

WARNING - READ YOUR OWNERS MANUAL

These are only brief guidelines for maintenance of your Parts Washer. Read your Owners Manual before any steps are taken to operate or maintain this machine.

GENERAL MAINTENANCE

- NEVER** add chemicals or pretreat parts – doing so may cause foaming, fire hazard and personal injury.
- NEVER** perform the water disposal/recycle feature until all floating oil is skimmed/ removed. To do so may create a fire hazard resulting in personal injury and/or property damage.
- DO NOT** totally skim all oil from your washer unless you are preparing to perform the water recycle function. A ¼" layer of oil on top of the solution is beneficial because it reduces steaming and retards rust.
- USE ONLY** detergent specifically made for use in recirculating, cabinet style automatic parts washers. Any other material may cause foaming, fire hazard and personal injury.

DAILY

- **Maintain your washer's water level.** Water level should be just below the oil skimmer exit pipe. Do not allow water level to get too low. Check after every 8 hours of operation.
- Water temperature should be no less than 140°F and no more than 195°F. Use a thermometer to determine actual temperature. Wash at as low a temperature as possible.

WEEKLY

Operate Oil Removal System (overnight) if the oil layer in your washer is over 2" deep.

(NOTE: If your unit has Auto-Water-Fill - disconnect the AWF plug before using the Oil Removal Feature.)

1. Place a catch pan (at least 3 gallons) under the oil removal pipe (left side of washer).
2. Open ball valve.
3. Flip oil removal switch to "on" position. All other switches should be in the "off" position.
4. Allow system to run overnight.
5. Close ball valve after Oil Removal is complete.

60-90 Days

Operate Water Recycle/Disposal feature. **NOTE: See Owners Manual before first use.**

(NOTE: If your unit has Auto-Water-Fill - disconnect the AWF plug before using the Water Recycle Feature.)

1. Do not operate the Water Recycle/Disposal feature until all floating oil is skimmed/removed, washer is cooled and all oil has come to the surface.
2. Remove baskets, turntable and Delta-Wave filter from the washer.
3. Ventilate washer cabinet (remove cap from vent pipe, connect 4" clothes dryer vent hose to vent pipe, OPEN FRONT DOOR OF WASHER AT LEAST 1")
4. Turn on the "HEAT TIME" Control until water heater light turns off (to preheat water).
5. Water Recycle/Disposal switch is "on". All other controls are "off". Momentarily depress "START" switch.
6. Remove solid waste from floor of washer and dispose of properly (see owners manual).
7. Clean out spray nozzles.
8. Clean rod on Low-Water Float (located inside unit on front-left panel near oil skimmer wheel). Debris can build up on the rod and cause the float to stick.



OWNER'S MANUAL

WARNING

Read your Owner's Manual

Maintain your washer's water level properly

- NEVER add chemicals or pretreat parts – doing so may cause foaming, fire hazard and personal injury.
- NEVER perform the water disposal/recycle feature until all floating oil is skimmed/removed. To do so may create a fire hazard resulting in personal injury and/or property damage.
- NEVER totally skim all oil from your washer unless you are preparing to perform the water recycle function. A ¼" layer of oil on top of the solution is beneficial because it reduces evaporation and retards rust.
- USE ONLY detergent specifically made for use in recirculating, cabinet style automatic parts washers. Any other material may cause foaming, fire hazard and personal injury.

Your washer will operate reliably for years with minimal care and maintenance. Thank you.

Installation and Start Up

Location Considerations

Your EnviroQuip automatic parts washer is designed to replace old style sink on a drum type solvent washers. It may be used to wash any and all parts that you used to wash in solvent. Your washer needs to be located for the convenience of your technicians so they can wash parts without leaving their work area.

The washer should be level side-to-side and slightly higher in the front. Allow 1ft. of clearance on all sides of the unit. Do not install and operate the washer on or near flammable materials. **Your washer must be on concrete.** Do not use on a wood pallet. Your washer contains switches and contactors that may spark when turning on and off. The washer's skin temperature can operate as high as 200 degrees when using the water recycle/disposal feature.

