g

GE Consumer Service Training

Technician Manual

18” Compact Dishwasher

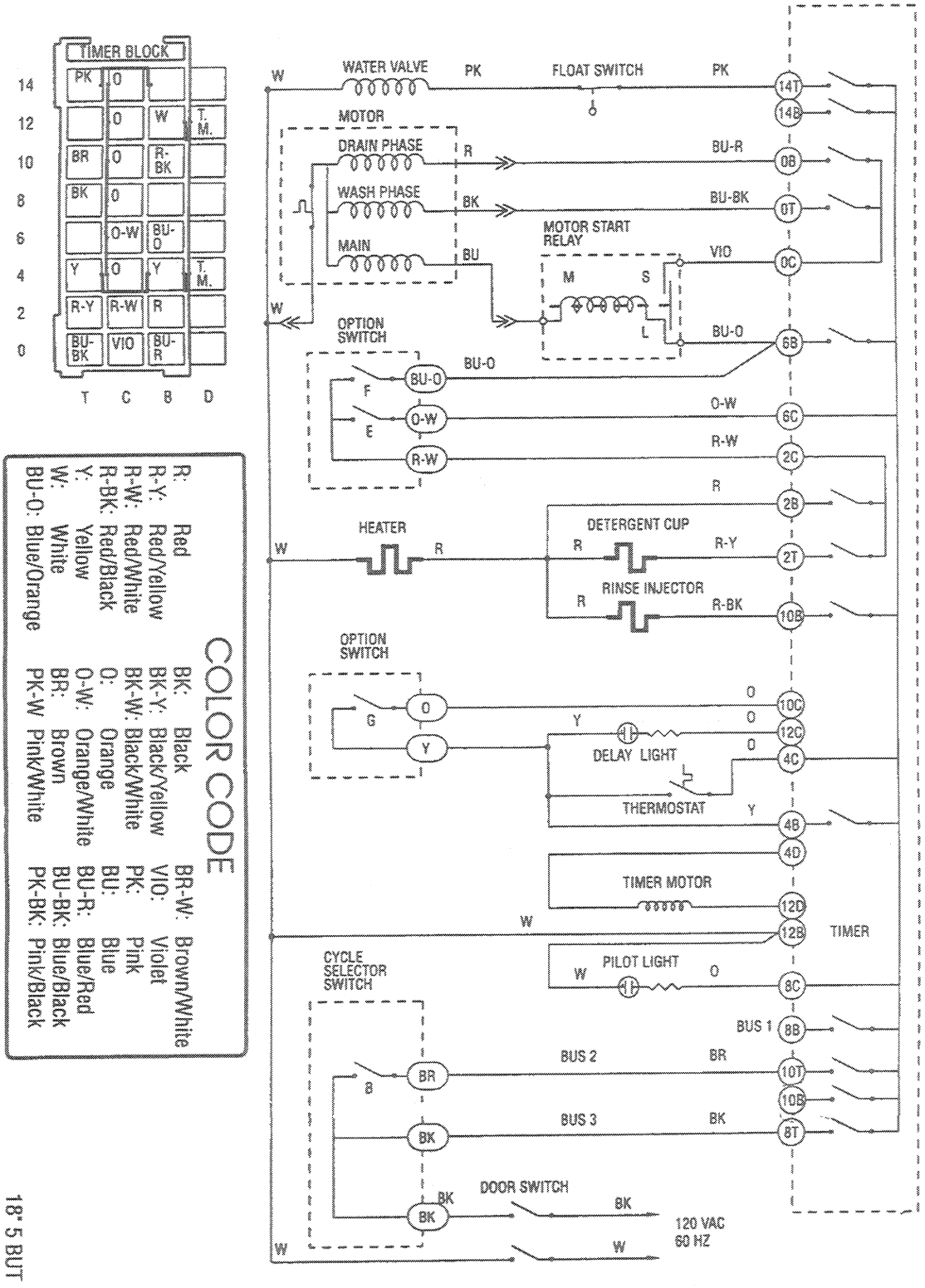
Pub. No. 31-9002

CONTENTS

SPECIFICATIONS

MODEL	DW1800Y
ELECTRICAL	
Rating	120V 60Hz ± 10%
Separate Circuit	15 - 20 Amps
Motor (HP)	1/3
Motor (Amps)	5.5 ± 10%
Heater Wattage	
Wash	600 ± 10%
Dry	450 ± 10%
Total Amps (Load Rated)	10.0 ± 10%
Thermostat Contacts Close At	127°F ± 5°F 53°C ± 3°C
COMPONENT RESISTANCE (OHMS)	
Timer Motor	2350 ± 10%
Heating Element	24 ± 10%
Pump Motor Start Windings	
Drain (White to Red)	5.6 ± 10%
Wash (White to Black)	5.6 ± 10%
Run Windings	
Main (White to Blue)	2.3 ± 10%
Fill Valve Solenoid	684 - 756
WATER SUPPLY	
Suggested Min. Incoming Water Temperature	120°F to 150°F 49°C - 66°C
Sump Water Temperature With Outer Door In Place	145°F ± 5°F 63°C ± 3°C
Water Charge	6 to 7 Quarts (5.7 to 6.6 liters)
Pressure (PSI) Minimum/Maximum	15/120 PSI
Connection (NPT)	3/8"
Consumption (Total Gallons)	7.5 - 8.75 Gal.
Water Valve Flow Rate (GPM)	1.08 GPM ± 10%
Water Recirculation Rate (GPM)	42 GPM ± 10%
Water Fill Time (± 3 Seconds)	91 Sec.

SCHEMATIC DIAGRAM



COLOR CODE

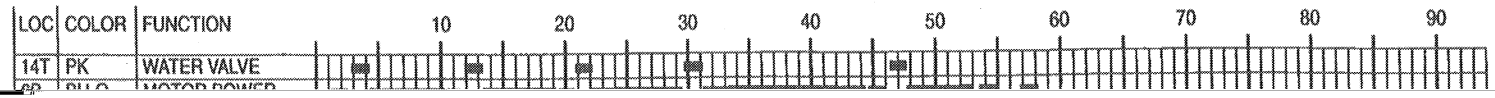
R:	Red	BK:	Black
R-Y:	Red/Yellow	BK-Y:	Black/Yellow
R-W:	Red/White	BK-W:	Black/White
R-BK:	Red/Black	O:	Orange
Y:	Yellow	O-W:	Orange/White
W:	White	BR:	Brown
BU-O:	Blue/Orange	PK-W	Pink/White
		BR-W:	Brown/White
		VIO:	Violet
		PK:	Pink
		BU:	Blue
		BU-R:	Blue/Red
		BU-BK:	Blue/Black
		PK-BK:	Pink/Black

18" 5 BUT

NOTE: SCHEMATIC DIAGRAM SUBJECT TO CHANGE. PLEASE REFER TO DIAGRAM SUPPLIED WITH PRODUCT LOCATED INSIDE PRODUCT CONSOLE.

TIMER SWITCHING FUNCTIONS IN MINUTES

LOC	COLOR	FUNCTION
14T	PK	WATER VALVE
6P	BU-O	MOTOR POWER



TIM

COMPONENT OPERATION AND REPAIR

SAFETY PRECAUTIONS

Always turn off the electric power supply before servicing any electrical component, making ohmmeter checks, or replacing any parts.

All voltage checks should be made with a voltmeter having a full scale range of 130 volts or higher.

After service is completed, be sure all safety grounding circuits are complete, all electrical connections are secure, and all access panels are in place.

TIMER

The timer allows the user to select the various cleaning cycles of the dishwasher. The timer controls all the electrical functions of the dishwasher in all stages of each cycle. All electrical functions can be traced on the charts and diagrams provided in this service manual.

To Test The Timer

If the timer is suspected of faulty operation, reference timer chart and electrical schematic diagram and proceed as follows:

1. Index the timer to the first increment of the Pots and Pans cycle, which is a drain period.
2. If the pump motor fails to operate during the first cycle increment, check for power at the pump motor connector block. If there is no power, check the door latch switch and selector switch. If there is power, check the pump motor as described in this section.
3. If the pump motor does operate, let the timer motor advance the timer through the drain increment to determine if the timer motor and drive train are fully operative.
4. Let the timer advance, or index it forward to the portion of the cycle in question.
5. If a component controlled by the timer fails to function as the timer advances through the cycle, check for voltage at the timer terminals. If the voltage is supplied to the component, check the component as described in this section.

Continuity through timer contacts, other controls, and wires can also be checked with an ohmmeter with electrical power disconnected.

If the timer contacts fail to close in the sequence shown on the timer chart, are burned (have resistance measurable with an ohmmeter), or if timer does not advance automatically, replace the timer.

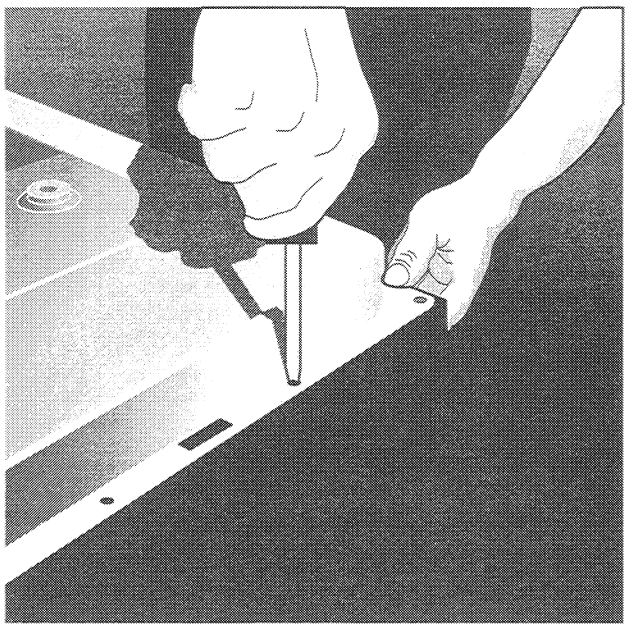


Figure 1

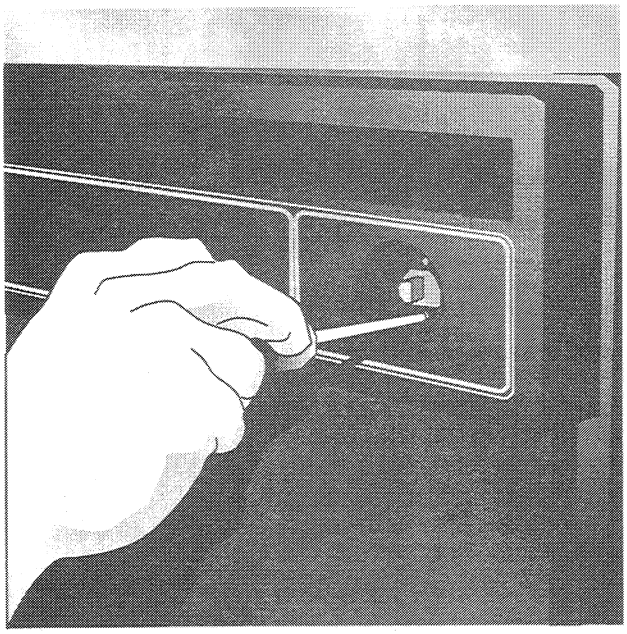


Figure 2

To Replace Timer

1. Disconnect dishwasher from electrical supply.
2. Remove timer knob.
3. Remove six screws securing the control panel to the inner door panel. (See Figure 1.)
4. Remove front two screws securing timer to control panel. (See Figure 2.)

