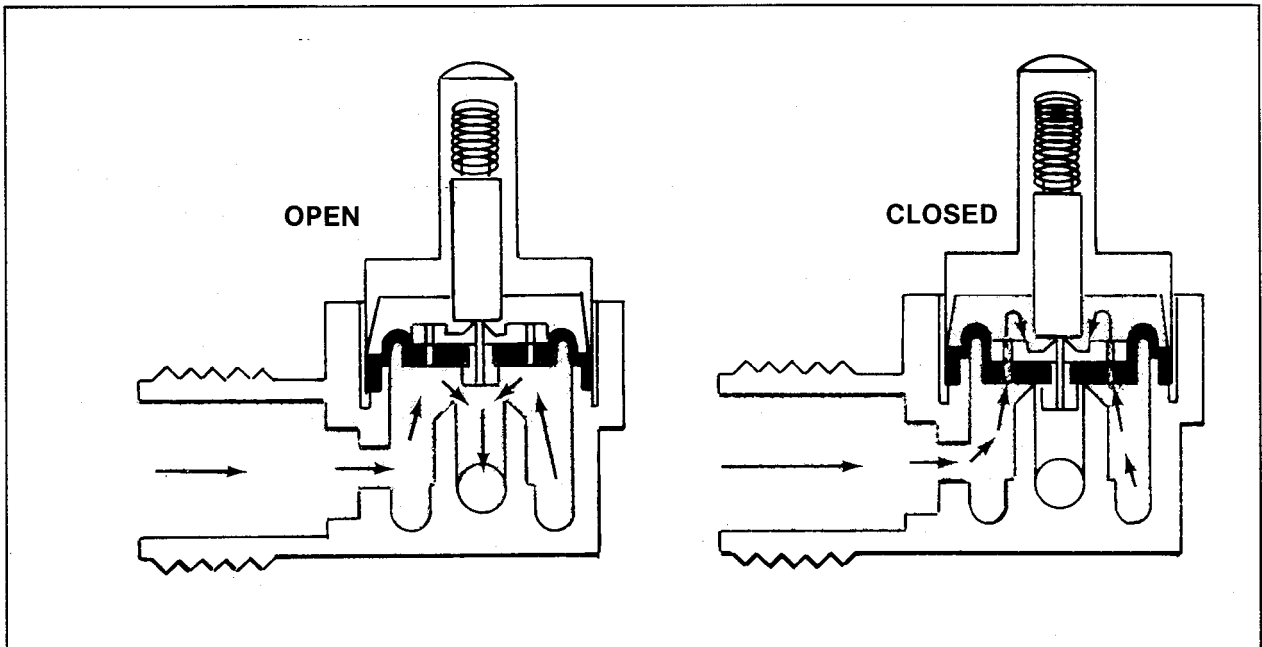
Note: On the microprocessor models, the timed intervals are controlled by the microprocessor board. The valve is designed to provide satisfactory operation at water pressures from 18 to 120 p.s.i. Low water pressure will affect the water valve's ability to fill the dishwasher within the required length of time. The recommended water tem-

perature is 140 ° F. to 150 ° F. as it enters the dishwasher

The water valve used on all models covered in this service manual, (except microprocessor models) operates on 120 volts AC. The water valve used on the microprocessor models operates on 24 volts DC.

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.



To Remove Water Valve:

Turn off water supply to dishwasher.

1. Remove access and toe panels. Refer to Front Panel, Access and Toe Panels, as needed.
2. Disconnect water line and injector hose.
3. Remove all wires from valve solenoid.
4. Remove two screws securing valve bracket to tub support and remove water valve.

Note: Attempted repair or replacement of component parts of the valve (other than cleaning or replacing the filter screen) is not recommended.

To Clean Or Replace Filter Screen:

Sediment on the inlet screen can prevent the dishwasher from filling within the required time length.

The inlet screen can be cleaned by disconnecting the water valve from the water supply and removing the two screws holding the water valve mounting plate to the tub support.

1. Remove the four screws holding the mounting plate to the valve body. This will provide complete access to the screen. Clean or replace the screen.
2. When reassembling the water valve, make sure the ground wire is reattached to the water valve mounting bracket.

To Check Water Valve:

Shut off electrical power to the dishwasher.

We recommend a continuity check be performed across the terminals of the water valve solenoid using an ohmmeter. A closed circuit (continuity) should be seen. If an open circuit (no continuity) is noted the water valve should be replaced.

A resistance measurement across the solenoid terminals can also be performed. The following should be seen:

120 volts AC Water Valve Solenoid - 900 Ohms

24 volts DC Water Valve Solenoid - 140 - 160 Ohms.

Note: Use of a motor test cord hooked directly to the water valve will provide a quick means of determining water valve solenoid operation.

CAUTION:

Do not use a motor test cord on the 24 volts DC water valve.

If unfamiliar with use of ohmmeter or motor test cord, or performing above checks, refer to the Electrical Test Equipment section in this manual.

DIODE - 24 VOLT DC WATER VALVE (MICROPROCESSOR MODELS)

There is a diode installed across the solenoid of the 24 volt DC water valve. While the diode is actually part of the wire harness, if necessary it can be cut out and a replacement diode soldered in place. When replacing the diode, be sure the banded (cathode) end is installed to the common white wire.

The diode is used to prevent voltage from gaining access to the microprocessor board through the float switch.

To Check Diode:

Shut off electrical power to dishwasher.

Using R x 10K scale on an ohmmeter, check for continuity across the diode. Continuity should be seen in one direction only. With the test lead reversed, no continuity should be seen.

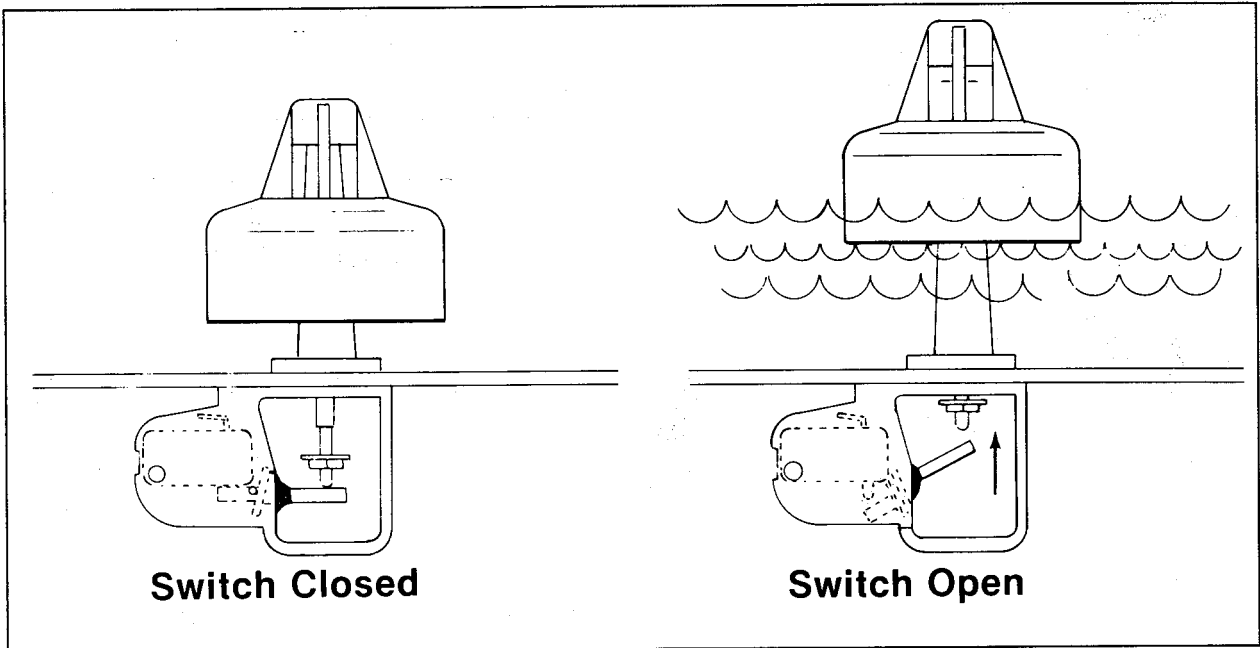
FLOAT ASSEMBLY

The float assembly consist of a float, float guide, float switch, actuator lever and a float switch bracket.

The float assembly is designed to control the amount of water entering the dishwasher (approximately 2 3/4 gallons) on each fill. When the proper amount of water has entered the product (level with the heating element), the float will have risen enough to allow the actuator lever to disengage the float switch. With the float switch open, the electrical circuit to the water valve is broken and the valve will shut off.

Should for some reason the float assembly fail to break electrical power to the water valve, the timer (in approximately 100 seconds) will automatically do so.

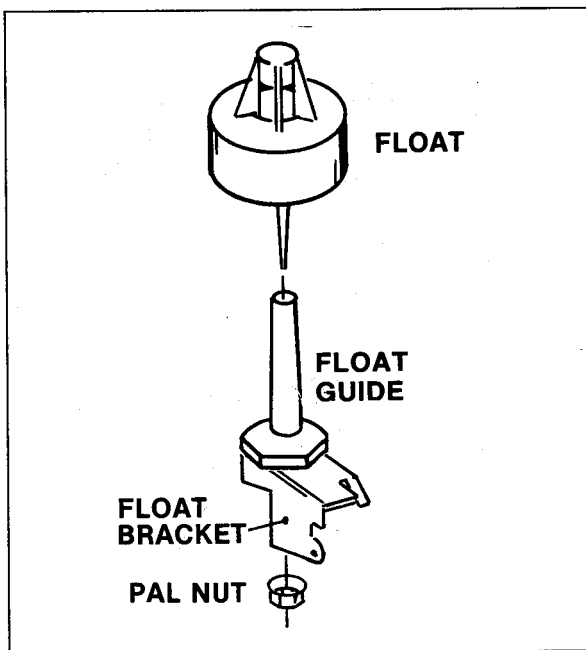
Note: If the float is sticking, look for a build-up of undissolved detergent and grease between the float and float guide. Clean both and advise customer on use of adequate amounts of detergent and 140 ° F. - 150 ° F. water temperature as it enters the dishwasher.



FLOAT SWITCH

CAUTION:
Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Float:



FLOAT

Remove access and toe panels. Refer to Front Panel, Access And Toe Panels, as needed.

1. Reach inside the float switch bracket and remove the palnut from the float shaft.

Note: You may find removal easier if you grasp the palnut with one hand and turn the float counterclockwise with the other.

CAUTION:
Replace the float if the end of the shaft twists off.

2. Pull the float up and out of the float guide.

To Remove Float Switch Bracket:

Remove float. Then, remove float switch guide and remove bracket.