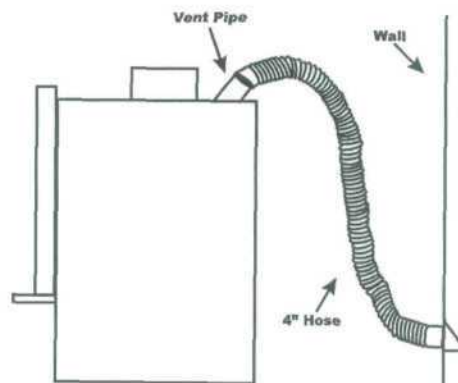
Ventilation Requirements

In normal daily wash operations, your washer does not need to be vented. You will find that a cap is installed on the vent pipe of your washer. When in normal operation, this vent cap helps retain heat in the washer and minimize water loss due to evaporation and is removed only when operating the water recycle/disposal feature.

The water recycle/disposal feature operates by bringing all of the water in the washer to a hard boil and converting the water into steam. This steam must be allowed to escape the cabinet to dispose of the water within the washer.

The forced evaporation of this quantity of water will generate a lot of steam, which will condense back into distilled water. For this reason, you may wish to consider the following options when selecting a site for your automatic parts washer:

- Vent your washer with a vent hose out through a wall to allow this steam outdoors. A 4" clothes dryer vent hose works fine. (See service section for detailed venting instructions.)



- If your shop is large and fairly well ventilated, you may also place the vent hose into a 55-gallon drum and allow the steam to condense into the drum. The condensed steam is clear, distilled water that can be used to refill your washer after clean out.

- You may also wish to place the end of the vent hose near a floor drain to allow the condensed, distilled water to flow into it. To limit the amount of steam leaving the hose, use a minimum 10ft hose. The longer the ventilation hose, the more the steam escaping the cabinet will condense back into distilled water before leaving the vent hose.
- Vent the steam out directly from the washer in a large, well-ventilated shop. Open the flip-top and the front door of the washer. **LEAVE THE CAP ON THE VENT...DO NOT REMOVE IT.** This option will decrease the recycle time, as the steam dissipates at a more rapid rate.

Connecting to Electrical Power

Consult the specification sheet in the rear of this manual for proper breaker size. Do not use a wild leg (measures more than 120 VAC above ground) to power single phase equipment.

- 1) MAKE SURE THAT ALL SWITCHES AND ELECTRICAL CONTROLS ARE "OFF" BEFORE CONNECTING TO ELECTRICAL POWER.
- 2) Your washer is equipped with a low water protection circuit. Upon connection to electrical power you should see a lighted indicator on the front control panel that is titled "Low Water." This function is operated by a float switch and prevents the pump and immersion heater from operating if the washer does not have a high enough water level to protect these components.