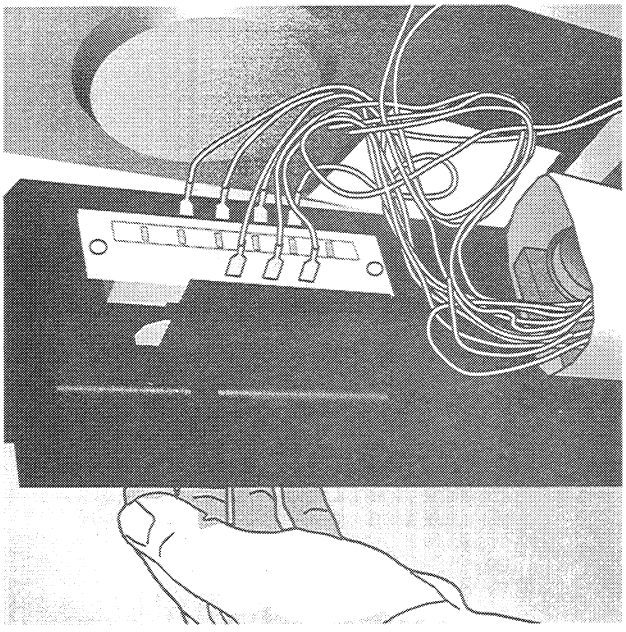


Figure 3

5. Carefully pull console forward to gain access to controls. (See Figure 3.)
6. Remove timer water shield.

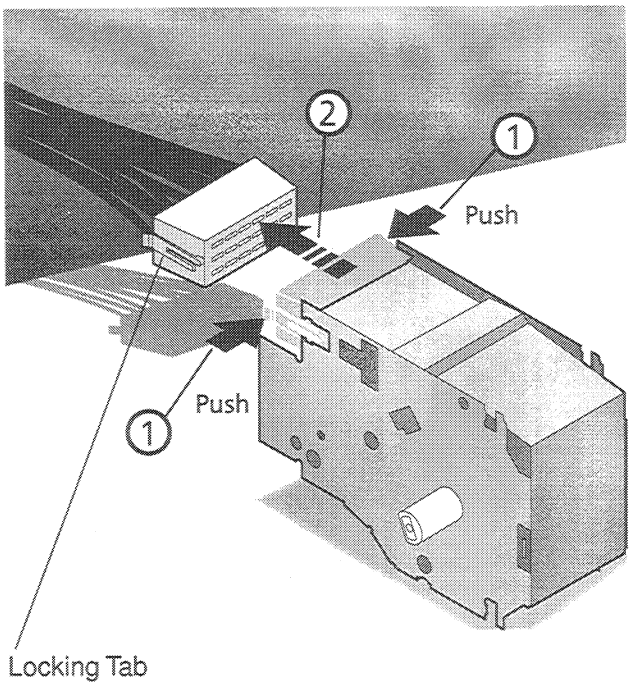


Figure 4

7. Push in on locking tabs and pull multiconnector from timer. (See Figure 4.)
8. Install new timer and reverse procedures to complete repairs.

SELECTOR SWITCH

Two types of selector switches are used on dishwashers. A rocker type, which is used on some models for simple options such as heated or natural drying; and a multifunction push-button type, that provides the user with a wide selection of dishwashing cycles and/or multiple options.

The selector switch can be tested using an ohmmeter, along with the wiring schematic and selector switch chart.

To Test Selector Switch

1. Disconnect dishwasher from electrical supply.
2. Remove screws securing the control panel to the inner door panel (See Figure 1.)
3. Carefully pull console forward to gain access to controls. (See Figure 3.)

4. Remove electrical leads from selector switch.
5. Place leads of ohmmeter across switch terminal contacts. (Refer to wiring diagram and selector switch chart for switch operation.)

To Replace Selector Switch

1. Disconnect dishwasher from electrical supply.
2. Remove screws securing control panel to inner door panel. (See Figure 1.)
3. Carefully pull control forward to gain access to controls. (See Figure 3.)
4. Remove wire leads from selector switch.
5. Remove screws securing switch to control panel.
6. Install new switch and reverse procedures to complete repairs.

DOOR LATCH AND SWITCH ASSEMBLY

The latch and switch are located in the door assembly behind the control panel. The dishwasher will not operate until the door is closed, the latch engages the door catch (holding the door firmly against the tub seal), and the normally open contacts of the double-pole, single throw, door safety switch are closed.

To Test Or Replace Door Switch

1. Disconnect dishwasher from electrical supply.
2. Remove screws securing the control panel to the inner door panel (See Figure 1.)
3. Remove wire leads from latch switch.
4. Use ohmmeter and check switch for continuity.
5. If the switch tests good
   - Check dishwasher electrical power.
   - Check to see if timer is defective.

5A. If switch is defective remove door switch from latch assembly.

6. Install new switch and reverse procedures to complete repairs.

To Replace Door Latch Assembly

1. Disconnect dishwasher from electrical supply.
2. Remove screws securing the control panel to the inner door panel. (See Figure 1.)

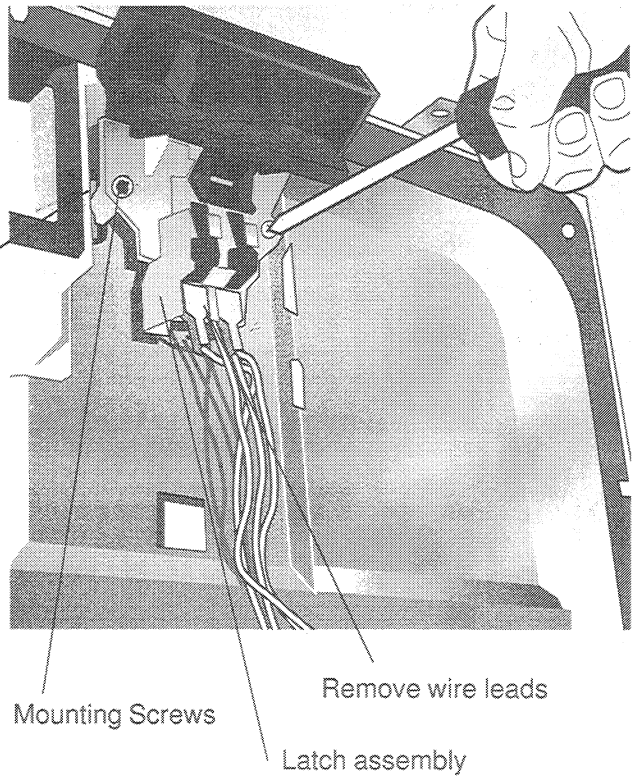


Figure 5

3. Remove wire leads from door latch switch. (See Figure 5.)
4. Remove screws securing door latch assembly to inner door panel. (See Figure 5.)
5. Install new door latch assembly and reverse procedures to complete repairs.

WATER FILL VALVE

The water valve is timer controlled and solenoid operated. The flow of water is controled by a rubber flow washer capable of maintaining a flow rate of 1.08 ± 10% gallons per minute with incoming water pressure of 15 to 120 P.S.I.

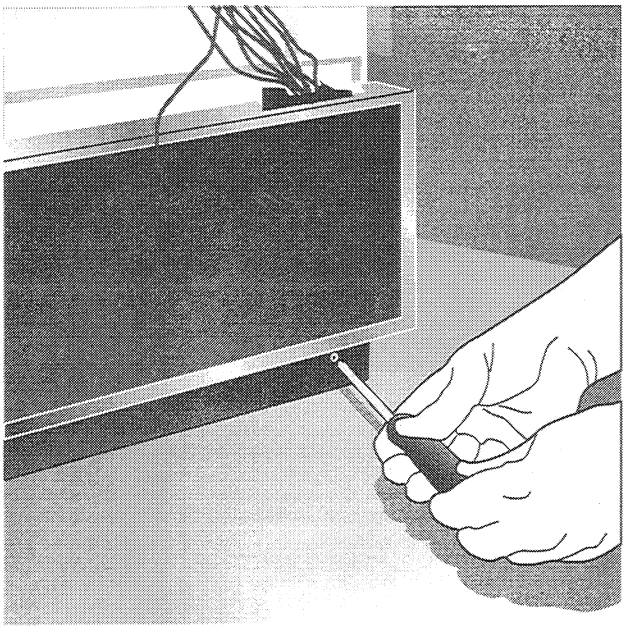


Figure 6

To Test Water Valve

1. Disconnect dishwasher from electrical supply.
2. Remove screws securing bottom of service panel and insert. (See Figure 6.)

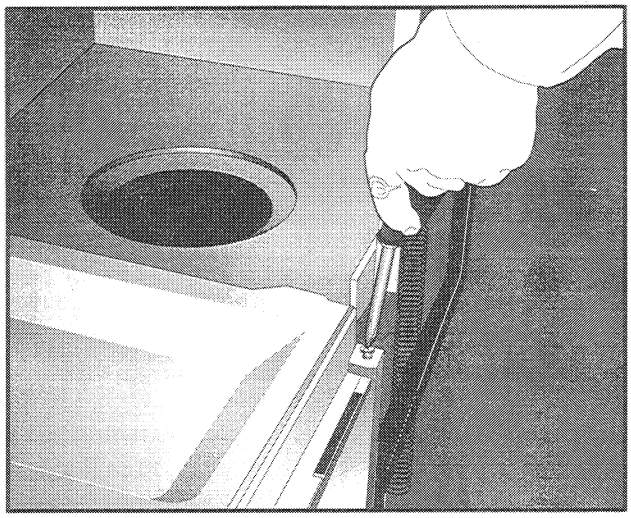


Figure 7

3. Open dishwasher door and remove screws securing top of service panel. (See Figure 7.)
4. Remove valve electrical leads and using ohmmeter, check resistance of solenoid. (See "Product Specifications" for correct ohms reading.)
5. To check for proper mechanical operation of water valve, attach a separate 115 volt, grounded power source to valve terminals, and metal frame of dishwasher. Turn power on for a few seconds and then turn power off. If water flow does not stop within 2 seconds, replace valve.

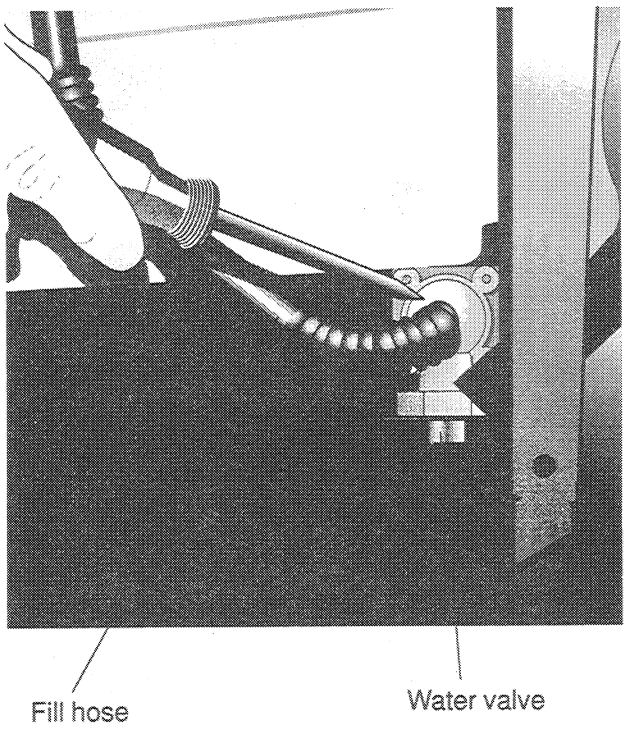


Figure 8

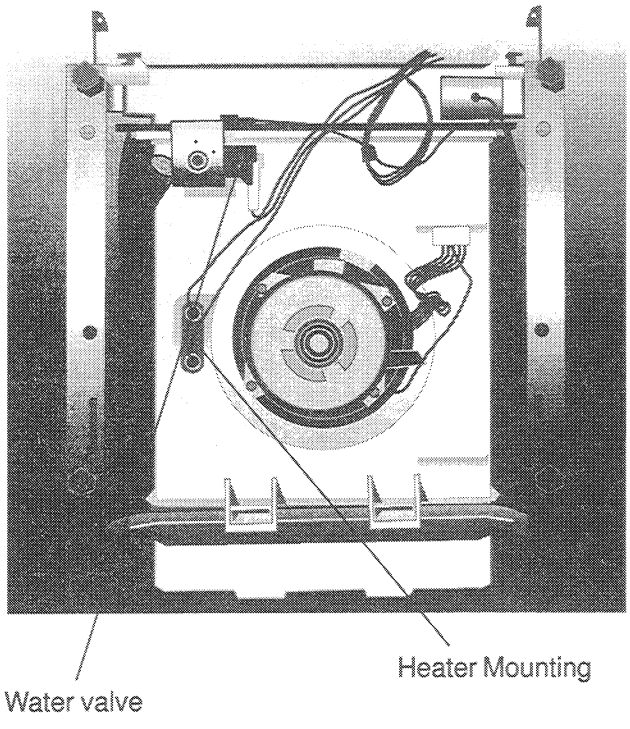


Figure 9

(View Showing Unit Laying On Its Back)

To Remove or Replace Valve

The water valve is mounted to the left hinge support of the dishwasher. (Refer to Figures 8 and 9.)