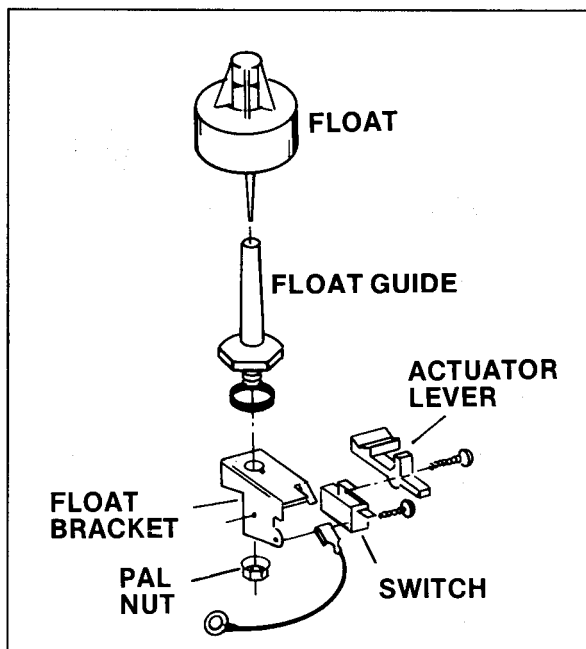
If the float switch bracket is to be replaced, remove the actuator and float switch.

Note: When reinstalling the float guide to the float switch bracket, be sure the gasket is placed in the groove in the bottom of the guide. Additionally, the tab on the bracket may be matched with the hole in the tub to assist in location of the bracket. Tighten the guide by hand. Do not overtighten.

To Remove Actuator:

Remove float, float guide and float switch bracket.

Remove screw and pivot pin securing actuator to bracket.



ACTUATOR LEVER

To Remove Float Switch:

Remove access and toe panels. Refer to Front Panel, Access And Toe Panels, as needed.

1. Remove both wire leads to switch.
2. Remove screw securing switch to bracket.

Note: A screw is used to secure the switch to the sheet metal bracket.

To Check Float Switch:

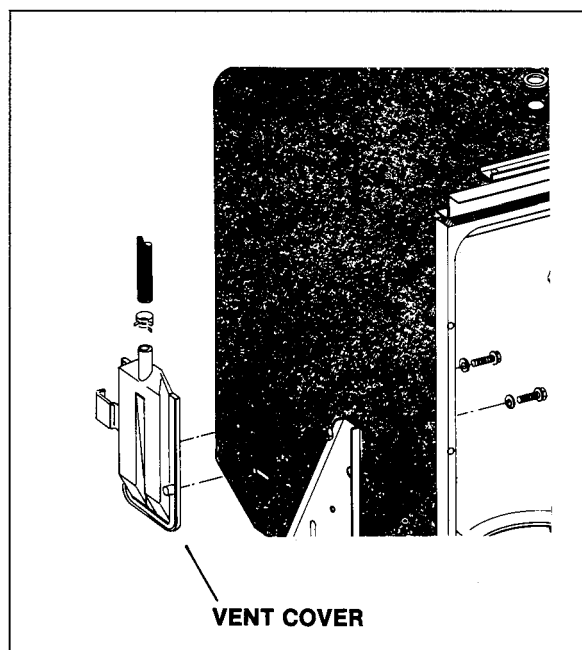
Shut off electrical power to dishwasher.

We recommend a continuity check be performed across the terminal of the float switch, using an ohmmeter. The switch should show a closed circuit (continuity) with no water in the tub. The switch should show an open circuit (no continuity) when the float is manually lifted.

If unfamiliar with use of ohmmeter or performing a continuity check, refer to Electrical Test Equipment section of this manual.

VENT COVER

The vent cover is located on the left-hand side of the dishwasher tub. It will therefore be necessary to remove the dishwasher from its installation.



VENT COVER

To Remove Vent Cover:

Remove lower dishrack.

1. Remove two screws from inside dishwasher holding vent cover to tub.
2. Remove inlet hose from vent cover and remove cover.

Note: When replacing the vent cover, clean sealant out of sealing groove and apply a new bead of silicone rubber sealant in the sealing groove.

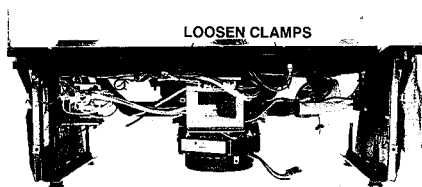
COMPACT POWER MODULE

To Remove Module and Motor Assembly:

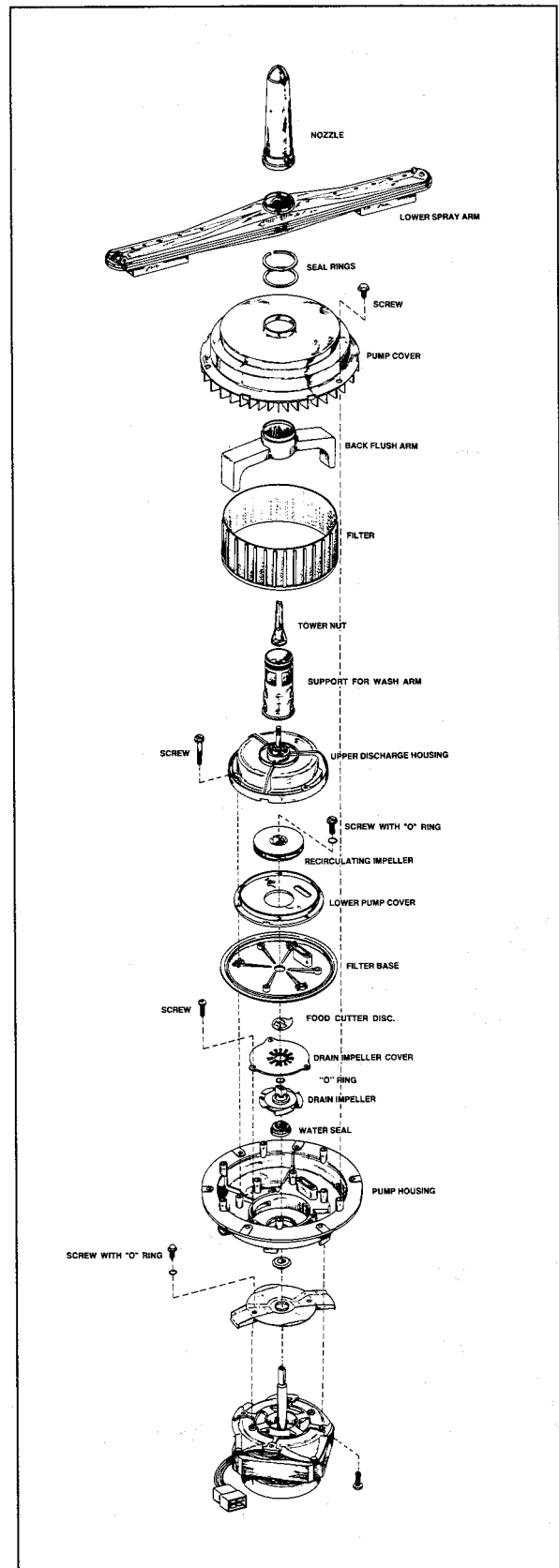
Note: Module assembly may be repaired without removing from tub. However, if failure occurs with the motor, replace complete module and motor assembly.

Remove lower access panel.

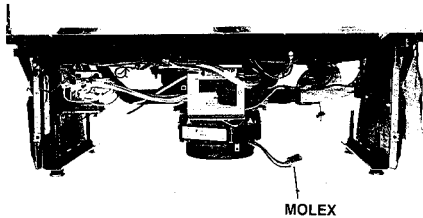
1. Loosen clamps that secure drain hose (left side) and recirculating hose (right side) from power module. Pull hose off outlets.



2. Open dishwasher door.
3. Remove upper and lower racks.
4. Disconnect electric mox and ground wires. (Twist connection side to side and pull apart.)

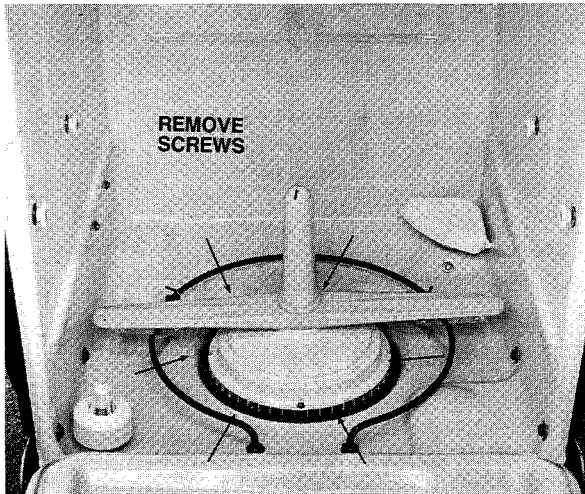
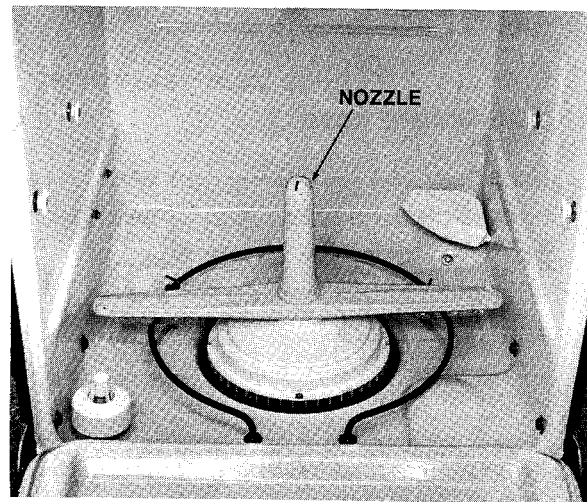


COMPACT POWER ASSEMBLY



2. Unscrew nozzle from lower spray arm. Remove lower spray arm by lifting up and off.

5. Remove six (6) screws holding power module to tub bottom. Lift power module and motor assembly up and out front of dishwasher.



3. Remove three screws from the module cover. Lift off cover.

Note: Cover and filter may come off as an assembly.

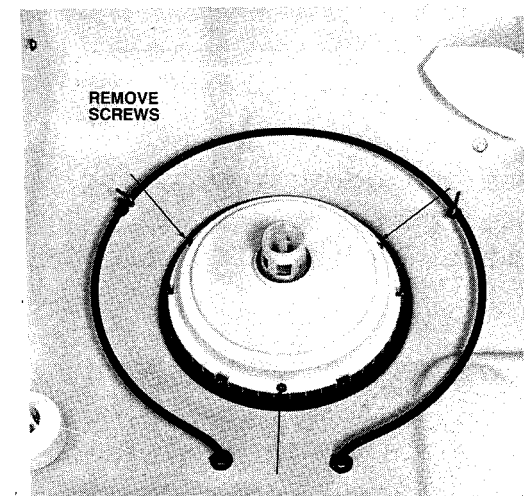
Note: This assembly is designed to be replaced complete - module and motor, if a motor failure occurs.