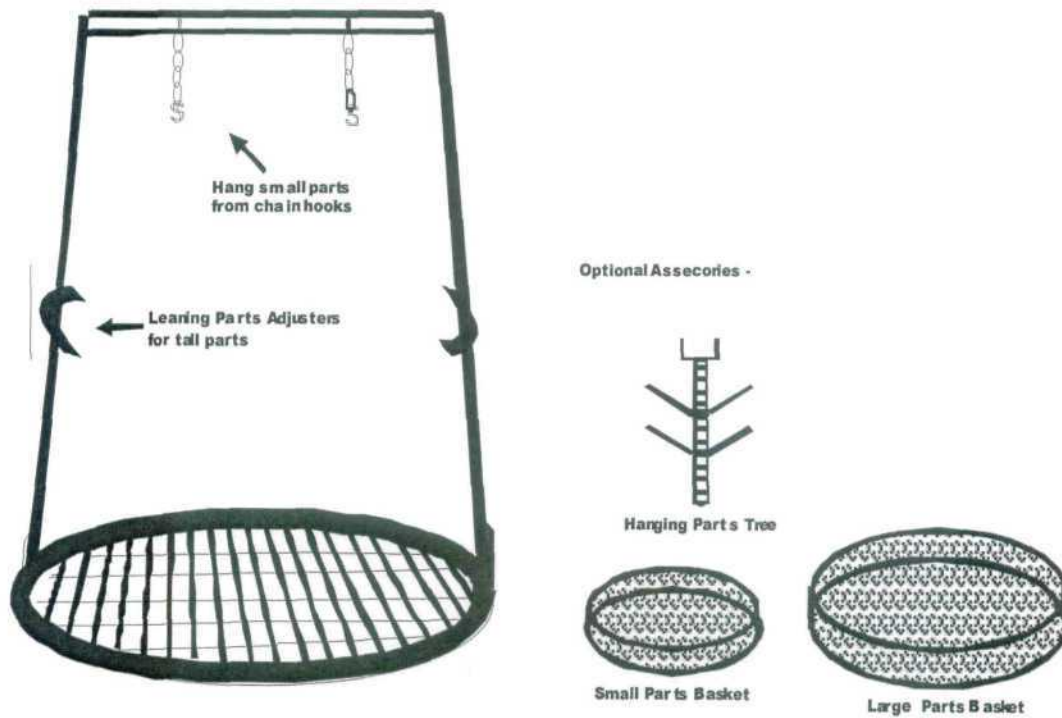
Washer Start Up

Your washer is designed to clean with soap and water. NEVER INTRODUCE SOLVENTS OR MATERIALS WITH FLASH POINTS BELOW 220° FAHRENHEIT, OR ANY OTHER TOXIC MATERIALS INTO YOUR ENVIROQUIP WASHER. TO DO SO MAY RESULT IN FIRE, EXPLOSION, INJURY OR DEATH.

- 1) Your washer comes with a starter kit that contains a pre-measured charge of EQ-3 General Purpose Soap. Add this soap to the washer **before** filling with water. Open the oil discharge valve. "Hose in" the powdered detergent to dissolve it into wash solution and continue to add water until it begins to exit the discharge pipe. Be sure to close the oil discharge valve after filling with water.
- 2) Check the belt drive for the turntable by lifting the hinged cover on the top of the washer to make sure that the belt has adequate tension to turn the turntable, but is not so tight that the belt cannot slip if the turntable is jammed. **DO NOT OVERTIGHTEN THIS BELT OR YOU MAY DAMAGE THE GEAR MOTOR THAT ROTATES THE TURNTABLE.**
- 3) Turn the "HEAT TIME" control knob clockwise to the number of hours that you desire the washer to operate. This control turns on the immersion heater(s) that are located in the wash water. Factory-set wash water temperature is 170° F. Depending on the initial temperature of the water, it will take 30 minutes to 1½ hour for the water to reach this temperature.

Loading the Parts Washer

Refer to the diagram below when loading parts on the turntable.



Cleaning Parts

Your washer is ready to clean parts when the water reaches normal operating temperature (170° F.)

- 1) After loading parts on the turntable, close and latch the washer door and set the "Wash Timer" for 10 minutes. NOTE: Most parts will require less time for cleaning, but setting a standard time of 10 minutes allows the technician to be productive with other tasks while waiting for parts to wash.
- 2) The washer will shut off automatically when the wash time has expired.

CAUTION: the wash water temperature is factory-set at 170° F. Parts can get quite HOT while washing. Allow parts to cool after washing before handling.

- 3) Open the door and remove the clean parts. A small quantity of water will remain on some parts. As a safety precaution, we recommend that you place an absorbent floor mat directly in front of the door of your washer. This prevents wet, slick spots from collecting in front of the washer door that could result in injury to employees. To prevent excessive heat loss from your washer, keep the door closed when not in use.

Clean Out and Maintenance

Water Level

Visually check and add water **DAILY** as is necessary to maintain a water level just below the oil skimmer exit ball valve. The washer will lose an amount of water to evaporation when operating. It is important to check the water level after every 8 hours of operation. If the water level is allowed to become too low, the low water lamp will light and your washer will not operate.

Adjustment of Water Temperature

The hotter the wash water, the faster the washer will strip paint and heavy grease from parts. However, you may be able to lower the water temperature and obtain satisfactory results. We recommend that you operate your washer at the lowest possible temperature. A lower setting will save electricity, decrease daily evaporative water loss, and reduce the risk of scalding when handling parts.

- 1) Turn off all electrical power to the washer before opening the hinged electrical components cover to adjust the thermostat.
- 2) Use a thermometer to measure the water temperature. The normal range of temperature should be no less than 140° F and no more than 195° F. **Do not trust the temperature markings on the thermostat; it is an approximate setting.**
- 3) Adjust the temperature as desired. The adjustment for wash water temperature is located inside the hinged electrical components cover at the bottom of the machine (black thermostat with blue wires.)