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (Refer to Figures 6 and 7.)
3. Remove incoming water line and tub fill hose. **Note:** Avoid contact between hose and spring to avoid hose damage.
4. Remove mounting screws.
5. Remove wiring harness conector.
6. Install new water valve and reverse procedures to complete repairs

TROUBLESHOOTING WATER VALVE

No Water To Tub

1. Be sure the main water supply and electrical power are turned on.
2. Check the float assembly for free movement up and down. (See Float Switch Assembly on page 10.)
3. Remove service panel. (Refer to Figures 6 and 7.)
4. Advance timer to fill position and latch door. Start the dishwasher.
5. Check voltage at fill valve solenoid.
6. If voltage is present, disconnect power and measure resistance of solenoid coil. (See "Product Specifications" for ohm reading.) Replace valve if defective. If solenoid checks OK, turn off water and electric power supply. Check inlet filter screen for debris. Clean screen and reassemble.
7. If there is no voltage present at the solenoid, check continuity though the latch switch, timer contacts, float switch, and appropriate harness wires (power off).

Water Level Too Low

Water level should touch the heating element.

1. Check incoming water pressure: 15 P.S.I. is the minimum pressure for an adequate fill.
2. Check main water supply valve for full "open."
3. Check for clogged screen in the valve.

Water Will Not Shut Off

1. Disconnect dishwasher from electrical supply. If water continues to flow, close main water supply valve and replace dishwasher valve.
2. If water turns off when power is disconnected, check for welded timer contacts, or timer motor that fails to advance. Replace timer if defective.

FLOAT SWITCH ASSEMBLY

The water float assembly is located under the left front corner of the tub. Its function is to open the electrical circuit to the water valve solenoid, should too much water enter the dishwasher. The float operated switch is a normally open switch. The weight of the float assembly holds the switch closed. If the switch fails to close, check the following:

1. Loose connection at the switch terminal.
2. Switch not installed properly.
3. Bent or binding switch actuator.
4. Warped stem on float, not contacting the actuator blade.
5. Float support restricts free float movement.

If the switch fails to open (overfill condition) check the following:

1. Check for cracked float.
2. Check for obstructed float - binding of mechanism.
3. Welded contacts in the float switch.
4. Bent or binding switch actuator.
5. Food (foreign material) restricting free float movement.

Note: The float switch will not protect against flooding caused by a mechanically obstructed water valve.

To Remove Or Replace Float Switch

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (See Figures 6 and 7.)

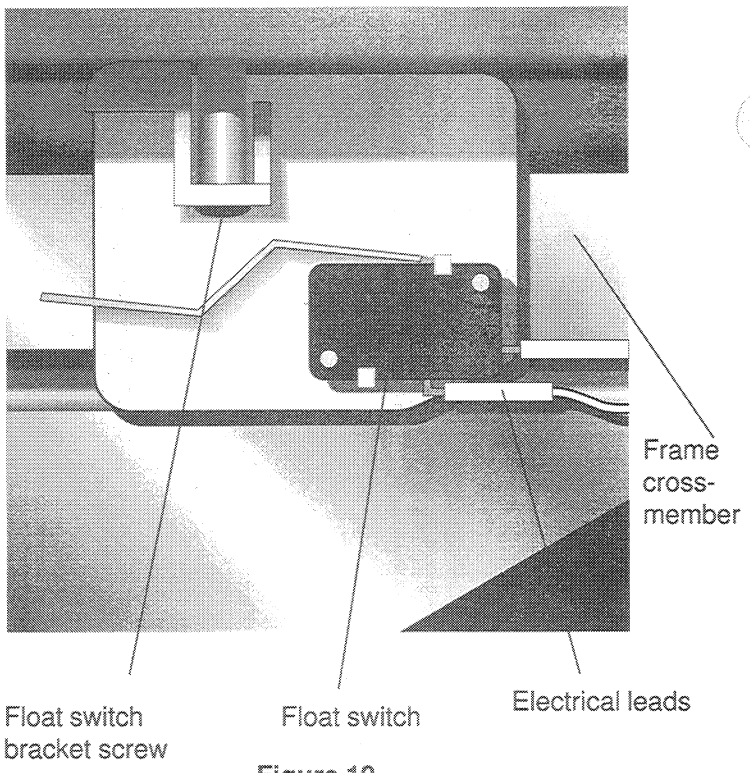


Figure 10

3. Remove electrical leads to float switch. (See Figure 10.)
4. Unsnap switch from tub frame. (See Figure 10.)
5. Install new float switch and reverse procedures to complete repairs.

FILL FUNNEL AND AIR GAP ASSEMBLY

The fill funnel and air gap assembly is molded onto the right side of the tub. It's purpose is to provide a method of supplying water for the wash and rinse cycles through an air gap, as required by plumbing codes. The air gap prevents the siphoning of wash water back into the water supply system should the water pressure drop to less than atmospheric. (See Figure 11.)

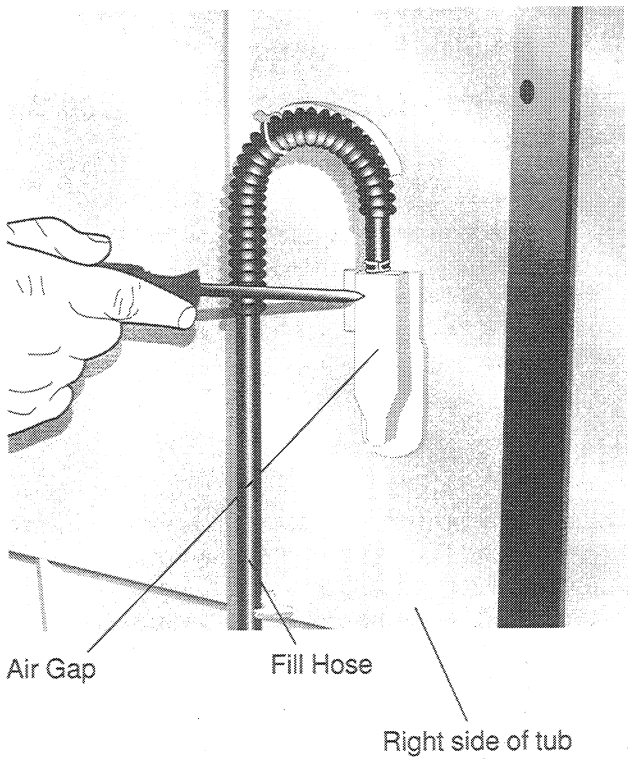


Figure 11

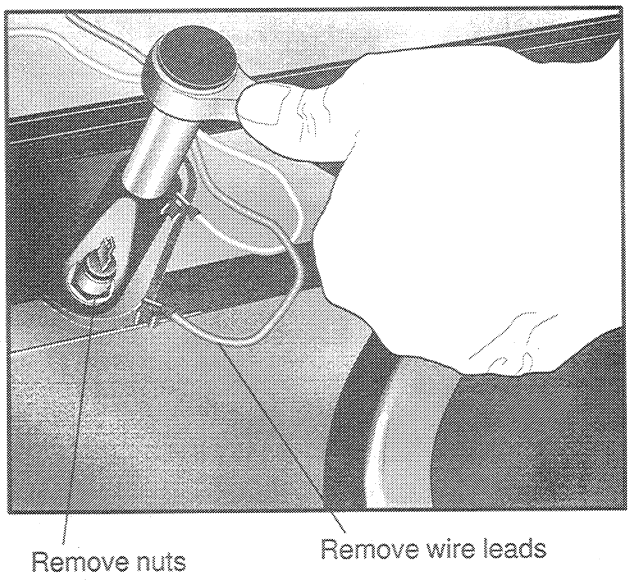


Figure 12

4. Remove electrical leads to heater. (See Figure 12.)
5. Remove hex nuts securing the heater element to the bottom of the tub. (See Figure 12.)

HEATING ELEMENT

The heating element maintains the water temperature during the wash and rinse cycles, and heats the air during the static dry cycle. (See page 2 for heating element wattage ratings.)

To check operation, advance timer to the dry cycle, set the selector switch for heated dry, close and latch the dishwasher door. Allow one or two minutes, open the dishwasher door and note if heat is present.

To Test Continuity Of Heating Element

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (See Figures 6 and 7.)
3. Remove electrical connection from one side of heating element. **Note:** The connectors have a lock tab to prevent the terminal from coming off. Depress lock tab to remove from heater.

To Remove Or Replace Heater Element

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (See Figures 6 and 7.)
3. Remove lower dishrack.

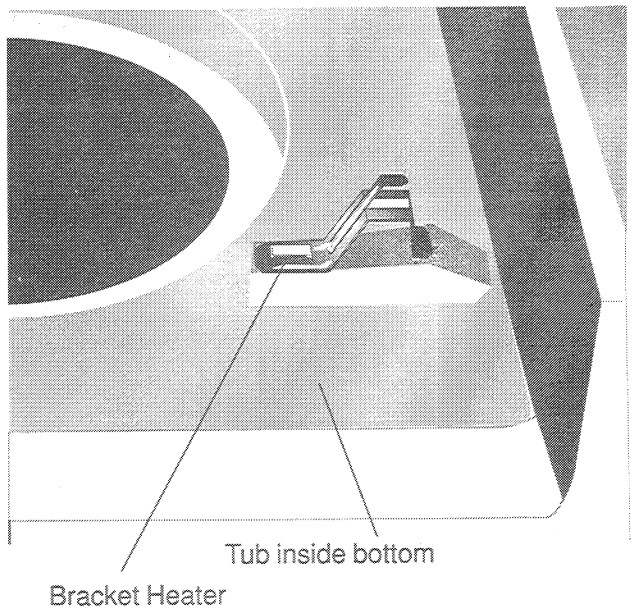
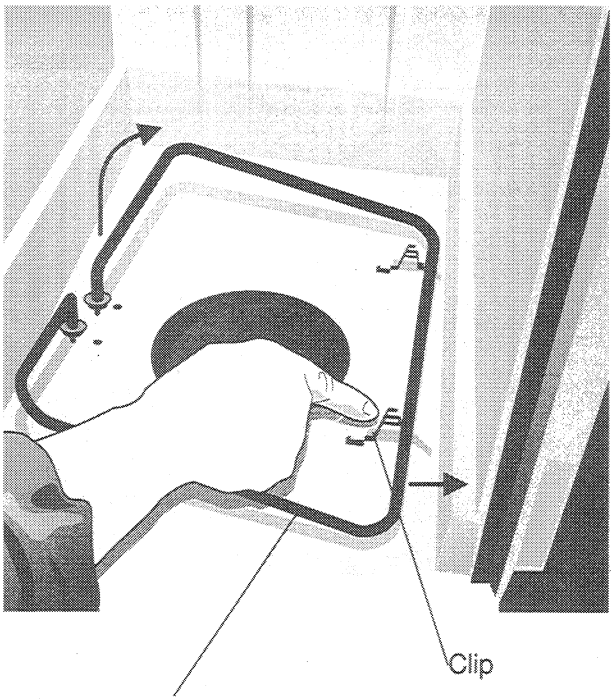


Figure 13



Rotate heater out from under brackets.
Do not try to remove the brackets.

Figure 14

6. Do not try to remove clips that secure heater to the bottom of the tub. After removing the hex nuts, (step 5), raise the element out of the mounting holes. (See Figures 13 and 14.)
7. Rotate heating element out from underneath heater retainer clips. (See Figures 13 and 14.)
8. Install new heater element and reverse procedures to complete repairs.

DETERGENT DISPENSER

The detergent dispenser consists of two cups molded into the inner-door panel with a rotating spring-loaded cover. The cover closes the larger of the two cups and rotates open to release the detergent at a specified point in the cycle. The detergent in the open cup falls into the tub when the door is closed.

The spring loaded cover is activated by a bi-metal in series with the main heater. (See schematic on page 3.)

Operation of the bi-metal may be electrically checked by slowly advancing the timer.

Failure Of The Bi-Metal To Operate May Be The Result Of

- Open heater.
- Loose connections at heater or bi-metal.
- Contacts in timer open.
- Binding of bi-metal where contact is made with cam (for example, no lubrication or tab is bent at wrong angle).
- Cam is not centered in the middle of bi-metal.

To Test Bi-metal

The bi-metal must only be tested using an ohmmeter. Never apply 120 volts directly across bi-metal terminals. A failed bi-metal most often can be traced to a bad wire connection or a broken lead.

1. Disconnect dishwasher from electrical supply.
2. Remove outer door panel.
3. Remove ground wire from the outer door panel terminal.
4. Remove electrical leads to the bi-metal, and place ohmmeter leads across the bi-metal terminals. Continuity should exist. If it shows infinite resistance, the bi-metal must be replaced.