6. Remove and clean gasket between tub and module.

To Disassemble Power Module Assembly:

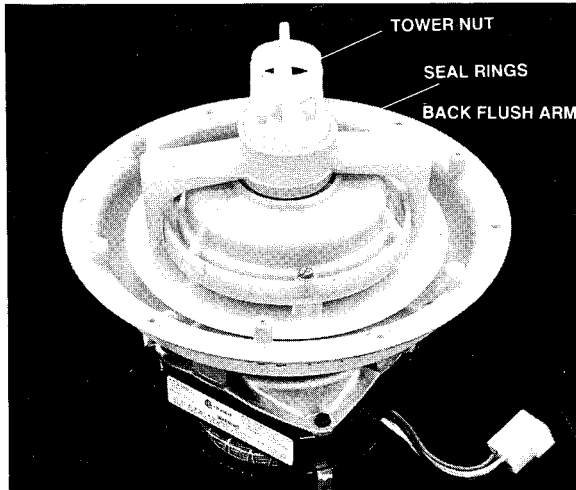
The power module assembly can be disassembled as follows:

1. Upper rack is to be removed before you can work on the Module Assembly. Pull out pins on each side rail, remove rubber stops and pull out rack.

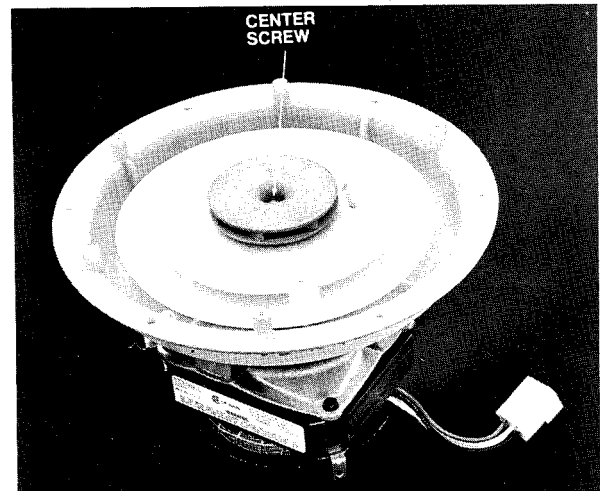


4. Lift off back flush arm with seal rings.

5. Unscrew tower nut.

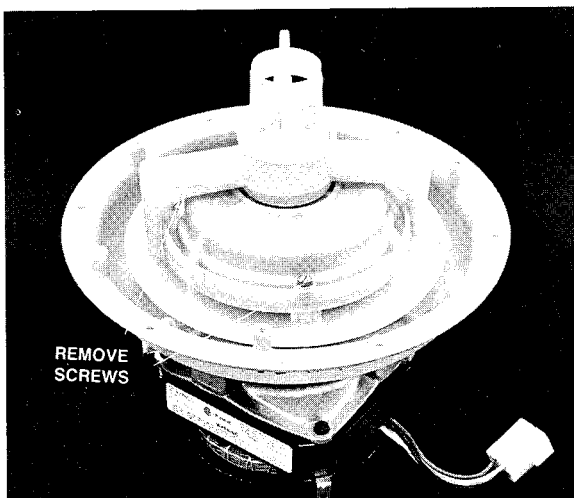


9. Remove lower module cover and filter base.

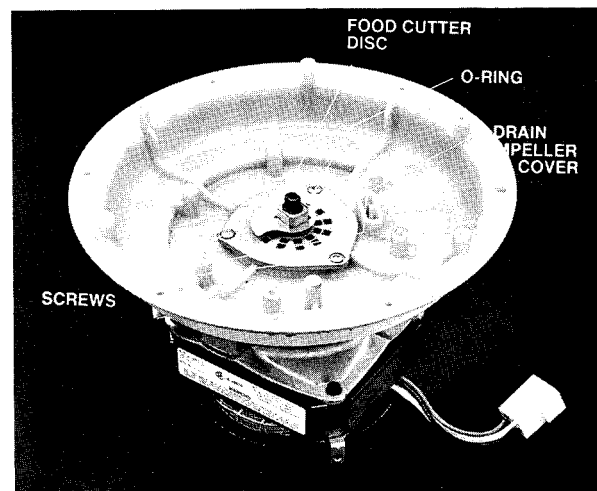


6. Lift off converging nozzle.

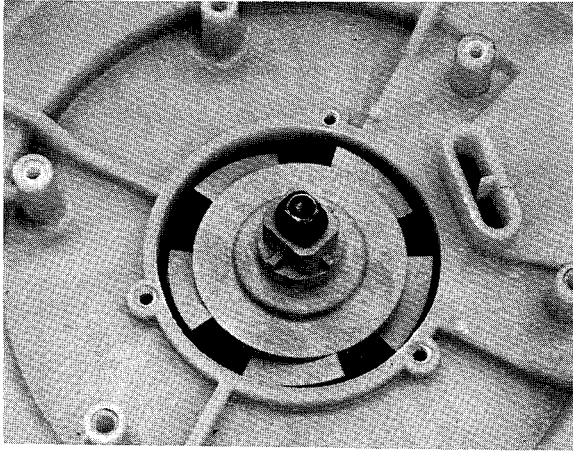
7. Remove three screws holding upper discharge housing to base.



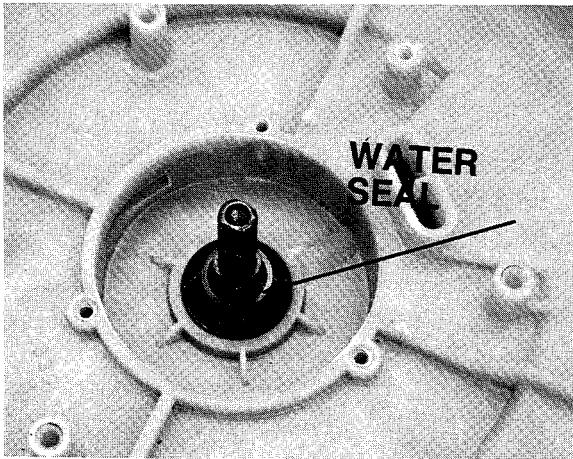
10. Lift off food cutter disc. Pull "O" ring off motor shaft. Remove three cross-head screws securing drain impeller cover to housing. Lift off cover. Remove drain impeller from motor shaft.



8. Remove center screw securing recirculating impeller to motor shaft. Lift off impeller.



11. With screw driver, carefully pry up on water seal. Pull seal up over motor shaft.

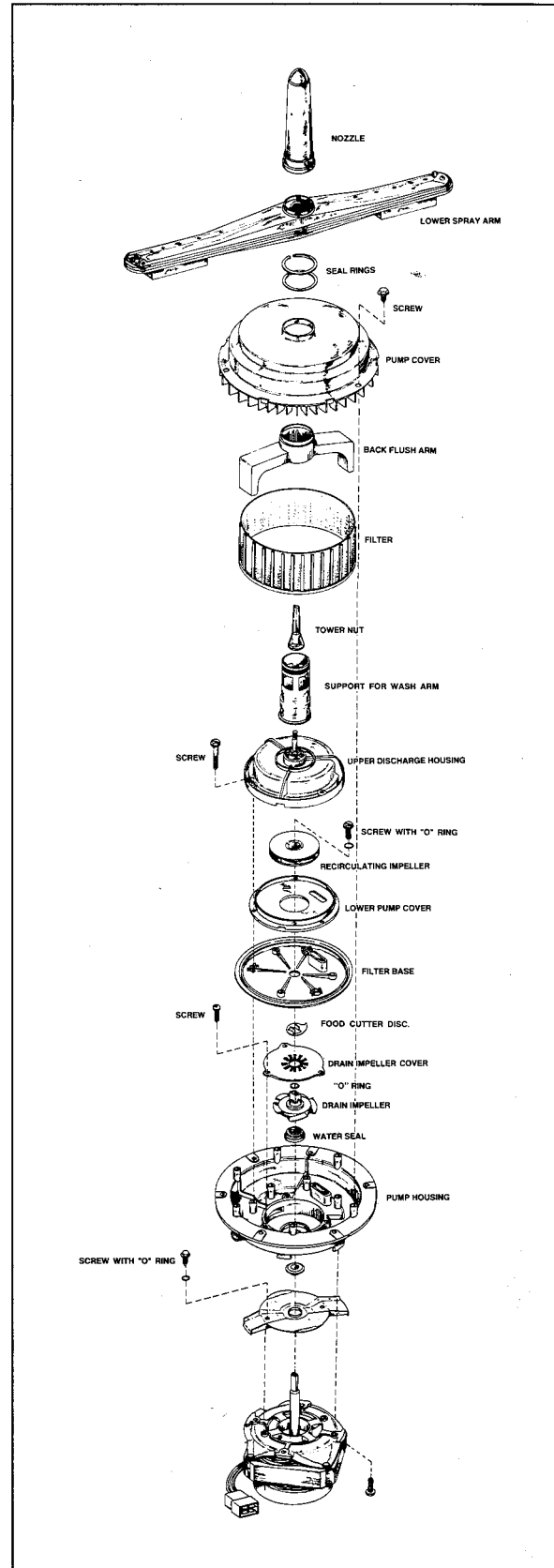


Complete Module and Motor Assembly replacement is recommended if any work must be done past this point.

DRIVE MOTOR

This motor is non-repairable. No individual components are available. Replace module and motor assembly should a failure occur.

Re-assemble entire assembly of module by reverse order. See Electrical Test Equipment section - "Drive Motor Test".



MODULE AND MOTOR ASSEMBLY

WATER CIRCULATION

Water enters the dishwasher tub on the left side through the water injector and will fill to a level approximately the height of the heating element (about 2 3/4 gallons). From the bottom of the tub, water flows between the fins of the strainer and is filtered through the Ultra-mesh-TM screen, entering the opening in the top of the module cover and down into the circulating chamber. The circulating impeller, attached to motor shaft, forces the water in several directions. Water is forced up the upper wash arm hose and out the small holes in the upper wash arm. The water also is forced up the channel in the module cover and out of the main spray nozzle and lower wash arm. The filter flush arm is attached to the lower wash arm assembly and the water being forced out of the slots in the filter flush arm flushes food particles from the outside of the filter screen.

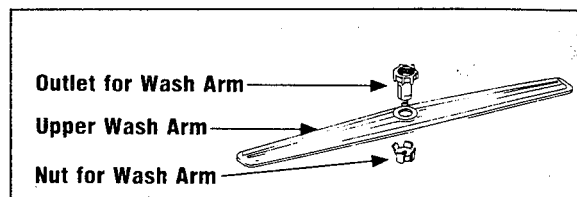
Rotation of the upper and lower wash arms is achieved by the water being forced out of the propulsion holes on each end of the arms.

This water flow is a continuing process throughout the length of all wash and rinse cycles. Upon completion of a wash or rinse cycle the drive motor stops, reverses direction and the drain impeller pulls the water around the filter screen and forces it up and out of the drain hose.

UPPER WASH ARM

To Remove Upper Wash Arm:

Turn retaining nut to the left to remove wash arm.