Oil Removal

DO NOT SKIM OIL ON NEW WASHERS UNTIL THE OIL WITHIN THE WASHER IS AT LEAST 2" DEEP. IT IS IMPORTANT ON NEW WASHERS TO ALLOW THE CHEMICALS THAT ARE IN THE SOAP TO COMBINE WITH OIL TO FORM A PROTECTIVE COATING WITHIN YOUR WASHER TO PREVENT RUST. IT IS NORMAL AND DESIRED FOR YOUR WASHER TO FORM A WHITE COATING ON THE INTERIOR. However, If the oil level is allowed to become excessive within the washer, the wash pump will pump an oil/water mixture which will become emulsified and will require a wash solution change to correct.

The frequency of clean out and wash water recycle/disposal will vary depending on the frequency in which you use the washer and how dirty the parts are that are being washed. Most washers in use in the Automotive Industry will give acceptable wash results for 90 days without a water change or treatment.

WHEN THE OIL LAYER IN YOUR WASHER IS OVER 2" DEEP, operate the built-in oil removal system overnight. Turn off the Immersion Heater and allow your parts washer to cool off overnight during the oil removal process.

- 1) To skim oil, open the ball valve on the left side of the machine directly in back of the electrical cover. (Note: You should not wash parts while the oil removal pipe is open.)
- 2) Place a catch pan with a minimum 3-gallon capacity under the oil removal pipe. It is recommended that the oil catch pan be placed inside a larger capacity pan in case of overflow.
- 3) Check that the water level inside your washer is filled to the normal, full level so that the oil skimmer is far enough into the wash solution to remove floating oils.
- 4) Turn the oil removal switch (located on the control panel) to the "on" position and allow the oil removal system to operate overnight. All other switches are to be in the "off" position during oil removal.
- 5) After oil removal is complete, close the ball valve.

OPERATE THE OIL REMOVAL SYSTEM PRIOR TO WATER RECYCLE/DISPOSAL. IT IS IMPORTANT THAT YOU REMOVE THESE OILS **BEFORE** RECYCLE/DISPOSAL OF THE WASH WATER OR THE WASHER MAY EXUDE SMOKE AND ODOR OUT OF THE EXHAUST DUCTING OR WASHER. **THERE IS A POTENTIAL FIRE HAZARD IF YOU ATTEMPT TO HEAT OIL OR OTHER FLAMMABLE MATERIALS.**

Water Recycle/Disposal Feature

With proper ventilation, the water/recycle disposal feature will take 5 to 8 hours. Plan on attending the washer while performing this procedure for the first time

This feature operates by disabling the immersion heater and pump operation within the washer and operating a separate set of contact heaters that are located under the floor of the washer. This second set of heaters will operate dry, bringing the water in the washer to a full boil and maintaining a boil until all the water has been evaporated.

A thermostat controls the water recycle heaters and must be calibrated for the amount of solids on the floor of your washer. For detailed instructions, refer to the section titled "Calibrating The Thermostat." Servicing your machine at regular 30, 60, or 90-day intervals eliminates the need for calibration after each use. Place a lube sticker on the machine as a reminder, noting the last service date and the next required service date.

CAUTION:

YOU MUST REMOVE ALL OIL BEFORE USE OF THE WATER RECYCLE/DISPOSAL FEATURE. FAILURE TO REMOVE OIL CAN RESULT IN FIRE AND/OR SMOKE FROM INSIDE YOUR WASHER.

YOUR WASHER IS DESIGNED TO USE SOAP AND WATER. NEVER INTRODUCE FLAMMABLE MATERIALS INTO YOUR WASHER. SOAP, WATER, AND DIRT FROM PARTS ARE NOT FLAMMABLE. OIL, CARB AND BRAKE CLEANERS ARE FLAMMABLE MATERIAL THAT CAN PRODUCE FIRE AND SMOKE IF YOU ATTEMPT TO BRING THESE MATERIALS TO HIGH TEMPERATURE.

A summary of the steps necessary in performing the water recycle/disposal procedure is as follows:

- 1) Refer to the previous section titled "Oil Removal" and remove all oil from the washer. In order to allow ample time for the washer to cool down and all oil to come to the surface, this procedure should be done overnight.
- 2) Disassemble the baskets, turntable, and metal grates from the washer by removing the bolt at the top of the turntable and tipping the top of the turntable toward the door opening. Please note that there is a single ball bearing under the turntable. Be careful not to lose this bearing after removal of the turntable.
- 3) Ventilate the washer cabinet. Remove the cap from the vent pipe of the washer and connect a standard 4" clothes dryer vent hose to the vent pipe of the washer. **OPEN THE FRONT DOOR OF THE WASHER AT LEAST 1".** The water recycle/disposal feature operates by bringing all of the water in the washer to a hard boil and converting the water to steam. This steam must be allowed to escape the cabinet to dispose of the contaminated water within the washer. Refer to the "Installation and Startup Instructions" under the section titled "Ventilation Requirements" for details on venting your washer.