To Remove Or Replace Bi-Metal

1. Disconnect dishwasher from electrical supply.
2. Remove outer door panel.
3. Remove ground wire from outer door panel terminal.
4. Remove electrical leads to the bi-metal.

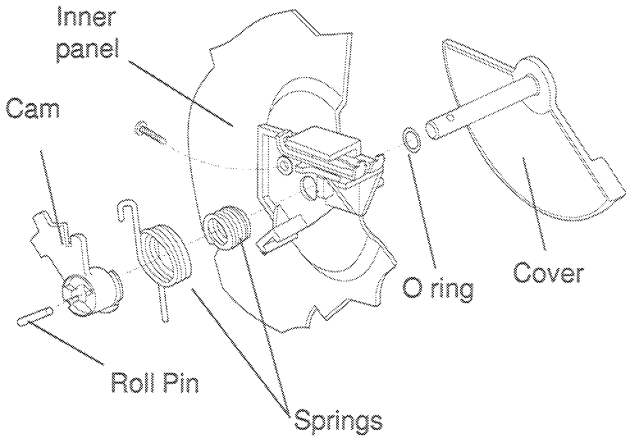


Figure 15

5. Remove roll pin securing cam and spring to shaft. (See Figure 15.)

6. Remove cam with spring. (See Figure 15.)
7. Remove spring from cup shaft.

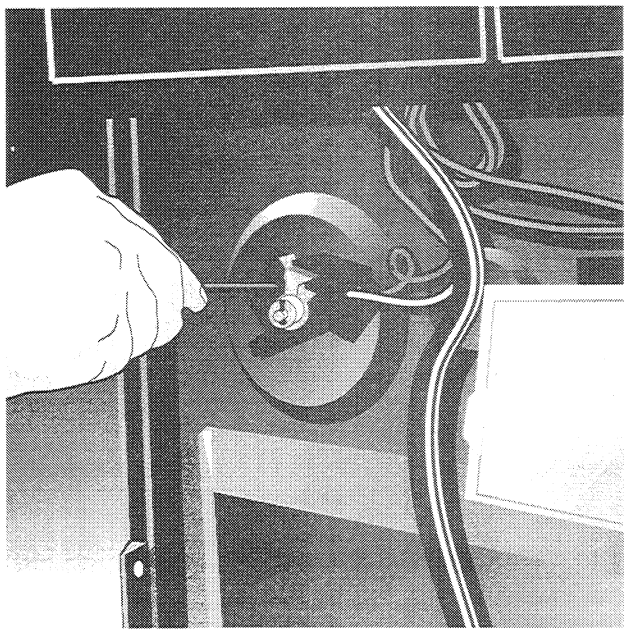


Figure 16

8. Remove screw securing the bi-metal assembly. (See Figure 16.)
9. Remove bi-metal assembly.
10. Install new bi-metal and reverse procedures to complete repairs.

To Replace Dispenser Cover

1. Disconnect dishwasher from electrical supply.
2. Remove outer door panel.
3. Remove ground wire from outer door panel terminal.
4. Remove electrical leads to the bi-metal.
5. Remove pin from shaft to allow removal of the cam and spring assembly. (See Figure 15.)
6. Remove bi-metal assembly. (See Figure 16.)
7. Remove dispenser cover, o-ring, and shaft assembly.
8. Install new dispenser cover and o-ring in reverse order. Reverse procedures to complete repairs.

Note: Be sure to attach ground wire to outer panel before attaching to inner door.

RINSE AGENT DISPENSER

The rinse agent dispenser is mounted to the back side of the inner door panel. The dispenser assembly fill neck extends through a grommet in the inner door panel. A screw and sealing washer secure the dispenser in place.

When the dishwasher door is opened, rinse agent flows into a small reservoir at the top of the dispenser tank. When the door is closed, the rinse agent flows into the reservoir. Excess rinse agent spills back into the dispenser tank. A plunger, attached to the reservoir retains the liquid agent to be dispensed later in the final rinse.

In the final rinse the timer energizes the bi-metal arm of the rinse agent dispenser. The current flow causes the bi-metal arm to warp, raising the sealing plunger. This allows the wetting agent to flow from the reservoir to the fill neck and into the tub, mixing with the final rinse water. This assures a measured charge of approximately .05 to .08 cubic centimeters of wetting agent.

Note: Should the dispenser fail to operate, check the electrical circuit through the heating element. The bi-metal arm in the dispenser is in series with the heating element.

To Remove Or Replace Bi-Metal Arm

1. Disconnect dishwasher from electrical supply.
2. Open dishwasher door and remove screws securing the outer door panel assembly.
3. Remove ground wire from the outer door panel terminal.
4. Remove electrical leads to bi-metal heater.
5. Remove screw from inner door panel securing rinse agent dispenser.
6. Pull rinse agent dispenser assembly from grommet of the inner door panel.
7. Remove screws securing bi-metal heater assembly to container.
8. Install new bi-metal assembly.
9. Reverse procedures to complete repairs.

To Remove Or Replace Rinse Agent Dispenser Assembly

1. Disconnect dishwasher from electrical supply.
2. Open dishwasher door and remove four screws securing the outer door panel assembly.
3. Remove ground wire from the outer door panel terminal.
4. Remove electrical leads to the bi-metal.
5. Remove screw from inner door panel securing rinse agent dispenser.
6. Pull rinse agent dispenser assembly from grommet of the inner door panel.
7. Remove screws securing bi-metal assembly to container.
8. Install new dispenser parts required.
9. Reverse procedures to complete repairs.

MOTOR START RELAY

The motor start relay handles the high current phase required by the (start) windings. At the proper motor speed the relay drops out, allowing the motor to continue operating on its main (run) windings. The motor start relay is mounted on the dishwasher door hinge weld assembly, behind the service panel.

To Test the Relay

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (See Figures 6 and 7.)
3. Remove electrical leads from motor start relay.
4. Check relay coil for continuity across terminals L and M. Replace relay if open.
5. To check contacts L and S, remove screw securing motor start relay. Note: This relay is position sensitive, which means that when energized, the contacts are pulled up to close, and are opened by gravity.
6. Turn relay upside down and check the contacts for continuity. They should be closed indicating continuity in this position and infinite continuity when the relay is right side up.

To Remove or Replace Valve (Always Replace Relay)

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (See Figures 6 and 7.)
3. Remove electrical leads from motor start relay.
4. Remove screw securing motor start relay.
5. Install new motor start relay. Caution: Be sure to mount relay with the word "top" up.
6. Reverse procedures to complete repairs.

MOTOR AND PUMP ASSEMBLY

The drive motor is a 1/3 H.P, 120 Volt, 60 HZ, 1 phase 3450 RPM, internal thermal overload protected motor. It drives the impellers in the pump system, rotating counterclockwise for the wash and rinse cycles, and clockwise for pumping water out of the dishwasher.

The drive motor has three sets of windings, one main (run) winding and two phase (start) windings. One phase winding is for counterclockwise rotation and one phase winding is for clockwise rotation.

A magnetic type motor start relay is used. The motor main (run) winding is connected in series with the relay coil. When current is applied to the motor circuit, it passes through the motor run winding and the start relay coil. High current energizes the start relay coil to magnetically lift the relay armature and close relay contacts L and S. This applies current across one of the start windings to start the motor.

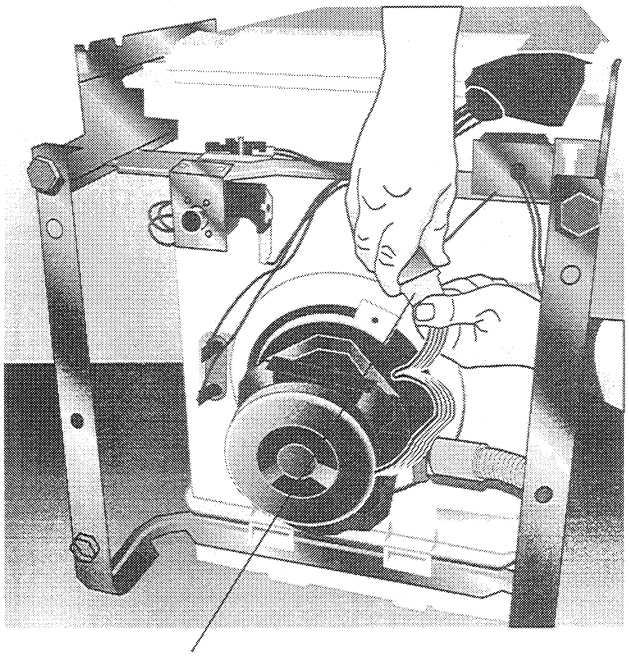
The timer determines which start winding circuit is closed, to give either counterclockwise or clockwise rotation. As the motor comes up to speed, the run winding current decreases, and the motor start relay armature drops to open contacts Land S. This opens the start winding circuit, and the motor continues to operate on the run winding.

The timer controls the motor electrical circuit to the run winding through contacts L and M of the relay, and the motor will come to a complete stop before reversing.

To Test The Drive Motor Windings

The drive motor (with power disconnected) can be tested at the lower main terminal board by using an ohmmeter and performing the following.

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (See Figures 6 and 7.)



Disconnect multiconnector

Figure 17

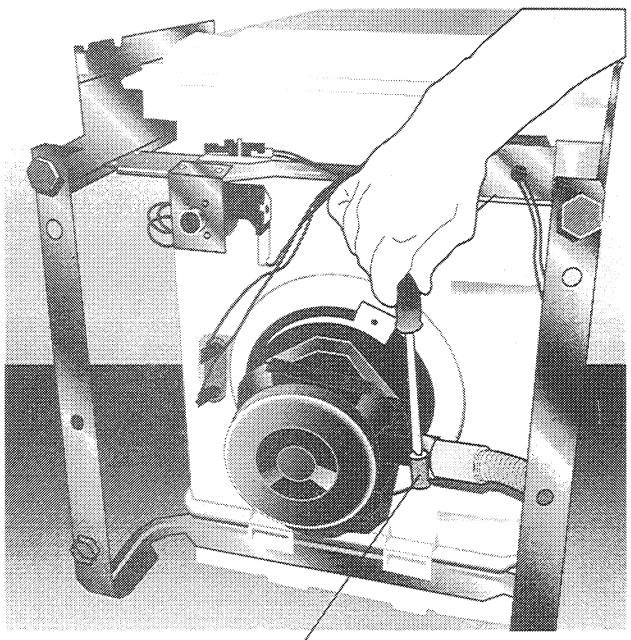
3. Disconnect motor lead multiconnector. (See Figure 17.)
4. With an ohmmeter check continuity through each winding and common (white). Resistance should be within ± 10% of values shown in the specification section of this manual.
5. If any of the winding circuits tests open, the motor must be replaced.

To Remove or Replace Motor and Pump Assembly

Note: To replace the motor, remove the motor and pump assembly from inside the dishwasher.

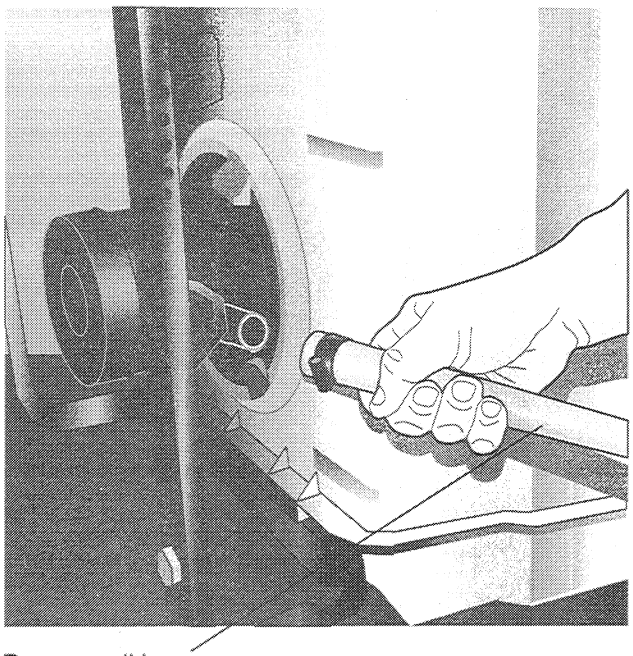
Note: Push **check value** onto the pump housing drain port, making sure the letters "TOP" are showing on top. This position locates the valve so that the slit end is perpendicular to the floor.

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (See Figures 6 and 7.)



