



GE Appliances

**Service
Handbook**

**Dishwashers
Disposers and Compactors**

1978 & Later

CAVITATION

REMOVE

GRID

FLANGE

ROW

IMPORTANT SAFETY NOTICE

Major appliances are complex electromechanical devices. General Electric Company's Major Appliance Service Publications are intended for use by individuals possessing adequate backgrounds of electrical, electronic and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. General Electric Company cannot be responsible for the interpretation of its service publications, nor can it assume any liability in connection with their use.

SAFE SERVICING PRACTICES

To preclude the possibility of resultant injury * and/or property damage, ** it is important that safe servicing practices be observed. The following are examples, but without limitation, of such safe practices.

1. Before servicing, always disconnect the product from its electrical power source by removing the product's electrical plug from the wall receptacle, or by removing the fuse (or tripping the circuit breaker to OFF) in the branch circuit serving the product.

NOTE: If a specific diagnostic check requires electrical power be applied (e.g., a voltage or amperage measurement, etc.), reconnect electrical power only for the time required for such a check, and disconnect it immediately thereafter. During any such check, ensure no other conductive parts (panels, etc.) - or yourself - come in contact with any exposed current-carrying metal parts.

2. Never interfere with or bypass the operation of any feature, part or device engineered into the product.
3. If a replacement part is required, use the specified General Electric Company part, or an equivalent which will provide comparable performance.
4. Prior to reconnecting the electrical power source to the General Electric or Hotpoint Dishwasher, Compactor or Disposer, - be sure that:
 - a. all electrical connections within the product are correctly and securely connected,
 - b. all electrical harness leads are properly dressed and secured away from sharp edges, high-temperature components (e.g. resistors, heaters, etc.) and moving parts,
 - c. any uninsulated current-carrying metal parts are secure and adequately spaced from all non-current - carrying metal parts,
 - d. all electrical grounds - both internal and external to the product - are securely connected,

- e. all water connections are properly tightened on Dishwasher and Disposers,
 - f. all panels and covers are properly and securely reassembled.
5. Read the SAFETY PRACTICES section in this Book for additional SAFE SERVICING PRACTICES.
 6. Don't attempt a product repair if you have any doubts as to your ability to complete it in a safe and satisfactory manner.

***PERSONAL INJURY**, in the form of electrical shock, burns, cuts or abrasions, etc., can occur spontaneously to the individual while attempting to repair or service the product; or may occur at a later time to any individual in the household who may come in contact with the product-unless safe servicing practices are observed.

****PROPERTY DAMAGE**, resulting from fire, flood, etc., can occur immediately or at a later time as a result of attempting to repair or service the product - unless safe servicing practices are observed.

PREFACE

This HANDBOOK contains information and service procedures to assist the service technician in correcting product, installation, and customer education faults that are not always obvious. Service procedures that are considered obvious are intentionally omitted.

Using the information in this HANDBOOK in conjunction with the Mini-Manual which is included with every 1979 and later dishwasher and every 1978 and later compactor will provide comprehensive information on these models.

Disposers do not have Mini-Manuals, but equivalent information on electrical wiring schematics, diagnosis, and service procedures for disposers is included in this HANDBOOK.

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WASHABILITY PROBLEMS

POSSIBLE CAUSES OUTSIDE THE DISHWASHER

Water Temperature

All General Electric and Hotpoint brand dishwashers built in 1981 and earlier require inlet water temperatures of 140° minimum to 150°F. maximum to do an optimum job of washing dishes.

In 1982 and later, G.E. and Hotpoint dishwasher models that are designed for inlet water temperatures as low as 120°F. started in production. These newer models have longer detergent wash periods that allow 120°F. inlet water to be heated up to a temperature that gives good washability results.

To measure inlet water temperature, let the hot water faucet at a sink adjacent to the dishwasher run until the temperature stabilizes. Measure temperature with a candy thermometer, or other type of thermometer.

All models with serial numbers that indicate 1983 and later production dates will have the capability of using 120°F. minimum temperature inlet water (except for some G.E. built-ins with "W" in the model number).

If the inlet water temperature is below either 140°F. or 120°F. (depending on model), the washing and drying performance will not be as good. Hot water of the proper temperature is necessary (1) in order to assure that certain animal fats go into solution, and (2) in order to ensure that dishwasher detergents go into solution properly.

Inlet water above 150°F. is not recommended because above this temperature the rubber parts in the dishwasher may be adversely affected.

GENERAL

Electric Power

- Line Voltage: 115-120 volt at dishwasher. Check for loose connection at junction box especially if house has aluminum wiring. Wiring must also be ample size No. 14 AWG. Dishwasher must not be connected to house line with lamp cord-type extensions.
- Dishwasher should be on a separate circuit with its own protection (15 amp or 20 amp fuse or circuit breaker).

Water Supply

- HOT water line connected to dishwasher. The number of cases where the cold water line is connected would surprise you. Long pipe runs through concrete slab floors should be avoided. It's nearly impossible to get hot water to the dishwasher.
- No restrictions in incoming line such as lime nearly closing the flow in an iron pipe (usually older homes that have installed a replacement dishwasher) or a kink in a copper inlet line.
- Low water pressure: Must be 15 PSI minimum. Check for proper operation of home water systems, water softeners.

Conditions of Water

- Ample supply of hot water: See preceding paragraphs on hot water in this section of HANDBOOK. Remember, the water is in greater quantity and at maximum temperature during the morning hours. Determine the customer's use habits. Don't be misled into believing the temperature you record at 10AM is the temperature of the water when the dishes from the evening meal are washed.
- Water hardness:
 - 0-3 grains - Soft
 - 4-9 grains - Medium hard
 - 10-15 grains - Hard
 - over 15 grains - Very hard

Use test strips to determine hardness. Always ask customer if she has water softener and is it working properly. (Changed regularly, salt added as necessary, etc.) Refer customer to Use and Care Book for amount of detergent to use.

- Mineral Content: Excessive calcium, iron, manganese. (Consider source of water, eg., well, river, lake.)

House Drain Plumbing - MOST IMPORTANT

- A partially blocked drain line is a major cause for a washability complaint. The complaint may or may not also be "water left in tub". In any case a partially blocked drain will almost always result in poor washability. The only exception, possible, would be the customer who washes dishes before putting them in the dishwasher. Another clue to the partially blocked drain is the undissolved detergent that is sometimes found on the tub bottom and in the detergent cup. Check dishwasher operation to see if tub drain out is completed before next fill. If not, there is a problem with drain line partially blocked or with dishwasher itself.
- Check for mashed copper drain tubing, flattened and kinked rubber drain hose, any sharp bends or elbows. Always check air gap. Very often the stoppage or restriction is here.
- An easy and quick test of whether the problem is in the drain line or is internal to the dishwasher is to disconnect the drain at the pump outlet and connect a 5' length of 1/2" I.D. rubber hose. Allow the dishwasher to take a normal fill and then turn it to pump out. Hold the hose in the sink. Observe stream of water from the hose and listen for water valve to come on for next fill. If tub is not voided before valve comes on for next fill, you can be sure there is a problem internal to the dishwasher.

Detergent

- Must use a recommended dishwasher detergent.
- Detergent must be fresh. Old, caked detergent does not dissolve easily and has lost its strength.
- Phosphate content. Check side of box: 12.9% is "fully phosphated". Some areas restrict phosphate content to 8% or even less. If phosphate content is low, it required more detergent (fill auxiliary cup) every cycle - especially if the water is hard.

Loading & Cycle Selection

- Proper loading per Use and Care Book.
- Odd sizes and shapes of dinnerware utensils or glasses. Some dinnerware is shaped in such a way as to make it nearly impossible to avoid redeposition.
- Overloaded?
- Detergent cup blocked? (Usually you will find cup nearly full of caked detergent.)

GENERAL

- Spray arm, power tower, power shower clear to operate and rotate?
- Proper cycle selection? (When applicable)
- Pushbutton fully depressed? (When applicable)
- Excessive amount of food soil?
- Foreign material in pump (string, toothpick, small bones, etc.).

Possible Problems With The Dishwasher Itself:

Amount of Water

- Intermittent or open water valve coil. Check by filling at least 10 times until coil is warm. Check for full fill each time.
- Water valve screen plugged - especially in hard water areas.
- Faulty harness or connections - especially at timer and valve.
- Check Mini-Manual on dishwasher for depth of water for a normal fill and number of fills.

Detergent Cup

- Detergent wash out - cup leaking. In hard water areas you will probably find a wide, white band of calcium extending down the door under the detergent cup. Some dampness in cup is normal. It is a pasty, almost liquid state of the detergent that indicates a leaking cup.
- Cup open fully and at proper time? Check cam chart on Mini-Manual.

Washing Cycle

- Check timer for fill, rinse, wash time, drain time. See Mini-Manual furnished with dishwasher.
- Proper operation of calrod and cycle extender on Potsscrubber Models.
- Proper rotation (10-30 RPM) of spray arm and power shower.
- No excessive internal water leakage at joints of wash system (power tower tube and base, spray arm lip seal).

Drain

- Check to see that drain valve gate in pump housing closes tight during wash cycle. Check at air gap or in sink drain during wash and rinse portion of cycle. No water should be seen at either of these points at any time except during pump out.

- Check float switch.
- Restriction in drain line (covered in detail in earlier paragraphs).
- Drain line too long or too many elbows.

Loading Dishwasher

Proper loading plays a very important part in good dishwashing. Consult the user book for pictures showing correct loading for the model you are interested in.

Lower Rack

Pulls out for easy loading of plates, saucers bowls etc. Pots and pans should be washed upside down in the lower rack — especially when the power scrub is used. Consult Use and Care Booklet for dishwasher concerned.

Upper Rack

Upper rack also pulls out for loading glasses, cups, saucers, bowls, dishwasher safe plastic and wood items. Long handled cooking forks, spoons and other flat utensils should be placed flat in the rack with soiled surface facing center of dishwasher. Consult User's Booklet for correct loading procedures.

FILMS AND STRAINS

Calcium/Lime Films

With the appearance of reduced phosphate dishwasher detergents, we began to see an increase in complaints due to films on glassware. These milky-white films began to appear in areas where phosphate contents were reduced or eliminated by law, and were especially severe where the water supply was hard.

First, what causes the film? This can best be answered by looking at the broad basic concept of detergent. Dishwasher detergent must penetrate, break down and loosen the soil in the time allowed in the wash portion of the dishwashing cycle. It must condition the water, prevent the build-up of coffee, tea and food stains, and condition the dishes for rinsing.

All of the chemicals found in a detergent must be combined in exactly the right proportions to give optimum cleaning and film-free results.

The sodium tripolyphosphate used in dishwasher detergent conditions the water. It sequesters, or ties up, hard water ions such as calcium and magnesium to prevent them from depositing on the dishes and glasses causing spotting and filming. Sodium tripolyphosphate when used in proper amounts will hold the calcium in the water as soluble ions and allow it to be pumped out

GENERAL

at the end of the wash cycle. If insufficient sodium tripolyphosphate is used, the tripolyphosphate — calcium ratio becomes unbalanced and the calcium will be precipitated from the water and deposited on glassware. Actually, it is also deposited on the entire dishload, the racks and the dishwasher tub, but is usually first noticed on the glassware.

It can be clearly seen that it is most important to use the proper amount of detergent in order to be sure of using the proper amount of tripolyphosphate. In soft water (0-3 grains) virtually no calcium is present, therefore we can prevent film and still fill the detergent cup only 1/3 to 1/2 full. As the water becomes harder the amount of detergent should be increased and when the water becomes 10 grains or harder, a full detergent cup must be used to prevent films.

We call a lack of detergent in the wash water a weak detergent solution. Any condition or situation that results in a weak detergent solution will probably also result in filmed glasses and dishes.

The most common reasons for weak detergent solutions are listed below:

1. Low phosphate detergents are required by law in many areas. If the % phosphorous indicated on the detergent box is less than 12%, it is a reduced phosphate detergent and will still work fine. It just takes more of it to prevent filming. Advise customer to increase amount of detergent. If the water is 10 grains or harder the second open cup should be filled as well as the covered cup.
2. Customer not using enough detergent: Advise customer that it is necessary to fill the detergent cup except when a water softener is used or when the water supply is naturally soft. (0-3 grains) If customer has water softener and still experiences filming, water softener should be checked for proper operation.
3. Leaking detergent cup: A leaking cup is usually accompanied by a wide band of caked on calcium under the cup. Sometimes this isn't evident, however, and the best test is to run the dishwasher, periodically checking the cup for wet detergent. Some dampness is normal. It's the oozy, almost liquid detergent that indicates a leaking cup.

Calcium tripolyphosphate film can usually be removed from glass in one or two dishwashing cycles using a full cup of 12% phosphate detergent. In stubborn cases or in cases where the tub and door have heavy deposits of calcium, we strongly recommend the use of citric acid crystals. Citric acid is now stocked in New Concord under catalog number WD35X151.

ELECTRICAL COMPONENTS

GSD2500

This model uses LEDs to indicate the current status of the cycle and the ENERGY MONITOR. The display for the time and fault codes is also an LED display.

GSD2500 CONTROL PANEL

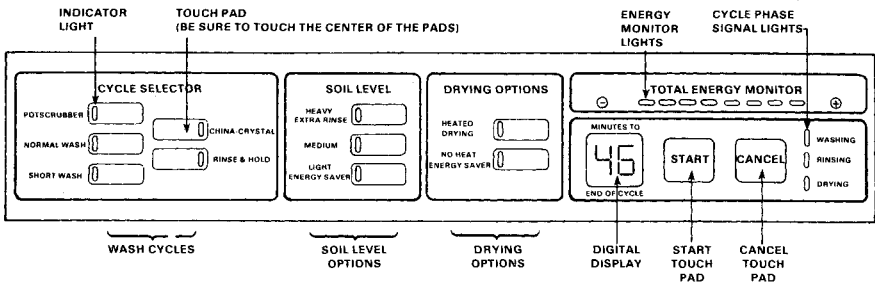


Figure 7 - GSD2500 Touch Pads and Indicators

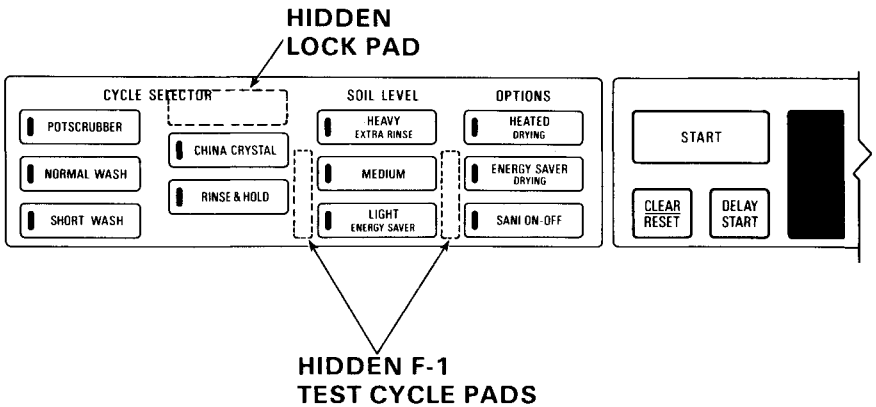
ELECTRICAL COMPONENTS

GSD2600/2800D

In addition to the cycle selector pads these models have hidden lock pads for use by the customer. Hidden F1 test cycle pads are for use by the service technician (Figure 8).

GSD2800/2600D TOUCH PADS

GSD2800D CONTROL PANEL



GSD2600D CONTROL PANEL

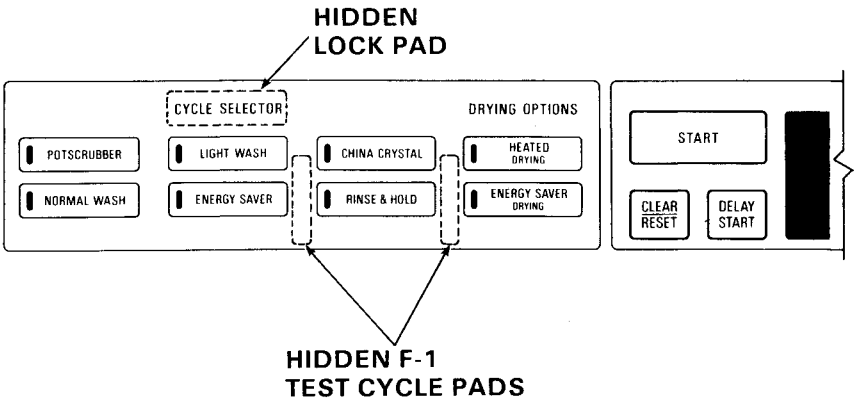


Figure 8

ELECTRICAL COMPONENTS

The control display (VF) uses words to indicate cycle status and faults (figure 9). Not all of the elements used on the 2800 are used on the 2600.

DISPLAY GSD2800/2600D

SEE DOOR LO ■■■■ HI ENERGY SAVER
 LABEL BLOCKED DRAIN WASHING CUP
 88 WASH ARM RESET DRYING OPEN
 HRS. DELAY CLEAN RINSED ONLY
 MINUTES PLUS HEATING

ITEM	EXPLANATION
88	STANDARD NUMBERS 0 TO 9. TIME TO END OF CYCLE. HOURS DELAY, DIAGNOSTIC CODES
LO ■■■■ HI 2800D ONLY	ENERGY MONITOR
ENERGY SAVER	COMES "ON" ANY TIME SHORT WASH, ENERGY SAVER WASH, LIGHT SOIL, OR UNHEATED DRY IS SELECTED. GOES "OFF" WHEN CYCLE STARTS.
WASHING	"ON" FROM START UNTIL WASH FILL IS PUMPED OUT
RINSE	"ON" DURING LAST TWO FILLS; "OFF" AT MOTOR "OFF". "ON" DURING RINSE AND HOLD CYCLE FROM "START" TO MOTOR "OFF"
DRYING	IF "HEATED DRY" SELECTED, "ON" FROM MOTOR "OFF" AT END OF WET PART OF CYCLE UNTIL CYCLE COMPLETE
RINSED ONLY	COMES "ON" AFTER "RINSE AND HOLD" CYCLE. STAYS "ON" UNTIL DOOR IS UNLATCHED.
CLEAN	COMES "ON" AFTER ANY CYCLE (EXCEPT RINSE AND HOLD). IF "HEATED DRY" WAS SELECTED, "CLEAN" COMES "ON" AFTER DRY IS COMPLETE. STAYS "ON" UNTIL DOOR IS UNLATCHED. DOES NOT COME "ON" AGAIN IF DOOR IS RELATCHED.
RESET	COMES "ON" WHENEVER "PF" (POWER FAILURE) OCCURS (IF DOOR IS LATCHED). ALSO COMES "ON" WHILE "CLEAR/RESET" IS IN OPERATION IF PUMPING OUT.
HRS. DELAY	REPLACES "MINUTES" WHEN DELAY START IS ACTIVATED
MINUTES	"ON" ANY TIME CYCLE IS RUNNING OR PROGRAMMING, EXCEPT DURING DELAY START
PLUS HEATING	COMES "ON" DURING PROGRAMMING IF "SANI" IS "ON". GOES "OUT" WHEN "START" IS ACTIVATED
HEATING	COMES "ON" ANYTIME THE PRE-SET TEMPERATURE IN MAIN WASH OR FINAL RINSE IS NOT REACHED IN THE MINIMUM TIME. COUNT-DOWN IS ON HOLD WHILE HEATING IS "ON"
LOCKED	ON WHEN "LOCK" PAD IS ACTIVATED

Figure 9

ELECTRICAL COMPONENTS

GSD2200/2400D

These models have cycle touch pads but no LED indicator lights (Figure 10). The hidden F1 test cycle pads are the the technician's use.

GSD2400/2200D TOUCH PADS

GSD2200D CONTROL PANEL

HIDDEN F-1 TEST CYCLE PADS

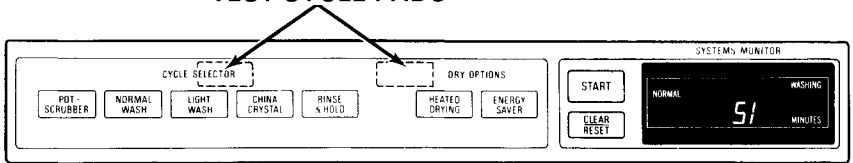


Figure 10

The control display (VF) uses words to indicate both the selected cycle and the cycle status (Figure 11). Fault codes are shown in place of the number of minutes remaining in the cycle.

DISPLAY GSD2400/2200D

POTSCRUBBER	SEE DOOR	WASHING
NORMAL	CHINA LABEL	RINGING
LIGHT WASH		HEATING
RINSE & HOLD	88	DRYING
UNHEATED DRY		MINUTES

ITEM	
88	STANDARD NUMBERS 0 TO 9, TIME TO END OF CYCLE, DIAGNOSTIC CODES
POTSCRUBBER	COMES "ON" WITH POTSCRUBBER CYCLE
NORMAL	COMES "ON" WITH NORMAL WASH CYCLE
LIGHT WASH	COMES "ON" WITH LIGHT WASH CYCLE
CHINA	COMES "ON" WITH CHINA-CRYSTAL CYCLE
RINSE & HOLD	COMES "ON" WITH RINSE & HOLD CYCLE; STAYS ON AT END OF CYCLE UNTIL DOOR IS UNLATCHED
UNHEATED DRY	COMES "ON" WITH ENERGY SAVER DRY OPTION
HEATED DRY	COMES "ON" WITH HEATED DRY OPTION
WASHING	"ON" FROM START UNTIL WASH FILL IS PUMPED OUT
RINSING	"ON" DURING LAST TWO FILLS; "OFF" AT MOTOR "OFF," "ON" DURING RINSE AND HOLD CYCLE FROM "START" TO MOTOR OFF.
DRYING	IF "HEATED DRY" SELECTED, "ON" FROM MOTOR "OFF" AT END OF WET PART OF CYCLE UNTIL CYCLE COMPLETE
HEATING	COMES "ON" ANYTIME THE PRE-SET TEMPERATURE IN MAIN WASH IS NOT REACHED IN THE MINIMUM TIME. COUNTDOWN IS ON HOLD WHILE HEATING IS "ON".
MINUTES	"ON" ANY TIME CYCLE IS RUNNING OR PROGRAMMING

Figure 11

ELECTRICAL COMPONENTS

ELECTRONIC CONTROL FOR GSD2500

GE model GSD2500 uses an electronic control with touch pads for setting up cycles. The electronic control assembly includes LED indicator lights and display.

The electronic control is not repairable; if anything goes bad internally, the entire control assembly, including touch pads and display, must be replaced.

The GSD2500 model uses two other special electrical components, in addition to the electronic control. These are: (1) Electric motor and gear box for detergent and rinse agent dispensing, and (2) a drain feedback sensor switch.

DRAIN FEEDBACK SWITCH - GSD2500

This switch, mounted on the drain solenoid bracket, has its contacts closed whenever the mechanism diverter (gate) valve is in its pump out position. This switch sends a signal to the electronic control that it is open or closed.

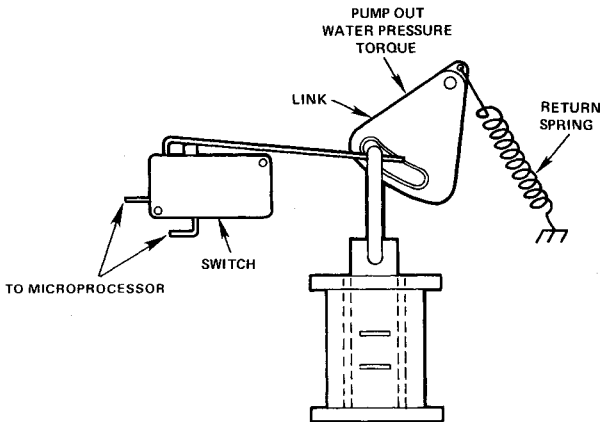


Figure 12 - Drain Feedback Switch

This switch tells the electronic control whether the diverter valve on the mechanism is in its pump out position (closed) or not (open). The switch is normally open. Operation of this sensor is as follows:

If drain feedback switch does not close when the drain solenoid is supposed to be energized for 5 seconds, the electronic control displays "ds" and cancels the cycle.

ELECTRICAL COMPONENTS

If the drain feedback switch is closed longer than 95 seconds, the electronic control displays "Ld" but the pump motor continues for up to 405 seconds. If drain out is completed prior to 405 seconds, the cycle continues but "Ld" remains in the display.

If the drain feedback switch is still closed at 405 seconds, the electronic control cancels the cycle and "Pd" is displayed.

A normal pump out period should be 40 to 60 seconds.

Detergent & R.A.D. Motor - GSD2500

The detergent and R.A.D. trip mechanism is powered by an electric motor, which plugs into a connector plug on the electronic control housing. Refer to parts in Figure 13.

The detergent cup is tripped when the motor is energized during main wash for 10 seconds. The motor continues turning for another 17 seconds as the trip mechanism is set up for the R.A.D. trip.

The Rinse Agent dispenser is tripped when the motor is energized during final rinse for 10 seconds. The motor continues turning for another 17 seconds.

When the detergent cup cover is manually closed for operation during the next wash cycle, the trip mechanism is reset for subsequent detergent cup and R.A.D. trips during the cycle.

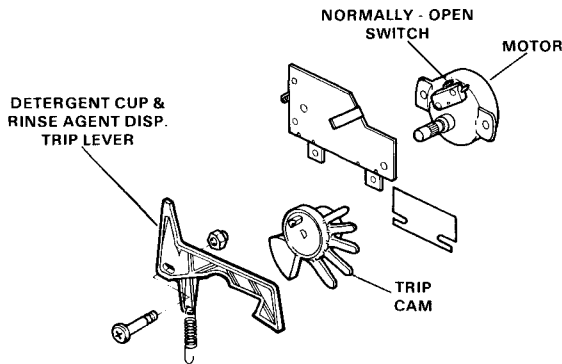


Figure 13 - Detergent & R.A. Dispensing System

ELECTRICAL COMPONENTS

Float Switch Overfill Sensor

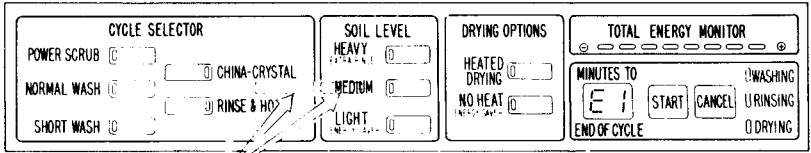
If the float switch opens (overflow condition), the electronic control receives a signal and cancels the cycle. "OFF" is displayed, and pump is repeatedly energized as long as door switch is closed.

TEST CYCLES

GSD2500 (E1)

Test Cycle E1 is used to check operation of the various components. Use voltmeter on component to see if it is receiving voltage. To set up test cycle —close door and latch. Press HEATED and then press the two test buttons simultaneously. Press Start — all lights will be on briefly. Read-Out should show "88". Operation of lights can be checked at this time. After lights go out, following schedule will occur. Control can be advanced at any time by touching "Start" except during pump-out.

ELECTRICAL COMPONENTS



PRESS SIMULTANEOUSLY

<u>TIME</u>	<u>CODE</u>	<u>NAME</u>	<u>FUNCTION</u>
70 sec	F, I	Fill	Water valve should be on.
21 min	C	Circulate	Circulate only in progress.
27 sec	dE	Detergent	Cup opens while dE is lit.
21 min	C, H	Circulate/Heat	335 watt heat on-circulate.
27 sec	r, F	Rinse Agent	Should inject while lit.
40-60 sec	P, O	Pump Out	Drain Cycle (Normal)
40-60 sec	P	Pause	No Action (Normal)
21 min	d, H	Dry	Heater On

FAULT CODES

- dE** Drain System - Check Drain Solenoid, Drain Feed Back Switch
- Ld** Long Drain - Clean Air Gap, Drain
- O, F** Over Fill - Check Water Valve, Pump Inlet, Main Motor
- P, F** Line Power Failure - Reprogram
- C, d** Cancel - Drain - Used to Change Cycles, Void Dishwasher of Water
- P, d** Plugged Drain - Clean Air Gap drain line

Figure 14 - E1 Cycles and Fault Codes

ELECTRICAL COMPONENTS

FAULT TREE ANALYSIS

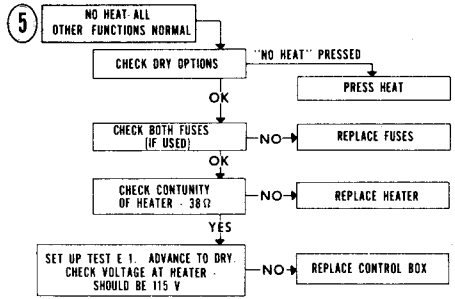
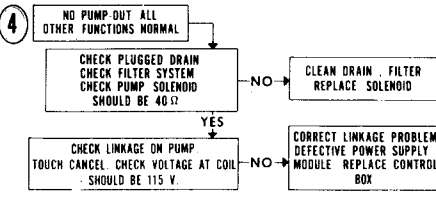
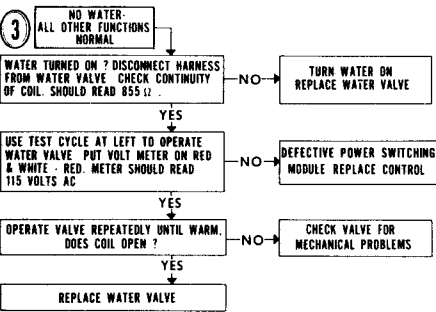
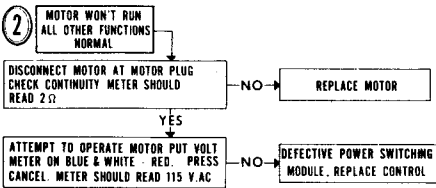
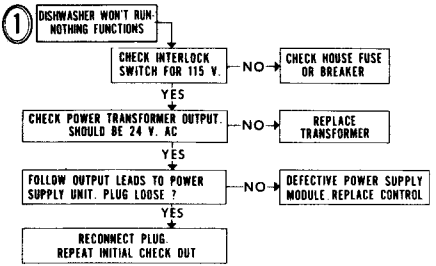


Figure 14 Cont'd.

ELECTRICAL COMPONENTS

Schematic Circuit

Shown in the SD2500 schematic (Figure 15) are all the circuits outside the electronic control.

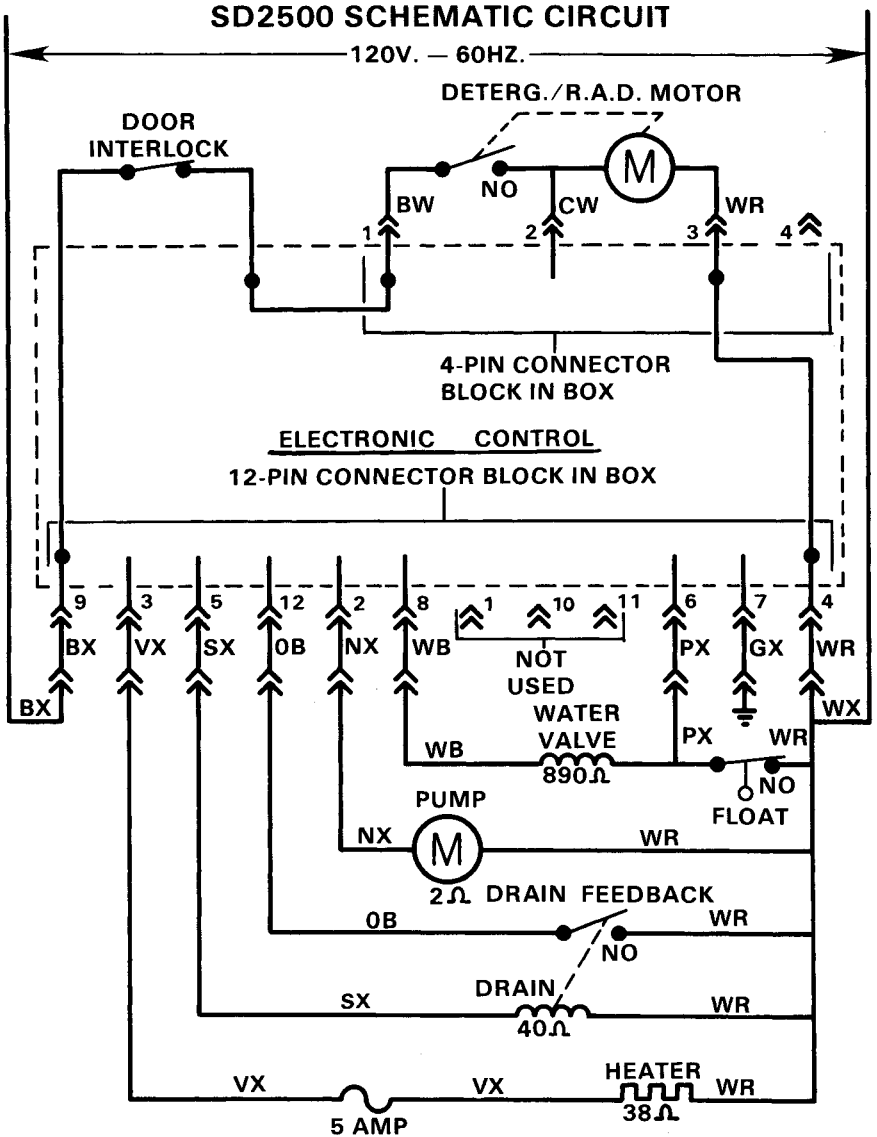
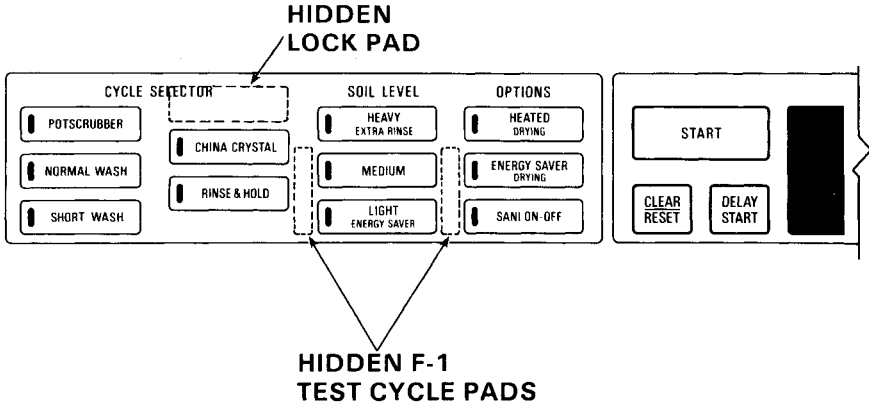


Figure 15 - GSD2500 Schematic Circuit

TEST CYCLES - GSD2600/2800D (F1)

To Set Up:

1. Close detergent cup and latch door.
2. Press two pads at same time. F-1 appears in display.
3. Press START.



CYCLE PREGRESSIONS:

CODE	FUNCTION	TIME	CHECK FOR
88	DISPLAYS ON	5 SEC. (1)	ALL DIGITS, WORDS, LIGHTS ON. HEATER IS ALSO ON.
(2) F	WATER FILL	65 SEC.	WATER VALVE ON. MOTOR RUNS.
(2) DA	DETERGENT CUP TRIP	30 SEC.	DETERGENT MOTOR ON.
C1	CIRCULATE-- HEAT TO 132°	30 MIN. (1)	MOTOR ON. HEATER ON AT 950 WATTS. HEATER OFF AT 132 F. WATER.
CO	CIRCULATE	30 SEC. (1)	MOTOR ON.
(2) rA	RINSE AGENT DISPEN. TRIP	30 SEC.	DETERGENT MOTOR ON.
c2	CIRCULATE — HEAT TO 145°	30 MIN. (1)	MOTOR ON. HEATER ON AT 950 WATTS. HEATER OFF AT 145 F. WATER.
PO	PUMP OUT	405 SEC. (1) MAXIMUM	DRAIN SOLENOID ON FOR 5 SEC. PUMP OUT UNTIL WATER GONE OR TO 405 SEC.
Dr	HEATED DRY	34 MIN. (1)	HEATER CYCLES ON 25 SEC., THEN OFF 25 SEC.

NOTES: (1) PRESS START PAD TO SHORTEN TIME.

(2) CAUTION: ALLOW FULL TIME FOR F, DA, AND rA.

(3) TO FREEZE FUNCTION, PRESS NORMAL WASH PAD. TO UNFREEZE, PRESS START PAD. DO NOT FREEZE ANY PUMP OUT.

Figure 16

ELECTRICAL COMPONENTS

To Use F-1 With Door Apart:

1. Wedge detergent cup sensor closed.
2. Tape door switch closed.
3. Remove wedge and tape after check.

PROBLEM CODES

DISPLAY	PROBLEM
C2	DRAIN OVER 405 SEC. CYCLE STOPS.
C3	WILL NOT GO INTO DRAIN. CYCLE STOPS.
C4	TOO MUCH WATER. CYCLE STOPS.
C5	NO WATER IN TUB, OR INLET TO PUMP. CLOGGED. CYCLE STOPS
C6	WATER TEMP. TOO LOW AFTER 20 MIN. EXTENSION
C7	TEMP. SENSOR INOPERATIVE NO WATER HEAT.
C8	DET. CUP BLOCKED FROM OPENING. GSD2800D ONLY

Figure 17

GSD2200/2400 (F1)

To Set Up:

1. Close detergent cup and latch door.
2. Press two pads at same time. F-1 appears in display.
3. Press START.

HIDDEN F-1 TEST CYCLE PADS

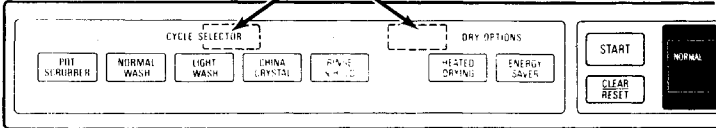


Figure 18

ELECTRICAL COMPONENTS

CYCLE PROGRESSION

CODE	FUNCTION	TIME	CHECK FOR
BB	DISPLAYS ON	5 SEC. (1)	ALL DIGITS, WORDS, LIGHTS ON. HEATER IS ALSO ON.
(2) F	WATER FILL	65 SEC.	WATER VALVE ON. MOTOR RUNS.
(2) DR	DETERGENT CUP TRIP	30 SEC.	DETERGENT MOTOR ON.
CB	CIRCULATE	30 MIN. (1)	MOTOR ON.
(2) FR	RINSE AGENT DISPEN. TRIP	30 SEC.	DETERGENT MOTOR ON.
CT	CIRCULATE — HEAT TO 132° WATER TEMP	30 MIN. (1)	MOTOR ON. HEATER ON AT 500 WATTS HEATER OFF AT 132°. WATER TEMP.
PD	PUMP OUT	405 SEC. (1) MAXIMUM	DRAIN SOLENOID ON FOR 5 SEC. PUMP OUT UNTIL WATER GONE OR TO 405 SEC.
DB	HEATED DRY	33 MIN. (1)	HEATER ON AT 500 WATTS.

NOTES: (1) PRESS START PAD TO SHORTEN TIME.

(2) CAUTION: ALLOW FULL TIME FOR F, DA, AND rA.

(3) TO FREEZE FUNCTION, PRESS NORMAL WASH PAD. TO UNFREEZE, PRESS START PAD. DO NOT FREEZE ANY PUMP OUT.

To Use F-1 With Door Apart:

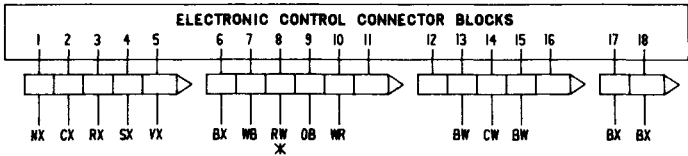
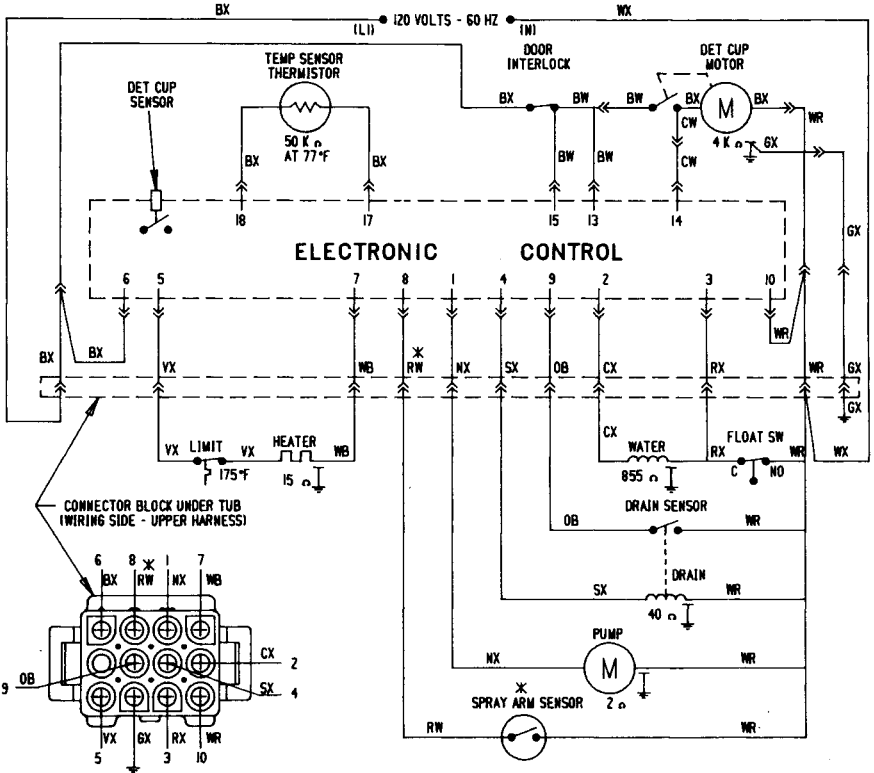
1. Tape door switch closed.
2. Remove tape after check.

PROBLEM CODES

DISPLAY	PROBLEM
C1	DRAIN OVER 95 SEC. CYCLE CONTINUES.
C2	DRAIN OVER 405 SEC. CYCLE STOPS.
C3	WILL NOT GO INTO DRAIN. CYCLE STOPS.
C4	TOO MUCH WATER. CYCLE STOPS.
C5	NO WATER IN TUB, OR INLET TO PUMP. CLOGGED. CYCLE STOPS
C7	TEMP. SENSOR INOPERATIVE NO WATER HEAT.

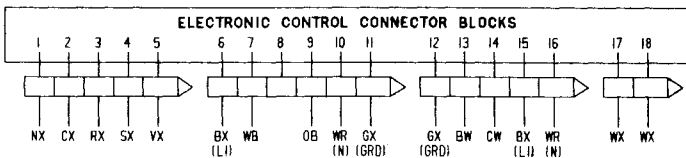
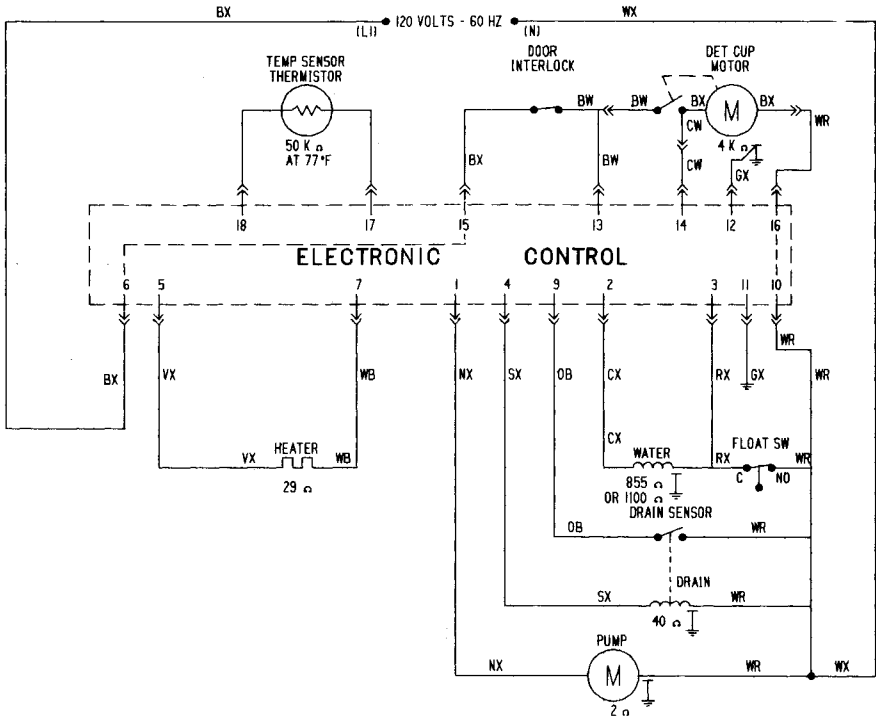
ELECTRICAL COMPONENTS

GSD2600/2800 SCHEMATIC



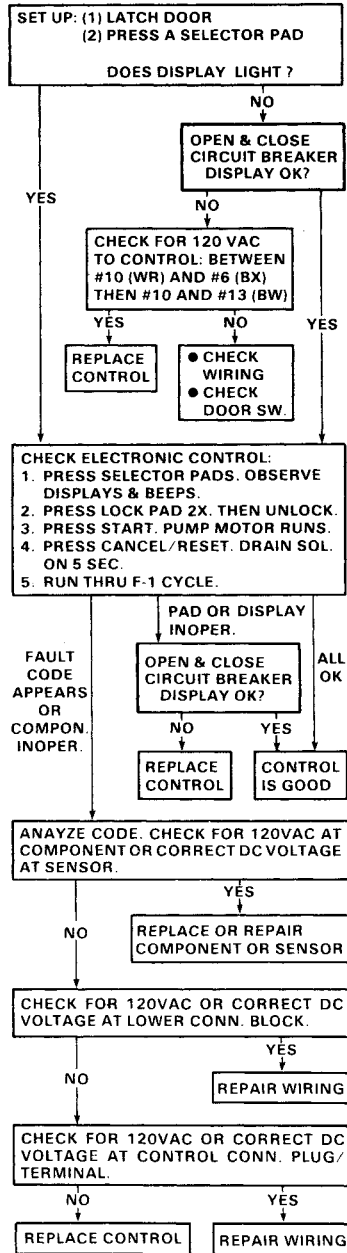
ELECTRICAL COMPONENTS

GSD2200/2400D SCHEMATIC

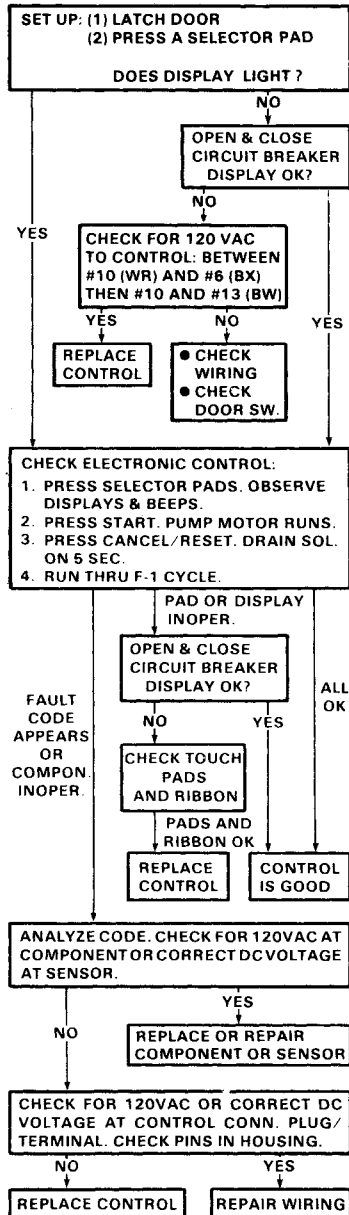


ELECTRICAL COMPONENTS

GSD2800D & GSD2600D CONTROL & ELECTRICAL DIAGNOSIS



GSD2200/2400D
CONTROL ELECTRICAL DIAGNOSIS



ELECTRICAL COMPONENTS

CONTROL REPLACEMENT — GSD 2600/2800D

The GSD2600D/2800D control is replaced as a single unit: i.e. the black box concept. This assembly includes the control, touch pad assembly, and the internal connections.

CAUTION: Remove 120 volts power to dishwasher. Control is always live with 120 volts directly to it.

NOTE: To replace door latch switch, the electronic control must first be disassembled from escutcheon.

To remove electronic control assembly:

- (1) Disassemble inner door liner and latch to front of tub.
- (2) Flex end of brown plastic harness cover that butts against control box, and remove.
 - The four connector blocks to control are now accessible. Disconnect these.
- (3) Take out six screws to remove thermistor mounting cover on back of control.
 - Detergent motor, switch, trip cam, and thermistor assembly are now accessible, as is the connector block for the motor and switch leads.
- (4) Remove the detergent cup sensor switch actuating lever parts. These are not supplied on replacement control.
- (5) Remove metal bracket at detergent motor end of control box (two screws). Loosen two screws holding bracket at other end. Slip out control.
 - Door interlock switch is now accessible. Remove plastic mounting bracket from control.

The replacement controls for the GSD2800D and the GSD2600D are different catalog numbers. They cannot be interchanged because: (a) The logic boards are slightly different, and (b) the touch pads on the face of the controls are different.

CONTROL REPLACEMENT — GSD2200/2400D

The control on the GSD2200D/2400D is only the Printed Circuit board. The control cover, P.C. board, touch pads, film, and the connecting ribbon are all individually replaceable.

If the wire guard is still in place remove it. Detach the 4 harness connector blocks from the control blocks. Remove five ¼" Hex head screws across the top of the plastic control cover. The bottom of the control is held in place by 4 tabs.

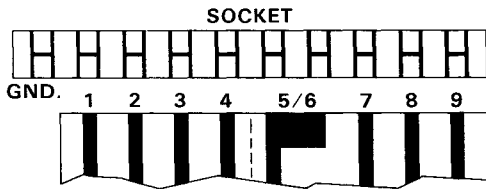
ELECTRICAL COMPONENTS

Lift the top of the control cover up and slip the tabs out of their slots. When you do this, the flat electronic ribbon will probably pull out of its socket in the control. The door latch switch is now accessible. Turn the control cover over so that you are looking at the circuit board. As with all electronic components handle the P.C. control board only by its edges to prevent any further damage by electro-static discharge.

Put the old board into the replacement carton immediately. Loosen the 4 bottom screws 1 to 1½ turns. Remove the top screws. You can lift the circuit board out of its housing. The thermistor and spring which are held in place by 2 screws and a metal plate are now accessible.

The connector ribbon and touch pad assembly can be tested without removing the ribbon. The ribbon is 2-ply with the tracks on the inside. However, the end that goes into the socket on the PC board has the tracks exposed so that the ribbon and pad assembly can be checked with an Ohmmeter. Figure 19 identifies the ribbon tracks and which ones should close when a specific touch pad is pushed. Testing the ribbon and touch pads will required the technician to have small alligator clips on his Ohmmeter test leads. Due to internal resistance the reading should be about 20 ohms or higher.

TOUCH PAD RIBBON



CYCLE

TERMINALS

POTSCRUBBER	3-8
NORMAL	3-9
LIGHT WASH	3-7
CHINA/CRYSTAL	3-5/6
RINSE & HOLD	2-9
HEATED DRY	2-5/6
ENERGY SAVER	2-7
CLEAR/RESET	1-7
START	1-9
F1 TEST	1-4

(PRESS BOTH PADS)

Figure 19

ELECTRICAL COMPONENTS

The aluminum trim frame must be removed before the ribbon, touch pads, or film can be replaced. To remove the frame bend the top row of tabs (7) out straight and roll the frame away from the plastic escutcheon. The film can now be lifted off. The ribbon is captured between the escutcheon and the touch pad asm. The touch pad asm. is detented in 2 places at the bottom. Use a small screwdriver to deflect the detents and lift out the touch pad asm. The touch pad buttons are detented into the touch pad housing and are available separately.

When reassembling the ribbon and the film be sure that they are properly seated over the 3 locating pins on the escutcheon. Slip the unbent tabs on the frame into their slots in the escutcheon and roll the frame into position. Rebend the 7 tabs slightly to hold the frame in place.

Replacing the ribbon end into the PC board socket requires that the PC board and cover assembly be held close to the escutcheon. Slip ribbon end into the socket. There should be no twists in the ribbon. Figure 20.

