Electrolux

ELECTROLUX MAJOR APPLIANCES OF NORTH AMERICA

SERVICE MANUAL

FRIGIDAIRE

COMMERCIAL

WASHER

Frigidaire
TAPPAN
White-Westinghouse
Gibson
Kelvinator

5995468302 ***September2006***

SAFE SERVICING PRACTICES - ALL APPLIANCES

To avoid personal injury and/or property damage, it is important that **Safe Servicing Practices** be observed. The following are some limited examples of safe practices:

1. **DO NOT** attempt a product repair if you have any doubts as to your ability to complete it in a safe and satisfactory manner.

2. Before servicing or moving an appliance:
   - Remove the power cord from the electrical outlet, trip the circuit breaker to the OFF position, or remove the fuse.
   - Turn off the gas supply.
   - Turn off the water supply.

3. Never interfere with the proper operation of any safety device.

4. **USE ONLY REPLACEMENT PARTS CATALOGED FOR THIS APPLIANCE. SUBSTITUTIONS MAY DEFEAT COMPLIANCE WITH SAFETY STANDARDS SET FOR HOME APPLIANCES.**

5. **GROUNDING**: The standard color coding for safety ground wires is **GREEN**, or **GREEN** with **YELLOW STRIPES**. Ground leads are not to be used as current carrying conductors. It is **EXTREMELY** important that the service technician reestablish all safety grounds prior to completion of service. Failure to do so will create a hazard.

6. Prior to returning the product to service, ensure that:
   - All electrical connections are correct and secure
   - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts
   - All non-insulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels
   - All safety grounds (both internal and external) are correctly and securely connected
   - All panels are properly and securely reassembled

ATTENTION!!!

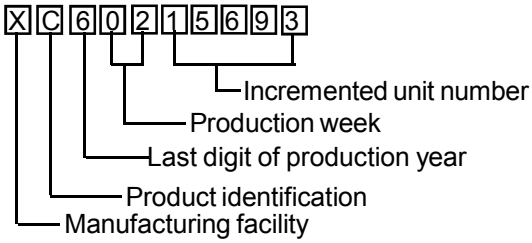
This service manual is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. Electrolux Home Products cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this manual.

QUICK REFERENCE SHEET

1. Serial nameplate location:

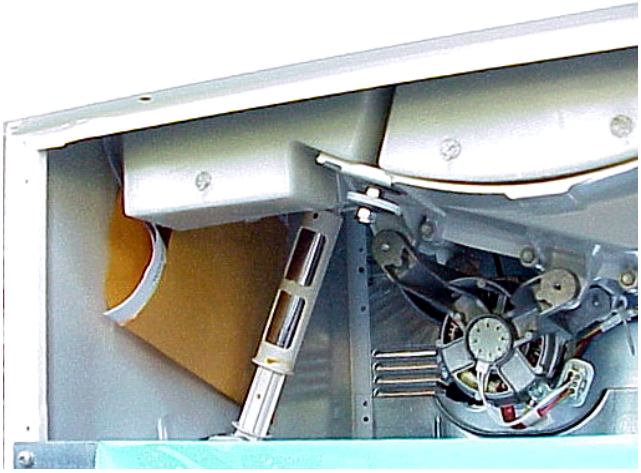
The top center of the loading door opening on the front panel.

2. Serial number breakdown:



3. Tech sheet location:

On the left-hand bodyside behind the front panel.



4. Temperture switch:

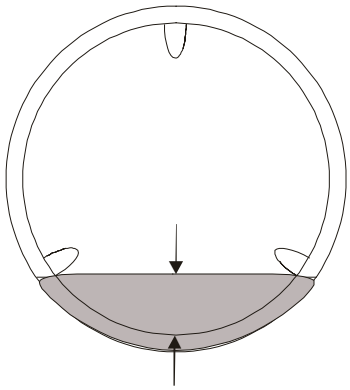
CIRCUIT			
WASH	1-3	1-5	2-6
COLD		X	
WARM	X	X	
DELIC	X	X	X
HOT	X		

QUICK REFERENCE SHEET

Component resistance chart:

Electrical component		Resistance Ω @ 77° F (25°C)
Water valve soleniods		880 ± 10%
Door lock solenoid		380 ± 10%
Pump motor		15 ± 7%
Timer motor		2425 ± 6%
Dispenser valve solenoids		1100 ± 7%
Tachogenerator		184 ± 7%
Motor	M1 TO M2	5.3 ± 7%
	M2 TO M3	5.3 ± 7%
	M1 TO M3	5.3 ± 7%
	M4 TO M5	118 ± 7%

Water fill height 3.5 ± 1.5 ":



Electrical requirements:

Circuit - Individual, properly polarized and grounded 15 amp. branch circuit fused with 15 amp. time delay fuse or circuit breaker.

Incoming water pressure:

30 and 120 pounds per square inch (maximum unbalance pressure, hot vs. cold, 10 psi.)

Drain requirements:

Drain capable of eliminating 17 gals (64.3 L) per minute.

A standpipe diameter of 1-1/4 in. (3.18 cm) minimum.

The standpipe height above the floor should be:

Minimum height: 24 in. (61 cm)

Maximum height: 96 in. (244 cm)

Motor:

No load agitate wattage - Max 150

No load spin wattage - Max 550

Water usages:

Per fill 4.23 gallons

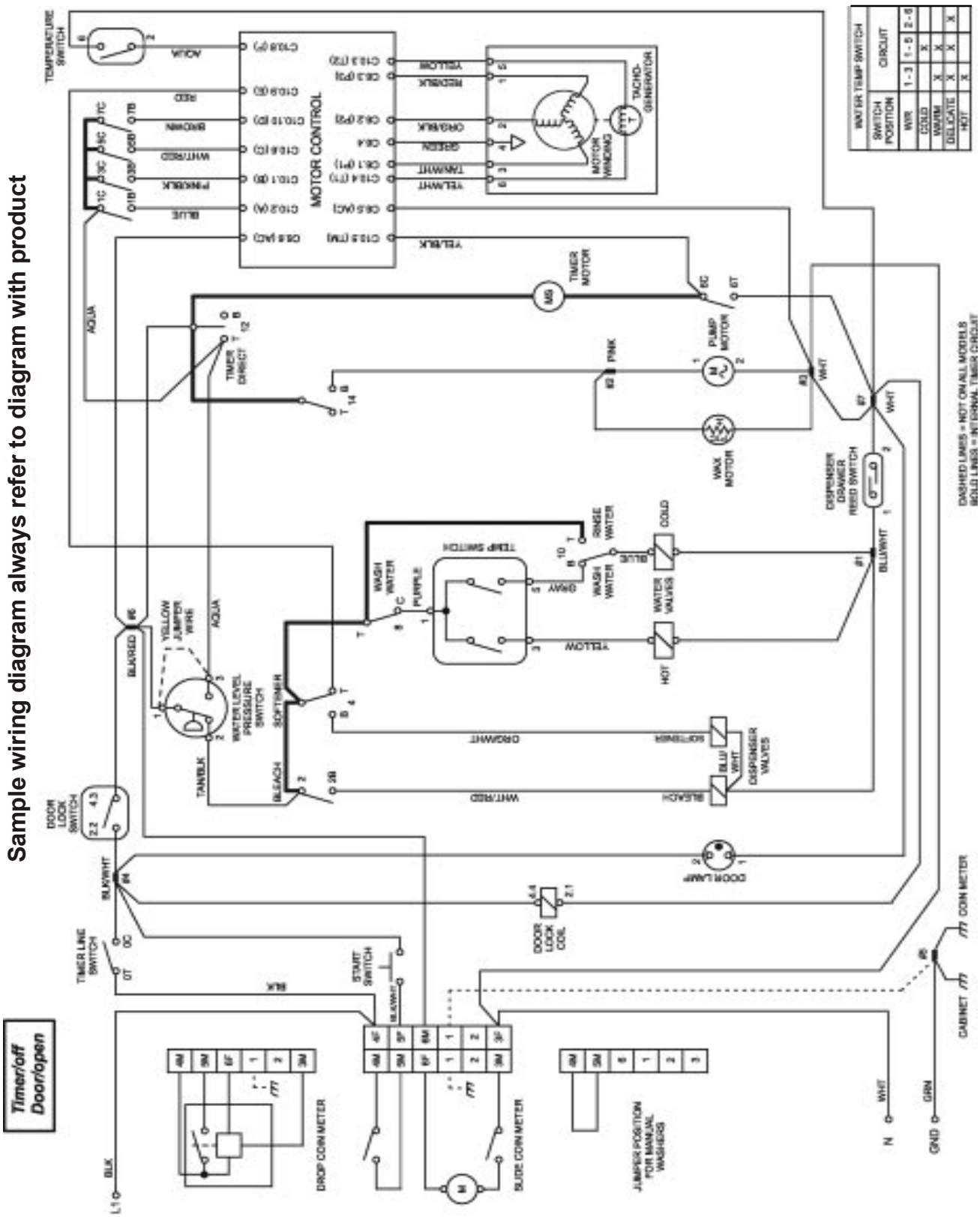
Per cycle 16.92 gallons

Based on 1 wash and 3 rinse fills

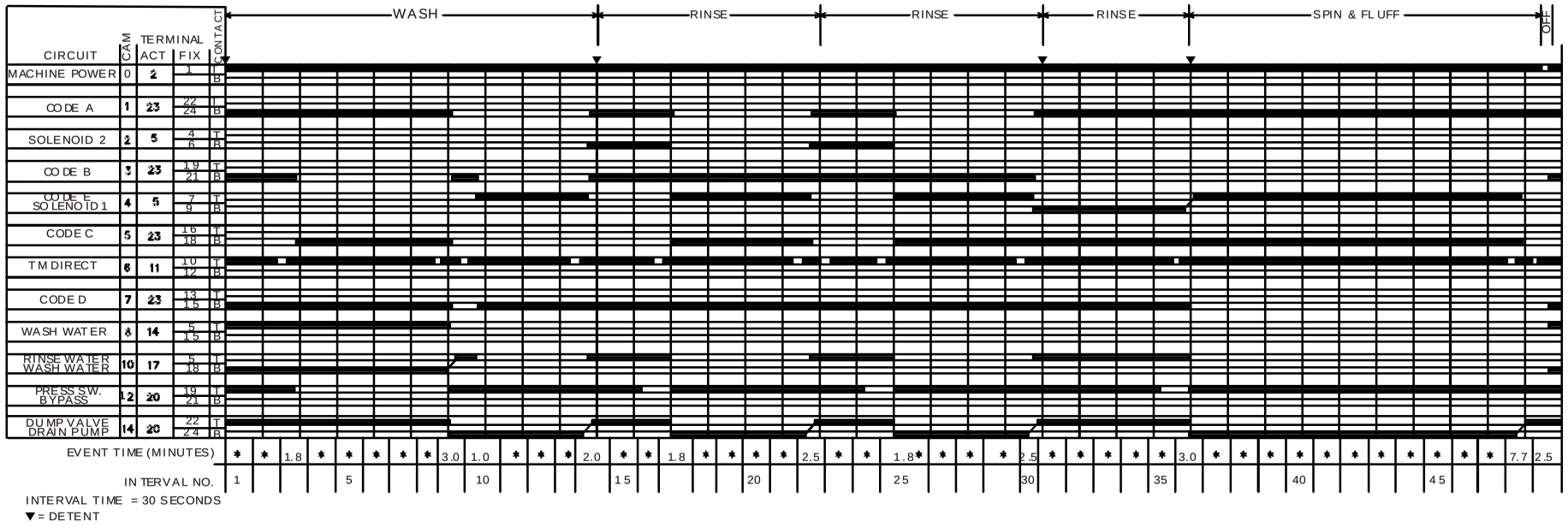
Operation speeds:

Agitate Speed - RPM (Regular)	51+/- 4
Agitate Speed - RPM (Delicates)	35+/- 4
Spin Speed - RPM (Regular)	950
Spin Speed - RPM (Delicates)	650
Tub Pulley to Motor Pulley Ratio	16 to 1.
Tub Capacity	2.65 cu. ft.

Sample wiring diagram always refer to diagram with product



Cycle chart


WASH
RINSE
RINSE
RINSE
SPIN & FLUFF
OFF
CIRCUIT
CAM
TERMINAL ACT
FIX
CONTACT
MACHINE POWER
CODE A
SOLENOID 2
CODE B
CODE E SOLENOID 1
CODE C
TM DIRECT
CODE D
WASH WATER
RINSE WATER WASH WATER
PRESS SW. BYPASS
DUMP VALVE DRAIN PUMP
EVENT TIME (MINUTES)
INTERVAL NO.
INTERVAL TIME = 30 SECONDS
▼ = DETENT

SECTION A - Installation and Safety Instructions

Full Size Tumble Action Washers

Before beginning installation, carefully read these instructions. This will simplify the installation and ensure the washer is installed correctly and safely. Leave these instructions near the washer after installation for future reference.

NOTE: The electrical service to the washer must conform with local codes and ordinances and the latest edition of the National Electrical Code, ANSI/ NFPA 70.

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

Do not store or use gasoline or other flammable vapors and liquid in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Clear the room, building or area of all occupants.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas suppliers instructions.
- If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

Your washer is equipped with a door safety interlock. Verify proper operation of interlock system daily, using the following procedure:

1. With the washer door open, insert the required number of coins (or the appropriate card, on machines equipped with a card-start system) and press the START button. THE WASHER MUST NOT START!

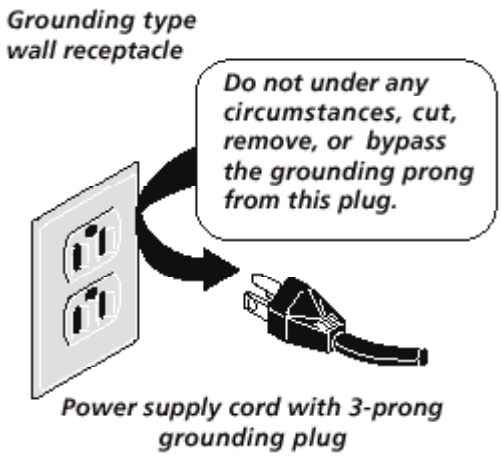
2. Close the washer door. Press the START button again to start the machine. Attempt to open the door without exerting excessive force. THE DOOR MUST NOT OPEN!

IF THE WASHER STARTS WITH THE DOOR OPEN, OR THE DOOR CAN BE OPENED WHILE THE WASHER IS OPERATING, THE MACHINE MUST IMMEDIATELY BE TAKEN OUT OF SERVICE. DISCONNECT THE POWER CORD, AND MARK THE MACHINE "OUT OF ORDER", UNTIL THE INTERLOCK SYSTEM IS REPAIRED, AND OPERATES AS DESCRIBED ABOVE.

Note: The instructions appearing in this INSTALLATION AND SAFETY INSTRUCTIONS manual are not meant to cover every possible condition and situation that may occur. Common sense and caution must be practiced when installing, operating and maintaining any appliance.

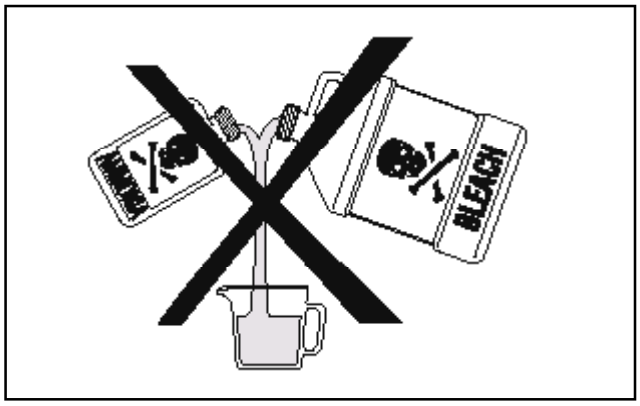
FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.



CORRECT
Use this way ONLY

WARNING Do not use or mix liquid chlorine bleach with other household chemicals such as toilet cleaners, rust removers, acid or products containing ammonia. These mixtures can produce dangerous fumes which can cause serious injury or death.



Important Safety Instructions

Read all instructions before using this washer.

WARNING To reduce the risk of fire, electrical shock, or injury to persons when using this washer, comply with the basic warnings listed below.

WARNING Failure to comply with these warnings could result in serious personal injuries.

Prevent Fire

WARNING Do not wash items that have been previously cleaned in, soaked in, or spotted with gasoline,cleaning solvents, kerosene, cooking oils, waxes, etc.

WARNING Do not store these items on or near the washer. These substances give off vapors or chemical reactions that could ignite or explode.

WARNING Do not put oily or greasy rags or clothing on top of the washer. These substances give off vapors that could ignite the materials.

WARNING Do not add gasoline, cleaning solvents, or other flammable or explosive substances to the wash water. These substances give off vapors that could ignite or explode. Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for 2 weeks or more. ***HYDROGEN GAS IS EXPLOSIVE.*** If the hot water system has not been used for such a period, before using the washer, turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. Hydrogen gas is flammable; do not smoke or use an open flame during this time.

WARNING Failure to comply with these warnings could result in fire, explosion, serious bodily injury and/or damage to the rubber or plastic parts of the washer.

Protect Children

WARNING Do not allow children to play on or in the washer. Close supervision of children is necessary when the washer is used near children. As children grow, teach them the proper, safe use of all appliances.

WARNING Destroy the carton, plastic bag and other packing materials after the washer is unpacked. Children might use them for play. Cartons covered with rugs, bedspreads or plastic sheets can become airtight chambers.

WARNING Keep laundry products out of children's reach. To prevent personal injury, observe all warnings on product labels.

WARNING Before the washer is removed from service or discarded, remove the washer door to prevent accidental entrapment.

WARNING Failure to comply with these warnings could result in serious personal injuries.

Prevent Injury

WARNING Test door interlock system daily. Follow instructions on previous page.

WARNING To prevent shock hazard and assure stability during operation, the washer must be installed and electrically grounded by a qualified service person in accordance with local codes. Refer to INSTALLATION AND SAFETY INSTRUCTIONS for detailed grounding procedures. If the washer is moved to a new location, have it checked and reinstalled by a qualified service person.

WARNING To prevent personal injury or damage to the washer, the electrical power cord of the washer must be plugged into a properly grounded and polarized 3-prong outlet. **The third grounding prong must never be removed. Never ground the washer to a gas pipe. Do not use an extension cord or an adaptor plug.**

WARNING Follow package directions when using laundry products. Incorrect usage can produce poisonous gas—resulting in serious injury or death.

- **Do not** combine laundry products for use in 1 load unless specified on the label.
- **Do not** mix chlorine bleach with ammonia or acids such as vinegar.

WARNING To prevent serious personal injury and damage to the washer:

- All repairs and servicing must be performed by an authorized servicer unless specifically recommended in this INSTALLATION AND SAFETY INSTRUCTIONS manual. Use only authorized factory parts.
- **Do not** tamper with controls.
- **Do not** install or store the washer where it will be exposed to the weather.

WARNING To reduce the risk of electric shock, disconnect this appliance from the power supply before attempting any user maintenance. Turning the controls to the OFF position does not disconnect this appliance from the power supply.

WARNING To prevent injury, do not reach into the washer while parts are moving. Before loading, unloading or adding items, allow the tub to coast to a complete stop before reaching inside.

WARNING Failure to comply with these warnings could result in serious personal injuries.

WARNING This washer is equipped with an electrical overload protector. The motor will stop if it becomes overheated. The washer will automatically restart after a cool down period of up to 30 minutes, if the washer has not been manually turned off during this time.

PRE-INSTALLATION REQUIREMENTS

Tools Required for Installation:

1. 1/4 in. nut driver.
2. 3/8 in. socket with ratchet.
3. 3/8 in. open end wrench.
4. 7/16 in. socket with ratchet.
5. 9/16 in. open end wrench.
6. Channel-lock adjustable pliers.
7. Carpenter's level.

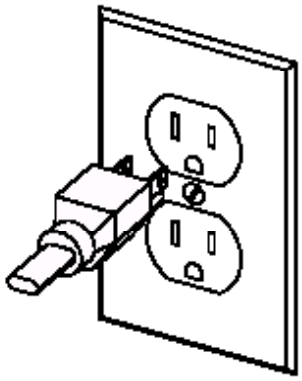
ELECTRICAL REQUIREMENTS

CIRCUIT - Individual, properly polarized and grounded 15 amp. branch circuit fused with 15 amp. time delay fuse or circuit breaker.

POWER SUPPLY - 2 wire, with ground, 120 volt, single phase, 60 Hz, Alternating Current.

NOTE: The use of this washer with power created by gas powered generators, solar powered generators, wind powered generators or and other generator other than the local utility company is not recommended.

OUTLET RECEPTACLE - Properly grounded 3-prong receptacle to be located so the power supply cord is accessible when the washer is in an installed position.



NOTE: GFI (Ground Fault Interrupter) receptacle is not required.

GROUNDING REQUIREMENTS

WARNING Improper connection of the equipment grounding conductor can result in a risk of electrical shock. Check with a licensed electrician if you are in doubt as to whether the appliance is properly grounded.

1. The washer **MUST** be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electrical shock by a path of least resistance for electrical current.

2. Since your washer is equipped with a power supply cord having an equipment-grounding conductor and a grounding plug, the plug **MUST** be plugged into an appropriate, copper wired receptacle that is properly installed and grounded in accordance with all local codes and ordinances or in the absence of local codes, with the National Electrical Codes, ANSI/NFPA 70 (latest edition). If in doubt, call a licensed electrician. **DO NOT** cut off or alter the grounding prong on the power supply cord. In situations where a two-slot receptacle is present, it is the owner's responsibility to have a licensed electrician replace it with a **properly grounded** three prong grounding type receptacle.

WATER SUPPLY REQUIREMENTS

Hot and cold water faucets **MUST** be installed within 42 inches (107 cm) of your washer's water inlet. The faucets **MUST** be 3/4 inch (1.9 cm) garden hose type so inlet hoses can be connected. Water pressure **MUST** be between 30 and 120 pounds per square inch (maximum unbalance pressure, hot vs. cold, 10 psi.) Your water department can advise you of your water pressure. The hot water temperature should be about 140 degrees F (60 degrees C).

DRAIN REQUIREMENTS

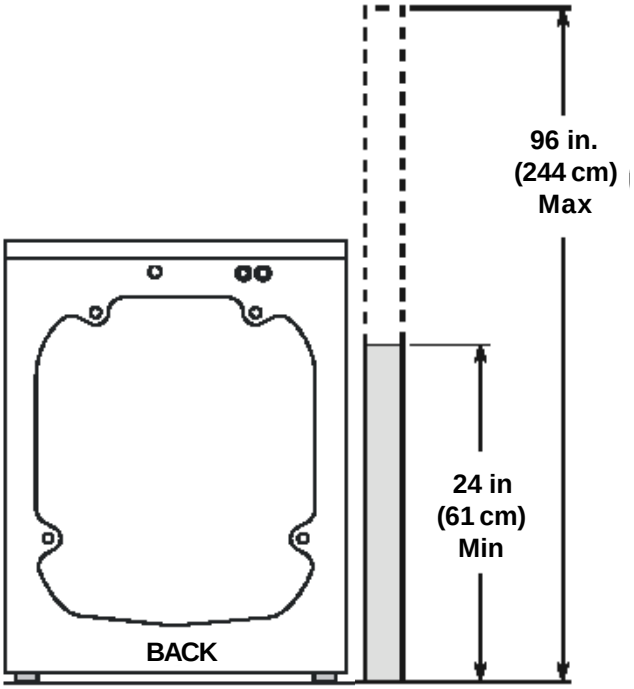
1. Drain capable of eliminating 17 gals (64.3 L) per minute.

2. A standpipe diameter of 1-1/4 in. (3.18 cm) minimum.

3. The standpipe height above the floor should be:

   Minimum height: 24 in. (61 cm)

   Maximum height: 96 in. (244 cm)

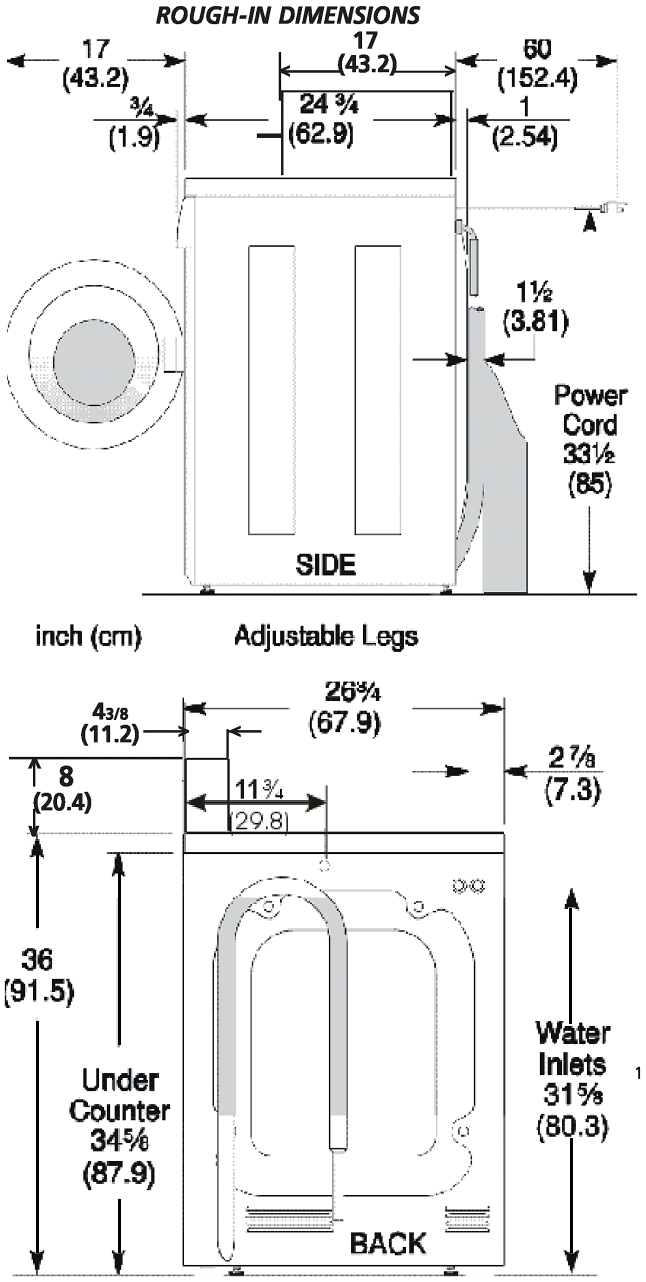


NOTE: Drain hose attached to the washer can reach a 58 in. (147 cm) high standpipe. For higher standpipe use hose P/N 131461201, available from an authorized parts distributor. If drain is less than 24 in. (61 cm), install a siphon break kit, available at your local hardware store.

Models equipped with gravity drain:

1. Floor drain MUST be capable of eliminating 17 gals (64.3 L) per minute.

2. Floor drain diameter must be at least 1/2 inch larger than drain hose.



LOCATION OF YOUR WASHER

DO NOT INSTALL YOUR WASHER:

1. In an area exposed to dripping water or outside weather conditions. The ambient temperature should never be below 60 degrees F (15.6 degrees C) for proper washer operation.

2. In an area where it will come in contact with curtains or drapes.

3. In an area (garage or garage-type building) where gasoline of other flammables are kept or stored (including automobiles).

4. On carpet. Floor MUST be solid with a maximum slope of 1/2 in. per foot (1.27 cm per 30.5 cm). To ensure vibration or movement does not occur, reinforcement of the floor may be necessary.

IMPORTANT

MINIMUM INSTALLATION CLEARANCES

When installed in alcove: Sides, Rear, Top = 0 in (0 cm).

When installed in closet: Sides, Rear, Top = 0 in (0 cm), Front = 1 in (2.54 cm).

Closet door ventilation openings required: 2 louvers each 60 in^2 (387 cm^2) - 3 in (7.6 cm) from top and bottom of door.

UNPACKING

1. Cut the shipping carton along the dotted line along the base of the unit.

2. While in the carton, carefully lay the washer on its back side.

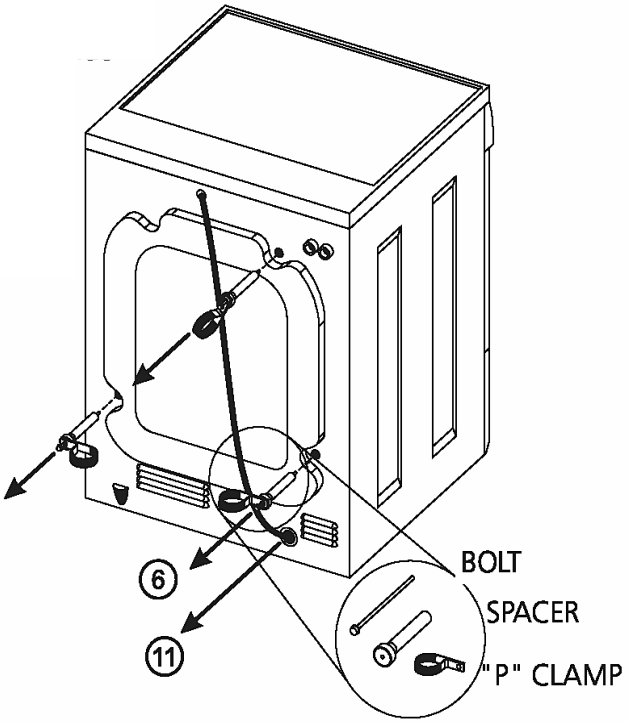
3. Remove the styrofoam base.

4. Carefully return the washer to an upright position and remove the carton.

5. Carefully move the washer to within 4 feet (122cm) of the final location.

6. Remove the following from the back side of the washer:

   3 bolts, 3 yellow plastic spacers, 2 or 3 metal "P" clamps.

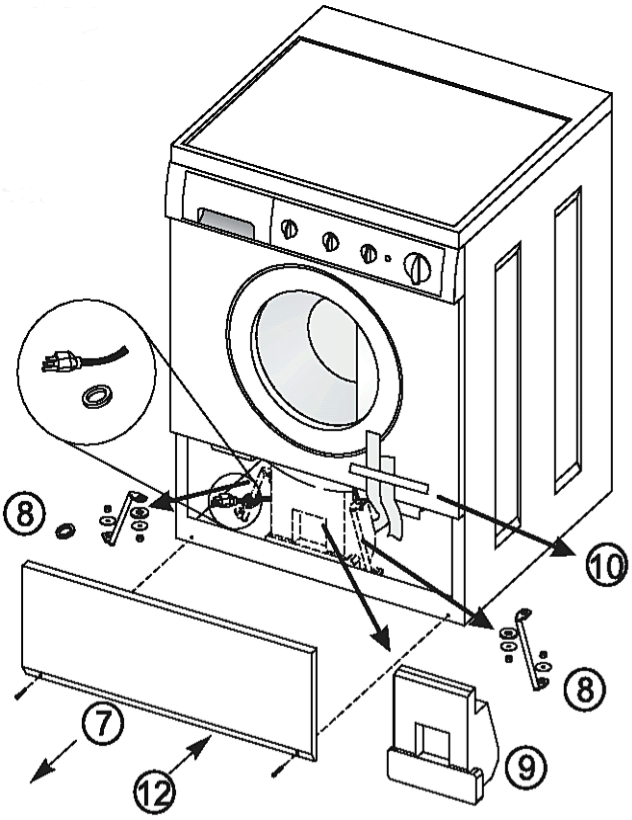


7. Remove the service panel from the front of the washer.

8. Remove the 4 nuts and 6 large washers that attach the 2 yellow shipping braces to the drum and the base. Lift up on the drum and remove the braces (a yellow ribbon surrounds the items to be removed). These braces must be removed to allow the power supply cord to be released from the shipping ring.

9. Remove the large styrofoam block located under the drum. Lift up on the drum, tilt the base of the foam block inwards toward the rear of the washer until free, then pull it out.

10. Remove and discard the yellow ribbon and label from the front of the washer.

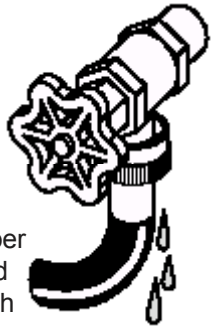


11. From the rear of the washer, carefully pull out the power supply cord through the hole in the backsheet.

12. Replace the service panel and screws.

NOTE: If the washer is to be transported at a later date, the shipping support hardware must be reinstalled to prevent shipping damage.

INSTALLATION



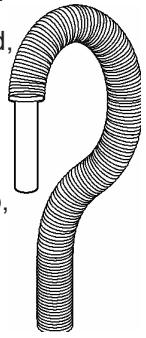
1. Run some water from the hot and cold faucets to flush the water lines and remove particles that might clog up the water valve screens.

2. Remove the inlet hoses and rubber washers from the plastic bag and install the rubber washers in each end of the inlet hoses.

3. (90° elbow end) Carefully connect the inlet hose marked "HOT" to the outside "H" outlet of the water valve. Tighten by hand, then tighten another 2/3 turn with pliers. Carefully connect the other inlet hose to the inside "C" outlet of the water valve. Tighten by hand, then tighten another 2/3 turn with pliers.

Do not crossthread or over-tighten these connections.

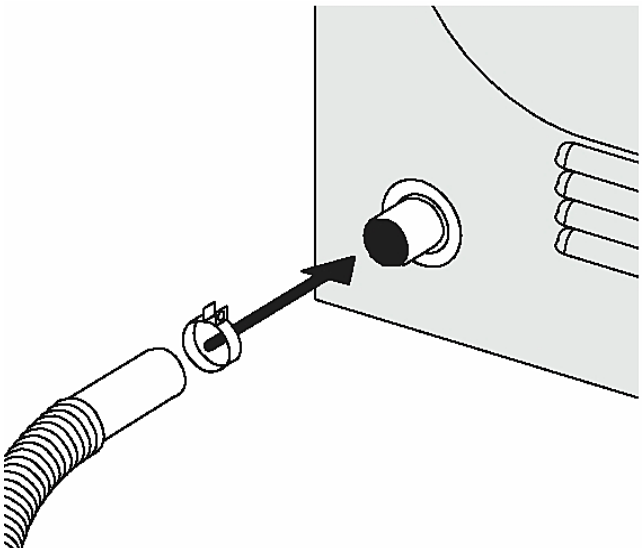
4. Connect the inlet hose ends to the HOT and COLD water faucets tightly by hand, then tighten another 2/3 turn with pliers. Turn the water on and check for leaks.