Remove clamp securing drain hose to pump

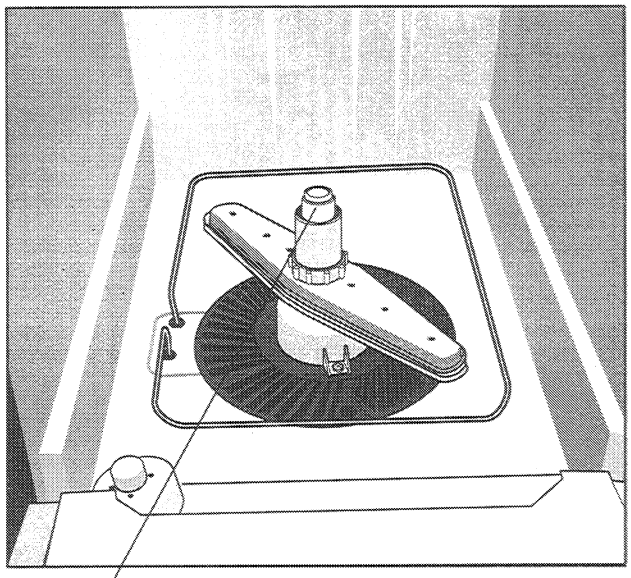
Figure 18



Remove all hoses

Figure 19

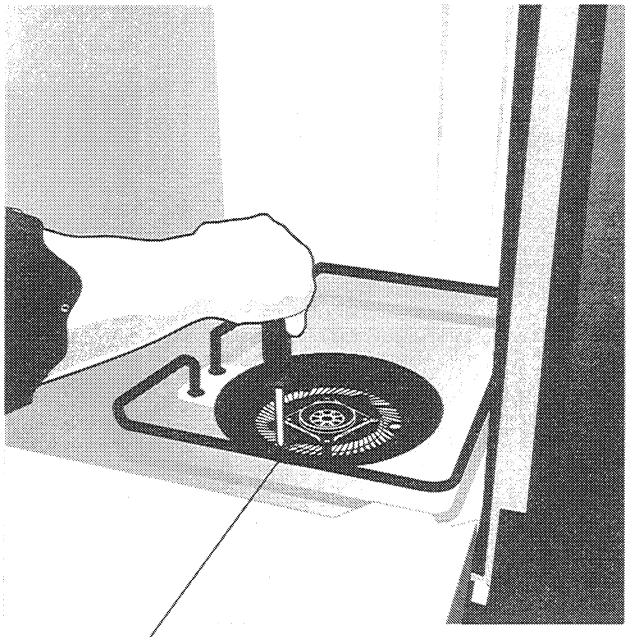
3. Disconnect multiconnector and hoses from motor and pump assembly. (See Figures 17, 18 and 19.)



Remove spray tower and spray arm

Figure 20

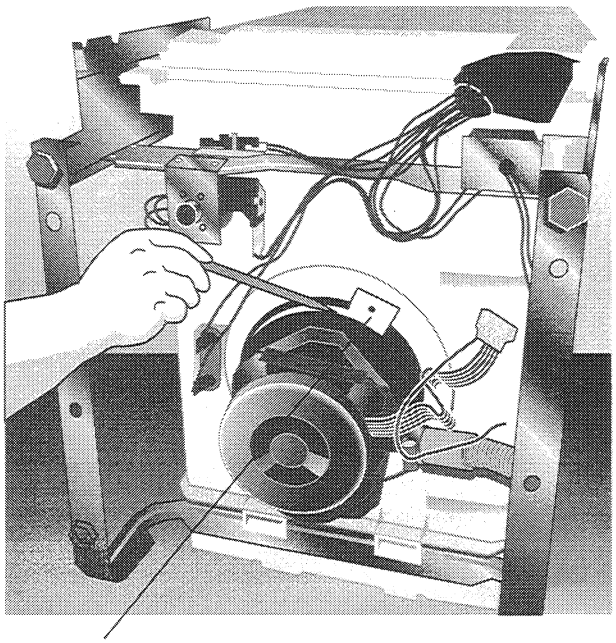
4. Remove spray tower, nut, bolt, and spray arm. (See Figure 20.)



Remove three screws that secure pump clamp

Figure 21

5. Detach motor/pump assembly from tub by removing three screws that secure pump clamp. (See Figure 21.)



Pump clamp

Figure 22

6. Separate and remove clamp ring from underside of the tub. (See Figure 22.)

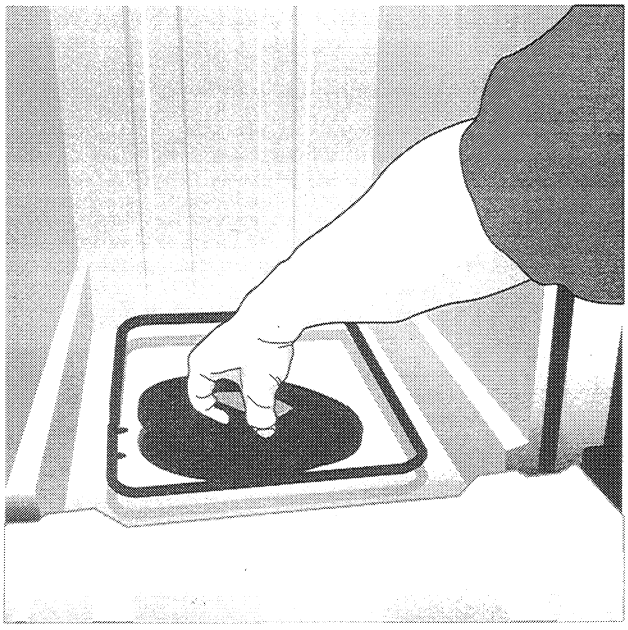


Figure 23

7. Carefully lift motor/pump assembly up and out of the tub. (See Figure 23.)
8. Remove diffuser housing. (See Page 23.)
9. Remove upper impeller, macerator blade, spacer plate and pump plate. (See Page 23.)
10. Remove lower impeller. (See Page 23.)
11. Remove pump housing from motor. Note position of pump housing in relation to motor.
12. Install housing in same position on replacement motor. **Important:** The motor shaft must be accurately centered in the pump housing for proper operation of the pump. To assure precise centering, use service tool 5300803923 (not included) before tightening screws.
13. Before replacing lower impeller on the motor shaft, carefully examine the mating surfaces of the lower impeller shaft seal (white ceramic) and the pump housing seal (black carbon). These surfaces should be perfectly smooth and polished in appearance. If either appear scratched, pitted or damaged in any fashion, leaking will result and the seals should be replaced.

Note: Use Service tool 5300803923 for installing seals.

14. Re-assemble pump components to installed in reverse order of removal.
15. Replace motor and pump assembly in dishwasher.
16. Remove the relay that is installed on the dishwasher and replace it with the relay furnished with the replacement motor.
17. Reconnect all wires and hoses.
18. Check for leaks and proper operation. Replace service panel.

DOOR HINGE ASSEMBLY

The dishwasher door counterbalance hinges are fastened to the lower edge of the inner door panel. Each counterbalance hinge arm is equipped with a support pin that pivots in a hole on the hinge weld assembly.

To Remove Or Replace Door Hinge Assembly

1. Disconnect dishwasher from electrical supply.
2. Remove service panel. (See Figures 6 and 7.)
3. Remove ground wire from the outer door panel terminal.
4. Remove outer door panel.
5. Release door counterbalance springs.

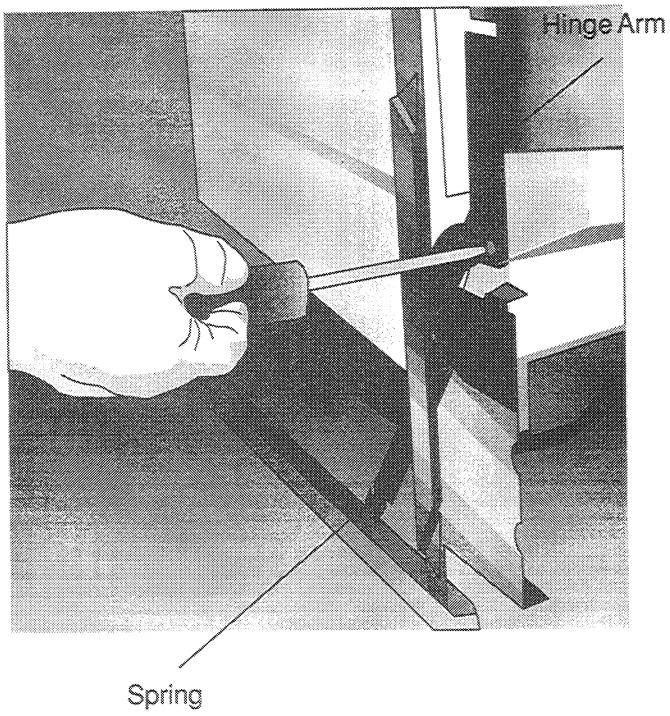


Figure 24

6. Remove two screws and nuts securing door counterbalance hinge arm to inner door panel. (See Figure 24.)
7. Remove nylon spring cushion pad.
8. Install new door counterbalance hinge arm assembly.
9. Reverse procedures to complete repairs.

DISHWASHER DOOR COUNTER BALANCE ARM HINGE GUIDE

The nylon guides are positioned to prevent the door counterbalance hinge arm from sticking or rubbing the counterbalance guide.

To Remove Or Replace Dishwasher Door Counterbalance Hinge Arm Guides

1. Disconnect dishwasher from electrical supply.
2. Open dishwasher door and remove screw securing the dishwasher door counterbalance hinge arm guide to hinge weld assembly.
3. Install new counterbalance hinge arm guide.
4. Reverse procedures to complete repairs.

TUB AND DOOR SEAL

The tub and door seal is soft black and is recessed in the tub.

To Remove Or Replace Tub And Door Seal

1. Disconnect dishwasher from electrical supply.

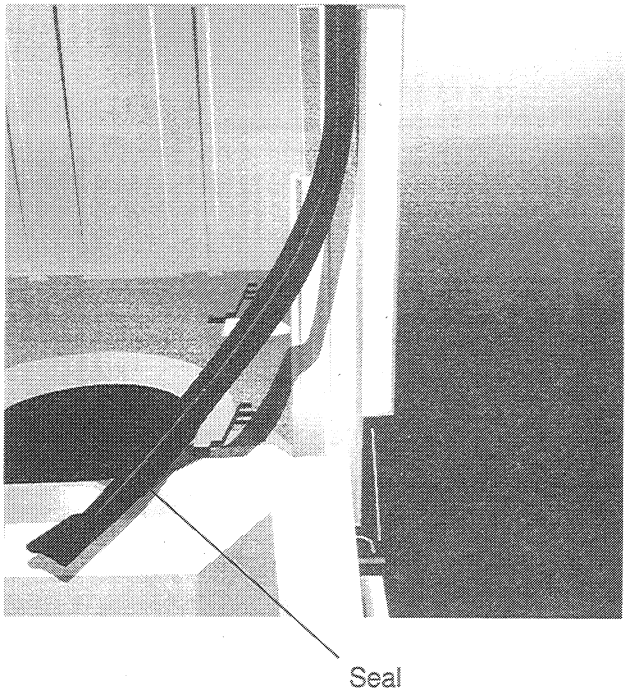


Figure 25

2. With a flatbladed screwdriver, carefully remove tub seal from recessed area around tub. (See Figure 25.)
3. To reinstall, press gasket into recessed area.

STATIC DRY SYSTEM

The static dry system operates through a vent located in the inner door panel. The vent allows room temperature air to enter the tub and gradually remove moisture. (See Figure 26.)