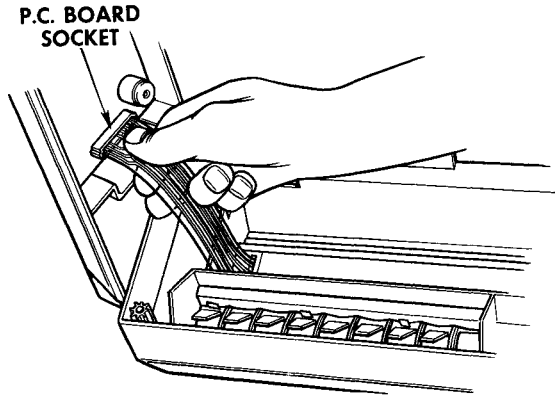


Figure 20

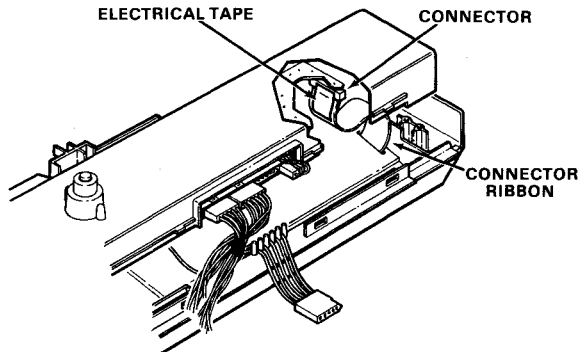


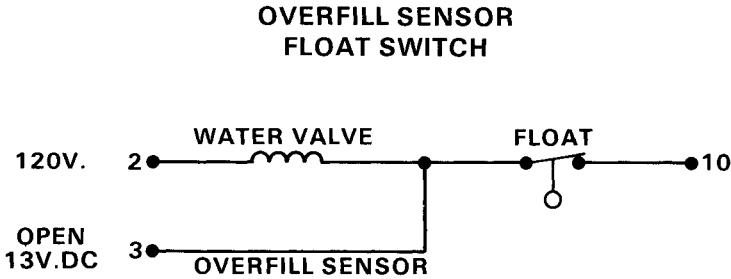
Figure 20A

Secure ribbon in connector by extending electrical tape from side of connector onto ribbon. Figure 20A. Slip the 4 cover tabs into their slots. Replace the second screw from the right (round hole) first and then the other 4 screws.

ELECTRICAL COMPONENTS

SENSORS — GSD2200/2400/2600/2800D

OVERFILL SENSOR: This is the schematic diagram for the water valve and float switch, which serves as the overflow sensor.

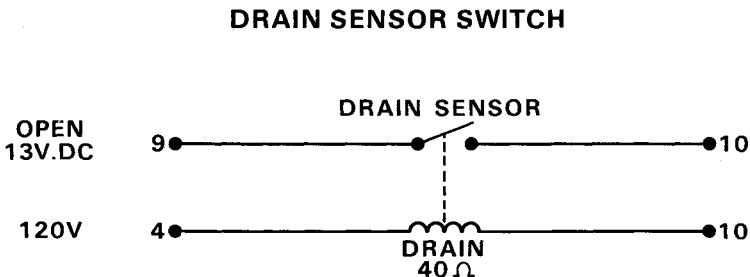


- IF FLOAT SWITCH OPENS, DRAIN SOL. ENERGIZED FOR 5 SECONDS, AT 30 SECOND INTERVALS.
- DOOR LATCH MUST BE CLOSED.

Figure 21

DRAIN SENSOR — ALL "E2" CONTROLS

This sensor is a switch mounted on the drain solenoid bracket. It also has 13 volts DC across its terminals, which can be measured when the switch is open. (Figure 22)



- SWITCH CLOSED WHILE DRAIN SOLENOID ENERGIZED.
- SWITCH REMAINS CLOSED UNTIL ALL WATER PUMPED OUT.

Figure 22

ELECTRICAL COMPONENTS

When the drain solenoid is energized, the normally-open sensor switch is held closed.

The sensor switch remains closed as long as there is water in the pump and the diverter valve remains in its pump out position.

The weight of the drain solenoid plunger holds the switch closed until the diverter valve moves to its circulate position, lifting the plunger.

The possible feedbacks from the drain sensor to the control are shown in the chart. (Figure 23)

To start a pump out period, the control supplies 120 volts to the drain solenoid for 5 seconds, and thus the sensor switch should always be closed for 5 seconds.

Feedback A: Control checks at 0.3 seconds to see if drain sensor switch is closed. If not, cycle is aborted and C3 is displayed, indicating that there is a drain system failure.

The numbers refer to control and lower harness (GSD2800/2600D only) connector plug terminals, which we will get into later on.

The 13 Volts DC from the control is applied to one side of the float switch, and the other side goes to the neutral of the input supply voltage. When the switch is open, 13 volts DC can be measured across the terminals of the overflow sensor switch.

If the float switch opens, the control picks up a signal, and it then energizes the drain solenoid for 5 seconds to go into a pump out period.

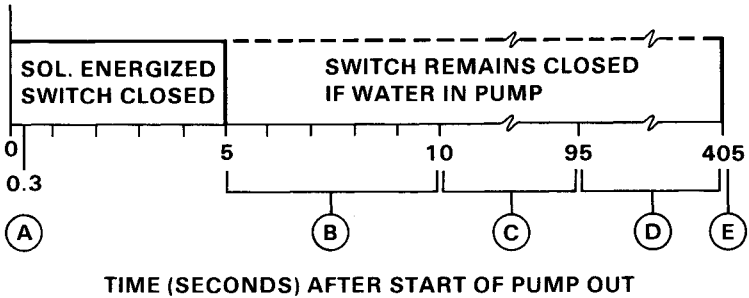
If the float switch remains open, the control re-energizes the drain solenoid every 30 seconds for a 5 second interval and also re-energizes pump motor.

The door latch must be closed to get this automatic pump out overflow protection.

The problem code C4 appears in the display when the float switch opens, whether the door latch is closed or not, and the cycle is terminated if the dishwasher is running.

The sensor switch is mounted to a plastic bracket with two screws; one is self-tapping into the bracket and the other uses a nut.

DRAIN SENSOR FEEDBACK



FEED BACK	TIME (SEC.)	CONTACTS		DISPLAY	CYCLE SEQUENCE
		SWITCH OPEN	CLOSED		
A	0.3	X		C3	STOPS
B	5-10	X		C5	STOPS
C	10-95		X	—	PUMP OUT CONTINUES
		X		—	TO NEXT PHASE
D	95-405		X	BLOCKED DRAIN OR C1	PUMP OUT CONTINUES
		X		BLOCKED DRAIN OR C1	TO NEXT PHASE
E	405		X	C2 OR BLOCKED DRAIN & C2	STOPS

Figure 23

Feedback B: Controls checks from 5 to 10 seconds. If switch is open, this means no water is in tub or in pump, so cycle is aborted and C5 is displayed.

The drain sensor switch can give a false signal to the control under certain conditions, which will cause C5 to be displayed and the cycle to stop with a full amount of water in the tub. This can occur when the inlet to the pump is clogged partially or completely, causing the pump to empty during the 5 to 10 second period after pump out starts. The diverter valve then resets and the control gets the same signal as for no water in tub.

ELECTRICAL COMPONENTS

Feedback C: Control checks from 10 to 95 seconds. Pump out is continued if switch remains closed. If switch opens, control ends pump out and goes on to next phase of cycle.

Feedback D: Control checks from 95 to 405 seconds. **BLOCKED DRAIN** is displayed. Pump out continues up to 405 seconds if switch is closed. If switch opens, control continues on to next phase of cycle, but **BLOCKED DRAIN** remains on display.

Feedback E: Control checks at 405 seconds. If sensor switch is still closed, cycle is aborted and **C2** is displayed along with **BLOCKED DRAIN**.

SPRAY ARM ROTATION SENSOR — GSD2800D

A strong magnet is enclosed in one end of the spray arm. A glass-enclosed reed switch is located in a plastic housing outside the tub on the right side. There is 13 volts DC applied to the reed switch. (Figure 24)

When the spray arm rotates and the magnet comes close to the reed switch, the reed switch contacts close while in the strong magnetic field.

The control receives a feedback from the reed switch whenever it closes or opens (changes state).

Thus, the sensor will detect a blocked spray arm even if it happens to be in a position where the magnet is close to the reed switch and it remains closed.

SPRAY ARM ROTATION SENSOR

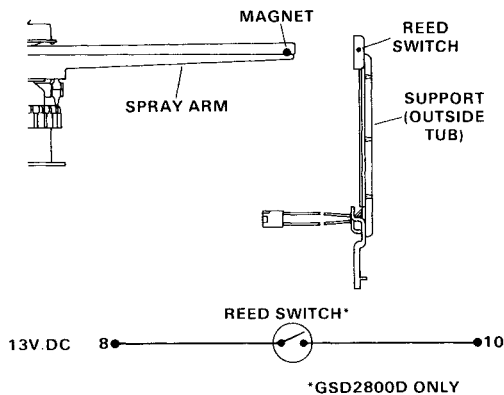


Figure 24

- SWITCH CONTACTS CLOSE IN STRONG MAGNETIC FIELD.
- CONTROL SENSES SWITCH OPENING OR CLOSING (STATE CHANGE).
- CONTROL CHECKS 45 SEC. AFTER FILL PERIOD, THEN EVERY 45 SEC.

ELECTRICAL COMPONENTS

The control checks the sensor switch 45 seconds after the completion of water fill, and then every 45 seconds there after. If the switch has not changed state (opened or closed), the cycle stops. The user can override by pressing the START pad, but, before opening the door.

DETERGENT CUP SENSOR — GSD2800D

This sensor is a pushbutton switch located on the underside of the control housing. It cannot be replaced separately; the entire control must be replaced.

When the detergent cup is latched closed, the plastic latch bears against a pivoting lever, which holds the sensor switch closed. (Figure 25)

DETERGENT CUP SENSOR SWITCH

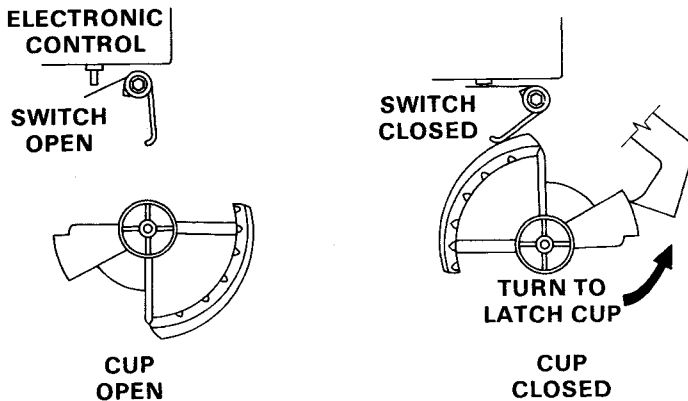


Figure 25

The plastic latch must rotate about one-quarter turn before it allows the sensor switch to open. Thus the switch also serves to indicate to the control that the detergent cup has been blocked from opening all the way.

The detergent cup sensor switch actuating lever can become deformed or take a set as it is bent between the latch and the sensor switch plunger (shown from the front as if looking thru the door color panels.) Every time that the inner door panel is separated from the outer door the lever should be reshaped to insure proper operation on the sensor switch. The lever should be rebent so that it points straight down (Figure 26).

The plastic hook will hold one end of the lever and aid in the rebending process.

ELECTRICAL COMPONENTS

A screw has been added in the end of the cover shaft in production. The screw gives added insurance of proper operation of the latch and detergent cup cover. Replace the screw.

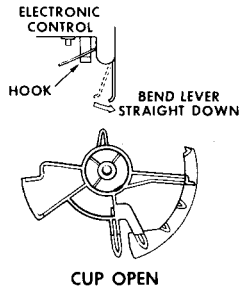
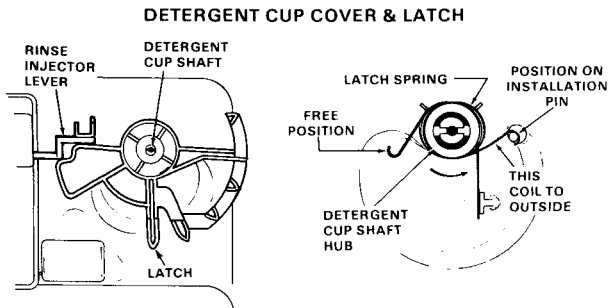


Figure 26

Figure 27 illustrates the way the detergent cup latch spring is mounted onto the detergent cup latch.

This method of spring loading the latch is the same as used on the new 1983 "C" PermaTuf tub models. However, a heavier spring is used. The two springs are not interchangeable.

The drawing and the instructions below are included in the Mini-Manual.



TO DISASSEMBLE:

- PUSH 1/4" SOCKET OVER SHAFT FINGERS

TO REASSEMBLE:

1. POSITION LATCH SPRING AS SHOWN
2. POSITION SHAFT HANDLE UP (COVER OPEN)
3. POSITION LATCH AS SHOWN & PRESS ONTO SHAFT
4. TURN LATCH COUNTER-CLOCKWISE

Figure 27

To remove detergent cup cover and handle shaft, push in fingers at end of shaft with a 1/4" socket.

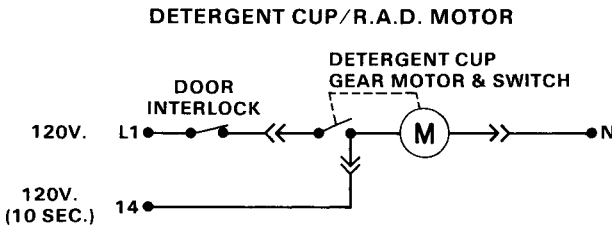
ELECTRICAL COMPONENTS

To replace detergent cup handle shaft and cover, follow steps below:

1. Position latch spring on shaft hub as shown in Figure 27. Wind spring counterclockwise to hook end on installation pin.
2. Position shaft and cup with handle pointing up (cover open).
3. Position latch on handle shaft as shown. Then press onto shaft until fingers snap in place.
4. Turn latch counterclockwise to position end of spring onto latch tang.

Figure 28 is the schematic. At the appropriate time in the wash period, the motor is energized for 10 seconds by 120 volts applied between control terminal #14 and the N side of line.

When the trip cam turns, it closes a normally open switch which is fastened on the gear motor mounting plate. Then 120 volts is applied to the gear motor through the door interlock switch from L1 side of line and the N side of line.



TO TRIP DET. CUP & RINSE AGENT DISP.

1. MOTOR ENERGIZED 10 SEC. BY CONTROL.
2. CAM CLOSES SWITCH WHEN MOTOR TURNS.
3. MOTOR ENERGIZED 20 SEC. THRU SWITCH, THEN CAM OPENS SWITCH.

Figure 28

TEMPERATURE SENSOR — ALL "E2" CONTROLS

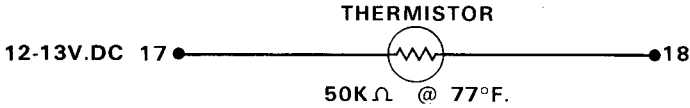
This sensor is a thermistor that is mounted in a spring-loaded housing, which is held in place by a removable plastic cover on the back of the control. There is 16 volts DC applied to the thermistor at room temperature.

The coiled spring holds the thermistor up against the inner door liner, where it can indirectly measure the temperature of the water as it is sprayed about inside the tub.

The thermistor can be checked with an ohmmeter. At 77°F room temperature it should measure about 50K ohms. At 50K ohms resistance, the thermistor has about 12-13 volts DC applied across it. With the thermistor circuit open, there would be 16 volts DC from terminals 17 to 18 on the control. (Figure 29)

ELECTRICAL COMPONENTS

TEMPERATURE SENSOR



WATER TEMP	THERMISTOR OHMS	CONTROL RESPONSE
—	INFINITE (CIRCUIT OPEN)	<ul style="list-style-type: none"> ● C7 DISPLAYED, NO WATER HEAT
132°F	14K	<ul style="list-style-type: none"> ● IN WASH TURNS OFF HEATER ● ENDS CYCLE EXTENSION
145°F	11K	<ul style="list-style-type: none"> ● IN WASH OR SANI RINSE, TURNS OFF HEATER ● ENDS CYCLE EXTENSION
185°F.	6K	<ul style="list-style-type: none"> ● OPENS HEATER CIRCUIT

Figure 29

The control checks the thermistor circuit at the start of any wash cycle. If open, the control will display C7 and will not allow the heater to come on during wash or any rinse. This is to protect against overheating with a 950 watt heater if too little water is in the tub.

In all WASH periods except POTSCRUBBER and in the third and the final RINSE periods, the control checks for a water temperature of 132°F. (14K ohms thermistor reading). If it sees this resistance, it disconnects power to the heater.

In POTSCRUBBER WASH and in SANI RINSE periods, the control checks for a water temperature of 145°F (11K ohms) (140°F on 2200/2400D).

The thermistor also has the added function of a safety device. If the control measures water temperature of 185°F (6k ohms), it opens the heater circuit. The heater circuit would also be opened during heated dry if the thermistor sensed this high a temperature.

ELECTRICAL COMPONENTS

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ELECTRICAL COMPONENTS

ELECTRONIC DISHWASHER FAULT TREES

A Guide to Systematic Diagnosis of Dishwasher Models with E2 Electronic Controls

1. These fault trees cover displayed fault codes and perceived faults.
2. For the sake of simplicity the more obvious solutions or required actions are not shown.

Voltage Readings At The Control Pin Blocks

A. Facts

1. There is no practical way to gain access directly to the 18 control pins with the 4 connector blocks in place.
2. The 6 pin connector block, with pins 6 and 10, must be in place to supply voltage to the control.
3. The 5 pin connector block, with pins 13, 14 and 15 must be in place to supply a controlled voltage to the dishwasher components using 120 VAC.

B. Assume That:

1. All internal connections from the control circuit board to the 18 male control pins are good.
 - a. If there is no insulating coating on the control pins and
 - b. If all of the female pins in the harness connector blocks are properly seated and
 - c. If all of the male pins on the control are properly seated - then a voltage reading taken at the rear (wire) end of the harness blocks is the same as a reading taken with the meter probes directly on the control pins.

C. Taking A Voltage Reading

Taking a voltage reading at the connector blocks which mate with the 18 control pins.

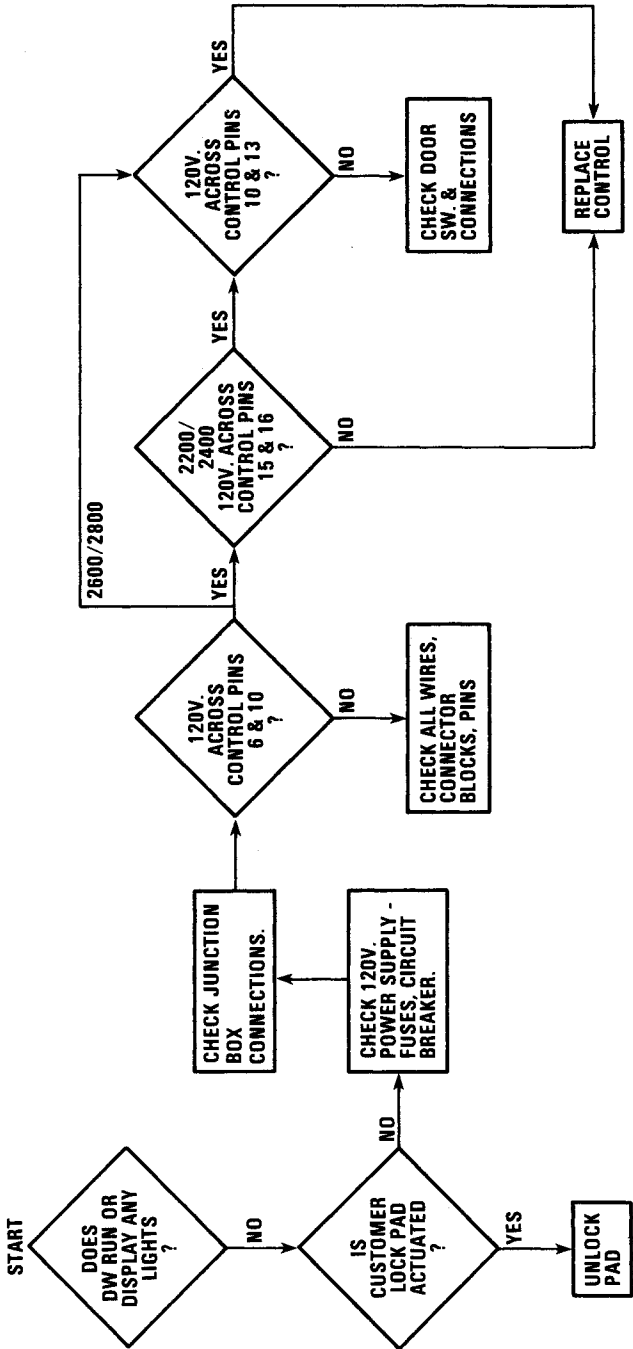
- a. Remove the blocks which contain the pins to be used for the voltage reading.
- b. Make sure that all of the pins in the block(s) are properly seated.

ELECTRICAL COMPONENTS

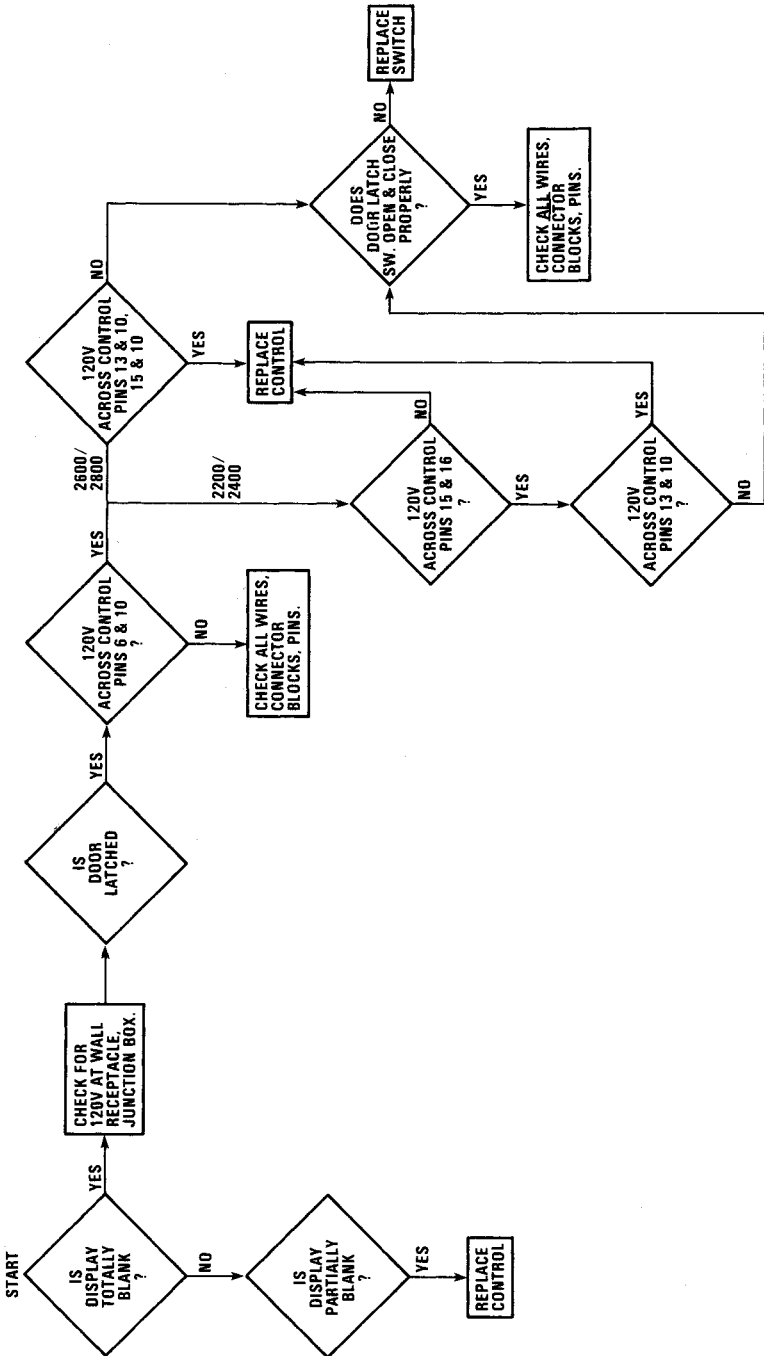
- c. Check the exposed control pins for any possible insulating coating. Scrape if necessary.
- d. Check the exposed control pins to be sure that they are properly seated.
- e. Replace the connector blocks onto the control pins.
- f. Take the voltage reading with the voltmeter set on the correct scale — AC or DC and the correct range.
 - 1) Use needle point probes, if available, inserted into the back (wire) end of the connector block(s).
 - 2) If needle point probes are not available, insert an extension (copper wire or a small brass nail) into the rear of the connector block.

ELECTRICAL COMPONENTS

DISHWASHER INOPERATIVE - NO RUN, NO DISPLAY

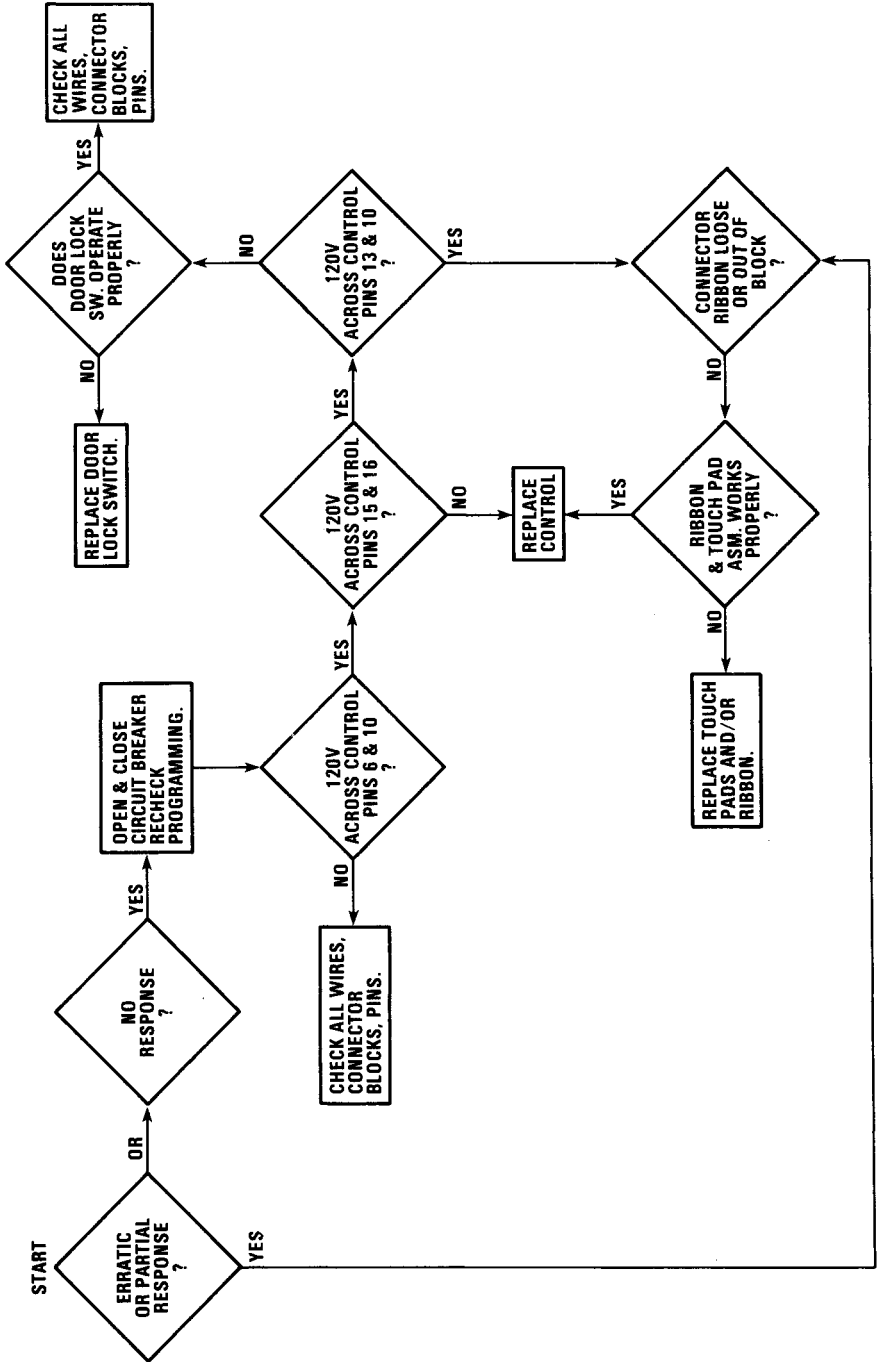


TOTALLY OR PARTIALLY BLANK DISPLAY

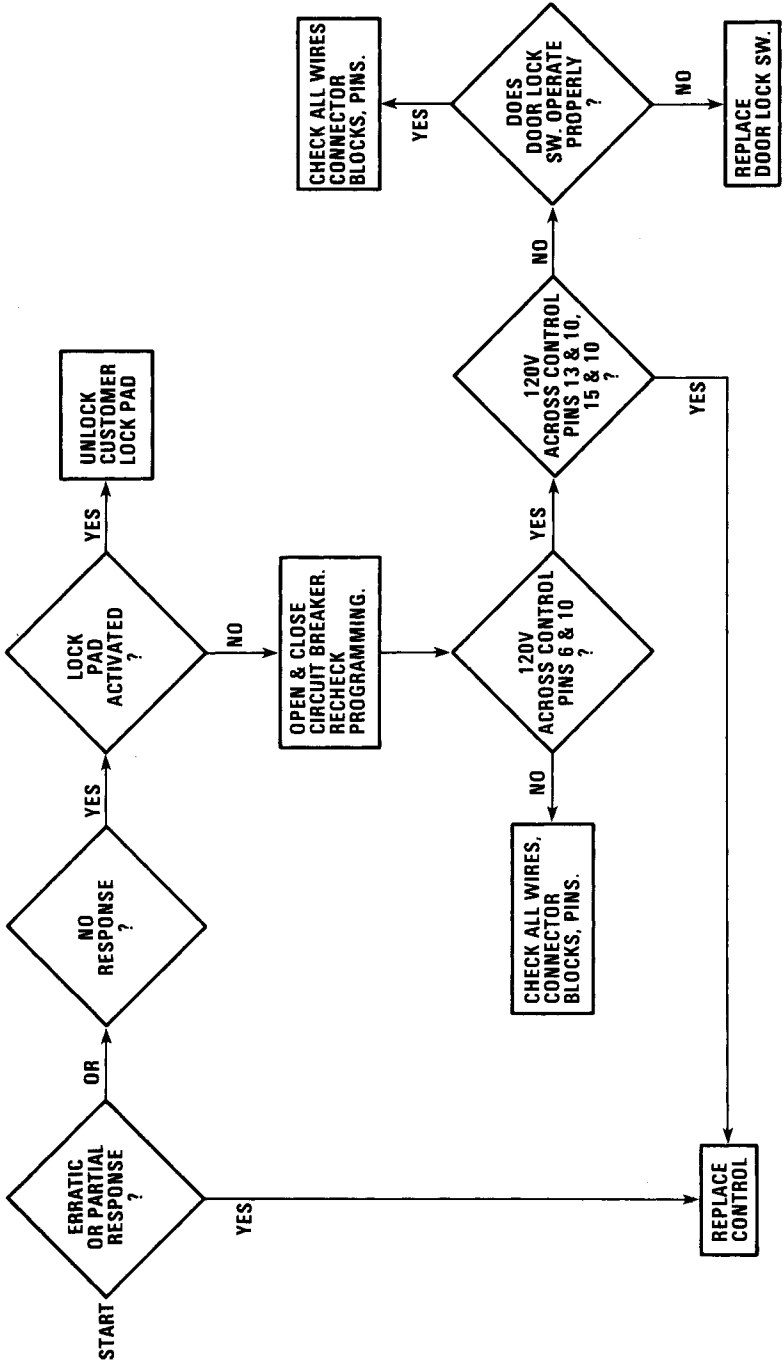


ELECTRICAL COMPONENTS

TOUCH PADS - GSD2200/2400



TOUCH PADS - GSD2600/2800



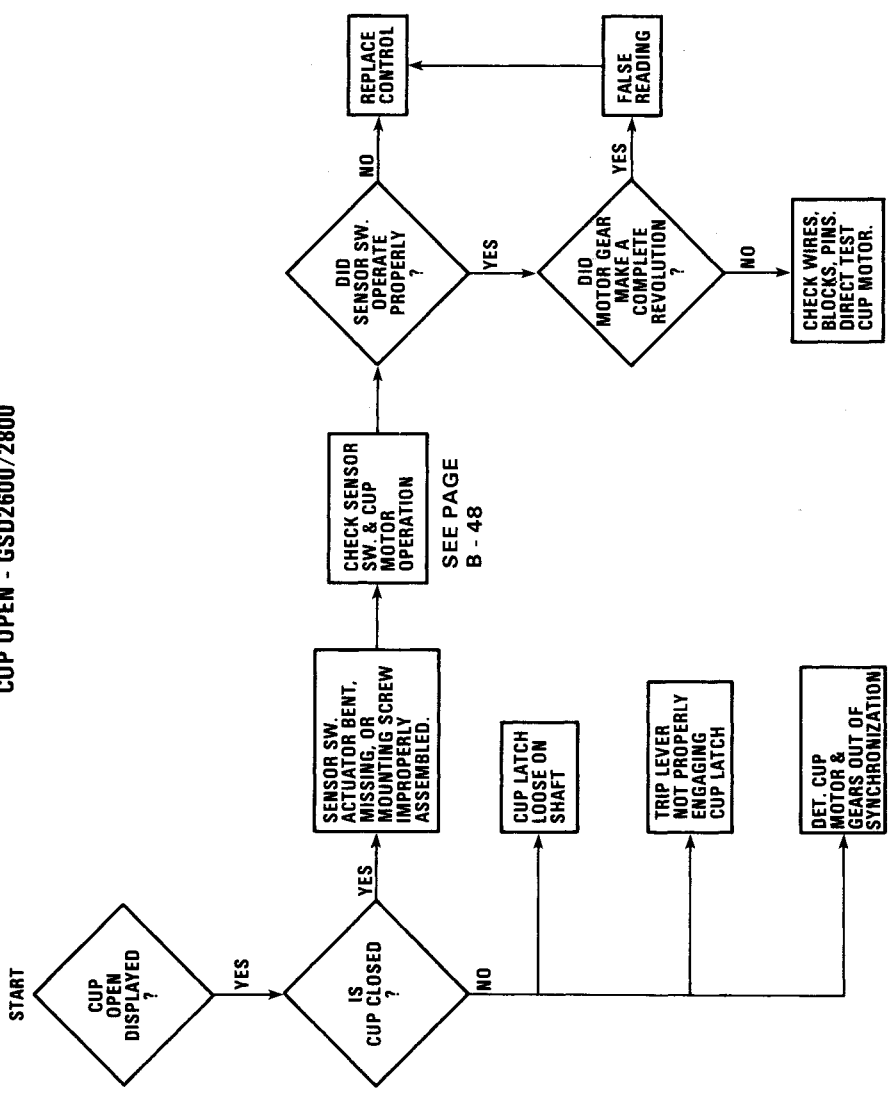
ELECTRICAL COMPONENTS

The following is a suggested method for checking the detergent cup sensor switch — on the GSD2800 control.

- a. Separate inner and outer door panels
- b. Depress door latch switch
- c. Press Start
 - “Cup Open” should flash
- d. Release door latch switch
 - Simulates opening door
- e. With one hand depress both detergent cup sensor switch and door latch switch.
- f. Press Start
 - Dishwasher should function properly