5. On machines equipped with drain pump, form a U shape on the end of the drain hose, with the hose pointed toward the drain.

NOTE: If the drain hose is placed in a standpipe without forming a U shape, a siphoning action could occur. There must be an air gap around the drain hose. A snug hose fit can also cause a siphoning action.

6. On machines equipped with gravity drain, connect one end of the drain hose to the drain outlet of the machine, using the provided clamp.



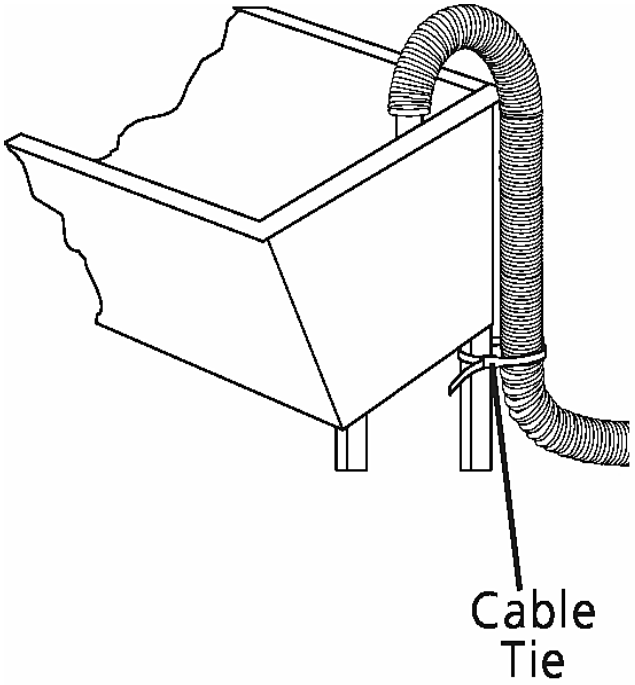
7. Carefully move the washer to its final location.

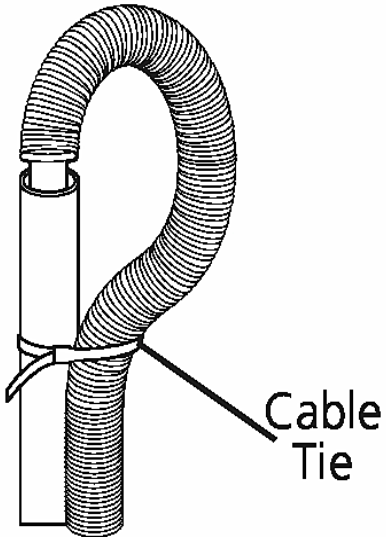
NOTE: Do not use the dispenser drawer or door to lift washer.

8. With the washer in its final position, place a level on top of the washer. Adjust the front leveling legs up or down to ensure the washer is resting solid. Turn the lock nuts on each leg up towards the base of the washer and snug with a wrench.

NOTE: Keep the leg extension at a minimum to prevent excessive vibration. The farther out the legs are extended the more the washer will vibrate. Rear leg adjustments are also accessible through the front service panel.

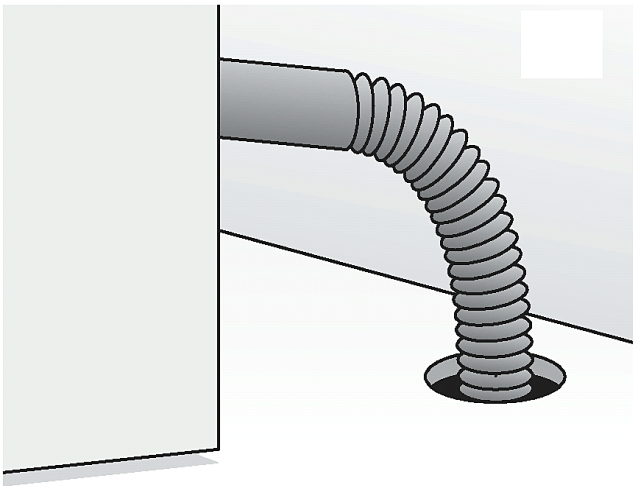
9. Models equipped with drain pump: Place the formed end of the drain hose in a laundry tub or a standpipe and secure with the cable tie provided in the enclosure package.





Models equipped with gravity drain:

Run the machine's drain hose into an oversized floor drain or drain trough. The entire length of the drain hose must be below the drain outlet on the machine.



NOTE: The drain pipe or floor drain, into which the drain hose is placed, MUST be at least 1/2 inch larger in diameter than the drain hose. This will insure that the sewer line cannot back up into the washing machine.

8. Plug the power cord into a grounded outlet.

NOTE: Check to ensure the power is off at the circuit breaker/ fuse box before plugging the power cord into an outlet.

9. Turn on the power at the circuit breaker/fuse box.

10. Be sure you have read the "Important Safety Instructions" before operating this washer.

11. Run the washer through a complete cycle. Check for water leaks and proper operation.

12. Keep these instructions for future reference.

NOTE: A wiring diagram is located inside the washer on the left side panel.

REPLACEMENT PARTS

If replacements parts are needed for your washer, contact the source where you purchased your washer, call 1-800-944-9044, or visit our website, www.frigidaire.com, for the Frigidaire Company Authorized Parts Distributor nearest you.

WARNING Destroy the carton and plastic bags after the washer is unpacked. Children might use them for play. Cartons covered with rugs, bedspreads, or plastic sheets can become airtight chambers causing suffocation. Place all materials in a garbage container or make materials inaccessible to children.

WARNING The instructions in this manual and all other literature included with this washer are not meant to cover every possible condition and situation that may occur. Good safe practice and caution **MUST** be applied when installing,operating and maintaining any appliance.

Maximum benefits and enjoyment are achieved when all the Safety and Operating instructions are understood and practiced as a routine with your laundering tasks.

Commercial Appliance Warranty Information

Your appliance is covered by a one year limited warranty. For one year from your original date of purchase, Electrolux will pay all costs for repairing or replacing any parts of this appliance that prove to be defective in materials or workmanship when such appliance is installed, used and maintained in accordance with the provided instructions.

SAMPLE WARRANTY ALWAYS REFER TO WARRANTY WITH PRODUCT

Exclusions

This warranty does not cover the following:

1. All labor costs on commercial laundry products.
2. Payment acceptance devices for commercial laundry products.
3. Products with original serial numbers that have been removed, altered or cannot be readily determined.
4. Normal wear and tear and gradual deterioration.
5. Product that has been transferred from its original owner to another party or removed outside the USA or Canada.
6. Rust on the interior or exterior of the unit.
7. Products purchased “as-is”.
8. Food loss due to any refrigerator or freezer failures.
9. Damage caused at any time during shipment.
10. Service calls which do not involve malfunction or defects in materials or workmanship, or for appliances used other than in accordance with the provided instructions.
11. Service calls to correct the installation of your appliance or to instruct you how to use your appliance.
12. Expenses for making the appliance accessible for servicing, such as removal of trim, cupboards, shelves, etc., which are not a part of the appliance when it is shipped from the factory.
13. Service calls to replace appliance light bulbs, air filters, water filters, other consumables, or knobs, handles, or other cosmetic parts.
14. Surcharges including, but not limited to, any after hour, weekend, or holiday service calls, tolls, ferry trip charges, or mileage expense for service calls to remote areas, including the state of Alaska.
15. Damages to the finish of appliance and/or location that are incurred during installation, including but not limited to floors, cabinets, walls, etc.
16. Damages caused by: services performed by unauthorized service companies; use of parts other than genuine Electrolux parts or parts obtained from persons other than authorized service companies; or external causes such as abuse, misuse, inadequate power supply, accidents, fires, or acts of God.
17. Labor costs after ninety (90) days from your original date of purchase incurred for product repair or replacement as provided herein for appliances operated by a concessionaire or vendor in a trailer or other motorized vehicle or at varying locations.

DISCLAIMER OF IMPLIED WARRANTIES; LIMITATION OF REMEDIES CUSTOMER’S SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR OR REPLACEMENT AS PROVIDED HEREIN. CLAIMS BASED ON IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR OR THE SHORTEST PERIOD ALLOWED BY LAW, BUT NOT LESS THAN ONE YEAR. ELECTROLUX SHALL NOT BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES SUCH AS PROPERTY DAMAGE AND INCIDENTAL EXPENSES RESULTING FROM ANY BREACH OF THIS WRITTEN LIMITED WARRANTY OR ANY IMPLIED WARRANTY. SOME STATES AND PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES, SO THESE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WRITTEN WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

If You Need Service

Keep your receipt, delivery slip, or some other appropriate payment record to establish the warranty period should service be required. If service is performed, it is in your best interest to obtain and keep all receipts. Service under this warranty must be obtained by contacting Electrolux at the addresses or phone numbers below.

This warranty only applies in the USA and Canada. In the USA, your appliance is warranted by Electrolux Major Appliances North America, a division of Electrolux Home Products, Inc. In Canada, your appliance is warranted by Electrolux Canada Corp. Electrolux authorizes no person to change or add to any obligations under this warranty. Obligations for service and parts under this warranty must be performed by Electrolux or an authorized service company. Product features or specifications as described or illustrated are subject to change without notice.

USA
1.866.738.1640
Electrolux Major Appliances
North America
P.O. Box 212378
Augusta, GA 30907

Canada
1.866.738.1640
Electrolux Canada Corp.
5855 Terry Fox Way
Mississauga, Ontario, Canada
L5V 3E4

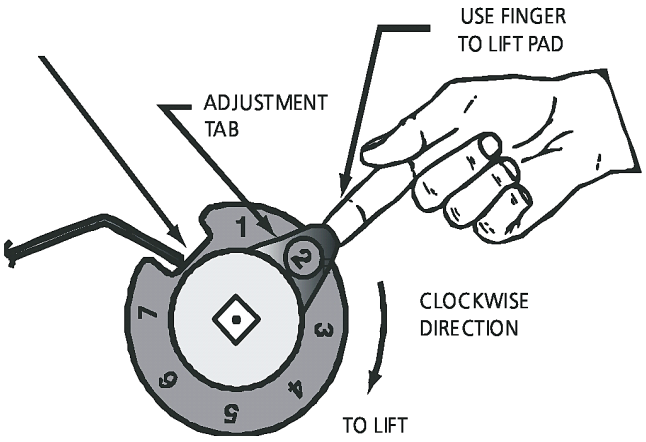
Meter Case Instructions

INSTRUCTIONS TO CHANGE THE NUMBER OF COIN SLIDE INSERTIONS TO START APPLIANCE.

1. Disconnect power from machine.

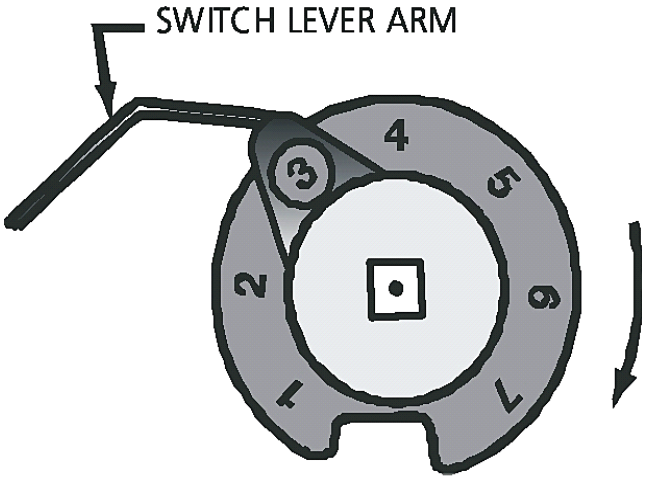
2. Turn Shaft & Cam Assembly in a clockwise direction until switch lever arm drops into cam notch.

EXAMPLE: To change from $1 to $2, move tab from 1 to 2.



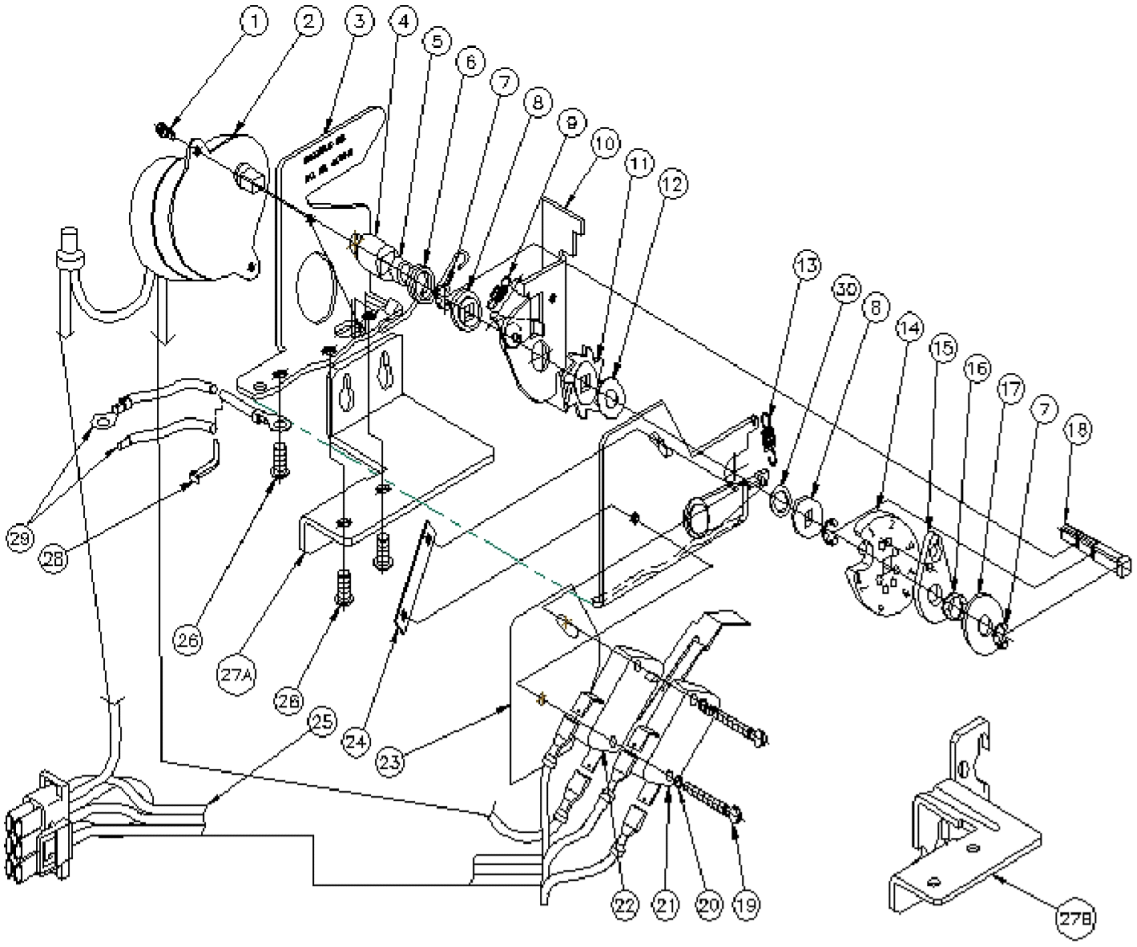
3. Lift Adjusting Tab away from cam with finger and turn Tab to desired number. Make sure Tab\ locks into place in new position.

4. Turn Shaft & Cam Assembly in a clockwise direction until switch lever arm is on top of Tab to assure that both mechanism switches are open.



5. Reconnect power to machine.

Parts List for series 7682 “Quick-Change” Start Mechanism



ITEM	REQ'D	PART NO	DESCRIPTION
1	2	00-7185	#4-40 SELF-TAPPING SC.
2	1	76-6009-*	TIMER MOTOR ASS'Y
3	1	76-1037	SWITCH & BRACKET SUB-ASS'Y
4	1	76-5014	DRIVE SELEEVE
5	1	76-2033	SLEEVE
6	1	00-8149	TORSION SPRING
7	3	00-7070	RETAINING RING
8	2	76-5013	DRIVE BUSHING
9	1	00-8003	SPRING
10	1	76-1036	RACTHET ARM & PAWL ASS'Y
11	1	76-5017	RACHET WHEEL
12	1	76-2003	WASHER
13	1	59-204	SPRING
14	1	76-5012	CAM
15	1	76-5010	ADJUSTER TAB
16	1	00-7055	SPRING WASHER
17	1	00-7047	WASHER
18	1	76-2026	DRIVE SHAFT
19	2	00-7458	#4-40 3/16 PAN HD SC.
20	2	00-7097	#4 SPLIT LOCKWASHER
21	1	00-6189	SNAP SWITCH
22	1	00-6190	SNAP SW. & LEVER ARM ASS'Y
23	1	76-5009	SWITCH INSULATOR
24	1	76-2035	NUT PLATE
25	1	76-6000	WIRE HARNESS ASS'Y
26	2	02-0810-00	#8-32x5/16 SEMS SCREW
27A	1	76-2059	MOUNTING BRACKET
27B	1	76-2027	MOUNTING BRACKET
28	1	59-0314	CABLE TIE
29	1	58-172-*	GROUND WIRE
30	1	00-7558	WASHER

Item 27A: Models 76-1030-21 (115v-60Hz),
76-1030-22 (230v-60Hz)

Item 27B: Models 76-1030-11 (115v-60Hz),
76-1030-12 (230v-60Hz)

CHANGING THE VEND PRICE ON A GREENWALD V8 COIN CHUTE

CHANGING THE PRICE OF A V8 COIN CHUTE ID# 20-3000

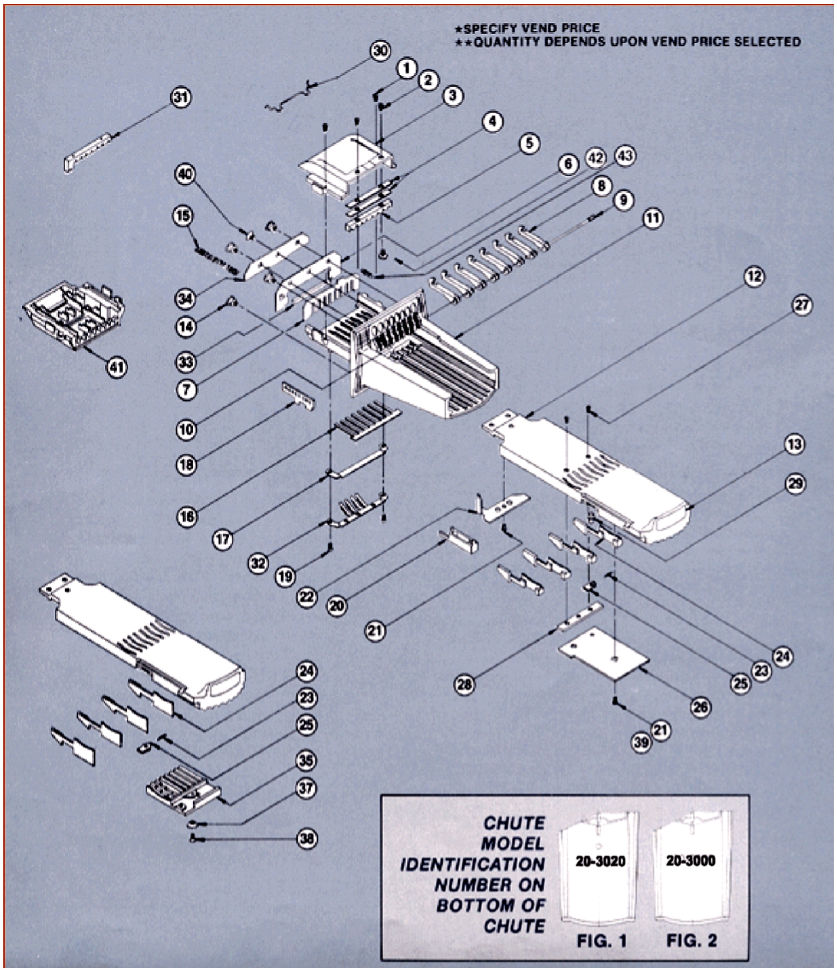
1. Remove slide return spring (#15).
2. Remove slide stop (#22).
3. Remove slide (#12) from chute.
4. Turn slide upside down and remove screw (#38). DO NOT R E M O V E COIN RECEIVER BLOCK.
5. Turn slide and block right side up and lay on a flat surface.
6. Lift slide clear of block and set aside.
7. To change prices, add or remove blockout keys (#24) or inserts (#20).
8. Replace coin receiver block into slide and reinstall into coin chute.
9. FOR 10¢ PRICING:

   A. Remove top housing (#3).

   B. Install correct coin sizing block (#31) or (#36).

   C. Reinstall top housing and return spring.

10. Install appropriate price decals (#10 & #13).



CHANGING THE VEND PRICE ON A GREENWALD V8 COIN CHUTE

CHANGING THE PRICE OF A V8 COIN CHUTE ID# 20-3020

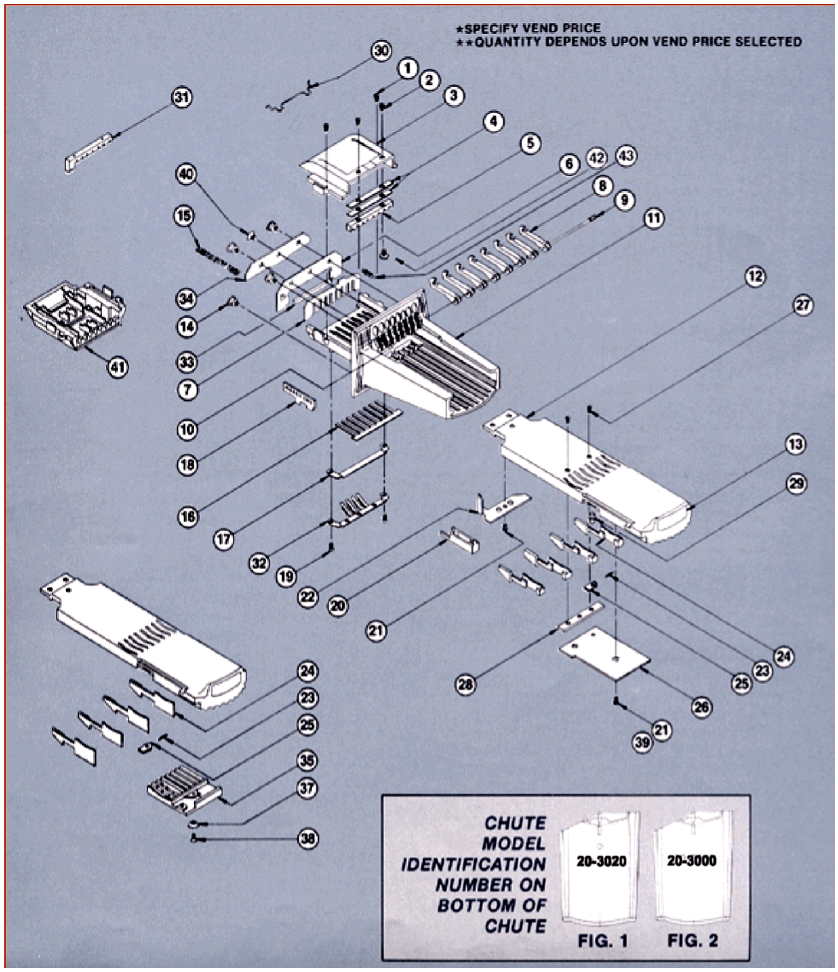
A. TO CHANGE 25¢ PRICING

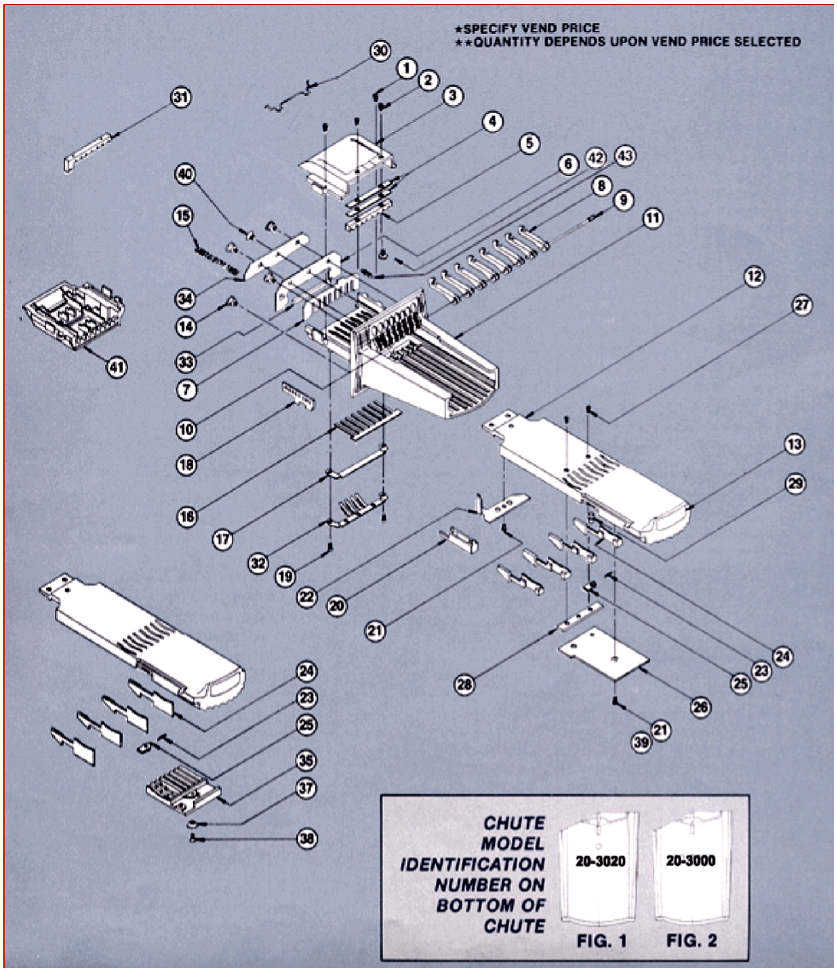
1. Remove slide return spring (#15).
2. Place coin(s) in coin slot(s) and push slide all the way forward.
3. Remove ratchet dog post (#28).
4. Turn coin chute upside down and install or remove the required number of blockout keys (#24). Remove keys to increase vend, add keys to lower vend.
5. Reassemble ratchet dog post.
6. Pull slide back to original position and reassemble slide return spring.
7. Install appropriate price decals (#10 & #13).

B. TO CHANGE 10¢ PRICING

1. Follow Steps 1, 2, 3, 4 in A above.
2. Turn coin chute upside down. Install or remove required number of blockout keys (#24). Install or remove 10¢ insert (#20) into left hand slot of slide (right hand slot with slide turned upside down).
3. Reassemble ratchet dog post and pull slide back.
4. Remove top housing (#3).
5. Remove two screws (#2) and coin sizing block (#5). Install 10¢ coin sizing block (#31).
6. Reassemble top housing and return spring.
7. Install appropriate price decals (#10 & #13).

For additional information online use website:
www.greenwaldindustries.com



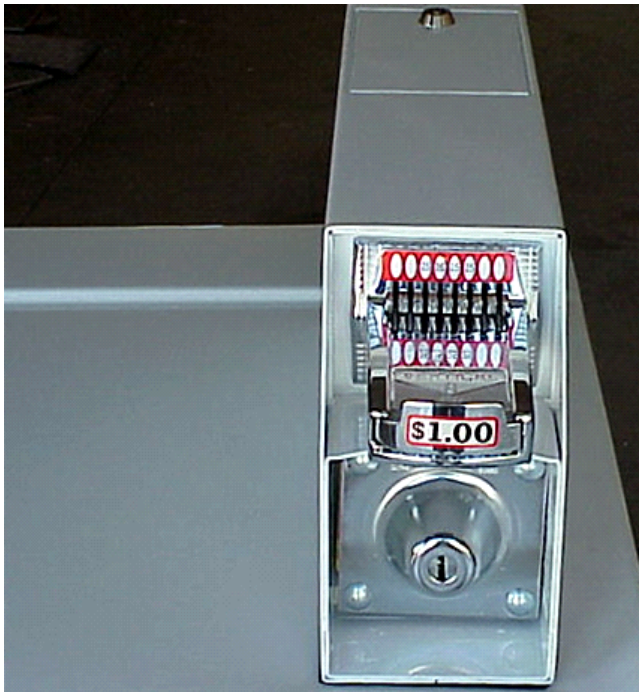


ITEM	REQ'D	PART NO	DESCRIPTION
1	2	00-9724	screw (metric)
2	2	00-7938	screw (metric)
3	1	20-3019	top housing.
4	2	20-2042	shim
5	1	20-3006	coin sizing block
6	1	20-2043	gate cover
7	1	20-2035	gate
8	8	20-2011	slide stop dog
9	1	20-4004	dog shaft
10	1	00-9905	decal casting
11	1	20-3020	body casting
12	1	20-3021	coin slide
13	1	00-9104	decal, slide
14	4	00-7483	chute locating screw
15	1	00-8148	slide return spring
16	1	20-2040	spring
17	1	20-2038	spring protector
18	1	20-2023	rack
19	2	00-7931	screw (metric)
20	varies	20-3023	$.10 insert
21	2	00-7923	screw (metric)
22	1	20-2039	slide stop
23	1	00-8123	ratchet dog spring
24	varies	20-5002	blockout key
25	1	20-2941	slide ratchet dog
26	2	00-7935	screw (metric)
27	1	20-2034	buffer
28	1	20-4005	ratchet dog post
29	optional	00-8168	coin retainer
30	varies	20-3007	coin sizing block
31	varies	27-5011	$.05 insert
32	varies	20-3023	$.10 insert
33	varies	27-3008	coin sizing block ($.05)
34	varies	27-3007	coin sizing block ($.10)
35	varies	27-3009	coin sizing block ($.05 x $.10)
36	varies	27-3010	coin sizing block ($.10 x $.10)
37	varies	00-7936	screw (metric)
38	___	_____	sizing plate housing
39	___	_____	sizing plate ($.25)
40	___	_____	sizing plate ($1.00)
41	___	_____	insert ($.25)
42	optional	00-9255	magnet
43	optional	27-1016	pressure spring assembly
44	optional	00-7541	screw
45	optional	27-1027-1	top housing assembly (U.S.)
46	___	_____	top housing assembly (Canada 0-$2.75)
47			spring

SECTION B - OPERATION

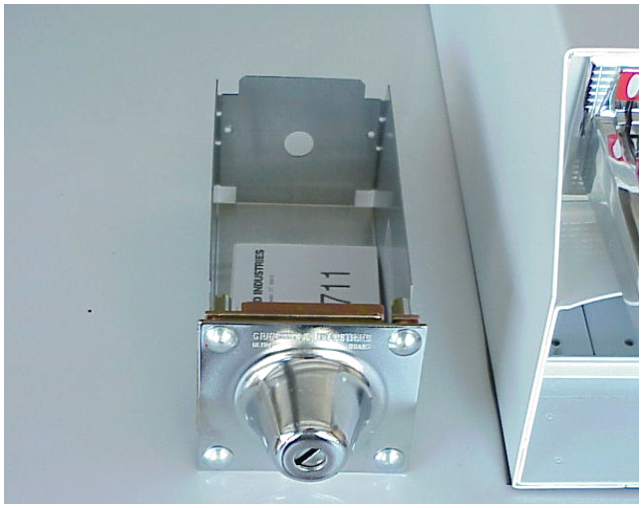
Coin Box

The coin box is mounted to the main top and contains three parts:



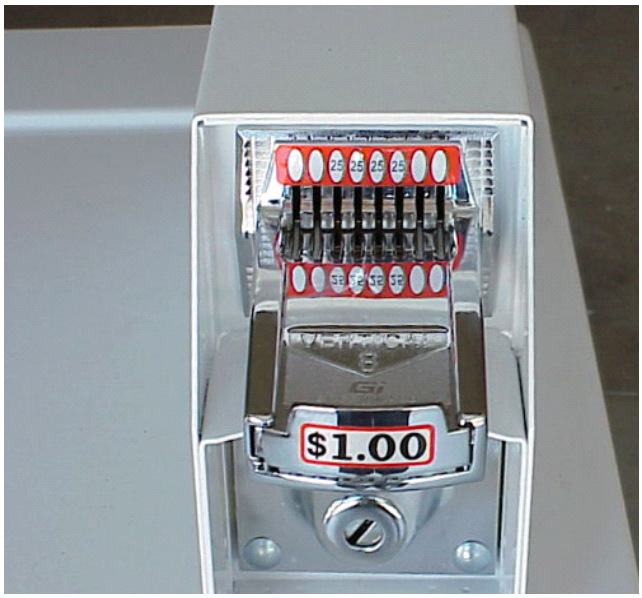
Coin Drawer:

The lockable coin drawer where the money is collected.

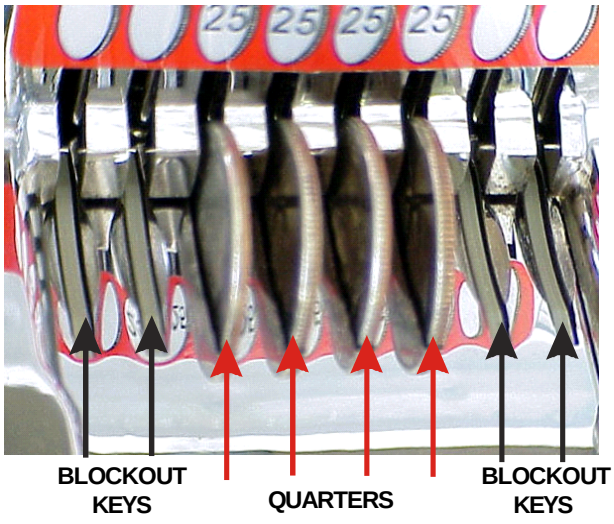


Coin Chute:

The coin chute where the money is inserted into the machine.