Please note that if a vent hose is used, the hose must run downward to allow the condensed distilled water to leave the cabinet by gravity flow. For this reason it will not work to vent through the ceiling, as a large percentage of the steam will condense back into distilled water and gravity flow back into the cabinet.

- 4) Preheat the wash water by turning on the "HEAT TIMER" until the water heater lamp on the control panel turns off.
- 5) Start the water recycle heaters. With all other controls "OFF," turn on the water recycle/disposal switch and momentarily depress the "START" switch. You will note a pilot lamp will light to indicate that the floor heaters are "ON." The water recycle/disposal heaters will bring the water within your washer to a boil and continue to operate until the water has been boiled away and then the floor heaters automatically shut off. The objective is to evaporate 95 to 98 percent of the water from the machine so that the solids are all that remain in the washer when the water recycle/disposal is complete.

(Note: The water recycle/disposal heaters can be turned off at any time by switching the water recycle/disposal switch off.)

- 6) Allow the washer to cool off after completing the water recycle/disposal cycle. Remove the Final Filter and clean it with soap and water. Remove the concentrated sludge from the floor of the washer with a dustpan or wet/dry vacuum. **Always dispose of concentrates and sludge per environmental regulations. EnviroQuip assumes no liability for improper recycle/disposal of regulated material.**
- 7) Clean the rod of the float switch using a shop rag to ensure that the float moves up and down freely. Failure to do so could prevent the low-water shut off from engaging and could cause damage to the immersion heater(s) and/or the pump.

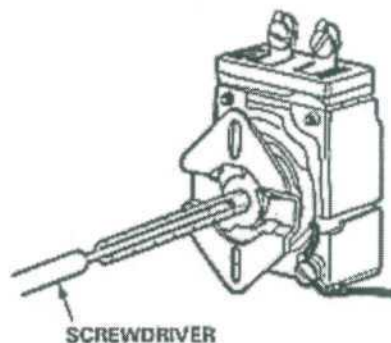
- 8) Replace the final filter and the Delta Wave filter.
- 9) Before installing the turntable, check to make sure the 5/16" stainless steel ball is in place. Check the turntable for non-binding rotation by turning by hand.
- 10) Add detergent and water, using the chart on the following page to determine the amount of detergent required for your washer.
- 11) Follow the instructions for cleaning out spray nozzles as instructed on the following page.

(Note: After recycle/disposal is complete, the water recycle/disposal switch must be in the "OFF" position for the immersion water heaters to operate.)

Calibrating The Thermostat

A gold thermostat, located inside the hinged electrical cover of your washer controls the automatic shutoff for the floor heaters. Place the water recycle switch in the up position and push the start switch up. If the gold thermostat is turned up high enough, you will hear a contactor turn on and the lamp will light on the control panel. The factory setting for this thermostat is on the low side, and your washer may shut off before bringing the water to a boil during the water recycle/disposal cycle. It may require "fine tuning" the first time that you use the water recycle/disposal feature.

To calibrate, simply adjust the gold thermostat a little higher (clockwise) and push the "START" switch again to allow the recycle/disposal heaters to operate. If you have turned the gold thermostat as far as it will go in a clockwise direction and the heaters shut off before reaching a full boil, loosen the calibration screw (very small) located inside the shaft of the gold thermostat. Turn this calibration screw counter clockwise one full turn to increase the amount that the main adjustment shaft can be turned.



Caution: One full **counterclockwise** turn of the calibration screw will **increase** the shut off temperature approx. 7 degrees. **Never turn the calibration screw more than five revolutions. This will damage the thermostat!**

We recommend that you attend your washer during first time use of the water recycle/disposal feature so that you can calibrate this gold thermostat to a point just high enough to maintain a boil, but not so high that the remaining solids are overcooked. If these solids are cooked too dry they will be difficult to remove from the washer.

Clean Out Of Spray Nozzles

This procedure should be completed on a **cold** washer.