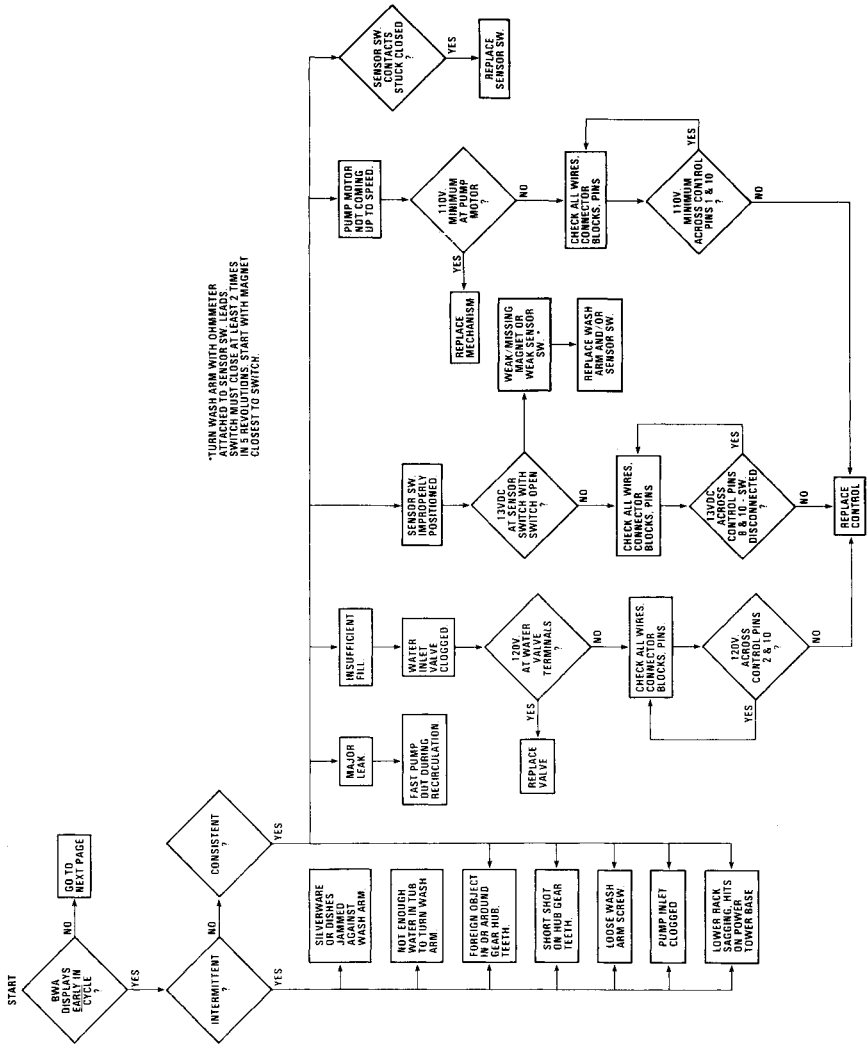
ELECTRICAL COMPONENTS

CUP OPEN - GSD2600/2800

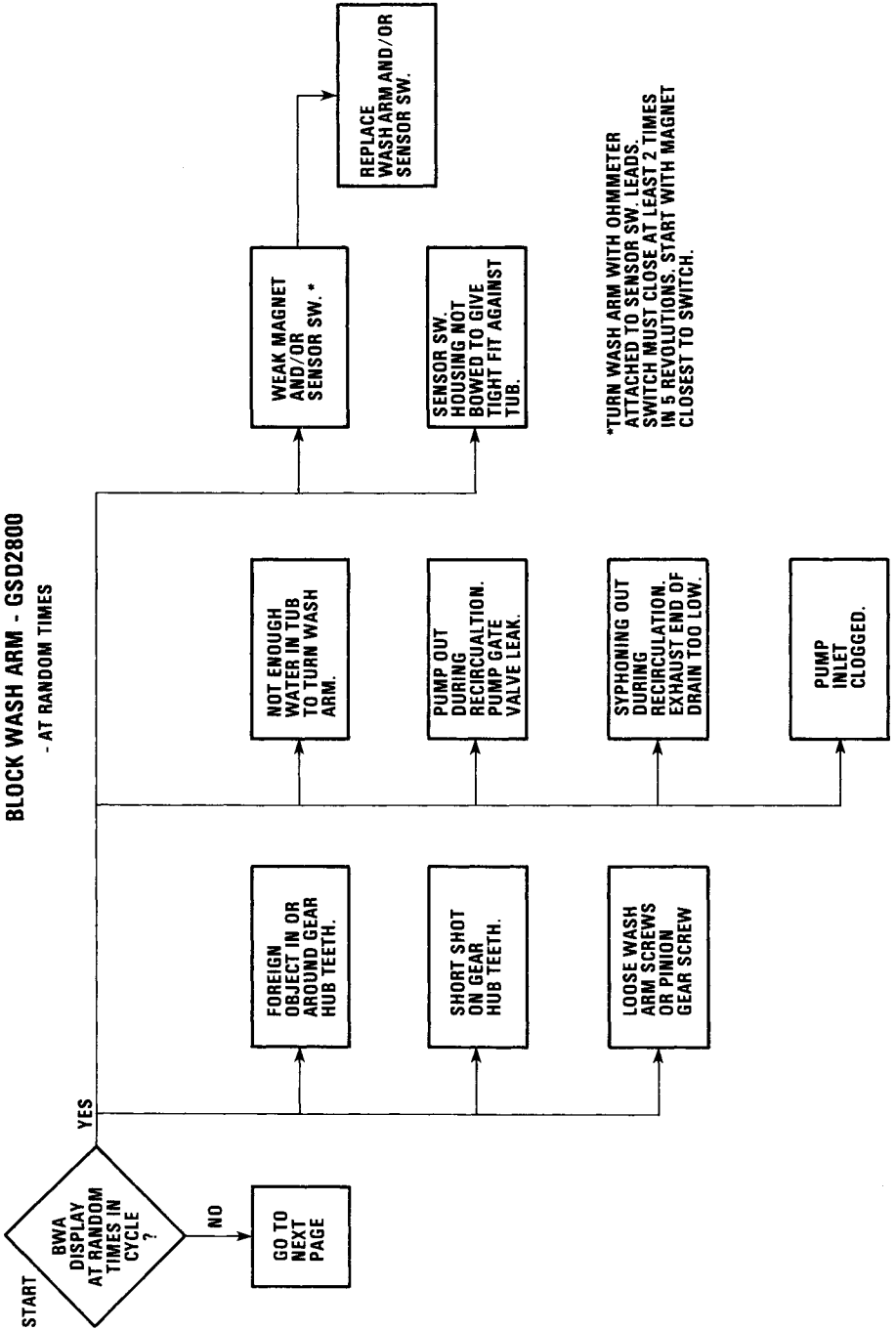


ELECTRICAL COMPONENTS

BLOCKED WASH ARM - GSD2800 — EARLY IN CYCLE

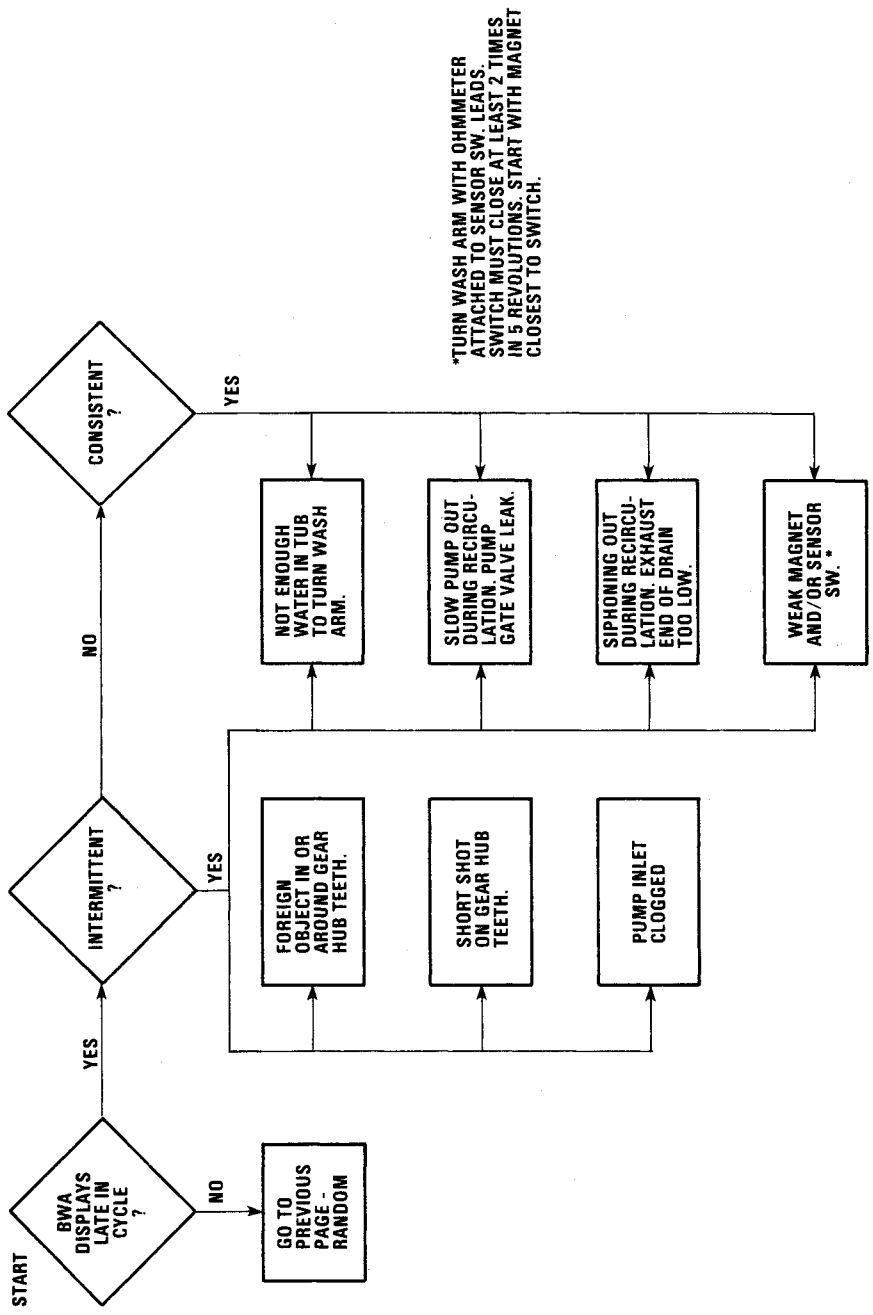


ELECTRICAL COMPONENTS

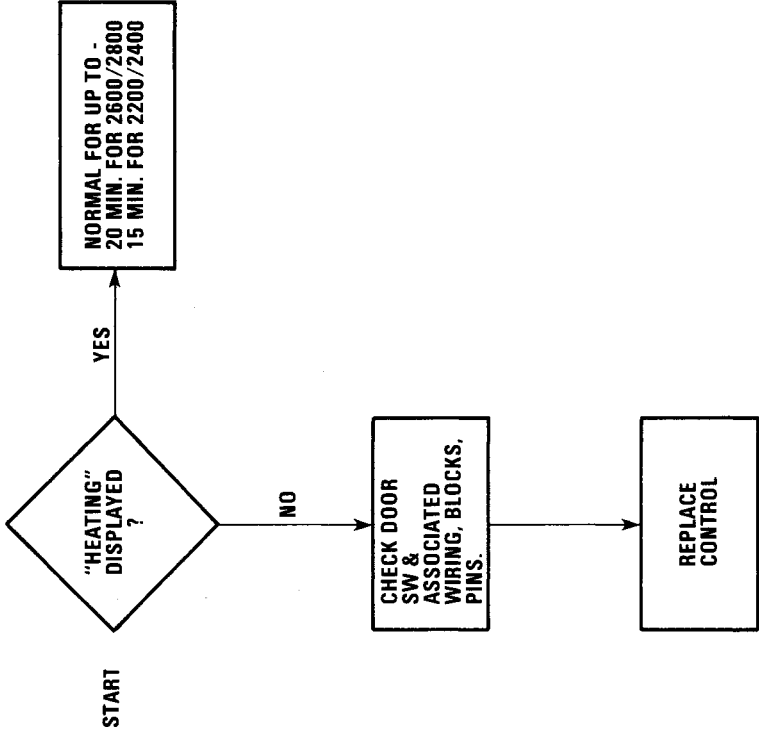


ELECTRICAL COMPONENTS

BLOCKED WASH ARM - GSD2800 LATE IN CYCLE

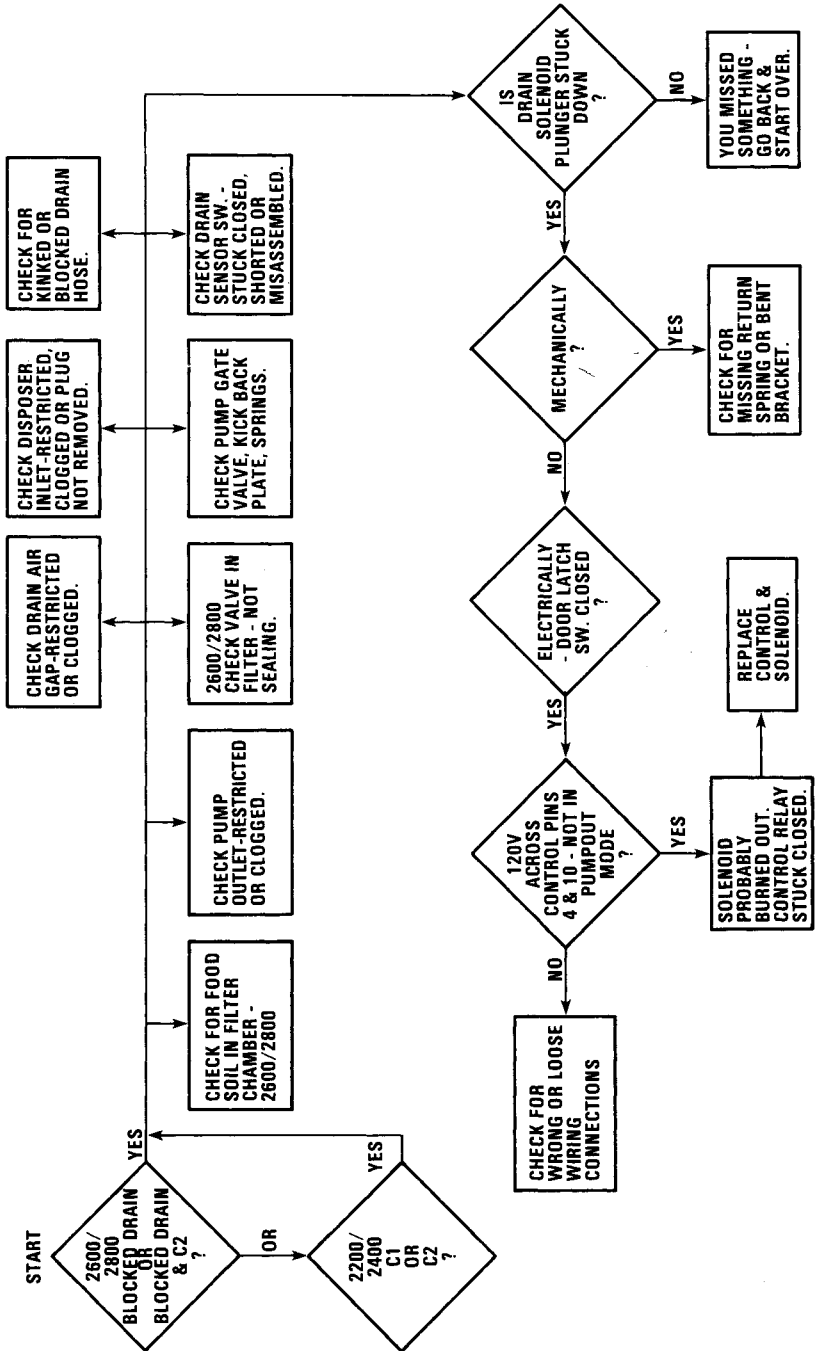


TIMER COUNTDOWN DISPLAY STOPS

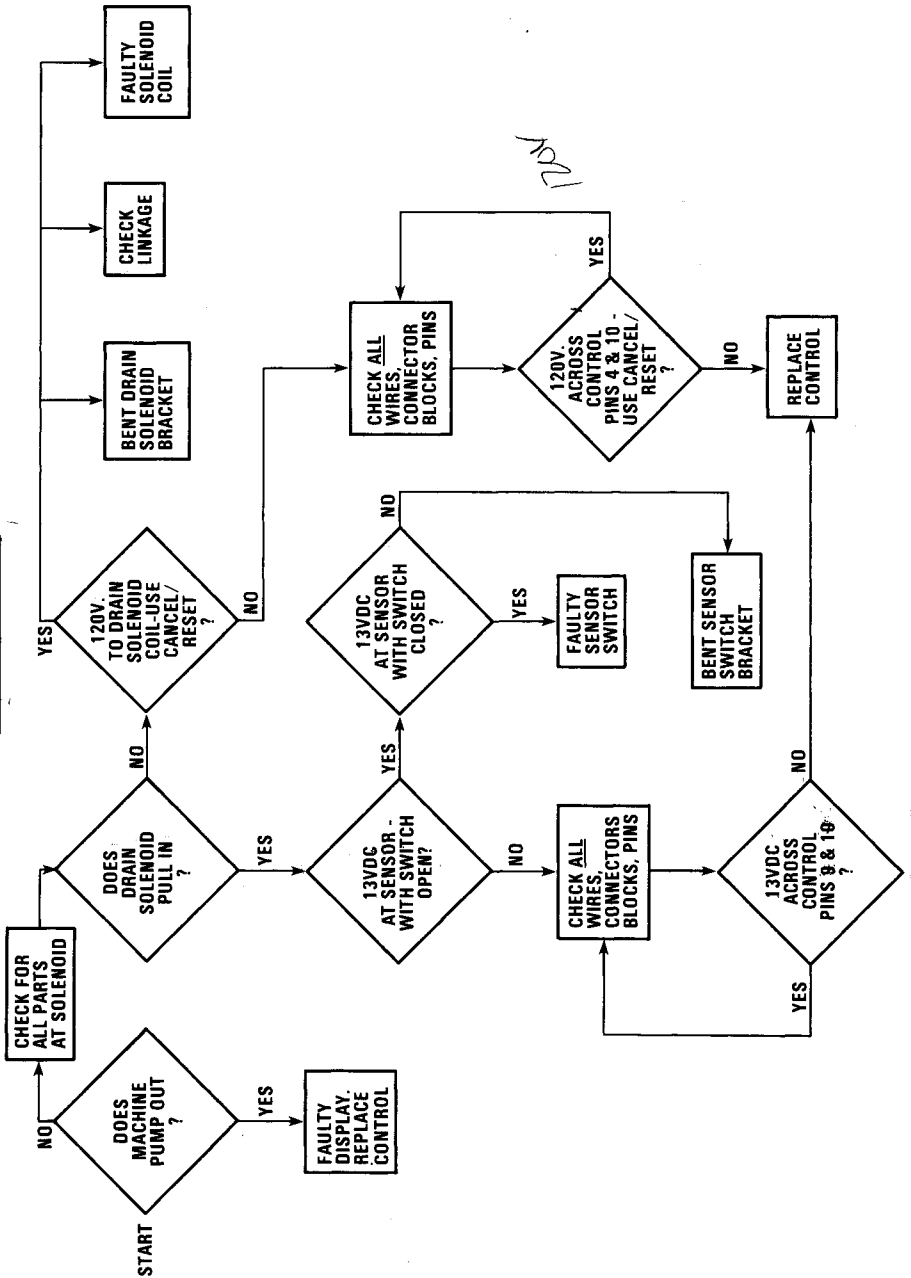


ELECTRICAL COMPONENTS

BLOCKED DRAIN, C1, C2

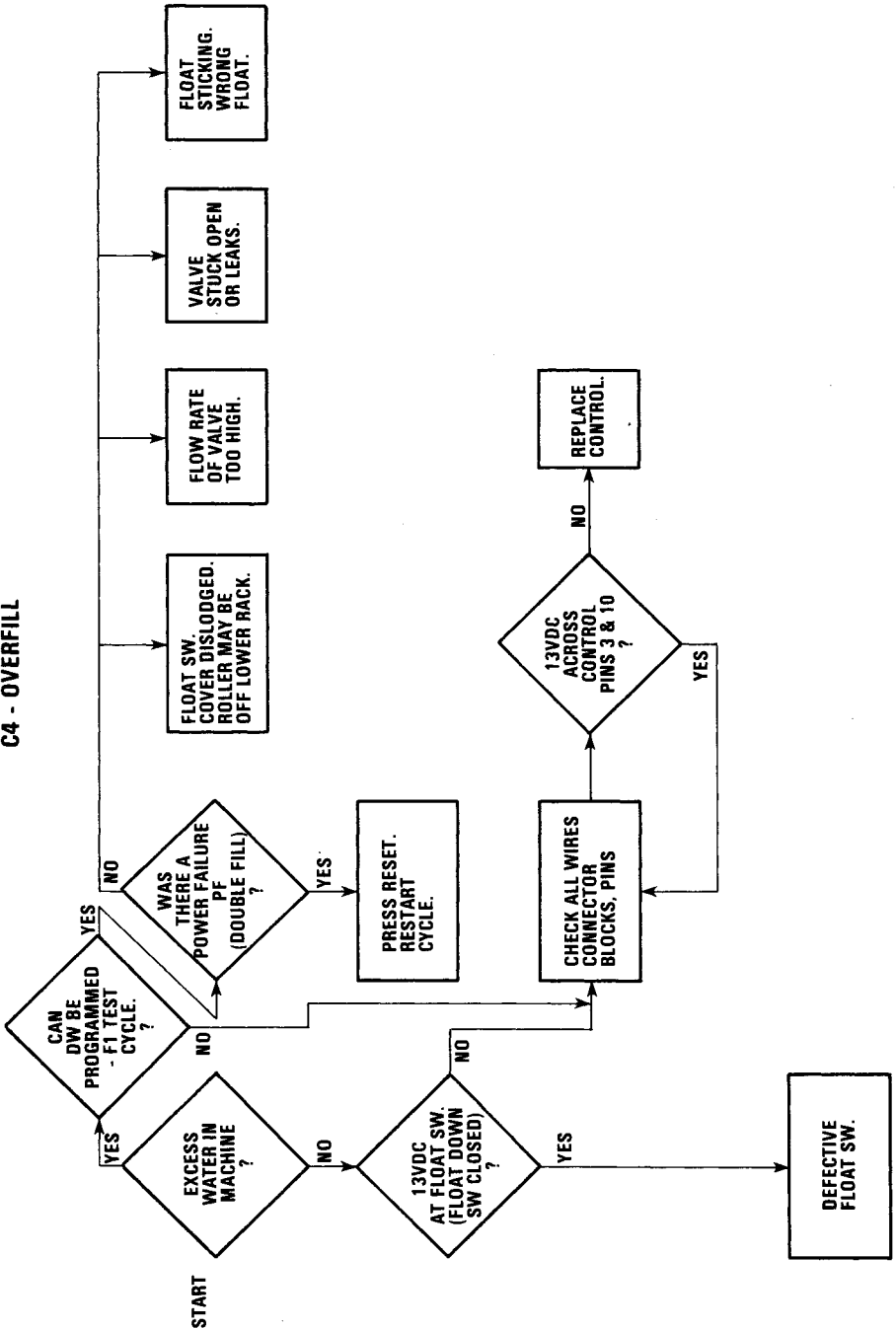


C3 - NO PUMP PUT



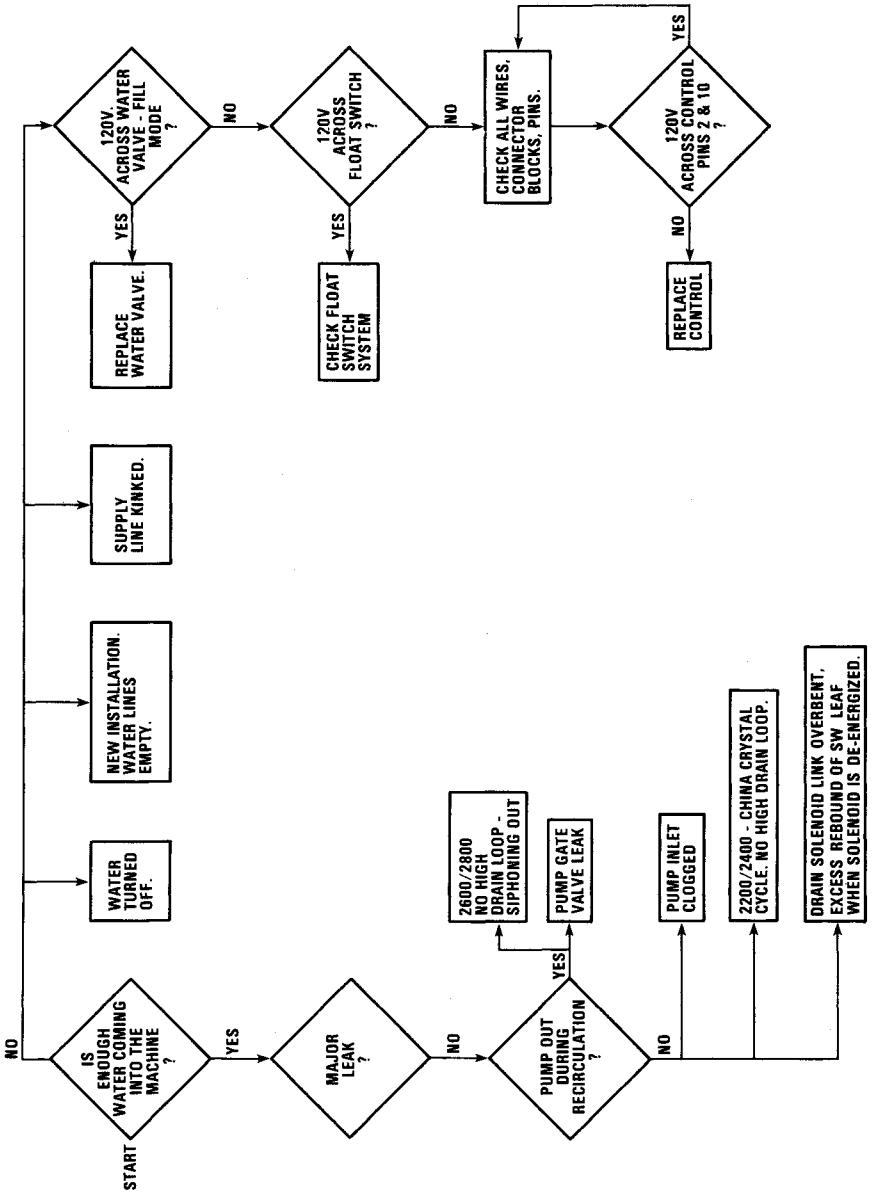
ELECTRICAL COMPONENTS

C4 - OVERFILL



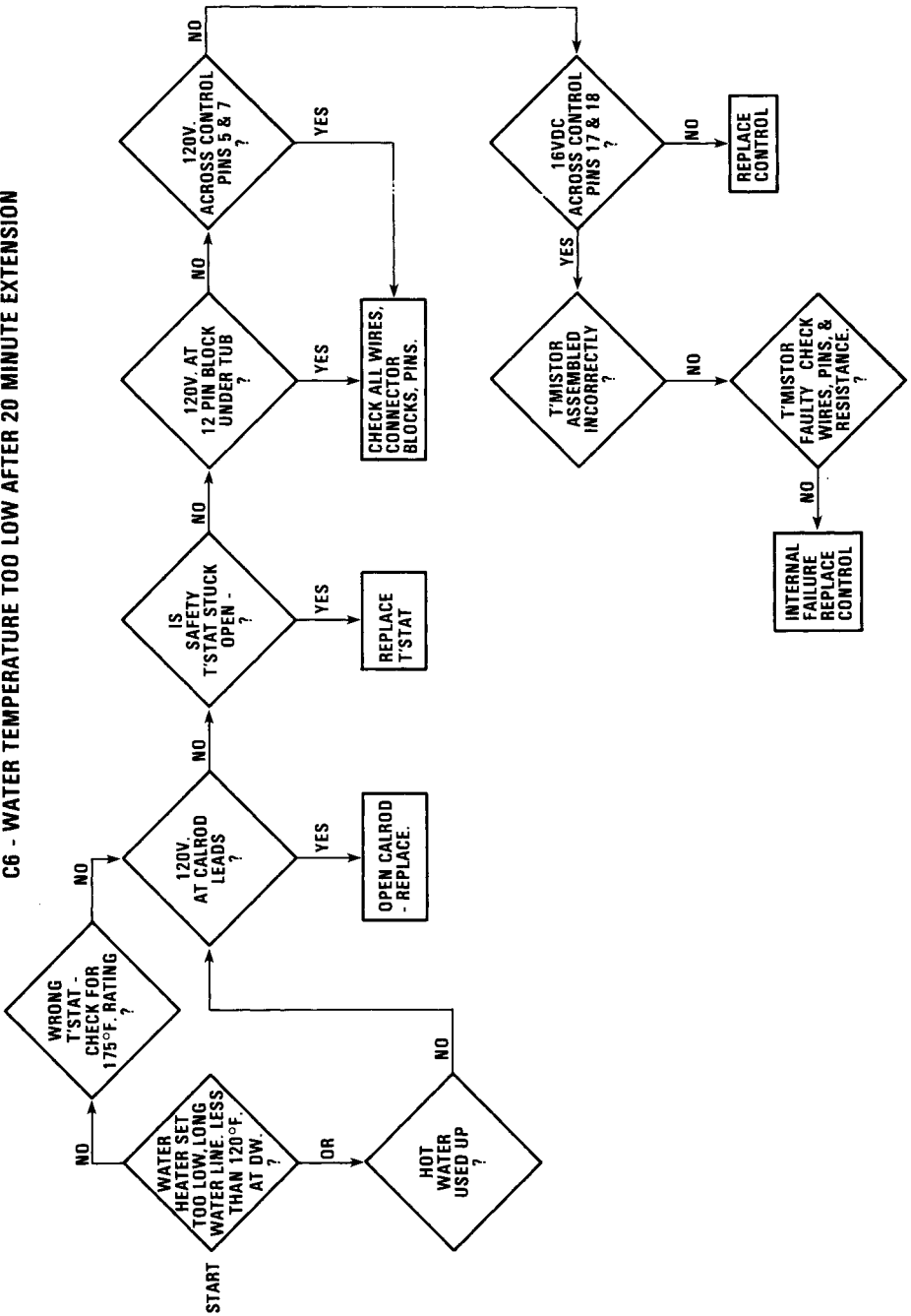
ELECTRICAL COMPONENTS

C5 - SHORT DRAIN

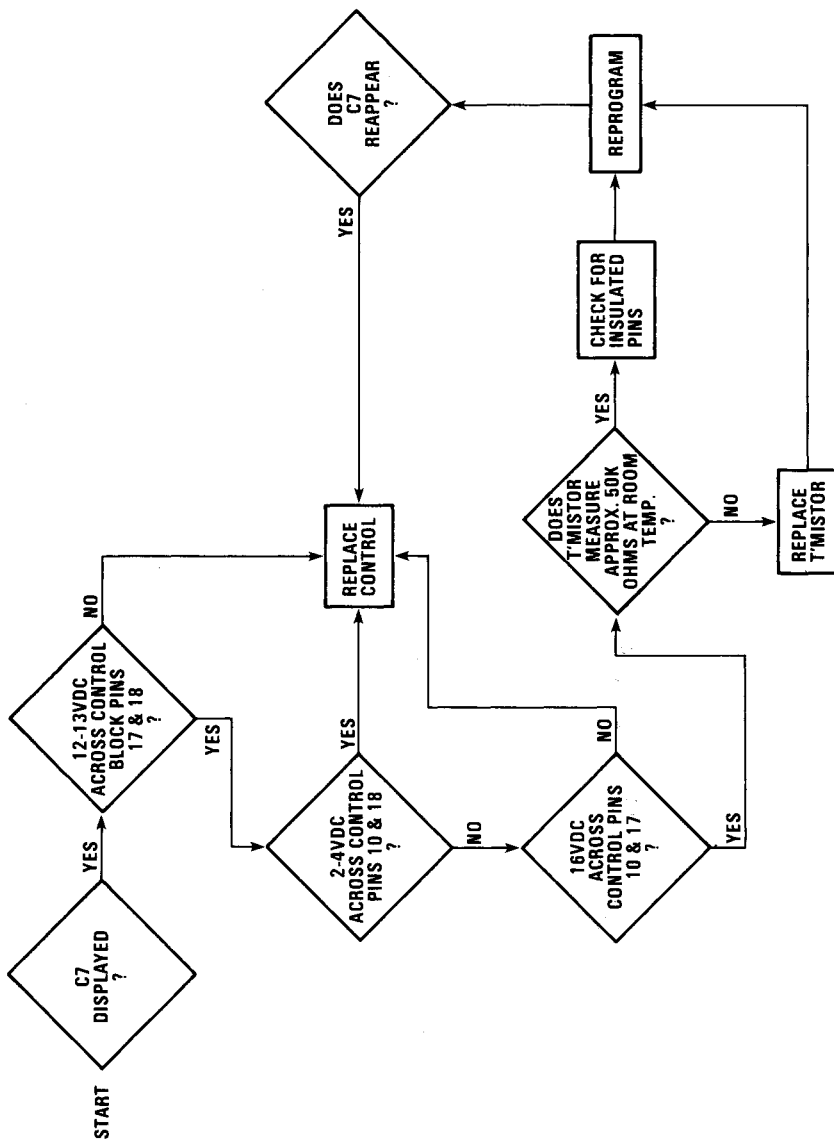


ELECTRICAL COMPONENTS

C6 - WATER TEMPERATURE TOO LOW AFTER 20 MINUTE EXTENSION

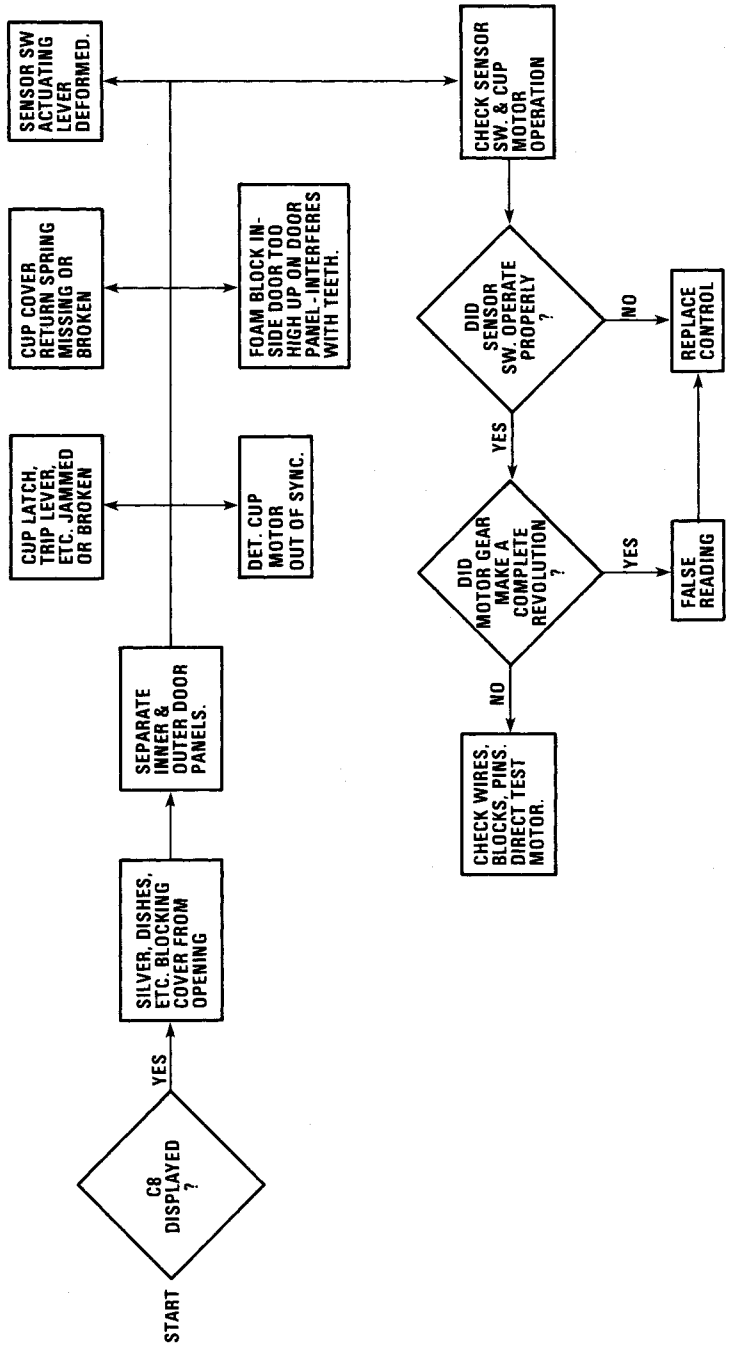


C7 - TEMPERATURE SENSOR (T'MISTOR) INOPERATIVE



ELECTRICAL COMPONENTS

C8 - 2800 - DETERGENT CUP BLOCKED FROM OPENING



MECHANICAL COMPONENTS

DISHWASHER — SECTION C

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ANTI-TIP STABLIZER, CONVERTIBLE DISHWASHERS

GENERAL ELECTRIC MODELS WITH PLASTISOL TUB — The stablizer system is designed so that when the dishwasher door is completely open, the two channel assemblies will move out and downward just touching the floor. Should additional downward pressure be applied to the door, the stablizer contacting the floor prevents tipping. Figure 1 shows the stablizer as mounted to the dishwasher.

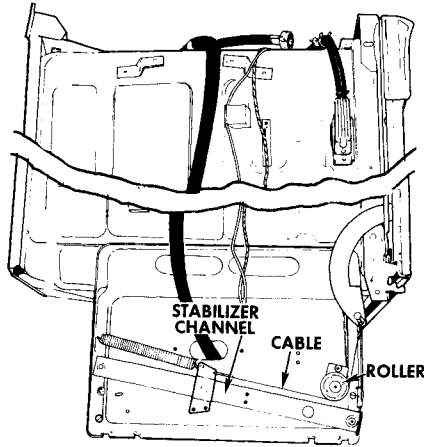


Figure 1 - Stablizer on General Electric Dishwasher, Plastisol Tub

Problems that could be encountered with stablizer are:

1. Stablizer fails to come forward when door is opened.
Cause - Cable is loose from either the door hinge or the stablizer, the cable is off the roller, or cable is broken. Remove side panel, reconnect or replace cable.
2. Door "falls" too easily - stablizer fails to retract.
Cause - Spring is not connected or is broken. Remove side panel and reconnect or replace.

PORCELAIN TUB — System has arm extensions welded to the door stops. A detailed diagram of the extension and its adjustment is shown in figure 2. There is an extension guide on each front pedestal leg. Problems that could be encountered with the anti-tip stablizer are as follows:

1. Stablizer fails to come forward - door is open.
Cause - Extension arm may be broken or loose. Remove side panel and replace damaged parts.

MECHANICAL COMPONENTS

2. Door "falls" too easily.

Cause - Spring or wire link is broken or unhooked.

3. Stabilizer fails to retract.

Cause - Arm is bent or the stop is not correctly adjusted and binding results — Spring or link may be broken.

4. Noise — If noise and squeaking is present the spring or link is rubbing the tub or the side panel. Remove the side panel and check parts for flatness. Also check door stop link for straightness. A bend at this point causes the spring to rub the tub.

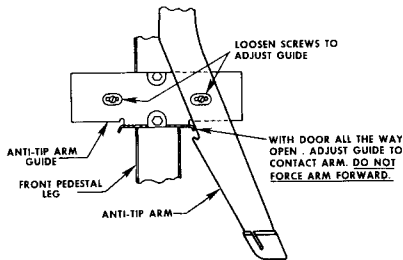


Figure 2 - Anti-Tip Adjustment

DETERGENT CUPS

All General Electric and Hotpoint Dishwashers use the same detergent cup except for the Potscrubber III Models. The detergent cup must trip at the correct time and open completely. Some water leakage into the cup is normal but the detergent must not be allowed to become soaking wet or turn into a liquid state. A cup that leaks this badly should be replaced.

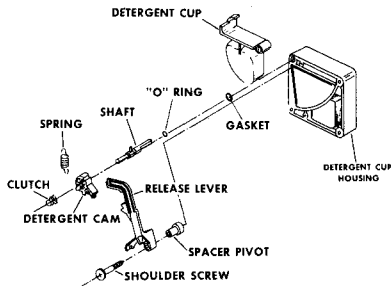


Figure 3 - Detergent cup used on most General Electric and Hotpoint Dishwashers.

MECHANICAL COMPONENTS

If cup fails to open:

1. Spring is broken or missing.
2. Cup is warped and binding.
3. Trip wire (on some cups) loose or out of hole. Reinsert in hole and bend to take up the looseness.

If the cup is warped badly enough to bind, it should be replaced.

Figure 4 shows the detergent cup used on the Potscrubber III Models. The detergent cup used on these models is a completely different design. The cup and the optional detergent cavity are molded into the inner door panel. The cover and gasket are glued together, the shaft is a separate part. The cover is actuated by a mechanical linkage between the door panels by the timer control. The shaft and cover are held in place by four "fingers" on the end of the shaft.

To remove the detergent cover or the detergent trip lever, remove the screw from end of shaft and simply press against the "fingers" with a 1/4" socket. This will cam the fingers together and the cover can be easily removed by pulling it away from the detergent cup. The detergent trip lever can be removed in the same manner. Note that the shaft has a lip seal to prevent leakage. The seal lip must be directed to the inside to prevent water from leaking past.

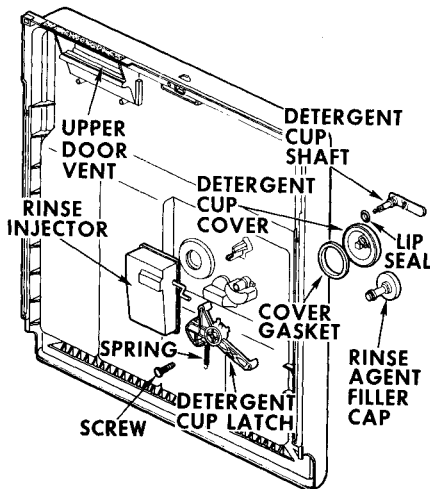


Figure 4 - Door and Detergent Cup on Potscrubber III Models.

MECHANICAL COMPONENTS

DISH RACKS

The racks used in all dishwashers are made of heavy steel wire and covered with plastisol. The epoxy repair kit can be used to repair nicks, cuts or torn places on the rack fingers and base.

Problems concerning dish racks are as follows:

- Fingers bent or broken - Bend fingers back to correct alignment or if broken, replace rack.
- Rollers bent out of line, causing rack to fall off track — Straighten rollers to original position.
- Rust marks on dishes — Inspect rack fingers for worn or bare spots in plastisol coating.

Figures 5 and 6 show the rollers being mounted to the lower rack.

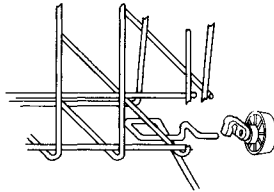


Figure 5 - Mounting roller to wire axle.

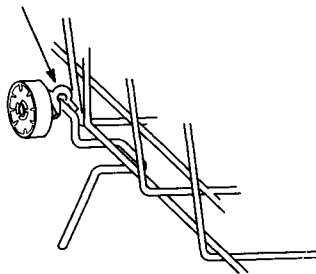


Figure 6 - Snap roller in place.

The upper rack rollers mount on the rack in the same manner as the rollers do on the lower rack. The slides do require some special attention in order to remove the end cap.

Figure 7 shows the method of bending the locking tab to remove the end cap. Reassembly of the end cap is the reverse of disassembly.

MECHANICAL COMPONENTS

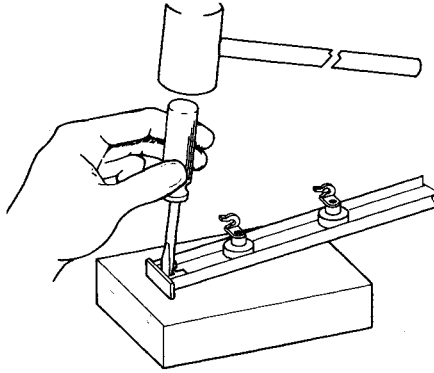


Figure 7 - Bend out locking tab.

Adjustable Upper Rack

Some Hotpoint dishwashers use an adjustable upper rack. This rack can be raised or lowered on either side or both sides according to the wishes of the user. Parts that make up the Lift-A-Level rack are shown in Figure 8.

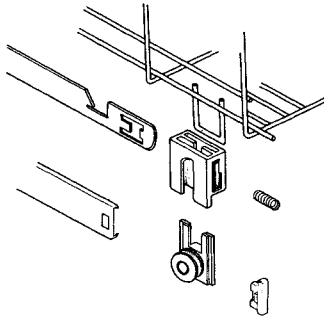


Figure 8 - Assembly parts that make up the adjustable upper rack.

DISHWASHER DOORS

Two types of inner door panels are used on General Electric dishwashers. One inner door is steel covered with plastisol, the other is plastic and used on the Potscrubber III Models. Hotpoint models use steel inner door panels that are porcelain covered.

MECHANICAL COMPONENTS

Problems concerning doors are usually as follows:

- Leaks - Check condition of door gasket. On GE models it should be installed correctly in gasket channel with no "roll-over" places. On Hotpoint models the gasket is held in place by 27 plastic fasteners. These must all be in place. If gasket is hard, split, gummy or otherwise defective it should be replaced.
- Cuts - Use the epoxy repair kit on General Electric Models. If the inner panel on a Potscrubber III Model is damaged the panel should be replaced. Chips and pin holes can be repaired on the Hotpoint doors by using the WD35X177 porcelain repair kit.
- Door won't stay down - Check for proper door spring on GE Models. (Springs may be too strong) compare color code on spring with parts catalog sheet for model in question. Install the WD1X5425 Kit on Hotpoint Models.
- Door falls too freely - Check for broken or missing spring.

General Electric Potscrubber III Models use a plastic inner door panel that may be "latched" in place and the outer door can be dropped to reveal the electrical components behind the escutcheon. If door panel has cracks or is otherwise damaged it should be replaced.

Figure 9 shows the inner door panel locked in place on the Potscrubber III Model.

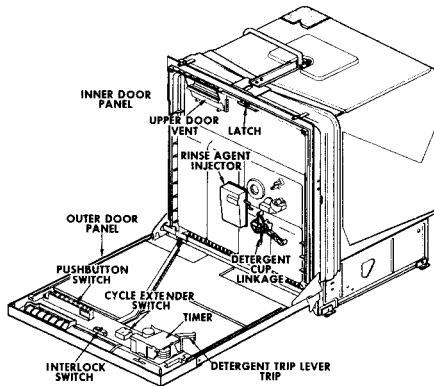


Figure 9 - Inner door panel Potscrubber III.

- Door Loose - Adjust latch strike so as to pull door in tighter. Do not remove screws - just loosen and tighten.

MECHANICAL COMPONENTS

LATCH

Figure 10 shows a typical latch assembly used on General Electric plastisol dishwashers. Potscrubber III models have a latch that snaps in place in the plastic inner door panel. Other than the method of mounting, this latch is similar to that used on other General Electric models. The Hotpoint latch is also similar to the latch used on General Electric models.

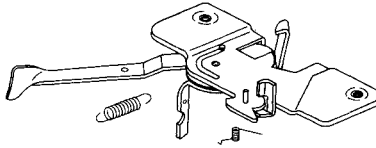


Figure 10 - Typical Latch used on General Electric Plastisol models.

Problems associated with the latch mechanism are listed below:

- Machine won't run - Check to see if "tang" on latch is actually closing interlocking switch. Bend to adjust if it does not close switch. Remove power and check continuity of switch.
- Door Leaks - Adjust strike to pull door in tighter. It is not necessary to remove strike mounting screws - just loosen, adjust strike, and tighten screws.
- Latch is hard to operate - Lubricate with a good grade of light grease such as Lubriplate.
- Dishwasher runs with door open - Check operation of latch - interlock switch - replace latch or interlock switch.

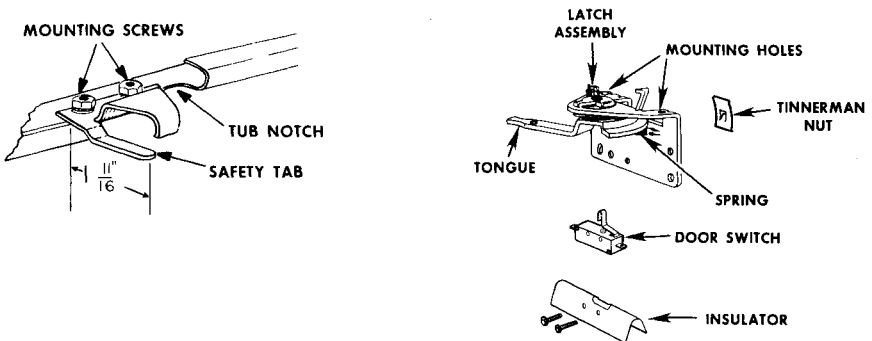


Figure 11 - Typical Latch & Switch Assembly used on Hotpoint models

MECHANICAL COMPONENTS

RINSE DISPENSER - ELECTRIC

The electric rinse dispenser is operated by a bi-metal unit that lifts a plunger that in turn, releases a measured amount of the rinse agent fluid. The Potscrubber III models use a non-electric mechanical operated injector.

Problems with the electric rinse dispenser are almost always leaks. Below are listed some known problems and corrections.

- Leaks - A leaking injector can only be detected while the dishwasher is being loaded. If it is determined that the valve is leaking, adjust the bi-metal downward to press tighter on the valve. If this does not help, replace the complete rinse dispenser assembly.
- Trips late - If the rinse fluid is noticed on the door when the door is opened to unload the dishwasher at the end of the cycle, the dispenser is tripping during the pump-out of the final rinse and is called a late tripper. Adjust the bimetal so it (when cold) almost touches the top of the rectangular opening in the valve. (See figure 12). If this doesn't work - change entire assembly.

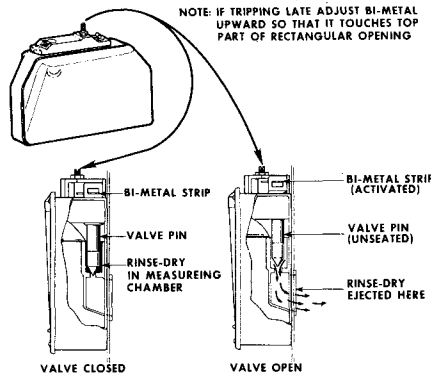


Figure 12 - Electric Dispenser - Door open and closed.

Do not over fill the reservoir tank. Four ounces should be a maximum filling. Remember, rinse conditioners only makes the water "wetter", (breaks surface tension to prevent drops) it does not soften water.

RINSE DISPENSER - MECHANICAL

Potscrubber III models use a non electric rinse dispenser. If it leaks or is otherwise damaged the entire assembly should be replaced. Figure 13 shows a convenient method of removing the rinse dispenser used on the Potscrubber III models. The dispenser has four fingers that hold it in place. It has no gasket, but has a lip seal built onto the tank spout. To remove the injector, remove the

MECHANICAL COMPONENTS

screws holding the door panels together, separate the door panels. Remove the power tower assembly from the center of the dishwasher (left hand threads). Using the center section of the power tower assembly as a tool, press the fingers inward while gently pulling the rinse injector from the door. When reinstalling, simply press in place.

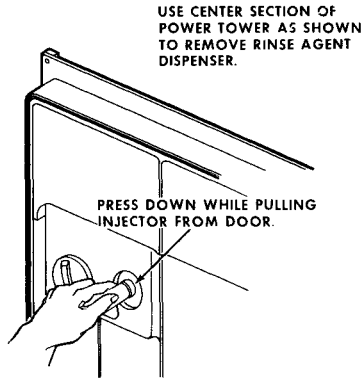


Figure 13 - Removing Rinse Dispenser from Potscrubber III (Permatuf Tub Models)

UNICOUPLE AND HOSE — CONVERTIBLE DISHWASHERS

Two types of unicouples are used: (1) On all GE and Hotpoint models up to mid-1982 production the design shown in Figure 14 is used, and (2) on GE and Hotpoint porcelain tub models manufactured mid-1982 and later the design shown in Figure 15 is used.

UNICOUPLE DESIGN TO MID - 1982

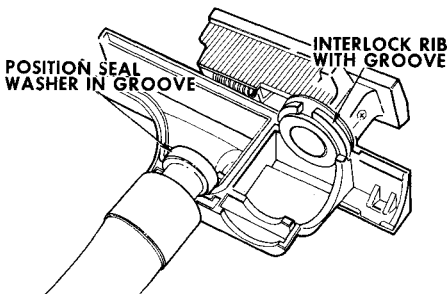


Figure 14

MECHANICAL COMPONENTS

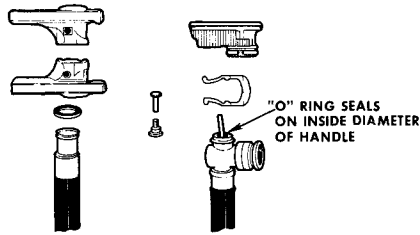


Figure 14 Con't. - Unicouple Design to Mid-1982

Problems with the unicouple and hose assemblies are usually confined to leaks around hose connections on the pressure release assembly.

If unicouple leaks at pressure release assembly when unicouple is connected to faucet:

1. Pressure release valve is not seating. Replace inlet hose and unicouple body assembly.
2. Pressure release slide is binding so as to unseat relief valve. Correct binding condition.

If the unicouple body leaks at center connections:

1. Make sure assembly of unicouple body is correct. See figure 14.
2. Make sure rubber seal washer is in groove.

If unicouple sprays out around connection to faucet or blows off faucet:

1. Repair using WD35X141 unicouple repair kit. If it is decided that the only part needed to repair the unicouple is the "O" ring, this part is available separately under catalog number WD1X5495.
2. If the gray plastic sleeve that fits over the faucet adapter is broken, a replacement is applied in the WD35X180 Unicouple Sleeve Kit. The kit consists of one thin sleeve and one thick sleeve. Use the one that matches what was originally used.

UNICOUPLE DESIGN AFTER MID-1982

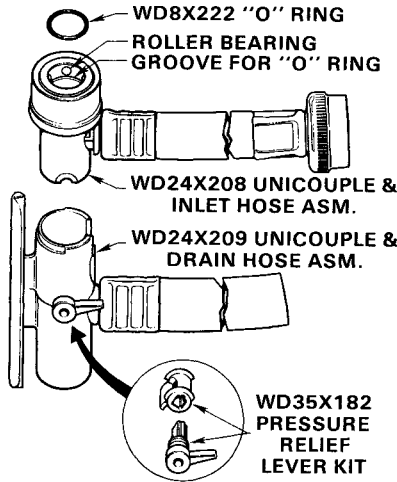


Figure 15 - Unicycle Design after Mid-1982

To correct leaks where unicycle connects to faucet adapter, install a new WD8X222 rubber "O" ring. The "O" ring is seated in a groove inside the unicycle body. To remove, pry out with scribe or small knife. Position new "O" ring in groove. See Figure 15.

To separate the two sections of unicycle body, pry apart using screwdriver between hoses. Each section is supplied complete with hose attached.

The pressure relief lever arm and actuator are supplied in a WD35X182 kit. To assemble, position actuator inside unicycle body as shown in drawing. Then push lever through hole in unicycle body, and snap two sections of unicycle body together.

FILTER SYSTEM AND DRAIN — GE PERMATUF TUB MODELS

During the wash and rinse modes of the cycle, soil bearing water falls down into the filter at the rear of the dishwasher. At any one given time, a portion of the water will be "raining" down into the filter. However, during the various wash and rinse periods, all the water will pass through the filter. The soil behind the filter will settle into the collection chamber and is held there. When the dishwasher goes into a pump out mode the water in the sump is pumped through the collection chamber, closing the piston valve to the inside of tub which at the same time opens the check valve in the bottom of filter screen. Opening of the back flow valve allows water on the tub bottom to flow from

MECHANICAL COMPONENTS

behind the filter screen into the sump. The pump flushes the collection chamber of all the food soil and pumps it down the drain.

A check valve is located in the drain line. This valve allows the water to flow in the drain direction only and prevents the head of water remaining in the high drain line from returning to the inside of the tub. The drain line check valve must close in the back flow direction or the piston valve in the collection chamber may not reopen into the tub after pump out is complete. A water head against the piston valve can hold it in the drain mode position. If the piston valve is held in the drain mode no soil can settle into the collection chamber rendering the filter ineffective.

When the tub has been voided of water, the drain line check valve closes and then the spring on the piston valve returns the valve to the wash mode position. The back flow valve in the bottom of filter screen closes and the filter system is ready for soil collection again.

Many washability complaints are caused by a partially blocked drain line. On these units washability complaints or no pump out can also be caused by a piston valve jammed open to the tub. We must always also check to make sure the back-flow valve in the filter screen is not stuck open. We must remember, too, that the check valve allows water to flow in drain direction only and it would not be possible to clear the drain line by blowing back through it or pushing a probe through it from the air gap end, unless the drain is disconnected from the check valve.

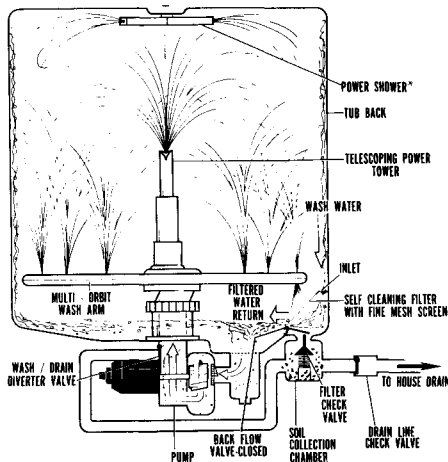


Figure 16 - Filter Operation - Wash Mode

MECHANICAL COMPONENTS

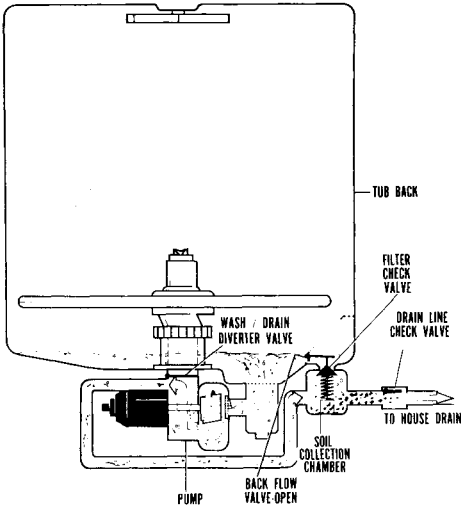


Figure 17 - Filter Operation - Pump Mode

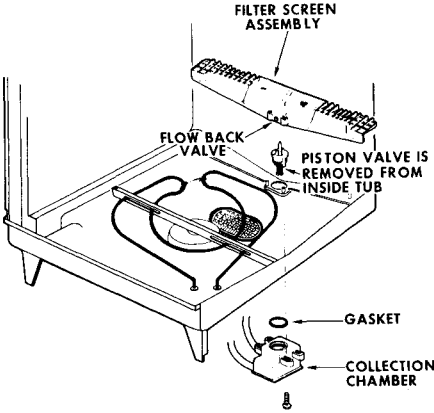


Figure 18 - Parts to Filter System

GE — BRAND PORCELAIN TUB CONVERTIBLES

With production starting in March, 1981, GE convertible dishwashers changed from models with a plastisol-on-steel tub to models with a porcelain enamel-on-steel tub.

MECHANICAL COMPONENTS

The GE brand porcelain tub convertible dishwashers are very similar in design to Hotpoint models, and therefore servicing procedures are very similar.

Where this HANDBOOK refers to service procedures for and descriptions of Hotpoint brand dishwashers, the information also applies for GE — brand models with porcelain tubs.

1983“D” MODELS (PERMATUF “C”)

Plastic Tub Models

The PermaTuf “C” models have a one piece all plastic molded tub. It has a steel channel main frame around the tub which serves as the two front legs. The two rear legs are also made of steel channel. A steel bottom liner stiffens and supports the plastic tub bottom. A cross brace is used at the front for rigidity. A tub bottom brace supports the tub when it is filled with water and prevents deformation. This tub assembly is NOT available as a replacement part.

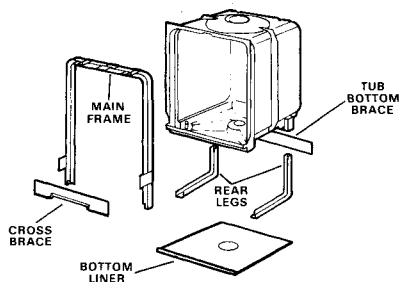


Figure 19

Door Assembly

The doors use two extensions springs as a counterbalancing means. The plastic tub models use a system which has the two springs across the front. Because spring disassembly on the plastic tub models is very simple it is usually best to remove the springs for access to any of the components under the tub.

The wire cable on each side of the springs has an eyelet on one end that hooks over a post on the door hinge, and a double eyelet on the other end into which the spring hooks are fastened. (Figure 20)

The springs and wire cables are easily disassembled from the front of the dishwasher:

1. Hold double eyelet which is attached directly to the springs.
2. Unhook springs, one at a time.

DOOR COUNTERBALANCE SYSTEM

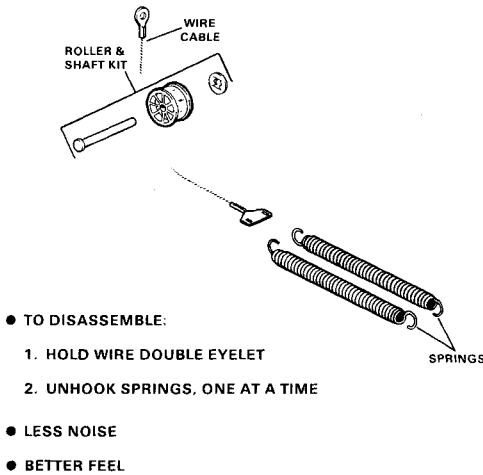


Figure 20

This counterbalance system has less potential for spring noise than previous designs, and gives a better feel as the door is opened and closed. The counterbalance system on the plastic tub models is not adjustable.

Rollers are mounted to the frame under each corner of the door. If a roller has to be replaced, the end of the shaft, which is fluted behind the tubular frame, must be cut off with a hacksaw, or else the flutes filed off. A kit is supplied which includes a different shaft and a fastener to hold pulley and shaft in place.

Care must be taken to follow the correct sequence of the cable and springs reassembly. First, hook the **single** eyelet over its post on the door hinge. Bring it around the roller and then hook the springs onto the double eyelet. **DO NOT** hook both eyelets first and then try to stretch the cable around the roller. This will bend the single eyelet and weaken it.

DISPENSERS

The plastic tub models have two washing aid dispensers — Dry Detergent and Liquid Rinse Agent. Both dispensers are loaded by the user with the door in the fully down position.

The detergent dispenser has two cavities. One has a cover which must be closed by the user. The cover will open and dump detergent at the beginning of the Wash portion of the cycle. The other cavity has no cover and will dump the detergent into the tub as the door is closed—that is—into the first Pre-Wash (Rinse). The use of this cavity is optional.

The RAD is filled by unscrewing the cap and pouring in the liquid rinse agent. The rinse agent will be automatically dumped at the beginning of the final rinse. The RAD has a capacity of 6 ounces and dispenses about 5CC per cycle.

MECHANICAL COMPONENTS

DOOR GASKET

The door gasket has a serrated lip that fits into a slot all the way around the inner door panel. The lip is cut away where the gasket bends around the lower panel corners. With a little practice you can remove the gasket without separating the two door panels. Start at one end of the gasket and force it out of its slot. To replace the gasket start at one of the cut-a-ways and press it back into the slot.

INNER DOOR PANEL

To service the dispensers, interlock switch, selector switches, timer, or cycle extender you must separate the inner and outer door panels. With the door in the open position, remove the seven Phillips head screws and the door latch knob. The inner panel can now be lifted out or it can be held in place in the closed position with the door latch.

There is a stiffening door bar which fits into slots at the top of the inner door panel. It is shaped to fit around the door latch assembly so it will only go in one way. The door latch is a slip fit into the inner door panel.

The latch cannot be closed and the interlock switch cannot be actuated unless the door is fully closed. When the door is not closed a catch on the latch prevents the latch arm from being moved from its open position. A finger which protrudes from the upper part of the tub moves the catch out of the way so that the latch arm can be moved and the interlock switch can be actuated when the door is fully closed.

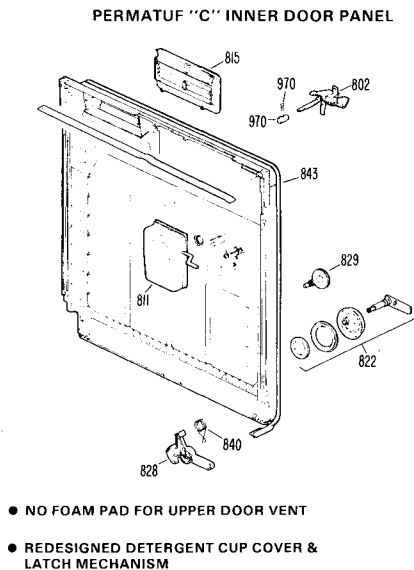


Figure 21

ALUMINUM TRIM PANEL

This trim is held onto the plastic escutcheon by tabs which are bent over.

DUAL INTERLOCK SWITCHES

These models have two interlock switches—one in each side of the power line. The switches are located at the top of the escutcheon. They are actuated by a metal plate which is held in place by a single screw.

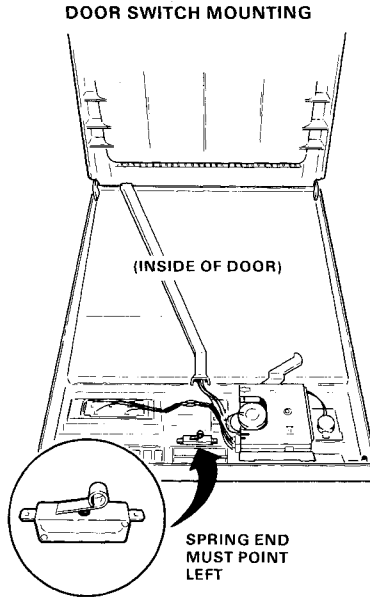


Figure 22

SELECTOR SWITCH

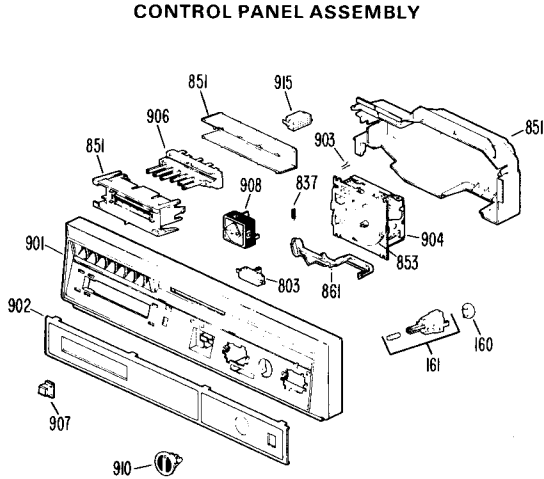
The pushbutton switch cover is held in place by a single tab on the right side and two pins and tabs on the left side.

The switch is held in a plastic mount by two tabs. This mount is held to the escutcheon by four plastic tabs. The switch buttons must be pulled off of their switch shafts before the switch can be removed from its mount. The slots for the shafts are offset to one side so the buttons must be properly oriented.

MECHANICAL COMPONENTS

TIMER/COVER

A timer cover is held in place by a tab on the left and the right. At the bottom a finger fits into a loop molded into the escutcheon. With the timer cover removed you can now see the cycle extender switch. It is held in place by two tabs.



- SNAP-ON PLASTIC COVERS
- SNAP-IN ELECTRICAL COMPONENTS
 - NO SCREWS EXCEPT TWO FOR TIMER
- BENT TAPS ON ALUMINUM TRIM PANEL

Figure 23

The timer itself is held in place by two screws and two tabs. The timer knob is held trapped between the escutcheon and the insert. When reinstalling the timer to the escutcheon the timer shaft and the knob must be correctly oriented so that they will fit together properly. Also, pull the timer lever down so that it can clear the cam.

The harness connector block fits onto the timer switch bank and is held in place by a tab on each side. To remove a wire terminal from the connector use the end of a standard paper clip to release its tang.

The wiring harness cover that runs from the timer to the bottom of the door can be removed by pressing in at the top to clear the two tabs.

TRIP LEVER & SPRING MOUNTING

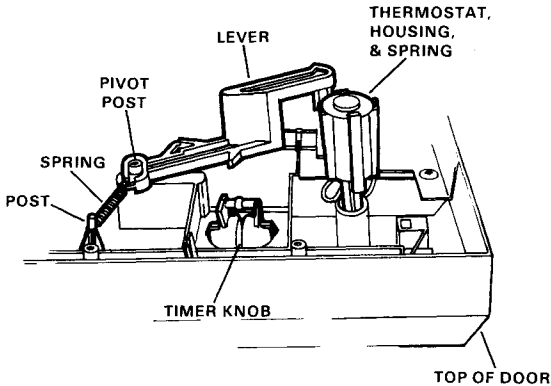


Figure 24

The external cam on the face of the timer operates the dry detergent dispenser thru the plastic detergent timer lever. This lever is mounted on a pivot and is spring loaded.

When the detergent cover is closed by the user, a serrated surface on the detergent cup latch and the pointed end on the timer lever come in contact with each other and the cup cover is held closed. At the beginning of the Wash cycle the timer cam moves the timer lever away from the the cup latch and the spring loaded latch moves part way back to its fully open position. This movement is enough to open the cup cover only. As the timer moves into the Final Rinse cycle the timer cam releases the cup latch completely and the RAD tank lever is actuated - dumping the rinse agent.

To disassemble the latch from the end of the handle shaft, use a 1/4" socket to push in the shaft fingers, while pulling off the cup and handle shaft.

To reassemble, follow these steps and refer to the drawings. (Figure 25)

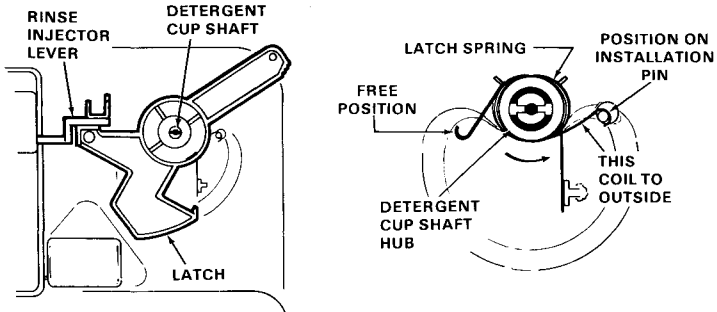
1. Place the spring on the detergent cup shaft hub in its free position. The spring coil with the hook on the end goes to the outside (toward assembler).

Wind the spring counterclockwise and position hook end on the installation pin. The straight end of the spring is held in position by a projection on the inner door.

2. Position cup with shaft handle pointing upward (cover open).

MECHANICAL COMPONENTS

DETERGENT CUP COVER & LATCH



TO DISASSEMBLE:

- PUSH 1/4" SOCKET OVER SHAFT FINGERS

TO REASSEMBLE:

1. POSITION LATCH SPRING AS SHOWN
2. POSITION SHAFT HANDLE UP (COVER OPEN)
3. POSITION LATCH AS SHOWN & PRESS ONTO SHAFT
4. TURN LATCH COUNTER-CLOCKWISE

Figure 25

3. Position latch as shown in the picture and press it onto the end of the shaft, while holding the cup and handle in place.
4. Turn the latch counter clockwise until the hook end of the spring snaps onto a tang molded into the latch.