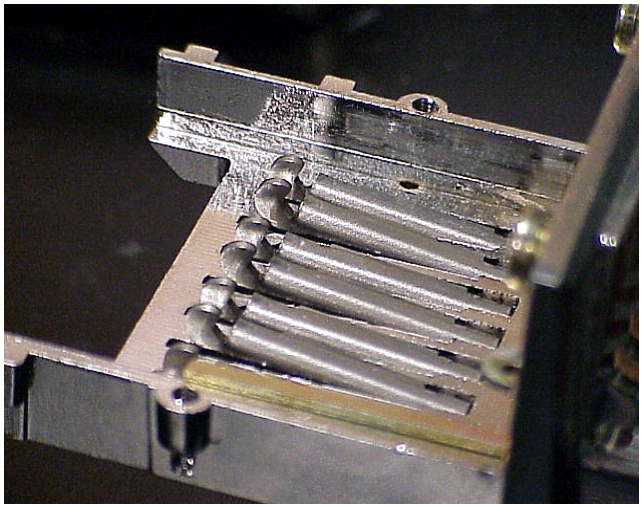
When the washer is shipped from the factory, the coin chute is set up with (4) blockout keys (2 on each end), and (4) open slots for quarters.



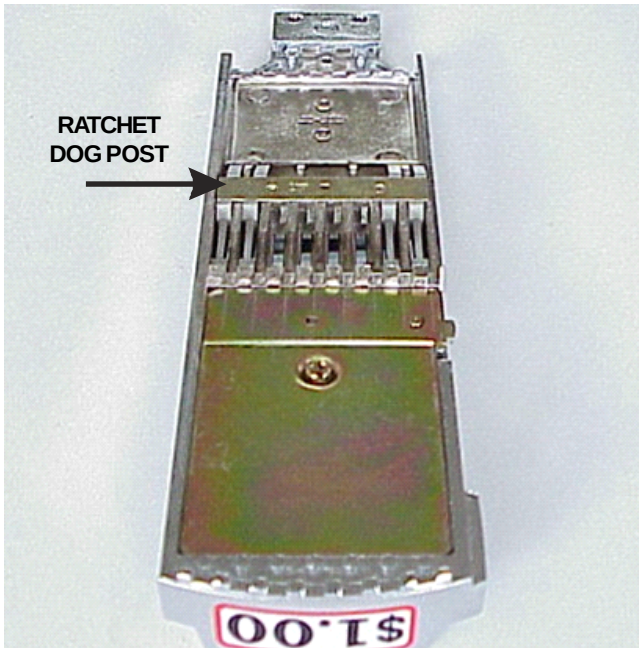
The number of blockout keys may be increased to reduce the number of coins needed or decreased to increase the number of coins needed.

The sizing plate may be changed to accept different size coins (quarters, dimes and nickels) allowing the owner to set the amount of money needed to operate the machine.

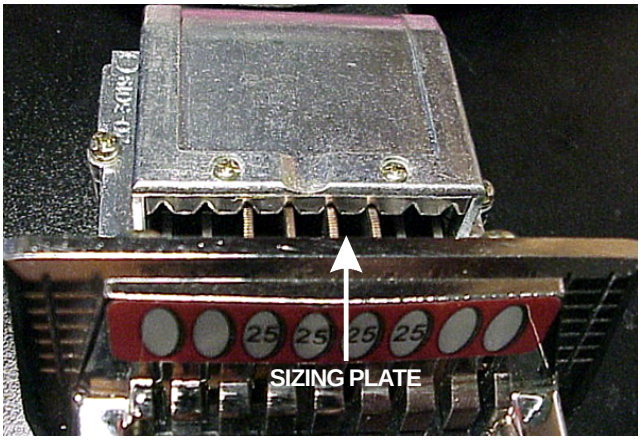
The body casting of the coin chute has (8) spring-loaded hooks, called slide stop dogs, mounted in it.



Unless these hooks are depressed when the coin slide is pushed in, they will catch on the bar mounted to the underside of the coin slide called the ratchet dog post.



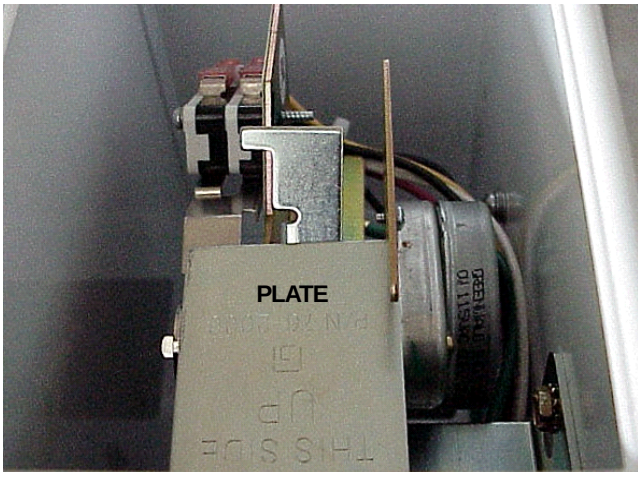
When the correct amount and size of coins are placed in the slide and the slide is pushed in, the coins enter the sizing block which pushes down on the coins.



The coins and blackout keys combine to depress the slide stop dogs and allow the coin slide to be pushed in. The coins then pass over an opening that allows them to drop into the coin drawer.

If the coins are to large, the sizing plate prevents the slide from being pushed in any further. If the coins are too small, they do not depress the slide stop dogs and the coin slide cannot be pushed in.

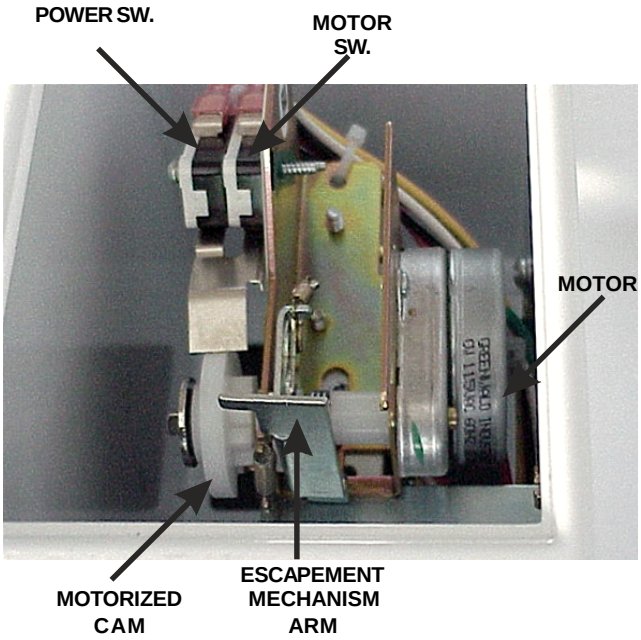
As the coin slide is pushed in, the plate on the end of the coin slide pushes the spring loaded ratchet arm of the meter case. When the coins slide is withdrawn, the ratchet arm moves forward advancing the cam in the meter case one increment.



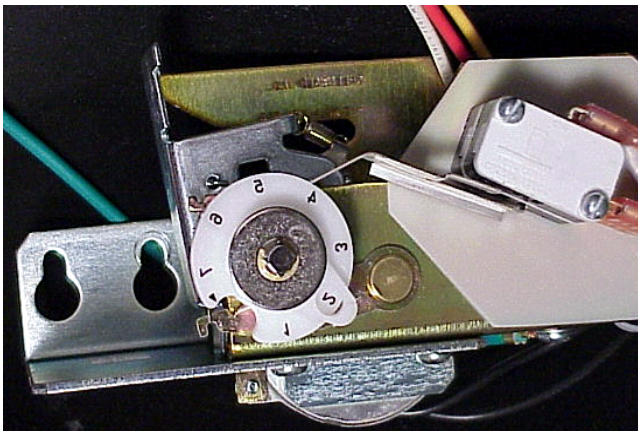
Meter Case Mechanism:

The meter case mechanism dictates the amount of money needed to operate the washer. Once the correct amount of money is inserted, the meter case mechanism applies power to the start switch.

The meter case is made up of a motorized cam, an escapement mechanism, 2 switches and an adjustable tab.



The cam has a notch in it and is numbers on the side from 1 to 7 for the placement of the tab. The tab is mounted next to the cam and can be adjusted to correspond with the numbers on the side of the cam. The double switch arm rides on the cam and allows the power switch to close when the arm dropped into the notch and open when the arm moves out of the notch. The contacts of the motor switch are closed when the double switch arm is riding on the cam and open when the arm is raised by the tab.



When the coin slide is pushed in, it pushes the spring-loaded escapement arm back. When the coin slide moves out the spring moves the escapement forward advancing the cam, one increment. The number of times the coin slide must be pushed in and released is determined by number of increments the tab is space from the notch. If they tab is placed over the number one, then the coin slide needs to be pushed in and released one time, which allows the switch arm to drop into the notch. This is because the cam has to move only one increment for the arm to reach the notch. If the tab is set to a number higher than one, the coin slide, must be pushed in and released the same number of times, as the number on the cam. By adjusting the tab, the owner sets amount of money necessary to run the washer.

Electrical operation:

When the washer is plugged in, power applied to the timer line switch and the power switch of the meter case mechanism. The power switch is open, if the switch arm is not in the notch. To start the washer, the chute mechanism must push and release the escapement mechanism arm until the switch arm drops into the notch on the cam. This closes the power line switches go to work contortion stored in its Masonic switch on the meter case mechanism.

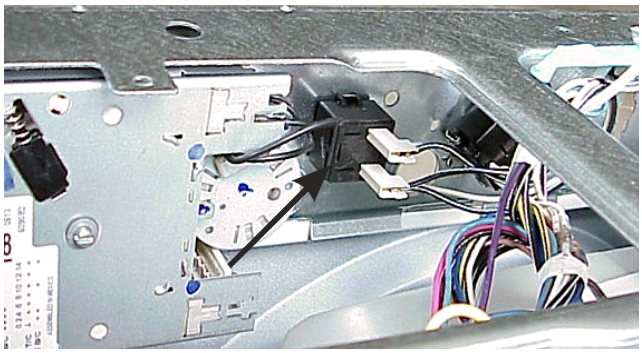
When the power switch closes, it applies power to the start switch of the washer. At this point, nothing happens until the start switch is pushed in and held for about three seconds. This applies power to the washer and the timer motor turns closing the timer line switch.

Once the timer line switch is closed, the washer will run its complete cycle. The only way to stop the washer is to unplug it. When power is reapplied to the washer it will continue its cycle until the timer reaches the end and the lines switch opens. This means that if the timer dial is showing anything but the off position, when powers applied to the washer, it will start and finish the cycle. This is the reason that some washers start to run immediately when the customer first plug them in, the washer has to complete the cycle and open the timer line switch.

At the same time, the is washers operating, power is applied by the motor switch to the motor of the meter case mechanism. The motor slowly turns the cam and tab, as soon as the switch arm moves out of the notch the contacts of the power switch open. The motor switch contacts remain closed until the switch arm is raised by the tab. This removes power from the motor stopping the cam in the position for the next customer to put their money in.

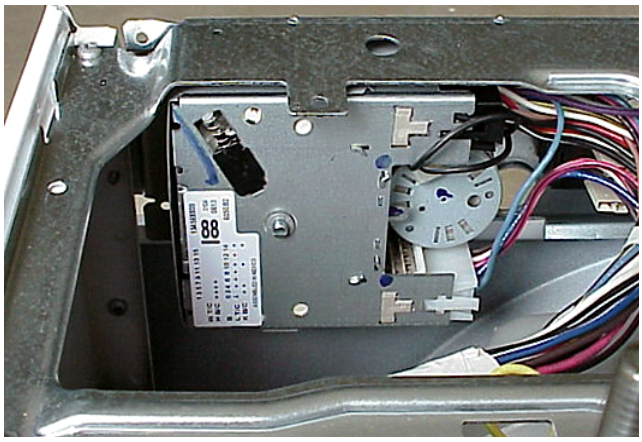
Start Switch:

The start switch, located behind the control panel, connects electrical power to the timer motor from the power switch of the meter case mechanism. The start switch, a spring-loaded switch, must be pushed in and held for about three seconds at the start of the cycle to advance the timer motor. Once the timer motor has moved, the line switch in the timer closes and remains closed for the rest of the cycle. When the timer line switch closes, the start switch no longer has any affect on the cycle.

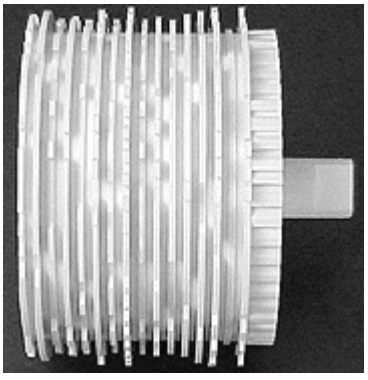


Timer:

The timer, located behind the control panel, controls electrical power to the components of the washer.



The timer is made up of a motor driven spool that advances one increment a minute whenever electrical power is applied to the motor.



The spool has 14 cams that open and close the 24 switch contacts, which supply electric power to components at the correct time in the cycles.

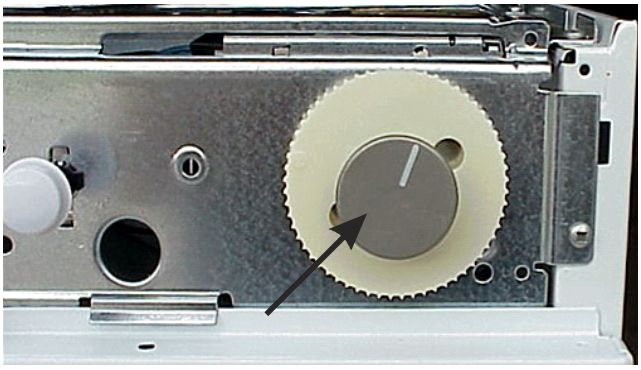
To help determine when each set of contacts are closed, a timer cycle chart is provided with each washer (A sample timer cycle chart is shown on the following page.) The first column of the chart is titled circuit and indicates the circuit controlled by the cam, terminals and contacts. The next column is titled CAM. In this column are numbers 0 to 14 that equate to the number of cams starting at the rear of the timer. The next two columns are titled terminal for terminals and are identified as ACTIVE and FIXED. The active terminals are the terminals that are moved by the cams. The fixed terminals are the ones that the do not move. The active terminals are usually the terminals that have power applied to them with the fixed terminals connected to the components that power is being applied to. The next column, titled CONTACT, is identified as T for the top contacts of the fixed terminals and B for the bottom contacts of the fixed terminals. For example, CAM 14, ACTIVE terminal 20, FIXED terminal 24, and CONTACT B controls the drain pump circuit at specific times. Each circuit has a horizontal line extending across the timer chart. The remaining columns make up the wash cycles and are connected by vertical lines below to the step time in minutes and the step number. When the boxes, formed by the horizontal lines from the circuit and the vertical lines step time, are filled in, this indicates that electrical power is applied to that circuit at that time in the cycle.

Line Switch:

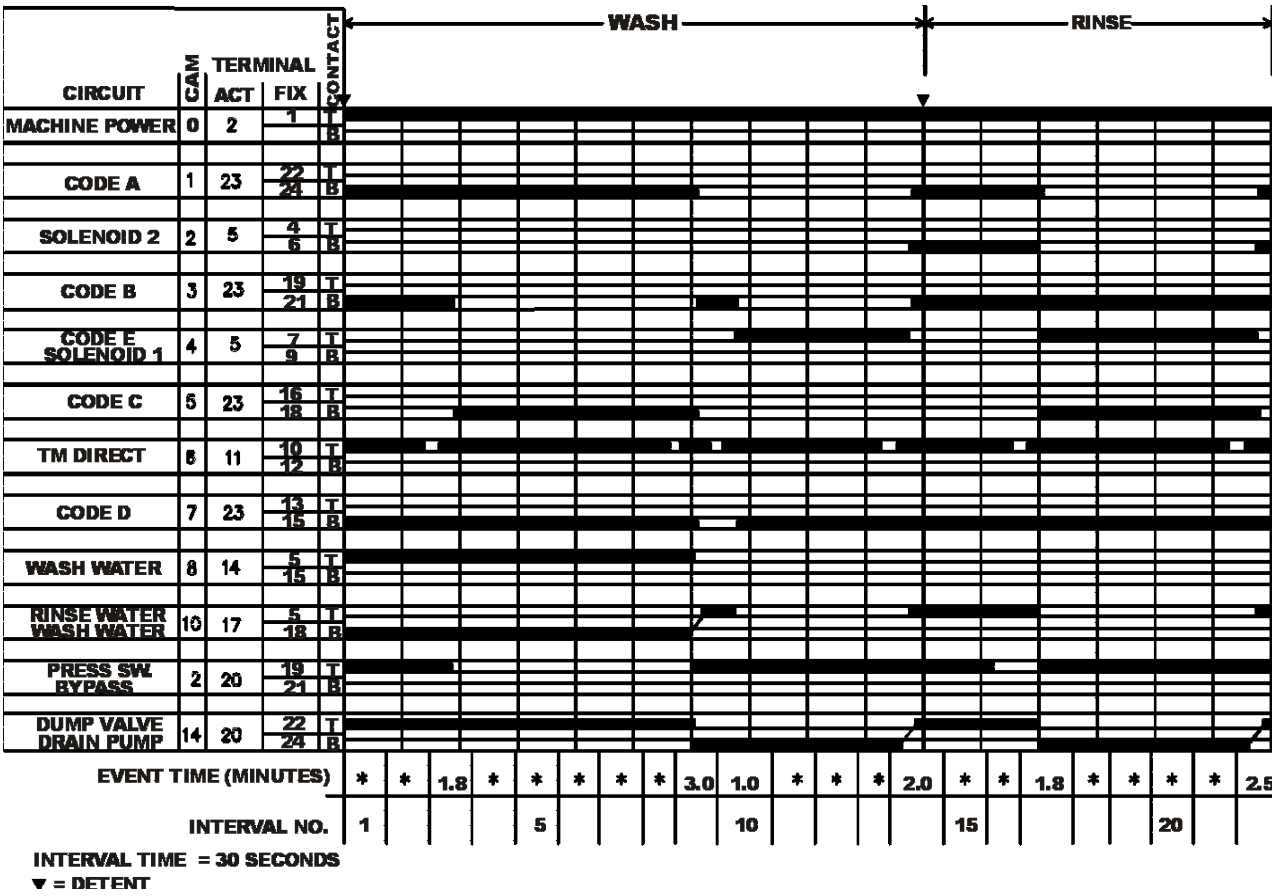
The line switch, located inside the timer, controls electrical power to the washer. When the timer motor is moved from the off position, the line switch contacts close and remain closed until the end of the cycle.

Timer Dial:

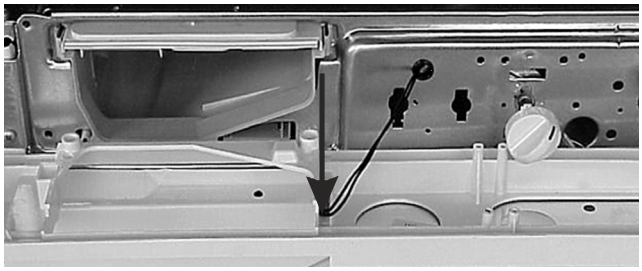
The timer dial is pushed onto the end of the timer shaft and covered by the clear window in the console.



Sample timer cycle chart (partial)



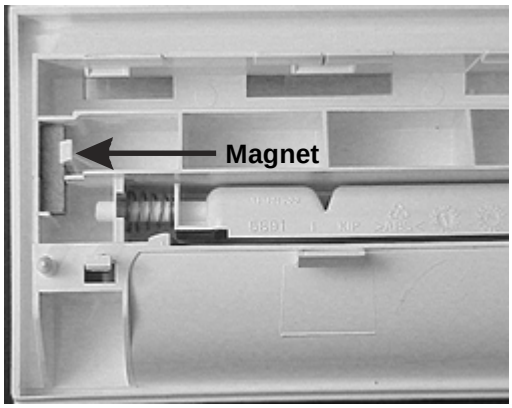
The timer dial is used only for a visual indication of the cycle and can only be accessed by removing the the console.



It's contacts are controlled by the magnetic field of the magnet located in the in the front panel of the dispenser drawer.

Dispenser Drawer Reed Switch:

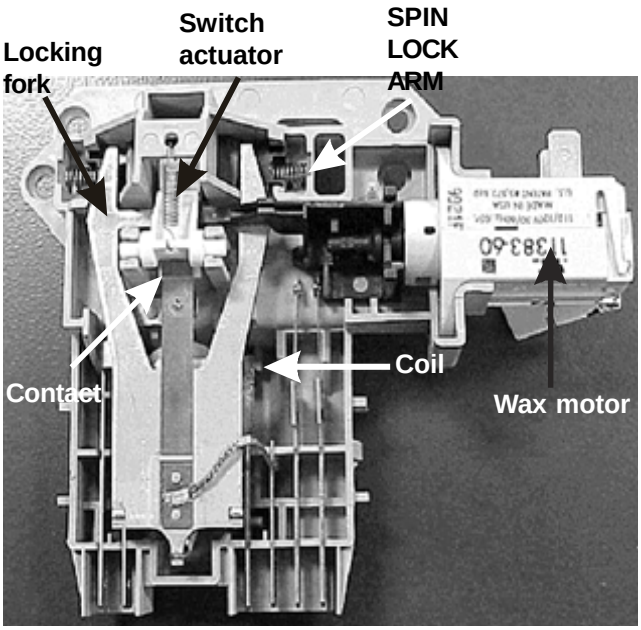
The dispenser drawer reed switch is a safety switch that prevents water from entering the washer when the dispenser drawer is open. The switch, located behind the control panel next to the dispenser drawer, connects the dispenser valves and water valves to neutral.



Door Switch Assembly:

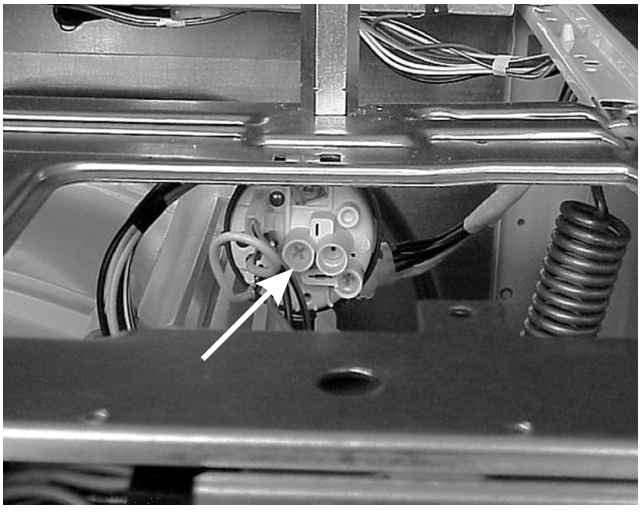
The door switch assembly, located behind the front panel, is a safety feature that prevents the washer from operating when the door is open, and locks the door during the cycle. The door lock assembly is made up of a coil, door switch, switch actuator, locking fork, wax motor, and spin lock arm. When the start button is pushed, electrical power is applied to the coil and the door lock switch. The magnet field of the coil pulls the locking fork down and tries to pull the contacts of the door lock switch closed. If the washer door is open, a tab on the switch actuator prevents the contacts from closing. The open contacts of the door switch prevent power from being applied to the timer motor preventing the timer motor from advancing and closing the timer line switch.

When the washer door is closed, the door strike pivots the switch actuator out of the way allowing the magnetic field of the coil to close the contacts of the door lock switch and the locking fork locks the door. The wax motor and spin lock arm are used to prevent the door from being opened while the spin basket is still spinning. The wax motor is electrically in parallel with the drain pump. Power is applied to the wax motor when the washer is in spin. When power is applied to the wax motor, it expands it's piston within 30 to 40 seconds, driving the spin lock arm between the locking fork and the switch actuator thus holding the locking fork down. When power is removed from the wax motor, it takes about 90 seconds for the wax motor to cool down and retract the piston, pulling the spin lock arm back away from the locking fork. This provides enough time for the spin basket to slow its rotation down to the wash speed before the door could possibly be opened.

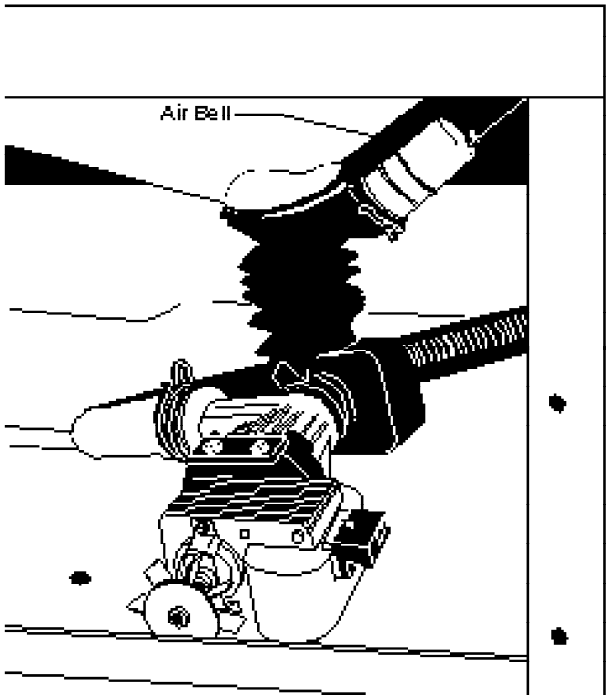


Pressure Switch:

The pressure switch, mounted to the center brace of the washer, under the washer top, and controls the water level in the washer. The pressure switch is made up of a single pole double throw switch that is controlled by a bellow which is covers a by sealed chamber. The pressure switch is connected by a hose to an air bell located at the bottom of the washer that is attached to the drain boot. Electrical power is applied to the pressure switch whenever the contacts of the door switch are closed. If the water level is below 1.2 inches from the bottom of the spin basket, contacts 1 to 2 of the pressure switch close applying power to the timer contacts controlling power to the temp switch, the cold water valve, the dispenser valves, and code E of the speed control board. When the timer advances to the fill increment, water enters the tub.



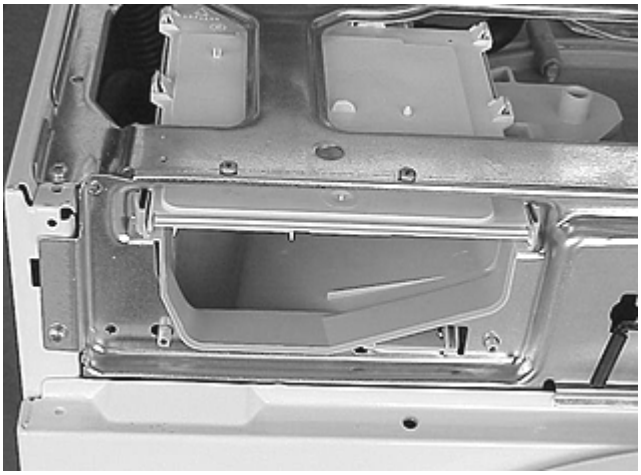
As the tub begins to fill, air trapped in the air bell and hose is compressed increasing the air pressure against the bellow. When the water level reaches about 3½ inches from the bottom of the spin basket, the bellow opens contacts 1 to 2 which removes power from the water inlet valves, and closes contacts 1 to 3 providing power to other components.

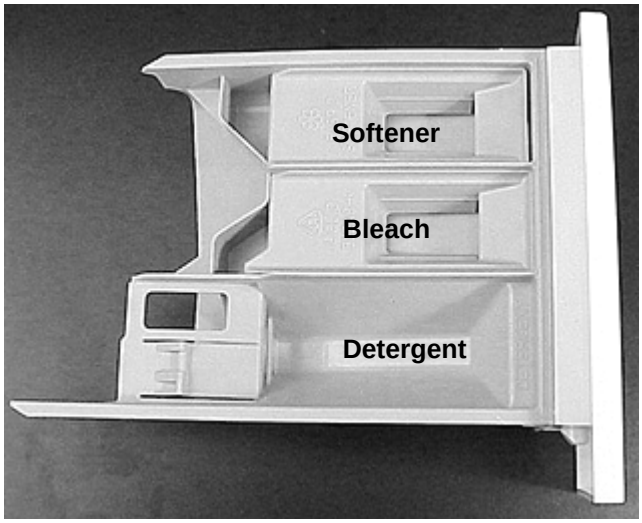


Some washers may have an optional jumper wire connected between terminals one and three to allow the input to the speed control board while the washer is filling.

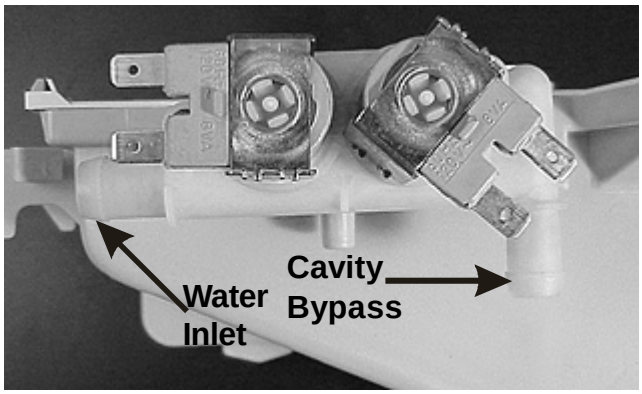
Automatic Dispenser:

The automatic dispenser for detergent, liquid bleach and fabric softener system is made up of the dispenser cavity and a removable drawer with three cavities, one for detergent, one for bleach and one for fabric softener.

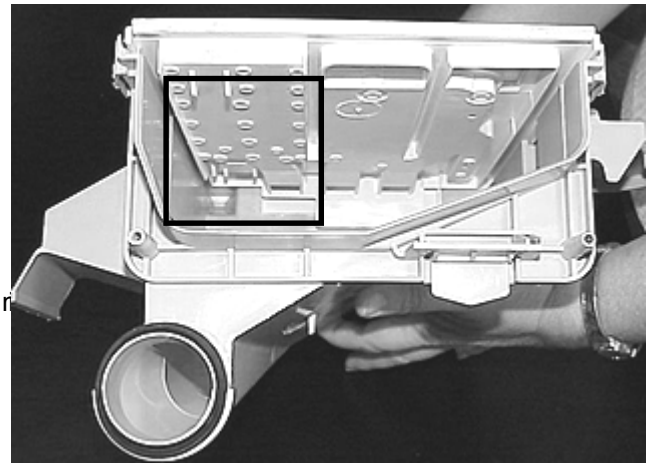




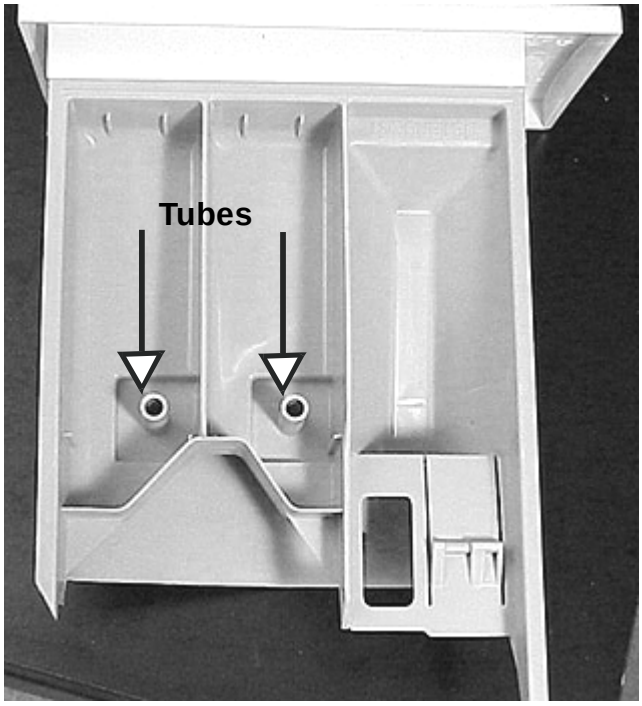
The dispenser cavity is connected to the water inlet valve by a hose.



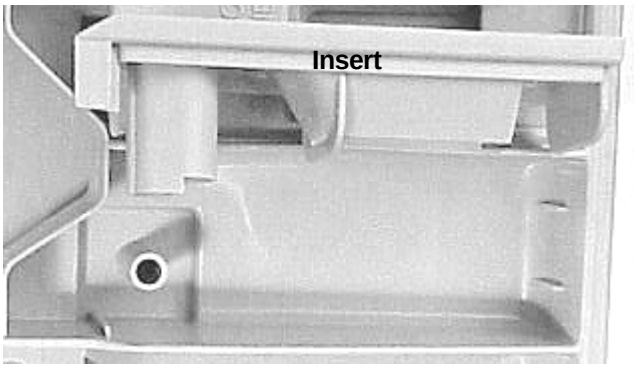
All the water that enters the washer passes through the solenoid valve assembly attached to the rear of the dispenser cavity. The water entering this assembly has four exit paths, two of which depend on input from the timer. The remaining two paths allow water to go through the cavity bypass or into the soap cavity through holes in the top of the dispenser during each fill.



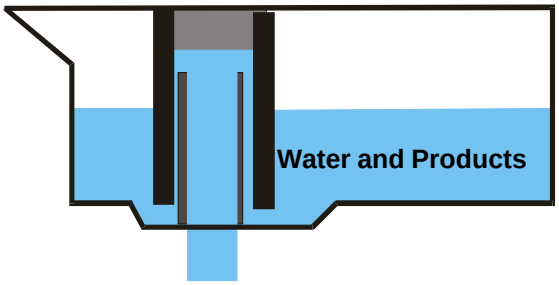
Bleach and fabric softener dispensing is controlled by the timer at specified times in the cycle by using the electrical solenoids which redirect some of the water fill into their containers. The bleach and the fabric softener cavities have tubes molded into the bottom which allows the cavity to be filled without being immediately dispensed into the washer.



Bleach and fabric softener inserts, which have a tube molded onto them, fit into each respective cavity . These tubes, which are larger than the tubes in the cavity, are designed to fit over the tubes, but not touch the bottom of the cavity when the insert is installed. When the correct time comes for the bleach or the fabric softener to enter the washer, the timer supplies 120 VAC to the solenoid behind that cavity allowing part of the incoming water to flow into the cavity from above.