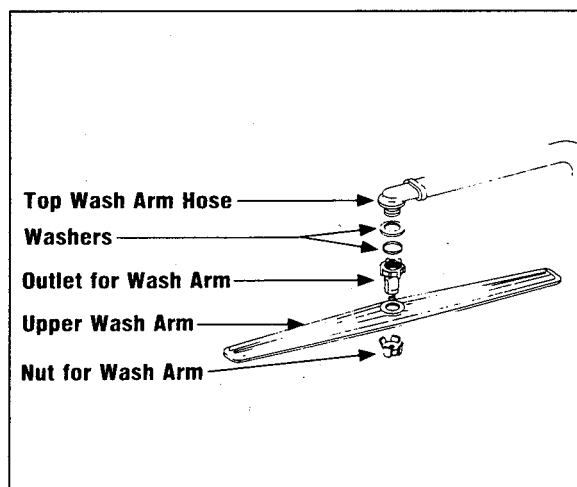
WASH ARM

UPPER WASH ARM HOSE

Water is supplied to the upper wash arm by the module assembly, through the upper wash arm hose. This hose runs up the right side of the tub and enters the top center. It is secured to the tub using sealing washers and a special outlet assembly.

Note: A short section of rubber hose is used to couple the upper wash arm hose to the module assembly.

Removal of the upper wash arm hose will require removing the unit from installation. This will involve disconnecting the electrical, water and plumbing services.



WASH ARM HOSE

To Remove Upper Wash Arm Hose:

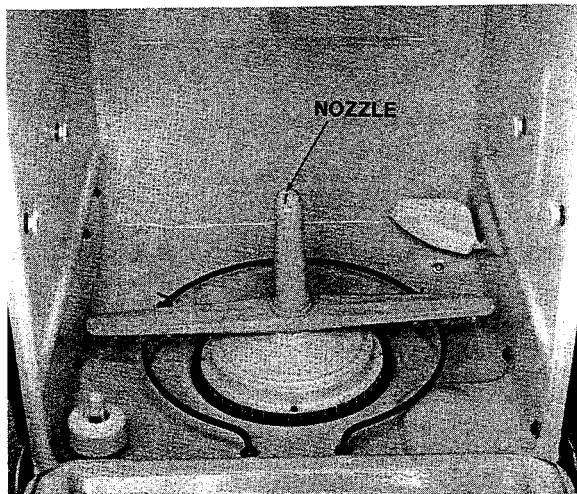
Remove four screws holding access and toe panels. Refer to Front Panel, Access Panel And Toe Panel, as needed.

1. Loosen hose clamp securing upper wash arm hose to module and remove hose.
2. Remove upper wash arm.
3. Unscrew outlet for upper wash arm and remove upper wash arm hose.

Note: When reinstalling outlet assembly, be sure the seal washers are properly positioned on the upper wash arm hose.

LOWER WASH ARM AND CENTER WASH NOZZLE

The center wash nozzle threads onto the lower wash arm support and holds the lower wash arm in place.



To Remove Lower Wash Arm:

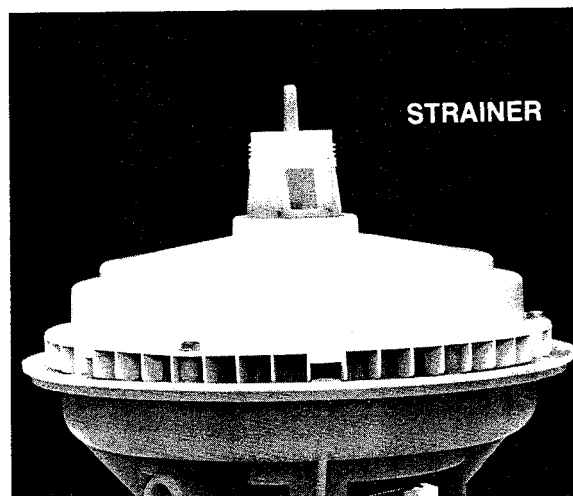
Unscrew the center wash nozzle (counterclockwise) and remove.

Lift off lower wash arm.

Note: When replacing the lower wash arm, make sure the gasket has not been forced out of position.

STRAINER (Cover For Module)

The strainer prevents large pieces of food debris from entering the power module. The strainer also serves to hold and seal the Ultra-mesh-TM filter in position.



To Remove Strainer:

Remove center wash nozzle.

1. Lift off lower wash arm.
2. Remove three screws and lift strainer off.

FILTER

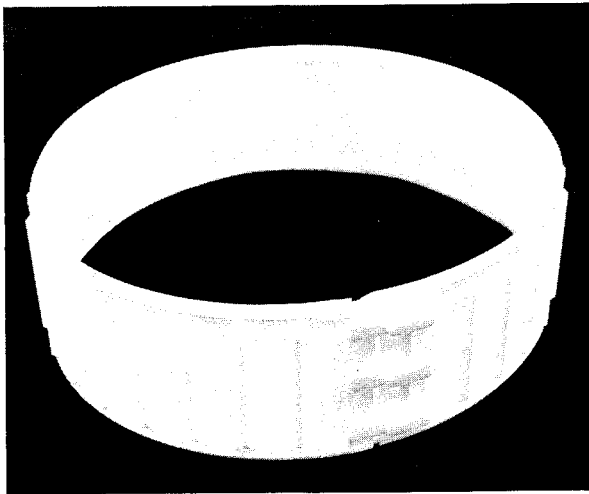
The filter is located directly beneath the strainer. It is secured and sealed in position by a groove found in the top of the power module and another groove located on the underneath side of the strainer.

Periodic cleaning of the filter by the customer is not required. The filter will be automatically cleaned through continuous flushing of the filter by the back flush arm, during the wash cycle.

To Remove Filter:

Remove center wash nozzle, lower wash arm and strainer.

Lift filter out.

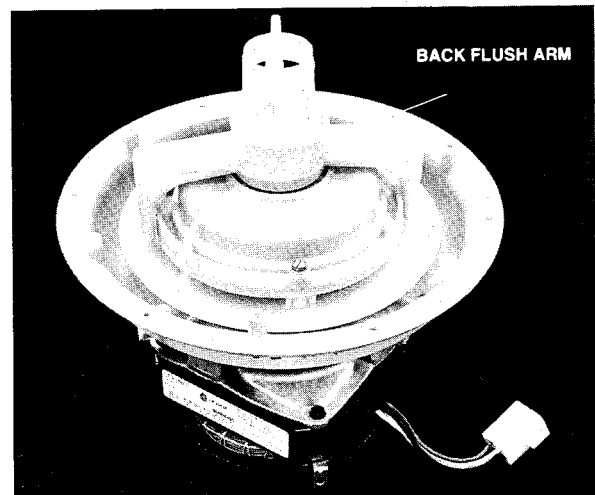


BACK FLUSH ARMS AND SEAL RINGS

The back flush arm is located under the strainer and sits over the lower wash arm support. The flush arm, turning in conjunction with the wash arm, sprays water out slots on each end cleaning debris from the filter. This provides an automatic and continuous flushing of

the Ultra-mesh-TM filter during the wash cycle.

The seal rings are positioned in the groove of the back flush arm with the lug of each ring fitting between the opening in the other ring. The seal rings will expand slightly forming a seal between the strainer and support for lower wash arm. This seal prevents air from entering the power module during circulation.



To Remove Back Flush Arm:

Remove center wash nozzle, lower wash arm and strainer.

Lift back flush arm off wash arm support.

POWER MODULE ASSEMBLY

The power module assembly provides a means of circulating filtered water through the wash arms during the wash cycle and draining the water from the dishwasher at the end of the cycle.

The power module assembly is available for repair purposes as a complete assembly with motor.

CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

To Remove Module Assembly:

Remove access and toe panels. Refer to Front Panel, Access And Toe Panels, as needed.

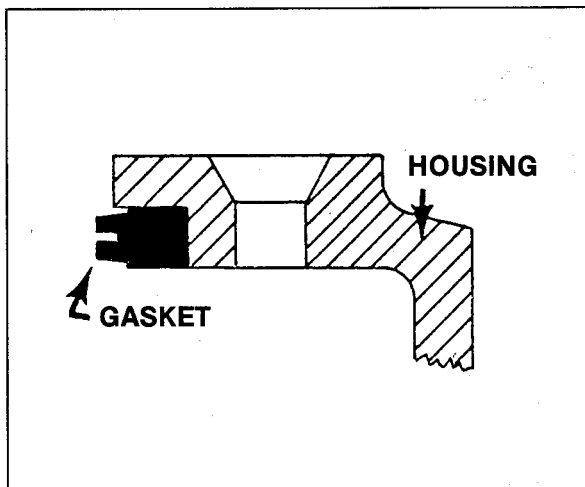
1. Remove drain and upper spray arm hoses.

Note: The module assembly will have a small amount of residual water in it (approximately two cups). Have a towel or suitable container available to catch the water when removing the drain and upper spray arm hoses.

2. Disconnect motor electrical connection and ground wire.
3. Remove six screws securing power module to tub.
4. Lift out power module.

To Install Module Assembly:

Use care to prevent damaging porcelain on tub.

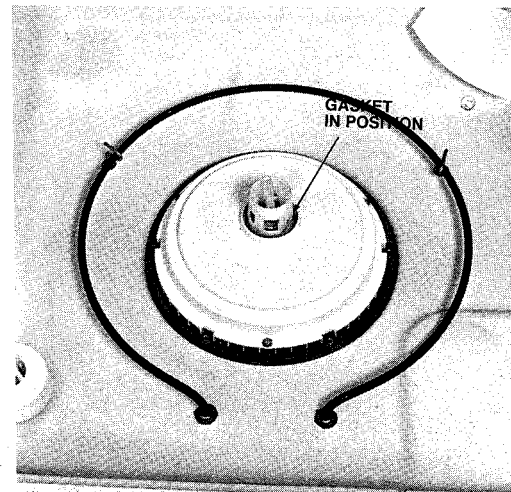


HOUSING AND GASKET

1. Place gasket for module to tub on the housing with the double ridge facing out.
2. Place the module in the tub and align the holes in the module with the holes in the tub.