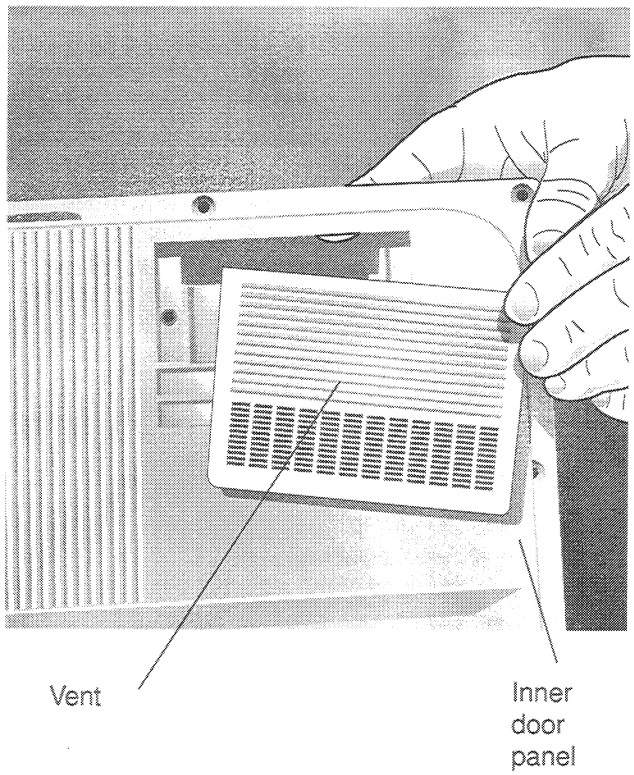
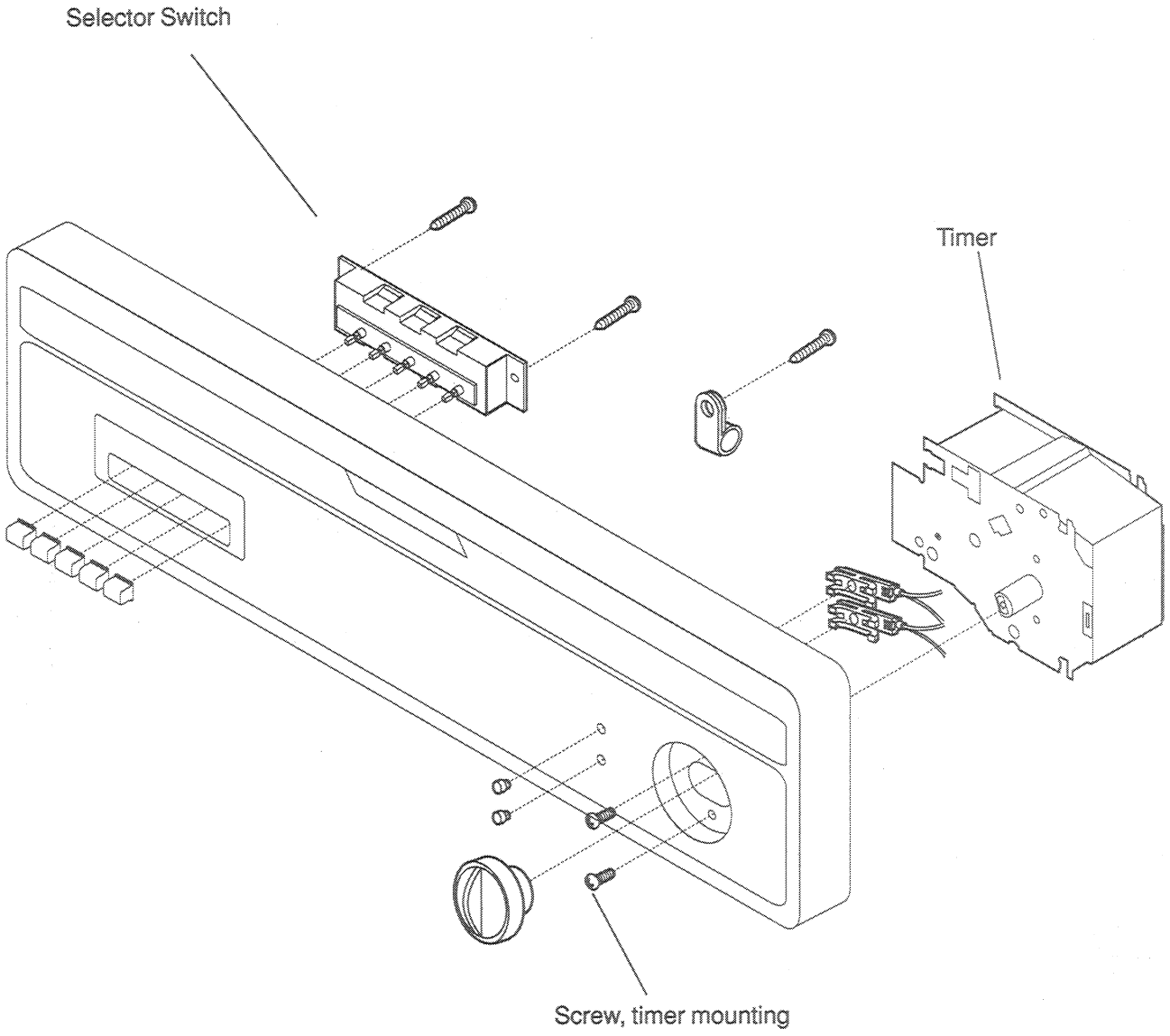
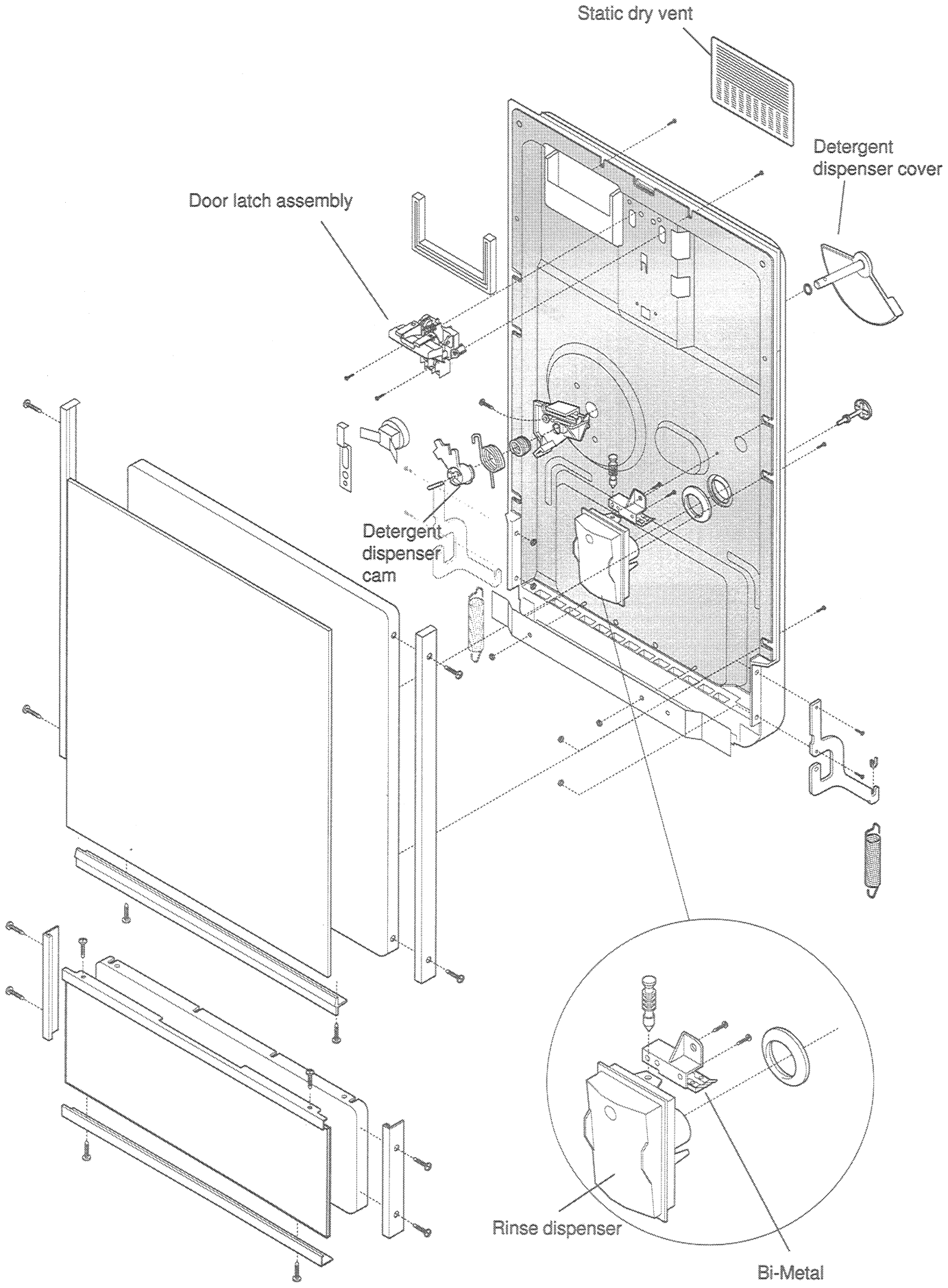
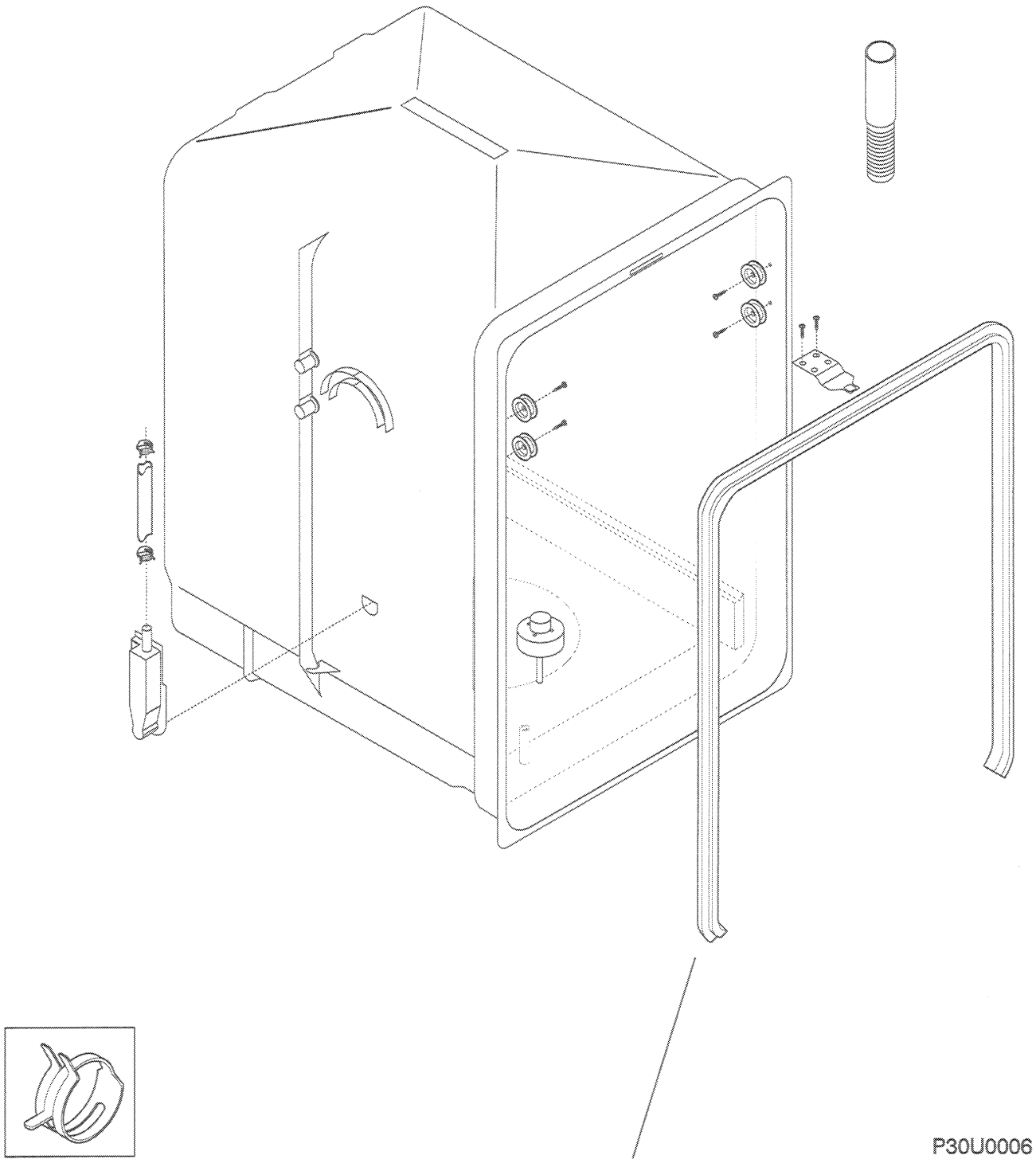