RINSE AGENT DISPENSER

The tank mounts directly to the inner door panel.

To remove the tank, use the center section of the 3-piece power tower as a tool to press down on the fingers while pulling the tank free. (Figure 26)

MECHANICAL COMPONENTS

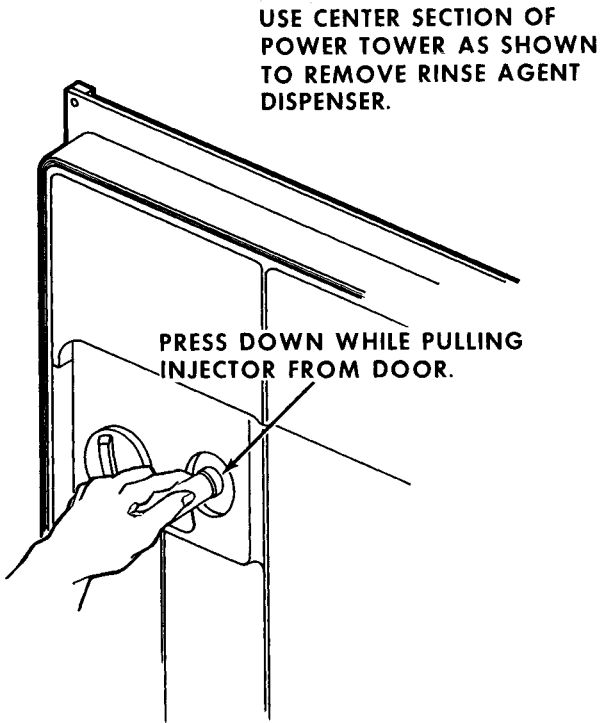


Figure 26

INNER TUB COMPONENTS

Racks

The lower rack has 6 wheels which snap on to the wire frame.

Two slight depressions have been molded into the inner door liner to avoid roll in of the lower rack when it has been pulled out for unloading. The two front rollers rest in these depressions when the lower rack is pulled out all the way.

To gain access to the other components inside the tub just lift the lower rack out.

Plastic retainer caps are used on the ends of the slides. The retainer cap can easily be removed, with just a blade screwdriver, by prying back the member that fits into the flange of the slide, and then pivoting the retainer cap inward. Assemble the cap in reverse order.

The upper rack has 4 wheels which move inside of the slides. These are also snap-on assemblies.

MECHANICAL COMPONENTS

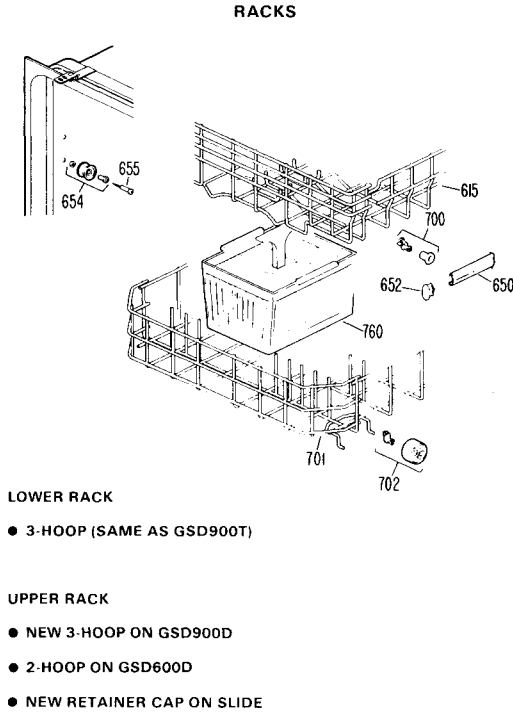


Figure 27

WATER INLET

The water inlet located on the lower left side is bonded to the tub. A curved hose on the outside of the tub goes directly to the water valve under the tub.

WASH ARMS/POWER TOWER

The lower wash arm is made of metal and is held down by the power tower. To remove the wash arm turn the power tower clockwise—left hand threads. The arm can now be lifted off of the spray arm hub. The hub, in turn, is fastened to the spray arm support by a screw down the center. The assembly of the hub and support can be unscrewed from the pump connector—R.H. threads. (Fig.28)

When removing the hub from the support be careful not to drop the plastic thrust washer and the flat metal washer underneath. When reassembling the hub to the support put the metal washer between the hub and the support. The plastic thrust washer is keyed in a slot in the hub.

The upper spray arm is plastic and is held in place with 2 screws which go thru the top of the tub and into a "U" shaped metal plate. A hose runs from the arm, left across the top of the tub and down to the pump.

MECHANICAL COMPONENTS

SPRAY ARM-WASH SYSTEM

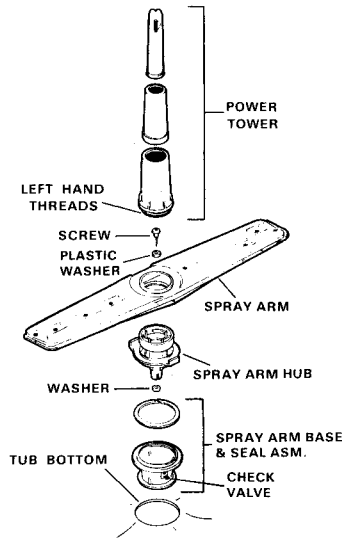


Figure 28

- NEW METAL SPRAY ARM
- NEW HUB & BASE
- NEW POWER TOWER

FLOAT SWITCH

The cover for the float switch is held in place by a single screw which also holds a heater support bracket. Under the cover the plastic float is free to move vertically. The weight of the float holds down the float stem which, in turn, keeps the float switch closed.

SUMP COVER & BAFFLE GRID

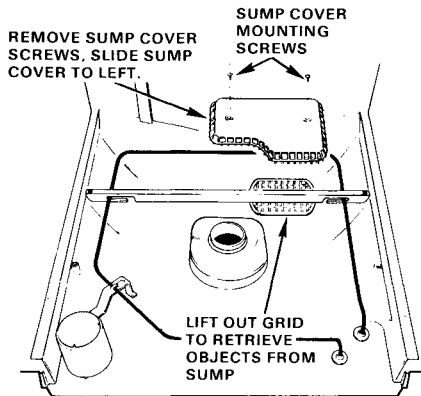


Figure 29

MECHANICAL COMPONENTS

SUMP

The sump cover at the rear is held down by 2 long screws. The sump cap or lid simply pulls up and out. (Figure 29)

With the sump cover and grid removed from the inside the tub, you can reach down into the sump boot and feel the soft food cutter and grader screen at the pump inlet. Foreign objects that block the grader may thus be removed.

HEATER

The heater has a rear support held in place by two screws. The heater is a standard calrod type element with an inner heating element and an outer sheath.

CAUTION: The sheath is not grounded. If the heating element is shorted to the sheath it could be electrically hot.

The electrical connections to the heater are under the tub.

UNDER THE TUB COMPONENTS

Heater

The ends of the heater come down thru the bottom of the tub in the right front corner. The ends protrude down about 2 inches and are held to the tub bottom by 2 speed nuts—one over each Calrod end. Spade terminals are attached to each end of the heating element. The connections to the wiring harness are insulated by a pair of plastic snap together terminal covers.

WATER VALVE

The water valve is mounted by two screws to the left front channel frame.

A rubber fill hose runs to the left side of the tub and is fastened with a clamp to the fill funnel.

The plastic fill funnel is vibration-welded to the plastic tub, and is not furnished as a replacement part.

WATER INLET SYSTEM

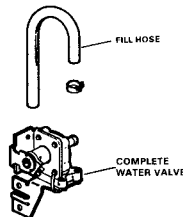


Figure 30

- FILL FUNNEL IS WELDED TO PLASTIC TUB
- LESS CHANCE FOR LEAKS AND SPLASH OUT

MECHANICAL COMPONENTS

A special insulator block is snapped on over the two water valve solenoid coil terminals. This block is anchored to the bracket, and thus prevents the harness leads from being pulled off the solenoid terminals during installation.

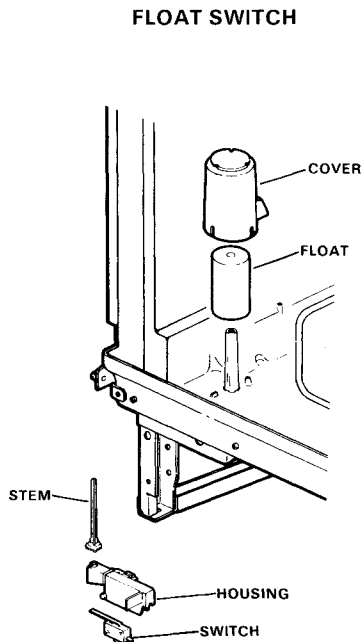
To remove the insulator block, unlatch two plastic tangs: one at front and one at harness end of block.

FLOAT SWITCH

The Float Switch is captured in a plastic housing under the tub. The float switch is not adjustable.

The housing is mounted to the plastic tub bottom by a Torx-head screw, and it has a cover that snaps in place and holds the float switch in the correct position relative to the stem. (Figure 31)

The housing also serves as an insulator over the switch terminals.



- TO REMOVE SWITCH, OPEN SNAP COVER ON HOUSING
- NO ADJUSTMENT

Figure 31

MECHANICAL COMPONENTS

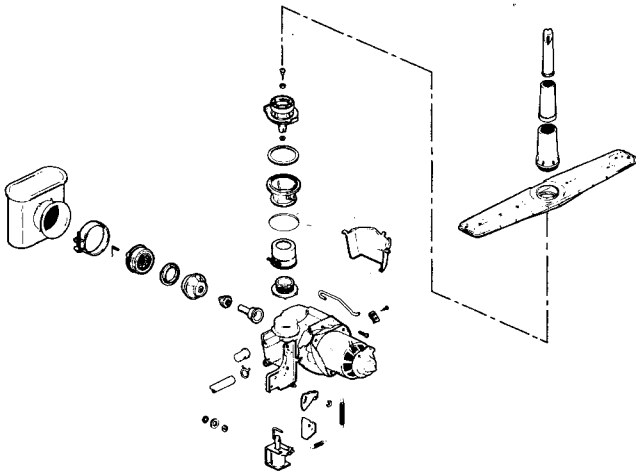
PUMP/SUMP

A wire motor hanger with a hook on one end and a speed nut on the other holds the pump mechanism to the metal tub bottom support. Only one screw is used to fasten the hanger to the mech. The mech is also supported by the pump connector and the sump inlet. There is a clamp at each location. A corbin clamp holds the drain hose to the pump.

The drain solenoid assembly is attached to the mech with 3 screws. A plastic insulator block is used over the harness lead terminals to the drain solenoid. The block is anchored to the solenoid to prevent the leads being pulled off during installation. The block is held together by two tangs: one on top of the block and one at the harness end.

Notice the flexible plastic part that clips into slots in the metal plate under the tub. This is a heat shield that keeps some hot air from the motor from blowing onto the electrical junction box, and thus keeps the temperature from rising above the acceptable limit.

MOTOR/PUMP MECHANISM & BOOTS



- ALL G.E. & HOTPOINT MODELS USE SAME WD26X74 MECH
- RECOMMEND PULL DISHWASHER TO REPLACE MECH
- SNAP INSULATOR COVERS USED ON MOTOR LEADS AND DRAIN SOLENOID TERMINALS

Figure 32

Because of the limited space under the tub to work in, and because the plastic tub models are light weight and easy to handle, it is recommended that the dishwasher be pulled to replace the mech.

Two plastic insulator cylinders are used over the connector terminals on the

MECHANICAL COMPONENTS

black wire motor leads. The insulators capture the terminals and prevent them from being pulled apart from the harness leads. To remove these, use pliers to unfasten the three tangs that hold the cylinder halves together.

If, because of thick carpeting or some other installation condition, the serviceman decides to remove the mech with the dishwasher in place under the countertop, it can be done but with some difficulty because of limited vertical space.

When replacing a mech with the dishwasher in place, it is recommended that the seven steps noted in the chart be followed in the sequence indicated. Following these steps should give the most reliable results because the mech can be moved around somewhat to correctly position the two boots and clamps.

REPLACEMENT OF MECHANISM ON PLASTIC TUB MODELS

1. Lubricate the sump and connector boots with soap, Rinse-Aid fluid, etc. Loosen clamps in preparation for installation.
2. Carefully "work" the mechanism past the hanger bracket and into the sump.
3. Rotate the mechanism upward and into the connector in the center at the pump outlet.
4. While holding the mechanism with the left hand, slide the motor hanger through the hanger clamp and install the hanger on the clamp on the motor.
5. Make certain the center connector boot is in place. Position the clamp and tighten.
6. Check the sump to pump connection by feeling the flange on the sump. Position the clamp and pull boot forward against pump. Tighten clamp.
7. Replace power shower and drain line to pump. The power shower outlet is the top outlet on the pump. The drain is the lower outlet on the pump. Do not get the hoses mixed.

ELECTRICAL CONNECTION BOX

House wiring connections are contained in a metal box in the right front corner.

MOTOR/PUMP MECHANISM

DISHWASHERS — SECTION D

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MOTOR/PUMP MECHANISM

SERVICING-TROUBLESHOOTING

The motor/mechanism can be removed from the dishwasher without removing the dishwasher from under the counter. When removing the motor/mechanism from General Electric Potscrubber III Model, you might find it easier to remove the dishwasher from under the counter and lay it on its back. This eliminates having to remove a quantity of water inside the sump. A procedure for removing the motor/mechanism is found on pages D-4 and D-12 of this HANDBOOK.

CAUTION: Always remove electric power from dishwasher before servicing motor/mechanism.

These are tests and service that can be performed without removing the motor/mechanism from the dishwasher. The most common malfunctions are listed below:

Leaks

Determine source of leak with mechanism on dishwasher. Hose clamps can be tightened and connector boots replaced without removal from machine.

Mechanism Fails to Operate

Remove power from dishwasher. Attempt to turn motor fan blades by hand. If tight or completely jammed, check for:

1. String or other material around cutter shaft. Remove connector boot, anything wound around cutter spring is obvious.
2. Check for tomato seeds, blackberry seeds, etc., caught between wear ring and pump impeller. Remove cutter blade shaft, grader nut (left hand thread), and wear ring.
3. Check motor according to procedure outlined elsewhere in this section.

Fails to Pump Out

Operate gate arm mechanism by hand. Check for binds and jams. Check solenoid coil, disconnect leads from solenoid and test for continuity with ohmmeter. Check for grounds in coil. If coil is okay, trouble is harness or timer control.

Check for drain line blockage. Check especially any 90° bends or other potential blockage areas for collapsed hose or tubing. Look for pieces of cup handles, glass or other foreign matter at these points. The motor/mechanism is easily removed from the dishwasher should it be necessary. It is not necessary to keep the mechanism in any particular position since it contains no excess oil.

MOTOR/PUMP MECHANISM

However, some water will be left in the pump housing, sump, and connector boot. The Potscrubber III models retain nearly a quart of water which must be removed from the inside of the dishwasher. Remove the sump cover and use a syringe or sponge to remove the water. Time can be saved by removing the dishwasher from under the counter. If dishwasher is removed, it is not necessary to remove the water from the sump. It is also not necessary to turn water and electric power off on dishwashers equipped with a module. Unplug the electric power at the front of the module.

After mechanism has been drained (or dishwasher removed and turned over on its back) it can be removed as follows:

1. Remove all power to dishwasher. Open circuit breaker or unplug at module.
2. Remove drain hose.
3. Disconnect power leads to motor and drain solenoid.
4. Loosen clamp screws at pump side of connector boots.
5. Remove clamp on tub bottom.
6. Carefully remove mechanism.

MAIN PUMP MOTOR

The main pump motor is a shaded pole type. It has no start windings and does not require a starting relay.

To test the motor it is not necessary to remove the motor from the dishwasher.

1. Disconnect power from dishwasher. Turn fan blades. Check for free turning and absence of binds.
2. If motor shaft is free, disconnect the two motor leads and connect to a test cord.

DOMESTIC MODELS: Plug directly into 115 Volt outlet.

EXPORT MODELS: Plug directly into 220 Volt outlet.

3. If motor runs, trouble is in harness, timer control, power supply, pushbutton switch, or interlock switch. If motor fails to run, overload is bad or winding is open. In either case, the mechanism must be replaced.

It is very important that all motors be direct tested. Many "good" motors are needlessly replaced because a direct test was not made before condemning the motor.

The motor can be checked for grounds with an ohmmeter. Place one probe on a motor lead and the other probe on the motor housing, making sure the probe touches bare metal. A continuity reading here indicates a grounded motor which should be replaced. Be sure and check both leads for grounds.

MOTOR/PUMP MECHANISM

If the motor runs part way through the cycle and then stops, the trouble is in the overload and is referred to as a "nuisance trip". This also requires replacement of the entire motor/mechanism assembly.

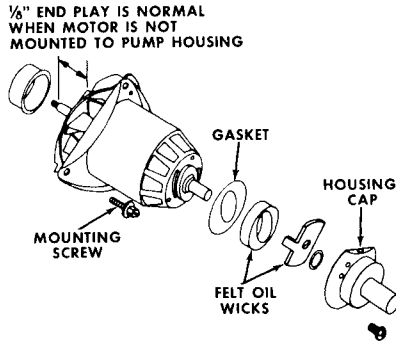


Figure 1 - Parts of Main Pump Motor

The main pump motor has end play, as shown in Figure 1. This amount of end play is normal. When the motor is installed on the pump housing and the pump impeller is screwed in place, the spring on the seal draws the motor shaft forward against the thrust bearing, eliminating noticeable end play.

When lubricating the wicking, lubricate with a good grade of light oil.

MOTOR SPECIFICATION

With a full load of water in the dishwasher, the main pump motor has the following specifications:

DOMESTIC UNIT: 115 VOLTS
4.5 — 4.9 AMPS
305 — 390 WATTS

EXPORT UNITS: 220 VOLTS
2.3 — 2.7 AMPS
280 — 310 WATTS

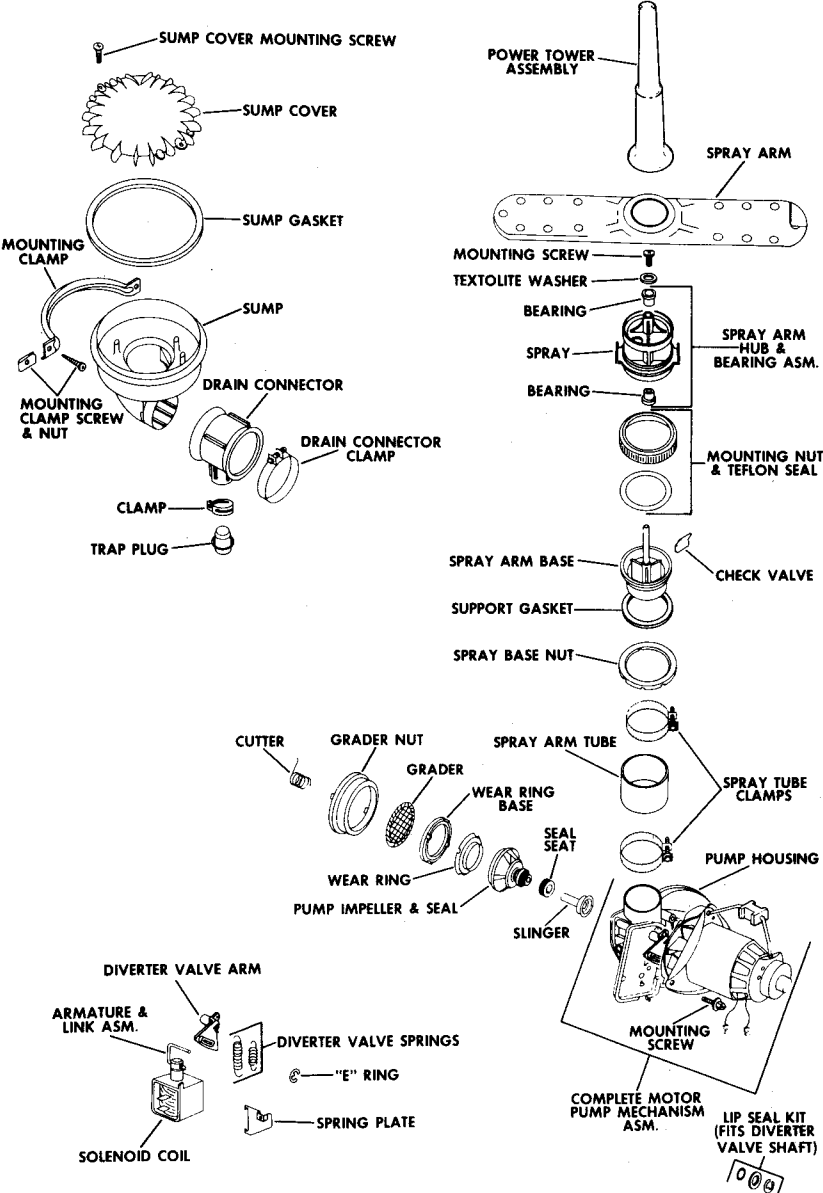
DISASSEMBLY — MOTOR/PUMP MECHANISM

Figure 2 is a complete breakdown of the shaded pole motor/mechanism, showing the correct name for each part. To disassemble and service, proceed as indicated. Many services and tests can be performed without removing the motor/mechanism from the dishwasher. However it is recommended that the motor/mechanism assembly be removed if a complete disassembly is to be made.

MOTOR/PUMP MECHANISM

To completely disassemble after the mechanism is removed from the dishwasher, follow the steps listed in the sequence below.

The Motor/Pump Mechanism disassembly is the same for all GE and Hotpoint dishwashers.



(ART NO. WD7553)

Figure 2 - Wash System and Mechanism (Not PermaTuf Tub)

MOTOR/PUMP MECHANISM

1. Remove Grader Nut.

Use a flat-side screwdriver or similar tool. Grader nut has LEFT HAND THREADS; TURN CLOCKWISE to remove.

2. Remove Grader, Wear Ring Base, and Wear Ring.

Figure 3 shows these parts. Pull the grader off over the cutter spring. Note that movement is possible between the wear ring and the wear ring base. This movement allows the wear ring to "float", following the eccentricity of the pump impeller.

If tomato seeds or other types of small foreign objects wedge between the wear ring and pump impeller, this can cause the mechanism to bind.

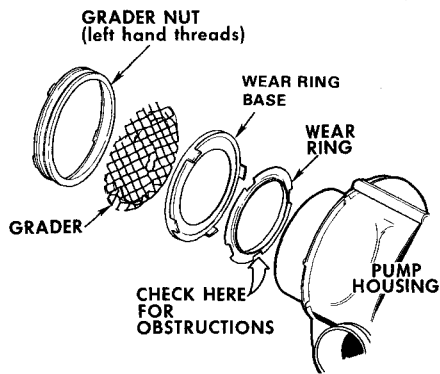


Figure 3 - Grader, Wear Ring Base, Wear Ring

3. Remove Cutter Spring

Hold the pump impeller with one hand, and use long-nose pliers to back the cutter spring off. Grasp the bottom edge of the spring coil, and shown in Figure 4, and turn counterclockwise to remove.

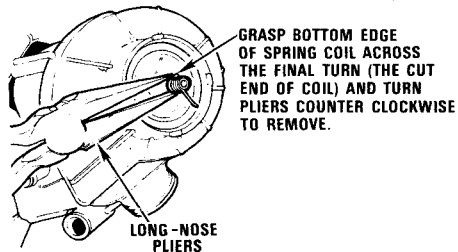


Figure 4 - Removing Cutter

4. Remove Pump Impeller

Hold fan blade and turn pump impeller counterclockwise. If impeller is tight, turn with a pair of channel-lock pliers, grip the hub directly behind the threads. Do not damage the threads. Impeller has right hand threads.

MOTOR/PUMP MECHANISM

5. Remove Seal

The seal presses on the metal hub on the motor side of the pump impeller. It is removed by pulling apart as shown in Figure 5. The seal ceramic remains in the pump housing. Notice the plastic sleeve on the motor shaft. This is the slinger. Any water passing between the seal and seal ceramic will pass along this plastic sleeve to the outside of the pump housing, where it will be thrown off as the motor shaft rotates.

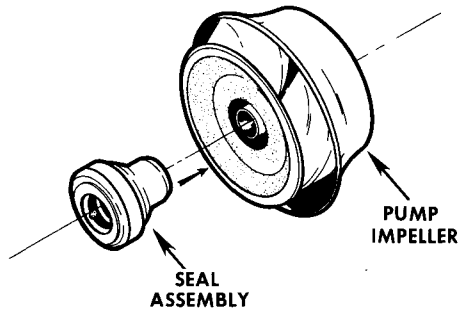


Figure 5 - Pump Impeller and Seals

6. Remove Pump Housing From Motor

Three screws secure the pump housing motor. An additional screw passes through a notch in the end bell and into the solenoid mounting plate. This screw references the motor to the pump housing so support hanger and pump housing will all be in proper alignment.

7. Remove Pump-Out Solenoid

When removing the solenoid in a complete disassembly, remove the entire mounting plate. This is accomplished by removing parts in the sequence that follows:

- a. Remove the "e" ring on the gate arm shaft.
- b. Remove spring from gate arm.
- c. Remove two screws holding solenoid plate to pump housing.
- d. Remove gate arm and lift solenoid off pump housing.

Solenoid can then be easily removed from plate. Test solenoid with ohmmeter.

Solenoid coil resistance —

40 ohms - Domestic Models

160 ohms - Export Models

If coil is open, replace. A coil with a charred appearance would likely be faulty. Take an accurate resistance reading and replace coil if different. Check the coil for grounds by placing the probes of the ohmmeter between the coil frame and each of the two terminals. Any continuity reading here would indicate a grounded coil and it should be replaced.

MOTOR/PUMP MECHANISM

8. Pump Housing

The pump housing contains the seal ceramic, the seal, the gate and shaft assembly. The gate position determines whether the machine is washing or pumping out.

To remove the seal ceramic, use a screwdriver or pen knife to gently pry around edge of the rubber seal seat until the seal ceramic is removed. Always pry between the rubber seal seat and the pump housing so the rubber seal seat is removed along with the seal ceramic. The seal ceramic is then easily removed from the rubber seal seat.

The gate arm seal can also be removed. This is as far as the pump housing can be disassembled. To remove the seal from the gate arm shaft, remove the "E" ring and stainless steel flat washer, see Figure 6. Carefully pry the lip seal out of the pump housing using a sharp pointed tool such as an awl. It is advisable not to remove the lip seal if it is not to be replaced. If gate or arm is faulty, replace pump housing.

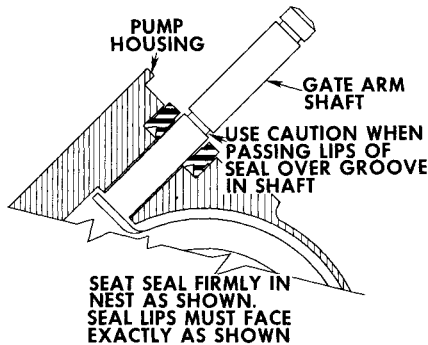


Figure 6 - Installing Lip Seal On Gate Arm Shaft

REASSEMBLY — MOTOR/PUMP MECHANISM

The reassembly of the pump housing is a reverse of the disassembly. Begin by installing the gate arm seal and the seal ceramic. Figure 6 shows the correct method of installing the gate arm seal. Notice the position of the lips. They must be on the shaft exactly as shown or leak will occur at the sealing point. Moisten the seal and carefully slide it on the shaft. Use extra caution when sliding the seal over the "E" ring grooves. Use a slight twisting motion to ensure the lips remaining in the correct position. Using a pen knife or small screwdriver, seat the seal in the pump housing. Reinstall the flat stainless steel washer and the "E" ring.

The seal seat and ceramic is installed by moistening the seal seat with soapy water and pressing into the pump housing. Make certain it is pressed in completely and straight. Press in with fingers.

MOTOR/PUMP MECHANISM

Install Solenoid Plate

If solenoid coil has been removed from solenoid plate, replace coil on plate and then install plate on pump housing.

Check for correct mechanical operation by manually pressing armature down in solenoid coil. It should operate smoothly and be free from binds. Notice that the armature bottoms in the coil before the gate is completely closed and that to finish closing the gate requires considerably more force since it is necessary to work against the force of the kick back plate spring. This is normal. The solenoid simply starts gate to close. The pressure of the water in the pump housing snaps it completely closed and the water is pumped out the drain opening. When the water is gone, the gate arm spring and kick back plate spring return the gate to the normal position for wash and rinse.

Never operate unit without kick back plate spring in an attempt to improve pump out. If pump out is not complete, check for drain stoppage or some other reason.

Install Motor

Place slinger on motor shaft as shown in Figure 7. Next place a plastic centering sleeve over the slinger. Fasten motor to pump housing using the three screws. Be sure motor is correctly referenced. Notch in front motor end shield is opposite tab on solenoid plate. Replace screw. When motor is securely tightened to pump housing, REMOVE CENTERING SLEEVE. The centering sleeve is used to make sure the motor shaft runs in the center of the seal ceramic. If the centering sleeve is not available, use extra caution to center the motor shaft. If the seal runs off the ceramic, a leak will result.

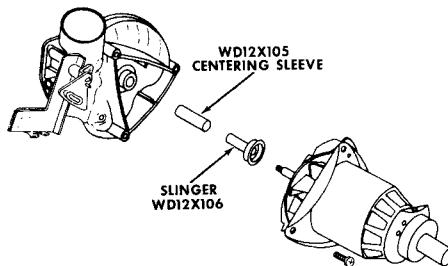


Figure 7 - Centering Sleeve Insures Proper Centering of Motor Shaft

Install Impeller and Seal

The seal is pressed on the motor side of the pump impeller, the reverse of the method shown in Figure 5. Lubricate the face of the seal with a light grease, such as vaseline. This will enable the motor to run with the seal "Dry" for not more than five minutes.

MOTOR/PUMP MECHANISM

Install Pump Impeller

Holding the motor fan, press in on the pump impeller to compress the seal and tighten on motor shaft. The impeller has right hand threads. Tighten with corbin pliers, but use caution not to damage the area around the hub.

Install Wear Ring, Wear Ring Base and Grader

These parts must be installed exactly as shown in Figure 3. The wear ring goes in place first with a lip toward the impeller. This is followed by the wear ring base and then the grader.

Next, install the grader nut. This has left hand threads. Tighten enough to keep the grader from turning but not enough to cause a bind between the wear ring and pump impeller.

If you shake the motor mechanism, you may notice a "rattle". This is the floating wear ring moving in the wear ring base and is a normal condition. This rattle disappears when the mechanism is operating with water.

Install Cutter Blade (Spring)

The cutter spring screws into the pump impeller shaft. It has a right hand thread. Hold motor fan and tighten cutter securely. Do not overtighten.

REMOVAL OF MECHANISM — PERMATUF TUB MODELS

Before removing the Motor/Mechanism, check the sump to make sure there is nothing blocking the cutter. Proceed as follows:

1. Inside dishwasher, remove sump cover by removing the two end screws. It will also be necessary to remove the screws holding the calrod support.
2. Slide the sump cover to the left and reach down into the sump and check for a possible jam. See Figure 8.

MOTOR/PUMP MECHANISM

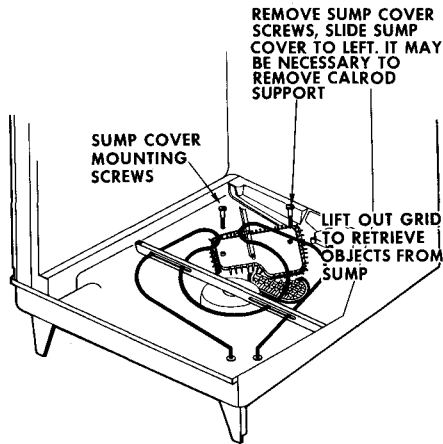


Figure 8 - Remove Sump Cover on Potscrubber III Models

Remove Motor Mechanism

Remove all power by disconnecting at module plug.

1. Remove all water from the sump. This can best be done by removing the sump cap and cover from inside the dishwasher and using a syringe or a sponge to soak up all water from the sump.
2. Underneath the dishwasher, at the front, remove the drain line from the check valve, air gap side. Remove check valve.
3. Disconnect motor, pump solenoid and ground leads.
4. Remove pump-out solenoid mounting plate from mechanism. Remove power shower hose and drain hose from pump housing.
5. Loosen sump clamp screw. Loosen connect clamp at pump outlet (to inside of dishwasher).
6. Remove motor hanger and remove motor pump assembly.

REPLACEMENT OF MECHANISM ON GE PERMATUF TUB MODELS

Reinstallation, in general is a reverse of removal. Lubricate the sump and connector boots with soap, rinse-aid fluid, etc. Loosen clamps in preparation for installation.

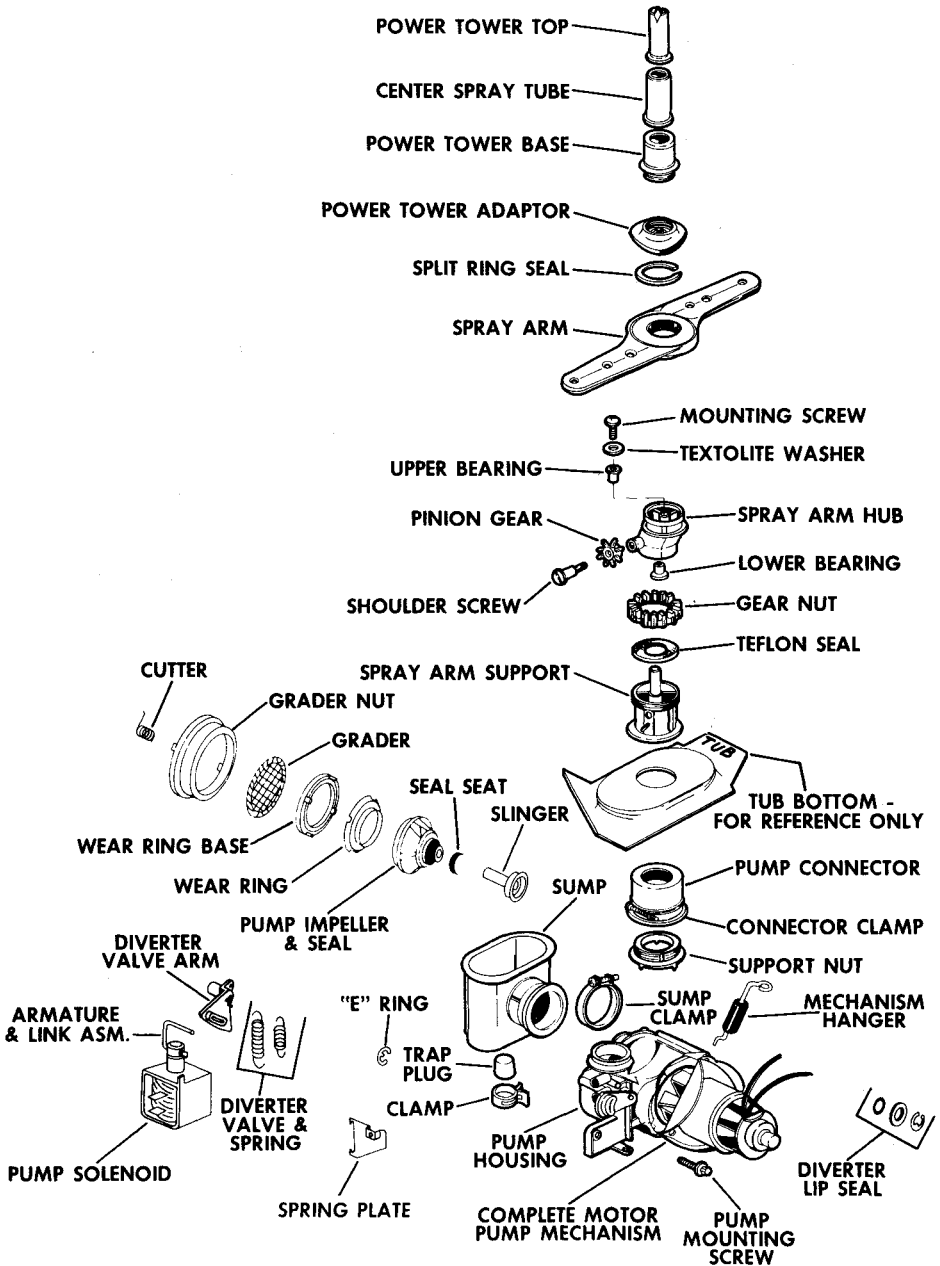
1. Carefully "work" the mechanism past the hanger bracket and into the sump.
2. Rotate the mechanism upward and into the connector in the center at the pump outlet.

MOTOR/PUMP MECHANISM

3. While holding the mechanism with the left hand, slide the motor hanger through the hanger clamp and install the hanger on the clamp on the motor.
4. Make certain that center connector boot is in place. Position the clamp and tighten.
5. Check the sump to pump connection by feeling the flange on the sump. Position the clamp and pull boot forward against pump. Tighten clamp.
6. Replace power shower and drain line to pump. The power shower outlet is the top outlet on the pump. The drain is the lower outlet on the pump. Do not get the hoses mixed.

Figure 9 is a complete breakdown of the parts on a GE brand PermaTuf Tub Model.

MOTOR/PUMP MECHANISM



(ART NO. WD7554)

Figure 9 - Wash System and Mechanism (PermaTuf Tub)

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CHART #1

DISHWASHER WASHABILITY COMPLAINT DIAGNOSIS

(USE WITH CHART #5 ON POSSIBLE CUSTOMER EDUCATION FAULTS)

STEP 1. SET UP

- (a) LATCH DETERGENT CUP COVER (NO DETERGENT)
- (b) TURN TIMER DIAL TO START OF DETERGENT WASH PERIOD
- (c) CLOSE & LATCH DOOR
- (d) PUSH TIMER DIAL TO START (IF REQUIRED)

STEP 2. WATER FILL

- (a) TIME DURATION - SHOULD BE 1 1/4 MINUTES (FILL OF 17 1/2 PINTS)
- (b) CHECK WATER LEVEL IN TUB - 1/2" UNDER CALROD \pm 1/2"

OK



NO WATER
CHECK: <ul style="list-style-type: none">● CUTOFF IN INLET LINE● WATER VALVE SCREEN● VOLTAGE AT WATER VALVE COIL● WATER VALVE OPERATION● TIMER CONTACTS● PUSHBUTTON SWITCH● DOOR LATCH

LOW WATER LEVEL
CHECK: <ul style="list-style-type: none">● WATER VALVE SCREEN● KINKED INLET LINE● LOW INLET P.S.I.● FLOAT SWITCH CUTS OFF EARLY

HIGH WATER LEVEL
CHECK: <ul style="list-style-type: none">● FILL CONTINUES UNTIL FLOAT SWITCH CUTS OFF. TIMER MOTOR INOPERATIVE. CHECK VOLTAGE.

DIAGNOSIS

CHART #2

DISHWASHER WASHABILITY COMPLAINT DIAGNOSIS (continued)

STEP 3. WASH ACTION

- (a) LISTEN TO SOUND OF WASH ARM TURNING - SHOULD BE 10-30 RPM
- (b) WASH SPRAY SOUND SHOULD BE FORCEFUL
- (c) CHECK THAT NO WATER GOES OUT DRAIN LINE

OK



LOW RPM OR WEAK SPRAY FORCE
CHECK:
<ul style="list-style-type: none">● PUMP GRADER SCREEN-CLOGGED● FOREIGN OBJECT IN PUMP● WASH ARM OR POWER TOWER JETS CLOGGED● FOREIGN OBJECT IN WASH ARM SYSTEM● TEFLON SEAL GASKET DEFECTIVE● FOR METAL WASH ARMS, ADJUST END JETS● MAIN MOTOR WINDING VOLTAGE● MAIN MOTOR WINDING OPEN

HIGH RPM
CHECK:
<ul style="list-style-type: none">● FOR METAL WASH ARMS, ADJUST END JETS

WATER OUT DRAIN LINE DURING WASH
CHECK:
<ul style="list-style-type: none">● PUMP-MECH GATE VALVE GASKET MISSING● FOREIGN OBJECT NOT ALLOWING GATE VALVE TO CLOSE● PUMP OUT - SOLENOID SPRING MISSING

STEP 4. DETERGENT DISPENSER

- (a) TURN TIMER DIAL AND LISTEN FOR CUP OPENING IN DETERGENT WASH PERIOD

OK



CUP DOES NOT OPEN
CHECK:
<ul style="list-style-type: none">● CAKED DETERGENT CUP● DETERGENT CUP MECHANISM● TIMER LINKAGE TO CUP

CHART #3

DISHWASHER WASHABILITY COMPLAINT DIAGNOSIS (continued)

STEP 5. PUMP OUT

- (a) TURN TIMER DIAL TO START OF PUMP OUT
- (b) TIME DURATION OF PUMP OUT - 40 SECONDS IS NORMAL
- (c) IF LONGER PUMP OUT, CHECK THAT IT IS COMPLETED PRIOR TO NEXT FILL.

OK

PUMP OUT TOO LONG

(a) DISCONNECT DRAIN HOSE AT PUMP; CONNECT LENGTH OF 1/2" I.D. RUBBER HOSE AND EMPTY INTO SINK

(b) FILL TUB AND TIME DURATION OF PUMP OUT

PUMP OUT TOO LONG

PROBLEM IS IN DISHWASHER.

CHECK:

- FOREIGN OBJECT IN PUMP
- PUMP GRATER SCREEN CLOGGED
- DEFECTIVE MOTOR - PUMP MECH.
- GATE VALVE NOT OPENING FULLY

PUMP OUT OK

PROBLEM IS IN DRAIN LINE.

CHECK:

- DRAIN HOSE KINKED OR BLOCKED
- AIR GAP BLOCKED
- DRAIN LINE KINKED, BLOCKED, TOO LONG
- DISPOSER HOPPER NOT EMPTY

NO PUMP OUT

CHECK:

- DRAIN OUT SOLENOID COIL VOLTAGE
- SOLENOID COIL OPEN

DIAGNOSIS

CHART #4

DISHWASHER WASHABILITY COMPLAINT DIAGNOSIS (continued)

STEP 6. INTERMITTENT FAILURES

CHECK FOR THESE POSSIBLE FAILURES IF STEP 1 THRU STEP 5 IS OK:

(a) MAIN MOTOR OVERLOAD OPENS WHEN MOTOR HEATS UP

CHECK:

- CLAMP END OF MOTOR SHAFT WITH VISE GRIP PLIERS. APPLY POWER TO COLD MOTOR. OVERLOAD SHOULD NOT TRIP IN LESS THAN 2 MINUTES.
- IF OVERLOAD TRIPS, REPLACE PUMP-MECH

(b) WATER VALVE COIL OPENS WHEN COIL HEATS UP

CHECK:

- OPERATE WATER VALVE UNTIL COIL IS WARM - 7 COMPLETE FILLS
- IF NO FILL, REPLACE WATER VALVE

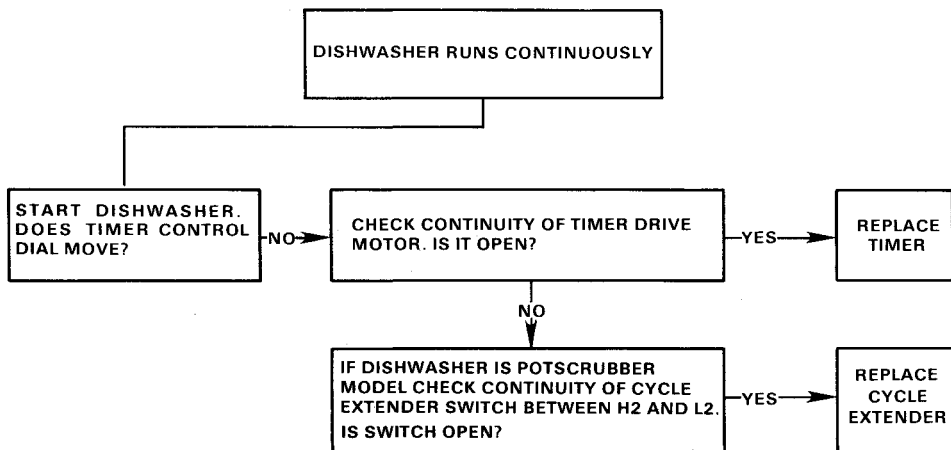
CHART #5

POSSIBLE CAUSES OF WASHABILITY COMPLAINTS

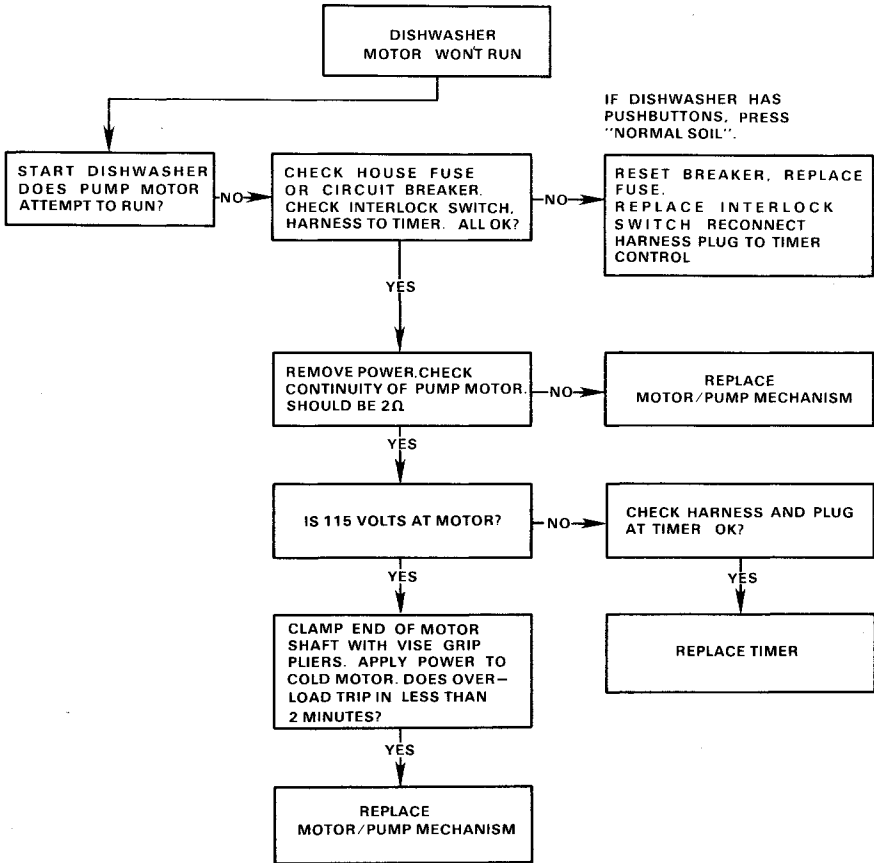
CUSTOMER EDUCATION FAULTS

- INLET WATER NOT 140°F. MINIMUM (OR 120°F. FOR MODELS INTRODUCED 1982 & LATER)
- INCORRECT DETERGENT TYPE OR AMOUNT OR TOO OLD
- SOIL OVERLOAD
- INCORRECT LOADING
- INCORRECT CYCLE SELECTION
- SOME ITEMS CANNOT BE WASHED SAFELY
- SPOTTING: RINSE AGENT NEEDED
- FILMING OR ETCHING OF GLASSWARE
- SUDS IN TUB — WATER LEAKS
- DISPOSER HOPPER NOT CLEAR
- DRAIN AIR GAP BLOCKED

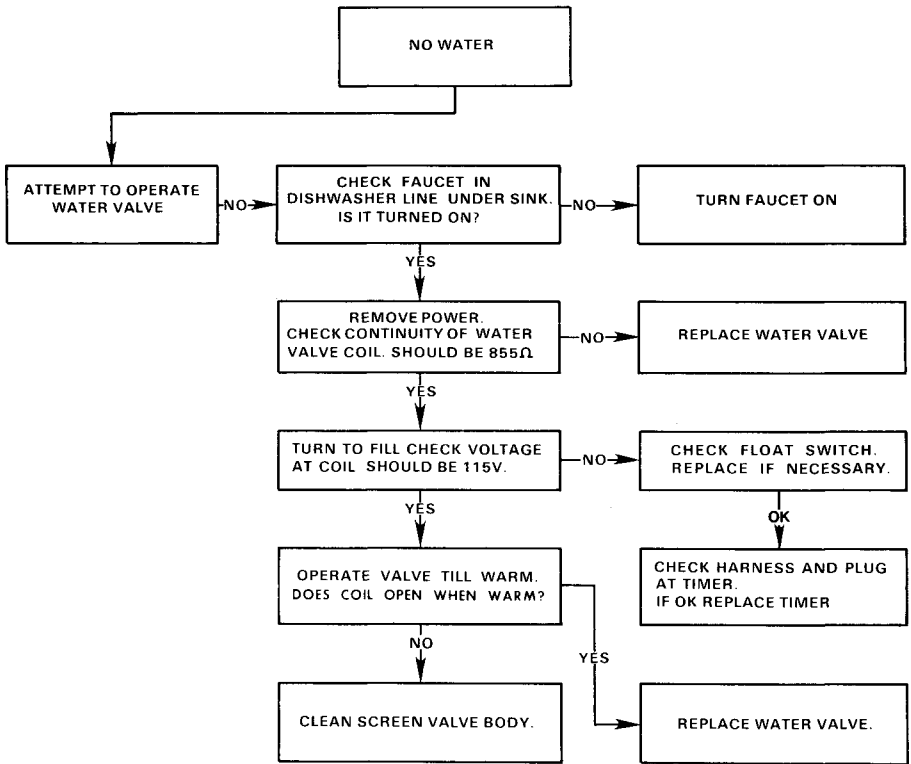
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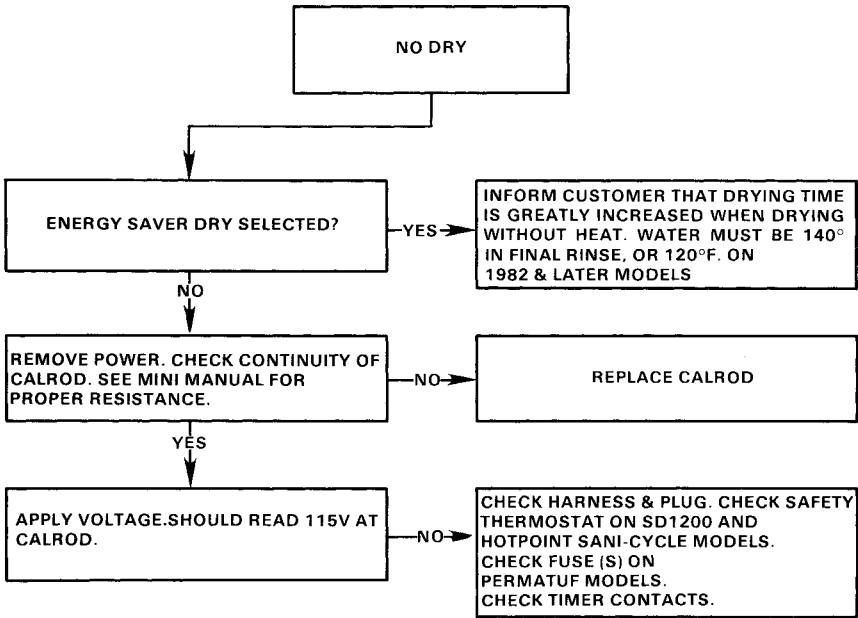
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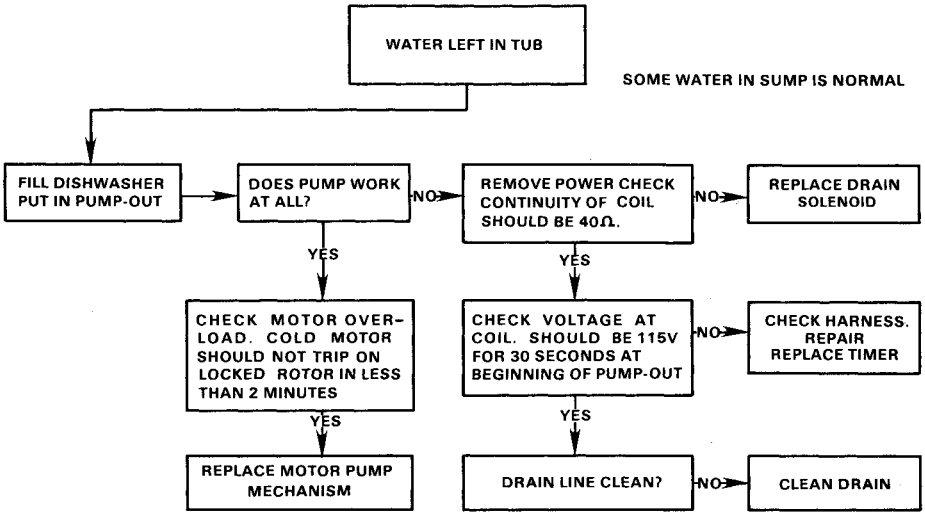
DIAGNOSIS



DIAGNOSIS



DIAGNOSIS



FIELD CORRECTIONS

DISHWASHER – SECTION F

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CABLE COMES OFF PULLEY — GE PLASTISOL CONVERTIBLE

If you can't keep the stabilizer cable from coming off the pulley on convertible dishwashers, install a WD1X1257 Pulley Kit. This kit consists of brackets, washers, etc. to provide a new, stronger mounting for the cable pulley. There are also four spacers to be installed on each caster socket. These spacers will raise the dishwasher slightly and help prevent the stabilizer from pressing hard against the floor and/or carpet. Pressure against the floor has a tendency to pull the cable off the pulley.