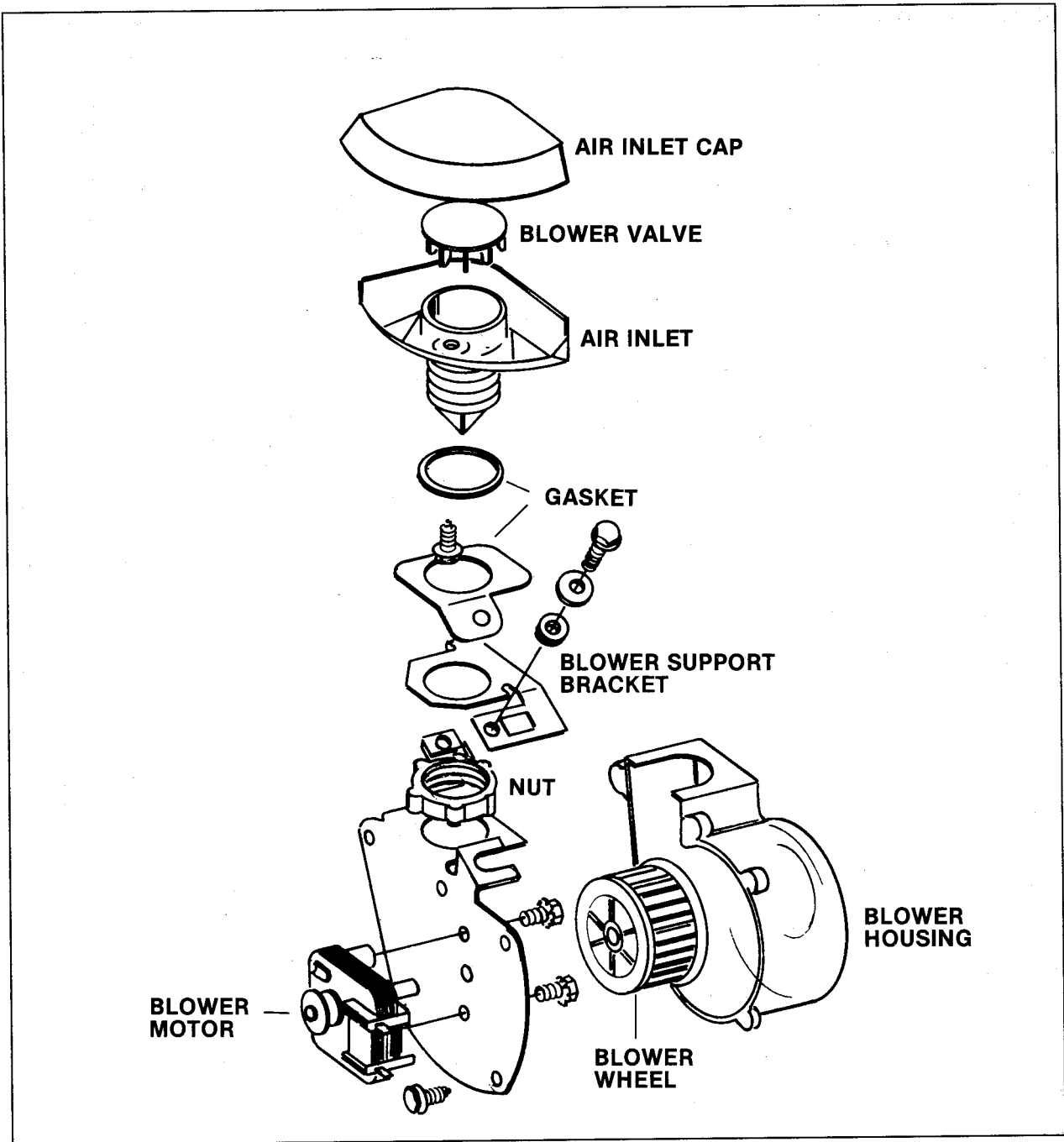
Note: The outlet for the upper spray arm hose (same side as motor wire connector) is positioned to the right, while the drain outlet is positioned to the left.

3. Insert and partially tighten either screw toward the back of the tub. Align holes in the module with holes in the tub and insert and partially tighten opposite screw. Do this with the remaining screws.
4. Replace lower wash arm and center wash nozzle, making sure gasket(s) are in position.



5. Reconnect motor harness connector. Also ground wire.
6. Check for leaks.

BLOWER ASSEMBLY



The blower operates during the last two-thirds of the dry cycle. When energized, the blower motor turns the blower wheel attached to the shaft of the motor. Make-up air is drawn through the housing and forced through the air inlet. The blower valve is lifted, allowing the make-up air to circulate through the dishwasher to aid in the drying process. Moisture-laden air is expelled from the dishwasher through the door vent, during operation of the blower.

The blower is located on the underside of the tub in the right rear corner. The blower can be removed for servicing without removal of unit installation.

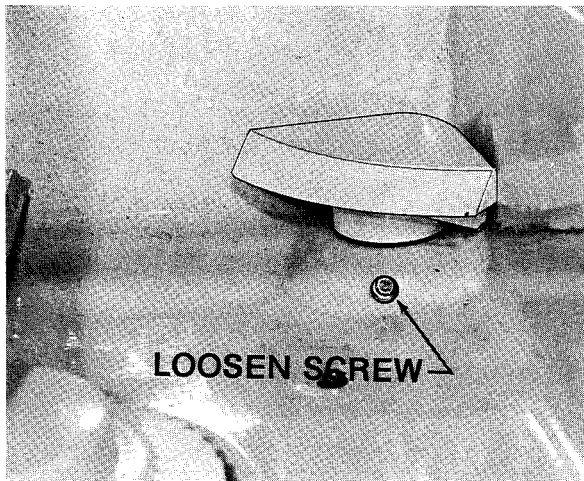
CAUTION:

Always shut off electrical power to dishwasher before beginning any service procedure.

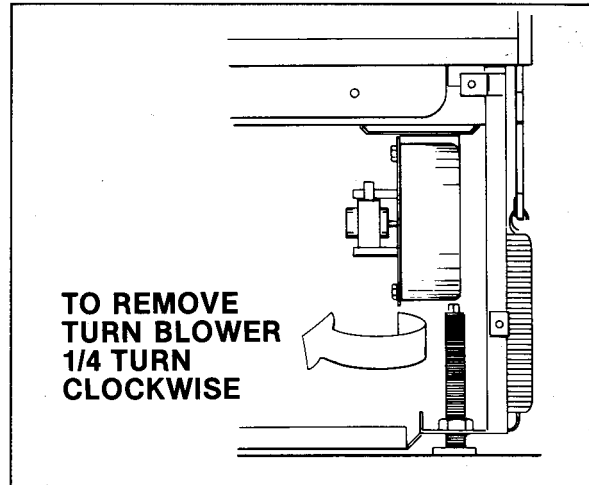
To Remove Blower Assembly:

Remove access and toe panels. Refer to Front Panel, Access and Toe Panels, as needed.

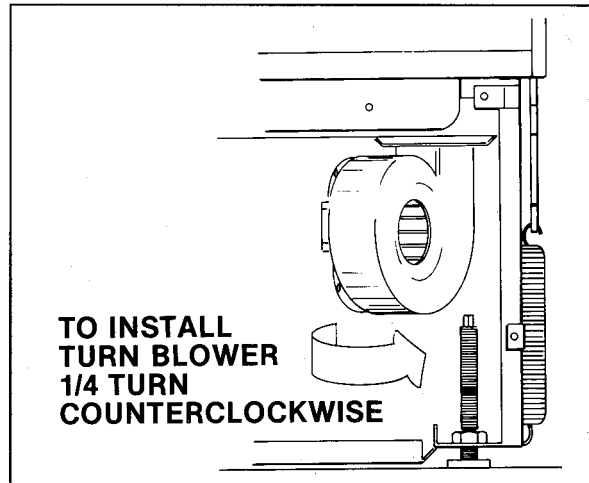
1. Remove three wires from blower motor.
2. Loosen, DO NOT REMOVE, the 5/16" screw located in the right rear corner inside the tub.



3. Reaching back to the blower, turn the blower 45° clockwise. This will disengage the blower from the bracket holding it to the bottom of the tub.



4. Drop blower down to clear the air inlet and remove blower from right side of the module assembly.



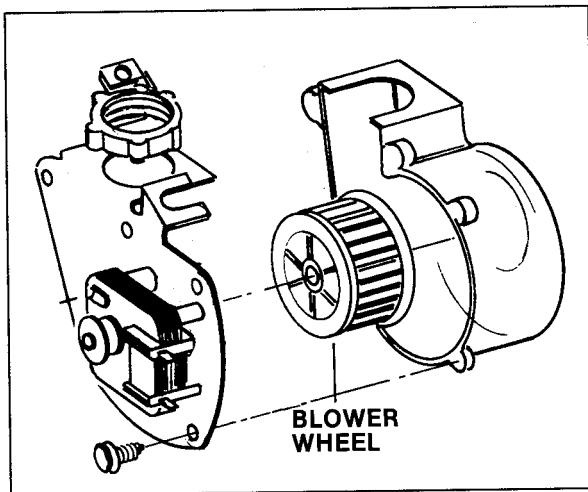
When reinstalling be sure the blower assembly is placed over the air inlet at a 45° angle and then turned counter-clockwise to lock in position. Retighten 5/16" screw on inside of tub (do not overtighten) and recheck blower installation to make sure it is securely locked in position.

To Remove Blower Wheel:

Remove blower assembly from dishwasher.

1. Remove screws securing blower housing to bracket.

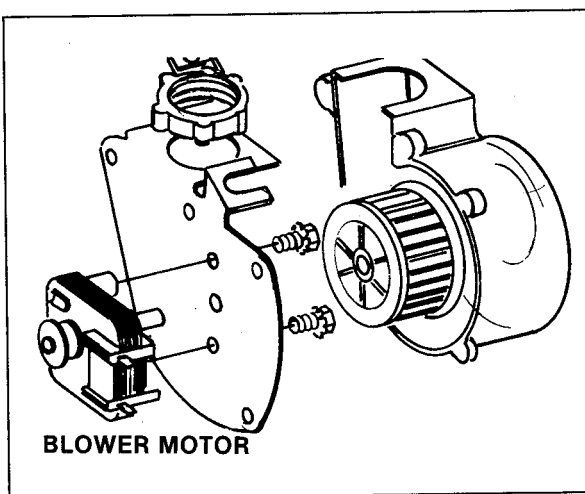
2. Remove retaining clip from hub of blower wheel and pull blower wheel from shaft of blower motor. This is a press fit.



BLOWER WHEEL

Note: When replacing the blower wheel, make sure it sits flush with the end of the motor shaft. If the wheel is allowed to slide back, contact between the wheel and screw heads used to secure the blower motor to the mounting plate can be made. This will result in a "ticking" noise during blower operation.

To Remove Blower Motor:



BLOWER MOTOR

Remove blower assembly from dishwasher.

1. Remove screws securing blower housing to bracket.
2. Remove blower wheel.
3. Remove two screws securing blower motor to mounting plate.

To Check Blower Motor:

CAUTION:

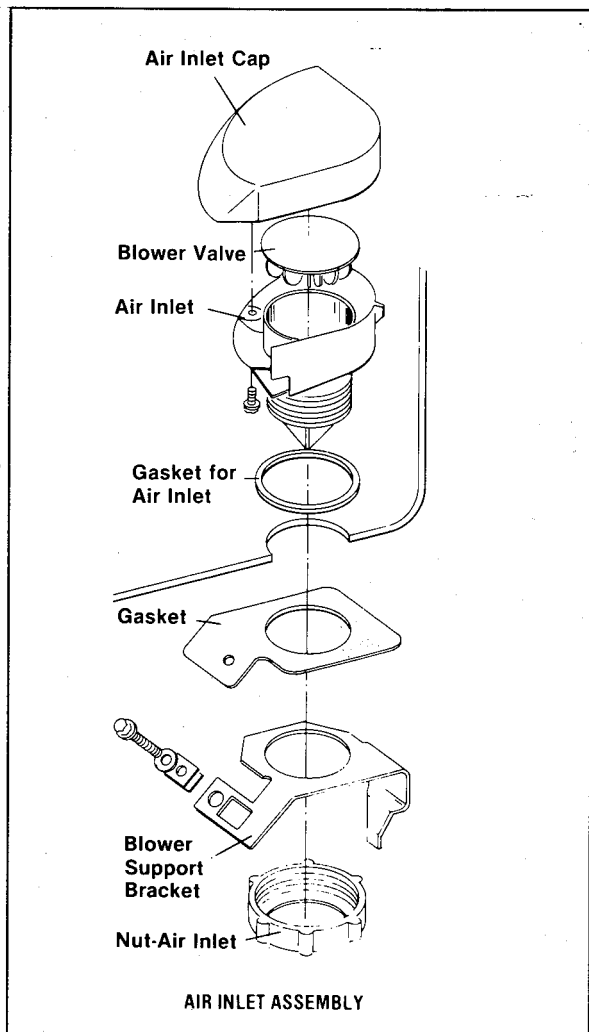
Always shut off electrical power to dishwasher before beginning any service procedure.