Figure 26

PRODUCT EXPLODED VIEWS

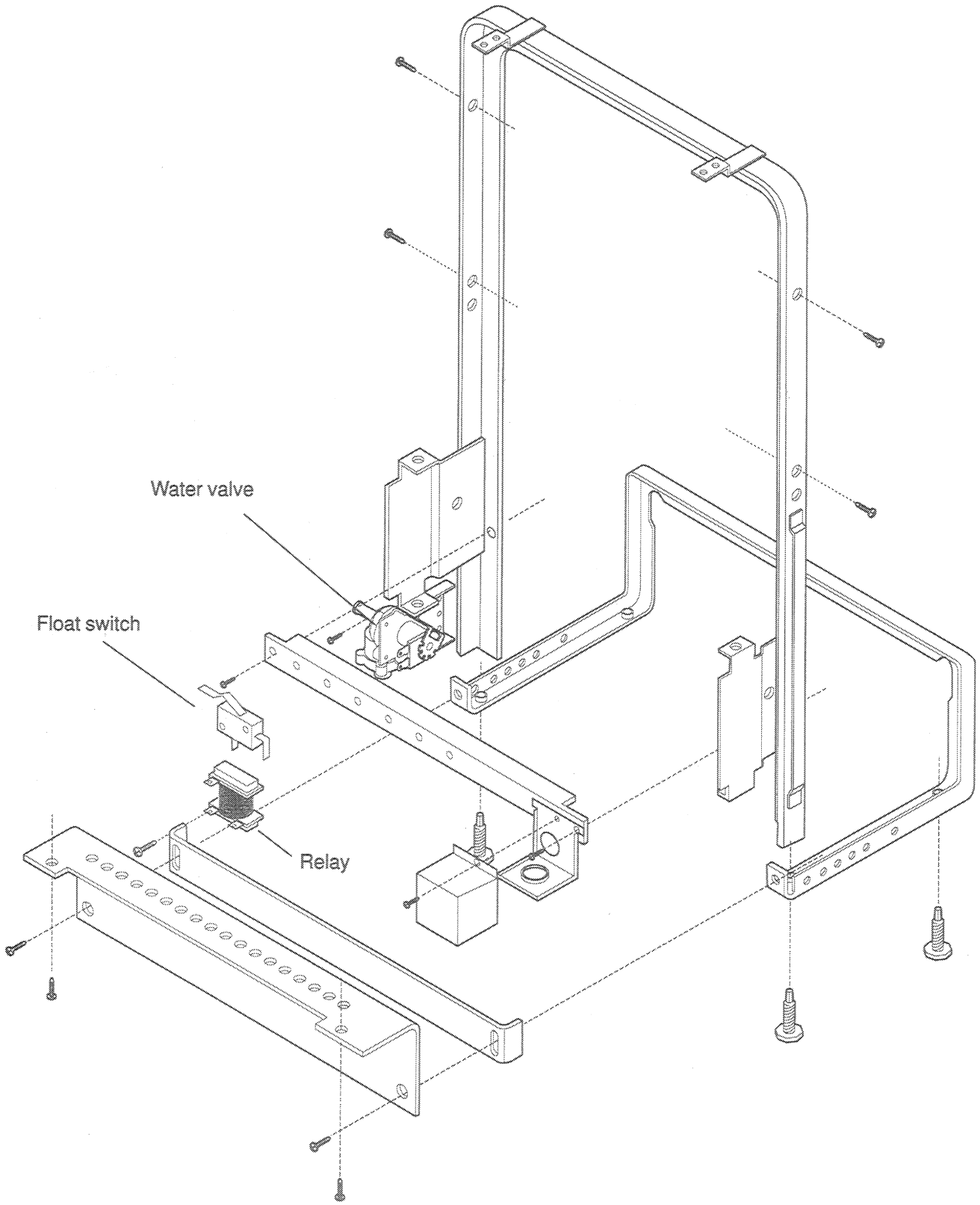


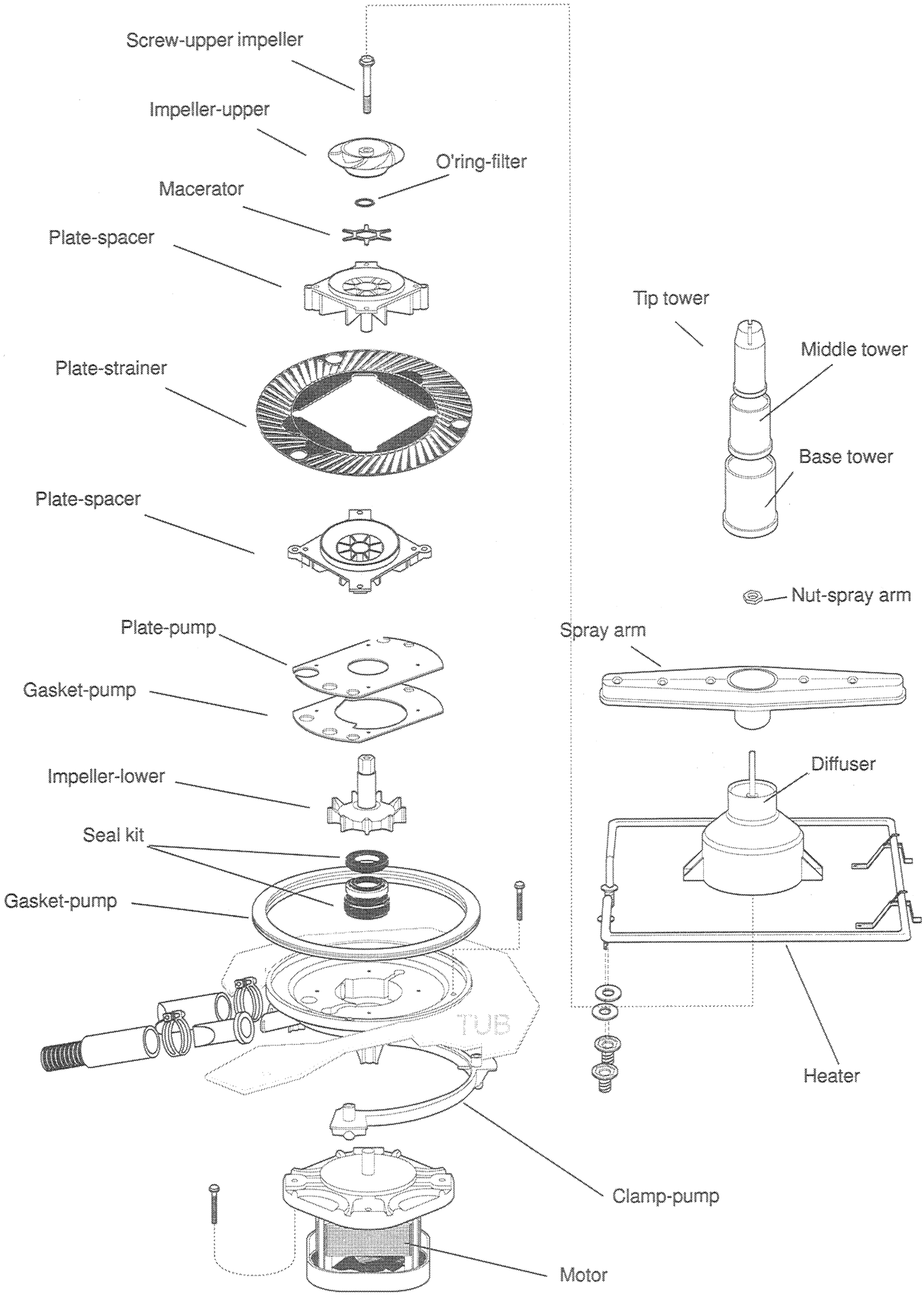

Static dry vent
Detergent dispenser cover
Door latch assembly
Detergent dispenser cam
Rinse dispenser
Bi-Metal



P30U0006

Door gasket


Water valve
Float switch
Relay


Screw-upper impeller
Impeller-upper
O'ring-filter
Macerator
Plate-spacer
Plate-strainer
Plate-spacer
Plate-pump
Gasket-pump
Impeller-lower
Seal kit
Gasket-pump
TUB
Clamp-pump
Motor
Tip tower
Middle tower
Base tower
Nut-spray arm
Spray arm
Diffuser
Heater

TROUBLESHOOTING

The troubleshooting check list is common for all dishwasher models. They use different parts to accomplish the same thing and diagnosis will remain similar.

When a problem arises, and a possible cause is listed, follow the test, remove or replace procedures as outlined in this service manual. The wiring diagram, schematic and timer cycle chart are a necessity when making electrical checks. In most cases an ohmmeter will handle all the tests necessary.

For checking any particular cycle of operation, it absolutely necessary that the cycle be set up as outlined in the product owner's guide.

SYMPTOM	CHECK THE FOLLOWING	REMEDY
Dishwasher will not operate when turned on.	1. Fuse (blown or tripped). 2. Supply line receptacle, wiring harness. 3. Timer (contacts open or burnt). 4. Motor (inoperative, check resistances). 5. Door switch (open contacts). 6. Door latch not making contact with door switch. 7. Selector switch (open contacts). 8. Relay (coil won't pull in).	1. Replace fuse or reset breaker. 2. Repair or replace. 3. Replace timer. 4. Replace motor. 5. Replace door switch. 6. Replace or adjust to make contact. 7. Replace selector switch. 8. Replace relay.
Dishwasher runs but will not heat.	1. Heat selector switch (not depressed). 2. Heater element (open). 3. Timer contacts (open or burnt). 4. Wiring or terminal (burnt or broken). 5. Dispenser bi-metal (burnt or broken).	1. Depress switch for heat. 2. Replace heater element. 3. Replace timer. 4. Repair or replace. 5. Replace bi-metal dispenser.
Dishwasher will not stop.	1. Timer motor (inoperative). 2. Wiring or terminal (burnt or broken). 3. Timer (open or burnt contact). 4. Relay (not dropping out of circuit).	1. Replace timer. 2. Repair or replace. 3. Replace timer. 4. Replace relay.
Dishwasher runs with door open.	Defective door safety switch.	Replace door safety switch.
Motor hums but will not start or run.	1. Start relay (contacts not closed). 2. Start winding (open). 3. Motor (bad bearings or locked rotor).	1. Replace start relay. 2. Replace motor. 3. Replace motor.

SYMPTOM	CHECK THE FOLLOWING	REMEDY
Motor trips out on internal thermal overload protector.	1. Start relay not dropping out. 2. Improper voltage. 3. Seal faces binding. 4. Motor shaft binding. 5. Motor windings shorted. 6. Glass or foreign items in pump.	1. Replace start relay. 2. Check voltage. 3. Repair or replace. 4. Repair or replace. 5. Replace motor. 6. Clean and clear area.
Repeated dishwasher cycles.	1. Timer (contacts open or burnt). 2. Motor (inoperative, check resistances). 3. Selector switch (binding or welded contacts).	1. Replace timer. 2. Replace timer. 3. Replace selector switch.
Timer does not advance automatically.	1. Timer motor (stalled or open). 2. Check timer for power to timer motor. 3. Timer shaft binding or knob interference to escutcheon.	1. Replace timer. 2. Replace timer. 3. Repair or adjust.
No heat in dry cycle.	1. Heat selector switch (not depressed). 2. Heater element (open). 3. Timer (contacts open or burnt). 4. Wiring or terminal (burnt or broken). 5. Dispenser bi-metal (burnt or broken).	1. Depress switch and/or replace. 2. Replace heater element. 3. Replace timer. 4. Repair or replace. 5. Replace bi-metal dispenser.
Dishwasher will not fill with water.	1. Water supply turned off. 2. Defective water inlet fill valve. 3. Check fill valve screen for obstructions. 4. Defective float switch. 5. Timer contacts (open or burnt). 6. Wiring (broken or burnt.)	1. Turn water supply on. 2. Replace water inlet fill valve. 3. Disassemble and clean screen. 4. Replace switch. 5. Replace timer. 6. Repair or replace.
Incomplete water fill.	1. Low water pressure. 2. Clogged water inlet valve screen. 3. Timer advanced past start of fill cycle. 4. Heavy water supply usage elsewhere in home. 5. Kinked or restricted fill hose, water inlet valve to fill tunnel.	1. Minimum water pressure of 15 P.S.I. 2. Clean water inlet valve screen. 3. Instruct customer/user to turn timer dial to start indicator mark. 4. Use dishwasher when water usage is at a minimum. 5. Correct as needed.
Too much water fill.	1. Water inlet fill valve defective. 2. Timer contacts (open or burnt). 3. Float arm binding or out of adjustment. 4. Possibility customer/user turned timer past drain cycle.	1. Replace water inlet fill valve. 2. Replace timer. 3. Repair, adjust or replace. 4. Instruct customer/user.