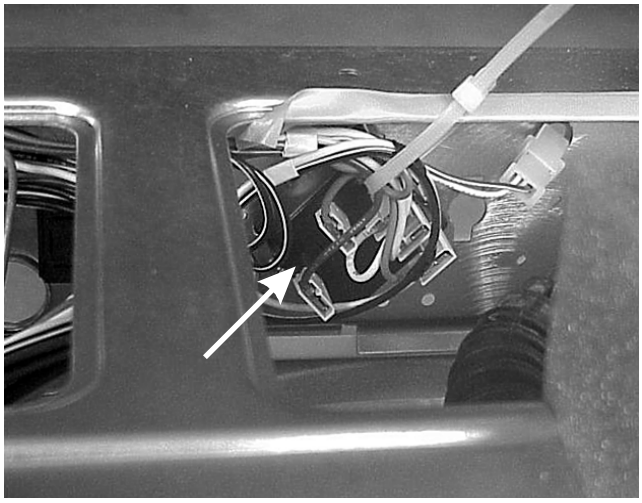
When water is added to either the bleach or fabric softener liquid, the mixture level rises between the two tubes above the tube in the cavity and flows into the washer tub. Since the end of the tube on the insert does not touch the bottom of the cavity, a siphoning action will start when the water is turned off by the solenoid. This allows the cavity to empty itself.



Temperature Switch:

The temperature switch, mounted behind the control panel, controls the water temperature in the wash and rinse cycles by supplying power to the water valve. The temperature switch in the delicates/warm position also

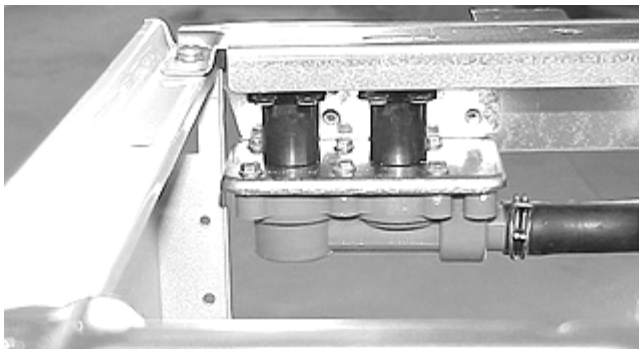
connects terminal C10.8 of the speed control board to neutral. This reduces the final spin speed from 950 to 650 RPMs.



Power is supplied from terminal (2) of the pressure switch to terminal (1) of the temperature switch. When the temperature switch is set to hot, terminal (1) is connected to terminal (3), which in turn is connected to the hot water valve. When the temperature switch is set to cold, terminal (1) is connected to terminal (5), which in turn is connected to the cold water valve. When the temperature switch is set to warm, terminal (1) is connected to both terminals (3) and (5), which in turn is connected to both the hot and cold water valves. When the temperature switch is set to delicate/warm, terminal (1) is connected to terminal (3) and (5), which in turn is connected to the hot and cold water valves. Also terminal (2)is closed to terminal (6), connecting terminal C10.8 on the speed control board to neutral.

Water Inlet Valve:

The water inlet valve, located in the lefthand rear corner of the washer is mounted to the rear reinforcement bracket.



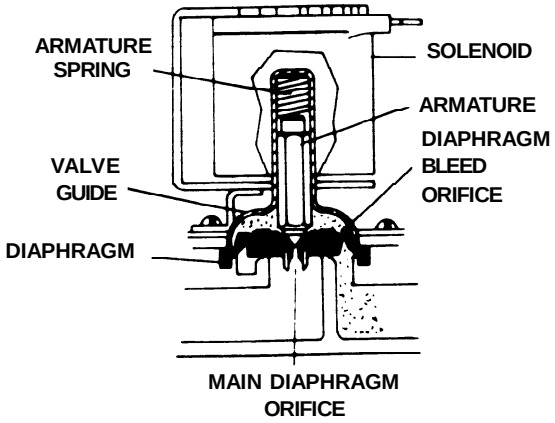
The water inlet valve is actually two solenoid operating valves in one body. A hot water valve and a cold water valve that discharge into a common mixing chamber. The flow of water out the chamber is controlled by a molded-in flow washer capable of maintaining a flow rate of 3.0 - 14.6 gallons per minute, with incoming water pressure of 30 to 120 P.S.I. The inlet valve is controlled by the timer and water temperature selector switch, individually or together, to provide hot, cold, or warm water for washing and cold water for rinsing. The temperature of the warm mixture will be dependent upon the temperature and pressure of the hot and cold water supply lines.

Valve Operation:

Both inlet solenoid valves are identical in construction and operation. The valve body provides an air passage with a large orifice and seat where the water can be stopped. The outlet of the valve body empties into the mixing chamber. A moveable rubber diaphragm operates against the valve seat to start and stop the flow of water. The diaphragm, operated by water pressure, has a small bleed orifice outside the seat contact area and a large main orifice at its center. The armature of the solenoid serves to open and close the main orifice. The armature operates within a closed metal tube (valve guide) which is sealed by the outer edge of the diaphragm to the valve body. A coil spring holds the armature down against the diaphragm main orifice when the solenoid is not energized.

The following line drawings and text explains basic valve operation.

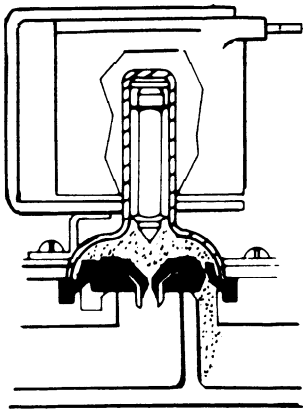
When the valve is in a closed position, the solenoid is not energized. Water has bled through the diaphragm bleed orifice placing incoming line pressure on top of the diaphragm. The bottom of the diaphragm is essentially at atmospheric pressure (open to the outlet) and the pressure differential holds the valve shut.



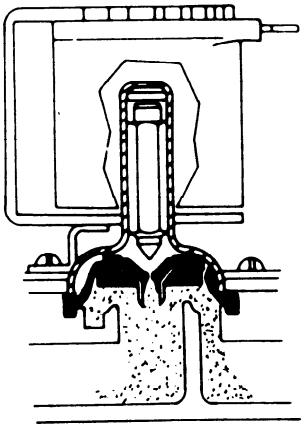
Water Valve Closed

When the solenoid is energized, the resulting magnetic field pulls the armature up into the valve guide. The armature spring is compressed by this action. When the armature moves up, it allows the water on the top of the diaphragm to drain through the main orifice.

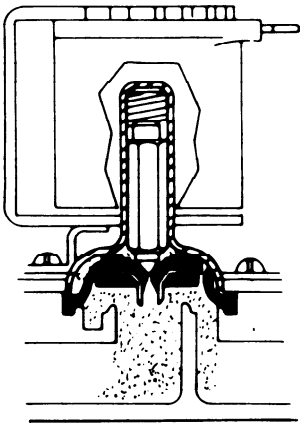
The diaphragm bleed orifice is much smaller than the main orifice and will not admit enough water to maintain pressure on the top side of the diaphragm. Thus, as the pressure on the top of the diaphragm is reduced to almost zero, the pressure on the bottom lifts the diaphragm off the valve seat, allowing a full flow of water.



Solenoid Activated
Water Valve Open and Diaphragm Up



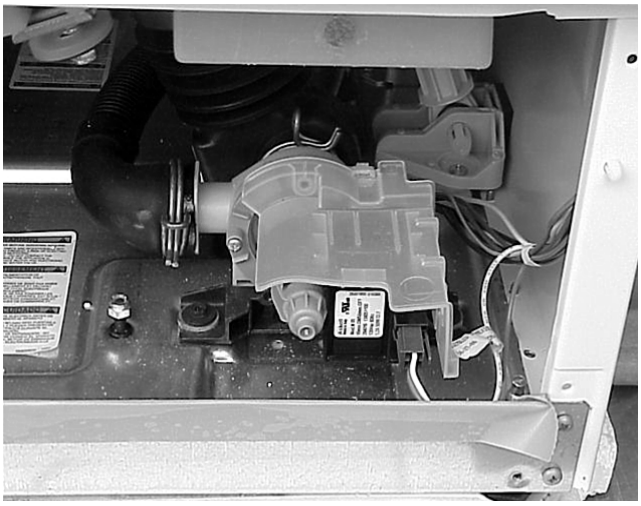
When the solenoid is de-energized, the armature drops down closing the diaphragm main orifice. Water continues to flow through the diaphragm bleed orifice, equalizing the pressure and allowing the spring to push the diaphragm down against the valve seat.



Water Valve Closing

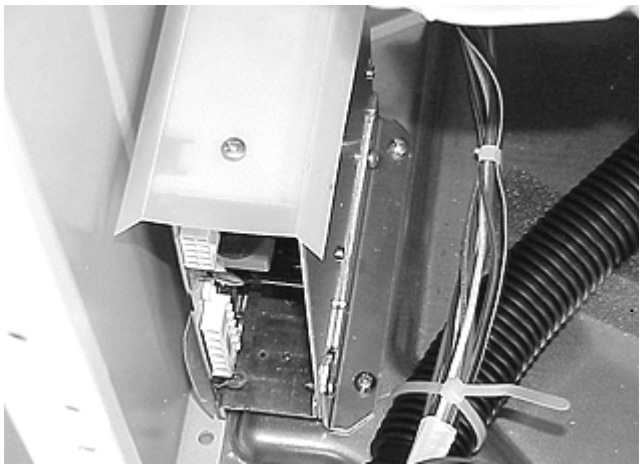
Drain Pump:

The drain pump, mounted to the bottom plate of the washer section in the right front corner behind the access panel, operates on 120 VAC and is controlled by the timer. The pump out specifications of the drain pump vary from 12 G.P.M with a 3 foot standpipe height to 7 G.P.M. with a 8 foot standpipe height.



Speed Control:

The speed control board is mounted to the bottom plate in the right rear corner of the washer.



The speed control board controls the following operations:

1. Advancement of the increments by connecting and disconnecting neutral to pin 5 of the ten pin plug of the control board.

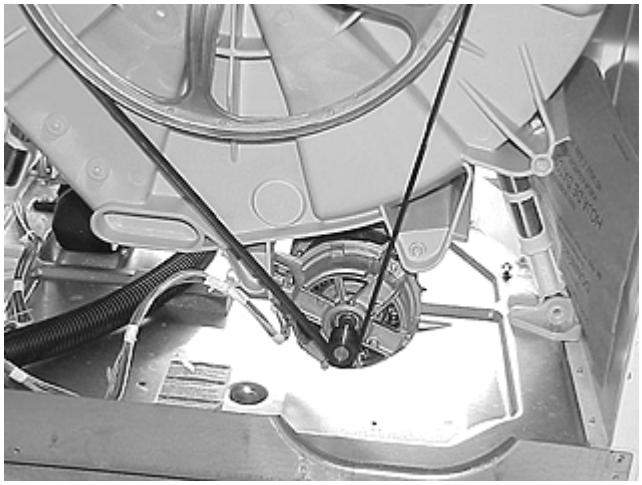
2. The timing of each function, and the speed and direction of the drive motor. The speed control board has six terminals marked on the schematic as A,B,C,D,E, and F that receive inputs or codes from the timer. These inputs or codes program the speed control board to run the drive motor at a certain speed and for a preset length of time. When the program is complete, the speed control board sends a signal to the timer to advance to the next increment.

3. The speed of the drive motor by converting input line to neutral single phase 60 Hertz voltage, to a varying frequency, three phase output voltage from zero to 300 VAC. By varying the amount, frequency, and polarity of the voltage and comparing the input from the tachogenerator on the drive motor, the speed control board can operate the drive motor at a preprogrammed speed and direction.

4. The balance of the load in the washer during the spin cycle by converting the sine wave from the tachogenerator to square waves and comparing the distance between the square waves.

Motor:

The motor is mounted to the bottom of the outer tub.



The motor is an induction, three phase AC motor that varies speeds when the voltage from the speed control board varies in frequency and amount. The motor has a tachogenerator that inputs the speed of the motor to the speed control board.

SECTION C - CONSTRUCTION

The front loading, tumble action clothes washer consists of a perforated, cylindrical spin basket suspended horizontally on its axis within a larger solid cylindrical tub. This assembly is suspended by springs within a four piece steel cabinet. A see through door and a flexible bellows (seal) provides access for loading and unloading clothes.

Cabinet

The cabinet is made of heavy steel in a four piece design. The sides and rear are Tog-l-loked at the rear corners and base. The rear of the cabinet is galvanized steel with an access panel.

Front Panel and Door Assembly

The front panel is attached with screws to the console mounting brace and base plate.

Bellows

The bellows is a rubber sleeve that seals the suspended outer tub to the stationary cabinet front at the tub opening. Its purpose is to provide a water tight opening into the tub that can be sealed by the cabinet door, yet allow flexibility for the oscillation of the tub during the wash and spin cycles.

Outer Tub Assembly

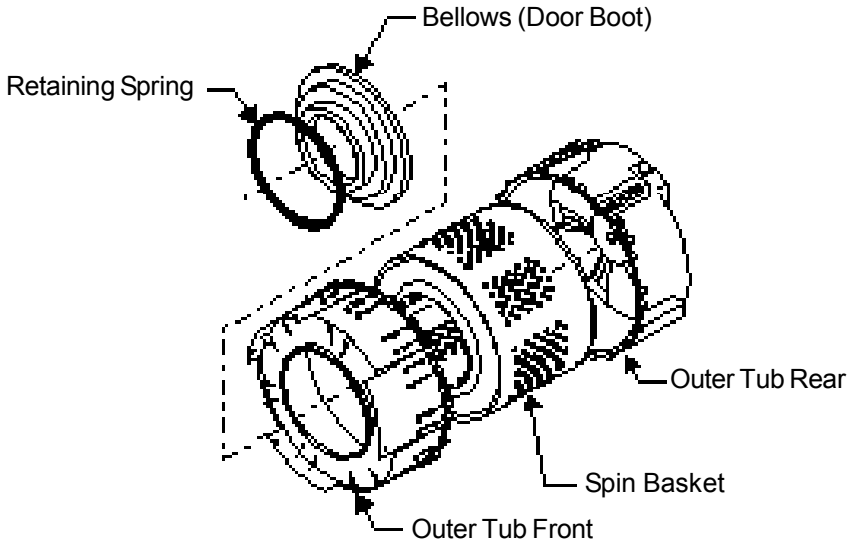
The outer tub assembly is supported by two suspension springs and stabilized by two air shock assemblies. A cement counter weight assembly is mounted to the front of the outer tub. Another weight is attached to the top of the rear half of the outer tub. These counter weights prevent excessive oscillation of the entire suspended assembly during an unbalanced spin cycle.

Spin Basket Assembly

The spin basket is constructed of stainless steel. The circumference of the basket is perforated to allow water to flow through it as it revolves. A heavy steel shaft is pressed into the spin basket support which is then bolted to the basket. The spin basket assembly is entirely supported by two ball bearing assemblies pressed into the rear of the outer tub.

A large drive pulley is mounted to the free end of the shaft that extends through the rear of the outer tub.

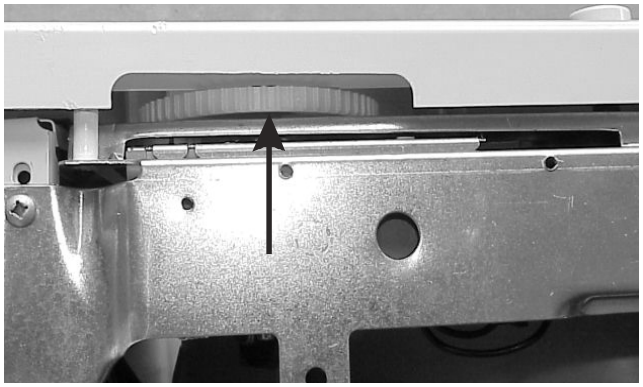
There are three plastic vanes mounted to the spin basket to aid in the washing action during the wash cycle. The rotation of the spin basket provides both the washing action during the wash cycle and water extraction during the spin cycle.



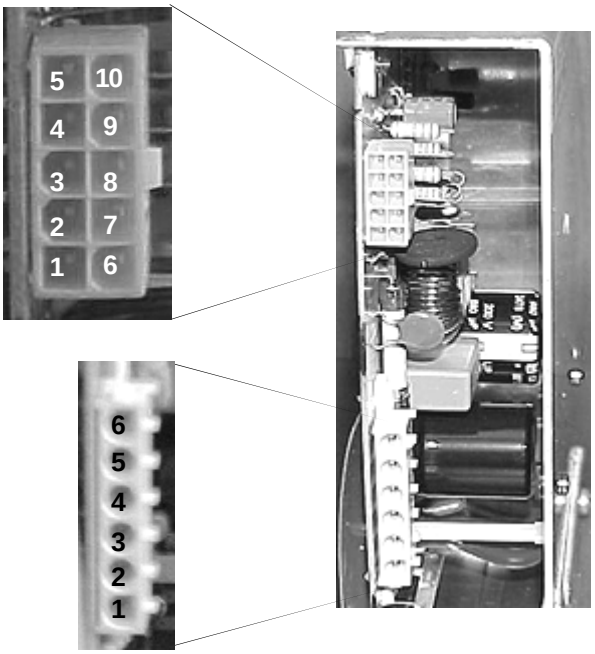
SECTION D - TROUBLESHOOTING

Speed control and motor plug pin layout and timer manual advance

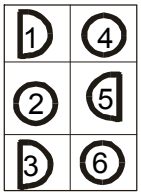
The timer may be manually advanced by removing the main top and turning the shaft with the large plastic gearon the timer shaft.



10 PIN PLUG (C 10)
SPEED CONTROL BOARD



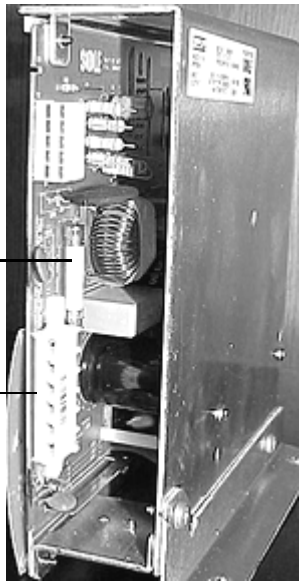
6 PIN PLUG (C 6)
SPEED CONTROL BOARD



MOTOR PLUG - MALE
(END VIEW)

FUSE

6 PIN PLUG (C 6)
SPEED CONTROL BOARD



FAILURE	CHECK	CORRECTION
Washer will not start.	1. Is the washer plugged in?	Yes, go to step 2. No, plug the washer in.
	2. Does the door lamp glow when the start button is pushed?	Yes, go to step 3. No, go to step 4.
	3. Are the contacts of the door lock switch closed?	Yes, defective timer. No, broken door strike or defective door switch.
	4. Has the meter case mechanism advanced and the arm dropped into the notch?	Yes, defective power switch on the meter case mechanism or defective start switch. No, go to step 5.
	5. When the coin slide is pushed in, does the end of the slide depress the ratchet arm and pawl assembly of the meter case mechanism?	Yes, broken spring or defective cam in the meter case, mechanism. No, check the bar extension on the coin slide.
Washer starts and runs when the start button is pushed without the coins slide being pushed in and released.	1. Is the meter case mechanism switch arm in the notch of the cam?	Yes, defective meter case mechanism motor. No, defective power switch on meter case mechanism.
Washer will not fill in any setting of the temp switch.	1. Are the hot and cold water faucets turned on?	Yes, go to step 2. No, turn on the faucets.
	2. Disconnect power from the washer and check the continuity between terminals 1 to 2 of the pressure switch. Are the contacts closed?	Yes, go to step 3. No, replace pressure switch.
	3. Check the resistance of the reed switch.	Zero, go to step 4. Open, magnet out of line or defective reed switch.
	4. Check the resistance of the hot and cold water solenoids. Does the meter read 880 Ohms ± 10%?	Yes, defective timer. No, defective water inlet valve.

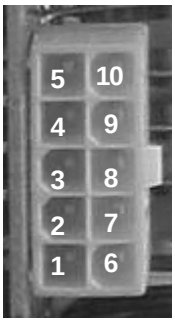
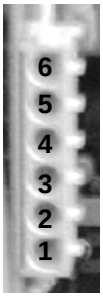
Note: Always check for defective wiring between the components before condemning any component.

FAILURE	CHECK	CORRECTION
Washer will not fill in the wash cycle with the temp switch set to hot.	1. Check the resistance between terminals 1 and 3 of the temp switch.	Zero, go to step 2. Open, defective temp switch.
	2. Check the resistance of the hot water solenoid. Is the reading 880 Ohms ± 10%?	Yes, defective timer. No, defective water inlet valve
Washer will not fill with the temp switch set to cold in the wash cycle.	1. Check the resistance between terminals 1 and 5 of the temp switch.	Zero, go to step 2. Open, defective temp switch.
	2. Check the resistance of the cold water solenoid. Is the reading 880 Ohms ± 10%?	Yes, defective timer. No, defective water inlet valve.
Water enters the washer during the wash cycle, but not in the rinse cycle.	1. Set the temp switch to cold. Does the water enter during the wash cycle?	Yes, defective timer. No, refer to washer will not fill with the temp switch set to cold.
Slow water fill.	1. Are the water hoses kinked or the faucets not turn completely on?	Yes, straighten hoses and turn the faucets completely on. No, go to step 2.
	2. Disconnect the water hoses at the faucets and check the water pressure. Is the water pressure above or below 10 psi?	Above, disconnect the water hoses at the washer, clean the valve screens and check the hoses for any restrictions. Have homeowner correct pressure problem.
Water fill does not turn off.	1. Disconnect electrical power. Does the water stopped coming in?	Yes, go to step 2. No, defective water inlet valve.
	2. Visually inspect the air bell and pressure switch hose. Are there any holes or air leaks.	Yes, tighten or replace defective part. No, defective pressure switch.
Incorrect water level.	1. Visually inspect the pressure switch hose. Is the hose kinked or restricted?	Yes, straighten or replace defective part. No, defective pressure switch.

Note: Always check for defective wiring between the components before condemning any component.

FAILURE	CHECK	CORRECTION
Door lamp does not glow when the washer is in operation.		Defective door lamp.
Washer does not drain.	1. Check the resistance of the drain pump motor. Is the reading 15 Ohms ± 7%.	Yes, go to step 2. No, defective drain pump.
	2. Remove and disassemble the drain pump assembly. Check that the impeller is not broken, the impeller turns, and at the pump is not restricted.	Problem in the pump, clean or replaced the pump. Pump checks good, replace the timer.
(Models with dump valves.) Water drains as fast as it enters.	1. Start the washer and check the voltage applied to the dump valve.	Line to neutral voltage, defective dump valve. Zero, defective timer.
Washer can be started with the door open.		Replace the door latch switch assembly.
Loading door can be opened, while the washer is in operation.		Replace the door latch switch assembly.
Bleach does not dispense.	1. Check the resistance of the bleach dispenser solenoid. Does the meter read 1100 Ohms ± 7%?	Yes, clean the cavity and dispenser. If the problem still exists replace a timer No, replace the bleach dispenser solenoid.
Softener does not dispense.	1. Check the resistance of the softener dispenser solenoid. Does the meter read 1100 Ohms ± 7%?	Yes, clean the cavity and dispenser. If the problem still exists replace a timer No, replace the softener dispenser solenoid.
Washer starts, timer dial turned slightly, then stops and the machine continue to operate until power is removed.		Defective speed control board.
With the temp switch set to delicate, the final spin speed is the same as in the other settings.	1. Set the temp switch to delicate and check the resistance between terminals 2 and 6 of the temp switch.	Zero, defective speed control board. Infinity, defective temp switch.

Note: Always check for defective wiring between the components before condemning any component.

FAILURE	CHECK	CORRECTION
Drive motor does not turn.  Speed control Board, 10 pin plug. (C10)  Speed control Board, six Penn plug. (C6)	1. Disconnect power and remove the rear panel from the washer. Is the drive belt properly installed?	Yes, go to step 2. No, reinstall or replace the drive belt.
	2. Remove the drive belt and turn large pulley. Does the drum turn smoothly?	Yes, go to step 3. No, check for anything binding the drum and the drum bearings.
	3. Turn the drive motor pulley. Does the motor turn smoothly?	Yes, go to step 4. No, replaced the motor.
	4. Disconnect the six pin plug from the speed control board. In the wire harness side of the plug measure the resistance between pins 1 & 2, 2 & 3, 1 & 3. Does the meter read 2.6 Ohms?	Yes, go to step 5. If any of the readings show open or shorted, the drive motor is defective. If the motor winding are shorted check the fuse on the speed control board. If the fuse is open replace the board.
	5. Reconnect power to the washer. Start the washer and allow the tub to fill. Measure the voltage between pins 5 & 6 of the six pin plug.	If the meter reads line to neutral voltage go to step 6. If the meter reads zero, the wire between the door switch and pin 6 of the speed control board is open.
	6. Disconnect the 10 pin plug from the speed control board. Measure the voltage drop between pin 5 of the six pin plug & pins 1, 2, 6, 9 & 10 of the ten pin plug.	If the reading between pin 5 and pins 2, 6, & 10 is line to neutral and between pin 5 & pins 1& 9 reads less than 50 VAC the speed control board is defective. If the meter reads anything other than line to neutral between pin 5 & pins 2, 6 & 10 and less than 50 VAC between pin 5 to pins 1 & 9 the timer is defective.

Note: Always check for defective wiring between the components before condemning any component.

FAILURE	CHECK	CORRECTION
Drive motor spins but does not tumble.	1. Remove the back panel from the washer. Start the washer and allow the tub to fill. Disconnect the 6 &10 pin plugs from the speed control board. Measure the voltage drop between pin 5 of the six pin plug & pins 1, 2, 6, 9 & 10 of the ten pin plug.	If the reading between pin 5 and pins 2, 6, & 10 is line to neutral and between pin 5 & pins 1& 9 reads less than 50 VAC the speed control board is defective. If the meter reads anything other than line to neutral between pin 5 & pins 2, 6 & 10 and less than 50 vac between pin 5 to pins1 & 9 the timer is defective.
Drive motor tumbles, but does not spin.	1. Remove the main top and advance the timer dial to the nine o'clock position. Remove the back panel from the washer. Reinstall the main top and start the washer. Disconnect the 6 &10 pin plugs from the speed control board. Measure the voltage drop between pin 5 of the six pin plug & pins 1, 2, 6, 9 & 10 of the ten pin plug.	If the reading between pin 5 and pins 2, 6, & 10 is line to neutral and between pin 5 & pins 1& 9 reads less than 50 VAC the speed control board is defective. If the meter reads anything other than line to neutral between pin 5 & pins 2, 6 & 10 and less than 50 vac between pin 5 to pins1 & 9 the timer is defective.
Drive motor tumbles, very slowly in any timer position.	1. Remove the back from the washer Disconnect the 10 pin plug from the speed control board. Measure the resistance between pins 3 & 4 of the ten pin plug. Does the meter reader 184 Ohms ± 7%?	Yes, defective speed control board. No, defective drive motor.
Coin slide will not push in.	1. Are there any coins jammed in the coin slide?	Yes, remove the coins. No, go to step 2.
	2. Disassemble the coin chute and inspect the slide ratchet dogs, the ratchet dog springs and the ratchet dog post.	Replace defective parts as needed.
Coin slide will not push in all the way.	1. Disassemble the coin chute and inspect the blocking keys, slide stop dogs, coin sizing block and gate.	Replace defective parts as needed.

Note: Always check for defective wiring between the components before condemning any component.

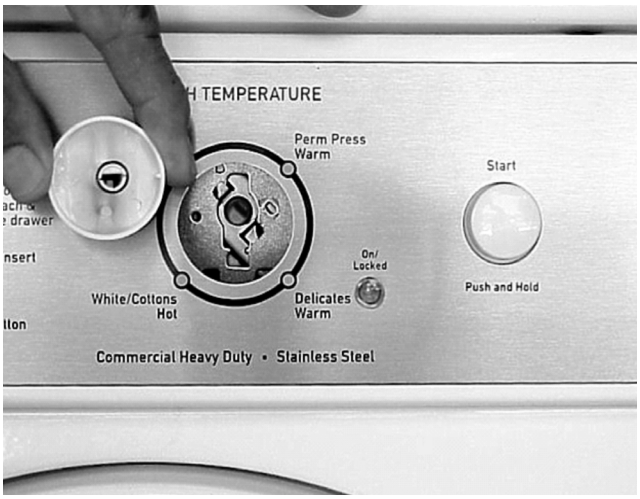
SECTION E - TEARDOWN

This section will describe how to remove components from the commercial washer. Unless stated, the procedure will be the same on all models. Unless stated, reverse the procedure to reinstall the component. Unless noted, all screws should be removed with a # 2 square drive bit or Phillips screwdriver.

WARNING Always remove electrical power from the washer when working in an area where electrical power is present.

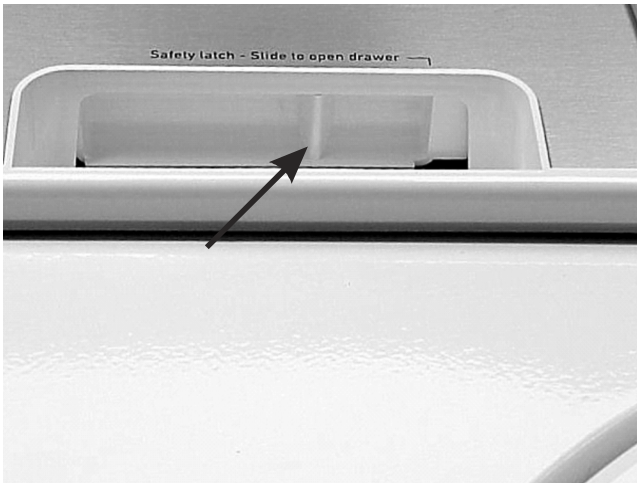
Removing the temp knob:

1. The shaft of the temp knob is “D” shaped and will pull straight off.



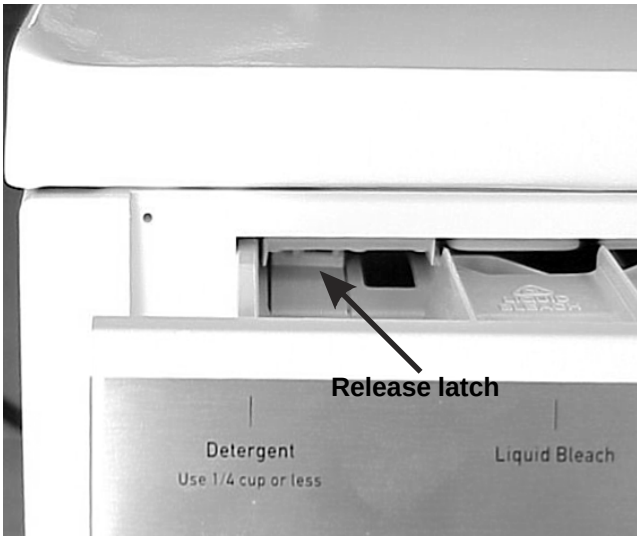
Removing the detergent drawer:

1. Slide the safety latch lever to the right and pull the drawer out until it hits the bottom stop.



2. Push up to release the metal latch on the bottom of the drawer and pull the drawer out until it hits the stop inside the drawer.

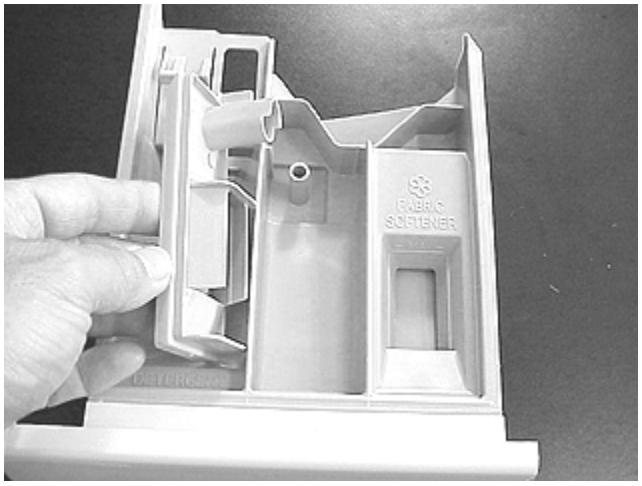
3. Push down on the release latch inside the drawer and pull the drawer out.



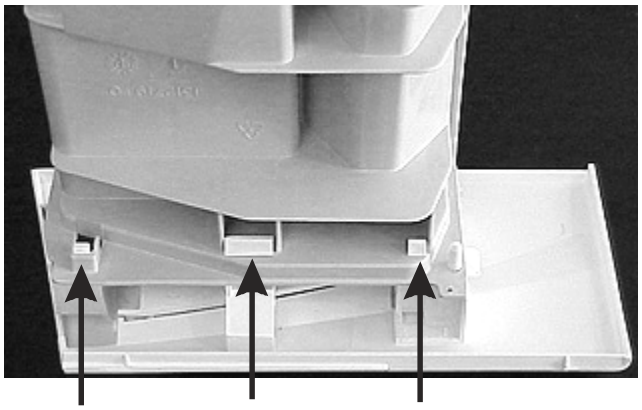
Detergent drawer disassembly:

1. Remove the drawer from the washer.

2. The liquid bleach and fabric softener inserts lift off. When reinstalling, be sure to seat them properly and in the correct location.

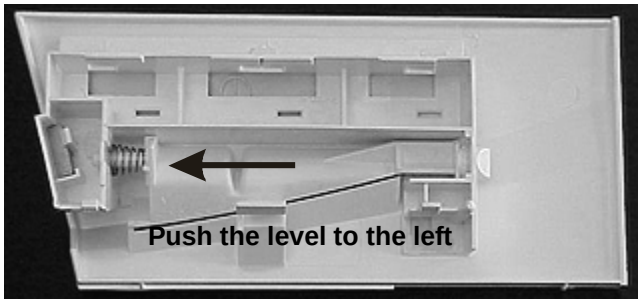


3. To remove the drawer front, release the three tabs and pull the drawer front away from the body. When replacing the drawer front, always remember to transfer the reed switch magnet.