We recommend a continuity check be performed across the terminals of the blower motor using an ohmmeter. A closed circuit (continuity) should be seen. If an open circuit (no continuity) is noted, the blower motor should be replaced.

If unfamiliar with use of an ohmmeter or performing continuity checks, refer to Electrical Test Equipment section of this manual.

AIR INLET ASSEMBLY

The purpose of the air inlet assembly is to allow make-up air from the blower to enter the dishwasher during the drying cycle. Additionally, it serves to prevent suds and water from getting out of the tub during the wash cycle. Both functions are controlled by the blower valve.



AIR INLET ASSEMBLY

Operation of the valve is dependent upon air flow or lack thereof from the blower. The blower valve is located under the inlet cap. It can be removed by removing the screw securing the air inlet cap to the air inlet. This screw is located directly under the air inlet cap and is accessible following removal of the air inlet assembly from the dishwasher.

Following removal of the blower assembly, the remainder of the air inlet assembly may be removed by removing the large nut located underneath the tub.

RACKS AND UPPER RACK TRACK ASSEMBLY

LOWER DISH RACK

To remove lower dish rack, simply pull rack out of the tub.

Note: There is a built-in rack stop on the cover for the door vent. Lifting the lower rack up, as it is pulled out, will keep the rack from making contact with the rack stop.

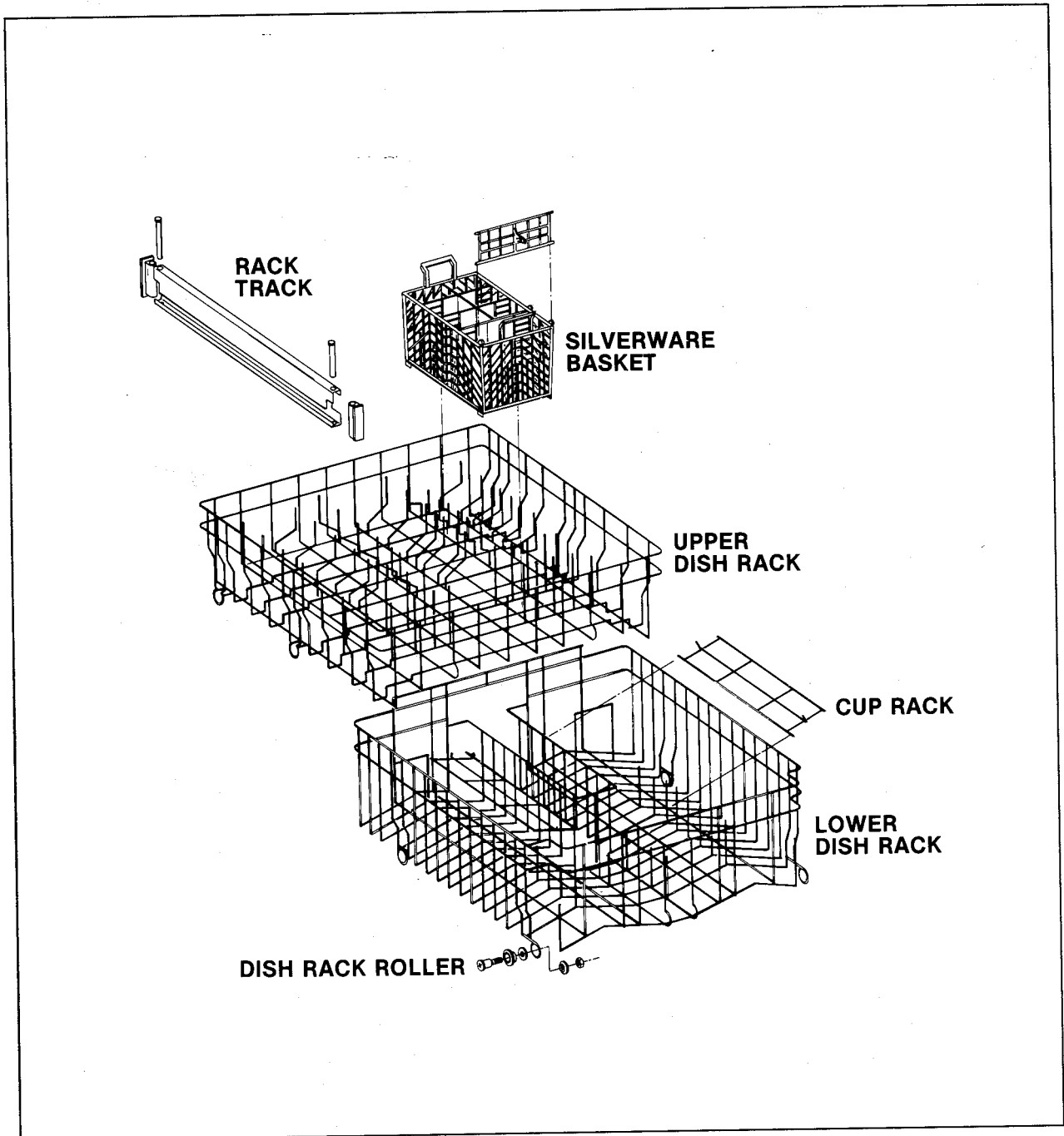
UPPER DISH RACK

The upper dish rack may be removed by removing the long pins which extend through the rubber rack stops at the front of each track. With the pins removed, pull the rubber stops out and pull the upper dish rack out of the tub.

RACK TRACK REMOVAL

Each rack track is supported by two track shafts with rollers. The track can be removed from the dishwasher by removing both front rack stops, pulling the upper dishrack from the dishwasher and removing the back rack stops. The tracks can then be pulled out of the dishwasher.

Note: Racks where the vinyl has been damaged can be repaired through the application of "Corrosion Guard" to the damaged area.



RACKS AND UPPER RACK TRACK ASSEMBLY

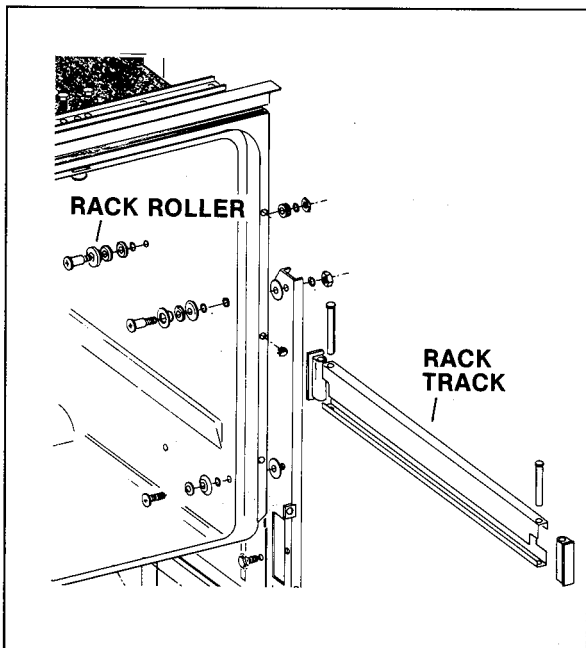
RACK TRACK SHAFT AND ROLLER

In order to remove the rack track shaft and roller, it will be necessary to remove the dishwasher from its installation. This involves disconnecting electrical, water and plumbing services.

To Remove Rack Track Shaft And Roller:

Remove upper dish rack.

1. Remove rack tracks.
2. Remove insulation from side of tub.
3. Remove nut on outside of tub and remove shaft and roller. Note order of components for correct reassembly.



RACK TRACK AND ROLLER

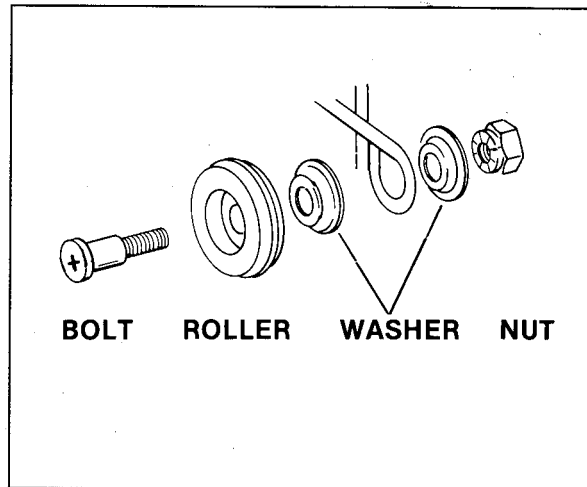
DISH RACK ROLLER

Should the dish rack roller require replacement, a dish rack roller assembly is available for repair purposes. Refer to respective parts catalog for part number.

To Replace Roller:

Remove dish rack from dishwasher.

Remove remaining portion of original roller. Note order of repair assembly components for correct reassembly.



CORRECT ORDER OF REPAIR ASSEMBLY

CUP RACK

To remove cup rack, grasp and push backwards on it until it is clear of the dish rack eyelet.

When replacing cup rack insert it into the rear eyelet first and push back until able to insert into front eyelet of dish rack.

ADJUSTABLE UPPER RACK

The adjustable upper rack is available only on certain models. Both the bowl and saucer racks in the rear of the dish rack may be folded up or down as needed for greater loading flexibility.

To Remove Bowl And Saucer Racks:

Pull upper dish rack out.