Full instructions accompany each WD1X1257 kit.

TIGHT UPPER RACK — GE PLASTISOL TUB

Tight and binding upper racks are caused by:

1. Tubs that are too wide.
2. Rack slides that are too wide.
3. Combination of 1 & 2 above. The solution to the tight rack problem is to install the WD35X168 rack roller kit. This kit contains the necessary rollers, spacers, sealers and a complete instruction to solve this problem.

AIR GAP KIT - GET & HOTPOINT

An Air Gap Kit has been developed that will help eliminate repeat calls for blocked air gaps. This kit fits Central D Brand air gaps only. It consists of a threaded base and a larger diameter cap. The new cap provides more area for the passage of food soils that normally collect in the Central D type cap. The catalog number of the kit is WD35X172.

The kit is recommended as truck stock item and should be installed when ever a call is made for a blocked air gap. The technician will need to explain the purpose of installing the kit to the customer.

Since the air gap is a part of the house plumbing, the customer should be billed for the kit and the service cost even when the call is in warranty.

Remember, the WD35X172 Air Gap Kit fits the Central D Brand air gap only.

SUMP REPAIR KIT — GE PLASTISOL

Our engineering people have developed a sump repair kit for the GE Plastisol coated dishwasher. The kit is now available under datalog #WD35X170. It is designed to fill all undercounter and convertible models produced in 1971 and later.

The sump kit can be used to repair a tub where the rust is concentrated in and around the sump opening. Tubs that have rust that has progressed out onto the tub bottom area more than 1/8" will require additional patching with an Epoxy

FIELD CORRECTION

Patch Kit. Do not allow the RTV used with the sump kit and the epoxy used to patch the tub bottom to mix or run together in the uncured state as neither material will cure properly in this condition. A repaired dishwasher should not be used for 24 hours after kit installation.

DISH CHIPPAGE — GE PLASTISOL & HOTPOINT

If you believe high pump pressure to be the reason for plates bumping during the wash and rinse periods, drill three (3) 1/4" holes in the spray arm. Drill holes on an angle in the end opposite the propelling hole. Drilling these holes as shown in Figure 1 will also give increased wash action in the silverware basket.

Do not drill the holes until you are certain that improper loading or unusually dish shape are not responsible for the contact between plates.

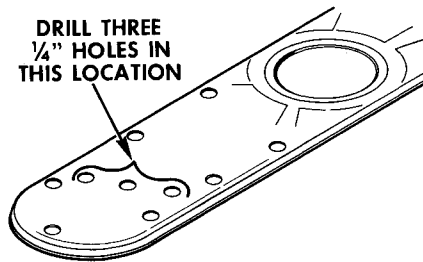


Figure 1 - Drill Holes as Shown

DOOR WILL NOT STAY DOWN — HOTPOINT

The correction for this problem is to install the WD1X5425 link kit. These links are shorter than the links on the dishwasher. This may seem like the wrong way to go to lessen spring tension but when the springs are moved to the location shown in Figure 2, the door will operate properly. Proceed as follows:

1. Remove dishwasher from undercounter or if convertible remove both side panels.
2. Disconnect both door springs from pedestal leg.
3. Remove the old wire links and replace them with the shorter WD1X5425 wire links.
4. Reconnect springs to pedestal legs, connecting them to second hole from the top. See Figure 2.
5. Reassemble or reinstall dishwasher.

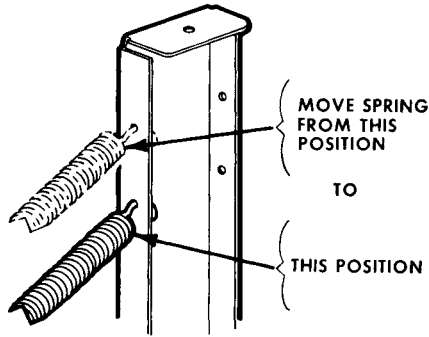


Figure 2 - Connect Springs in Second Hole

USE OF OXALIC ACID — HOTPOINT

Do not use oxalic acid to remove stains from the white porcelain tub and doors on Hotpoint dishwashers. Oxalic acid etches the surface of the white porcelain.

Citric acid (WD35X151) and products such as Lime-A-Way are safe to use for stain and film removal on the white porcelain dishwashers.

PORCELAIN REPAIR KIT — HOTPOINT

A repair method for porcelain has been developed. The new repair kit consists of 10 bottles of primer, white epoxy and user instructions. The epoxy is the white epoxy we have been familiar with for years, its the primer that's different. Ten bottles of the primer are provided in each kit. The primer has a rather short shelf life, once opened. It is suggested that a new bottle of primer be opened for each job.

By the time all ten bottles have been opened, the epoxy will be nearly used up and then its time for a new kit. Instructions for use are included in each kit. Please read and heed! The catalog number fro the Porcelain Repair Kit is WD35X177.

LOWER RACK "ROLL-IN" — GE PERMATUF

Rack "roll-in" is that condition where the lower rack rolls back in the dishwasher by itself while it is being loaded.

First, check the plumbness of dishwasher front with front of cabinet. With the door latched, the dishwasher door side trim should be parallel to the cabinet front.

Where the dishwasher is installed plumb and level but the lower rack "roll-in" problem still exists, the problem is with the door hinge stops.

FIELD CORRECTION

To adjust the hinge stop it will be necessary to pull the dishwasher out about 5". The following procedure is recommended:

1. Remove access panel.
2. Disconnect wiring harness from inlet valve.
3. Remove the fill hose at valve outlet port and remove the two screws holding the valve to the side of dishwasher.
4. Remove the two screws that secure dishwasher to the counter top.
5. Pull the dishwasher forward. Make certain that drain hose and power supply cable are long enough to allow you to pull dishwasher out about 5" to 6", or until door hinge stops are accessible.
6. Adjust the door hinge stops on each side to allow the door to open more fully. See Figure 3. Bend the lower portions of the stops upward.

CAUTION - When the dishwasher is disconnected from the counter top, it will very likely tip over with the door open. Make sure you secure tub when door is opened fully.

7. After stops are adjusted to where the rack roll-in is corrected, reinstall the dishwasher.
 - Secure to countertop
 - Remount valve to side of dishwasher
 - Reconnect hose to outlet port — secure clamp properly
 - Reconnect harness leads to the valve
 - Check routing of drain hose and power supply cable, make sure drain hose is not kinked.
 - Make sure unit is level and plumb with cabinetry
 - Make sure lower rack does not roll-in
8. Test run the dishwasher with water for leaks. Then replace access panel when you are assured that everything is OK.

Remember that this applies only to SD900, SD980, SD1000, SD1200, and SD2500 models with PermaTuf tubs.

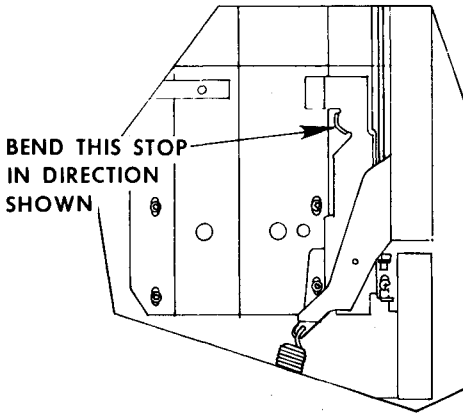


Figure 3 - Rack "Roll-In" Correction GE PermaTuf Models

TIMER LEVER MALFUNCTION — GE PERMATUF

This applies to all GSD900, 900X, 980, 980X, 1000, 1000S, 1000X, 1200, 1200S and 1200X PermaTuf® Dishwasher Models.

Figure 4 shows the back of the control panel, which is visible when the inner door panel is separated from the outer door panel, and the brown plastic housing over the timer and pushbutton switchbank is removed.

The Black Rubber Bushing, WD3X763, **MUST BE IN PLACE** as shown. If it is not, the pivot point of the Timer Lever is affected, which can cause it to bind against the Detergent Cup Latch (see Figure 5). Any binding will occur after the detergent cup trip point in the cycle.

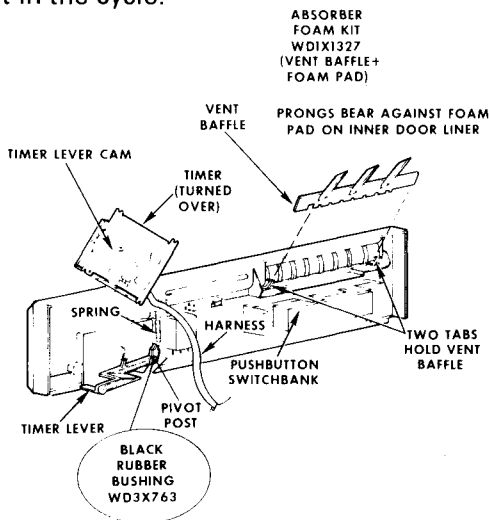


Figure 4 - Rear of GE PermaTuf Control Panel

FIELD CORRECTION

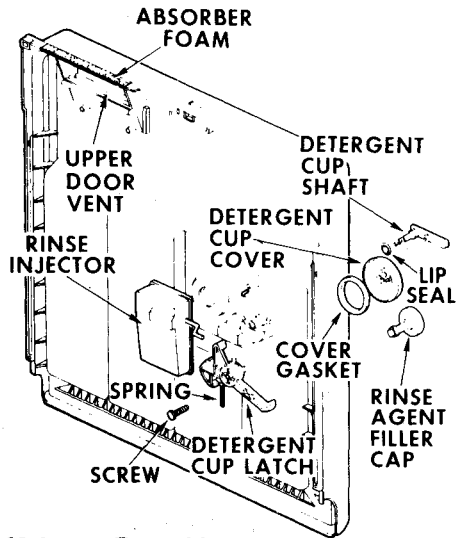


Figure 5 - GE PermaTuf® Inner Door Liner

One of two possible symptoms will occur when the WD3X763 Bushing is missing:

1. Timer Stalls

Detergent Cup trips okay, but Timer Lever later jams against Detergent Cup Latch. This causes Timer to stall prior to reaching the Rinse Agent trip point.

2. Rinse Agent Is Dispensed In "Dry"

Detergent Cup Latch hangs up temporarily, and then breaks loose to trip the Rinse Agent Dispenser after the final rinse. Result is rinse agent can be seen running down inner door liner at end of complete cycle.

To check whether the WD3X763 bushing is in place on the Timer Lever pivot post:

- On SD900, 980, and 1000 models, the bushing is visible with the Timer mounted.
- On SD1200 models, the Timer must be removed to check the bushing. To remove the Timer (all models), take out the one mounting screw at left bottom corner and then push out on brown plastic tab at right bottom corner.

If the bushing is missing or not in place, always replace it with a new one. Remove Timer to replace bushing. We recommend that several WD3X763 bushings be carried in the Service Technician's tool box.

When the WD2X763 bushing is properly in place, there are two other possible causes for either of the symptoms listed above:

FIELD CORRECTION

- a. On SD1200 models: Light blue wires to rapid advance motor on Timer interfere with movement of Timer Lever.

Check that the light blue wires are not pinched between Timer Lever and Timer Mounting Plate. If so, re-route wires.

- b. On SD900, 980, and 1000 models: Timer Lever movement is restricted by hitting side of Timer Mounting Plate.

Refer to Figure 6. As the Timer is turned through the cycle, the Timer Lever should not bottom out against the Timer Mounting Plate. If it does, this could prevent the Timer Lever from moving in far enough.

To correct this condition, bend the flange on the Timer Mounting Plate to a 90 degree angle so that the Timer Lever will clear the flange.

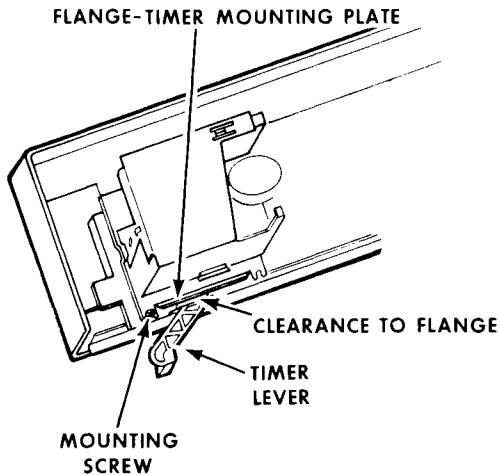


Figure 6 - Timer Lever, GE PermaTuf

DOOR VENT BLOCKAGE — GE PERMATUF

This applies to GSD900, 980, 1000, and 1200 models prior to the "S" and "X" models.

Figure 4 shows the brown plastic "Vent Baffle" used in production on all "S" and "X" models and the SD2500. This part has three (3) prongs that bear against the absorber foam pad located on the inner door flange above the upper door vent openings (see Figure 5).

Prior to the "S" and "X" models, the vent baffle part used did not have the three prongs. On these models there is a chance that if the adhesive holding the

FIELD CORRECTION

foam pad in place fails to hold, the pad can fall down and block the upper door vent openings.

If the vent openings are blocked, humid air builds up inside the door and can cause failure of the pushbutton switches. Drying performance will also be adversely affected.

If this condition is found, replace both the absorber foam pad and the vent baffle. They are now supplied together in a kit: Absorber Foam Kit WD1X1327. The parts are also supplied separately under these catalog numbers: Vent Baffle (with 3 prongs) - WD12X322, and Absorber Form Pad -WD1X1278.

The absorber foam pad is adhesive-backed. When installing, be careful to get the pad to lay flat against underside of the door liner top flange as it is pressed into position.

DOOR GASKET WITH TABS — GE PLASTISOL

A WD8X221 Door Gasket Kit is now supplied to replace the door gasket with pull-through tabs used on GE-brand plastisol tub models.

The Kit includes:

- 2 — Aluminum Wires
- 2 — Clamps
- 2 — Screws
- 1 — Instruction

Previously, the gasket alone was stocked as WD8X215, but this number is superseded by the WD8X221 kit.

The WD8X221 gasket kit is used on all "W2" and later model GE dishwashers with plastisol tubs. It was also used on "W1" models for a short time. The parts lists for the "W1" models call for the previous WD8X202 gasket; there was not model number change for introduction of the WD8X221 on "W1" models.

The WD8X221 gasket has tabs that pull through rectangular holes in the inner door panel. To prevent the tabs being broken off, it is important that the instruction steps be followed:

INSTALLATION STEPS

1. Turn hot water on and allow it to reach maximum temperature. Close sink drain and allow hot water to reach depth of 4 inches.

FIELD CORRECTION

2. Place gasket in sink bowl and allow to soak while performing Step 3.
3. Remove front panel escutcheon and lower plastic door guard from dishwasher. Remove old gasket.
4. Remove new gasket from hot water soak and install on door in the following manner.
 - Gasket is directional. The side lip that extends back 8" from each end of the gasket must be outside of door. See Figure 7.

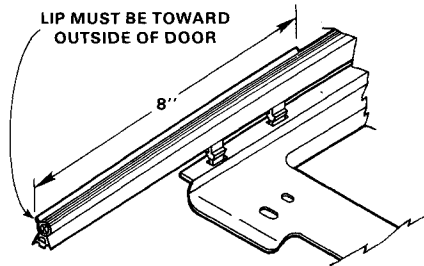


Figure 7

- Locate the gasket by pushing the first "lock" portion of the tabs in the slots. This will hold the gasket temporarily in place. Then from the other side of the door, gently pull the tabs the remainder of the way through the slots to the second "locking" position with pliers. Pull all tabs through in this manner.
- Insert one of the aluminum wires furnished in each end of the gasket as shown in Figure 8. Leave approximately 1/2" of the wire protruding from the end.

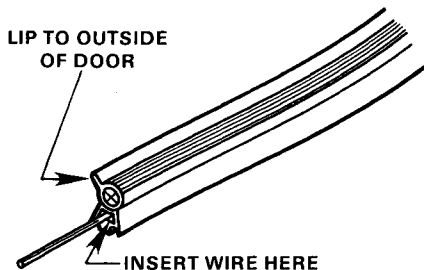


Figure 8

- Pull each end of gasket tightly downward and wrap around door with 1-inch minimum overlap as shown in Figure 9.
- Reinstall the plastic door guard. Fasten door guard at center only.

FIELD CORRECTION

- Install a stainless steel clamp on door guard pin at each end and fasten in place with screws furnished. See Figure 9.
5. Replace escutcheon and front panel. Check for leaks.

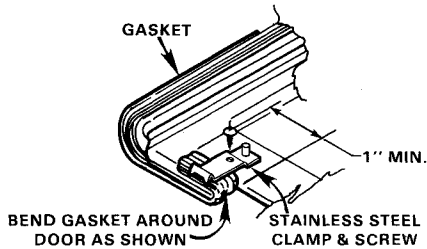


Figure 9

GSD2500 DETERGENT CUP HANGS UP

A problem with the GSD2500 detergent cup not opening may result if the Detergent Cup trip Cam (which is a part of the detergent cup motor and trip mechanism assembly) hangs up.

The trip cam may hang up on a rib molded to the spring retainer post of the inner door liner. See Figure 10.

To correct this malfunction, use a knife to shave off the rib down to the post.



Figure 10 - GSD2500 Detergent Cup Latch

VAPOR BARRIER KIT — GE & HOTPOINT

On Hotpoint and GE convertible porcelain-tub models, there is occasionally a complaint of condensation collecting on the control panel escutcheon above the door vent, and then possibly running down the front of the door and dripping onto the floor.

This condition usually occurs in the summer in air-conditioned kitchens.

A Vapor Barrier Kit, WD35X179, is available for installation of Hotpoint and GE convertible porcelain-tub dishwashers to alleviate this condition. The kit installs inside the door and channels moisture back into the tub. Installation instructions are included in the kit.

This condition may also occur on GE plastisol-tub models, but to a lesser extent. The WD35X179 Vapor Barrier Kit may be modified to fit on GE plastisol-tub models by trimming the plastic barrier as necessary.

FIELD CORRECTIONS

MOISTURE BARRIER SD2200/24000

To prevent failures of the processor board due to getting moisture on the board, a foam pad WD1X1405 and moisture barrier WD1X1406 should be installed per the following instructions.

PROCEDURE:

Remove dishwasher latch handle knob (one screw in bottom of knob).

Separate inner and outer door assemblies by removing seven (7) screws extending through inner door into outer door assembly.

NOTE: Screws may not be all alike; return screws to original locations when re-assembling door.

Disconnect detergent cup motor and interlock switch 5-pin connector from circuit board cover (5-pin connector next to 2-pin thermistor connector.)

Disconnect ribbon from circuit board and install new board.

Place the moisture barrier under the control board as shown in Fig. 1. Align holes in barrier with holes in control board. Some older boards will have 3 holes, current board has only 2 holes on top left end.

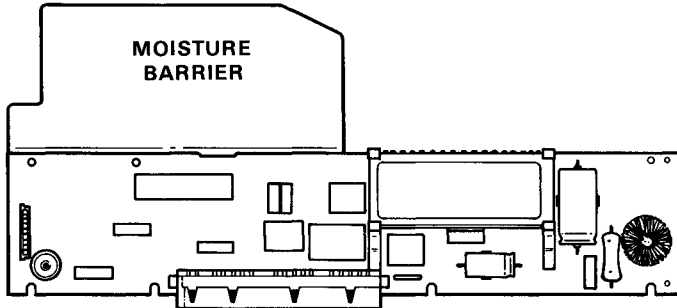


Fig. 1

Drive the screws to secure the barriers in place first, then drive the remaining screws to secure the control board.

Place a 2" piece of electrical tape on side of the ribbon connector extending down onto board with approx. 1" of tape unattached. (See Fig. 4)

Remove old foam tape, RTV sealer, etc. from circuit board cover and escutcheon in area under dishwasher vent. Surface must be thoroughly cleaned for good foam pad adhesion.

FIELD CORRECTIONS

Remove covering from adhesive backed foam pad and press pad onto escutcheon in area illustrated. Be sure pad is folded over escutcheon flange and extends from interlock switch area to opposite end of vent opening (Fig. 2)

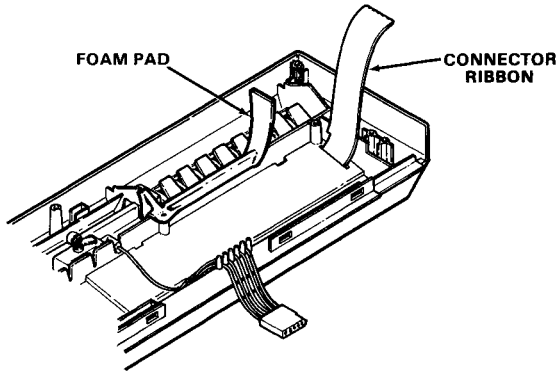


Fig. 2

Hold circuit board and cover assembly close to escutcheon as illustrated (Fig. 3) and plug ribbon into connector on board.

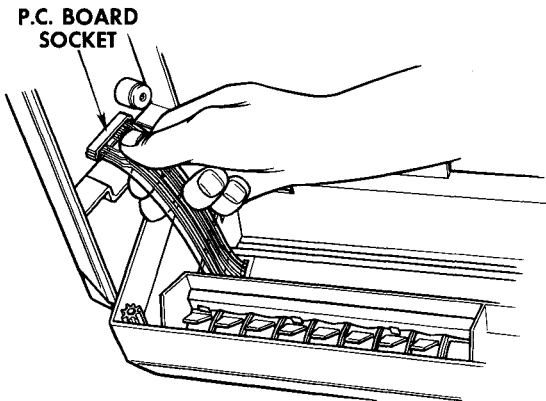


Fig. 3

Secure ribbon into connector by extending electrical tape from side of connector onto ribbon (Fig. 4)

FIELD CORRECTIONS

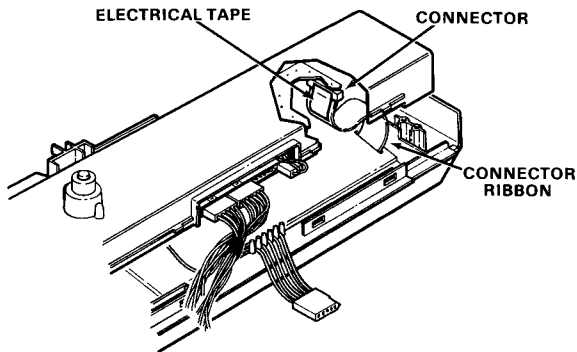


Fig. 4

Fold the moisture barrier down over the control board as shown in Fig. 5

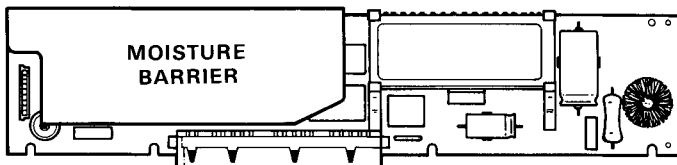


Fig. 5

Re-assemble cover assembly to escutcheon.

Re-connect detergent cup motor connector plug to cover assembly.

Perform F-1 electrical test cycle as outlined in dishwasher Mini-Manual.

Re-assemble door assemblies and install latch handle knob.

FOR ALL ELECTRONIC DISHWASHER MODELS: GSD28000, 26000, 24000, 22000

On earlier production (Serial numbers AM thru ZM and AR thru FR) the harness plug was not tied to the control housing - and we encountered problems with connector plugs working loose. Since April, 1984 (Serial No. "GR" and later) a plastic tie strap has been used.

When servicing electronic control dishwashers, be sure to either:

- (1) Replace the plastic tie strap, or
- (2) Use tape, to secure the harness connector plug to the control housing or receptacle, so that it will not work loose and cause future problems.

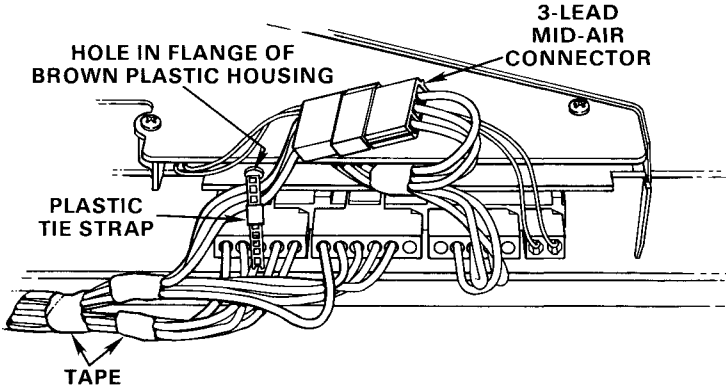
FIELD CORRECTIONS

ELECTRONIC DISHWASHERS

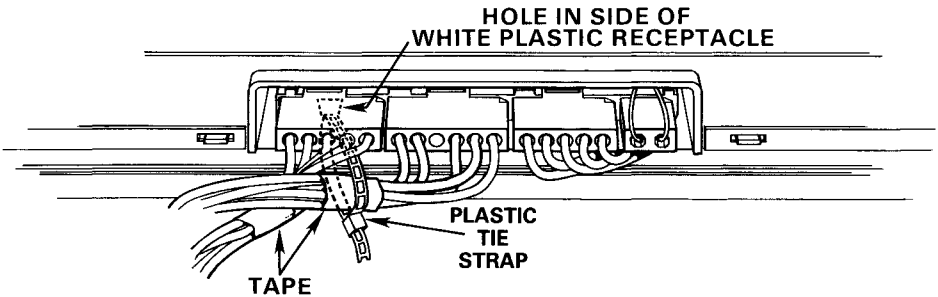
LOOSE HARNESS PLUG TO CONTROL

- Plastic Tip Strap in production April 1984 (Serial "GR" and later)

GSD2800D



GSD2200D



- When servicing control, it is important to secure wiring harness to housing.
 - If strap used, replace with insulated wire or similar.
 - If strap not used, use tape to secure.

FIELD CORRECTIONS

DETERGENT CUP COVER LATCH - LOOSE/OUT OF POSITION

A screw/plug has been added in the end of the detergent cup cover shaft. This gives added insurance of proper operation of the latch and detergent cup cover. Whenever the latch is removed and replaced on the cup cover shaft, always replace the screw/plug.

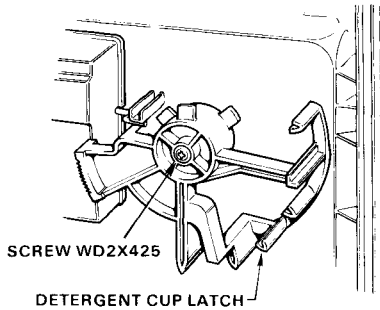


Fig. 8

On earlier models, without the screw or plug and with a loose latch, use screw WD2X425 to expand the shaft fingers.

STUCK PUMP SEAL

Many Technicians have been using the following method to loosen a dishwasher pump seal which has become stuck due to not being used over an extended period. In many cases, it will eliminate the need to replace the pump and motor assembly.

As always, try to turn the pump motor fins first. If this fails, heat two quarts of water on the range to boiling. Drain the water from the dishwasher down to the sump cover level. Remove the Power Tower and pour the hot water down into the pump. Replace the Power Tower. Close and latch the door. Start the dishwasher.

PERMATUF® "B" DISHWASHERS FIX FOR "MEOWING" NOISE

On PermaTuf® "B" models (GSD1200, 1000, 980, 2800 etc.) the source of a "meowing" type noise is a vibrating WD8X210 Teflon Lip Seal in the Wash Arm Hub Support Asm.

Starting with production in May, 1986 (Serial No. "HT") a new WD8X226 Double-Thickness Teflon Lip Seal is being used. This new seal should greatly reduce the incidence of noise complaints.

FIELD CORRECTIONS

- Stocks of WD8X210 Seals will be scrapped, and the WD8X210 will be superseded by the new WD8X226 Seal.
- Stocks of WD22X108 or WD22X131 Hub Support Asm. will NOT be scrapped. Before using, check the Teflon Lip Seal and replace with a WD8X226 Seal if the old WD8X210 seal is used.

IMPORTANT: Assemble the WD8X226 Seal with the curved crown to the top, as shown in the drawing, for proper operation. If the seal is assembled with the crown toward the bottom, the wash arm speed will be reduced by one or two RPM.

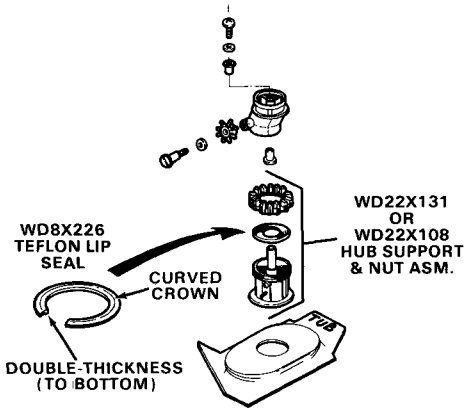


Fig. 9

ELECTRONIC CONTROL DISHWASHERS

For Electronic Dishwasher models GSD2800, 2600, 2400, 2200, and HDA2000, it is **NORMAL OPERATION** for the minute countdown to stop while the cycle is extended to heat water. Whenever this happens, the word **"HEATING"** appears in the display.

The word **"HEATING"** appears **ONLY** when the countdown is stopped – and at no other time. The cycle will normally be extended to heat water when the incoming water temperature is lower than 140°F.

WHEN MINUTE COUNTDOWN STOPS & "HEATING" IS LIT IN DISPLAY

- Models GSD2800D & 2600D (main wash period extended).
 - "Heating" remains lighted up to 20 minutes while minute count downs reads:

FIELD CORRECTIONS

- 15 Minutes – For NO-HEAT DRY
- 49 Minutes – For HEATED DRY
- Model GSD2800D - “SANI” option selected (FINAL RINSE period extended)
 - “Heating” remains lighted up to 20 minutes while countdown reads:
 - 1 Minute – For NO-HEAT DRY
 - 35 Minutes – For HEATED DRY
- Models GSD2200/G, 2400D/G & HDA2000 (Main Wash Period Extended).
 - “Heating” remains lighted up to 15 minutes while minute count down reads:
 - 11 Minutes – For NO-HEAT DRY
 - 44 Minutes – For HEATED DRY

PERMATUF® DISHWASHERS - DOOR HINGE SPRINGS

The door hinge springs used on PermaTuf® “B” and PermaTuf® “C” models are entirely different, because the hinge systems are different. Within model families, different springs are used depending on the weight of the escutcheon. Each door spring is color-coded. The catalog numbers for the various door springs currently used and their color codes are shown below:

<u>MODEL</u>	<u>SPRING CAT. NO.</u>	<u>NO. USED</u>	<u>COLOR</u>
P/TB: 1200T,G, 2600D,2800D	WD1X1286	2	Tan (Heavier)
P/TB: 1000T,980T, 900T	WD1X1287	2	Yellow
P/TB: 1100G	WD1X1382	2	Orange (Light)
P/TC: 500D,540D	WD1X1354	2	Yellow (Light)
P/TC: 600D,940D, 2200D	WD1X1354 WD1X1333	1 1	Yellow Blue (Heavier)

FIELD CORRECTIONS

The door springs originally on each model should handle almost any optional 1/4-inch thick wooden panel that may be installed on the door. If a thicker or heavier wooden panel is used, and the consumer complains about the door falling down, then you may be able to improve the situation by installing a "heavier" door spring, as listed in the table.

For PermaTuf® "C" models, no springs other than those listed in the table are available. For PermaTuf® "B" models, a heavier door spring (than the WD1X1286 listed in the Table) was previously supplied with a black glass kit. This spring is still available from New Concord as Cat. No. WD1X1270, and it may solve a door falling problem on model 1200, 2600, or 2800.

GSD2800/2600 SPRING FOR CUP OPEN SENSOR

A new spring-loaded activator and lever for the detergent dispenser "cup open" sensor started in production in October, 1985 (Serial No. "TS"). The new parts and how they are assembled are shown in the sketch below.

The previously-used activator and lever, which were not spring-loaded, have each been superseded by three new parts. The three new parts must be used as a set.

PREVIOUS PART

WD1X1360 Activator

WD12X380 Lever

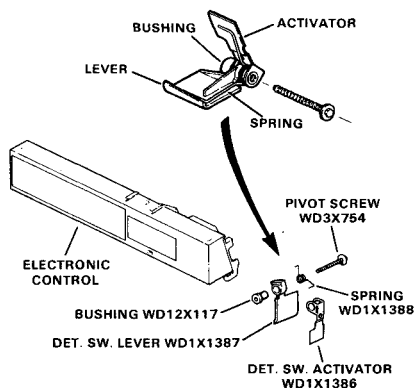
SUPERSEDED BY THREE PARTS

WD1X1386 Activator

WD1X1387 Lever

WD1X1388 Spring

The activator, lever, spring, bushing, and screw are not furnished with replacement controls. It is recommended that a new activator, lever, and spring be ordered for use with replacement controls on models with serial numbers prior to "TS". Re-use the old bushing and screw.



FIELD CORRECTIONS

PERMATUF® NON-ELECTRONIC DISHWASHER SCREW USED IN DETERGENT DISPENSER SHAFT.

With production starting in December, 1985, (Serial No. "ZS") a screw was added to the end of the detergent dispenser handle/shaft. The purpose is to be sure that the latch arm is seated securely over the tangs molded into the end of the shaft. With the screw in place, the latch arm is much less likely to come off if a user uses excessive force in doing the cup.

It is recommended that a WD2X425 screw be added when servicing the detergent dispenser on models prior to Serial No. "ZS". **CAUTION** — Use only the correct size screw. A screw too long or too big could cause the shaft to bind. After assembly, always check that the detergent dispenser shaft turns freely.

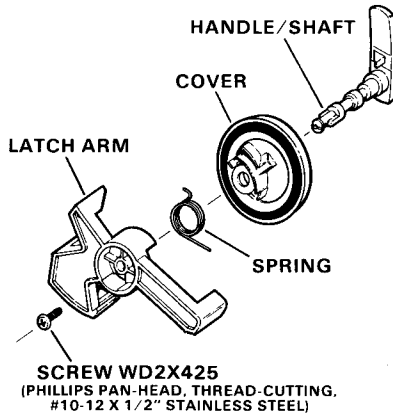


Fig. 11

**COMPACTOR — SECTION G
INDEX**

	PAGE
How Compactor Works	G - 3
Mechanical Operation	G - 3
Electrical Functions	G - 4

Perhaps the most common problem found with Compactors is the problem of Customer Education. It is in order to review how the compactor works before going into the mechanical details of its make-up.

HOW THE COMPACTOR WORKS

The user deposits trash, cans, bottles, cartons, paper, etc. into the trash container and closes the door. She then pushes the start button. Note that the unit does not start until the start button is pushed.

When the start button is pushed, and held momentarily, the motor starts and the ram begins to move down into the trash container. The ram does not go all the way down to the bottom of the container. It goes to within four inches of the bottom and then moves back up. The container must be more than 1/3 full before compaction is noticed because of the length of ram travel. This is probably one of the greatest customer education problems. Even though the operation of the unit is explained in the user's book, many customers still expect complete and full compaction when a hand full of scrap paper is put in an empty container. The correct way to use the compactor is to continue putting trash into the bucket until it is maybe half full, and then push the start button and run the ram down. As additional trash is added and the compactor is operated, all trash will be compacted including that on the bottom.

A total force of 3100 pounds will be exerted upon the trash by the ram disc. At this point the motor automatically reverses and the ram retracts to the top and the cycle ends. The 3100 pound force also needs further explanation. This force is in pounds and not in pounds per square inch. This means that the ram screw presses the center of the ram disc down with a force of 3100 pounds. If the container was set in the center of the kitchen and a ram disc without the jack assembly was placed on top of the trash, a 200 pound man could stand on the ram disc and compact the trash with a force of 200 pounds. In the compactor, through the mechanical advantage offered by the ram screw, scissors jack and the pulley-gear belt arrangement a 1/3 H.P. motor can cause the ram to exert 3100 pounds on the trash.

The cycle lasts a maximum of 40 seconds. This cycle time becomes shorter as the level of compacted trash in the bucket builds up.

Mechanical Operation

The drive motor is 1/3 horsepower running at 1725 rpm. The motor pulley drives the gear belt which in turn drives the large gear sheel. This provides a speed reduction of 6 to 1 or about 8 rpm at the moment of full load.

GENERAL

The gear wheel rotates a column nut which is threaded internally. The column nut engages the ram screw and as it rotates, it drives the ram screw downward or lifts it up, depending upon the direction of rotation. The total compacting force has now been multiplied to about 3100 pounds at the ram disc.

Note that the total compacting force is generated by the action of the column nut and the ram screw. As the gear wheel is turned in the counter clockwise direction, the screw is driven downward as it would be when compacting. Reversing the rotation (clockwise) the screw and ram disc is lifted, since the top bearing is fastened to the top of the cabinet.

The function of the jack is to concentrate the pressure downward under all load conditions. It keeps the ram disc horizontal and the ram screw vertical.

Electrical Functions

There are a number of switches that insure safe operation of the compactor. There is the "Momentary Start Switch" which starts the compacting cycle when it is depressed for a few seconds.

The "Stop" switch is in series with the hot side of the line and pressing this button turns off all power to the unit.

The "Top Limit Switch" is connected in parallel to the start switch and when it closes, it maintains power to the motor when the start button is released. The ram must move downward sufficiently to close this switch.

The "Door Switch" is operated by the trash door and if it is open, the start button cannot start the unit. Further, the compactor stops if the door is opened during a cycle.

The motor is 1/3, HP 1725RPM, and is thermally protected. The cycle starts when the start switch knob is turned "On" and held momentarily. The start switch acts as a by-pass switch to the top limit switch. As the knob is turned, current flows through relay coil and motor run winding. The relay picks up and current then flows through the directional switch and the start winding. The motor starts and relay drops out.

As soon as the ram moves down 3/4" to 1", the momentary start switch knob can be released. The top limit switch has closed and the directional switch contacts have changed position setting it up so that the current will reverse through the starting winding when the ram bottoms out.

As the ram approaches the bottom, the motor starts to load down. As it approaches maximum compression force, about 3100 pounds, the current flow through the run winding increases. When the current reaches approxi-

mately 11.5 amperes, the relay picks up. This immediately sends a reverse current flow through the start winding.

The reverse current acts as an electrical brake stopping the motor and instantaneously reversing it. As the motor picks up speed, the current drops rapidly (below 9.5 amperes) and the relay drops out opening the circuit to the start winding.

The ram returns to the top of unit where it comes into contact with first, the directional switch thereby changing the circuit so the motor will start in opposite direction on next cycle, and secondly, the limit switch opens stopping the motor to end the cycle.

ELECTRICAL COMPONENTS

COMPACTORS — SECTION H

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Door Switch	H - 4
Limit Switch	H - 5
Relay	H - 6
Reversing Switch	H - 7
Start Switch	H - 9
Schematic & Wiring Harness	H - 11

SWITCH, CONTAINER

The container switch is located inside the wiring tunnel at the inside, rear of the cabinet. See figure 1. It is a single pole, single throw, normally open switch operated by a tubular plunger. The switch is actuated by the top of the container and should the trash container be out of its normal compacting position, the compactor will not operate. See Schematic Section.

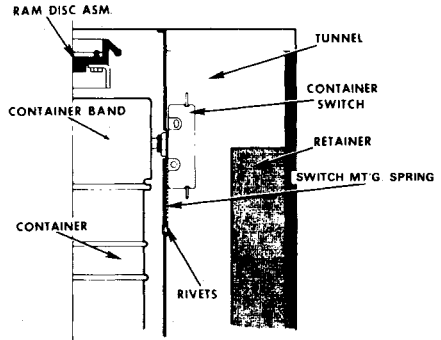


Figure 2 - Container Switch Actuated.

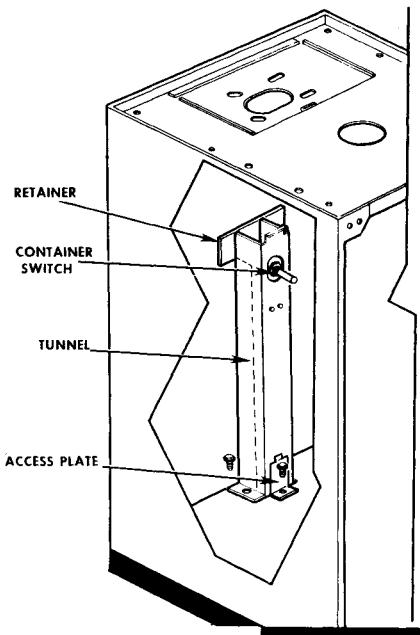


Figure 1 - Container Switch & Tunnel.

Figure 2 shows the relative location of all parts including the tunnel, fibre wire retainer, container, switch and the flat spring leaf to which the switch is attached. This spring mounting allows for over-travel of the container as it bends inward, relieving pressure on the switch plunger.

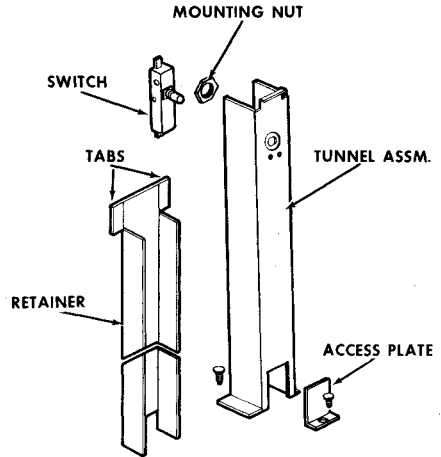


Figure 3 - Switch Associated Parts

The tunnel assembly is stocked with the switch mounting spring riveted in place. The fibre retainer is necessary to hold the electric wires in the tunnel and the flat upper tabs position the tunnel forward so that the switch will operate consistently.

Disassembly

To remove the container switch proceed as follows: (Figure 3)

1. Disconnect power to compactor.

ELECTRICAL COMPONENTS

2. Remove container and prop door open.
3. With ram in its top position, remove three screws and pull tunnel outward.
4. Disconnect two leads and remove switch.
5. Reassemble in reverse order of disassembly.

Diagnosing Problems

1. Compactor won't run. Check:
 - a. Power to unit.
 - b. Continuity through door interlock switch when actuated.
 - c. Continuity through container switch with plunger pressed in.
 - d. Container band and handle missing or out of position.
2. Compactor stops in compacting cycle - doesn't hum. Check:
 - a. Door latch adjustment - door pops open.
 - b. Top limit switch and reversing switch.
 - c. Container switch for intermittent operation critical adjustment.
 - d. Bent spring or loose mounting nut.
 - e. That retainer tabs are behind tunnel.

SWITCH, DOOR

The trash door safety switch is a single pole single throw normally open type mounted to the top center of the load plate and 1/2 inch back from the front flange. It is actuated by the switch plunger. The plunger is mounted to the top center of the trash door. See Figure 4.

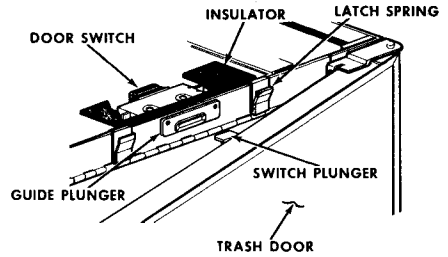


Figure 4 - Trash Door Interlock Switch

The door safety switch is a leaf operated switch. Adjustment of the leaf is usually not necessary due to the large amount of overtravel designed in the system. When a new switch is installed and the door is closed the first time, the switch plunger will form the leaf to the proper operating dimension. However, should adjustment become necessary, hold the switch leaf with a pair of long nose pliers, keeping the section of the leaf parallel with the switch body and increase the radius of curvature at the end of the leaf.

DISASSEMBLY

The door switch may be removed as follows:

1. Disconnect power to compactor.
2. a. If ram is stalled down in the container - open or remove door and disconnect door spring.
b. If ram is in the top position - open door and remove container, disconnect door spring.
3. Remove escutcheon frame (2 screws, each side) and lift away.

ELECTRICAL COMPONENTS

- Remove 4 screws to storage shelf, lift shelf slightly and turn gear wheel counter clockwise to lower ram screw sufficient to lift out shelf.
- Remove two screws to electric panel - lower panel and disconnect two springs.
- Remove two screws from switch and nut strip - disconnect two leads and lift switch out.
- Make necessary repairs - reassemble by reversing order of disassembly.

- Switch plunger loose.
- Door switch or harness connection loose.

LIMIT SWITCH

The limit switch is a single pole, single throw plunger operated switch. Its function is to turn off power to the drive motor when the ram returns to the top of its stroke. The limit switch snaps into a mounting bracket which is secured to the top right hand side of the hinged electric panel. See Figure 6.

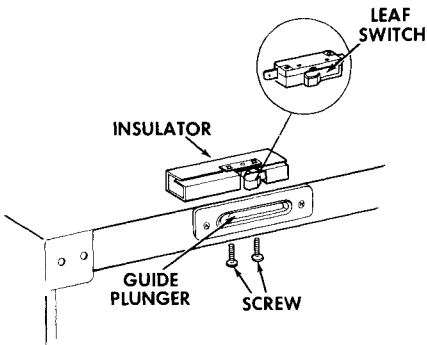


Figure 5 - Door Switch Parts

DIAGNOSING PROBLEMS

- Compactor won't run. Check for:
 - Faulty door switch.
 - Bent or broken switch leaf.
 - Switch plunger missing.
 - Loose harness connections.
 - No Power to compactor.
- Compactor stops in cycle. Check for:
 - Door opening - latch needs adjusting.
 - Intermittent door switch. No compacting. Check for bent switch leaf.

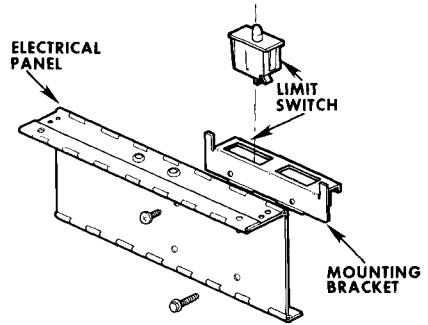


Figure 6 - Limit Switch Mounting

When the ram is at the top position, the limit switch is "off". To start the unit the user must initiate the start switch which acts as a momentary by-pass circuit around the limit switch. As soon as the motor starts and the ram moves down $3/4$ to one inch, allowing the hinged electric panel to drop, the limit switch contacts close. The power to the drive motor then passes through the limit switch. As the ram returns to the top of its stroke, it first contacts the shelf bumper, then raises the electric panel. This action depresses the switch plunger, thus opens the circuit and stops the unit.

ELECTRICAL COMPONENTS

Unlike the previous design leaf switches, this switch requires no adjustment. It has been manufactured with a predetermined plunger height, it snaps into a bracket shared with the reversing switch and is securely mounted to electric panel.

To remove the switch, press inward on the locking tabs and push the switch from the bracket. To install a new switch, simply push the switch into the bracket until the tabs snap into place.

Diagnosing Problems

1. Unit starts when "Start" knob is turned - stops when knob is released. Check for:
 - a. Open limit switch.
 - b. Open limit switch circuit.
2. Compactor stops somewhere in cycle. Check for:
 - a. Intermittent limit switch.
 - b. Motor overload trips.
3. Compactor runs continuously. Check for:
 - a. Defective limit switch, contacts welded together.
 - b. Shelf bumper missing

RELAY

The relay is the device that starts the motor. The motor starts when the operator activates the start button. This sends current through the relay coil which is in series with the motor run winding. When the current through the run winding reaches 9.0 amps, the relay plunger picks up, making internal contact between terminals "S" and "L". Figure 7.

Current then flows through "down" start winding causing the motor to start. As the motor picks up speed, the current through the main winding decreases rapidly. As it decreases (7.6 amps or lower) through the relay coil, the magnetic forces decrease also and the relay plunger drops down breaking contact between terminals "L" and "S".

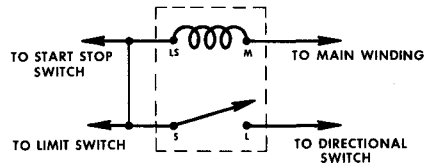


Figure 7 - Relay Operation

As the ram reaches the bottom of downward stroke, the main winding current increases - due to loading - which causes the relay to pick up again. The motor reverses immediately because the directional switch is set so that the current flow is through the "up" start winding. As the motor speed increases, the relay again drops out the start windings and the ram returns to the top. See schematic for diagrams for directional switch and motor reversal operation. (Sequence 3.)

Disassembly

1. Disconnect power from the compactor.
2. Lower electrical shelf by removing two hex screws holding the front hinge to the upper load plate. (Consult electrical shelf section in this manual for details).

ELECTRICAL COMPONENTS

3. Remove relay from the mounting clip-by pushing it to one side. (It may be removed more easily by loosening the two bracket mounting screws).
4. Disconnect from wiring harness.
5. Replace relay by reversing the order the disassembly.
 - a. For a jammed drive system.
 - b. Starting relay operation.
 - c. For directional switch operation.
 - d. Direct test motor.
 - e. Low voltage (below 108V. under load).

Testing Relay

1. Position relay in its operating position (arrow up) and check for continuity between terminals "LS" and "M". Figure 8. If there is continuity, the coil is good.
2. If coil is good, turn relay over (arrow down) and check continuity between terminals "S" and "L". If there is continuity, then turn relay right side up (arrow up) and the circuit should open. If relay responds as described, then it is good.

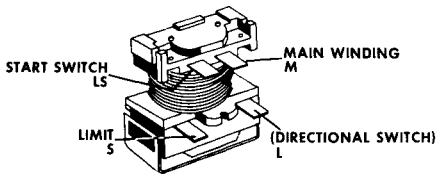


Figure 8 - Relay Terminal Locations

Diagnosing Problems

1. Motor won't run. Check:
 - a. Power supply at wall outlet and at the end of the power cord.
 - b. All safety switches - See Schematic.
 - c. Direct test motor for operation.
2. Motor won't start - hums. Check:

The relay described above is the same relay, WC21X5023, as used on previous models. The wiring harness has been changed because of the new directional switch and the new double start winding motor.

NOTE: Never test compactor when it is laying on its back. In any position other than vertical, the relay will not operate.

REVERSING SWITCH

The reversing switch is a single pole, double throw plunger operated switch. Its function is to set up circuits to supply power to the motor start windings at the beginning of each cycle and to reverse the motor and return the ram to the top of its stroke. The reversing switch snaps into a mounting bracket which is secured to the top right hand side of the electric panel. See Figure 9.

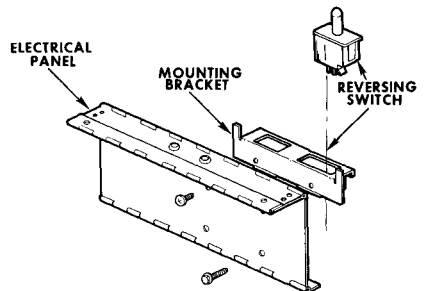


Figure 9 - Reversing Switch Mounting

ELECTRICAL COMPONENTS

When the ram is in the top position, the reversing switch is set to supply current to the "down" start winding of the motor when the user actuates the start switch. As the ram moves down about 3/4 to one inch, the plunger moves away from the load plate and the switch resets itself to supply power to the "up" start windings when the motor begins to load up and the starting relay picks up.

NOTE: Since the switch is set to supply power to the "up" start winding, any cycle interruption will cause the ram to return to the top position.

Unlike the previous design leaf switch, this reversing switch requires no adjustment. It has been designed and manufactured with a predetermined plunger height, it snaps into a bracket shared with the limit switch and is securely mounted to the hinged electric panel.

You will note that the height of the reversing switch plunger is greater than that of the limit switch. This is to insure that the circuit is set to drive the ram down before the limit switch opens, stopping the cycle.

To check switch for proper operation proceed as follows:

1. Disconnect wire harness from switch.
2. Make the following continuity tests.
 - a. With the switch plunger pressed down, check for continuity between "common"

and "NO" terminals per figure 10.

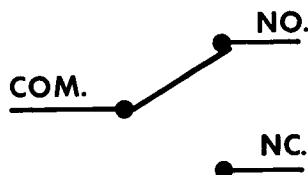


Figure 10 - Switch Connections with Plunger Actuated

- b. With switch plunger free (up position) check for continuity between "common" and "NC" terminals per Figure 11.

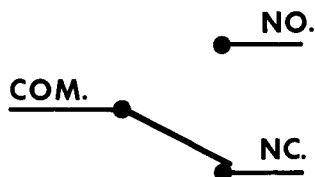


Figure 11 - Switch In Free State, Plunger Up.

Diagnosing Problems

1. Won't run with ram down or up-hums. Check for:
 - a. Proper reversing switch harness connections.
 - b. Defective reversing switch.
 - c. Ram jammed - low voltage.
 - d. Starting winding open.
2. Compactor refuses to start occasionally. Check for:
 - a. Loose connections in starting circuit.
 - b. Intermittent or high resistance contact in reversing switch.

ELECTRICAL COMPONENTS

SWITCH, START - STOP (KNOB TYPE)

The "start" portion of the switch is a normally open, momentary switch. It acts as a bypass circuit across the top limit switch to start the ram downward and after 2 to 3 seconds, the knob may be released. By this time the ram and electric shelf have moved down about one inch, the limit switch has closed and the cycle will continue until the ram reaches the top of its stroke.