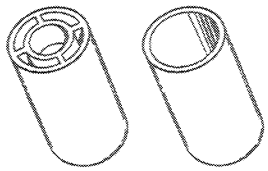
SYMPTOM	CHECK THE FOLLOWING	REMEDY
Dishwasher will not pump out.	1. Drain restricted. 2. Motor winding clockwise rotation for pump out (check resistances). 3. Damaged impeller. 4.Timer contacts (contacts open or burnt).	1. Clear restrictions. 2. Check or replace motor. 3. Replace impeller. 4. Replace timer
Water siphons out.	1. Drain hose (high) loop to low. 2. Drain line connected to a floor drain not vented. 3. Motor operating clockwise for pump out.	1. Move to proper height. 2. Install vent air gap at counter top. 3. Replace motor.
Water leaks.	1. Spray arm not rotating. 2. Spray arm split (seam open). 3. Overcharge of water. 4. Tub seal (torn, worn or loose). 5. Vent plate out of position (inside door). 6. Dishwasher door not sealing properly. 7. Dishwasher not level. 8. Oversudsing (wrong type of detergent). 9. Hose clamps loose. 10. Heater element mounting nuts loose. 11. Water seal leaking. 12. O-ring not in position between impellers. 13. Motor and pump assembly not seated properly in tub liner bottom.	1. Check for proper rotation. 2. Replace spray arm. 3. Check and correct for proper fill. 4. Replace tub seal. 5. Replace vent plate. 6. Adjust door latch assembly and/or strike. 7. Level dishwasher properly (use spirit level). 8. Instruct customer/user. 9. Tighten all clamps securely. 10. Tighten mounting nuts. 11. Install new water seal. 12. Replace o-ring. 13. Replace seal.
Poor washability.	1. Improper loading of dishes, pots, pans and nesting of silverware. 2. Spray arm not rotating. 3. Check for proper level of water in tub. 4. Detergent dispenser inoperative. 5. Old or insufficient amount of detergent. (Detergents lose their effectiveness in extended storage or stored open in a damp area.) 6. Wrong detergent used. 7. Damaged or broken impeller. 8. Improper incoming water temperature to properly dissolve detergent.	1. Instruct customer/user on proper loading per owner's guide. 2. Check for proper rotation. 3. Water level should cover heating element. 4. Repair or replace. 5. Instruct customer/user on proper amount of fresh detergent to use. Also to store closed in dry area away from moisture. 6. Instruct customer/user on proper dishwashing detergents. 7. Replace impeller. 8. Incoming water temperature of 140°F is required to properly dissolve dishwashing detergents.

SYMPTOM	CHECK THE FOLLOWING	REMEDY
Poor drying of dishes.	1. Improper loading of dishes, pots, pans and nesting of silverware. 2. Incoming water temperature too low. 3. Improper drain cycle, water left in tub. 4. Heating element (open). 5. Dispenser bi-metal heater (broken or burnt). 6. Wiring or terminal (burnt or broken).	1. Instruct customer/user on proper loading per owner's guide. 2. Incoming water temperature of 140°F for best drying results. 3. Check for proper drain out cycle. 4. Replace heating element. 5. Repair or replace. 6. Repair or replace.
Detergent cup will not latch.	1. Cam not locking on bi-metal arm. 2. Roll pin retainer or shaft broken. 3. Broken spring (s)	1. Adjust or replace bi-metal. 2. Replace roll pin retainer. 3. Replace springs.
Detergent cup will not open.	1. Roll pin retainer or shaft broken. 2. Cup binding. 3. Defective bi-metal. 4. Timer contact (open or burnt). 5. Wiring or terminal (burnt or broken). 6. Open heater element.	1. Replace pin, retainer or shaft. 2. Repair or replace. 3. Replace bi-metal. 4. Replace timer. 5. Repair or replace. 6. Replace heater element.
Rinse agent runs continuously or each time dishwasher door is opened.	1. Rinse agent dispenser not mounted correctly. 2. Bi-metal heater defective. 3. Plunger stuck or held in closed position.	1. Mount securely to rear of inner door panel. 2. Replace bi-metal. 3. Free plunger or adjust bi-metal release.
Rinse agent liquid will not eject.	1. Rinse agent dispenser not mounted correctly. 2. Bi-metal heater defective. 3. Plunger stuck or held in closed position.	1. Mount securely to rear of inner door panel. 2. Replace bi-metal heater. 3. Free plunger or adjust bi-metal release.
Rinse agent liquid leaks.	1. Over filling container. 2. Container cracker or broken. 3. Defective seal on plunger. 4. Dishwasher not level.	1. Follow instructions in owner's manual. 2. Replace container. 3. Replace plunger. 4. Level dishwasher.
Door will not latch.	Latch mechanism.	Replace
Noisy pump assembly.	1. Debris in bottom of tub sump area. 2. Pump parts not properly installed. 3. Impellers not properly shimmed or rubbing. 4. Defective motor bearings. 5. Sucking sound at end of cycle.	1. Clean out sump area. 2. Inspect and correct. 3. Use shim gauge furnished in impeller and seal kit, when seals are properly shimmed the impellers will be in correct operating position. 4. Replace motor. 5. Normal condition.

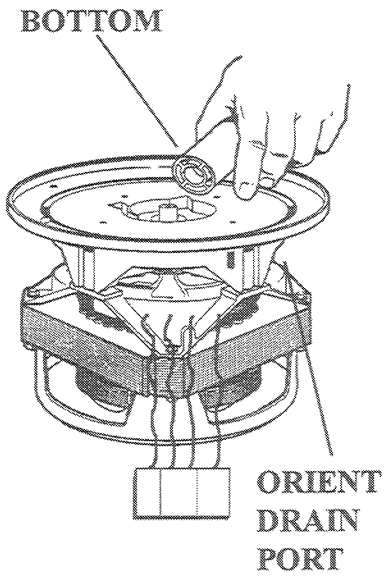
SYMPTOM	CHECK THE FOLLOWING	REMEDY
Detergent left in dispenser.	1. Detergent allowed to stand too long in dispenser. 2. Dispenser wet when detergent was added. 3. Detergent cover binding on cover. 4. Detergent cup held closed or blocked by large dishes.	1. Instruct customer/user. 2. Instruct customer/user. 3. Replace heating element. 4. Instruct customer/user on proper loading of dishes.
Spotting or filming on glasses (redeposition of food soil).	Undissolved detergent redeposit can be caused by: 1. Using old ineffective detergent. 2. Water not hot enough to dissolve detergent or hold food soil in suspension (140° F suggested). 3. Improper loading, blocking water circulation. 4. Stuck or binding spray arm not turning the 15/40 R.P.M. required to be effective. 5. In rare cases by using excessive amounts of detergent. 6. Water high in mineral content will leave noticeable filming. 7. Water too hot (160°F or higher) will cause protein foods to bake on before detergent can remove it. 8. Improper preparation of dishes for dishwashing. 9. Improper installation of the dishwasher to a food waste disposer. 10. Restricted drain could prevent all of the dirty water from being pumped out so that some soil remained in last rinse.	Instruct customer/user on the proper operation of dishwasher. 1. Use only fresh detergent. 2. Set water heater tank to deliver 140°F water. 3. Instruct customer/user on proper loading. 4. Repair or replace. 5. Instruct customer/user on proper amounts. 6. Have water analyzed. Use of rinse agent (Jet Dry) helps reduce the spotting by lowering the surface tension of the water. The water then "sheets" off dishes. 7. Set water heater tank to deliver 140°F water. 8. Instruct customer/user in proper preparation of dishes. 9. Install properly according to instructions with dishwasher. 10. Adjust or replace.
Etching of glassware.	Caused by a soft water condition, natural or artificial.	Have sample of the water analyzed by local water department.
Dishwasher continues to fill even though there is no voltage to fill valve (flooding condition).	1. Defective water inlet fill valve. 2. Dirt or foreign material under diaphragm in water inlet valve.	1. Replace water inlet valve. 2. Clean water inlet valve or replace.

PUMP SEAL SERVICE

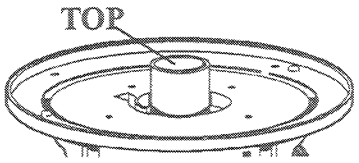
Installation of motor to pump housing requires centering of motor shaft using a special plastic tool, available as a service part. The tool is not packed with the motor, and has to be ordered separately. Failure to center motor shaft may result in seal leaks and noisey operation. The centering tool is also used to install the seal.



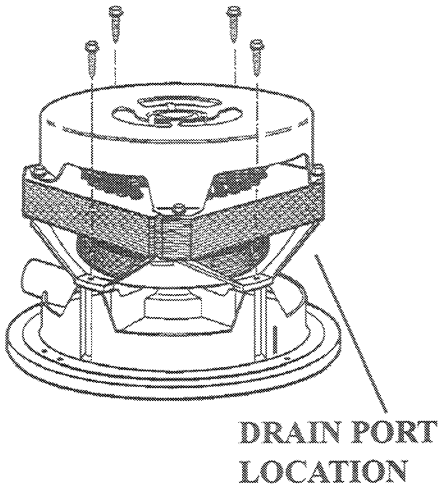
1. Set the Emerson motor on flat surface with the motor shaft in the upwards positon, with the motor wires at the 6 o clock position.
2. Set pumP housing on top of Emerson motor with the drain port at the 3 o clock position.
3. Take centering tool place over motor shaft and center it with pump housing.



4. Insert centering tool down until it bottoms out.

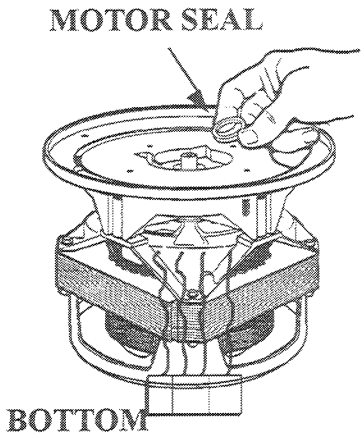


8. Wet the inside of the pump housing with water before installing motor seal.
9. Take motor seal and place over top of motor shaft and center it with pump housing.

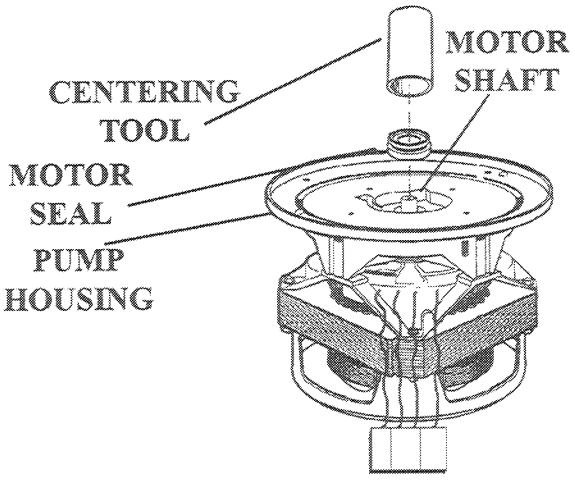


5. Take motor, pump, and centering tool, and hold centering tool so it does not fall oout and flip pump assembly upside down onto flat surface.
6. Now install the 4 mounting screws into the pump housing making sure they are tight.
7. Take the motor and pump assembly and flip back to its upright position. (Note Motor wires are not visible in this illustration.

8. Wet the inside of the pump housing with water before installing motor seal.
9. Take motor seal and place over top of motor shaft and center it with pump housing.

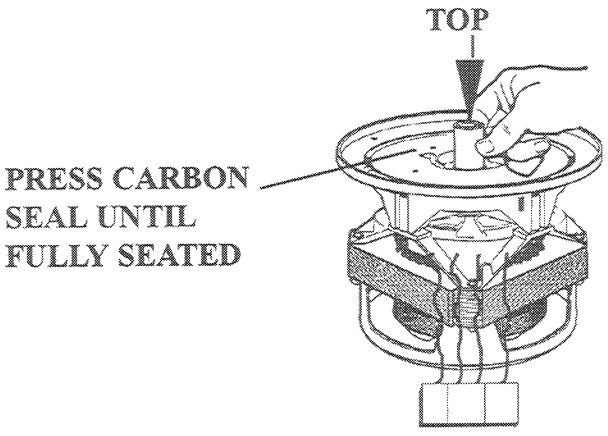


10. Place the top part of the centering tool and place over top of motor shaft on to top of motor seal and then press down until motor seal is seated correctly.



11. Reverse tool orientation by flipping it over and take the carbon seal and place on top of motor seal.

12. Press carbon seal down hard on the top of motor seal until it is fully seated.



NOTES

NOTES