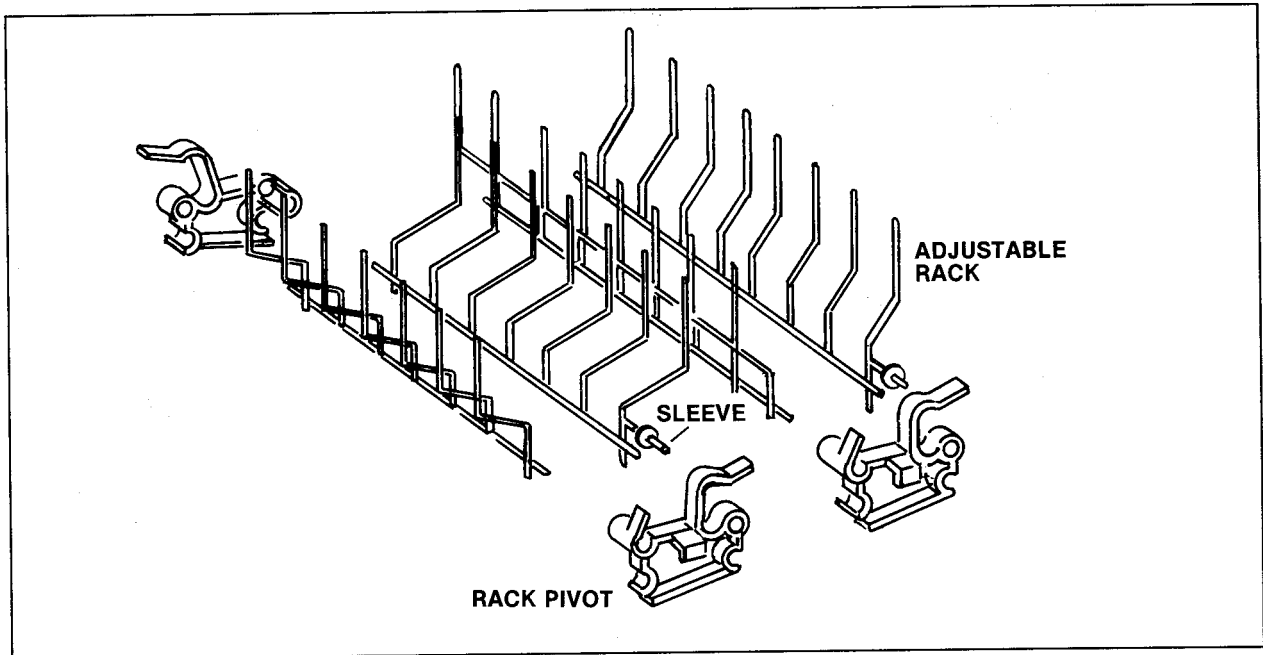
Disengage bowl or saucer rack from pivot for rack.

Note: The sleeve for the bowl or saucer rack is a press fit onto the ends of the rack.

To Remove Pivot For Rack:

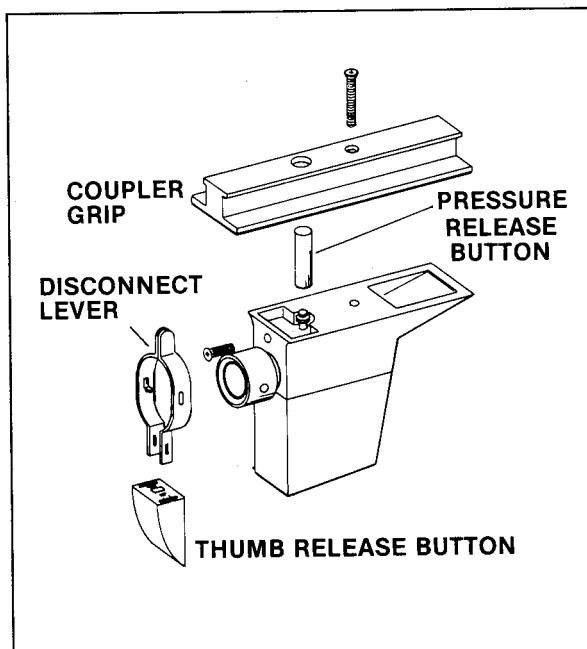
Remove bowl or saucer rack.

1. Press down on locking tab of pivot to disengage from pivot.
2. Disengage pivot from dish rack.



ADJUSTABLE RACK

To Disassemble Faucet Coupler:



FAUCET COUPLER

COUPLER GRIP

Remove screw located below pressure release button on coupler grip and screw located between coupler grip and coupler. Then remove coupler grip.

PRESSURE RELEASE BUTTON

Remove coupler grip, then pry pressure release button off.

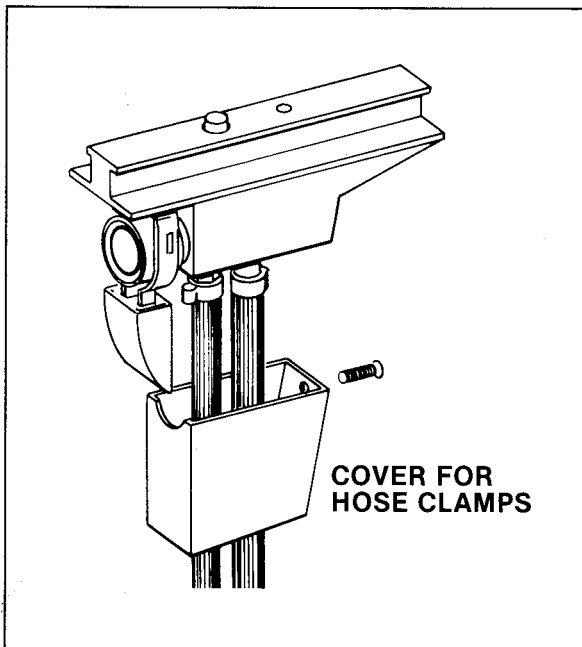
DISCONNECT LEVER AND THUMB RELEASE

Pull thumb release button off.

Pull disconnect levers out to disengage from slots in coupler grip.

Note: When replacing levers, make sure the tab on each lever is placed into the opening on each side of the faucet coupler.

FILL AND DRAIN HOSES



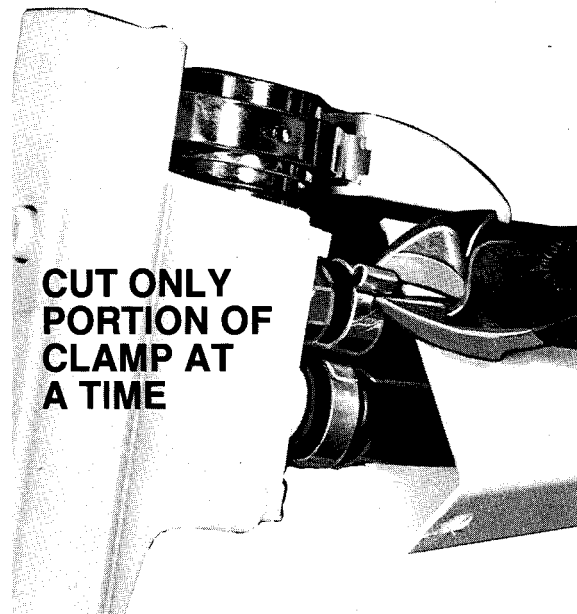
COVER FOR HOSE CLAMPS

Remove screw securing cover for hose clamps.

1. Press firmly on the screw side of the cover and pull downward to disengage cover from faucet coupler.

Note: Slide the cover down the hoses to get it out of the way.

2. Determine which hose is to be removed and cut one of the ears off the "O" clamp using a pair of wire cutters.



3. Remove hose from coupler.

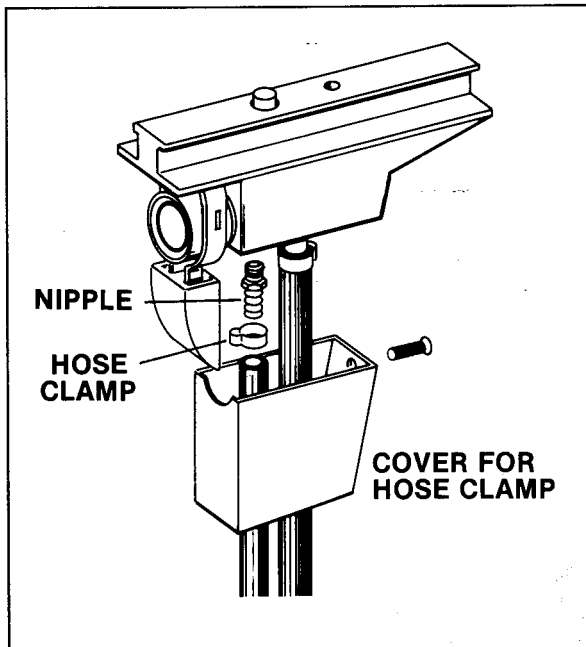
Repeat the above procedures if both hoses are to be removed.

When replacing hose(s) to coupler, use new adjustable clamp. Position the clamp so screw head of clamp does not interfere with installation of cover.

NIPPLE FOR COUPLER

Remove cover for hoses.

1. Remove fill hoses.
2. Unscrew and remove nipple.



COUPLER NIPPLE, HOSE CLAMP AND COVER

FAUCET COUPLER

Remove coupler grip, thumb release and disconnect levers.

Remove cover for hoses, fill and drain hoses and nipple from coupler.

GASKET FOR COUPLER INLET

This gasket provides a seal between the faucet adapter and inlet of the faucet coupler. The gasket sits down inside the faucet coupler.

To Remove Gasket:

Insert a screwdriver blade behind the gasket and pry out.

POWER CORD

To Remove Power Cord:

CAUTION:

Disconnect Power.

Remove access and toe panels. Refer to Front Panel, Access And Toe Panels, as needed.

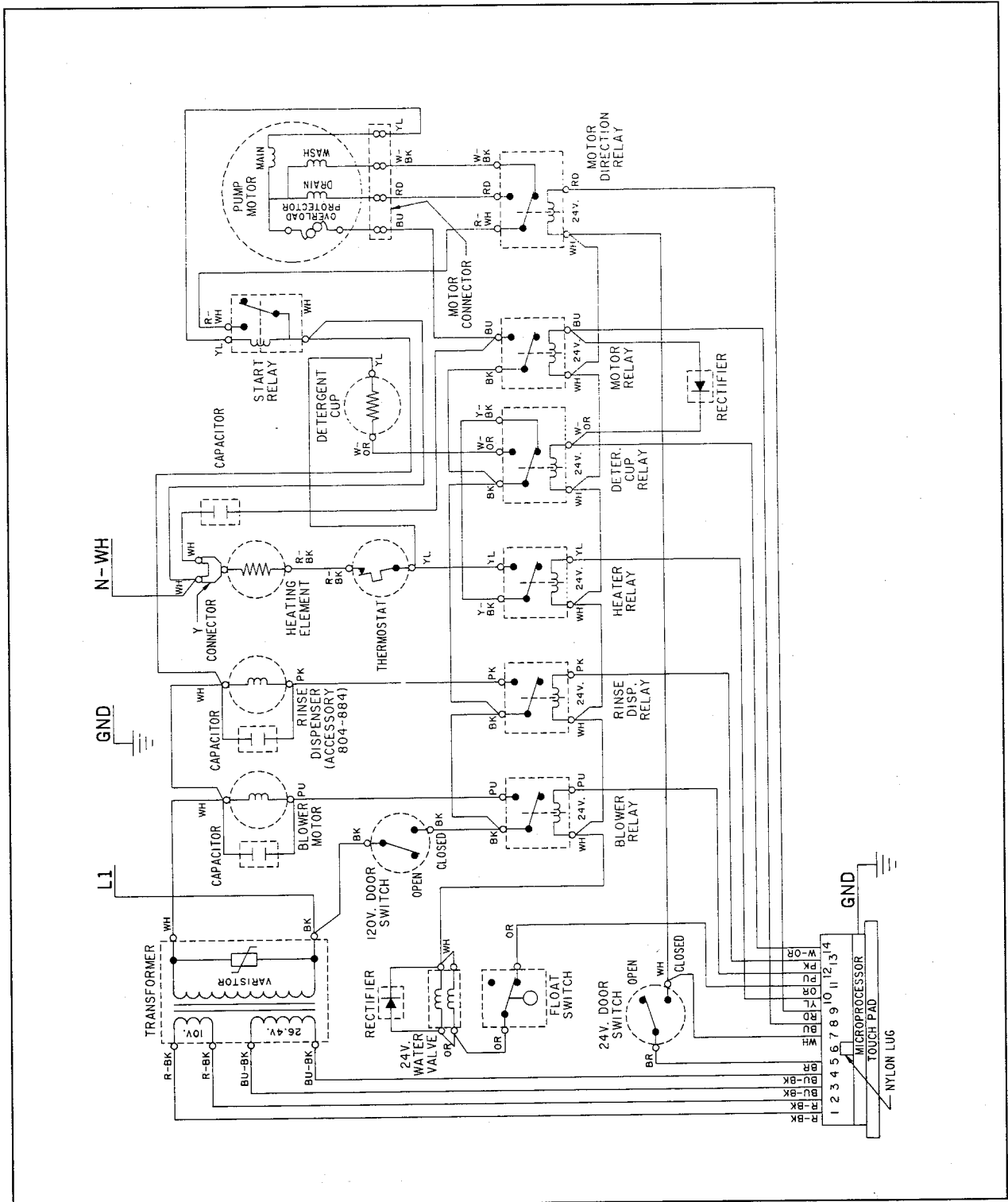
Remove two screws securing terminal box cover to terminal box.