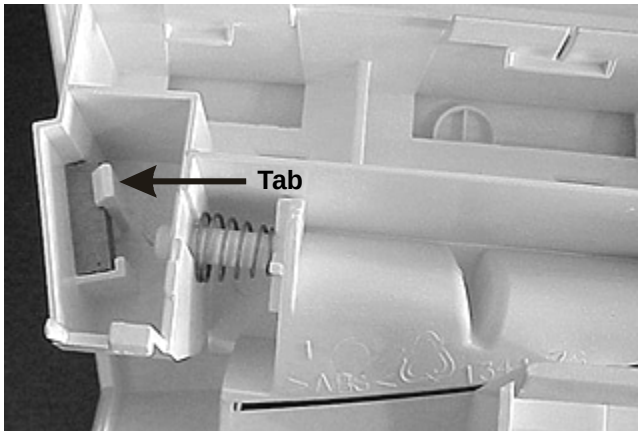


Release the three tabs

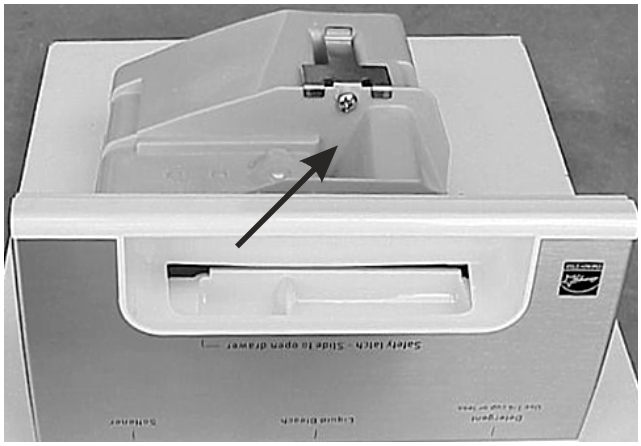
4. To remove the safety latch lever, compress the spring by moving the lever completely to the left and lift the lever out.



5. To remove the magnet, pull the tab to the right and lift the magnet out.



6. To remove the bottom latch, remove the screw holding the latch to the drawer.



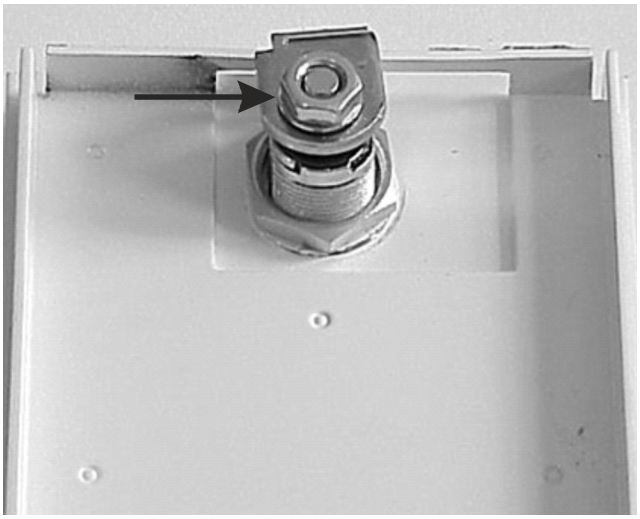
Removing the meter case mechanism cover:

1. Unlock the cover with the key, open the cover and lift the cover out.

Removing the meter case mechanism cover latch:

1. Remove the meter case mechanism cover.

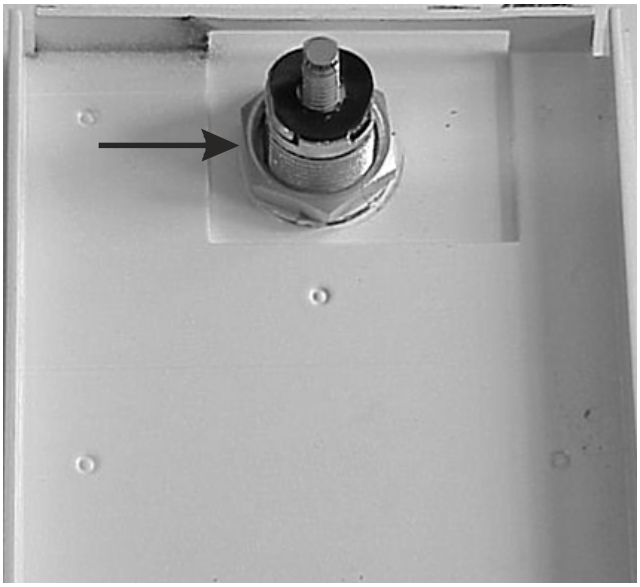
2. Using a 15/32” socket, remove the nut securing the latch to the locking mechanism. Remove the washer and lift the latch off.



Removing the meter case mechanism cover locking mechanism:

1. Remove the meter case mechanism cover and the latch.

2. Using a 7/8” wrench, remove the locking nut and lift the locking mechanism out.



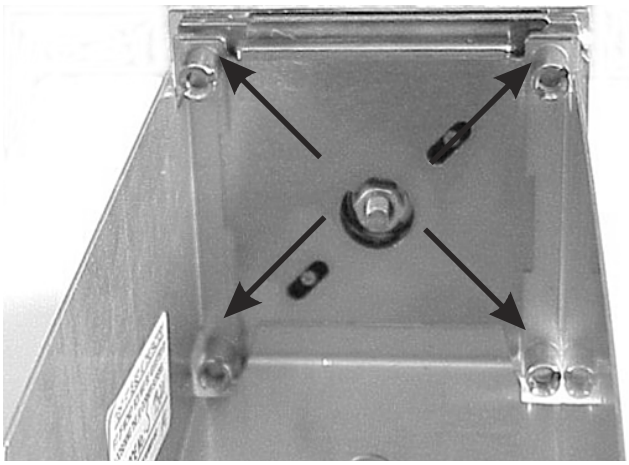
Removing the coin drawer:

1. Unlock the drawer with the key and slide the drawer out front.

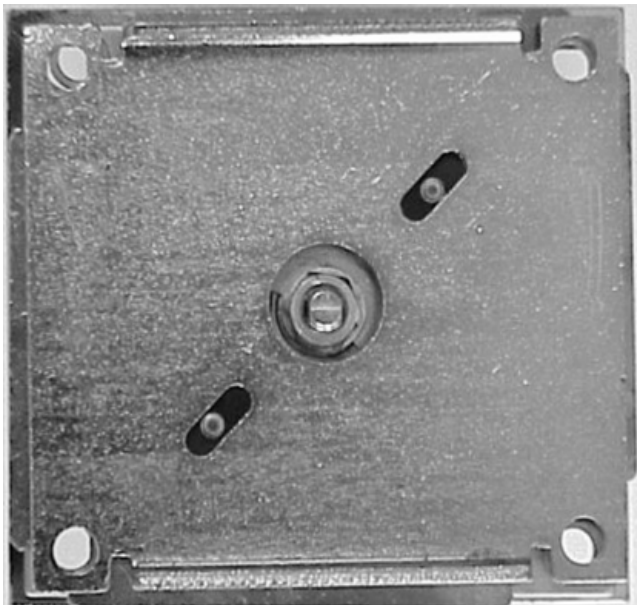
Removing the coin drawer face and locking mechanism:

1. Remove the drawer from the washer.

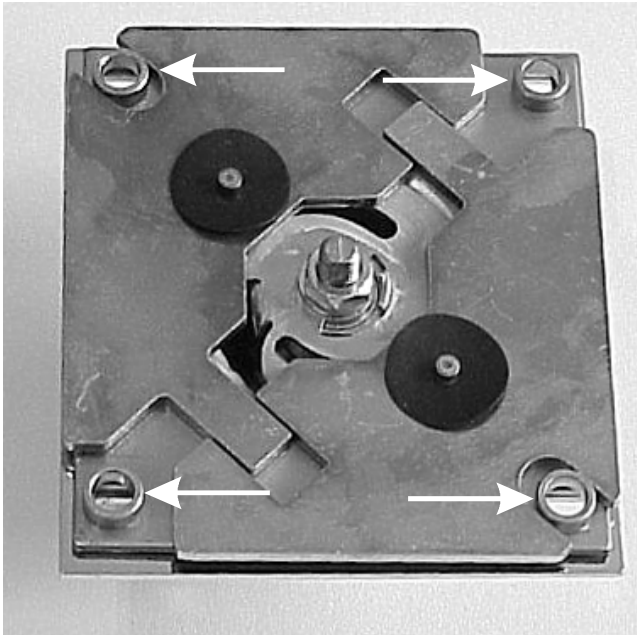
2. Using a common screwdriver, with a long shaft, remove the (4) slotted cylinder nuts holding the face to the drawer and lift the face off. (Be careful not to lose the four spacers)



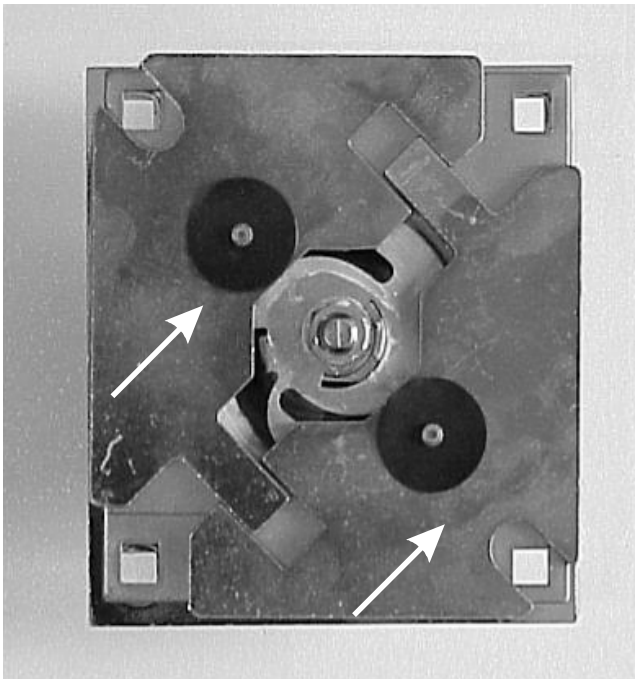
3. Lift the cover plate off.



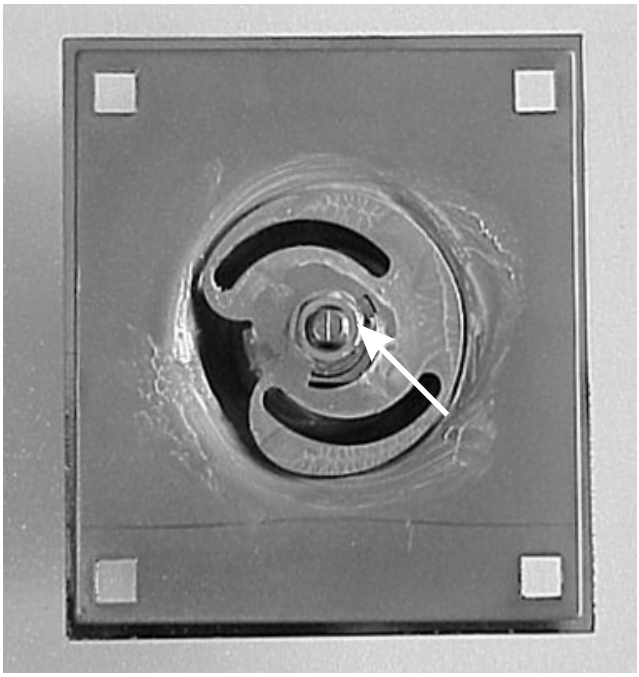
4. Remove the (4) spacers.



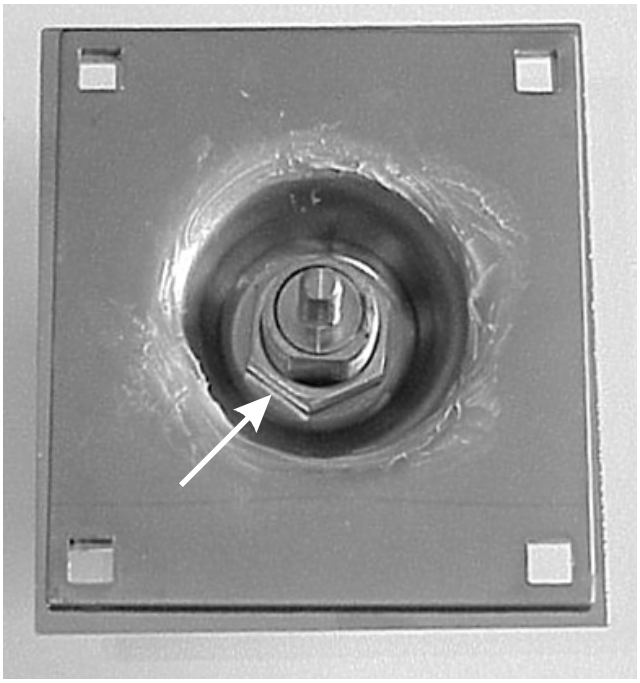
5. Lift the (2) locking plates off.



6. Using a 7/16” socket, remove the nut holding the expansion plate to the lock assembly and lift the plate off.

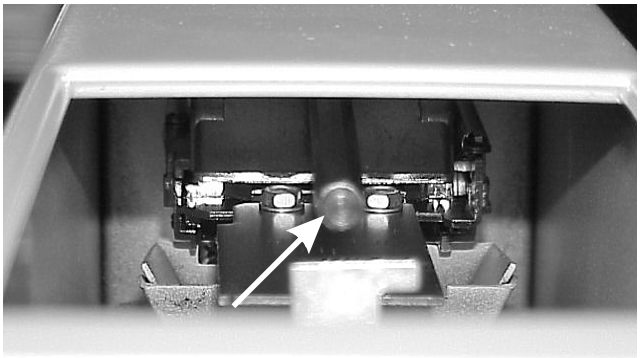


7. Using a 7/8” socket, remove the locking nut holding the lock mechanism to the front face and pull lock mechanism out the front.



Removing the coin chute:

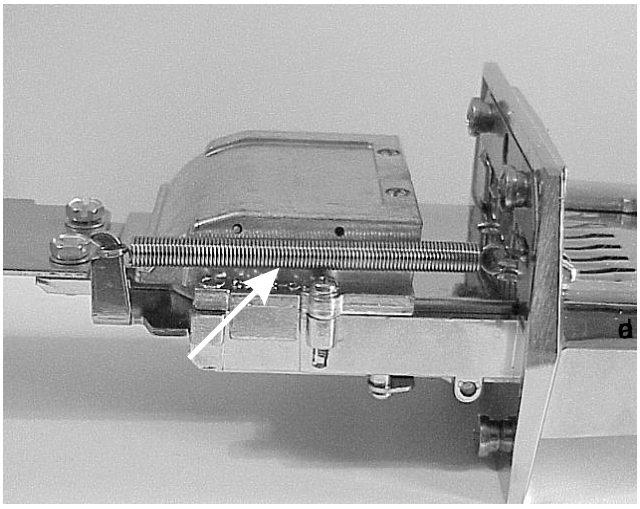
1. Disconnect power from the washer and remove the meter case mechanism cover.
2. Using a 5/16” socket, remove the locking rod that holds the coin chute to the coin box.



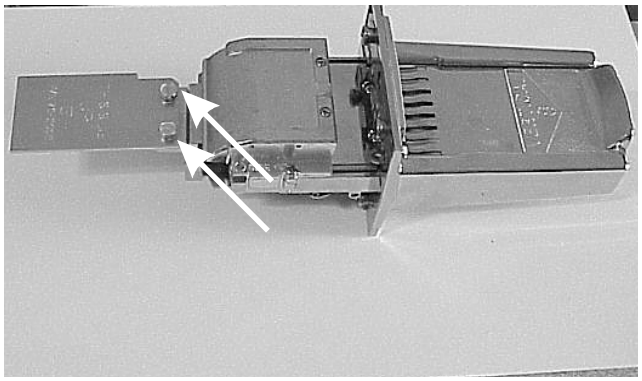
3. Lift up on the coin chute and pull it out the front.

Disassembling the coin chute:

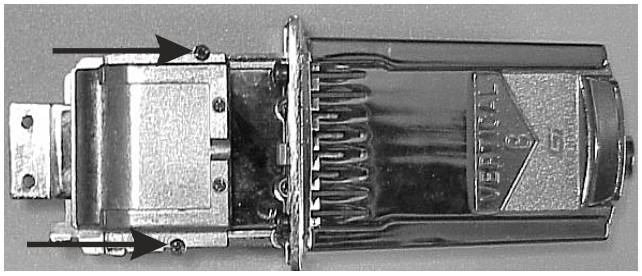
1. Remove the coin chute from the coin box.
2. Disconnect the slide return spring.



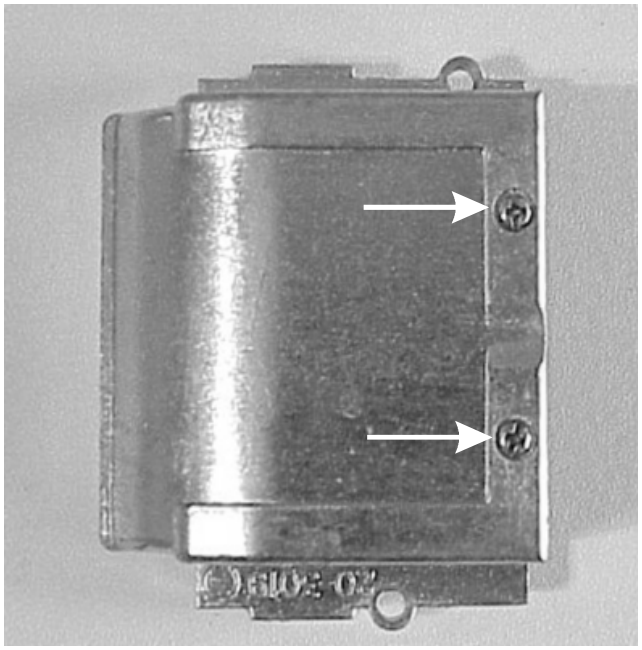
3. To remove the extension bar, use a 3/8” nut driver and remove the (2) screws.



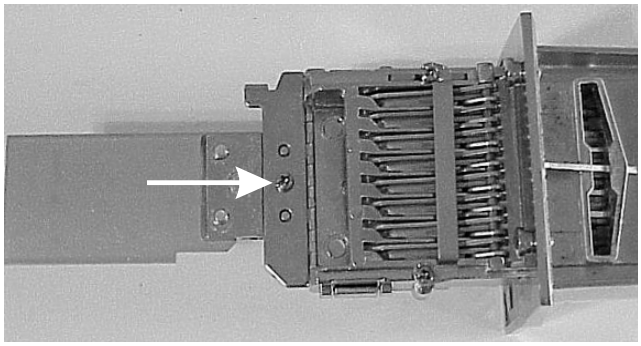
4. To remove the top housing, remove the (2) Phillips head screws, one on each side, and lift the housing off.



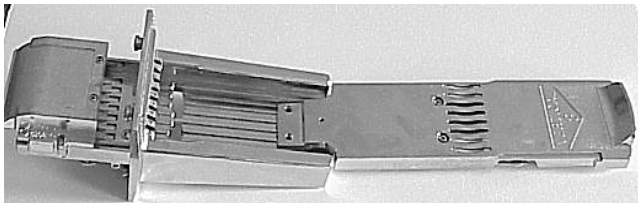
5. To remove the coin sizing block, remove the top housing, then remove the two Philips head screws holding the coin sizing block to the top housing.



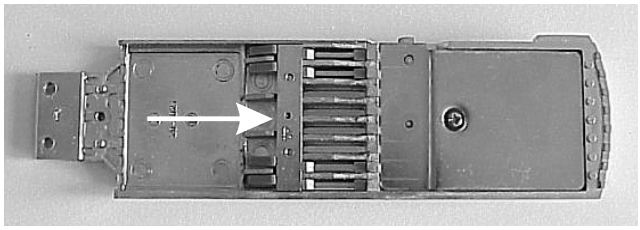
6. To remove the slide stop, disconnect the slide return spring and remove the Philips head screw holding the slide stop to the coin slide.



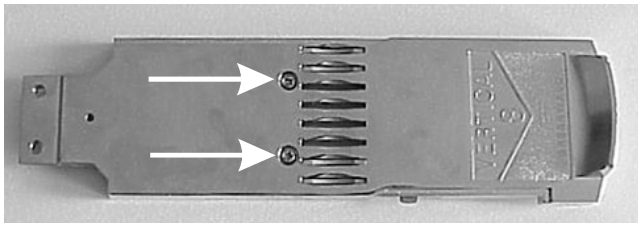
7. To remove the coin slide, disconnect the return spring, remove the extension bar, slide stop and slide the coin slide out the front.



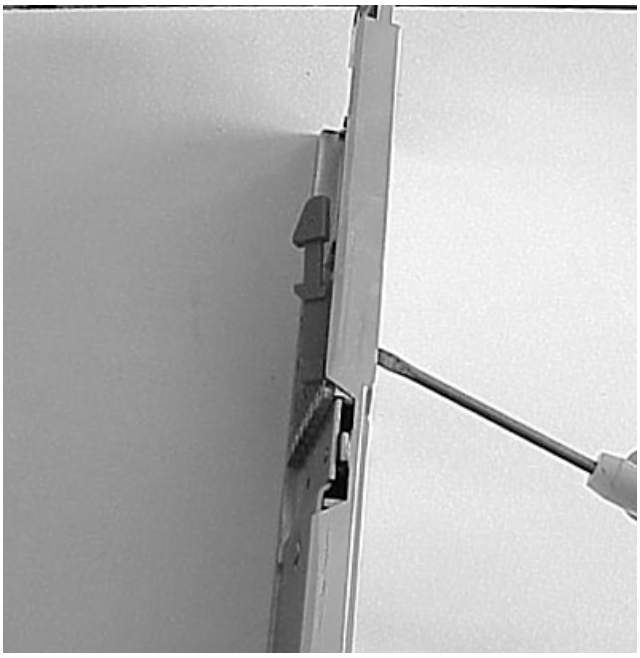
8. To remove the dog post ratchet,



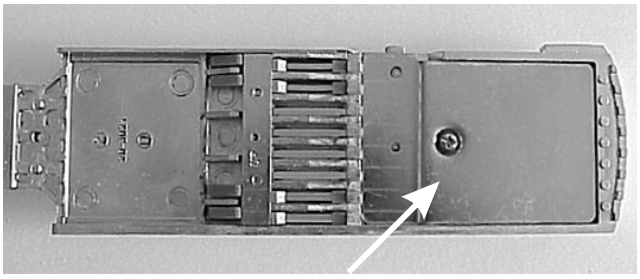
remove the coin slide and the (2) Phillips head screws holding the dog post ratchet to the bottom of the coin slide and lifted off.



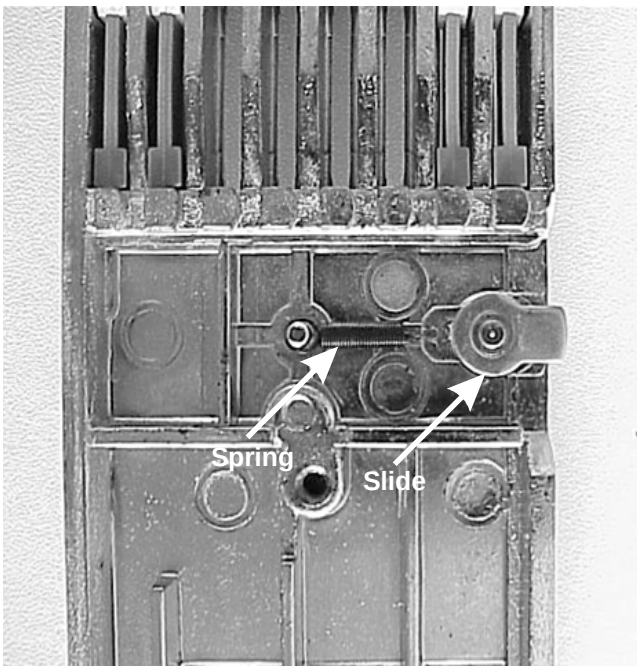
9. To remove the blockout keys, remove the dog post ratchet and push the blockout keys out of the bottom.



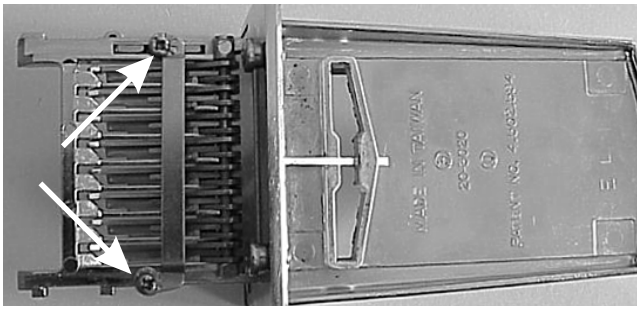
10. To remove the ratchet dog cover, remove the coin slide. Turn the coin slide over and remove the Phillips head screw holding the cover to the coin slide.



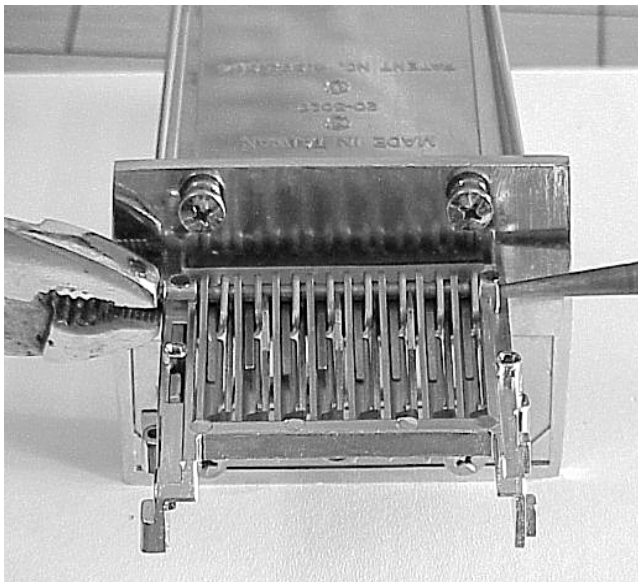
11. To remove the ratchet dog slide and ratchet dog slide spring, remove the ratchet dog cover and lift the slide and the spring out.



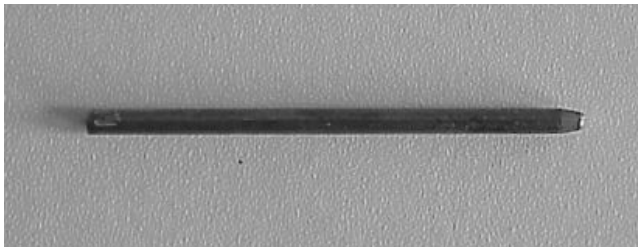
12. To remove the spring protector, turn the coin slide body over and remove the (2) Phillips head screws holding the protector to the body.



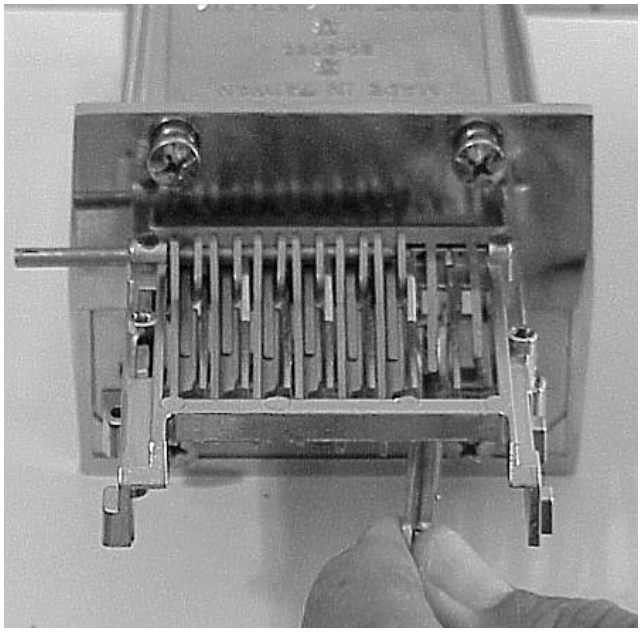
13. To remove the dog shaft, remove top housing, spring protector, and use a small rod or a nail punch to tap the shaft until it moves far enough out that pliers can grip it. Then pull the shaft the rest of the way out with the pliers.



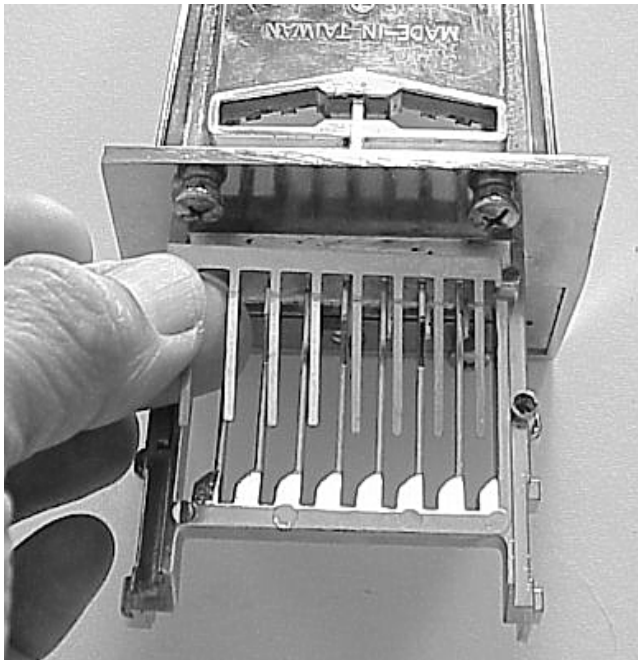
Note: The shaft is tapered on one end. When removing the shaft tap the tapered end. When reinstalling the shaft, put the tapered end in first.



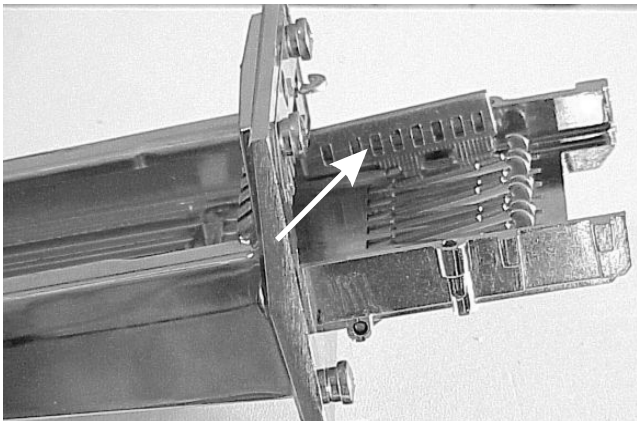
14. To remove the dog stop slides, remove the dog shaft and the slides will pull out.



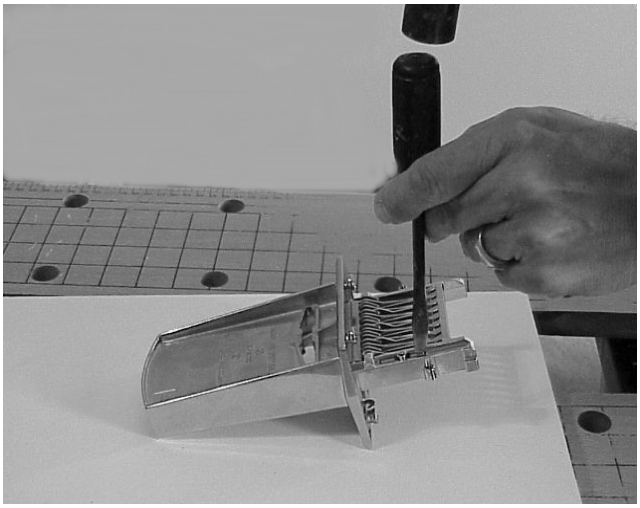
15. To remove the dog stop spring, remove the dog shaft and dog stop slides and the spring will lift out.



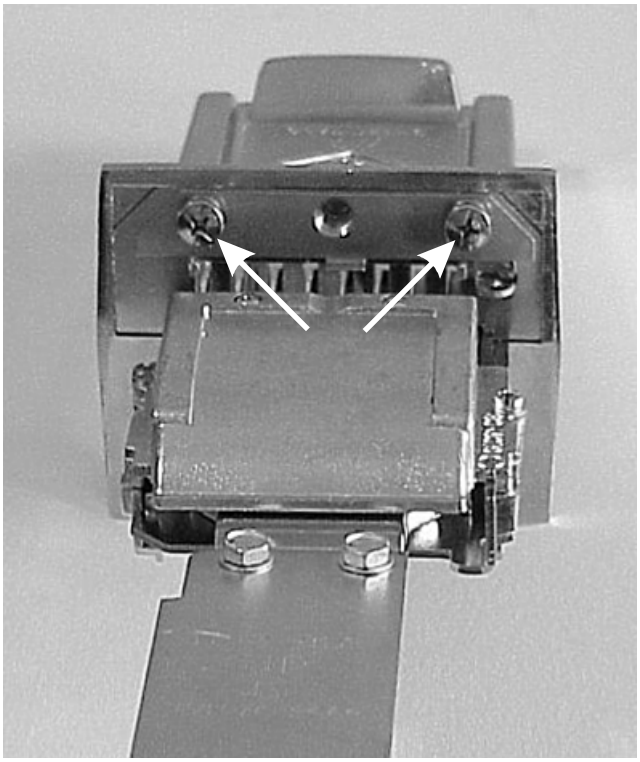
16. The rack is forced into the body casting.



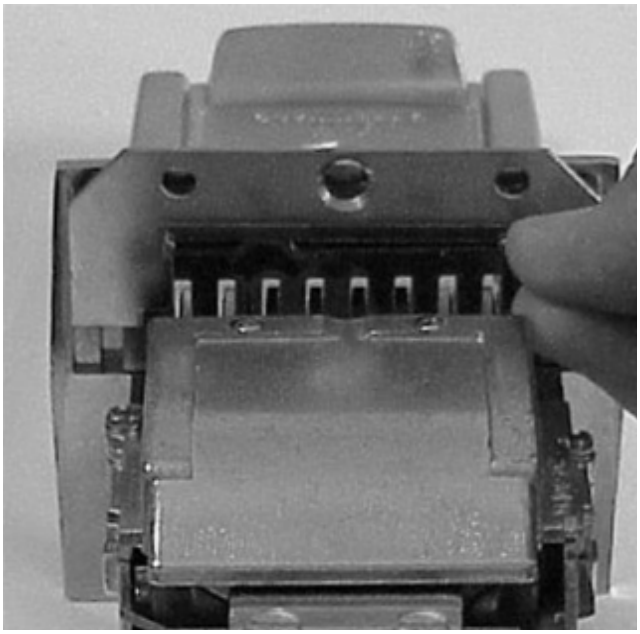
To remove the rack, remove the top housing, turn the body casting over and tap it out using a common screwdriver and a hammer.