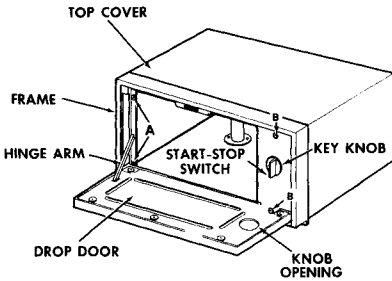


Figure 12 - Key Knob, Switch and associated parts.

DISASSEMBLY WITH DROP TYPE STORAGE DOOR

To remove the switch, proceed as follows:

1. Disconnect power to the compactor.
2. Turn knob to "stop" and withdraw.
3. Remove frame by running out four screws (marked "A" & "B") from each corner. Note that two "A" screws are short and "B" screws are long. See Figure 12.
4. Remove 3 screws and lift off box cover and switch. See Figure 10.
5. Disconnect wires and unscrew switch nut.

6. Remove switch.
7. Reassemble by reversing order of disassembly.

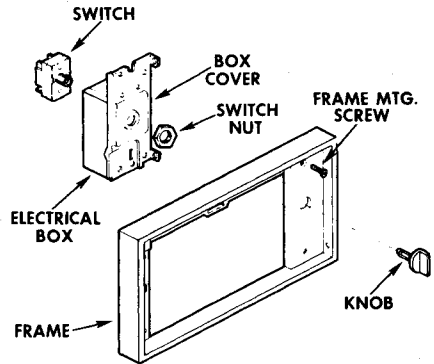


Figure 13 - Switch, Box & Frame Disassembly

DISASSEMBLY OF BUILT-IN COMPACTORS WITH A SOLID ESCUTCHEON.

1. Disconnect power from compactor.
2. Turn key to "stop" and withdraw knob. See Figure 14.

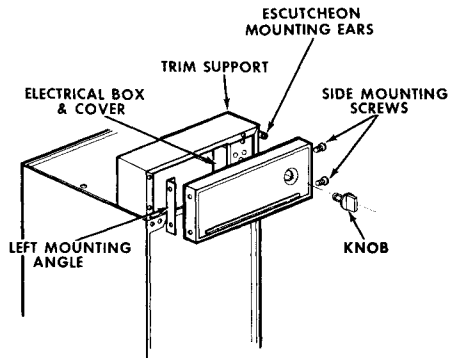


Figure 14 - Removing solid escutcheon.

3. Remove four side screws and remove escutcheon.
4. Remove 3 screws and lift off box cover.
5. Remove wires and unscrew switch nut.

ELECTRICAL COMPONENTS

6. Withdraw switch.
7. Reassemble in reverse order of disassembly.

Note that the electrical box is held in place only by the cover plate. A mounting angle is not used on the right side as the electrical box cover has two ears to which the escutcheon is fastened.

SCHEMATIC WIRING DIAGRAM AND WIRING HARNESS

Figure 15 shows the schematic and the harness. The relative position of all electrical components is also shown on the drawing of the wiring harness.

ELECTRICAL COMPONENTS

WARNING - Disconnect from electrical supply before servicing unit.

NOTE: Machine with door closed ready to operate.

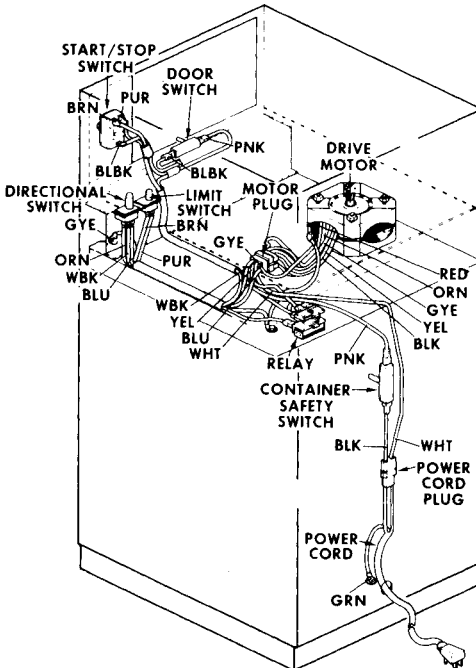
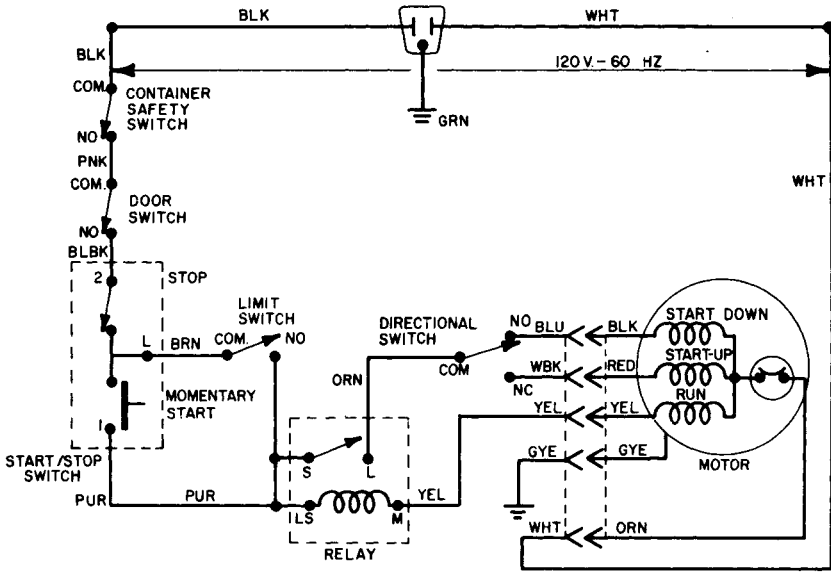


Figure 15 - Compactor Schematic Wiring Diagram and Wiring Harness

MECHANICAL COMPONENTS

COMPACTORS — SECTION I

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BAND & HANDLE, CONTAINER

The steel band and carrying handle is made to clamp onto the top flange of the trash container. It clamps over the plastic bag and holds it in place. The band also provides a guide and two tabs to attach the band to the container support. The band, carry handle and the latch mechanism is a complete assembly and must be serviced accordingly. Only the plastic latch cap is stocked separately. See Figure 1.

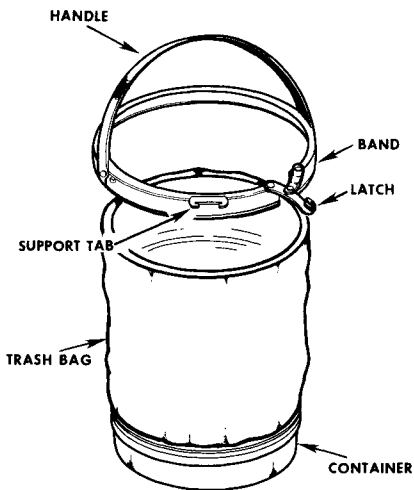


Figure 1 - Container Band & Handle

Diagnosing Problems

1. Band pulls off container. Check for:
 - a. Latch is bent-straighten.
 - b. Latch rivets are loose. Tighten by peening over or replace band assembly.
 - c. With plastic bag in place and band pulls off container with a 35 pound load, replace band & handle assembly with WC29X5012.

MECHANICAL COMPONENTS

2. Handle rubs side of cabinet. Check for:
 - a. Handle sticks and does not drop down against container.
 - b. Support tabs bent outward.
 - c. Door support for container damaged or worn.

CABINET STRUCTURE

The compactor cabinet construction is different than that usually found in appliance cabinets as it is designed to withstand the expansion force of approximately 3100 pounds between the top and the bottom, when compressing trash. Thus, the three sides are in tension and are actually load members at the moment of compaction.

The top load plate is made of a single thickness of heavy steel to which the scissors assembly and motor are attached. The bottom load plate (upon which the trash container rests) is actually two thicknesses of heavy steel with a number of channel reinforcements welded between them. The sides and back are a wrap-around made of a single thickness of sheet steel. See Figure 2.

MECHANICAL COMPONENTS

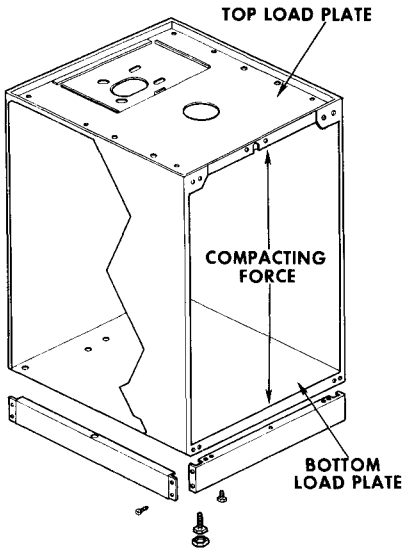


Figure 2 - Compactor Cabinet.

Since the cabinet is welded into a single assembly, damage to any one side would require the replacement of the entire cabinet.

This fact, plus the amount of labor needed to completely rebuild the compactor, makes it uneconomical to replace cabinets in the field. A damaged or faulty cabinet will require the replacement of the entire compactor.

Diagnosing Problems

1. Top of compactor moves up during compacting stroke. Check for:
 - a. Cracked bottom load plate.
 - b. Broken welds on bottom load
 - c. Sides broken loose from either load plate.

In all three cases replace the compactor if unacceptable to customer.

2. Popping and creaking noises. Check for:

- a. Cracks in bottom load plate.
- b. Sides bulged (oil canning).
- c. Broken welds along lower side of cabinet.

In all three cases replace the compactor if unacceptable to the customer.

CONTAINER SUPPORT

The container support is mounted on the inside of the trash door and it supports the trash container off the bottom of the cabinet yet allows it to rest on the bottom load plate when compacting. It also is spring biased to swing the container inward so that the largest possible container will fit into a fifteen inch wide cabinet. Further, it is double ended in that it will function regardless of how the door is mounted.

MECHANICAL COMPONENTS

Disassembly From Door

The complete support may be removed from the door as follows: (See Figure 3).

1. With the door partially open, slide the door spring cover inward about one inch.
2. Grasp the spring and cover near the support and pull it outward. With a large pair of long nose pliers, unhook the spring.
3. Remove eight screws from the top and bottom mounting plates and remove entire assembly from door.

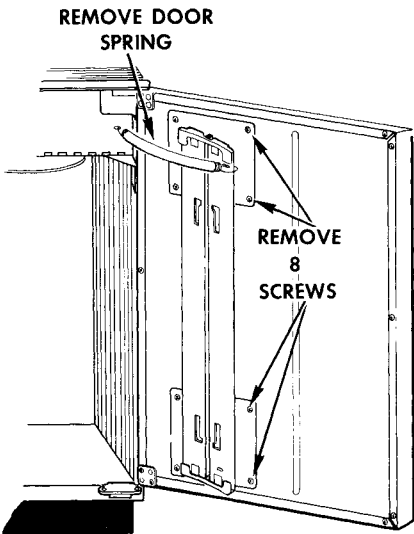


Figure 3 - Removing Container Support.

4. Reassemble in the reverse order of disassembly. Make sure door spring is in place and hooked so that end hooks face outward, away from the door.

Disassembly of Spring Support

After the entire support assembly is removed from the door, either of the end support assemblies may be serviced as follows:

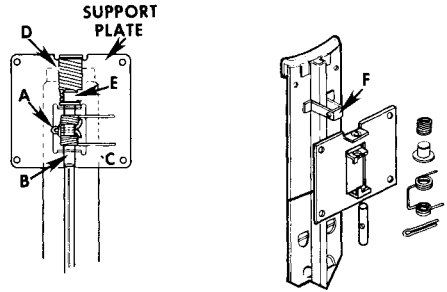


Figure 4 - Spring Support Assembly

1. Refer to Figure 4 and remove cotter pin A.
2. Hold spring C and withdraw pivot pin B.
3. Door spring D and pivot eyelet E may be drawn out from support plate.

Reassembly of Spring Support

1. Door spring D and pivot eyelet E should be pushed in place together.
2. Remove the burrs on the underside of the two ends of torsion spring C using a file or stone.
3. Place support plate over bracket F.
4. Position center of torsion spring C over bracket F, force into position and slide pivot pin B through bearings into eyelet E.
5. Rotate pivot pin with pliers until cross holes line up with bracket F and insert cotter pin. Bend ends over as shown.

MECHANICAL COMPONENTS

6. Using grease WC32X5001, lubricate pivot pin at two support plate bearings and at torsion spring coils.
7. Rest support plate on the floor and press downward on container support. Door spring should compress and pivot pin should slide freely.
8. Reinstall in door as shown in Figure 3.

Diagnosing of Problems

1. Door won't swing open when latch is released. Check for:
 - a. Broken torsion spring. Replace.
 - b. Worn pivot pins. Replace and lubricate with WC32X5001.
 - c. Lack of lubrication on pivot pins. Add WC32X5001.
 - d. Container drags. See below.
2. Container drags. Check for:
 - a. Bulged container bottom. Replace container and check ease of support assembly vertical movement.
 - b. Pivot pins worn or need lubrication. Use grease WC32X5001.
 - c. Bent lower hinge.
 - d. Bent or damaged container support assembly.
 - e. Loose clamp ring on container. Replace band and handle assembly.
 - f. Weak or broken door compression spring.
 - g. Hook on band is bent or welds are bad.

- h. On older models check to see if WC1X5101 spacer is in place. Install WC1X5101 spacer if missing.

3. Bent lower hinge—door loose. Check for:
 - a. Inoperative or binding container support. (Puts load on door when compacting — difficult to move up and down.
 - b. Container not hooked on properly or support tabs on band are bent.

ELECTRIC PANEL

The electric panel is a four section, three hinge assembly. The lower end is riveted to the front of the electric shelf and the upper end is fastened to the top of the cabinet with two 1/4 inch hex screws. See Figure 5. It supports the limit switch and the reversing switch.

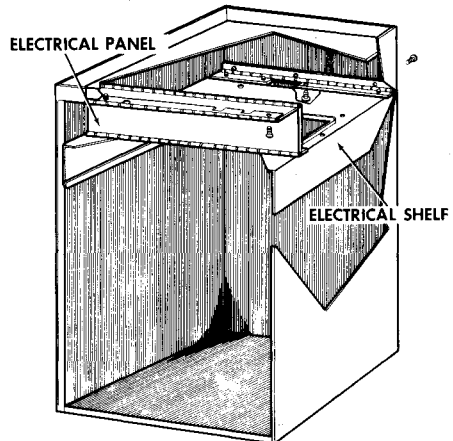


Figure 5 - Electric Panel In Position.

The design concept of the electric panel is such to allow it to drop approximately one inch at the be-

MECHANICAL COMPONENTS

ginning of the compacting cycle. This vertical movement is sufficient to activate the limit switch and the reversing switch. These switches control the electrical circuitry to the drive motor. Figure 6 illustrates the switches and their relative location on the panel.

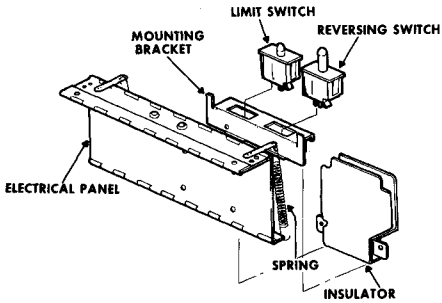


Figure 6 - Electric Panel With Control Switches

For a detailed analysis of how the switches operate, see Switch, Limit, or Switch, Reversing in component section of this Handbook.

IN ADDITION TO THE LIMIT AND REVERSING SWITCHES, THE ELECTRIC PANEL ALSO SUPPORTS THE DEODORANT CONTROL DISPENSING MECHANISM ALONG WITH THE SPRAY CAN. THESE SYSTEMS ARE EXPLAINED UNDER SPRAY, AUTOMATIC OR SPRAY, MANUAL IN THIS HANDBOOK.

Disassembly

The electric panel assembly may be removed as follows:

1. With ram at top, disconnect power from compactor.
2. Remove trash container.
3. Remove ram disc.

4. Disconnect trash door spring from panel.
5. Remove two mounting screws and lower electric panel and shelf.
6. Remove two shelf springs.
7. Remove 4 1/4 inch hex screws which secures the switch bracket and harness guard to panel. Two screws have nuts attached.
8. Detach panel from shelf by using a .130 inch bit and drill out the corner rivets.

NOTE: Replacement panels are packaged with pop rivets to fasten new panel to electric shelf.

9. Make necessary repairs and reassemble in reverse order of disassembly.

Diagnosing Problems

1. Compactor operates only when "Start" button is pressed. Check for:
 - a. Electrical shelf not dropping—limit switch cannot operate, unit will jam at bottom of stroke.
 - b. Loose harness connection or defective limit switch.
 - c. Shelf damage or tight hinges.
2. Compactor refuse to start - jammed with ram in "up" position. Check for:
 - a. Rubber shelf bumper missing or damaged. Cement in place with WX6X19.

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ELECTRICAL SHELF

The electrical shelf is located above the trash container. It is attached to the rear of the cabinet by a hinge and is supported at the front by the hinged electrical panel. It moves up or down as the ram disc contacts the shelf bumper. The movement of the electrical shelf lifts or lowers the electrical panel which carries the switches to provide motor reversal and stop function at the top of the ram stroke. See Figure 7.

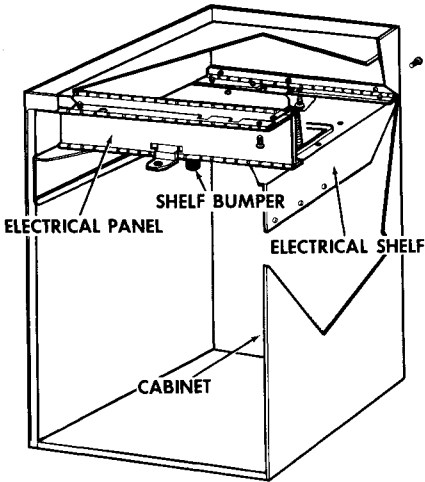


Figure 7 - Electrical Shelf in Position

Disassembly

A. Removing shelf assembly from compactor.

1. With the ram at the top remove power.
2. Remove trash container.
3. Remove door spring & spray can.
4. Remove ram disc.
5. Remove rear tunnel.

6. Remove two 1/4" hex electric shelf mounting screw, lower electrical panel and shelf.
7. Remove two shelf springs.
8. If rear of unit is accessible, remove three mounting screws through back of cabinet. If this is not possible, remove four 1/4 inch hex screws through underside of shelf into rear hinge.
9. Disconnect wires and remove shelf.

NOTE: If trash door cannot be opened 180 degrees, remove the trash door by loosening the bottom hinge bracket.

10. Make necessary repairs and reassemble in reverse order of disassembly.

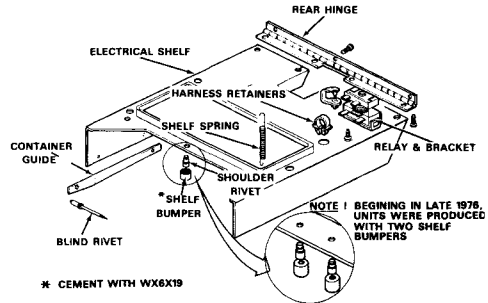


Figure 8 - Electrical Shelf and Components

B. Removing Relay.

1. Disconnect all wires.
2. Loosen two mounting screws.
3. Pry mounting bracket tabs outward and remove relay.
4. Reassemble by reversing order of disassembly.

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C. Replacing Container Guides.

1. Pry off plastic guides by breaking off heat staked heads on pins or drill out rivets with a 0.130 inch bit.
2. Redesigned guides are held in place by small pop rivets. Hold guide securely in place and insert rivet with head against guide. Staked rivet should not protrude more than 5/64 inch beyond side of shelf. File down if necessary to prevent interference and hang-up.

D. Replacing Electrical Shelf.

1. Remove shelf and relay by following procedure under "A" & "B".
2. Free harness by removing ground screw and retainers.
3. Drill out two rivets using a 0.130 inch bit holding electrical panel to shelf.
4. Attach electrical panel to new electrical shelf using two pop rivets furnished.
5. Transfer rubber bumper and other components to new shelf.
6. Reassemble by reversing order of disassembly, making certain that motor ground wire is in place.

Also move shelf up and down manually several times to check for free operation before installing ram disc.

Diagnosing Problems

1. Compactor operates only when "Start" button is pressed. Check for:

- a. Electrical shelf not dropping to turn on limit switch. Switch mounting screws binding on upper scissor channel.
 - b. Loose connection or bad limit switch.
 - c. Shelf damaged or hinges worn.
2. Compactor refuses to start - jammed in ram "up" position. Check for:
 - a. Rubbish or waste material on top of ram disc.
 - b. Rubber shelf bumper missing or damaged.
 - c. Limit switch out of adjustment. See limit switch section in this manual.
 3. Compactor runs continuous. Check for:
 - a. Rubber shelf bumper missing.
 - b. Defective limit switch.

HINGES, TRASH DOOR

The hinges used to support the trash door are made of heavy sheet steel and pivot on pins, much like refrigerator door hinges. They are unique in that they permit the door to be hinged on the right (as mounted at the factory) or on the left. The two hinges on the door have pivot pins in opposite corners. The bottom hinge bracket is used either left or right and it supports the door by means of a washer on the pivot pin.

There are left and right top hinges that support both the door and the door latch. These hinges are adjustable vertically in order to control latch engagement on the door.

MECHANICAL COMPONENTS

Top hinge brackets mounted on the cabinet have abrasive anti-skid washers to keep them from slipping during shipment. The hinge pins and bottom washer should be lubricated with Lubriplate grease.

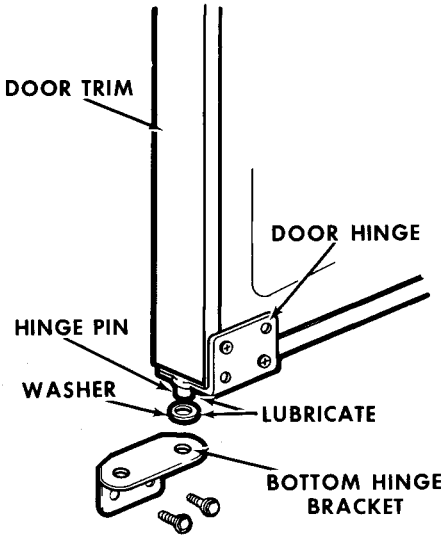


Figure 9 - Bottom hinge and Door Hinge.

Disassembly

The bottom hinge bracket is removed by removing two hex screws per figure 9. This permits the door to be removed for service or hinging change.

When replacing the bottom hinge, make certain washer is on the pin and that it is lubricated with Lubriplate.

The door hinge brackets may be removed from the door by removing two recess screws from each. Note that the screws also holds the trim in place. Some "play" is provided in the screw holes to permit door alignment.

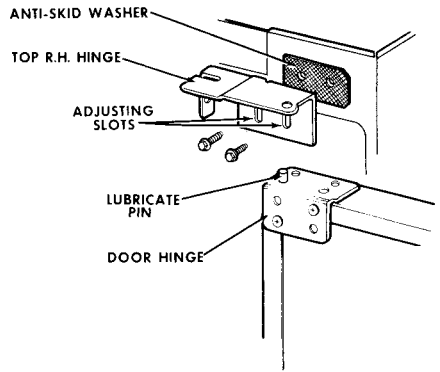


Figure 10 — Top Right Hand Hinge

The top hinges may be removed by removing two hex screws in each. This will release both the trash door and the latch. Figure 10. When replacing the hinges make certain that they are positioned against the top door hinge without binding. For details regarding the door latch, refer to that section in this manual.

Diagnosing Problems

1. Door binds - trash container removed. Check for:
 - a. Misadjusted top hinge - too tight.
 - b. Lack of lubrication.
 - c. Missing lower hinge washer.
2. Door sags or isn't parallel with side of cabinet. Check for:
 - a. Bent lower hinge.
 - b. Worn or missing hinge washer.
 - c. Loose or worn hinge pins.
 - d. Loose door hinges.
 - e. Misadjusted door hinges.

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LATCH, TRASH DOOR

The trash door latch is an aluminum extrusion extending the full width of the cabinet. It is supported by two pivot pins that mate with holes in vertical tabs on the door hinge brackets. The hinges also have projections that act as vertical stops. A "Z" shaped spring holds the latch downward against the stops, preventing rattling. An angled lip on the underside of the latch engages the trash door to lock it closed. See figure 11.

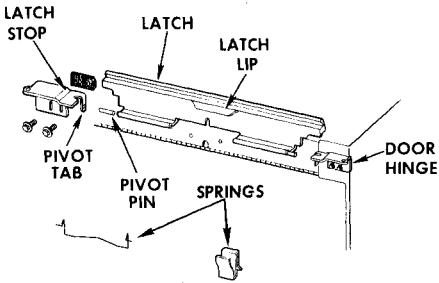


Figure 11 - Latch & Support Detail Disassembly

To remove the latch from compactor proceed as follows:

1. Open trash door, remove container and block door open.
2. Remove hinge bracket not supporting door.
3. Remove latch and spring. See figure 12.
4. Remove spring by pulling one end at a time out of the latch slot.
5. To reassemble reverse order of disassembly.

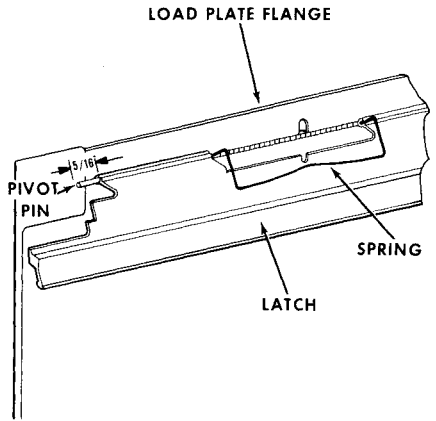


Figure 12 - Latch Spring Installation

To remove and replace pivot pins from latch proceed as follows:

1. If pin is intact, compress and withdraw with pliers.
2. If pin is broken off, drive out remaining portion using a flat blade screwdriver in the latch slot.
3. Drive new pin in place so that 5/16 inch is projecting. See figure 12.

Diagnosing Problems

1. Trash door pops open when compacting - unit stops. Check for:
 - a. Too shallow engagement of latch lip over trash door. Adjust both top hinge brackets downward to increase latch engagement to at least 5/32 inch.
 - b. Weak or broken latch spring.
 - c. Broken or worn latch pivot pins.
 - d. Hinge bracket pivot tabs bent outward - latch too loose.
 - e. Damaged trash container - bulges.

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2. Latch difficult to lift - drags. Check for:
 - a. Inadequate clearance at latch lip. Bend pivot tabs outward slightly - Away from load plate flange.
 - b. One or both hinge brackets adjusted too high or aren't mounted level.
 - c. Bent latch spring.
 - d. Container not hung properly or mounting is bent.

Late production compactors use two, flat springs that clip onto the flange of the top load plate. They are positioned 4 1/2 inches from the edges of the cabinet as shown in figure 13. Sharp projections hold them in place.

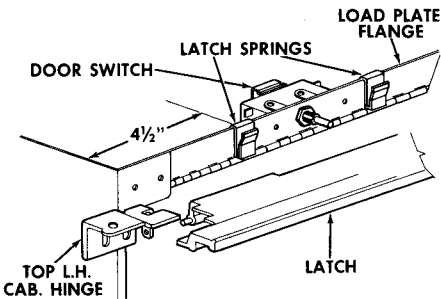


Figure 13 - Latch Spring Installation - Flat Type

RAM (SCISSORS)

The function of the ram (scissors) assembly is to keep the ram disc horizontal and the ram screw vertical under all unbalanced load conditions. This concentrates the total compacting force (approx. 3100 pounds) at the point of contact, regardless of where it is located on the ram disc. In a sense, it operates like a folding frame.

The ram is actually two scissors tied together, formed by the two outer roller arms and the solid inner arm as shown in figure 14. They are pivoted at the center with rollers at either end that move back and forth in the heavy channels at the top and the bottom.

To keep the roller arms in position and centrally located as the scissors opens and closes, four link arms are used, two at the top and two at the bottom. These links also hold the channels in place.

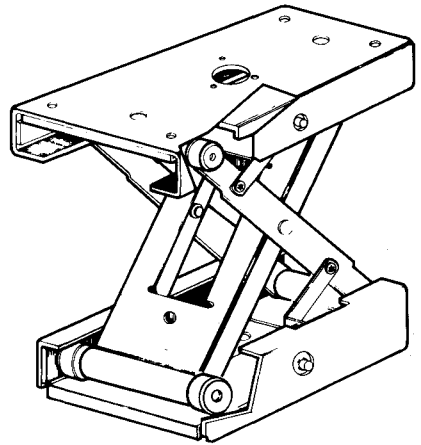


Figure 14 - Ram Assembly - Hard Guide Links

This ram assembly is similar to Ram "A" with some important changes. See figure 15.

The link arms tended to fail under heavy off-center loads in the earlier rams. The links in this ram are made of fully hard spring steel with the pivot pins (that fit into the channels) orbital riveted in place. These links are available for service of the older rams - (See Field Corrections Section of this manual).

MECHANICAL COMPONENTS

The earlier rams occasionally stalled in the down position, especially when operated without a load. This problem has been eliminated by a re-design of the lower channel.

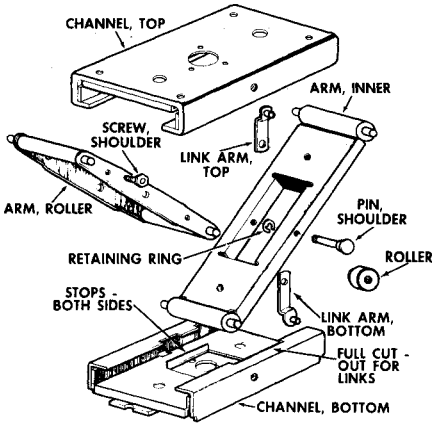


Figure 15 - Ram Assembly Parts

Figure 15 illustrates the vertical tabs on either side of the lower channel that prevent the scissors from extending too far and jamming.

Due to a lack of clearance, the retainer for the lower spherical bearing is held in place by two, Torx 70 screws, rather than hex head screws formerly used.

The return flanges on both top and bottom channels have been fully notched to clear the heavier links. Thus, a most unlikely interference at these locations.

Disassembly

Top and bottom links may be exchanged without removing the ram from the compactor. Proceed as follows:

1. If the ram is jammed down in the container, remove the trash door and raise the ram disc, either by

turning the top gear pulley or the ram screw.

2. Retrieve the ram parts in the container for further use. Remove container.
3. If top links have failed, remove two screws from the electrical panel and drop the electrical shelf.
4. Using a 5/16 inch socket or box end wrench, remove the front and rear shoulder screws. Use Torx 27 wrench or an Allen wrench - 3/16 inch size.
5. Turn links toward the inner cross arm and pull pins out of channel.
6. If the bottom links have failed, follow the same preparatory procedure and then remove damaged links.
7. When installing shoulder screws add a drop of Loctite 290 (WC32X5002) to the threads. This is important! Torque screws to 60 inch - pounds.

NOTE: Some Torx screws will have threads treated with a dry sealer and Loctite will not be needed.

NOTE: Some rams with hard, spring steel bottom links will come equipped with stainless steel straps as shown in figure 16.

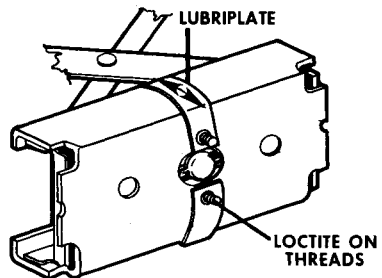


Figure 16 - Straps Covering Lower Link Pins.

MECHANICAL COMPONENTS

Always replace straps! (See Field Corrections Section in this manual). Replacement lower links, WC28X-5032 will have straps in the kit.

8. Disassemble scissors arms by pushing off "E" rings and removing pivot pins.
9. Inspect, replace worn or broken parts and reassemble in reverse order of disassembly. Lubricate all moving parts with grease, WC32X5001.

Diagnosing Problems

1. Noisy when compacting. Check for:
 - a. Broken or missing roller.
 - b. Lack of lubrication.
 - c. Bent lower channel.
 - d. Broken or worn socket seat.
2. Binding or jamming. Check for:
 - a. Bent or broken links.
 - b. Broken or loose ram disc.
 - c. Chipped or broken rollers.
 - d. Bent or worn roller shaft.
 - e. Bent or broken scissors arm.
3. Ram stalled in down position. Check for:
 - a. Low voltage (below 108 volts) or high voltage (125 volts or higher).
 - b. Broken lower bearing dowel pin.
 - c. See "Motor and Drive System B" in this manual.
4. Noisy when running without load.
 - a. Large gear wheel teeth don't match teeth on good belt. Replace gear wheel.

- b. Loose belt. Tighten belt 7 - 9 pounds with 5/16 inch deflection with ram run down two full turns!
- c. Worn thrust bushing in top channel. Check excess play in gear wheel in horizontal direction.
- d. Excess vertical play in thrust bearings or cracked bearing race washer.

Replace cracked or bowed race washers. Use extra race washer under brake to take up excess vertical play.

RAM DISC

The ram disc assembly is bolted to the underside of the bottom channel of the scissors. The rubber wiper and retaining flange are fastened to the disc.

The total compression force of about 3100 pounds is transmitted to the center of the disc by the spherical lower bearing on the end of the ram screw. This force, in turn, is transferred to the trash in the container. See figure 17.

MECHANICAL COMPONENTS

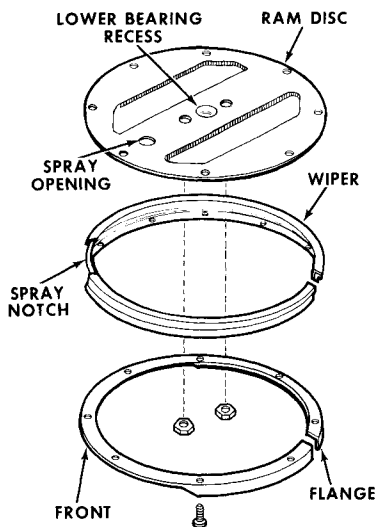


Figure 17 - Ram Disc and Components.

Disassembly

To remove and disassemble the ram disc proceed as follows:

1. Disconnect power to compactor.
2. With the ram in the top position, remove two nuts on underside of disc and it will drop free.
3. Place inverted disc assembly on a flat surface and remove nine screws. Disc, wiper and flange may now be serviced.
4. Reassemble by reversing order of disassembly.

NOTE: When reassembling, make certain that the spray opening in the disc, the notch in the wiper and the cut-away portion of the flange are in front.

Diagnosing Problems

1. Ram and disc stuck down in trash container. Check for:
 - a. Center of disc broken out.

- b. Mounting nuts loose.
 - c. Broken pin in lower bearing.
2. Noisy operation - No load. Check for:
 - a. Loose ram disc.
 - b. Cracked ram disc.
 - c. Loose or worn lower bearing retainer.
 3. Cannot open trash door. Check for:
 - a. Foreign material on top of ram. (Stops upward stroke too soon).
 - b. Broken pin in lower bearing.

SPRAY, AUTOMATIC

The spray used in the compactor helps control odors. The system consists of a pump - spray can clipped to the front of the electrical panel in an inverted position, spraying a measured amount into the trash container each time the ram disc begins its downward stroke. A hole in the ram disc is provided to permit the spray to reach the trash inside the container.

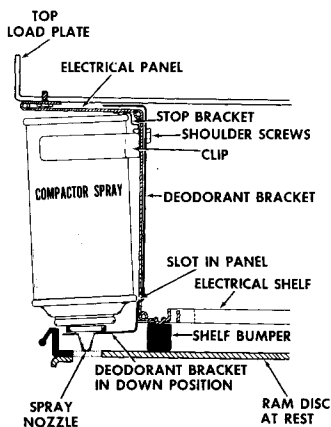


Figure 18 - Automatic Spray System at Top of Travel.

MECHANICAL COMPONENTS

Figure 18 shows the compactor at rest with the ram disc at the top of its stroke and the electrical shelf held up by the rubber shelf bumper. The deodorant bracket is at its lowest position.

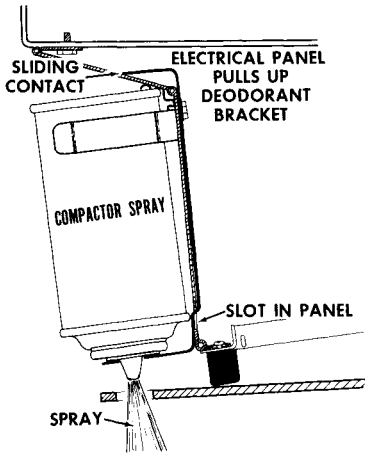


Figure 19 - Automatic Spray Activated

In figure 19 the ram disc and electrical shelf have moved downward and the deodorant bracket has been pulled upward by its right angle projection sliding on the upper portion of the electrical panel.

This upward movement of the deodorant bracket presses the spray nozzle upward which releases a single burst of spray.

Disassembly

The spray operating mechanism may be removed as follows:

1. Disconnect power to the compactor.
2. Open trash door - remove container and spray can.
3. Remove door spring.

4. Remove two screws holding electrical panel to upper load plate.
5. Lower electrical shelf and remove the two springs.
6. Refer to figure 20 and remove two screws and nuts mounting top limit switch.
7. Using 1/4 inch socket wrench, remove two nuts holding stop bracket, can clip and deodorant bracket.
8. Carefully lift electrical insulation and remove deodorant bracket.
9. Reassemble in reverse order of disassembly.

NOTE: Lubricate rubbing surfaces of the panel and bracket. Deodorant bracket must move up and down freely. Check switch lever adjustments before re-assembly.

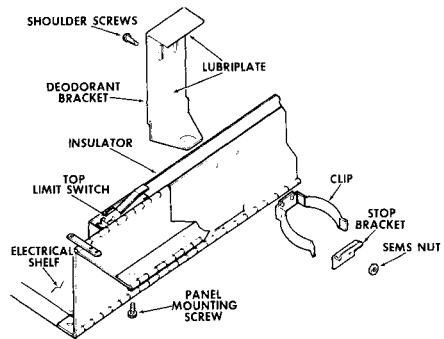


Figure 20 - Automatic Spray Parts
Diagnosing Problems

1. Spray will not operate. Check
 - a. Empty spray can or clogged nozzle. Test manually.
 - b. Spray can not seated under stop bracket.
 - c. Bent or damaged deodorant bracket.
 - d. Lack of proper lubrication.

MECHANICAL COMPONENTS

2. After repair, compactor stalls. Check:

- Electrical shelf hanging-up on scissors jack. Switch mounting screws too long.
- Either switch out of adjustment.
- Electrical terminal pulled loose.

THRUST BEARING ASSEMBLY

The thrust bearing assembly consists of four parts, the thrust bushing, race, needle bearing and another race washer. This arrangement handles the entire upward pressure of 3100 pounds developed by the ram screws. See Figure 21.

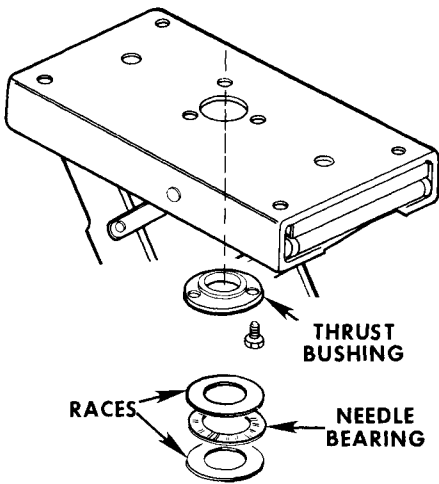


Figure 21 - Thrust Bearing Assembly

The thrust bushing is a round steel collar mounted on the underside of the top scissors channel by three screws. These screws project above the channel and act as stops to limit the rotation of the brake. This bushing also acts as a radial bearing-

the only bearing to resist the side thrust of the drive belt and the ram screw.

The two races are identical hardened steel washers above and below the needle bearing.

To disassemble proceed as follows:

- Lift or remove shelf, drive belt and gear wheel.
- Remove retaining ring and lower ram disc. Scissors will open up and thrust bearing parts are accessible.

To remove thrust bushing continue as follows:

- Reaching through the side of the scissors, remove three, 5/16 inch hex screws.
- Work bushing out from between stop flanges.
- Reassemble in reverse order of disassembly.

DIAGNOSING PROBLEMS

- Trash compacting is poor. Check:
 - Lack of lubrication on thrust bearing assembly.
 - Rough surfaces on bearing races, thrust bushing or needle bearings.
 - Worn, rough surfaces on inside of thrust bushing and/or on outside of socket seat.
 - Low voltage.
- Motor stalls or overload opens under load. Check:
 - a, b, c, & d above, in that order.
 - Reversing switch.
 - Starting relay.

MOTOR & DRIVE MECHANISM

COMPACTOR — SECTION J

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BRAKE & TOP NEEDLE BEARING

The plastic gear wheel has a recess underneath with two flats that mate with the similar shaped gear fitting and held in place by two hex screws. The fitting has three internal recesses which mate with three similar raised lands on the tubular extension of the socket seat. Rotation is thus transmitted from the fitting to the socket seat and column nut. The gear fitting is secured to the socket seat by a large retaining ring. See Figure 1.

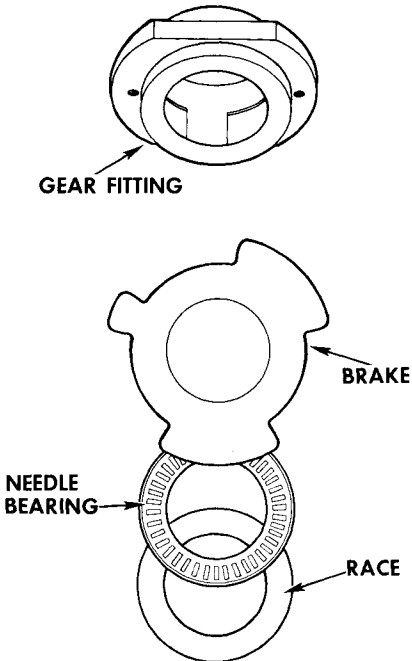


Figure 1 - Fitting, Brake & Bearing

Beneath the gear fitting is a hardened steel plate with three tabs which are prevented from rotating by three screws projecting from the top

of the scissors assembly. This is the brake and its function is to prevent excessive pressure lock-up as the motor coasts to a stop. Keep in mind that this entire assembly is being compressed at the end of the upstroke.

Underneath the brake is the needle bearing with its hardened race washer. This bearing carries only the weight of the ram assembly on the upstroke and the compression as the motor coasts to a halt.

To disassemble proceed as follows:

1. Lift shelf and remove drive belt.
2. Remove two screws and lift off gear wheel.
3. With an expander, remove retaining ring and lift off gear fitting.
4. Note how the brake is positioned and remove.
5. Lift off needle bearing and race.
6. Reassemble in reverse order making certain all parts are lubricated.

DIAGNOSING PROBLEMS

1. Motor hums-won't start down.
 - a. Lack of lubrication on underside of fitting on brake and bearing.
 - b. Brake installed incorrectly. Narrow tab should fit between closest of the three projecting screws. See Figure 2.
 - c. Top limit switch misadjusted, opens too late.
2. Motor hums-ram stuck down.
 - a. Brake installed incorrectly. See Figure 2.

MOTOR & DRIVE MECHANISM

- b. Brake or fitting surface rough.
- c. Lack of lubrication.

Note: This condition would result with little or no load in the trash container.

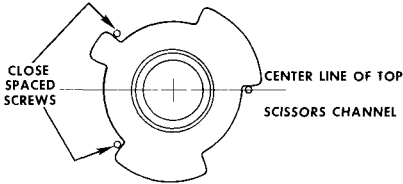


Figure 2 - Brake in Proper Position

DRIVE BELT

The drive belt is a special gear type (positive drive) with teeth that mesh with corresponding teeth on the gear pulleys. It is absolutely essential that the belt be adjusted properly to prevent belt damage and excessive noise.

To adjust belt, proceed as follows:

1. Turn off Power.
2. Run ram down two turns of gear wheel.
3. Loosen the four motor mounting nuts and force the motor to the left. A flat blade screwdriver in the mounting slot at point "A" will help this procedure.
4. Check tension per Figure 1 and retighten the four nuts.
5. Turn gear wheel manually to determine if belt runs in the center of face width and re-check tension.

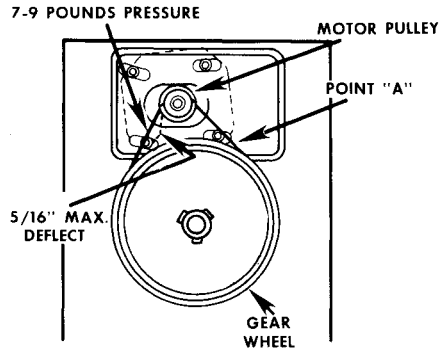


Figure 1 - Belt Adjustment Rubber Bushing Mounting

If the belt runs low, tighten the inner two mounting nuts and/or loosen the rear two nuts slightly.

If the belt runs high, tighten the rear two nuts and/or loosen the inner two nuts.

1. Seal all nuts with Loctite!

Caution: Do not drop anything into the end of the motor!

SOLID MOUNTING WITH SPACER

When the motor is mounted to the top of the cabinet using a 1/8 inch thick fiber spacer or a thin polyester shield, adjust the belt height by raising or lowering the motor pulley. Seal the set screw with loctite and torque to approximately 20 inch-pounds.

DIAGNOSING PROBLEMS

1. Motor runs-ram stalled. Check:
 - a. Belt teeth stripped or torn.
 - b. Motor pulley loose or broken.
2. Belt runs high or low - cannot be adjusted with mounting nuts.

MOTOR & DRIVE MECHANISM

Check:

- a. Motor pulley moved up or down.
- b. Motor Pulley loose on shaft.
3. Belt chatters-runs rough. Check:
 - a. Loose belt.
 - b. Belt teeth and gear teeth pitch do not match.
4. Belt strips regularly, Check:
 - a. Belt tension.
 - b. Binding in bearing, column nut and/or in scissors.

DRIVE MECHANISM

The drive mechanism is attached to the top load plate and is entirely supported by the top of the cabinet structure. Removing the storage shelf exposes the motor pulley, belt, jack pulley and retaining ring. See Figure 1.

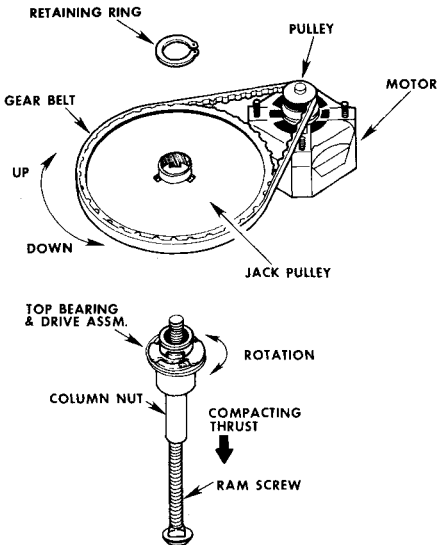


Figure 1 - Drive Mechanism

The jack pulley, top bearing, column nut and other driving parts are all one assembly and rotate as a single unit. The ram screw is designed with a

bearing surface like a carriage head bolt. Its square shoulder locks into the bottom channel of the scissors (not shown). The ram disc is also fastened to the bottom scissors, securing the ram screw. The ram screw and disc do not rotate.

During operation in the downward stroke, the motor turns the jack pulley and column nut counter clockwise. Since the ram screw is locked in the bottom channel and cannot rotate, the screw is extended downward.

With the motor running at 1725 R.P.M., the gear wheel (and column nut) rotate at 288 R.P.M. or a reduction in speed of 6 to 1. This six time increase in motor torque is further increased by the column nut and ram screw to produce the total downward thrust.

It is interesting to note that only three assemblies rotate during the compacting cycle, the motor and pulley; the gear belt and jack pulley; thrust bearing and the column nut. This accounts for the relative quiet and highly efficient operation.

When servicing any of the drive components, see the proper section of this manual.

An exploded view of the parts making up the drive mechanism is shown below for reference. See figure 2.

MOTOR & DRIVE MECHANISM

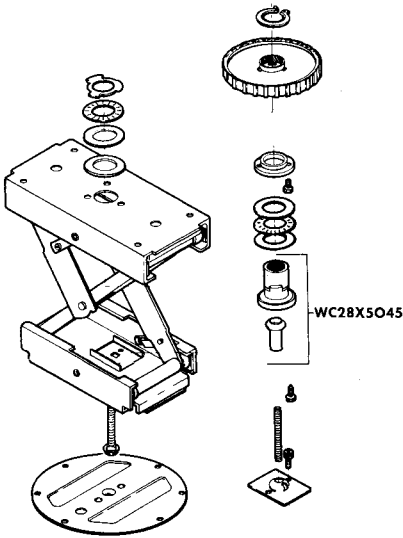


Figure 2 - Drive Mechanism Parts & Their Location

A kit consisting of the socket seat, column nut, retainer and mounting screws has been set up to service older models. This kit (WC28X5045) supersedes column nut WC28X5012, socket seat WC28X5010, Top Bearing WC4X5023, bearing retainer WC28X5011 and column nut bearing assembly WC4X5022. This new assembly is a better repair in that it eliminates the upper bearing pin failure which was the weak point in the older jack design.

MOTOR ASSEMBLY & PULLEY

The motor is rated at 1/3 HP, 1725 RPM, 115 Volts, 60 Cycle. No load amperage and wattage averages 4.3 amperes and 125 watts at 115 volts. Full load amperage and wattage averages 5.5 amperes and 435 watts at 115 volts. The motor windings are

protected by an internal (automatic resetting) overload protector that is sensitive to both overheating and over-current conditions. A relay is used to start the motor.

The motor can be direct-tested without removing it from the unit, by first removing the drive belt and turning the motor to make certain it is not jammed. If not, close the trash door with the container in place and apply power through the compactor circuits. If the motor runs, the problem is elsewhere in the drive mechanism. (See Drive Mechanism Section).

If it hums but doesn't start, check the starting relay.

When above procedure fails to start the motor, direct test as follows:

1. REMOVE THE DRIVE BELT FIRST!
2. Disconnect all power to the compactor.
3. Loosen tunnel and lay in bottom of cabinet.
4. With ram all the way up, remove the ram disc and loosen front of electrical shelf. Lower it toward the bottom of the cabinet.
5. Disconnect the mid air plug between the motor leads and the harness leads. Connect Robinair Motor Tester No. 14408, using the Compactor Adaptor No. 14623. To check the start-up windings, set the directional switch to "Pump-out" turn the start switch to "Start", hold momentarily, then release.

MOTOR & DRIVE MECHANISM

To check the start-down windings, set the directional switch to "Wash-Rinse", turn the start switch to "Start", hold momentarily, then release.

If the motor fails to start in either test, replace the motor.

If the motor cuts out part way through the cycle, the trouble may be the overload protector. This is referred to as "nuisance tripping". However, do not condemn the motor until a direct test is made or until an ohmmeter test is made. See schematic to make ohmmeter test. Also check door safety switches to make sure they are okay. The door latch may allow the door to move outward and the door switch or container switch may open the circuit.

To check the motor for ground, use an ohmmeter and check between motor housing and motor leads. Make sure ohmmeter probe is touching bare metal on housing. Check for ground on both windings "start" and "run". See schematic for proper lead connections. If ohmmeter indicates less than infinite resistance, this indicates a ground and motor must be replaced.

To Remove Motor, proceed as follows:

(In the following sequence refer to the appropriate sections in this manual for details when removing or re-installing parts).

1. Disconnect power to compactor.
2. Remove storage door and escutcheon frame.

3. Remove storage shelf. (Turn gear wheel counterclockwise until ram screw is low enough to clear shelf).
4. Slip off gear belt.
5. Remove ram disc and run ram to top position by turning gear wheel.
6. Remove gear wheel.
7. Remove tunnel and lower electrical shelf.
8. Remove scissors assembly from top load plate. Do not drop on electrical shelf!
9. Disconnect motor leads and remove ground wire.
10. Remove motor by unscrewing four nuts and lowering carefully.

To Reinstall Motor, Proceed as follows:

1. Transfer motor pulley to new motor (or use new pulley) and adjust height per Figure 1. Set screw must be tight to approximately 20 inch-pounds and sealed with loctite.

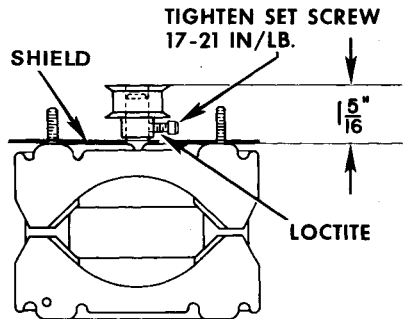


Figure 1 — Pulley Location

2. Remove polyester shield from old motor and reuse.

MOTOR & DRIVE MECHANISM

3. Attach the ground wire to the motor and move it upward so the studs fit into the holes.
4. While holding it in position, add a washer and nut on each stud. Tighten nut only finger tight.
5. Slip the gear belt on the pulleys and tighten belt.

EXPORT COMPACTOR MOTOR

The motor is rated at 1/4 H.P., 1425 RPM, 220 volts, 50 Hz. No load amperage and wattage averages 2.5 amperes and 190 watts at 120 volts. Full load amperage and wattage averages 3.0 amperes and 415 watts at 220 volts. The motor windings are protected by an internal (automatic resetting) overload protector that is sensitive to both overheating and over-current conditions. A relay is used to start the motor.