1. Disconnect power cord from wire leads in terminal box. Disconnect ground.
2. Remove power cord from strain relief located on base frame.
3. Remove power cord from retainer for faucet coupler.



SECTION 4. SCHEMATICS

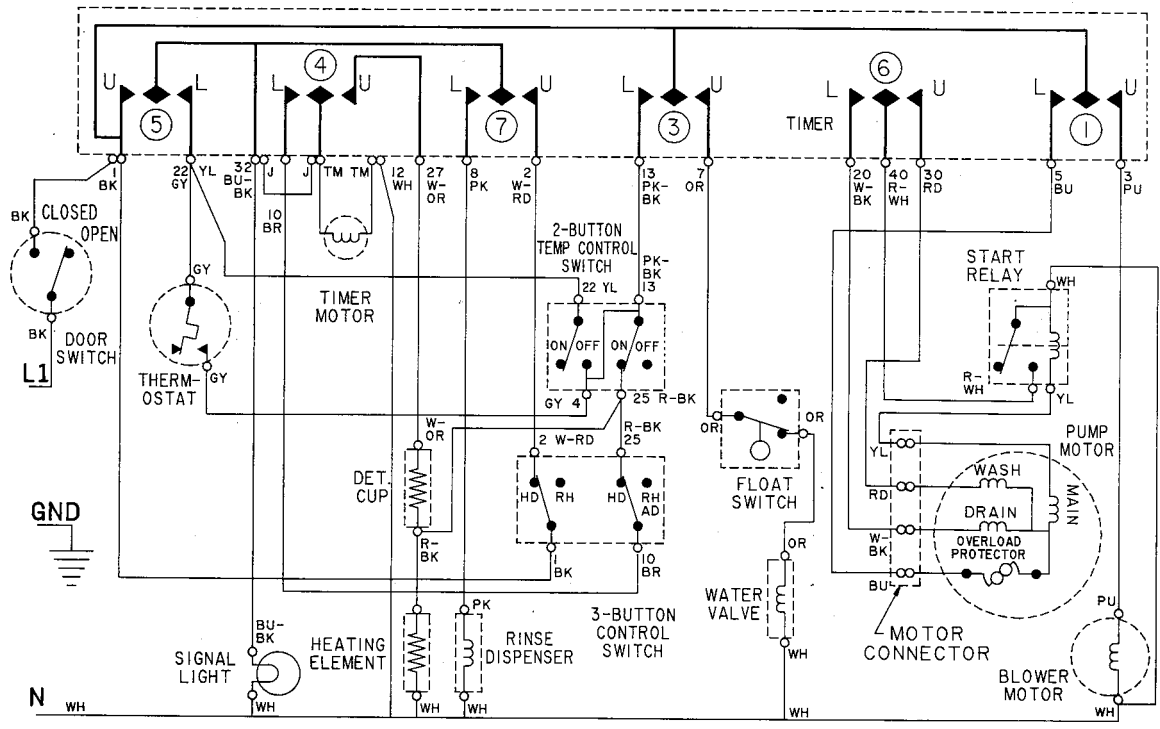
DU598



CAM INFORMATION AND CONTACT DATA			TIME CHART - 100 SECONDS PER INCREMENT									
CAM NO.	CAM THROW	FUNCTION	5	10	15	20	25	30	35	40	45	50
①	U	BLOWER										
	L	MAIN WINDING										
②	U											
	L	POSITIVE DETENT										
③	U	WATER VALVE										
	L	HEATER - WASH										
④	U	DETERGENT CUP										
	L	HEATER - DRY										
⑤	U	TIMER MOTOR										
	L	TIMER MOTOR BYPASS										
⑥	U	WASH WINDING										
	L	DRAIN WINDING										
⑦	U	TIMER MOTOR INTERRUPT										
	L	RINSE DISPENSER										

<ul style="list-style-type: none"> ▨ CONTACTS CLOSED 9-15 SECONDS ▨ CONTACTS OPEN 8-20 SECONDS 	<ul style="list-style-type: none"> □ CAM OPEN ▨ CAM CLOSED ▨ CAM MAY BE OPEN OR CLOSED
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SWITCH CODE
 RH-RINSE & HOLD
 HD-HEATED DRY
 AD-AIR DRY

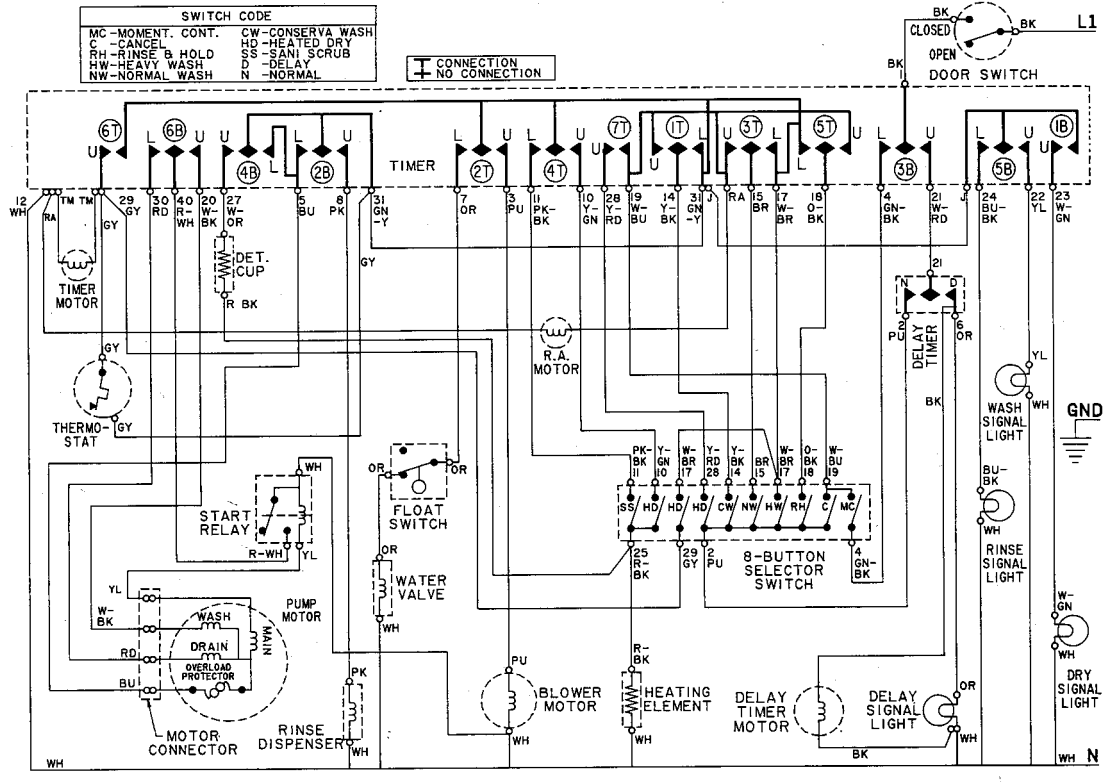
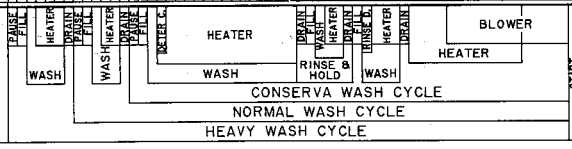


CAM INFORMATION AND CONTACT DATA			TIME CHART - 100 SECONDS PER INCREMENT											
CAM NO.	CAM THROW	FUNCTION	5	10	15	20	25	30	35	40	45	50	55	60
1T	U	CONSERVA WASH-R.A.	[Hatched]											
	L	CONSERVA WASH	[Hatched]											
2T	U	BLOWER	[Hatched]											
	L	WATER VALVE	[Hatched]											
3T	U	NORMAL WASH-R.A.	[Hatched]											
	L	NORMAL WASH	[Hatched]											
4T	U	HEATER DRY	[Hatched]											
	L	HEATER-CIRCULATE	[Hatched]											
7T	U	MAIN WASH R.A.	[Hatched]											
	L		[Hatched]											
5T	U	RINSE & HOLD-R.A.	[Hatched]											
	L	RINSE & HOLD	[Hatched]											
4B	U	DETERGENT CUP	[Hatched]											
	L	MAIN WINDING	[Hatched]											
2B	U	RINSE DISPENSER	[Hatched]											
	L	MAIN WINDING	[Hatched]											
3B	U	TIMER MOTOR	[Hatched]											
	L	START	[Hatched]											
6B	U	WASH WINDING	[Hatched]											
	L	DRAIN WINDING	[Hatched]											
5B	U	WASH SIGNAL LIGHT	[Hatched]											
	L	RINSE SIGNAL LIGHT	[Hatched]											
1B	U	DRY SIGNAL LIGHT	[Hatched]											
	L		[Hatched]											
6T	U	TIMER MOTOR INTERRUPT	[Hatched]											
	L		[Hatched]											

CONTACTS CLOSED 9-15 SECONDS
 CAM OPEN
 CONTACTS OPEN 8-20 SECONDS
 CAM CLOSED
 CAM MAY BE OPEN OR CLOSED

SWITCH CODE
 MC - MOMENT. CONT. CW - CONSERVA WASH
 C - CANCEL HD - HEATED DRY
 RH - RINSE & HOLD SS - SANI SCRUB
 HW - HEAVY WASH D - DELAY
 NW - NORMAL WASH N - NORMAL

CONNECTION
 NO CONNECTION





MAYTAG

Maytag Appliances Sales Company

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Cleveland, TN 37311