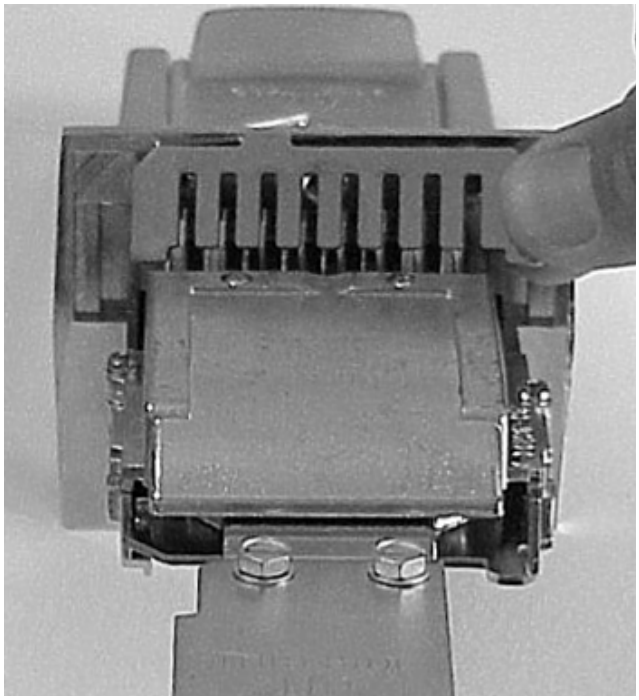
17. To remove the gate cover shield, disconnect the coin slide return spring and remove the (2) Phillips head screws holding the shield to the body casting and lift the shield off.



18. To remove the gate cover, remove the gate cover shield and lift the gate cover off.



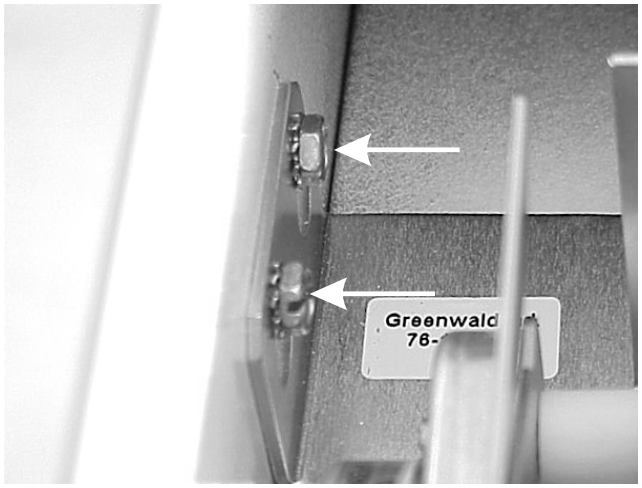
19. To remove the gate, remove the gate cover and lift the gate off.



Removing the meter case mechanism:

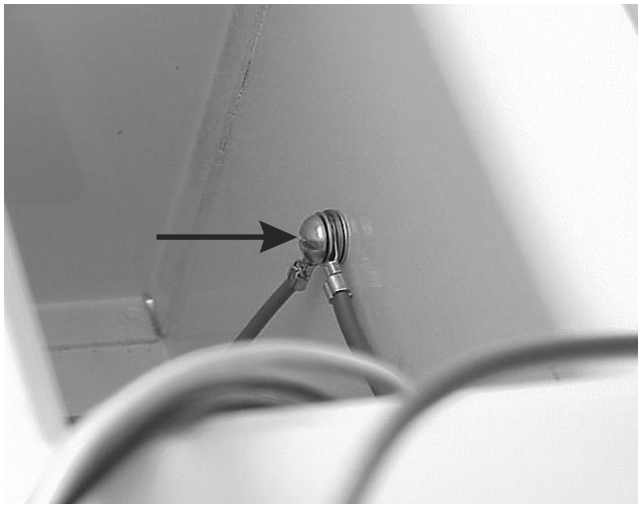
1. Disconnect power and remove the meter case mechanism cover.

2. Using a 5/16” wrench loosen (2) screws holding the meter case mechanism mounting bracket to the side of the coin box.



3. Raised up and out on the mechanism to disengage the bracket from the screws and lift the mechanism up and out of the coin box.

4. Using a common screwdriver, remove the screw holding the ground wires to the side of the coin box.

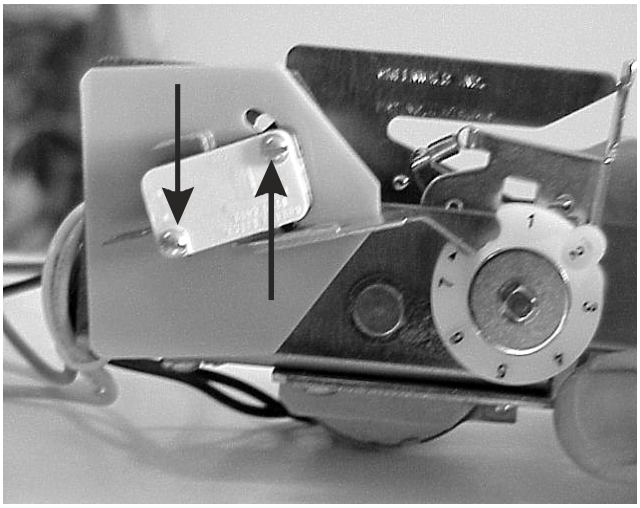


5. Carefully work the meter case mechanism harness up into the coin box, unplug harness and lift the mechanism off.

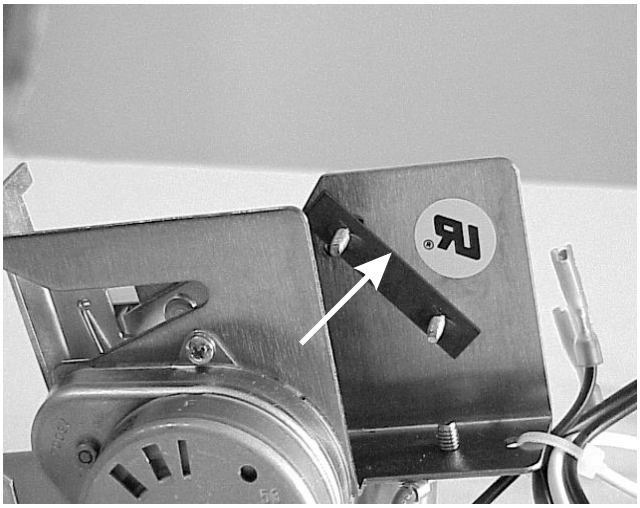
Note: If difficulties occur getting the harness plug up into the coin box, raise the rear of the main top and push the plug up through the gasket.

Disassembling the meter case mechanism:

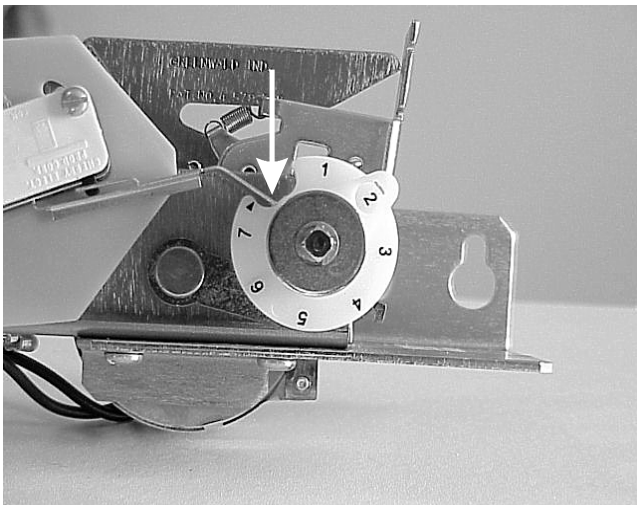
1. To remove the motor and power switches, disconnect the wires from the switches and using a small common screwdriver, remove the (2) screws holding the switches to the meter case mechanism bracket.



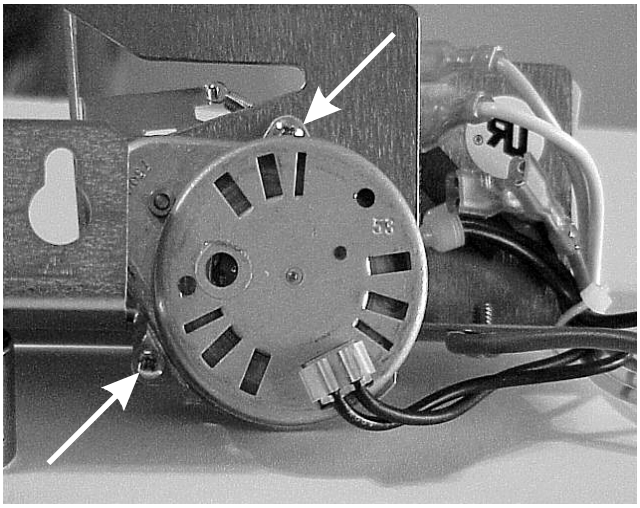
Be careful not to lose the Timmerman clip on the back of the bracket that the screws are going into.



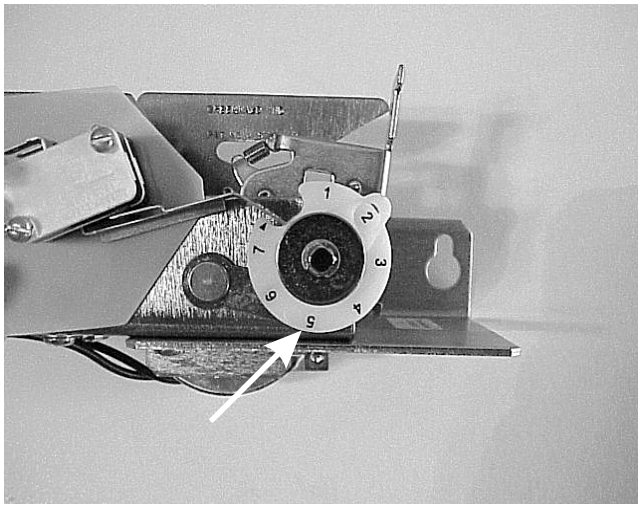
When reinstalling the switches turn the cam until the switch arm drops into the notch in the cam. Adjust the switches down until the tip of the arm is just touching the cam.



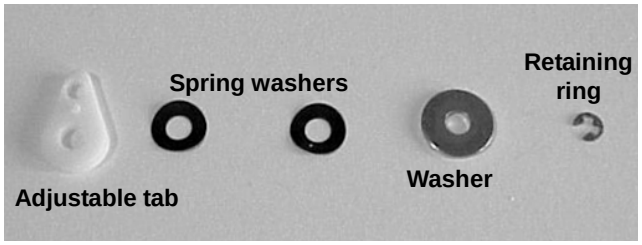
2. To remove the drive motor, disconnect the wires at the motor switch and and removed the (2) Philips head screws holding the motor to the mounting bracket. Pull straight out on the motor to disengage the shaft.



3. To remove the adjustable tab, remove the retaining ring from the end of the drive shaft,

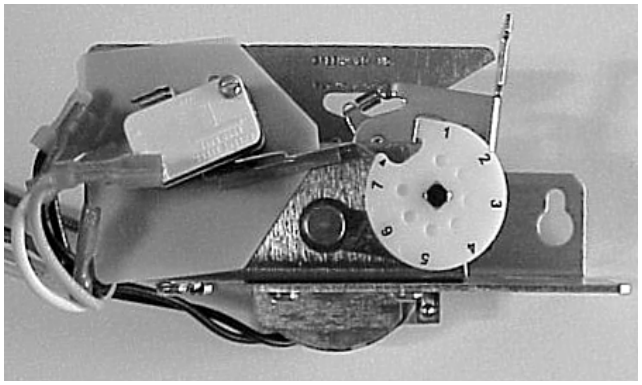


slide the washer off, slide the (2) spring washers off and the adjustable tab will slide off.

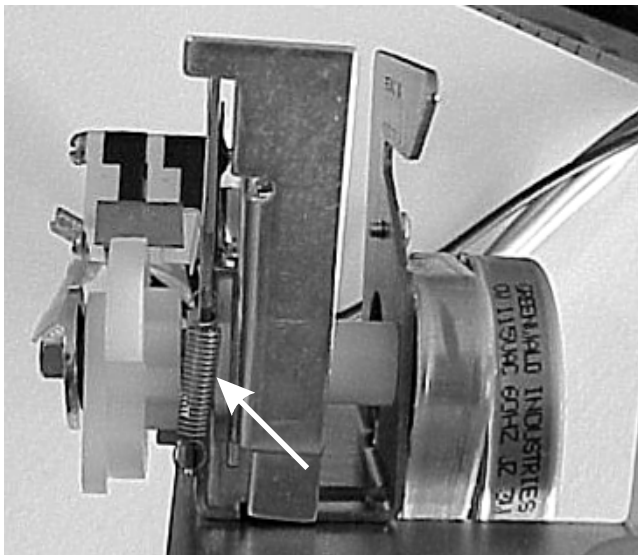


When reinstalling the adjustable tab, put it back in the same number hole it came out of.

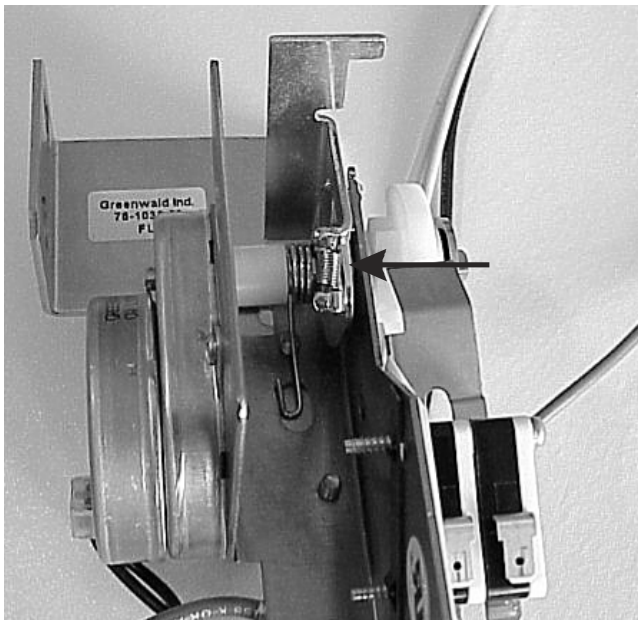
4. To remove the cam, remove the retaining ring, washers and adjustable tab. The cam will now slide off.



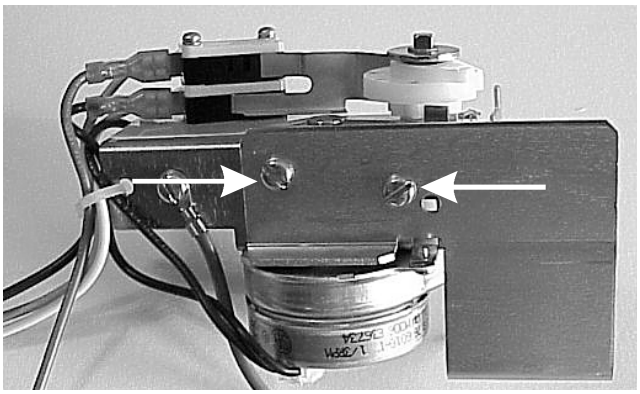
5. To remove the cam advance spring, unhook the spring from the mounting bracket and drop the spring off.



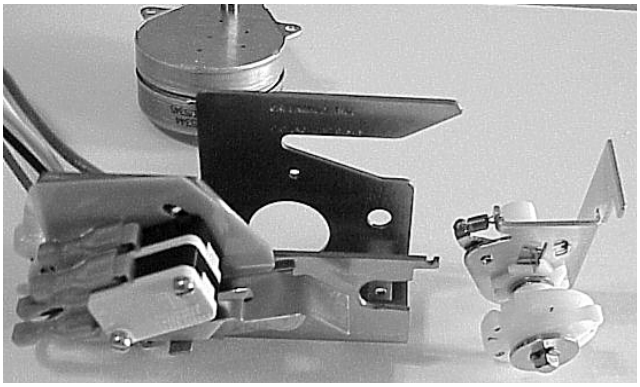
6. To remove the cam lock spring, unhook the spring from the mounting bracket and lift the spring off.



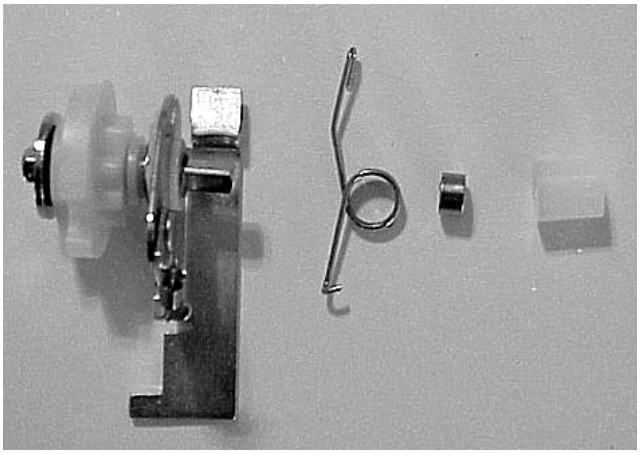
7. To remove the meter case mechanism mounting bracket, turn the mechanism over and use a common screwdriver to remove the (2) screws holding the mounting bracket to the mechanism bracket.



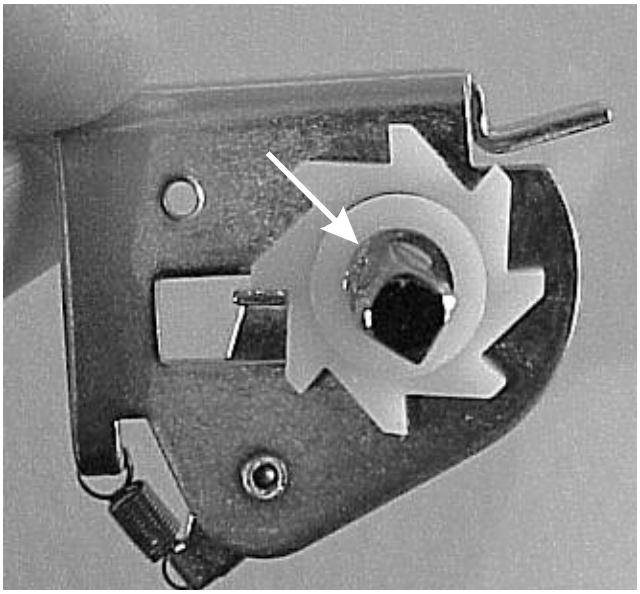
8. To remove the drive shaft and all the components on it, remove the drive motor, cam advance spring and the drive shaft. All the components on it will snap out the front of the bracket.

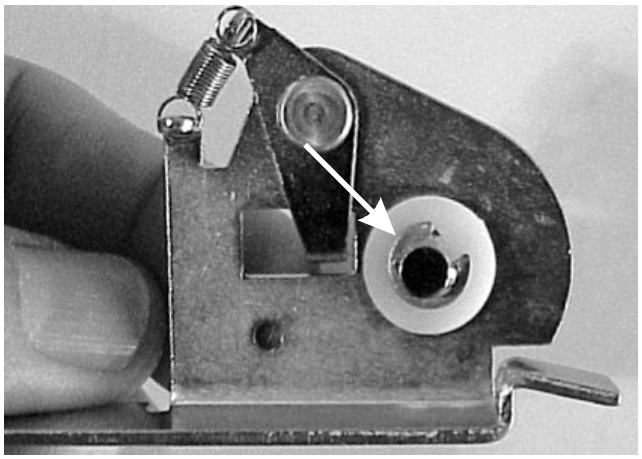


9. To remove the drive sleeve, torsion spring, and sleeve, snap the drive shaft and all of it's components out of the bracket. The drive sleeve, torsion spring and sleeve will slide off the end of the shaft.



10. To remove the rachet arm and pawl assembly, ratchet wheel, drive bushings, and drive shaft, snap the drive shaft and all its components out of the bracket. Remove retaining ring, adjustable tab, cam, drive sleeve, torsion spring, and sleeve. Remove either of the inside retaining rings and the drive shaft will slide out of the components.

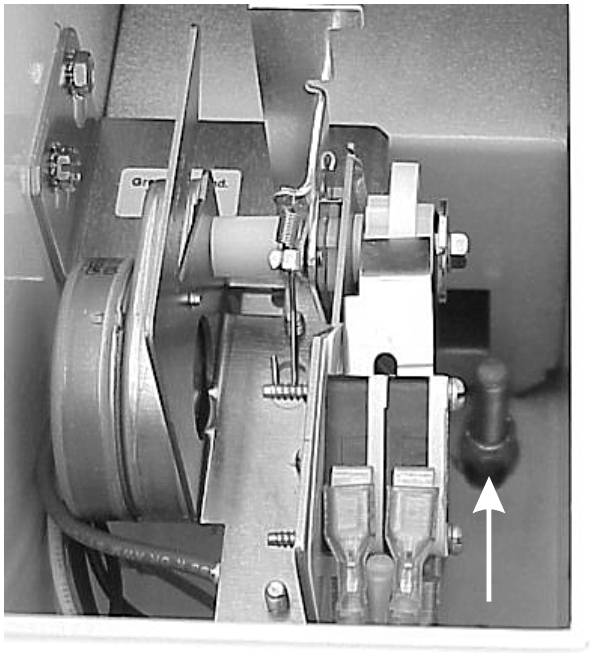




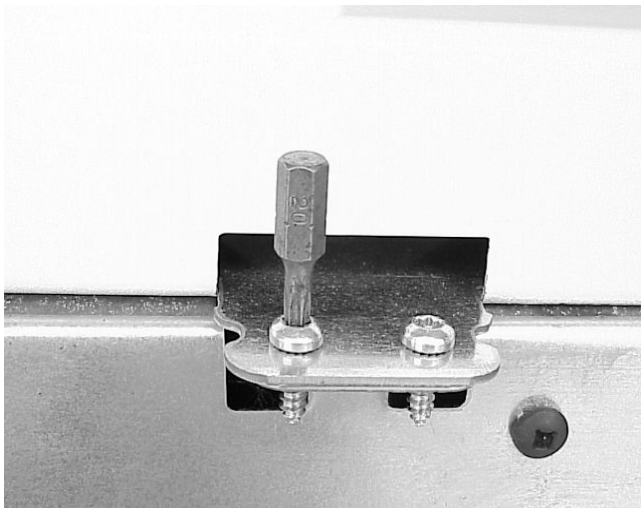
Removing the main top and coin box:

1. Disconnect power from the washer and remove the meter case mechanism cover.

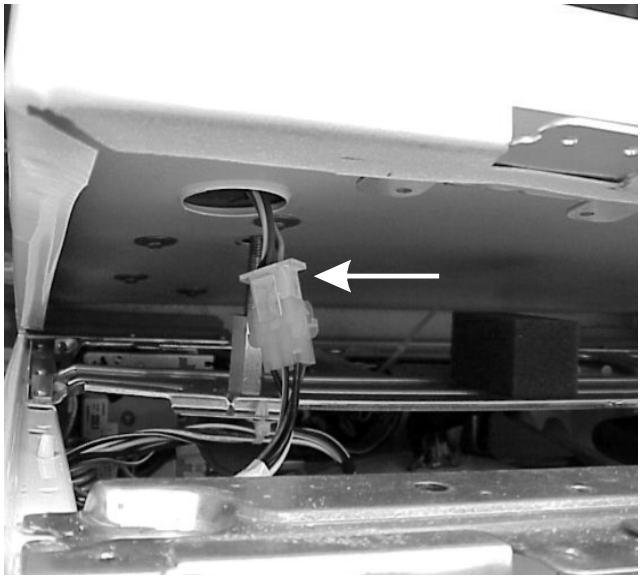
2. Using the 9/16” deep socket, remove the nut from the bold holding the coin box and the main top to the center brace of the washer.



3. Using a number 20 Torx bit, remove the (4) screws holding the hinges on the rear of the washer.



4. Raise the rear of the top until the holddown bolt is cleared and unplug the wire harness going to the coin box.

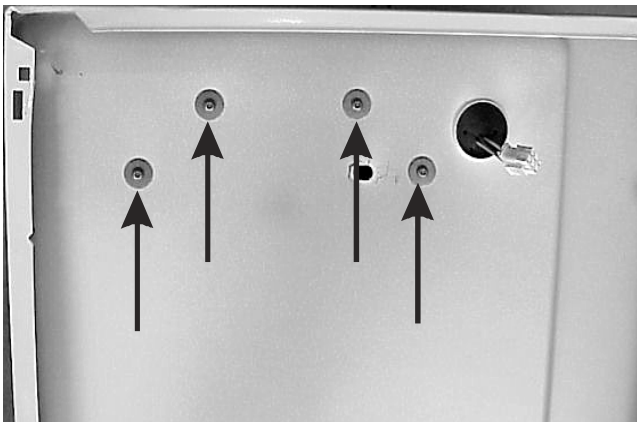


5. Push the top forward and lifted off.

Removing the coin box:

1. Disconnect power from the washer and remove the main top and coin box.

2. Using a security Torx # 27 bit, remove the (4) screws holding the coin box to the main top and lift the coin box off.



Removing the gasket between the coin box and the main top:

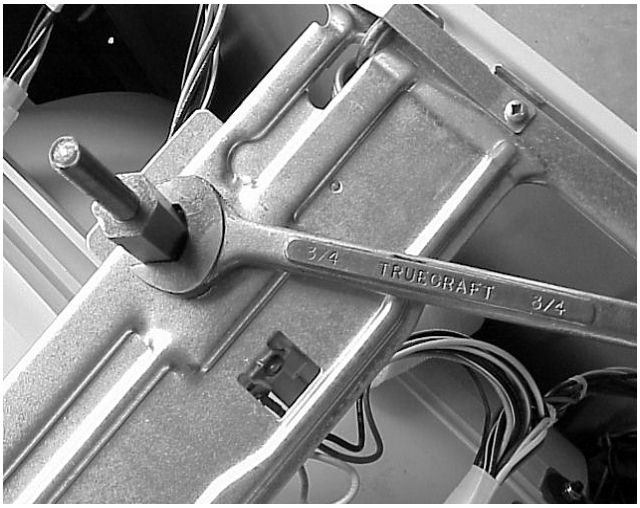
1. Disconnect power from the washer and remove the coin box from the main top.

2. The gasket will now lift off.

Removing the holddown bolt:

1. Disconnect power and remove the main top.

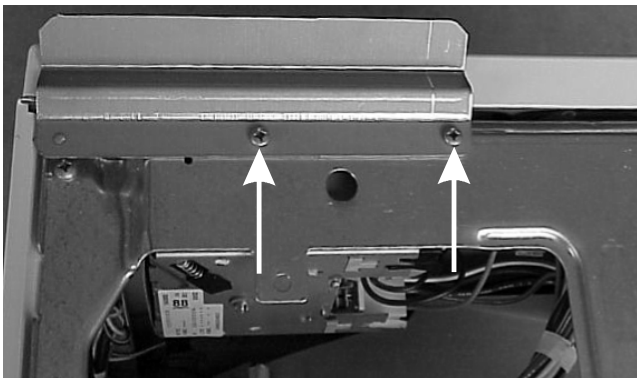
2. Using a 3/4” wrench, remove the spacer from the bolt and the bolt will drop out the bottom.



Removing the main top front holddown brackets:

1. Disconnect power and remove the main top.

2. Remove the (2) screws holding the bracket to the control panel frame and lift the bracket off.

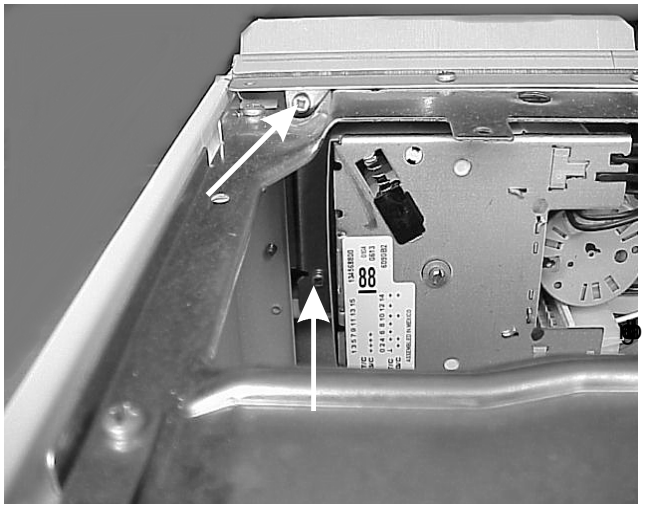


Removing the console:

1. Disconnect power and remove the main top.

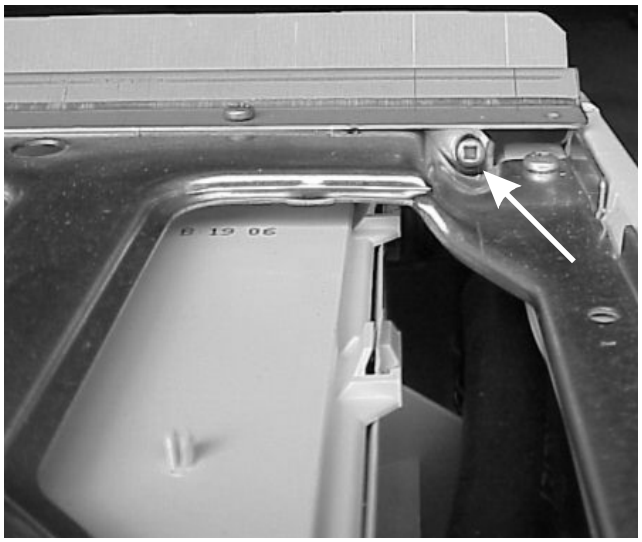
2. Remove the (5) screws,

(2) on the side with the timer,

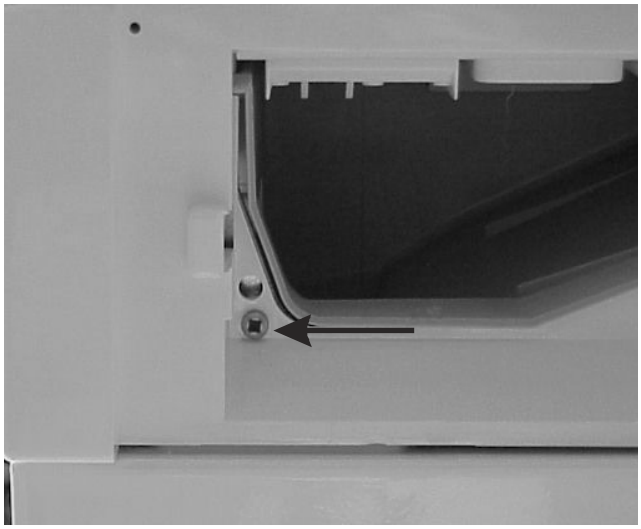


(1) in the center,

(1) from the top left hand corner,



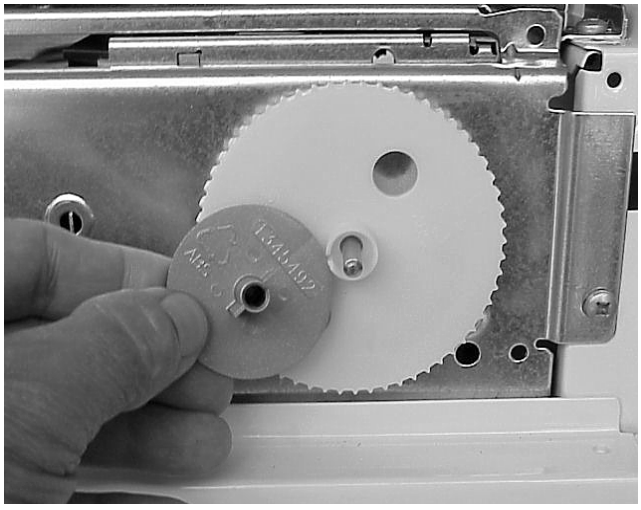
and (1) from behind the detergent drawer cover.



3. Pull the console forward, and disconnect the door lamp from the door lamp lens, unsnap the reed switch from the console and lift the console off.

Removing the timer dial:

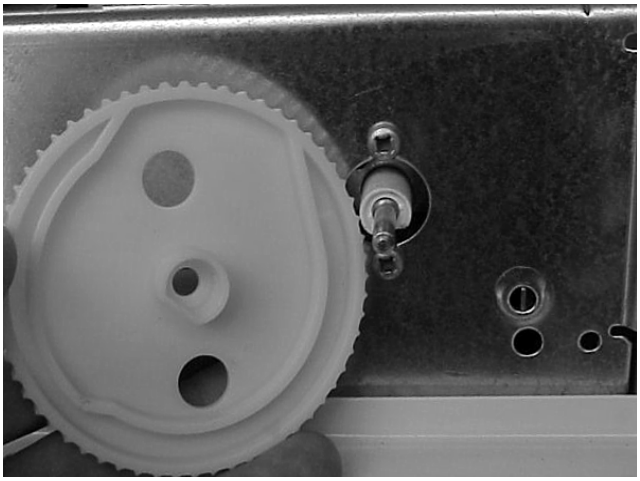
1. Disconnect power and remove console.
2. The timer dial will pull straight off.



Removing the timer shaft cam:

1. Disconnect power, remove console and the dial.

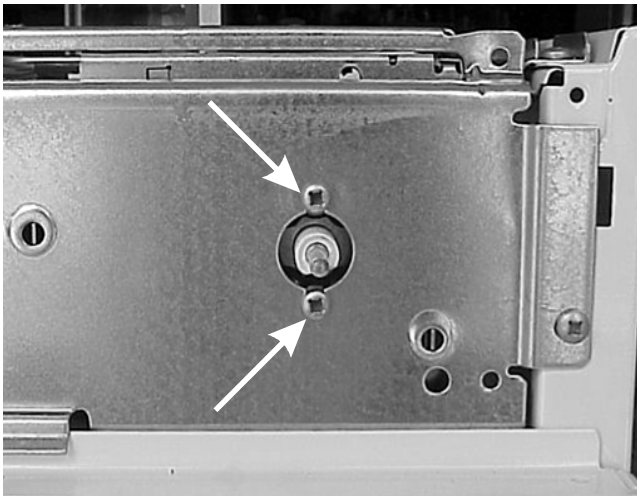
2. The cam will pull straight off.