Except for Motor, all tests and adjustments in this Handbook apply to Export Compactors.

RAM SCREW & LOWER BEARING

The ram screw is a case hardened screw about twelve inches long. Beginning with the 1977 "02" models it is designed with a "carriage head bearing surface", replacing the lower spherical bearing and cross pin used on previous models. The screw is driven up and down by rotating the column nut. The entire compacting force is generated by the screw and transmitted to the ram disc thru this bearing surface. The square shoulder on the screw head locks into the lower scissors channel preventing the screw from rotating. The central spherical recess in the

ram disc is drawn to fit the carriage head bearing surface. Two bolts passing through the bearing retainer, the scissors channel and the ram disc hold the assembly together. Figure 1 illustrates the associated parts and their relative positions.

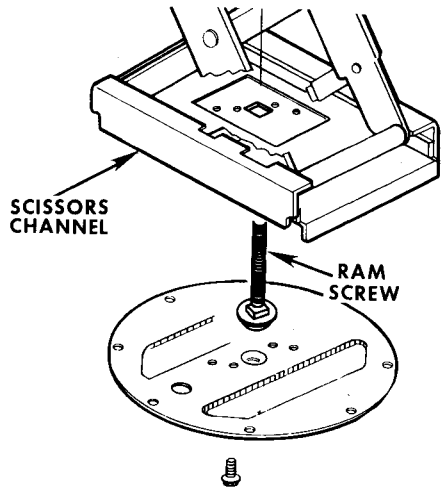


Figure 1 — Ram Screw, Lower Channel and Disc Assembly.

To disassemble proceed as follows:

1. Remove trash container from cabinet.
2. Remove storage shelf and drive belt.
3. Turn gear wheel counterclockwise several turns to lower ram down.
4. Remove two nuts and lift out ram disc.
5. Continue to turn gear wheel until scissors is fully extended downward.
6. With one hand lift the lower scissors channel to free the shoulder and unscrew the ram screw until it drops free.

MOTOR & DRIVE MECHANISM

7. Replace a badly worn, broken or damaged screw. Lubricate with WC32X5004.
8. Reassemble in reverse order of disassembly.

RAM JAMMED IN DOWN POSITION

To raise the ram when it is down in the container and the door will not open, proceed as follows:

1. Remove bottom hinge and free trash door.
2. Unhook anti-whip spring, unhook trash container and set door aside.
3. Remove storage shelf and drive belt.
4. Raise the ram disc by turning the gear wheel clockwise. Run the screw to the top of its travel.
5. Slide out the trash container.
6. Follow disassembly procedure above for removal of ram screw.

DIAGNOSING PROBLEMS

1. Motor runs - Compactor won't operate. Check:
 - a. Socket seat broken or screws in retainer loose.
 - b. Pins in column nut broken.
2. Motor hums - jams at bottom of stroke. Check:
 - a. Low voltage (motor may stall at less than 108 volts.)
 - b. Thrust bearing broken, worn or missing.
3. Poor compacting. Check:
 - a. Ram screw worn or damaged.
 - b. Ram screw and column nut not lubricated properly.

- c. Binding in scissors assembly.

SOCKET SEAT, BEARING & COLUMN NUT

The socket seat supports the entire weight of the ram disc and scissors assembly, it transmits rotation to the column nut and it transfers the compression force of 3100 pounds to the thrust bearing. It has a spherical surface that accepts the spherical top bearing and two slots that engage the two diametrically opposed pins that rotate the bearing and column nut.

The bearing retainer also has a spherical surface that engages the bottom side of the top bearing and holds it in the socket seat. The column nut is held in the top bearing by the two, opposed double roll pins. See Figure 1.

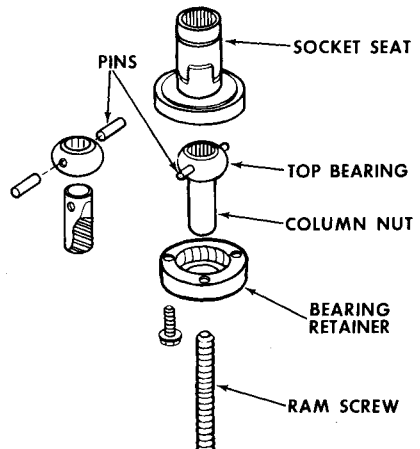


Figure 1 — Socket Seat, Bearing & Column Nut

To disassemble proceed as follows:

1. Lift or remove shelf, drive belt and gear wheel.

MOTOR & DRIVE MECHANISM

2. Remove retaining ring and lower ram disc.
3. Working through open scissors, remove thrust bearing parts.
4. Unscrew socket seat assembly from ram screw.
5. Remove three hex screws and assembly will come apart as in Figure 1.
6. The column nut may be removed from the bearing by punching out the two drive pins. Note: The roll pins must be a loose fit into the column nut but must be a drive fit in the two bearing holes. The bearing should "float" on the column nut! This puts the load on the bearing and the end of the column nut, preventing breaking of the pins.
7. Reassemble in reverse order of disassembly.

DIAGNOSING PROBLEMS

1. Motor runs but compactor will not operate. Check:
 - a. Bearing pins broken - no rotational drive to column nut.
 - b. Top retaining ring broken or slipped out of groove.
 - c. Retainer screws loose or stripped out of socket seat.
2. Noisy (squeaks) when operating. Check:
 - a. Lack of lubrication on column nut.
 - b. Worn or cracked socket seat.
 - c. Thrust bearing condition and lubrication.
3. Poor Trash Compacting. Check:
 - a. Worn column nut (or jack screw) threads.
 - b. Lack of lubrication.
 - c. Binding in rest of drive mechanism.

Note: Some of the above problems may result in the ram disc and scissors coming to rest in the "down" position in the trash container. The trash door cannot be opened. In this case, follow the procedure outlined in section "Ram Screw & Lower Bearing" to lift the scissors assembly.

The thrust bushing is a round steel collar mounted on the underside of the top scissors channel by three screws. These screws project above the channel and act as stops to limit the rotation of the brake. This bushing also acts as a radial bearing—the only bearing to resist the side thrust of the drive belt and the ram screw.

The two races are identical hardened steel washers above and below the needle bearing.

To disassemble proceed as follows:

1. Lift or remove shelf, drive belt and gear wheel.
2. Remove retaining ring and lower ram disc. Scissors will open up and thrust bearing parts are accessible.

To remove thrust bushing continue as follows:

3. Reaching through the side of the scissors, remove three, 5/16 inch hex screws.
4. Work bushing out from between stop flanges.
5. Reassemble in reverse order of disassembly.

DIAGNOSING PROBLEMS

1. Trash compacting is poor. Check:
 - a. Lack of lubrication on thrust bearing assembly.
 - b. Rough surfaces on bearing races, thrust bushing or needle bearings.
 - c. Worn, rough surfaces on inside of thrust bushing and/or on outside of socket seat.
 - d. Low voltage.
2. Motor stalls or overload opens under load. Check:
 - a. a,b,c & d above, in that order.
 - b. Reversing switch.
 - c. Starting relay.

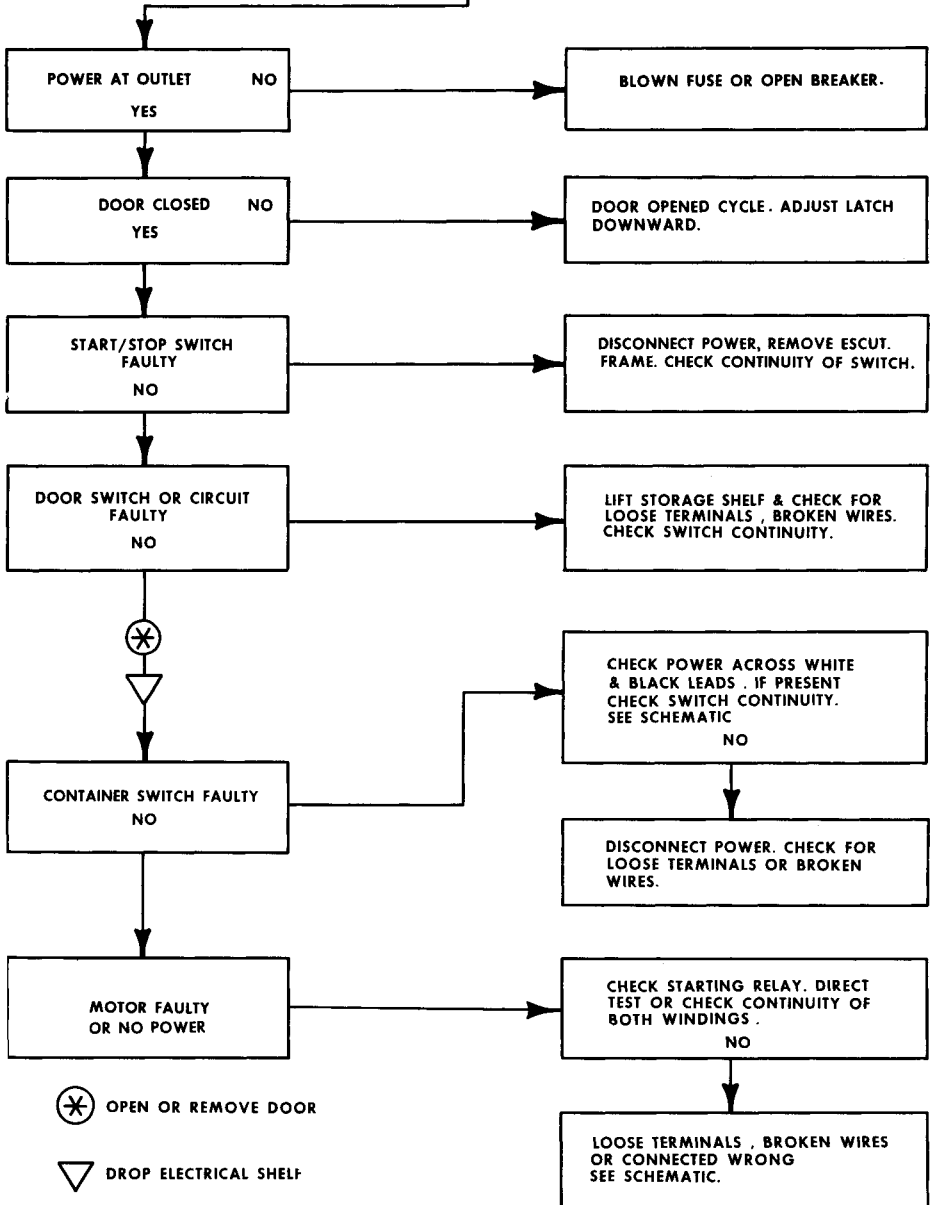
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DIAGNOSIS

UNIT WON'T RUN , NO HUM , DEAD.
DOOR MAY OR MAY NOT OPEN.

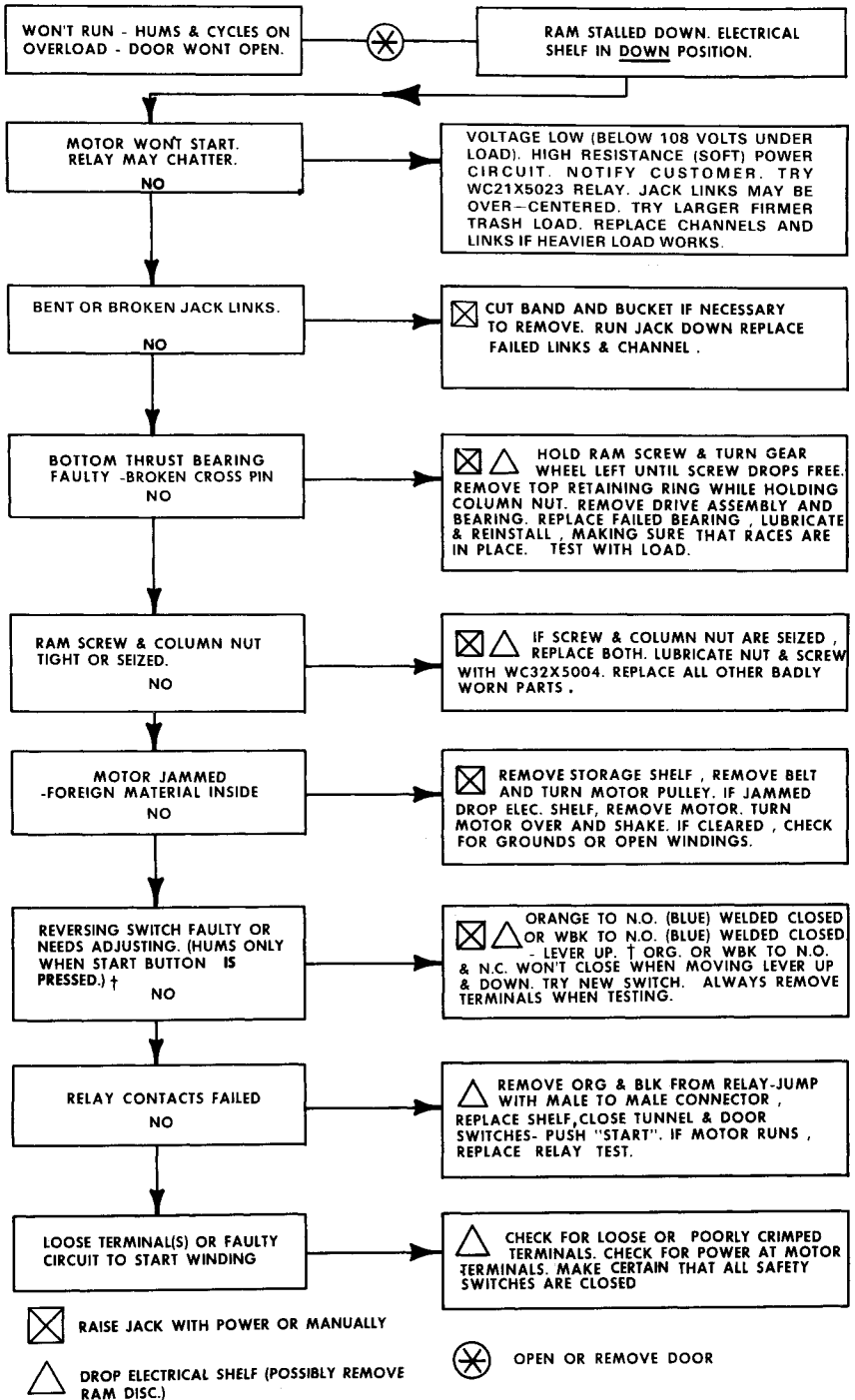


 OPEN OR REMOVE DOOR

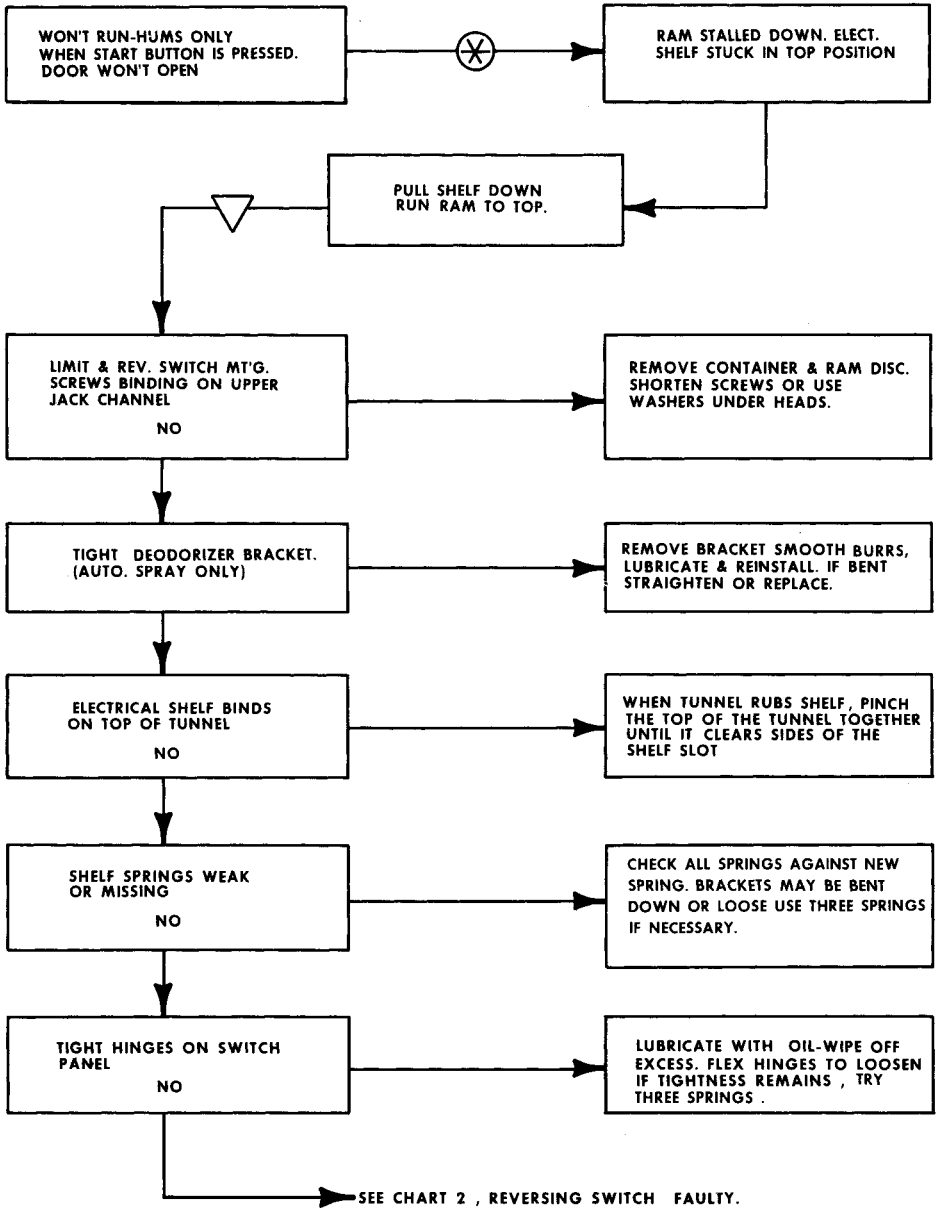
 DROP ELECTRICAL SHELF

 LIFT STORAGE SHELF

DIAGNOSIS



DIAGNOSIS

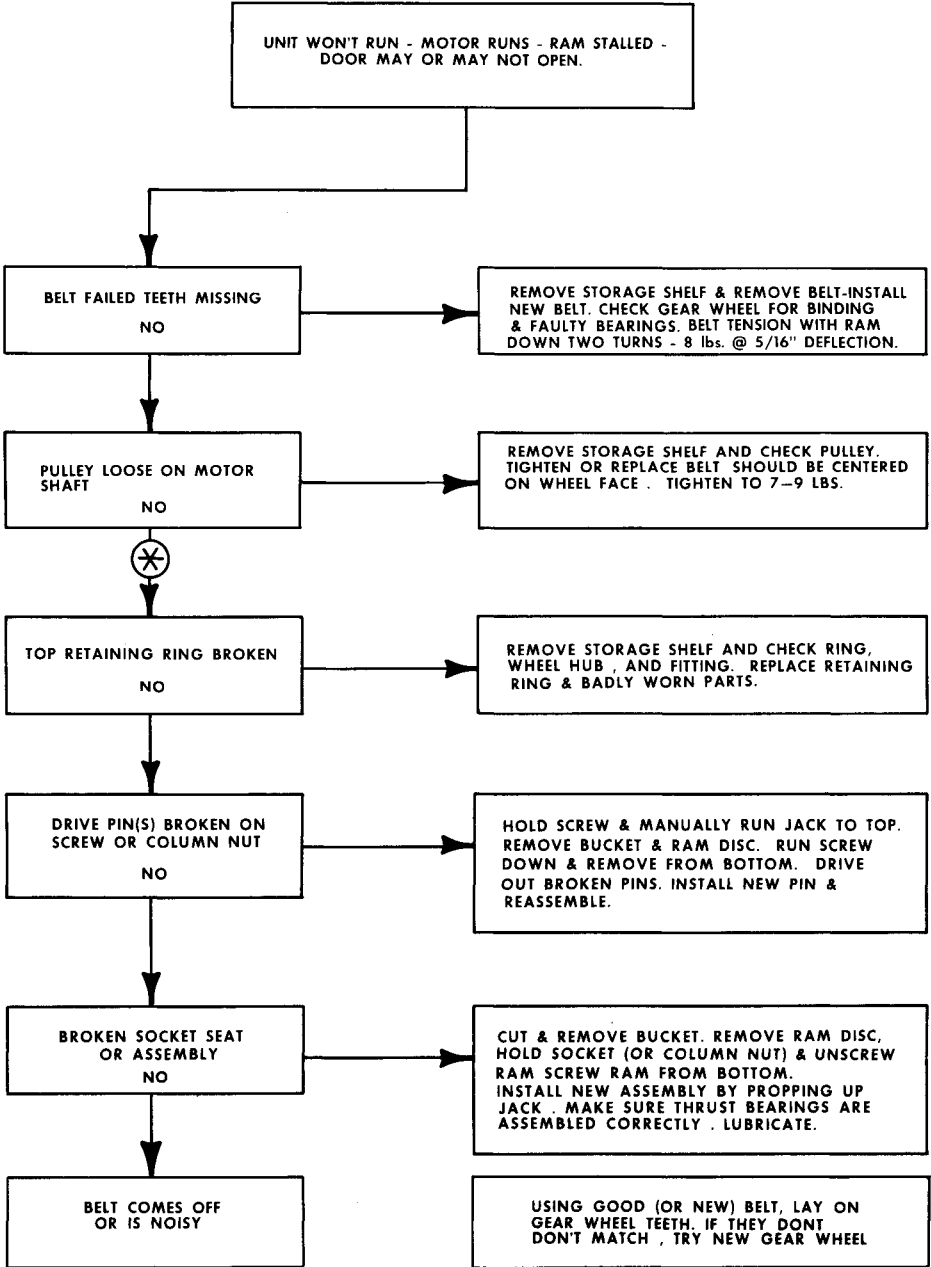


⊗ OPEN OR REMOVE DOOR

▽ DROP ELECTRICAL SHELF

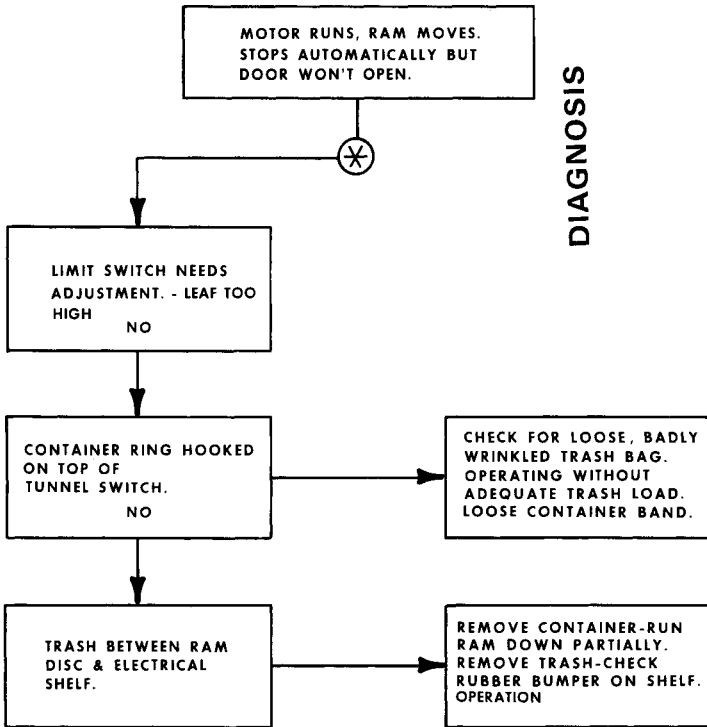
NOTE: INSTALL SPRINGS WITH BOTTOM HOOKS INWARD, AWAY FROM WIRE HARNESS.

DIAGNOSIS



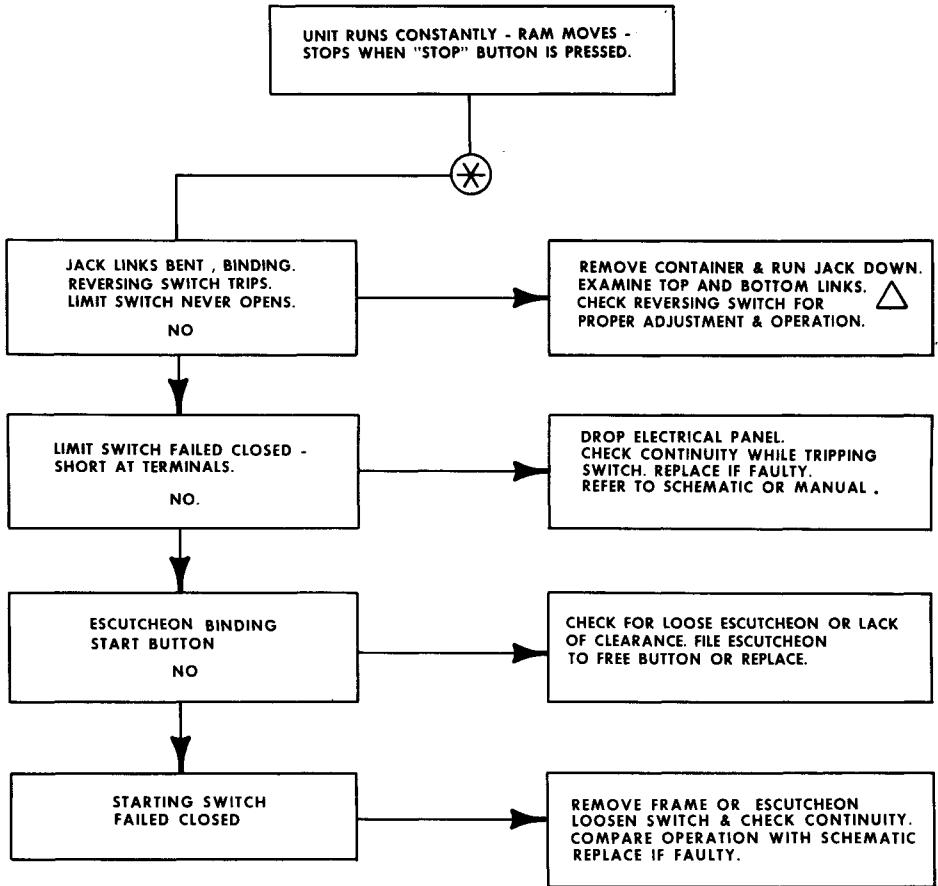
 OPEN OR REMOVE DOOR


DIAGNOSIS



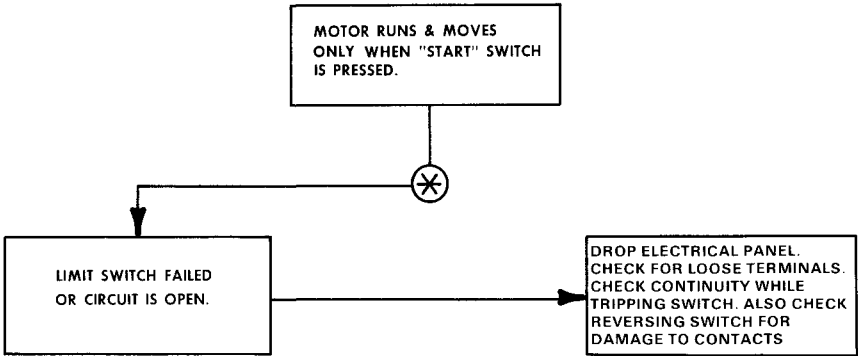
(X) OPEN OR REMOVE DOOR

DIAGNOSIS



 OPEN DOOR WHEN RAM IS UP .

DIAGNOSIS



(X) OPEN OR REMOVE DOOR (DEPENDS WHERE FAILURE OCCURRED)

FIELD CORRECTIONS

COMPACTOR — SECTION L

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FIELD CORRECTIONS

DOOR OFF HINGES

This condition initially can be the result of rough handling during shipment and subsequently, the result of binding in the vertical movement of the trash container support. The bottom hinge bracket is usually bent down enough to free the top hinge pin.

Open the door carefully, remove the container, insert the top hinge pin and close the door. While holding the door up, remove the damaged lower bracket as shown in Figure 1.

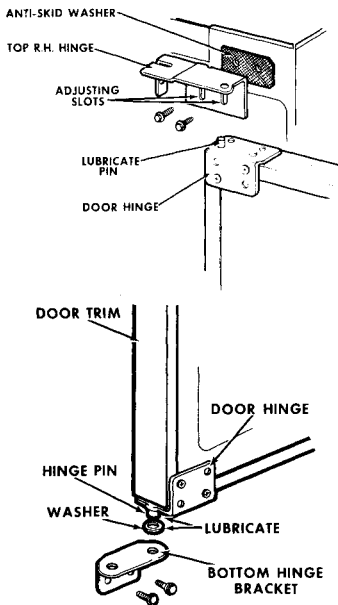


Figure 1 - Top and Bottom Hinge Details

Install new bracket with bearing washer in place and lubricate with WC32X5003 grease. Install container and test door for proper latching.

Check the container support mech-

anism by opening the door partially and pressing down on the door until the container touches the bottom of the cabinet. It should move smoothly up and down without binding. If in doubt, add WC32X5001 Molycote grease to the top and bottom of both pivot pins per figure 2.

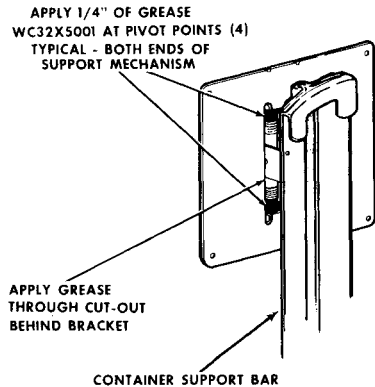


Figure 2 - Lubricating Container Support

Press down several times to distribute grease. Test compactor for proper operation using a trash load, if possible. If binding is still present replace the support mechanism or both pivot pins in support mechanism.

DOOR OPENS WHEN COMPACTING

When the door opens, the door switch stops the unit and the user must hold the door closed in order to complete the cycle. The complaint can usually be corrected by adjusting both top hinges downward to increase the latch grip on the door. See figure 3. Loosen the four upper hinge bracket screws, move both brackets downward evenly and retighten screws.

FIELD CORRECTIONS

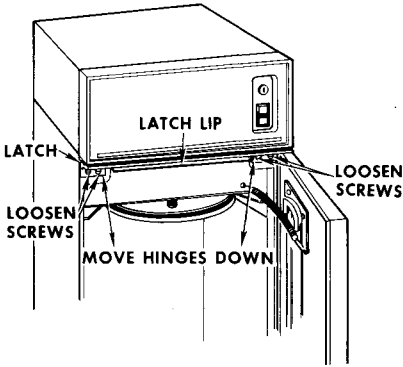


Figure 3 - Adjusting Trash Door Latch

Adjust both top hinge brackets downward to increase latch engagement to at least 5/32 inch. See figure 4. Door hinge should have minimum clearance at top hinge pin.

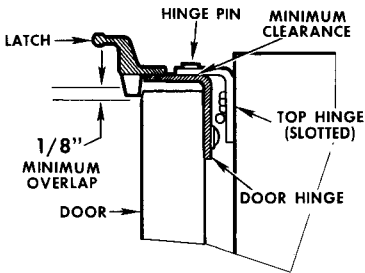


Figure 4 - Door Latch Properly Adjusted.

Test compactor with a load in the container to make sure door stays latched and does not open due to binding in the container support mechanism. See "Door Off Hinges" section.

RAM LINK FAILURE

Link failure in - 01 & - 02 model compactors should be corrected by using tempered steel top and bottom links. Single top links are WC28X-5027 and single bottom links are in kit WC28X5032 (use two each per ram assembly see figure 5).

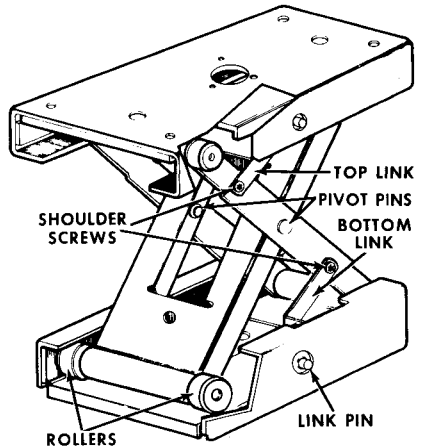


Figure 5 - Ram Assembly, - 01 & - 02 Models

Links may be replaced without removing the entire ram from the compactor. With the ram lowered just short of the maximum "down" position, unscrew the bottom shoulder screws, turn the links vertically and pull inward to free link pin. Preferably, replace the the front link first and then replace the rear link to prevent the bottom channel from moving sideways.

To replace the top links, remove the two 1/4 inch hex screws holding the electrical shelf to the top of the cabinet and lower it. Top links may now be reached.

FIELD CORRECTIONS

Always use Loctite (WC32X5002) on the shoulder screw threads and torque up snugly to 3 or 4 foot pounds! These screws must withstand a heavy load which probably destroyed the original links!

The shoulder screws used in early rams were 9/16 inch hex, while the new screws are Torx No. 27. Some Torx replacement screws will have a dry, colored sealer on the threads which makes the use of Loctite unnecessary.

The improved, hard links fit into the lower ram channel better, consequently the pivot pins protrude considerably and might strike the flange of the opening in the electrical shelf. This bends the shelf down and causes a "jammed down" situation.

To avoid this possibility, all lower link kits, WC28X5032 come with a stainless steel strap to cover the link pivot pin.

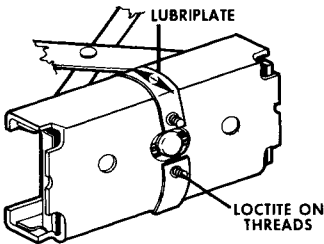


Figure 6 - Straps in Position Over Pins & Disc Bolts.

Note that the straps cover the link pins and then slip over the two ram disc bolts. Lubricant is placed on the strips where they cover the pins to prevent any possible hang-ups.

Most - 03 model compactor had ram corrected at the factory. However,

corrective action took the form of bending the return flange of the ram opening back about 45 degrees at the center, front and rear. Thus many - 03 compactors will not have straps on the ram! Others, corrected in the field, will have straps in place.

RAM STALLS DOWN

This situation is different than when the ram stalls anywhere in the cycle. In this case the ram stalls in the extreme bottom position with the jack scissors fully extended. It will happen with - 01, and - 02 units which are new, or little used and without a load in the container.

Assuming that there isn't anything wrong with the compactor and all diagnostic checks have been carried out, proceed to replace the lower ram channel as shown in figure 7.

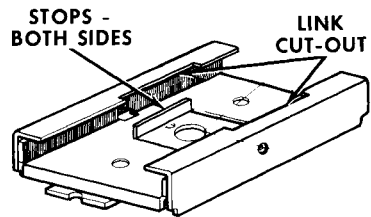


Figure 7 - Bottom Channel With Stops.

This new bottom channel has two angles (in the same manner as the top channel) which prevent the scissors from closing too far. This channel eliminates "over-centering" of the links and binding which stalls the motor. Note also that long cut-out sections are provided to clear the bottom links and thus eliminate any binding at these points. This channel design is being used in type "B" rams.

FIELD CORRECTIONS

RAM SCREW SQUEAL (LUBRICATION)

Occasionally, a compactor will develop a squealing noise as the compacting pressure builds up. Applying an improved grease to the ram screw is a fix - proceed as follows:

1. With the ram in the top position, open the storage door or remove the escutcheon panel on the built-in model. Remove the cover from the ram screws. See figure 8.

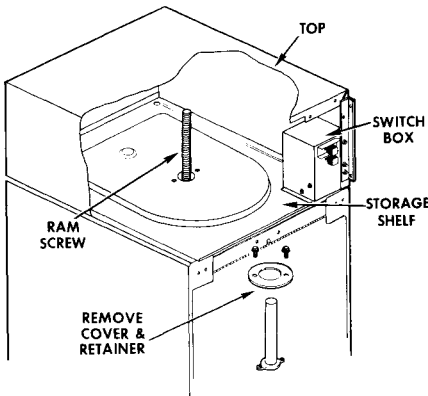


Figure 8 - Exposing Ram Screw.

2. Remove all original grease from the exposed ram screw with a solvent such as M.E.K. (WD49X23).
3. Apply WC32X5004 grease to screw, making sure that grease is worked thoroughly into thread as far down as possible.
4. Reassemble and test run to work grease into the column nut.

STALLS IN CYCLE (WON'T REVERSE)

Compactors may stall and not complete a normal cycle. Following is a list of probable cause of stalling where the trash door cannot be opened.

Usually the door must be removed to determine the failure by removing the lower hinge bracket from the cabinet, as shown in figure 9.

Support the door while removing the hinge, then lower the door to unhook the container. Open door and unhook spring. Set door aside. The ram may have to be raised to free the trash container. This procedure will be indicated by an asterisk (*) in the following list.

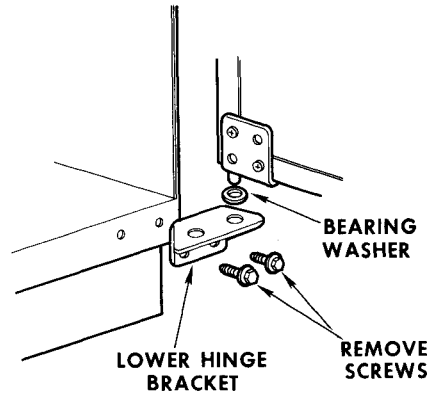


Figure 9 - Removing Lower Hinge & Door.

- A. Electrical shelf fails to drop enough to operate switches. Check for:
 1. Shelf binding on container handle which may not always drop down against the side of the trash container. If handle is out-of-round, reshape and lubricate pivots or replace with WC29X5012.
 2. Shelf binding on the sides of rear tunnel. Pinch sides together at the top until shelf moves freely.

FIELD CORRECTIONS

3. Shelf held up by tight hinges. Lubricate and flex hinges until shelf drops freely.
 4. Shelf binds on automatic spray bracket. Look for burrs on edge of bracket, bent bracket, tight shoulder screws or lack of lubrication.
 5. Shelf not dropping due to stretched or missing shelf springs. Also, look for loose or bent support brackets.
 6. Shelf hanging up because switch mounting screws are too long and bind on the side of the top jack channel. After shortening screws, always seal nuts with Locktite.
- B. Shelf drops freely — Compactor stalls. Check for:
1. Low voltage (below 108 Volts) with stalled motor on the line, if not on the unit, replace starting relay with WC21X-5023. Relubricate ram screw with special grease WC32X-5004, after cleaning off old grease with a solvent.
 2. Reversing switch faulty.
 - a. Normally closed contacts stuck open or closed.
 - b. Operating lever bent. Adjust end to 5/8 inch vertically from hinge.
 3. Loose or faulty terminals in start circuit.
 4. Starting relay contacts failed. Turn up-side-down and check for closed circuit. If contacts indicate an open circuit, replace with WC21X5023.
 5. Bottom ram screw bearing or cross pin are damaged or broken. (*) Run ram screw up and lift jack. Remove container and ram disc. Run ram screw down, remove and repair.
 6. Broken or bent link arms on jack. (*) Lift jack from container. Replace bent or broken parts, reassemble, using Locktite on link arm shoulder screw threads. Lubricate and check for binding during operation.
 7. Ram screw binding in column nut. Look for bent ram screw, rough or worn threads or lack of lubrication. Use special lubricant, WE32X5004 after cleaning off old grease with a solvent.
 8. Foreign material jamming motor. Look for loose screws, nuts, bits of metal or plastic inside shaft end of motor. Check all motors for this condition before rejecting if they appear to be bound up.

TRASH CAUGHT ON TOP OF RAM DISC

Occasionally, trash will work its way on top of the ram disc. To remove this material, proceed carefully as follows:

1. Remove trash container from support bracket and set in place in the compactor, closing rear switch.
2. Push door interlock switch plunger in and hold while pushing start button.

FIELD CORRECTIONS

3. Release door switch-plunger as soon as ram disc is down far enough to remove trash from top of ram disc.
4. Depress door switch plunger again to drive ram back to top position.
5. Replace trash container on support bracket and close door.

FAILS TO SHUT OFF AT END OF CYCLE

Failure of a compactor to cut off at end of cycle is often incorrectly diagnosed as "short plunger on limit switch". Some units are being repaired by adding a shim to either the switch or to the top load plate.

This should not be necessary.

Failure of the limit switch to cut off is most often caused by a **MISSING SHELF BUMPER**. (See figure 10). Make certain the shelf bumper is in place. If not, replace bumper (WC2X5114). Glue in place with WX6X19 adhesive.

Compactors built during 1977 and later have two shelf bumpers.

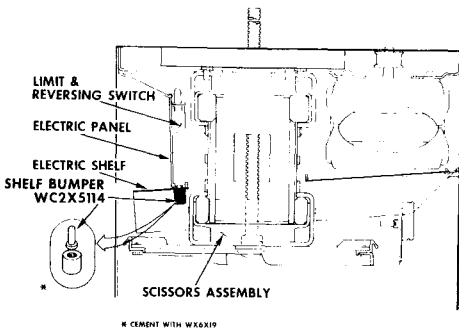


Figure 10 - Shelf Bumper(s) Location

DISPOSERS — SECTION M
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CONTROL SWITCH-GFB MODELS

OPERATION

Batch-feed models have a switch that is mounted on the side of hopper. The switch plunger protrudes through hopper wall and plastic sleeve. The switch is activated by the cam on the sink stopper when the cam is rotated by the customer to the "Operate" position. The switch is held in place by a single screw. There is a gasket on switch plunger which acts as a seal to keep water out of switch and it also seals the plunger clearance hole in hopper.

DIAGNOSING PROBLEMS

Disposer will not start:

1. Check wall switch if used. Is it in "On" position? Is 115 volts present at disposer?
2. Check switch plunger for binding action against seal gasket to hopper. Align switch or lubricate plunger to correct.
3. Check switch plunger and sink stopper cam for wear. Necessary cam action may not exist.
4. Switch may be defective. Test with an ohmmeter for continuity as follows:
 - a. Turn off disposer power supply.
 - b. Remove the inspection plate on the bottom of the disposer.
 - c. Attach the leads of the ohmmeter to points A and B of the hopper switch and protector, Figure 1.

One lead is attached to the black disposer lead A. The other lead is attached to the protector B.

- d. Place the stopper control into the sink drain in the operate position.

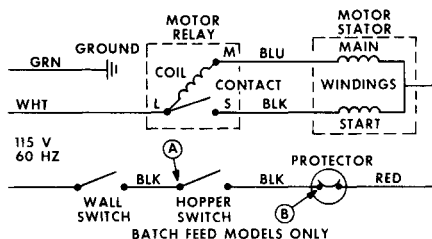


Figure 1 - Wiring Diagram.

- e. If the switch contacts are closed and in satisfactory condition the ohmmeter scale will read "0" ohms.

This means there is no resistance to current flow. The hopper switch and its leads are in good order and the cause for failure to operate is elsewhere.

If the ohmmeter scale indicates resistance or infinity, the switch (furnished with leads) should be replaced, see SWITCH REPLACEMENT.

Disposer will not shut off:

1. Check switch plunger for binding action against seal gasket to hopper. Align switch or lubricate plunger to correct.

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2. Switch may be defective. Test with ohmmeter as described above but do not put sink stopper in position. If meter shows infinite resistance, switch is good. Zero resistance indicates a failed switch.

SWITCH REPLACEMENT

1. Turn off disposer power supply. Remove bottom inspection plate.
2. Disconnect the switch from the hopper and remove angle clamp.
3. Disconnect switch wires from black side of the power line and from the overload protector.
4. Remove switch with armored cable from unit.
5. Install new switch in reverse order of above procedure.
6. Test disposer for proper operation.

SHREDDING RING — INDUCTION MODELS

The shredding ring performs the actual grinding of food wastes that are forced against the cutting surfaces by the flywheel impellers.

Close tolerance is maintained between the flywheel and shredding ring by a shoulder on the bottom of the shredding ring. Food wastes are carried out through holes in shredder after they have been pulverized.

Certain models have a hardened lifetime cutter welded onto the shredding ring. The cutter is an extremely hard material which provides fast, additional grinding action. The cutter is not removable,

the shredding ring for the above models is supplied with the cutter welded in place.

To remove shredding ring, it is necessary to remove hopper as described previously. Then shredding ring can be lifted out of its seat in shredder housing.

Before replacing shredding ring, check the condition of hopper gasket to insure that it has not been cut. Position shredder with rubber bumper against stop on shredder housing wall. This prevents rotation of the shredding ring. See figure 2. If the shredder ring turns, the sealing gasket will be pulled loose and leaks will result.

FLYWHEEL ASSEMBLY

The flywheel is attached to the end of rotor shaft. Figure 3. It has a right-hand thread that screws onto shaft. To remove the flywheel, remove the bottom cover and hold rotor. Strike flywheel impeller with a hammer in counterclock direction. Once the flywheel has broken loose, turn by hand to remove it.

The centrifugal force of the rotating flywheel throws the food waste against the shredding ring. The impellers hold the waste matter against shredding ring causing it to be shredded into fine particles which float out through drain holes and down the drain. The embosses in the flywheel plus the notches in shredding ring, provide fast, efficient water and food waste discharge.

The impellers are not removable; therefore, the flywheel is supplied complete.

DIAGNOSING PROBLEMS

Noisy

1. Check for foreign object in disposer.
2. Check flywheel hitting shredding ring. Center shredding ring in proper position.
3. Check impeller studs for looseness. They should be tight.
4. Check threads on flywheel and motor shaft. They should fit snugly and flywheel should be tight on the shaft.
5. Check whether rotor is striking stator.

Won't Run — Flywheel jammed

1. Usually caused by a foreign object or sliver of bone.
2. Check inside hopper and remove object causing jam with a pair of tongs.
3. Jams sometimes occur between the edge of the flywheel and the shredding ring. Remove and reposition the shredding ring to clear this problem.

Leaks-At Weep Hole

Check for a damaged or poorly seated seal.

Leaks-At Junction Of Drain Casting and Hopper

Check for:

1. Gasket torn or pulled out of position.
2. Clamp ring loose or bent out-of-shape.

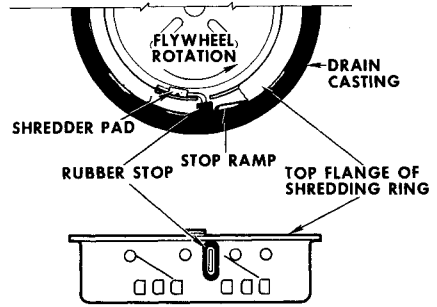


Figure 2 - Shredding Ring Stop.
SHREDDING RING — SERIES MODELS

The shredding ring rests on a shoulder of the drain housing. It is held in place by the hopper when it is installed. There is a projection on the drain housing that engages into one of the slots in shredding ring which acts to keep it from rotating. Make certain that shredder is seated into shoulder provided in drain housing before installing hopper gasket and hopper, Figure 3.

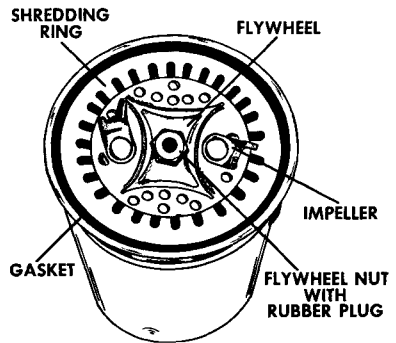


Figure 3 - Shredding ring and flywheel.

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FLYWHEEL

The flywheel is attached to rotor shaft by a thick nut. The nut is sealed by a rubber plug forced into the threaded center above the end of the rotor shaft. There is an impression in the flywheel which acts to lock the nut in place. The flywheel must be turned with the nut to tighten it down completely. The rotor shaft has a screwdriver slot which is used to tighten or loosen flywheel nut. To remove flywheel, hold the flywheel, or nut, and use a large straight bit screwdriver to loosen rotor shaft. Robinair tool No. 14221 is available to hold flywheel for installation or removal, Figure 4.

The flywheel impellers are not removable. In the event that impellers fail, the complete flywheel assembly must be replaced.

The rotating flywheel and impellers throw the food waste in the hopper against shredding pad, welded to hopper wall. The centrifugal force of the flywheel and the cascading water from faucet, force the waste down against cutting edges of shredding ring. The pulverized waste is then carried through the shredding ring and diverted down the drain by the drain housing.

The upper portion of the carbon steel shaft is smaller in diameter to accommodate the stainless steel sleeve. See figure 5. There is a groove in the shaft to accept the lower "O" ring. The sleeve is slipped over the end of the shaft and the second "O" ring is located above the sleeve.

The seal lips run on this sleeve preventing water from reaching the steel shaft. The seal guard and flywheel have smaller diameter center holes.

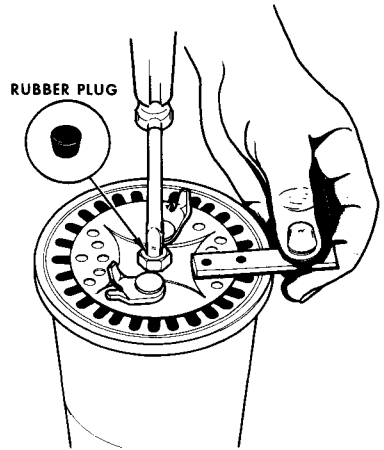


Figure 4 - Flywheel removal or installation.

DIAGNOSING PROBLEMS

Noisy

1. Check for foreign object in disposer.
2. Check position of shredding ring on shoulder of drain housing.
3. Check flywheel impellers for looseness or breakage.
4. Check that flywheel is tight on motor shaft by testing flywheel nut.

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has brass inserts moulded into it for installing the tail pipe. The inserts are threaded to accept the 10-32 tail pipe clamp screws. Should holes become stripped, it will be necessary to use a larger self-tapping screw or new shredder housing.

ROTOR

The rotor is installed into the shredder housing as shown in Figure 6. Insert the rotor shaft through bearings from bottom side of housing. Position thrust washer over shaft and install retaining ring in groove provided on shaft. Robinair Part No. 14162 Truarc pliers are used for removing and replacing the retaining ring. Install the bearing cover, make sure it is properly seated on shoulder of bearing sleeve. If bearing cover isn't seated properly, it will interfere with water slinger.

To remove rotor, simply reverse the procedure of installing.

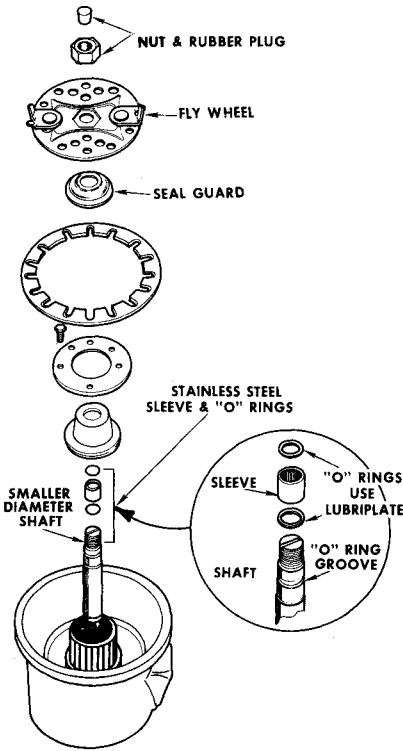


Figure 5 - Motor with carbon steel shaft.

INDUCTION MOTOR ASSEMBLY SHREDDER HOUSING

The shredder housing acts as a drain housing that diverts water and pulverized food wastes down the drain. The housing is made of a polyester material that is completely resistant to corrosion. A sleeve is moulded into center of housing which has permanent Sintered Bronze bearings pressed into it. Figure 6. The bearings require no oiling and cannot be replaced. Should the bearings fail, the entire shredder housing must be replaced. The shredder housing also

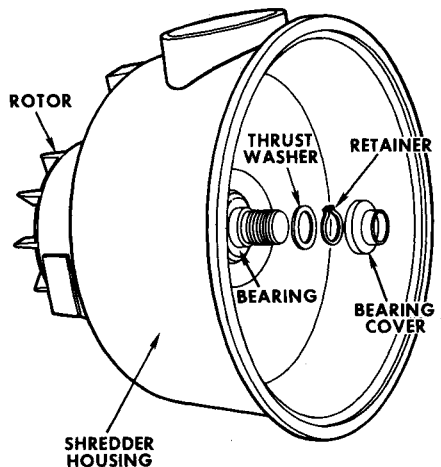


Figure 6 - Rotor installation.

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WATER SEAL

The water seal is pressed into the drain casting, just under the flywheel and acts to seal water from going down the shaft into motor housing. Figure 8. It is almost impossible to remove seal without destroying it due to the very tight fit in motor housing. Use screwdriver or other sharp instrument to pry seal out.

WATER SLINGER

The water slinger rests on a shoulder of shaft beneath the "O" ring. It provides extra protection to the motor in case water should get past the "O" ring. The water slinger directs water out through a weep hole provided from seal cavity in shredder housing to the outside. Figure 7.