- 1) Remove the clean out plug that is located in the upper right corner of the spray manifold and then operate the washer for 2 to 5 minutes with the clean out plug removed.
- 2) Visually inspect each spray nozzle and clear any obstructions that remain with a small piece of wire. Repeat step one until all obstructions are clear, and then replace the clean out plug.

Adding Detergent To Your Washer

EnviroQuip EQ-3 General Purpose Detergent is the recommended soap for both cast iron and aluminum. EQ-3 contains an anti-rust formula that will slow or prevent flash rust. Your washer is not intended for use with caustics or flammable materials. Adding excessive soap to your washer will leave a large amount of white residue on parts after washing and drying.

Problems such as excessive foaming and/or darkening of aluminum are usually caused by the addition of other chemicals to the washer. Most aerosol carb cleaners will cause excessive foaming within the washer. Excessive foaming may cause an overflow from the washer and/or cause the washer's pump to lose prime. To avoid such problems, do not add non-approved or non-tested chemicals to your washer.

Use the chart below in determining the correct amount of EQ-3 General Purpose Detergent to your washer. (Note: A 3lb coffee can (appx one gallon) equals 6lbs of EQ-3 powder detergent.)

MODEL	DETERGENT
A40	6 lbs
G80	12 lbs
T100	18 lbs
WJ22	4 lbs

Refer to MSDS for detergent content information (MSDS available on request).

Your source for



Parts, Chemicals & Accessories

**PLEASE COMPLETE FOR
YOUR RECORDS**

MODEL: _____
 VOLTS: _____
 PHASE: _____
 AMPS: _____
 SERIAL #: _____

* Amp. ratings are recommended breaker size.

The above information can be found on the data tag located on the back of your machine, by the power cord.

DATE OF PURCHASE / INSTALLATION:

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Troubleshooting

Always check power and fuses FIRST!

Problem: **Low water light will not go off when machine is filled with water.**

Solution: Lift the float switch; it may only be "stuck."

If the light is still on, unplug the machine and cut the two wires to the float switch then connect them together. This will keep the machine running temporarily until a new float switch is installed.

Push the coil button on the bottom of the Omron relay. If the light goes off when the coil button is pushed but comes back on when released, the Omron relay is bad and must be replaced.

Problem: **Poor Wash Performance**

Solution: The turntable may not be rotating properly. Check set screws on the pulleys.

May also be caused by clogged spray nozzles or improper use of detergent. Refer to the "Clean Out and Maintenance" Section of the Owner's manual for details.

Problem: **Water recycle not working.**

Solution: Check the thermostat setting. It should be turned up all the way (clockwise.)

If the thermostat setting was not the problem, unplug the machine and connect the thermostat wires together. If water recycles this way, the thermostat is bad and must be replaced.

Check wires to 3-pole contactor and recycle switches. There should be power to the Recycle "ON" switch going to the L3 terminal on the 3-pole contactor when the switch is engaged. If so, the 3-pole contactor is bad.

Problem: **No heat during wash cycle.**

Solution: Unplug machine and check to see if the immersion heater is broken.

If the immersion heater isn't broken, check the black thermostat by connecting the two blue wires on the thermostat together. If it works, the black thermostat is bad and must be replaced.

If the thermostat is working properly, put the blue wires back in place and check the timer and the 2-pole contactor. When the 12 hr timer is turned on, there should be power to the black thermostat (through the black thermostat and up to the coil of the 2-pole contactor.) If there is no power, the timer or 2-pole contactor is bad and should be replaced.

Problem: **The pump is not working.**

Solution: If the turntable is working but there is no pump, the pump motor is bad and must be replaced.

If there is no pump and the turntable is not working; the problem is either the power, the 2-pole contactor is bad, or the door interlock switch needs to be replaced.

Problem: **Pump is noisy and/or has lost its prime.**

Solution: The Inlet Strainer or Final Filter may be clogged. Remove, clean, and replace.

If the pump has lost its prime, the most probable cause is foaming. Open the washer door after approximately 5 minutes of washing and look for large quantities of foam. If so, add De-Foam (2oz at a time) until foaming is controlled.

Problem: **Scratching noise coming from the pump.**

Solution: Current pump (Models after July 1997): the impeller is rubbing against the bushing in the housing. Former pump (Models before July 1997): the bearing is going out in the motor and must be replaced.

Problem: **Oil wheel does not turn.**

Solution: Check power in and out of the switch. Check the continuity on the oil wheel motor to see if it is bad. If the power is ok, most likely the gear motor needs replacing.