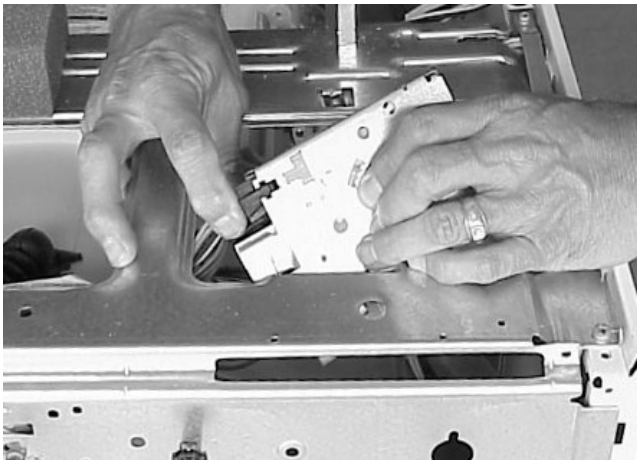
Removing the timer:

1. Disconnect power, remove console, timer dial, and timer shaft cam.

2. Remove the (2) screws holding the timer to the control mounting plate.



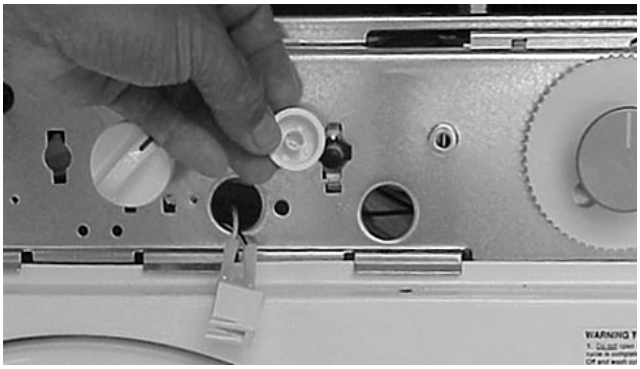
3. Pull the timer back and unplug the wiring harnesses.



Removing the start button:

1. Disconnect power and remove console.

2. The start button pulls straight off.

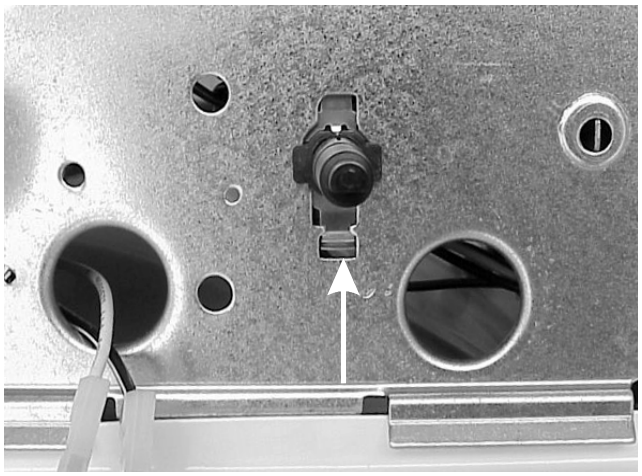


Removing the start button switch:

1. Disconnect power, remove console and start button.

2. Disconnect the wire from the back of the switch.

3. Depress the locking tab, turn the switch a quarter turn, and pull the switch out the back.

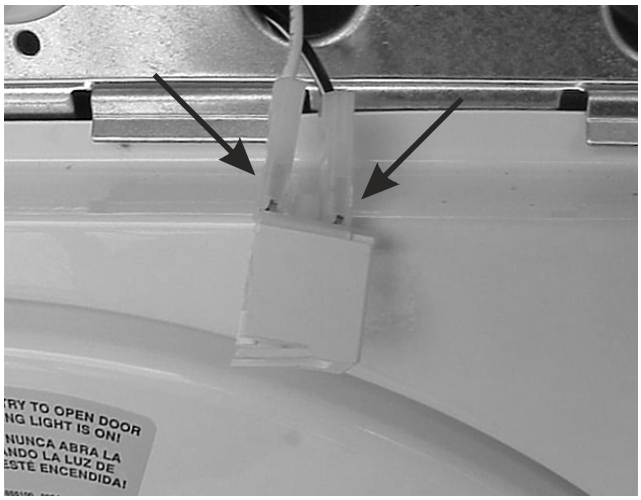


Removing the door lamp:

1. Disconnect power and drop the control panel down.

2. Slide the door lamp sideways to release it from the lens.

3. Disconnect the (2) wires from the light.

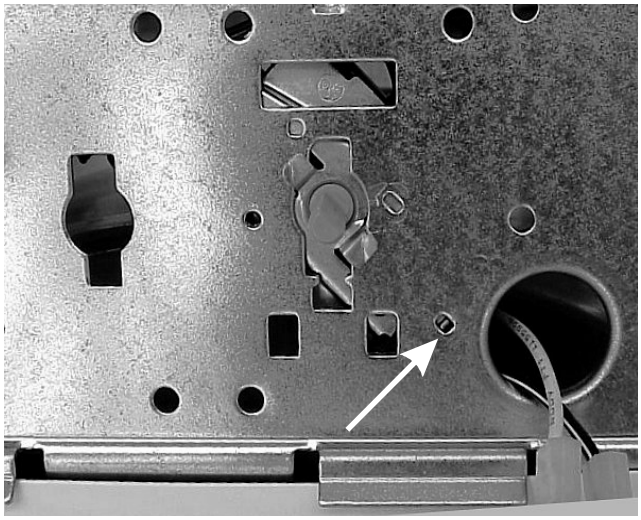


Removing the temp switch:

1. Disconnect power and remove the control panel.

2. Disconnect the wires from the back to switch.

3. Release the locking tab, turn the housing of the switch clockwise and pull the switch out the back.

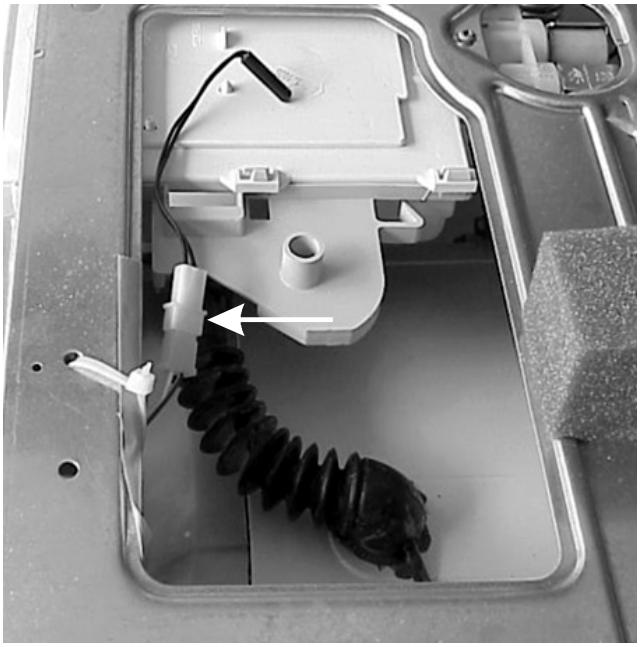


Removing the reed switch:

1. Disconnect power and drop the control panel down.

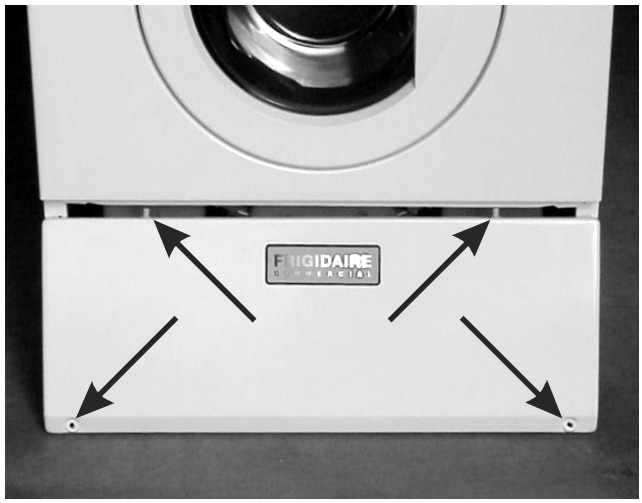
2. Unsnap the reed switch from the console.

3. Pull the reed switch through the control mounting panel and disconnect the wiring harness to the reed switch.



Removing the front service panel:

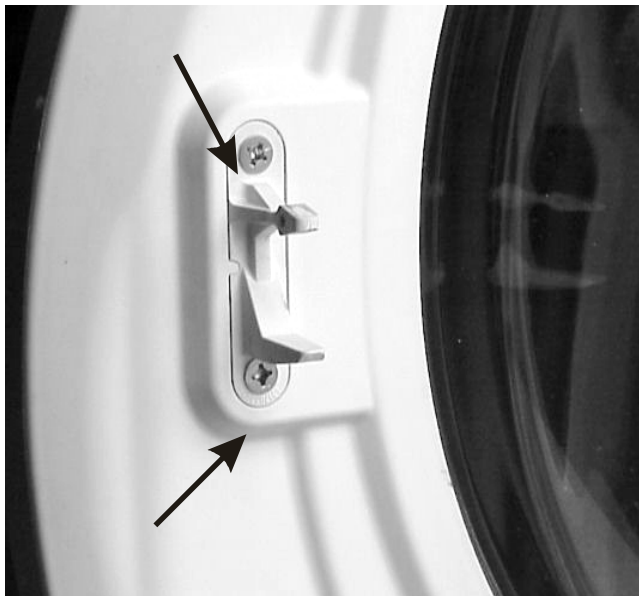
1. The front service panel is held in place by (2) nylon pins at the top and (2) 1/4” hex screws located at each bottom corner.



2. Remove the (2) 1/4" hex screws located at each bottom corner. Pull down and forward.

To remove door strike:

1. Open the loading door and remove the (2) screws holding the strike to the inner door liner.



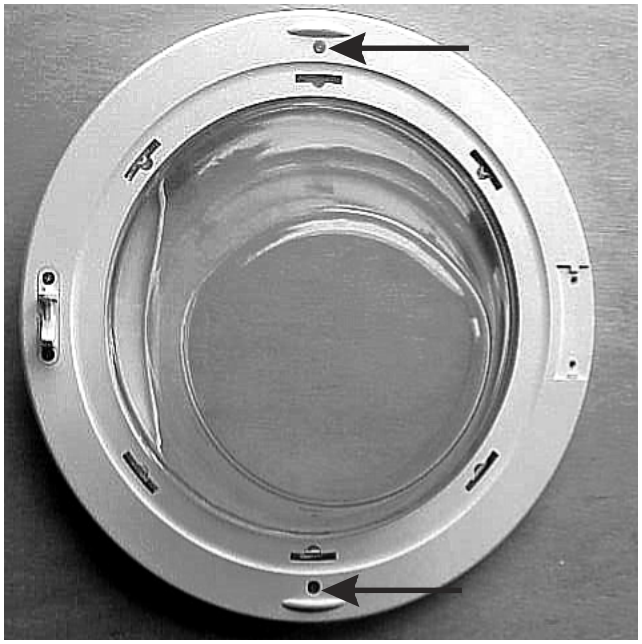
To remove the loading door:

1. Hold the door, and remove the (2) screws holding the door to the hinge.

To disassemble loading door:

1. Remove the loading door from the washer and lay the door on a soft surface.

2. The (2) halves of the door are held together by (2) screws and glue on the two posts on the hinge side. Remove the (2) screws, one at the top and one at the bottom.

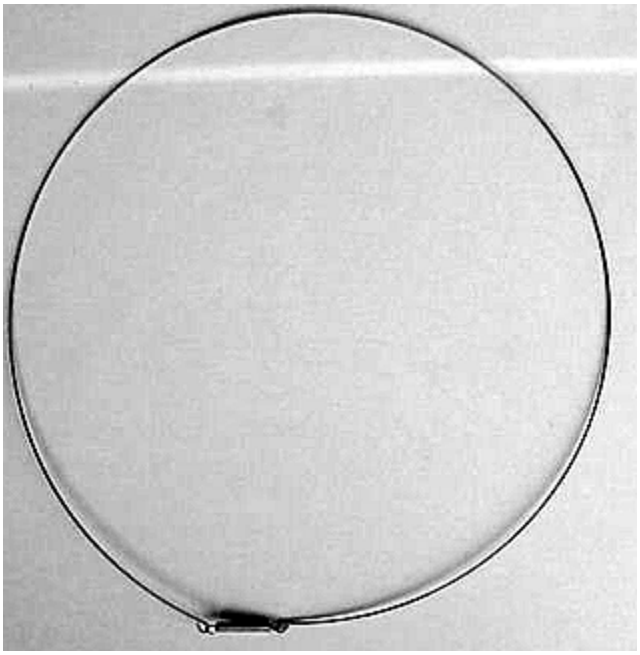


3. Using a common screwdriver and pry the two halves of the door apart.

4. The glass is held in place by (6) molded tabs in the rear door cover. To remove the glass, grab the edge of the cover by the tab and twist it away from the glass.

Releasing the bellows (door boot) from the front panel:

The front of the bellows is installed over the lip of the door opening in the front panel and held in place by a spring loaded wire loop.



1. Open the loading door.
2. Using needle nose pliers, start where the spring and wire are connected at the bottom of the bellows and pull the wire out of the groove of the bellows.

3. Pull the bellows off of the lip of the front panel.

To remove loading door hinge:

1. Remove the loading door and release the bellows from the front panel.
2. Pull the bellows off of the front lip on the hinge side.
3. Remove the (2) screws holding the hinge to the front panel.

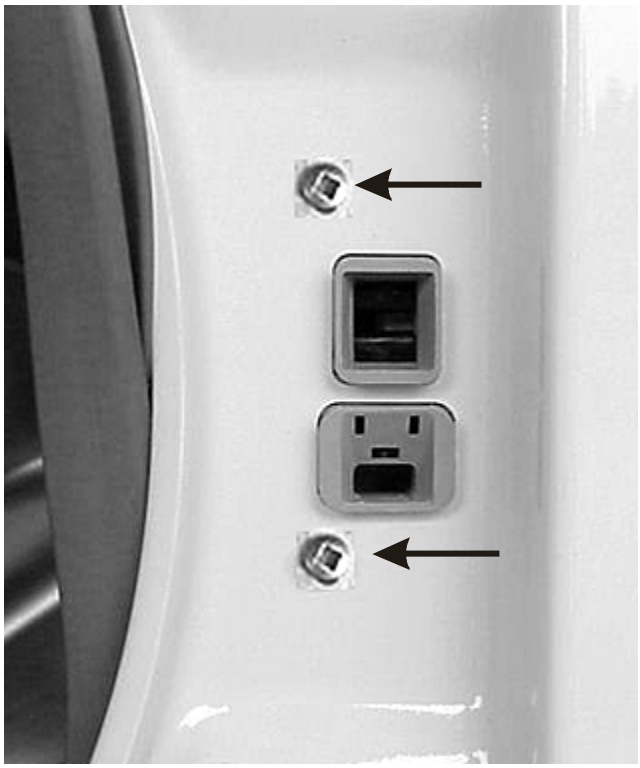
4. Collapsed the hinge and pull it out between the bellows and the front panel.

Removing the door safety switch:

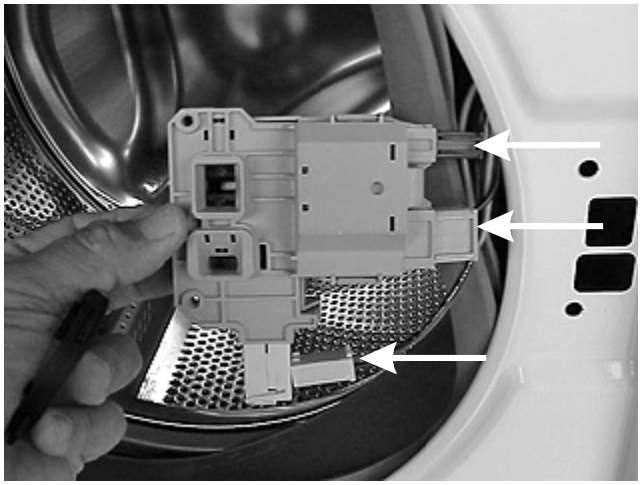
1. Disconnect power from the washer.

2. Release the bellows from the front panel.

3. Remove the (2) screws securing the switch assembly to the front panel.



4. Pull the switch assembly into the door opening and unplug the electrical connectors.



Removing the bellows (door boot):

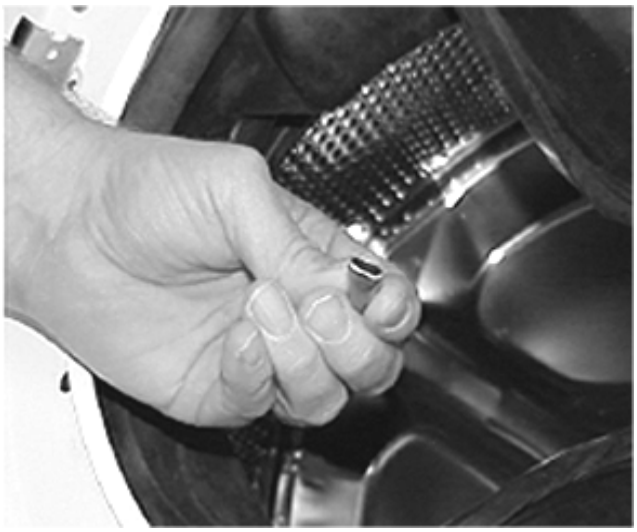
1. If the machine is positioned in such a way that it would be difficult to move, you will be better off leaving it where it is. However, if it is possible, it is easier to do this job if the machine can be leaned back against a wall protect the wall with cloth or rug). By leaning it back, the tubs will hang back from the front panel and you will have increased space to work. If leaning it back is not possible, then a 6 or 8 inch block of wood can be wedge between the front panel and the tub to hold the tub back out of the way.

2. Remove the spring-loaded wire loop, and release the bellows from the front panel.

3. Once the boot is loose from the front panel, push it into the opening of the tub and out of the way.

At this point, if the machine is not leaning back, take your block of wood and while pushing back on the tub through the opening, wedge the block between the front panel and the tub about ten inches to the bottom - right of the opening. This will afford you more space to work with the boot.

4. The boot is still attached to the water inlet duct that is located just inside the front panel at the upper left corner from the opening. This is where the water, soap, bleach and fabric softener enter the tub. To remove (and later on, reattach) the clamp holding this in place on the end of the duct make a tool from a three inch piece of 3/8 inch soft copper tubing by flattening one end somewhat, so that it can be slipped over the twisted ends of the clamp.



Twist the tube counterclockwise to open the wire clamp. Remove the clamp and pull the boot free from the duct.

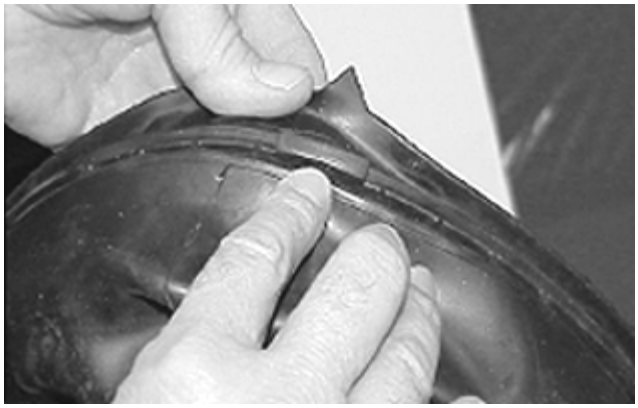
5. Using both hands, grab onto the boot at the top of the opening to the tub and pull downward and toward you with slow steady pressure. As the boot is pulled free from the outer lip of the tub (at the top), the coiled spring that holds the boot from the groove behind the lip around the opening to the front shell will become visible. You can either continue pulling on the boot until it comes off or you can hook the spring (with a piece of coat hanger fashioned into a hook) and pull it off and then pull the boot off separately.

Reinstalling or replacing the bellows (door boot):

1. The boot has a lip that will have to be folded into the groove behind the lip on the front tub shell. To start, examine the boot and locate the groove in front of the lip that corresponds to the similar lip and tab on the tub shell.

2. Using some liquid dishwasher soap sparingly lubricate this groove on the boot to make it easier to slip onto the lip of the tub shell.

3. Once the groove in the boot is lubricated with soap, locate the arrow that is located on the top of the boot (located to the right of the extrusion that slips over the duct). This arrow must point up when the boot is installed.

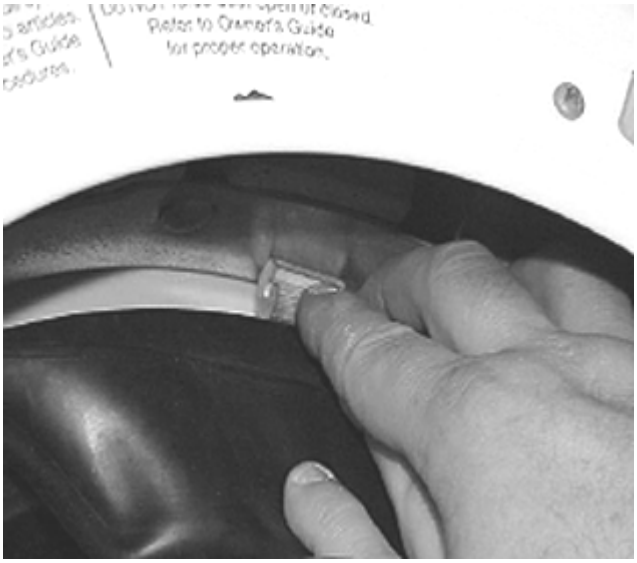


4. With the boot in one hand and with the other hand spreading the lip and groove (on the boot near the arrow), force the lip into the groove behind the lip at the top of the opening on the tub shell.

5. With one hand holding the boot so it does not slip off, use the other hand to continue spreading the lip and groove of the boot further to the right. In this way you continue this action 360 degrees around until the boot is mounted onto the front tub.

6. Installing the spring. Included in the replacement boot kit is a set of three spacers.

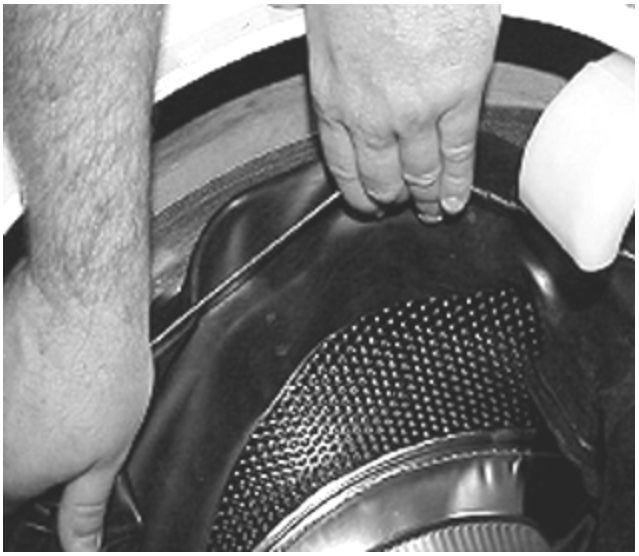
These spacers are to be used to hold the spring in place in the groove on the outside perimeter of the boot. As it will take both hands to stretch this spring into place, these spacers will prevent the spring from popping out when you let go of it to use both hands to stretch it further around the boot. Begin by pushing the spring down into the groove just forward from where the boot contacts the front tub shell at about the 12 o'clock position. While holding the spring in place with one hand, use the other to tightly wedge the spacer above it, between the spring (in its groove) and the weight ring above it.



7. Working to the right, push the spring down into the groove. Once the spring has been installed about 90 degrees around the opening from the first spacer, install the second spacer.

8. Continue working your way around until you reach 180 degrees from the first spacer. Install the third spacer.

9. The spring will be extremely tight now.



Once you have gone more than half way around, the spring will be easier to roll into the rest of the groove. When you have the spring in place, make sure to remove the three spacers.

10. Replace the boot extrusion back onto the duct and pull it up over the ridge on the duct near the top of the opening.

Reinstall the clamp in such a way that the clamp sits between the ridges on the extrusion and above the ridge on the duct. Snap the clamp closed with the copper tubing tool.

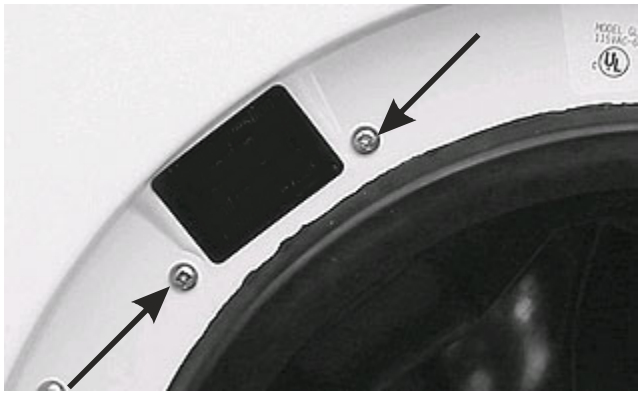
11. Before attaching the new boot to the front panel, clean the surface of the front panel with alcohol or household cleaner. This step is needed to ensure the new boot will lay flat against the front panel.

12. Remount the boot onto the front panel making sure the boot is not wrinkled. If large wrinkles exist, this may pool water in the boot and dribble onto the floor when the door is opened. If this is the case, pull it loose from the front panel and remount it slightly more clockwise or counter clockwise as needed.

13. Insert the wire spring clamp into the groove at the top of the boot. Work the clamp into the groove all the way around the boot making sure the clamp is oriented to the 6 o'clock position. Close the door to assure proper sealing of the boot to the door. Run the washer to check for leaks.

Removing the water inlet duct:

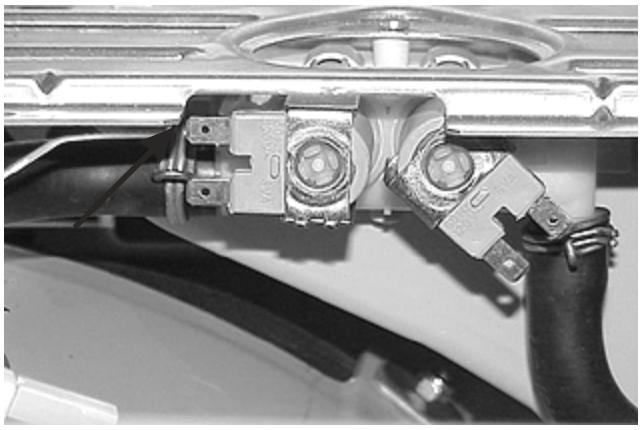
1. Disconnect power from the washer.
2. Remove the main top and detergent dispenser cavity.
3. Disconnect the boot from the duct.
4. Remove the two screws holding the duct to the front panel.



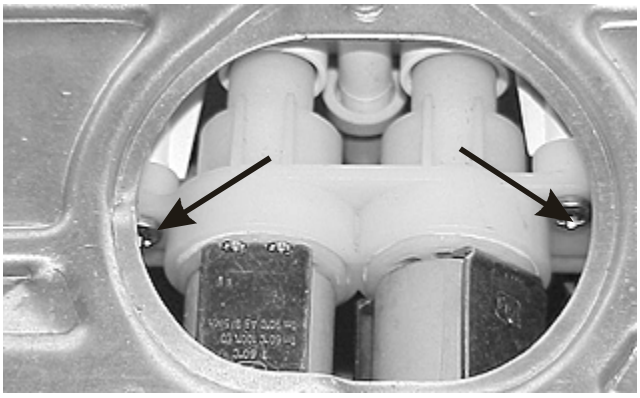
5. Pull the duct to the rear and disconnect the inlet hose.

Removing the detergent dispenser solenoid assembly:

1. Disconnect power from the washer.
2. Remove the top panel from the washer.
3. Unplug the wires and disconnect the hoses from the dispenser solenoid assembly.



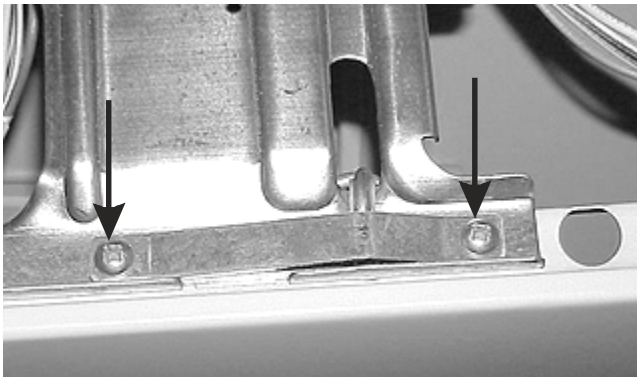
4. Remove the (2) screws holding the solenoid assembly to the detergent dispenser cavity and pull the assembly back.



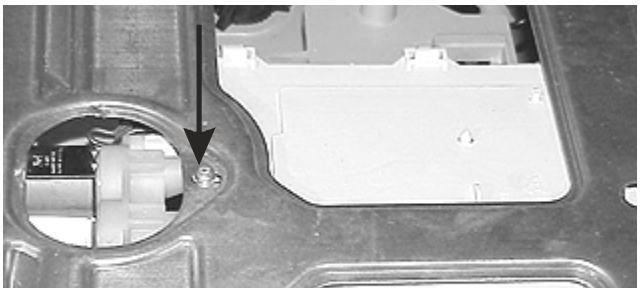
Removing the detergent cavity assembly:

1. Disconnect power from the washer.
2. Remove the main top and the main top front mounting brackets.
3. Disconnect the vent hose.

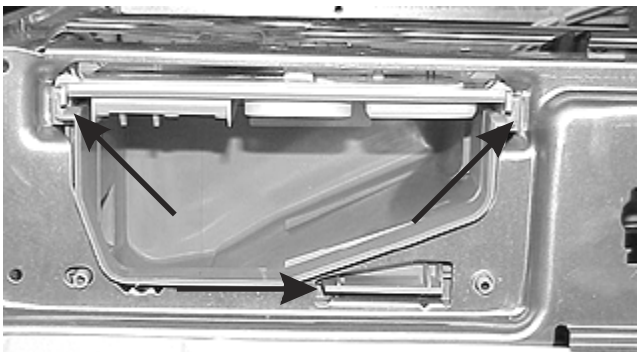
4. Remove the (2) screws securing the suspension spring retainers.



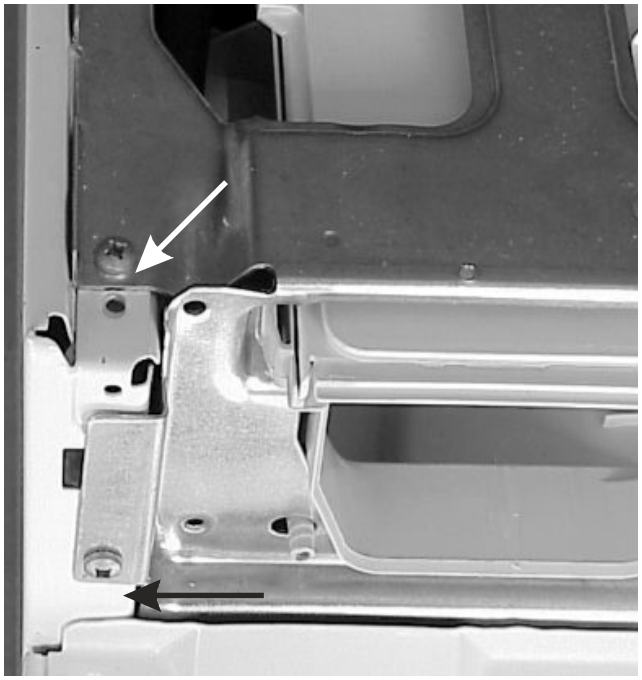
5. Remove the suspension spring retainers.
6. Remove the detergent dispenser solenoid assembly.
7. Remove the (1) screw from dispenser assembly.



8. Push to release catches on upper front corners and the center of dispenser assembly and push dispenser rearward.



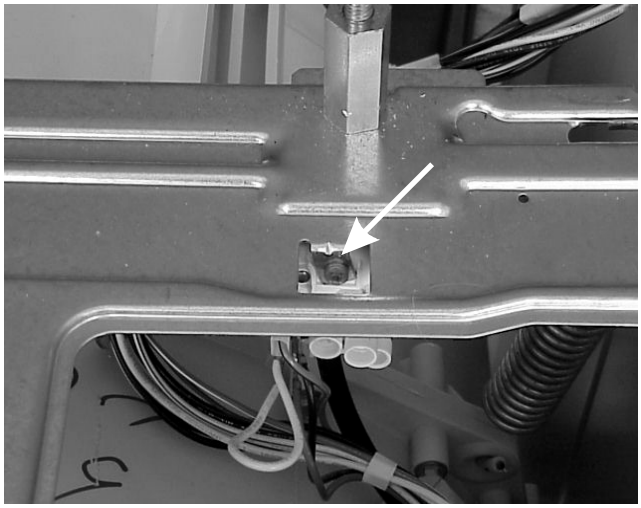
9. Remove the (4) screws (two on each side) securing the control mounting bracket to the washer cabinet.



11. Lift upward on the control mounting bracket, reach in and pull out the dispenser.

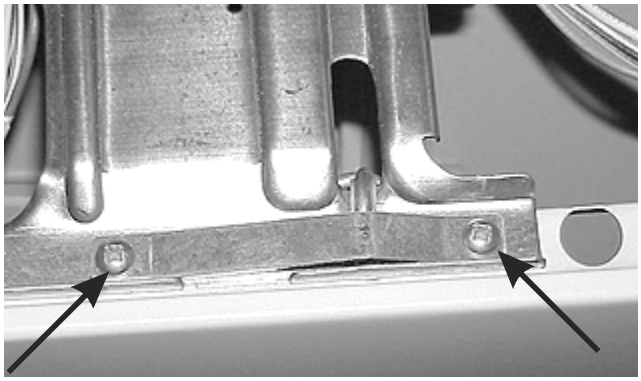
Removing the pressure switch:

1. Disconnect power from the washer.
2. Remove the main top.
3. Disconnect the wiring and the hose from the pressure switch.
4. Remove the (1) screw holding pressure switch to the center brace.