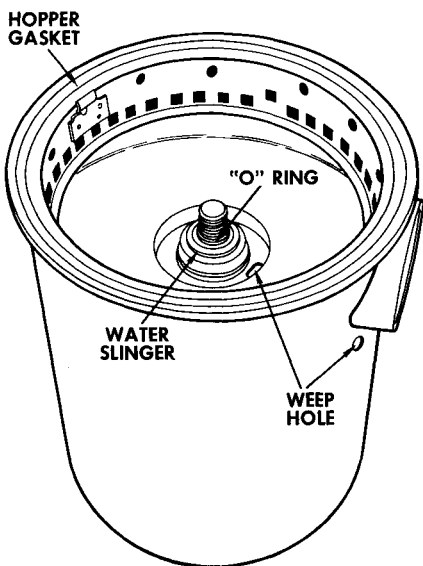


Figure 7 - Shredder housing weep hole.

"O" RING

The "O" ring fits in a groove on the rotor shaft just below the threads. The seal bushing fits over the "O" ring and effects a seal between shaft and seal bushing. Whenever service is performed in the seal area, the "O" ring should always be replaced. Figure 7.

SEAL BUSHING

The seal bushing is made of stainless steel with a finished surface on the outside for the lips of seal to bear against. If the surface of bushing should become scratched, it must be replaced. It is very important that bushing be installed before seal is put in place. The lips of seal must turn upward against the bushing surface to seal properly. Proper positioning of the lips are insured when bushing is installed first.

SEAL SHIELD

The seal shield is a stainless steel cover that acts as a protective shield over the rubber boot portion of the seal cone and the seal lips. It serves as a slinger to keep food waste from working its way down into seal lips causing possible leaks. Figure 8.

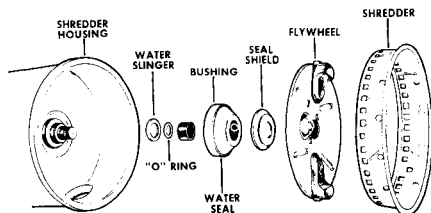


Figure 8 - Lip seal and related parts.

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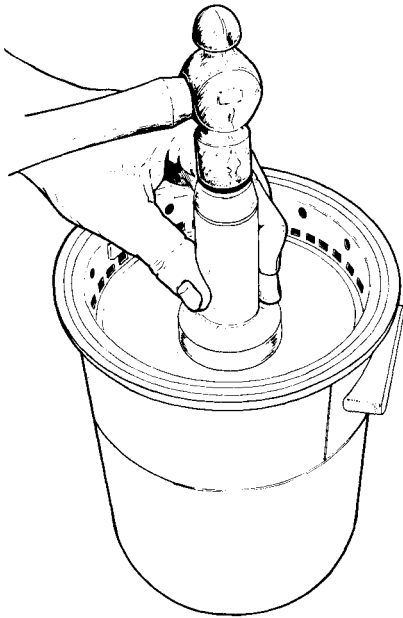


Figure 9 - Using seating tool.

ROBINAIR TOOL NO. 14069 is recommended for seating seal. Figure 9.

6. Install seal shield over seal and bushing. This completes the seal installations, all components are then held in place by the flywheel which threads onto end of motor shaft.

STATOR HOUSING

The stator is fixed within the housing by four spot welds. It cannot be removed, the stator and housing weld assembly must be replaced as a unit. The assembly is mounted to shredder housing by four through bolts that pass through stator laminations. These bolts can be removed after removal of motor cover.

CHECK STATOR

If an open stator is suspected, check continuity through both sets of windings. To check windings, disconnect the red motor lead that connects to overload protector and proceed as follows:

1. Lubricate base of seal with soap to aid in installation. Do not lubricate seal lips — inside, the seal is packed in a special grease and needs no additional lubricant. ROBINAIR TOOL NO. 14069 is designed to aid in installing the seal.
2. Position water slinger over shaft and seat on shoulder provided on motor shaft.
3. Install "O" ring in groove on shaft above water slinger.
4. Insert seal bushing over shaft and "O" ring. It must seat snugly against water slinger.
5. Install seal over bushing and press it into shredder housing.

1. To check main winding, connect ohmmeter probes from blue lead, terminal "M" on relay, Figure 10, to the disconnected red lead. If there is continuity (approximately 2.2 ohms), then the main winding OK.

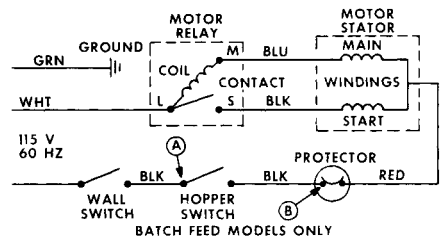


Figure 10 - Schematic

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2. To check start winding, connect ohmmeter probes from black lead, terminal "S" on relay, Figure 10, to the disconnected red lead. If there is continuity (approximately 5.7 ohms), then the start winding is OK.

If there is continuity through both windings, the stator is OK. Check remainder of circuit for continuity.

DIAGNOSING PROBLEMS

Won't run — open or shorted motor windings:

1. Check for "power" to disposer — check wall switch.
2. Check all harness connections.
3. Check stator with ohmmeter as described above.

Leaks — water in motor

1. Suspect a "seal leak".
2. Trace source of water by noting water marks on parts.
3. If seal leak, replace seal as described.

Leaks at Drain Tailpipe Connection

1. Check tightness of drain screws. They should be tightened evenly.
2. Reset drain elbow gasket in shredder housing. If necessary use sealer.
3. Disposer must not have a severe strain imposed on it by mislocated drain line plumbing.

Leaks — Shredder Housing has Crack or Hole in Side

1. Examine shredder housing for holes in side walls. These can be caused by metal objects thrown by the flywheel.
2. Check for hair-line crack.
3. Check for proper seating and tightening of clamping band and position of hopper gasket.

Disposer Won't Run — Magnetic Lock-Up

1. Check stator and rotor air gap alignment. Should be a minimum of .006". Adjust stator position if necessary. See figure 11. Proceed as follows:

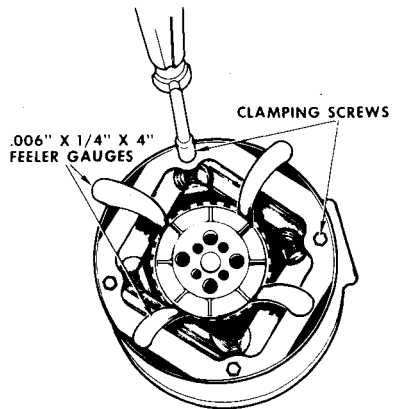


Figure 11 - Align Stator and Rotor as Shown

- a. Loosen four clamp screws so stator can move.
- b. Place four feeler gauges in air gap opposite each screw location.
- c. Center stator so that gauges move freely.
- d. Tighten clamping screws evenly until snug.

- e. If one or two gauges bind or will not move, loosen clamp screws and using a rubber mallet, tap on the stator on the opposite side toward the tight gauges.
- f. Retighten clamp screws and withdraw gauges.
- g. If gauges continue to bind and cannot be withdrawn, replace shredder housing.

Note: Due to tolerance variations, the rejected shredder housing may be satisfactory with another rotor and stator.

- 2. Retest for proper starting after grinding some hard food waste.

SERIES MOTOR ASSEMBLY STATOR — DRAIN HOUSING

The drain housing diverts the water and pulverized food wastes down the drain. The housing is made of a plastic material. Should the drain portion of housing fail, the entire unit must be replaced.

The tail pipe mounts onto housing by two No. 10 thread cutting screws that thread directly into the plastic material. Tail pipe screws must be driven straight to minimize possibility of stripping out holes. Should holes become stripped, a No. 12 thread cutting screw can be used.

BEARING AND SEAL ASSEMBLY

The bearing and seal assembly is held in place in the drain housing by the bearing retainer. The retainer is fastened to the drain casting by four screws, Figure 12.

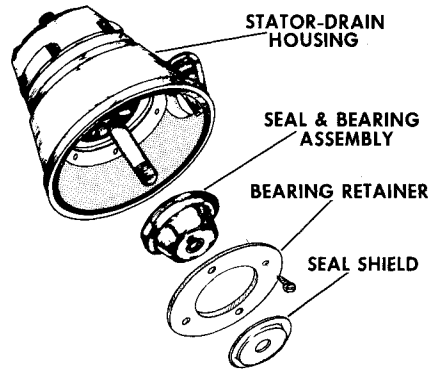


Figure 12 - Bearing Assembly.

Use care when tightening the bearing retainer screws to avoid binding the rotor shaft. When replacing the bearing and seal assembly, follow these instructions:

1. Position the bearing and seal assembly over the shaft and seal it into the cutout provided in the drain housing. When the bearing is seated, do not lift it out of position or the lips of the seal will become inverted. If the seal lips become inverted, the bearing and seal assembly must be removed and reinstalled to get the lips directed upward.
2. Install the screws finger tight, then tighten the screws in pairs, 180° apart. Tighten alternately and evenly to prevent cocking the bearing assembly.
3. Turn the rotor by hand to be sure sure the bearing turns free.

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Whenever water leaks past the top bearing and seal assembly, it is recommended that the bottom bearing be checked before installing a new seal. Should the bearing show signs of water damage, the rotor should be removed so that bottom bearing can be cleaned and re-oiled.

SEAL SHIELD

The seal shield is positioned over the seal and rests on a shoulder of the rotor shaft. The shield serves as a protective cover over the rubber lip seal portion of the bearing and seal assembly. Also, it serves as a slinger to keep food wastes from working down into the lips of the seal, Figure 12.

STATOR HOUSING

The stator housing has the stator encapsulated within as an integral part. Should the stator fail, the entire unit must be replaced. The top bearing is replaceable, since it is a part of the seal assembly. The bottom bearing is not replaceable. It is pressed into housing and requires special tools to install. Failure of bottom bearing will require replacement of entire unit.

If water leaks past the top bearing and seal assembly, the bottom bearing should be checked before installing a new seal. If the bottom bearing shows signs of water leakage, the rotor should be removed so the bearing can be cleaned and oiled.

Disassemble the disposer to the point shown in Figure 13, by following the procedure described in the appropriate section for removing

each component. Remove the rotor to clean and oil the bottom bearing components as follows:

1. Disengage the rotor shaft retainer from the groove on the bottom of the rotor shaft, Figure 13.

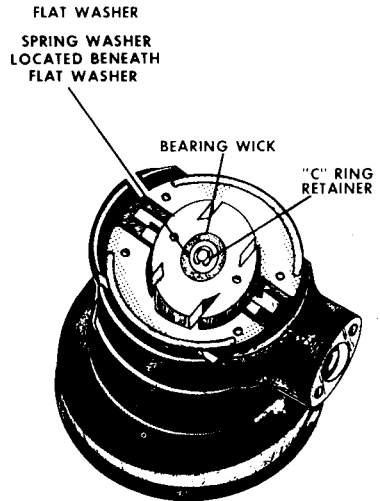


Figure 13 - Bottom view stator housing

- Remove the flat washer and the spring washer.
 - Lift out the rotor. There is a spring washer on bottom of rotor, between rotor and bottom bearing.
2. Remove the water deposits and corrosion from the bottom bearing and rotor shaft.
 3. Oil the inside of the bottom bearing and add a small amount of oil to the felt wick.
 4. Install the rotor, washers, and retainer. Next, install the top bearing and test the disposer to make sure the motor runs properly.

CHECK STATOR

If an open or grounded stator winding is suspected, test to be certain it is actually defective before replacing the disposer.

1. Check for open circuit, as shown in Figure 14.
- The harness leads do not necessarily have to be removed to make the following tests, but all tests must be made at points indicated. Check continuity of harness and components individually.

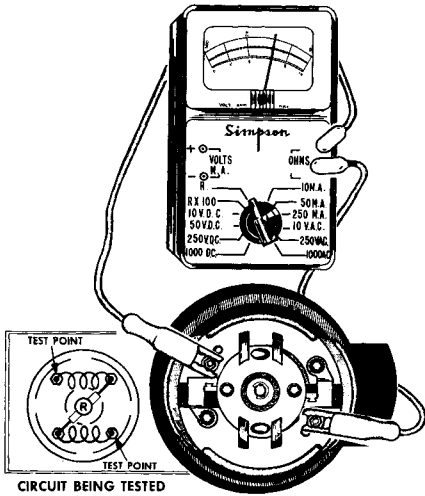


Figure 14 - Check for open circuit.

The resistance across both windings, rotor and brushes should be approximately 10 ohms, Figure 14. The resistance may vary due to pressure of brushes against armature.

- If circuit is open, resistance will be very high.
- If brush contact is poor, resistance may vary widely, as rotor is turned, and exceed 10 ohms at any position of the rotor.

- If windings have shorted turns, resistance will be much lower than 10 ohms.
2. Check each stator winding, as shown in Figure 15.
- Each winding should register from 0.6 to 1.8 ohms on the meter scale, if winding is satisfactory. Check at top screws, as shown in Figure 15, then move meter probes to bottom screws to check other winding.

If the reading is low, less than .6 or near zero, the winding is shorted. This reading should confirm the reason the disposer fuse blows or the protector operates. Replace the disposer.

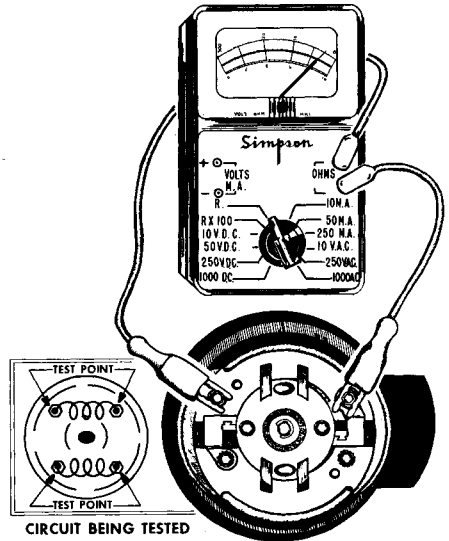


Figure 15 - Check for open stator

1978-1981 DISPOSER

ROTOR - SERIES MOTOR

To check the rotor for an open coil, defective commutator bars, or other defects, it must be removed from the stator housing. Refer to Figure 13 and Step 1 under STATOR HOUSING for removal.

Ohmmeter Test

1. Remove rotor from disposer.
 2. Check the rotor resistance by placing the ohmmeter prods on the commutator bars, 180° apart.
- The parallel resistance across the coils should read between 1.8 to 2.5 ohms.
 - If any one of the coils (21 total) is open, the bar to bar resistance, 180° apart, will read approximately 5 ohms. An open coil can usually be detected by inspection of commutator bars, as the bars adjacent to the open coil will show signs of being burnt or blackened. The resistance of each coil is approximately .5 ohms.

BRUSHES - SERIES MOTOR

The two motor brushes are held in place by the retainers which are screwed to the stator housing. The screws which hold the brush retainers in place also secure one end of each stator lead. A spring is attached to the brush, Figure 16. As the brushes wear in, the spring pressure is reduced. Brushes may eventually wear to the point where there is poor or no contact with the commutating portion of the rotor.

Ohmmeter Test

1. Remove bottom cover to expose brush retainers, as shown in Figure 17.
 2. To check the brushes, place one ohmmeter test prod on each motor brush retainer, Figure 17 and Figure 18.
- There should be continuity indicated on the ohmmeter scale. The value of resistance will vary, depending upon the degree of brush contact, but the value should be very low — 6 to 8 ohms.
 - If a high resistance is obtained, then poor brush contact is indicated.

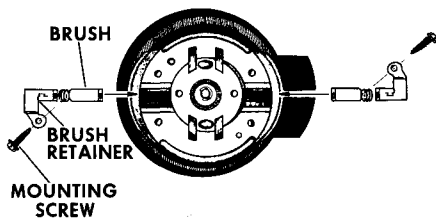


Figure 16 - Brush detail

Poor brush contact can be caused by oil and carbon dust from brushes which forms a paste causing arcing and a corrosive buildup on commutator, insufficient spring tension on brushes or a loose brush retainer screw. Remove and examine the brush components.

Excessive brush wear can be caused by uneven commutator bars, oil, dust or excessive arcing due to improper spring tension on brush. Brush springs provide the proper tension when used as supplied. Do not stretch springs in an attempt to increase tension.

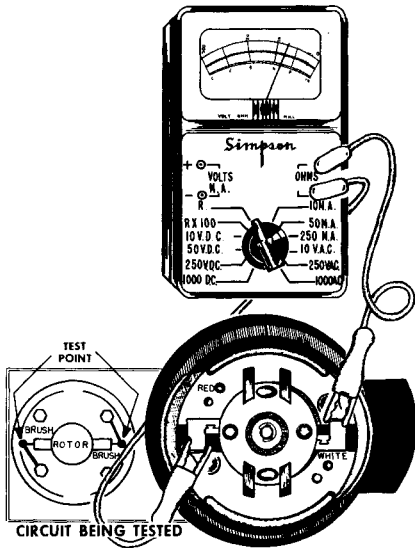


Figure 17 - Check brush contact with rotor.

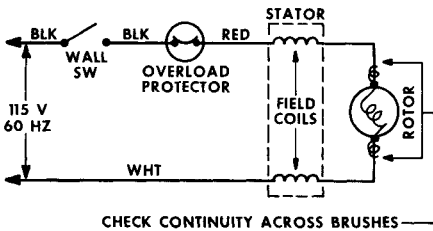


Figure 18 - Schematic - Wiring Diagram

DIAGNOSING PROBLEMS

Disposer won't run:

1. Check wall switch. Check power to disposer.
2. Check for proper brush contact or loose brush holder. Check all harness connections.
3. Try turning armature shaft to see if bearings are tight. It should turn smoothly.
4. Check stator windings for "open" or "short".

5. Check armature for "short" or "open".

Leak at drain elbow joint to stator housing:

1. Drain elbow gasket not seated properly against stator housing. Loosen and retighten assembly.
2. Screws are loose in drain bracket. Tighten securely and evenly.
3. Drain screw holes are stripped out. Use a No. 12 thread cutting screw to hold drain bracket.
4. Screw hole not drilled deep enough to accept screw. Drill hole to necessary depth. Do not go too deep or you will break through casting wall.

Water in motor:

1. Check top bearing and seal assembly. Note position of sealing lips.
2. Check to be sure seal retainer and retainer screws are in position and tight.

LATER CHANGES — SERIES MOTOR

Motor has been changed slightly as illustrated in Figure 19. The ground plate is more like a "T", the configuration of the motor casting has changed somewhat, and the overload has a different calibration, identified by a blue lead instead of the red lead previously used.

1978-1981 DISPOSER

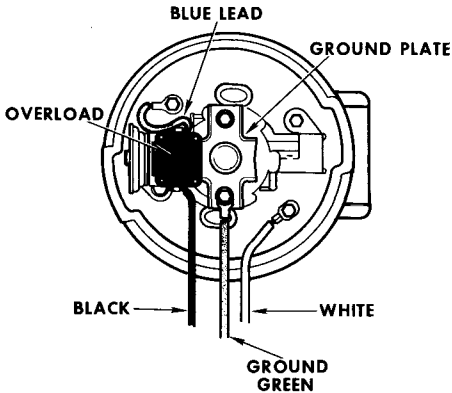


Figure 19 - Motor with bottom cover removed.

Except for the changes above and use of a carbon steel shaft, the current motor assemblies are the same as previously used.

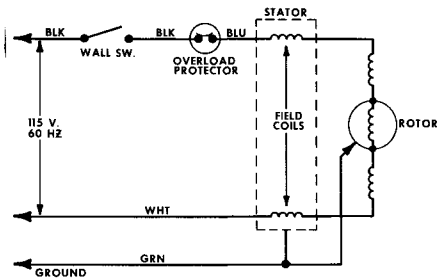


Figure 20 - Schematic Wiring Diagram - Series Motor

RELAY — INDUCTION MODELS

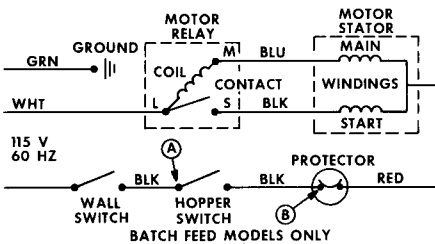


FIGURE 21 — Wiring Diagram — Induction Motor Disposers

DIAGNOSING PROBLEMS

The relay is mounted to the motor cover. There are three terminals marked "M" (main), "L" (line), and "S" (start). If the unit doesn't start, check relay as follows:

1. With relay in normal position (arrow up) check continuity between main terminal "M" and line terminal "L". Figure 22. If there is continuity, the coil is good.
2. If coil is good, turn relay over and check continuity between start terminal "S" and line terminal "L". Figure 22. If there is continuity, the coil is good.

If either of the above checks fail, relay must be replaced.

CAUTION

Fiber insulators are placed between the relay and motor winding so these keep the wiring away from the rotor.

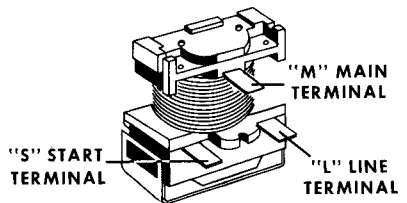


Figure 22 - Relay

DISPOSER — SECTION N

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1982 & LATER DISPOSER

MODEL TYPES

The new 1982 model line of Disposall garbage disposers replace all models in the 1981 line. The construction of the 1982 model disposers is entirely different from previous models; there are no common parts.

The two basic types of disposers in the 1982 line are: (1) Series-Motor, and (2) Induction Motor. These are the same types as in the 1981 and earlier line, but the new series-motor models use two permanent magnets for the stator field instead of two stator windings.

All the 1982 series-motor disposers are continuous feed, and they require an on-off electrical switch remote from the unit. There are two version of the induction-motor type: (1) continuous feed and, (2) batch feed. The batch feed model has an on-off switch which is actuated by the disposer stopper.

PERMANENT MAGNET (SERIES) MOTOR MODELS:

1/3 HP AND 1/2 HP DIFFERENCES

All functional parts of the 1/3 HP GFC195 model and the 1/2 HP GFC200, 400, and 600 models are identical except for the armature and the overload protector.

The 1/3 HP and 1/2 HP armatures are physically interchangeable but the windings are longer on the 1/2 HP version. The resistance of the windings, 180-degrees apart on the commutator, are:

1/3 HP-9 Ω -5/8" Long armature bars
1/2 HP-6 Ω -2" Long armature bars

The 1/3 HP and 1/2 HP armatures must not be substituted for each other because of the difference in ratings of the matched overload protectors. The current ratings for opening are:

1/3 HP-11.0 amps for 4-9 sec.
1/2 HP-16.5 amps for 4-9 sec.

The protectors have one different lead color for identification. The 1/3 HP leads are black and white; the 1/2 HP leads are black and blue. The protectors are not supplied separately as a replacement part, but are included with the end bell assemblies.

SCHEMATIC WIRING DIAGRAM

The schematic is the same for 1/3 HP motor model GFC195 and for the 1/2 HP models GFC200, 230, 400, 430, and 600. See Figure 1.

There are no motor stator windings in the circuit because two permanent magnets are used to supply the stator field.

A full wave rectifier is used to provide DC current through the armature winding. This gives high torque operation.

The normal failure mode is for one of the diodes to short out. The rectifier diodes can be checked with an ohmmeter, measuring resistance between each adjacent set of terminals and reversing ohmmeter polarity. The readings should be OPEN for one polarity and a low resistance for the other.

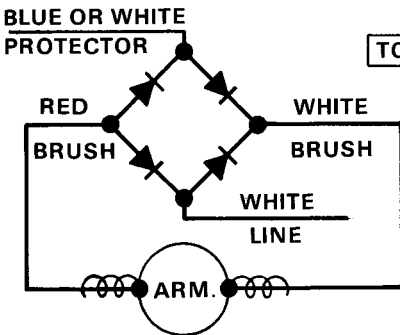
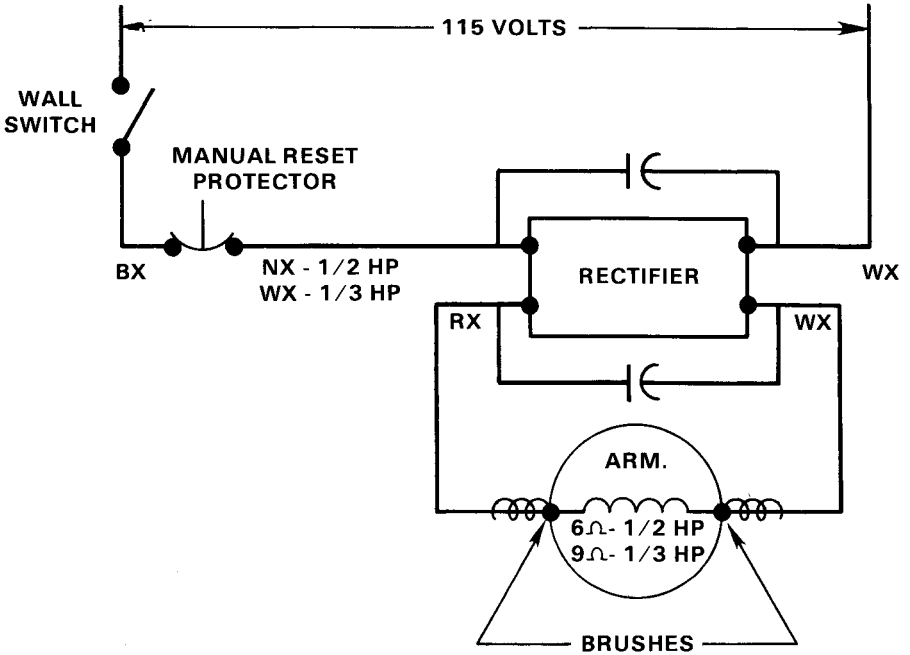
1982 & LATER DISPOSER

Whenever a rectifier fails, it will almost always result in an overload protector failure also.

The capacitor across the input terminals of the rectifier is designed to pro-

tect against high voltage spikes in the line. The other capacitor across the brushes is to help prevent radio or television interference by suppressing arcing at the brushes.

SCHEMATIC WIRING DIAGRAM



TO CHECK RECTIFIER WITH OHMMETER

1. Disconnect 2 leads at brushes.
2. Check between adjacent terminals (4 sets).
3. One polarity should read a low resistance on RX1 scale and opposite polarity should read OPEN.

Figure 1 - Schematic for Permanent Magnet (Series) Motor Models

GFC195,200,400,600 ELECTRICAL DIAGNOSIS

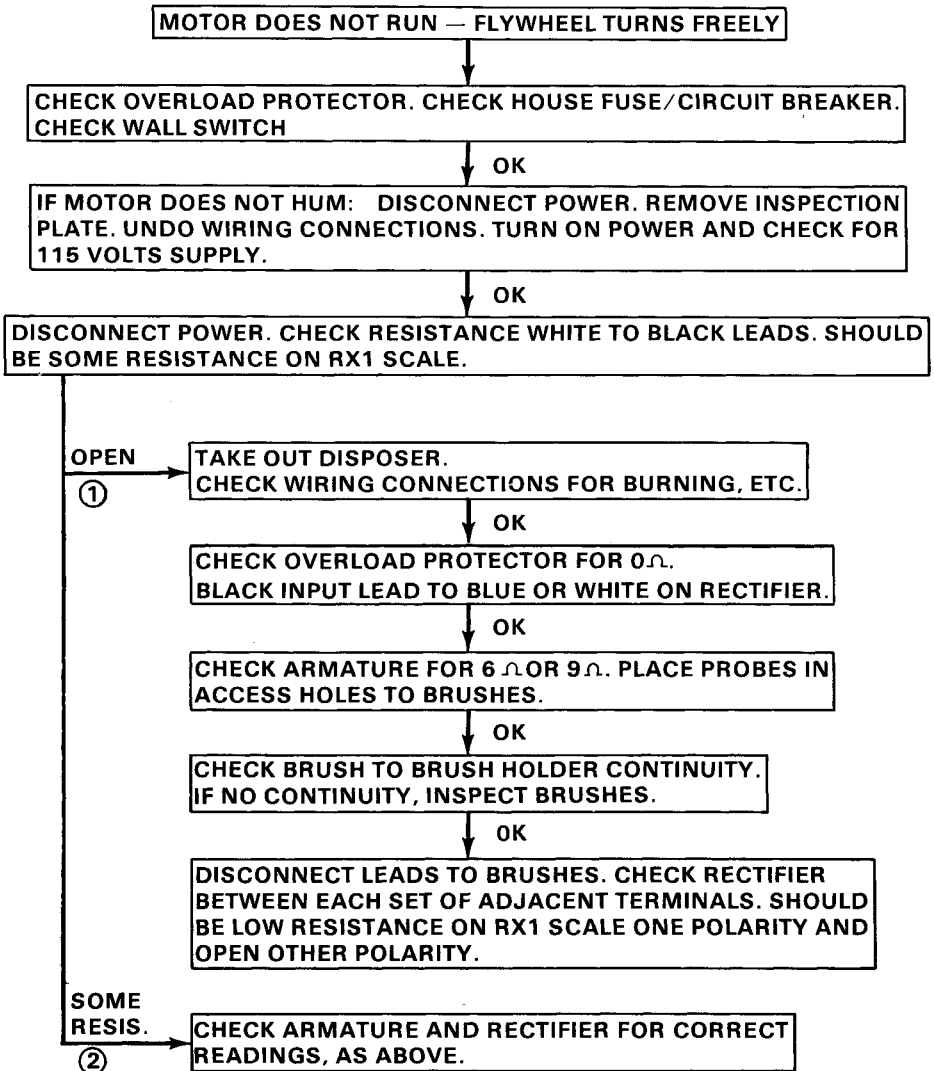


Figure 2 - Electrical Diagnosis for Permanent Magnet (Series) Motor Models

1982 & LATER DISPOSER

ELECTRICAL DIAGNOSIS

If motor does not run and it hums, the first thing to suspect is a jammed flywheel. Turn power off and check that flywheel turns freely. Check for object jamming flywheel. CAUTION: Do not put hands inside disposer. Use a broom handle, large screwdriver, or something similar to unjam flywheel.) If none, a bearing may be frozen. Remove disposer and check bearings.

If flywheel turns and motor does not run, proceed with electrical diagnosis indicated in Figure 2.

The first thing to check is that the motor overload protector is not tripped. Then check that the house wiring circuit breaker or fuse is OK, and that the remote wall switch is turned on.

If all appears OK, disconnect power to disposer and proceed with continuity checks shown in Figure 2.

END BELL DISASSEMBLY

To service the end bell assembly it is not necessary to remove the disposer from under the sink. The end bell may easily be removed with the disposer installed. The wire tool described in Figure 3 may be used to hold the brush springs in place as the end bell is removed.

To remove the plastic end bell, take off the two 11/32-inch nuts on motor studs. A long-nosed pliers or hollow-stem nut driver is needed for one nut because most sockets won't fit over the longer stud. Lift off end bell, being careful to not lose brushes and brush

springs. Sintered bronze lower bearing is pressed in place and not supplied for replacement. Also, the overload protector and the rectifier are not supplied separately.

The brushes and brush springs are supplied on a replacement end bell assembly. They are held in place by a wire tool like the one in Figure 3. The brushes and springs are also supplied separately.

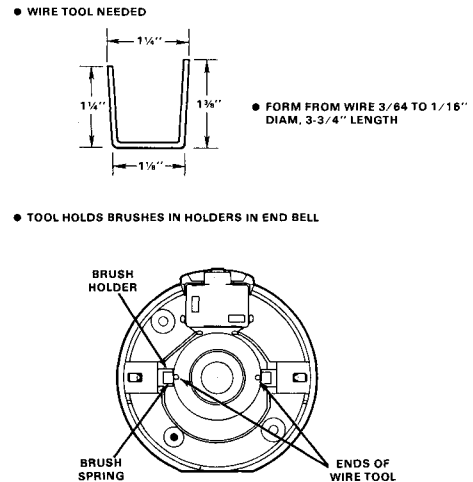


Figure 3 - Wire Tool for Assembly Brushes in End Bell Assembly

To reinstall the end bell assembly, it is necessary to install the brush springs and the brushes first. The brush springs are plated brass and are not "springs" as we normally think of them but rather are a strip of brass rolled up. When the brush is inserted the brass strip is unrolled toward the end of the brush holder. This roll of brass strip exerts a force against the brush.

1982 & LATER DISPOSER

To assemble the brushes onto the end bell a "tool" is needed. Make it out of a stiff piece of wire, 3/16 to 1/16" diameter (coathanger), and 3 1/2-inch length. Bend in "U" shape so ends fit through two holes in end bell wiring compartment. Using this tool, proceed as follows:

- Insert ends of tool in holes but short of brush holders. Place one brush in end of holder with tang overlapping at top. Then place brush in position and push inside holder. Use long end of wire tool to hold first brush in position.
- Position second spring and brush, hold brush in, and push up ends of tool to capture both brushes in place.

Regrease lower bearing in end bell with Lubriplate or a good grade grease. Now put end bell assembly in place on motor housing. Ends of wire tool will be pushed up by commutator on armature. Remove tool and replace two nuts on motor studs.

WATER SEAL IN DRAIN HOUSING

To replace the water seal, first remove the hopper and then the flywheel. (The flywheel has LEFT HAND threads.)

Next, lift slinger off shaft. Then lift up and remove seal spacer on shaft. This part is what the water seal lip seals against. See Figure 4.

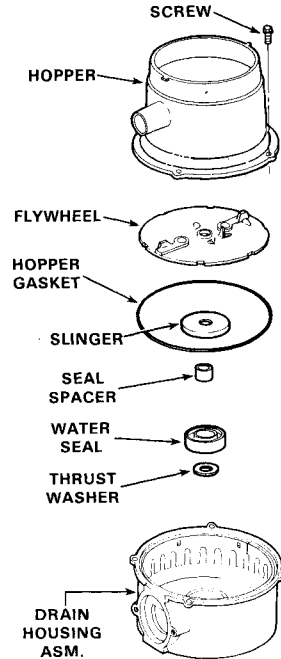


Figure 4 - Water Seal Location in Drain Housing

Water seal can now be removed by inserting a flat blade screwdriver under the seal and gently prying out.

Under the seal is a flat thrust washer, which can be removed. The sintered iron bearing is pressed in the drain housing and is not furnished as a replacement part.

To install a new water seal in the drain housing, proceed as follows:

- Put thrust washer on armature shaft.
- Slip seal spacer on armature shaft.
- Apply soap, light oil, or grease on body of seal, then press evenly in place.

Replacement drain housings come with a water seal in place.

1982 & LATER DISPOSER

INDUCTION MOTOR MODELS:

SCHEMATIC WIRING DIAGRAM

The schematic wiring diagram shows the circuit for GFB950 with the stopper-off switch. The two house wiring leads are connected directly to the disposer. See Figure 5.

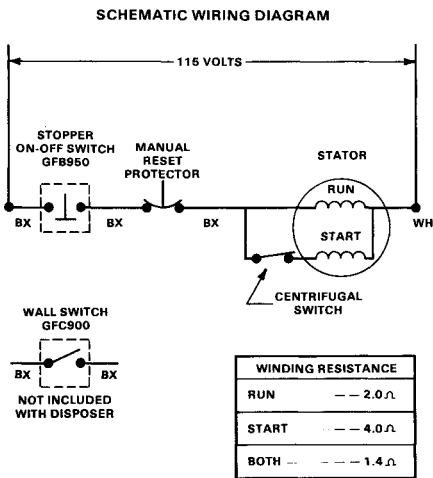


Figure 5 - Schematic for Induction Motor Models

For the GFC900, the schematic is the same except that there is no stopper on-off switch. Instead an external toggle-type on-off switch is used in the house wiring before it connects to the disposer.

The induction motor has a centrifugal switch that opens the start winding when the motor gets up to speed.

ELECTRICAL DIAGNOSIS

If motor does not run and it hums, the first thing to suspect is a jammed flywheel. Turn power off and check that flywheel turns freely. Check for object jamming flywheel. **CAUTION:** Do not put hands inside disposer. Use a broom handle, large screwdriver, or something similar to unjam flywheel.

If none, a bearing may be frozen. Remove disposer and check bearings.

If flywheel turns, and motor does not run, proceed with electrical diagnosis indicated in Figure 6.

The first thing to check is that the motor overload protector is not tripped. Then check that the house wiring circuit breaker or fuse is OK, and that the remote wall switch (if used) is turned on.

If all appears OK, disconnect power to disposer and proceed with continuity checks shown in Figure 6.

GFB950/GFC900 ELECTRICAL DIAGNOSIS

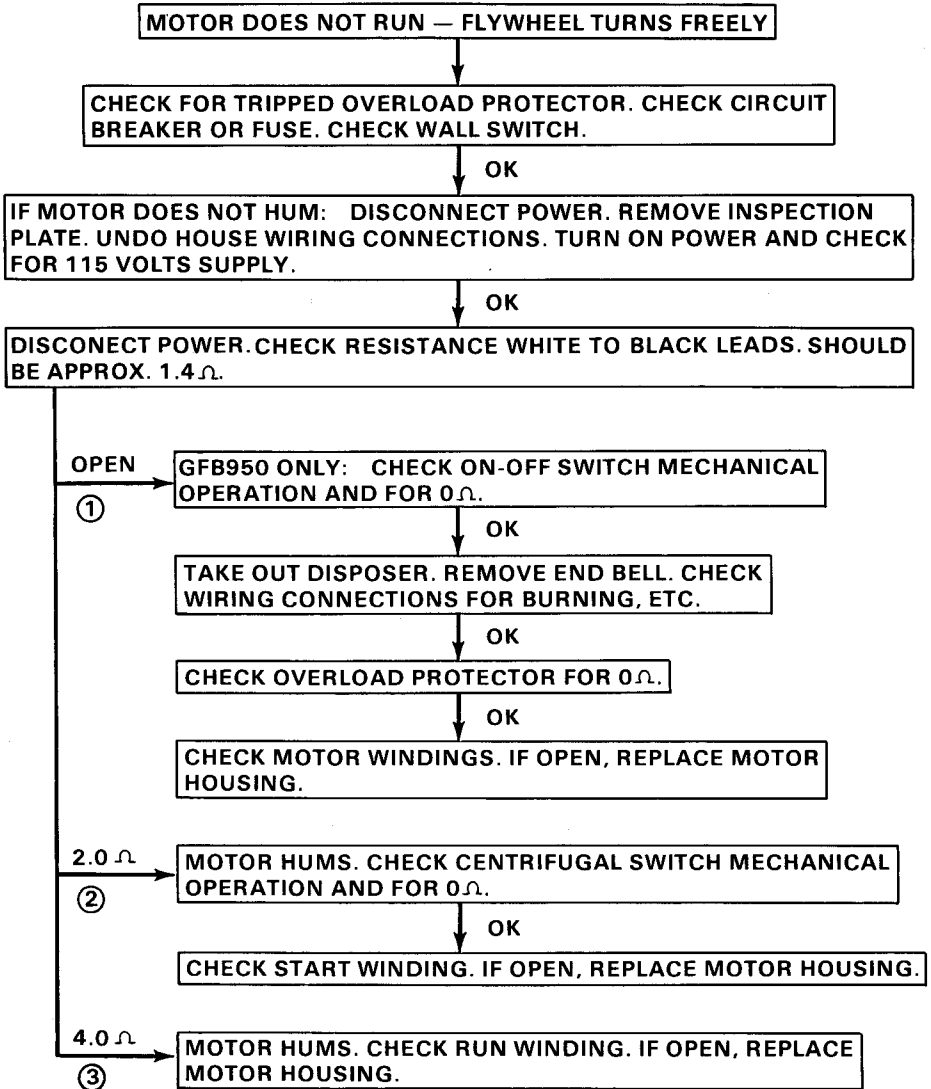


Figure 6 - Electrical Diagnosis for Induction Motor Models

1982 & LATER DISPOSER

OVERLOAD PROTECTOR TRIPPING

The motor overload protector will trip (open) if the flywheel is blocked or a bearing is frozen. Always check that the overload protector button is in its depressed (closed) position before proceeding with any further electrical checks.

If the water seal in the drain housing leaks, this can cause the bearing under it to freeze or to bind.

If the disposer starts but the overload trips out in 10 to 15 seconds, this means that the start winding is remaining in the circuit. One possible cause of this is a tight bearing which does not allow the motor to attain operating speed. Another possible cause is a centrifugal switch that does not open properly.

GFB950 ON-OFF SWITCH & PLUNGER

Parts of the GFB950 on-off switch and actuating plunger can be replaced individually. For access, remove switch cover.

- Switch is held to bracket with 2 screws.
- Remove plunger button removing retainer at end of plunger shaft, while holding spring compressed. Then plunger can be pulled out. Notice the two removeable rubber "O" rings on the plunger shaft which act as a water seal.
- There is no adjustment for the actuating plunger.

- The plunger bushing can be replaced by removing the jam nut with a 5/8-inch open wrench. A rubber collar around the bushing acts as a water seal.

To reassemble, reverse above steps. The positioning of the parts is shown in Figure 7.

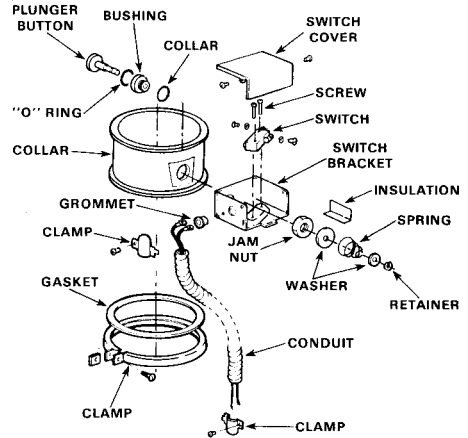


Figure 7 - GFB950 On-Off Switch & Plunger Parts

The disposer can be disassembled with the on-off switch assembly left mounted to the collar.

DISASSEMBLY

1. Four 1/4-inch hex head screws hold hopper to drain casting. Remove hopper and hopper gasket.
2. Shredder ring lifts out. It is prevented from turning by a shredder stop that fits between ring and inside wall of plastic drain housing. Insert tab on shredder stop in one of top ring of holes in shredder top. Short end of shredder stop bears against one of projections on drain housing to prevent shredder from turning. Refer to Figure 8.

1982 & LATER DISPOSER

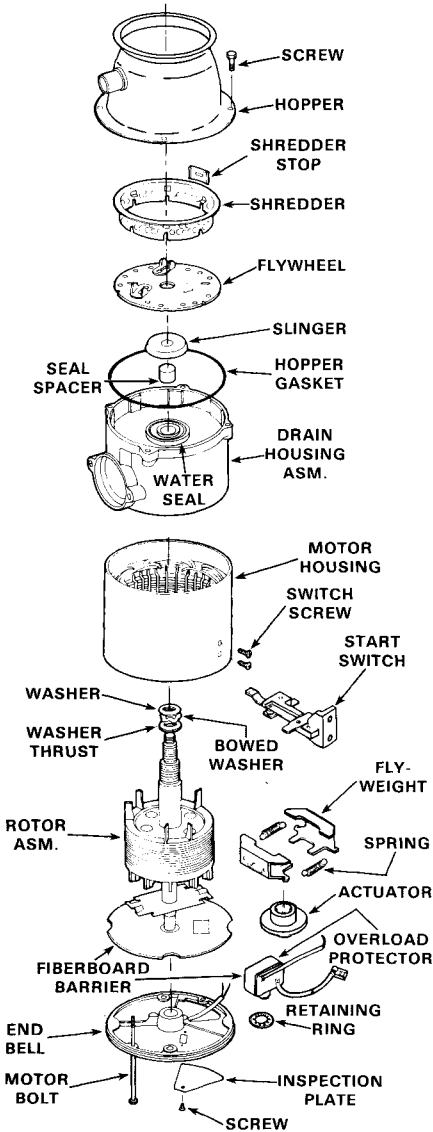


Figure 8 - GFC900 & GFB950 Parts Breakdown

3. Remove flywheel by sharply tapping it clockwise with a drift pin. Threads are left hand. **CAUTION:** Do Not hit plastic drain housing as it may break.

4. Slinger under flywheel lifts off. Seal spacer also can be lifted out with pliers. The water seal is pressed into the drain housing. It should not be removed unless it is to be replaced. Use a pen knife to pry out the water seal. It is furnished as part of a replacement drain housing assembly.

5. Next turn over the drain housing/-motor assembly.

IMPORTANT: To aid in reassembly, scribe two marks that align the end bell and the drain housing to the motor housing.

Remove two motor through bolts, then pry end bell out of motor housing.

6. The overload protector is held onto the end bell with a retaining ring. Do not remove retaining ring unless protector is to be replaced. To disassemble, tap neck of protector free from retainer ring. To assemble retainer ring, use 7/16-inch socket that will fit over protector neck.

7. After start switch is removed from motor housing, the rotor is free to be lifted out.

8. The drain housing has been used to support the end of the rotor. If just it is to be replaced, it is free when the two motor bolts are removed and can be lifted off without disturbing the motor housing and end bell.

1982 & LATER DISPOSER

REASSEMBLY

To reassemble, reverse the steps listed above. Points to remember are:

- a. When replace rotor end in drain housing, use some light grease such as Lubriplate in the bearing. Be sure the three washers are in place: Washer with two tabs pointing up goes against bearing in drain housing, then bowed washer, then thrust washer with slots on edge.

- b. Carefully align (using previously scribed marks) the motor housing to drain housing.

Also, carefully align (using previously scribed marks) the end bell onto the motor housing.

These alignments are critical to be able to thread the end of the motor bolts into the drain housing.

- c. To install a new water seal in the drain housing, proceed as follows:

- Slip seal spacer in place on rotor shaft.
- Apply soap, light oil, or grease on body of seal, then press evenly in place.

- d. For GFB950: hopper goes on only one way; with dishwasher drain connection over drain outlet.

- e. For GFB950: be careful to not open hopper to collar clamp too wide; it may break. Also, carefully align gasket between hopper and collar.

- f. Foam sound insulation blanket is held in place around motor housing with an elastic retainer (rubber band).

CUSTOMER EDUCATION FAULTS

Listed below are the primary causes of Customer Education types of faults. These apply to all disposer models, and are all covered in the Use and Care Booklet supplied with new disposers.

1. What Should Not Go In the Disposer:

- Meat, glass, china, plastics, and ceramics. These are not acceptable to the sewer system.

- Leather, cloth, spring, rubber, seafood shells, artichoke leaves, or corn husks. These items CAN CAUSE NUISANCE TRIPPING OF MOTOR OVERLOAD PROTECTOR.

- Lye or drain cleaning chemicals. These may damage the disposer.

2. What Should Probably Not Go In The Disposer:

- Items such as large bones and fibrous husks like lima bean pods. These require considerable cutting time.

3. To Deodorize The Disposer, If Odor Develops:

- Run orange or lemon rind through disposer, with water flowing.

- Or, grind a dozen ice cubes sprinkled with a generous amount of household scouring powder, without water.
- Flush out disposer at least once a day.

4. Overloading Causes, Protector Trips:

- Packing food waste into disposer too tightly.
- Metallic object falling into unit and jamming flywheel.
- CAUTION: NEVER PUT YOUR HAND IN DISPOSER TO UNJAM. USE TONGS OR LARGE SPOON.

5. If Disposer Will Not Restart After Jamming:

- Use a lever such as large screwdriver or broom handle to turn the flywheel to free the jam.

6. Causes of Unusually Loud Noise:

- This is normal when grinding bones or fruit pits.
- Spoon, bottle cap, etc. in unit.

SAFETY PRACTICES

ALL PRODUCTS — SECTION O

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SAFETY PRACTICES

1. ELECTRICAL

A. Electrical Safety Responsibilities

General Electric & Hotpoint Dishwashers, Compactors & Disposers are designed, engineered, manufactured and tested in adherence to the requirements of established safety codes, standards and specifications. One important segment of this effort deals with the potential hazards of electrical shock during both service and use of the electrical products involved.

The service technicians responsibility must include the safety of the product. It is very important that the technician:

1. honor all built-in safety features and other safety related requirements of the product.
2. be continually alert for defeated or non-honored safety features or safety requirements.
3. be immediately responsive to all recognized safety hazards and reported incidents of electrical shock.

B. Electrical Safety Test Procedures

General Electric Company makes leakage-current training available to improve the effectiveness of the technicians' safety related responsibilities.

Information about safety training test procedures and product test specifications for General

Electric and Hotpoint Dishwashers, Compactors, and Disposers is available from any Product Service Zone of the General Electric Company (attention Mgr. — Field Service Administration).

Test procedures and measurement specifications which are related to leakage-current include the following:

1. Electrical-service tests.
2. Ground-path continuity (bonding) tests.
3. Leakage-current tests.
4. Resistances (insulation) tests

C. Grounding

For personal safety, all appliances equipped with a three prong power cord must be properly grounded. These three prong power cords mate with a standard three prong (grounding) wall receptacle. See figure 1.

DO NOT, UNDER ANY CIRCUMSTANCES, CUT OR REMOVE THE THIRD (GROUND) PRONG FROM THE POWER CORD.

Wall receptacles can be and sometimes are miswired such that the polarity is incorrect and their grounds are inadequate or non-existent. **IF THERE IS ANY DOUBT AS TO WHETHER THE WALL RECEPTACLE IS MISWIRED OR IMPROPERLY GROUNDED, THE CUSTOMER SHOULD HAVE IT CHECKED BY A QUALIFIED ELECTRICIAN.**

SAFETY PRACTICES

PREFERRED METHOD

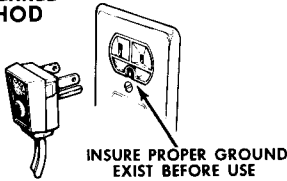


Figure 1 - Three Prong Receptacle

Where a standard two-prong wall receptacle is encountered, it is the personal responsibility of the customer to have it replaced with a properly grounded three-prong wall receptacle. The customer should be advised of this by the service technician.

When local codes permit however, a **TEMPORARY CONNECTION** may be made to a properly grounded two-prong wall receptacle by the use of a UL listed adapter which is available at most local hardware stores. See figure 2. The larger slot in the adapter must be aligned with the larger slot in the receptacle. **NOT PERMITTED IN CANADA.**

TEMPORARY METHOD (ADAPTER PLUGS NOT PERMITTED IN CANADA)

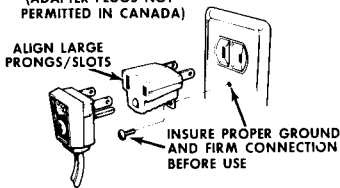


Figure 2 - Temporary Connection

CAUTION: Attaching the adapter ground terminal to the wall receptacle cover screw does not ground the appliance unless the wall receptacle is grounded through the house wiring.

When disconnecting the power cord from the adapter, hold the adapter with one hand. If this is not done, the adapter ground terminal is very likely to break with repeated use.

Should this happen, either **REPLACE THE ADAPTER** or **DO NOT USE** the appliance.

D. Appliance Grounding

Any part of General Electric & Hotpoint Dishwashers, Compactors and Disposers that is capable of conducting an electrical current is grounded.

If any ground wire, screw, strap, nut etc. is removed for service, or any reason, it must be reconnected to its original position with the original fastener before the appliance is put in operation again.

Failure to do so will create a possible shock hazard and an unsafe condition.

E. Type of Circuit

A separate branch circuit should be provided for the operation of the Dishwasher, Compactor and Disposer. Extension cords should not be used. If use of an extension cord is unavoidable, it should be:

1. Properly grounded and polarized.
2. 6 Ft. maximum length.
3. 16 gauge (or heavier) wire.
4. Temporary

Only fuses or circuit-breakers with ratings that conform to the local electrical code should be used to protect the circuit. If they are found to be rated too high, the customer should be advised of a potential fire hazard. The correct fuses or circuit-breakers should be installed, before the appliance is operated.

G. Frayed Electrical Cords

Repair or replace immediately all electric service cords that have become frayed or otherwise damaged. Do not use a cord that shows cracks or abrasion damage along its length or at either the plug or connector end. Never unplug your Compactor or Disposer by pulling on the wire. Always grip the plug firmly and pull straight out from the receptacle. See figure 3.

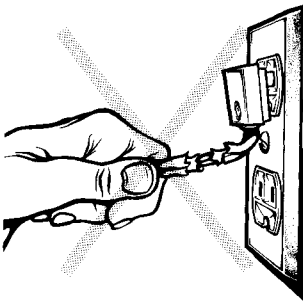


Figure 3 - Power Cord Removal

H. Cutting and Splicing Electric Wires

When it is necessary to cut and splice electric wires, the splice should be staggered rather than side by side. All splices should

be made with bell type connectors. Position the open end down after filling the connector with RTV to seal out moisture.

II. SERVICE PRACTICES

A. Disconnect Electrical Power

Power should always be removed from the appliance when service is to be performed which will involve contact or near contact with electrical devices or wiring. Sometimes it is necessary to conduct tests with the power on as is the case when using a voltmeter tester. In such instances, use extreme caution to prevent electrical shock. Be sure that customer's children do not touch any parts, wires or tools that might be energized. Always ask the customer to remove children from the work area.

B. Use Proper Tools

It is important to have and use proper tools. The tool box and its contents should be checked periodically to be sure they are clean and in good working condition. Worn or broken tools are a cause of accidents and should be replaced.

All test equipment and electrical tools should be in good working order and free from electrical shock hazards. All electric power tools must be properly grounded to prevent the danger of electrical shock.

Raucett Adapters old WD10x316 New (larger) WD1X1447



GE Appliances

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