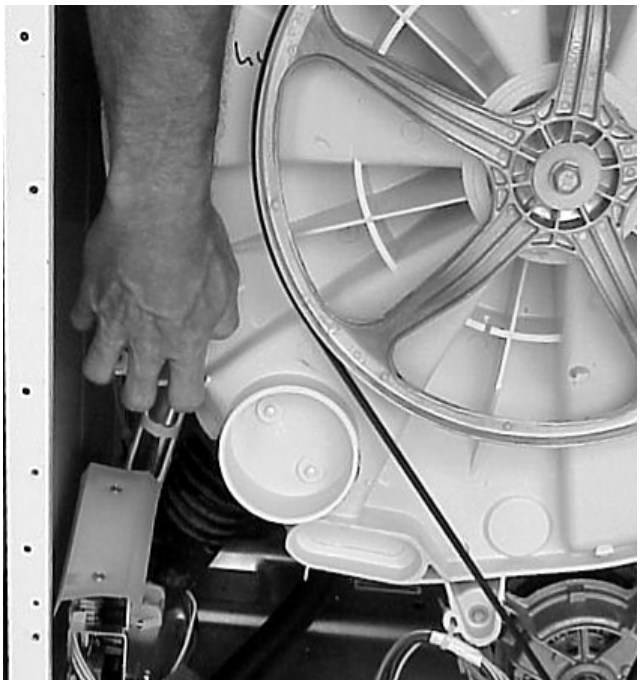
Removing the suspension springs:

1. Disconnect power from the washer.
2. Remove the main top.
3. Remove the (2) screws holding the suspension spring retainers to the control mounting panel.



4. Remove the spring retainer and reinstall the (2) screws.

5. Detach the spring from the control mounting plate by grasping the tub assembly on the lower tub reinforcement area and lifting (4:00 and 7:00 position approx.)



while guiding the top end of the spring with the other hand.

6. Rotate the spring to release it from the tub.

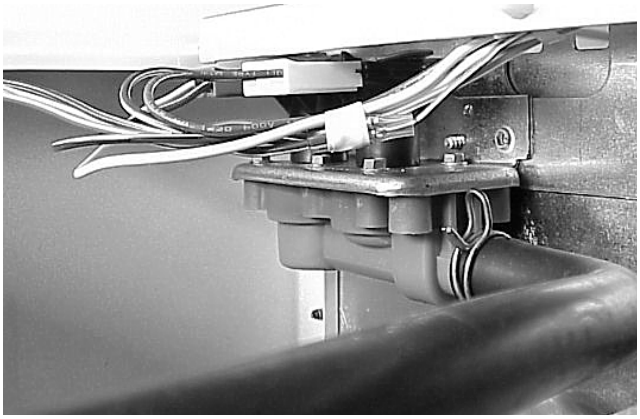
Removing the water inlet valve:

1. Disconnect power from the washer and turn off the water supply.

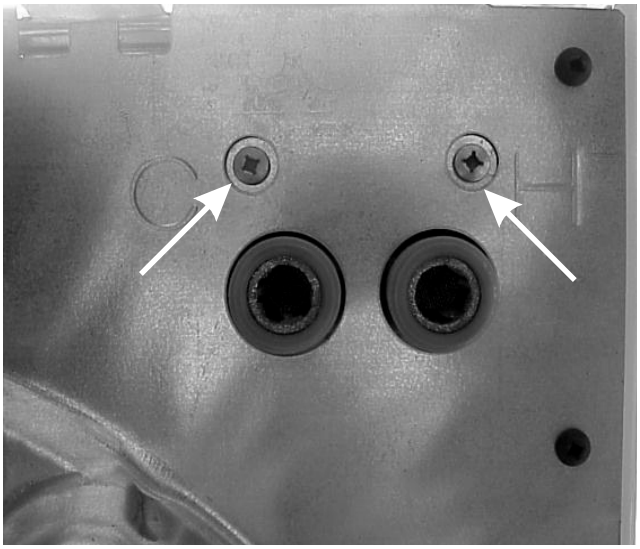
2. Remove the main top.

3. Disconnect the (2) inlet hoses.

4. Unplug the wiring harness and disconnect the outlet hose.



5. Remove the (2) screws securing the valve to the rear reinforcement bracket.

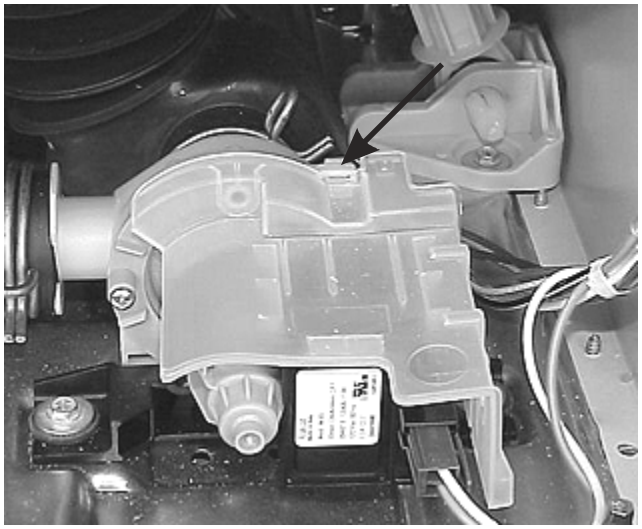


Removing the drain pump assembly:

1. Disconnect power from washer.

2. Remove the front access panel from the washer.

3. Release the tab securing motor cover to pump and slide the cover back and off.

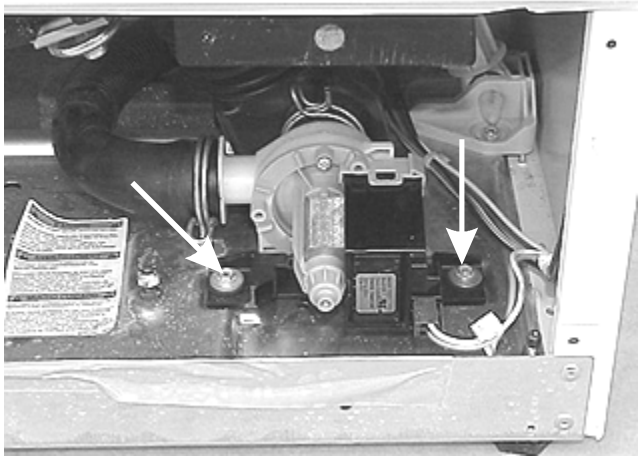


4. Disconnect electrical harness plug from pump motor.

5. Remove drain hose from drain and empty any remaining water in hose. Use a large pot or pan.

6. Disconnect the hoses from the pump.

7. Remove (2) 5/16” hex head screws securing the drain motor and pump assembly to the cabinet base and lift the assembly out.

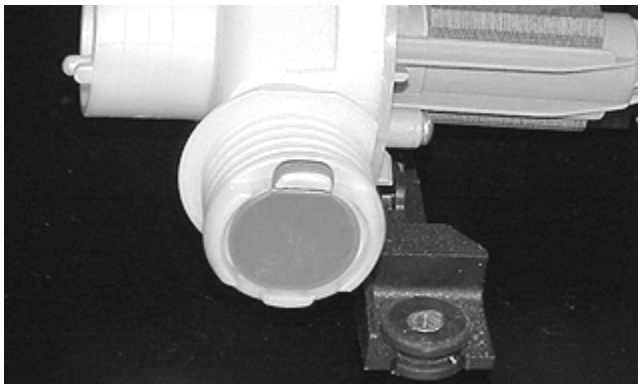


Disassembling the drain pump:

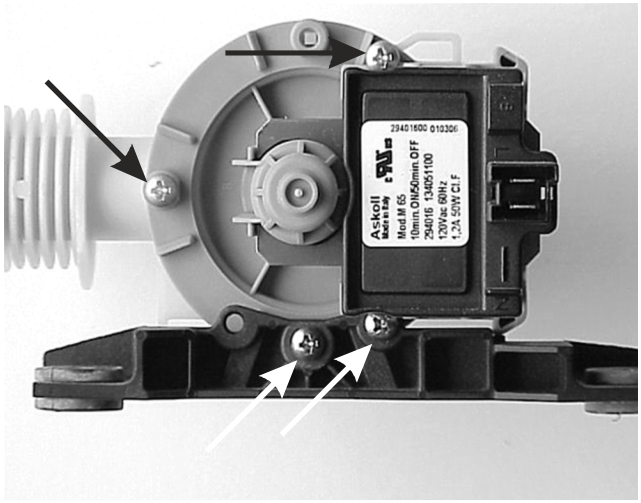
1. Disconnect power from the washer.

2. Remove the drain pump from the washer.

3. The check valve is located in the output connection of the pump. To remove the check valve lift it off by its tab.



4. To remove the rear pump housing, remove (4) screws locking the housings together and pull the housings apart. (Do not twist.)



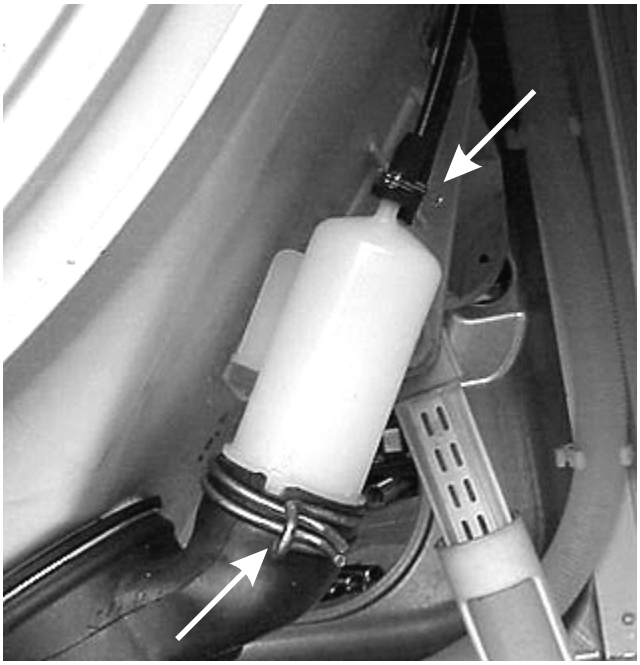
To remove the air bell:

1. Disconnect power from the washer.

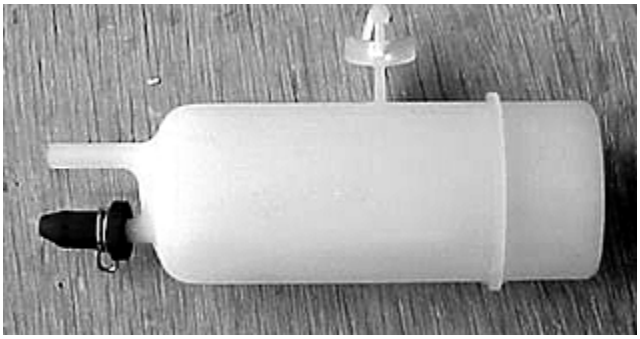
2. Remove the front access panel from the washer.

3. Remove drain hose from drain and empty any remaining water in hose. Use a large pot or pan.

4. Remove the (2) clamps securing air bell to sump hose and pressure hose and disconnect the hoses from air bell.



5. Release the rivet holding the air bell to the outer tub.



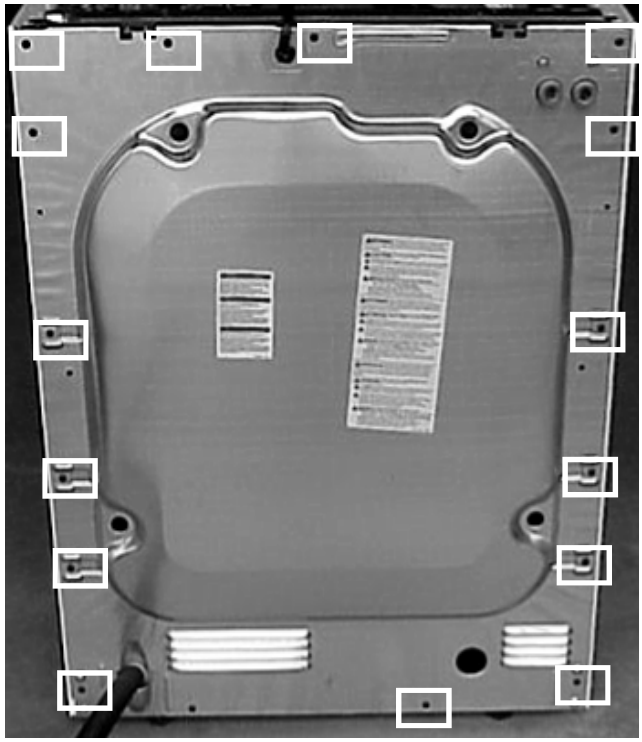
NOTE: Seal air connecting tube to air bell and air bell to sump hose using waterproof glue such as p/n 5364709100. DO NOT plug air connecting tube opening.

Removing the rear service panel:

1. Disconnect power from the washer and turn off the water supply.

2. Disconnect the water inlet hoses and remove the top panel.

3. Remove the (16) screws holding the back panel to the top brace, sides and bottom.

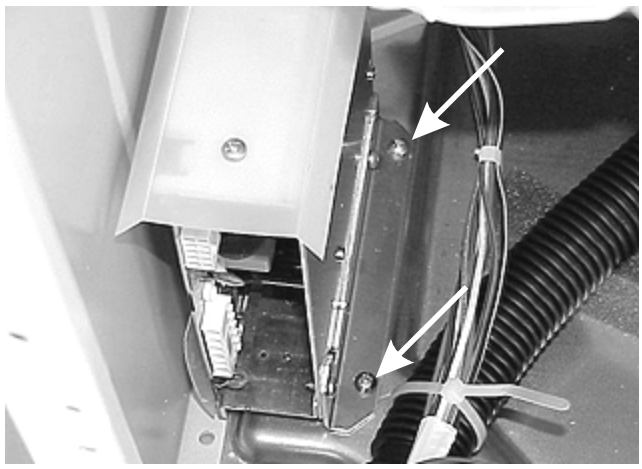


Removing the speed control board assembly:

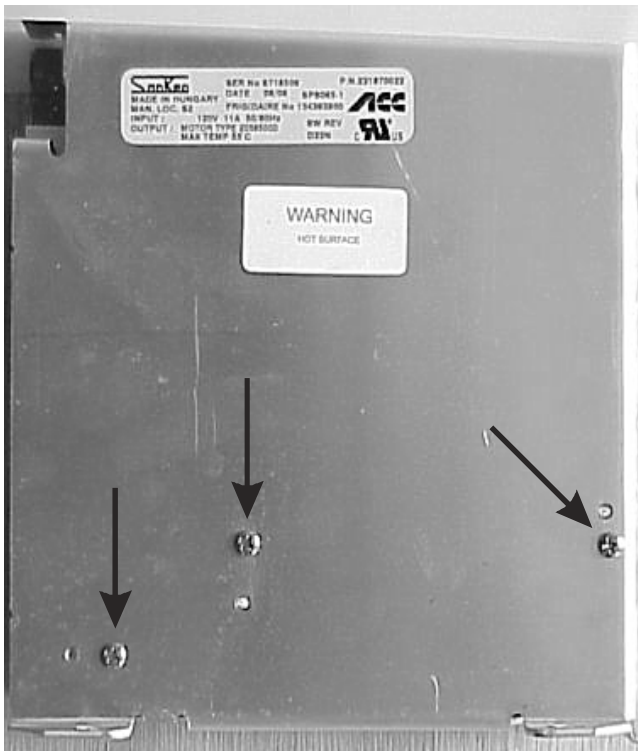
1. Disconnect power from the washer and turn off the water supply.

2. Remove the rear service panel.

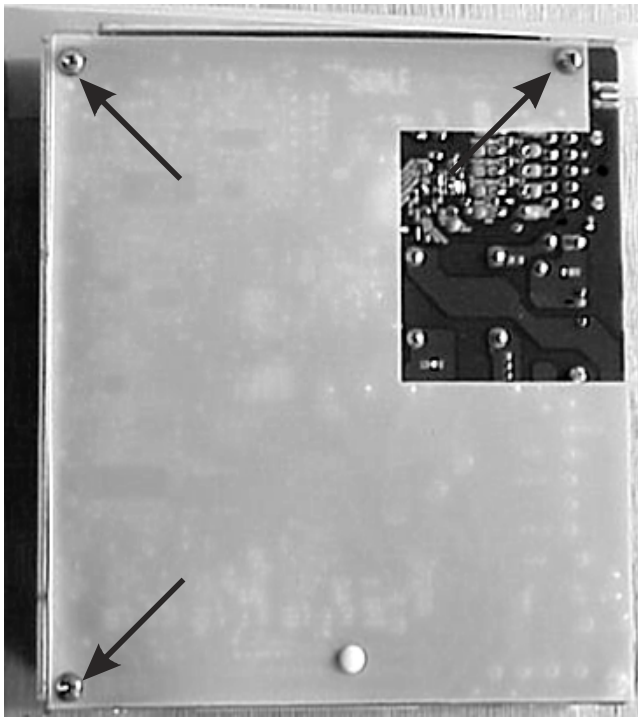
3. Unplug the (2) electrical plugs, remove the (2) screws holding the mounting bracket to the base and pull back and up to release the tab.



4. To remove the control board cover remove the (3) screws, from the front,



(3) in the back and lift the cover off.



5. To remove the top plastic shield, remove the (2) screws holding the shield to the speed control board assembly.

Drive belt:

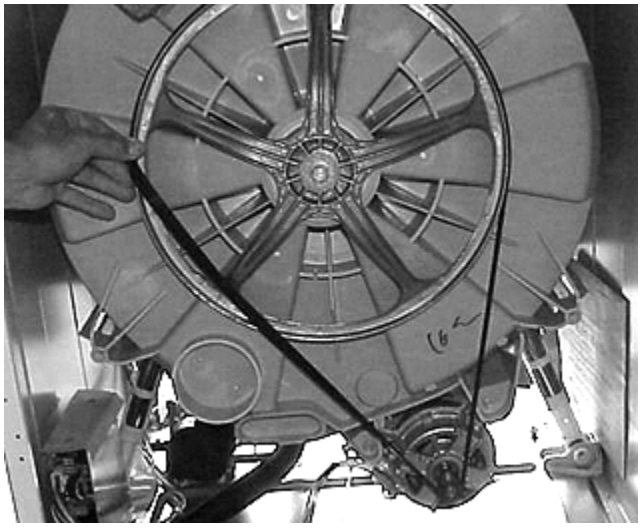
The drive belt (6 rib flat Poly-V) is used to transmit power from the motor pulley to the tub. Because the belt is constructed of a material that stretches, belt tension adjustments are unnecessary.

To remove or replace the drive belt:

1. Disconnect power from the washer and turn off the water supply.

2. Remove rear service panel.

3. Remove belt by turning tub drive pulley and rolling belt off pulley. The belt is elastic and is designed to "give" enough to remove and install in this manner.



4. Reverse procedure to reinstall, making sure that belt tracks in the center of the tub pulley. Adjust tracking, if required, by moving belt on motor pulley.

Removing the drive motor:

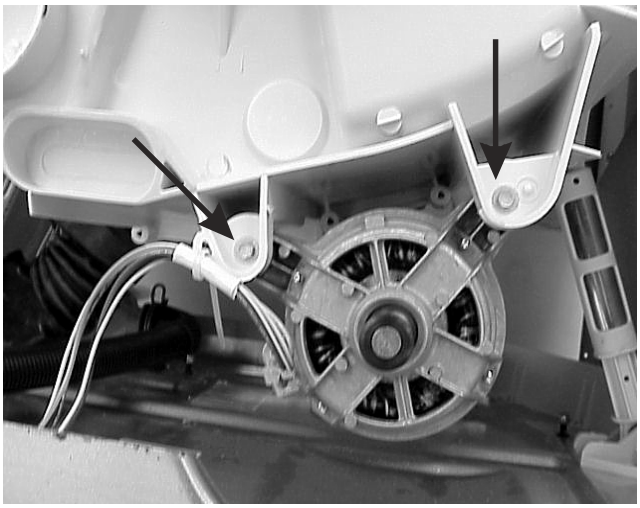
1. Disconnect power from the washer and turn off the water supply.

2. Remove rear service panel.

3. Remove belt by turning tub drive pulley and rolling belt off pulley. The belt is elastic and is designed to "give" enough to remove and install in this manner.

4. Disconnect the wiring harness connector block.

5. Remove the (4) motor mounting bolts, (2) in the front and (2) in the back.



6. Slide motor to front while supporting to remove.

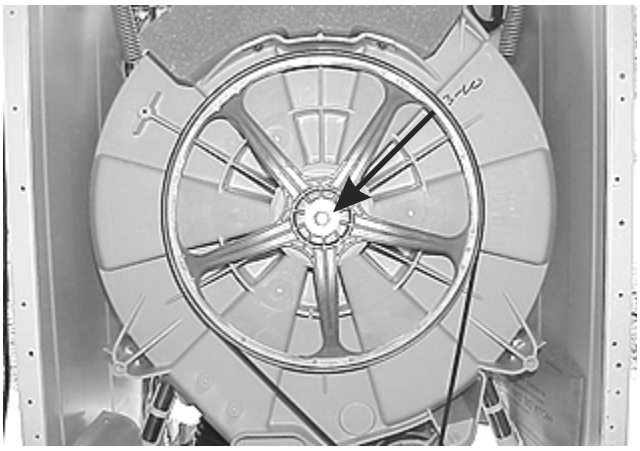
7. Reverse procedure to reinstall, making sure that belt tracks in the center of the large pulley. Adjust by moving the belt on the motor pulley if required.

Removing the large pulley:

1. Disconnect power from the washer and turn off the water supply.

2. Remove the rear service panel and drive belt.

3. Using a 9/16” wrench, remove the bolt in the center of the pulley by holding the pulley and turning the bolt counter clockwise.

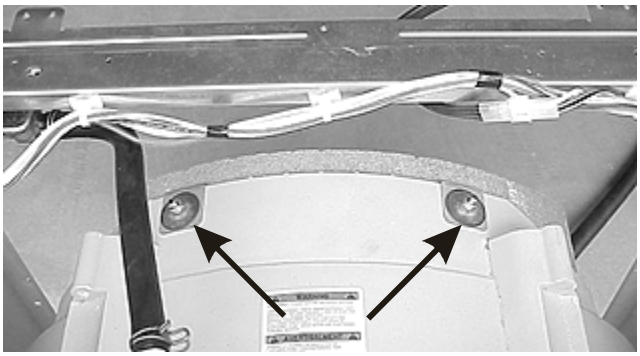


Removing the rear counter weight:

1. Disconnect power from the washer and turn off the water supply.

2. Remove the main top and the rear service panel.

3. Using a 7/16” wrench, remove the (2) bolts holding the weight to the back half of the outer tub.

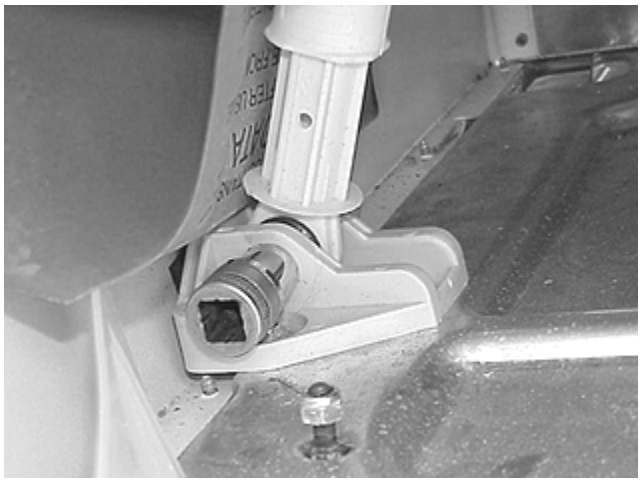


Removing the air shock absorber:

1. Disconnect power from the washer and turn off the water supply.

2. Remove the front and the rear service panels.

3. Remove air shock securement pins by depressing locking tab while pulling pin to remove. This procedure is much easier if a deep 1/2", 6 point socket (or 13 millimeter, 6 point) is used to compress the locking tab of the plastic pin. Push the socket onto the tapered end of the pin as far as it will go to compress the locking tab.



4. Use pliers to grasp head of pin and pull to remove. As the pin is removed, the socket will drop free.

5. When replacing the air shock, make sure to position it with the bell end facing downward.

6. Lubricate the securement pins with Sil-Glide® before installing.

Removing the outer tub:

1. Disconnect power from the washer and turn off the water supply.

2. Disconnect the water supply hoses from water valve, remove the drain hose from the standpipe and move the washer away from the walls.

3. Remove the washer main top and rear panel.

4. Disconnect the motor wiring harness connector block. Remove wire tie to free harness from tub.

5. Remove pressure fill tube from pressure switch.

6. Remove the front access panel.

7. Loosen the clamp securing sump hose to the tub and remove bellows style hose from tub.

8. Remove wire spring clamp from air bell.

9. Remove the top pins from shock absorbers and push the shock absorbers against the cabinet.

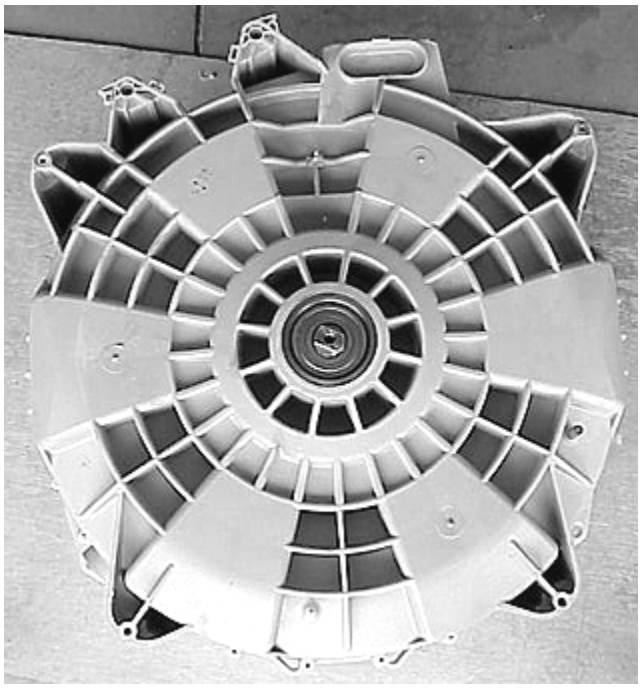
10. Protect floor and carefully lay washer on its back.

11. Remove the vent hose.

12. Pull outer lip of boot from flange on front panel and disconnect the boot from the fill tube.

13. Remove (1) screw of the suspension spring retaining strap and loosen the other one. Pivot strap out of the way to permit access to spring. Remove suspension springs from washer cabinet and then from outer tub.

14. Carefully lift cabinet to clear tub assembly and set aside.

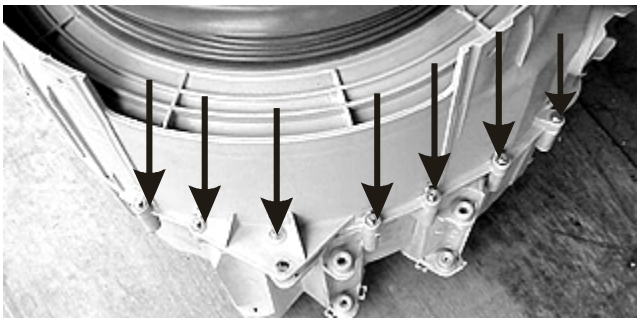


Removing the spin basket and rear tub half:

1. Disconnect power from the washer and turn off the water supply.

2. Remove outer tub assembly.

3. Remove the (23) screws securing the outer tub halves together. Rotate tub assembly so that front opening is face down.

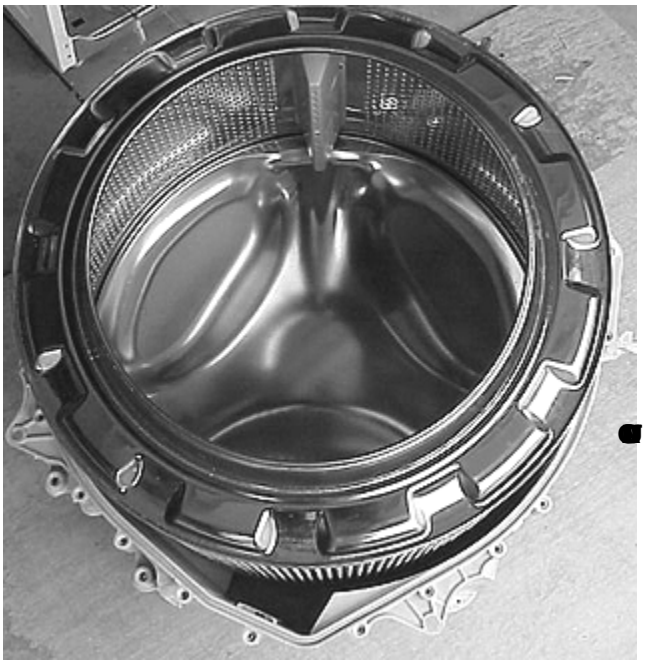


4. Remove belt by turning tub drive pulley and rolling belt off pulley. The belt is elastic and is designed to "give" enough to remove and install in this manner.

5. Remove large pulley from shaft.

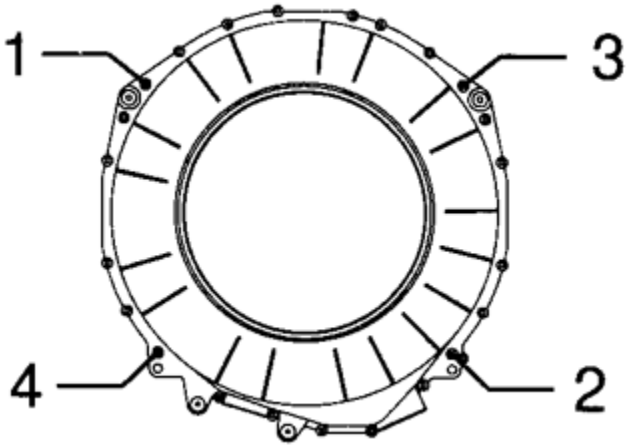
6. Remove the drive motor.

7. Separate outer tub halves.



Use caution in handling the spin basket. The outer surface is very sharp!

8. Reverse procedure to reassemble using illustration below to show outer tub screw tightening sequence.



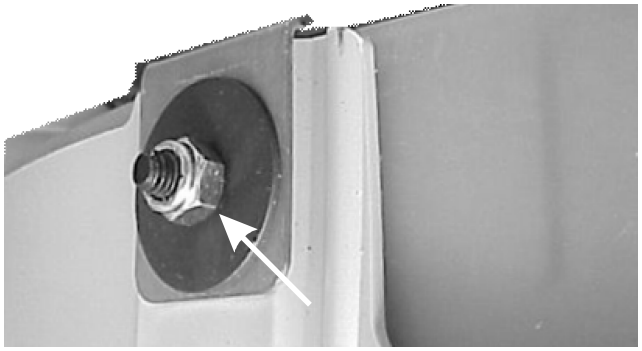
9. The seal between the (2) tub halves is placed in the groove of the rear half and can be lifted out.

10. To remove the spin basket, set the back half of the outer tub on it's side, reinstall the bolt that holds the large pulley on and tap the inner tub out with a rubber hammer.

Note: The bearings, water seal and seal between the two tubs come as part of the rear half of the outer tub. If the water seal or bearings fail, inspect and if necessary dress the shaft of the spin basket with a file. With some failures, it may be necessary to replace the spin basket.

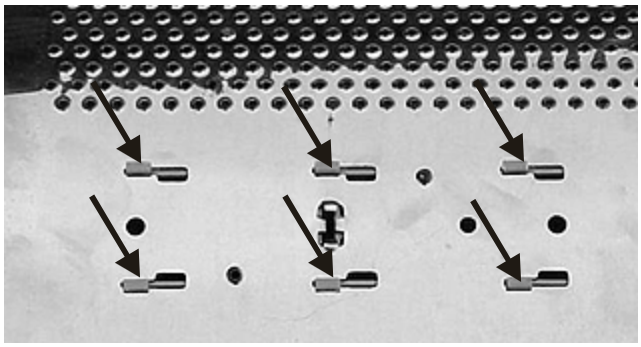
Removing the front counterweight:

1. Disconnect power from the washer and turn off the water supply.
2. Remove the outer tub.
3. Using a 7/16" wrench, remove the bolts holding the counterweights to the front half of the outer tub.

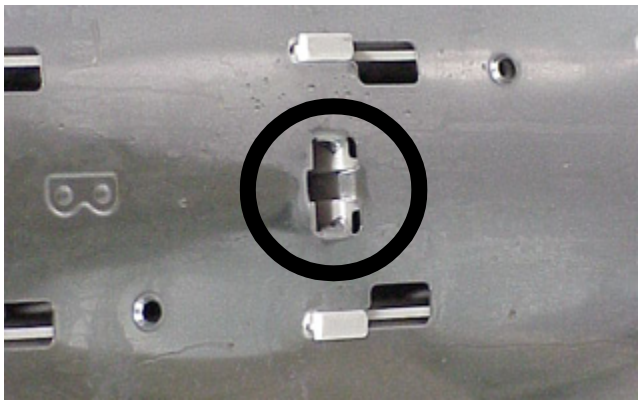


Spin basket vanes:

There are three plastic vanes mounted to the spin basket to aid in the washing action during the wash cycle. The vanes are held to the spin basket by (6) tabs that are slipped into slots in the spin basket and locked in



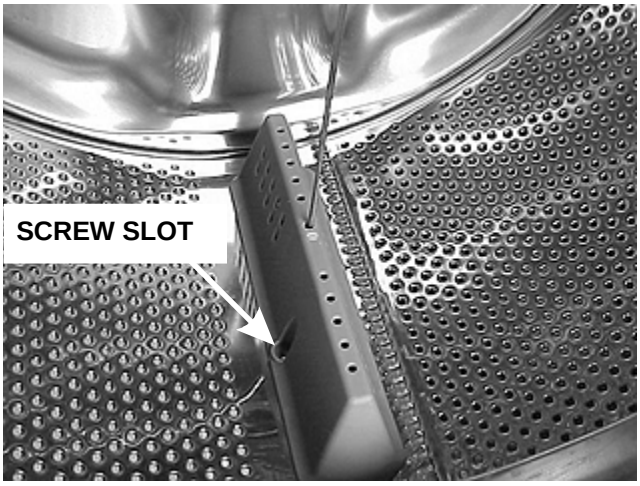
place by (4) tabs pressed out of the spin basket.



Removing the spin basket vanes:

1. Open the washer's loading door.

2. Insert a small shaft common screwdriver into the hole in top of the vane behind the divided space and push the (4) locking tabs open.



3. Slide the vane towards the door opening to release the (6) tabs and push on the side of the vane to remove.

4. When replacing or reinstalling, secure the vane with a stainless steel screw through the slot in the side of the vane.