Trouble Shooting Guide

- **Symptom:** Unit is extremely noisy
- **Cause:** Possible worn bearing on cutter assembly. Remove container from blender. Slowly turn the cutter assembly from the bottom of the container. If it is hard to turn or feels loose/wobbly replace cutter assembly. Possible worn drive coupling. Check the teeth of the drive coupling. If worn, replace drive coupling outlined in repair guide.

- **Symptom:** During a normal cycle the machine stops
- **Cause:** The unit has possibly overheated without notice to the warning lights indicating to run a cool down cycle. Unplug the machine 15-30 minutes. Plug in the unit and try to operate. If the problem persists proceed to repair guide.

- **Symptom:** Unit will not turn on.
- **Cause:** No power at wall outlet, ensure the power outlet is operational and delivering the correct voltage. Power switch not turned on. Circuit breaker has tripped. Wire disconnected. Possible PC Board. VFD Board, and/or touch pad failure.

- **Symptom:** Power switch fails
- **Cause:** Check electrical connections. Ensure the PVC switch cover is present (moisture protection). If problem persists proceed to Repair Guide.

- **Symptom:** When switch is in off position, display is on.
- **Cause:** Power Switch/Circuit Breaker failure. Measure the continuity at switch. If the terminals are shorted proceed to Power Switch section of Repair Guide.

- **Symptom:** No jar sensor indicator
- **Cause:** Magnets missing on container or container not seated, check to verify the 4 magnets are present on bottom of container and container is seated on base. Additional causes are bad PC board, wire connector, jar sensor, or loose wire connections.

- **Symptom:** Motor runs 3-7 seconds and quits. Speed Sensor Failure displayed on screen.
- **Cause:** Main board failure (triac), broken magnet on motor shaft, Hall Effect sensor failure. Refer to repair guide.

- **Symptom:** The unit displays a "Speed Sensor Error" and an audible "click" is evident when the start button is pressed (this is the relay applying power to the motor).
- **Cause:** Possible failed main PC board. Inspect lead wire connections between motor and main board. Inspect the hall effect switch and plug. Ensure the hall effect magnet is present on the motor shaft. Check continuity through motor field coils. Check motor brushes. Reconnect wires as needed; replace the motor or motor brushes as needed.

- **Symptom:** Blender is tripping wall circuit breaker.
- **Cause:** Unit needs a dedicated 15-amp circuit (no additional electrical devices should be operating on this circuit). If problem persists with the unit operating on a dedicated circuit the cause could be a shorted bridge rectifier on the main board (main board failure).

- **Symptom:** Unit displays any error message containing a number such as error # 29, 30, 42, 100, 103.

- **Cause:** Communication error between the microcontroller and EEPROM. Replace VFD board.

- **Symptom:** Unit display indicates an error # 60, or # 62.
- **Cause:** EEPROM is defective or has corrupt data. Replace VFD board.

- **Symptom:** Unreadable display or missing pixels, or pixels will not illuminate.
- **Cause:** VFD board failure or Main Board. Replace, refer to repair guide.

- **Symptom:** During a normal cycle, unit is running too fast.
- **Cause:** Speed control function on main board has failed. Replace main board, Refer to repair guide.

- **Symptom:** One or more buttons on touch pad will not function correctly.
- **Cause:** Touch pad failure. Replace, refer to repair guide.

- **Symptom:** Memory card will not upload custom program.
- **Cause:** Ensure unit is turned off prior to loading custom program. Ensure memory card is inserted into port correctly (Look for "this side up" on the memory card). If blender will still not accept custom program the card may need to be replaced, the memory card board or VFD board may need to be replaced. Ensure the memory card board cable is connected to memory card board. Refer to repair guide.

- **Symptom:** Rubber around the quiet shield appears to be degrading
- **Cause:** The seals between the upper and lower parts of the quiet shield have an aggressive fit. This is to help the blender effectively dampen sounds. To prevent premature failure, you could have them apply a light coat of food safe grease to the area. We recommend a Molykote 111 grease or equivalent. This can be purchased off the shelf, on-line, or from HBB (part number 990172600).

- **Symptom:** Unit displays an ERROR #51
- **Cause:** Faulty reading of the NTC (Temp Sensor on the motor). Potential cause could be open NTC. Another cause could be a faulty PCB. A spare motor could be used and connect the NTC connector to the PCB…if fault goes away, then faulty NTC – replace motor. If it does not go away, then faulty PCB – replace PCB.

Repair Guide

Quiet Shield Removal

- Remove the Quiet Shield by sliding the locks forward and lifting up on the shield assembly.

Housing Disassembly

- Turn the switch to the "off" position and unplug the machine.
- Remove quiet shield
- Place the unit upside down and remove the four screws from the lower housing and remove the lower housing. The feet do not need to be removed.

- Remove the gasket by pulling it off the middle housing.
- Remove the eight screws that hold the middle housing to the top housing.
- Flip the housing upright resting the middle housing top housing assembly on the bottom housing.
- Remove the jar pad
- Remove the four screws that hold the top housing to the middle housing.
- Carefully lift the top housing from the unit, wires will limit your movement.

Motor Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- Remove Quiet Shield
- Disassemble Housing
- Remove ground wire from motor
- Lift motor out of unit.
- Disconnect motor leads, Hall Effect cable, thermistor cable and replace with new motor.
- Replace wire ties and assemble in reverse order.

Motor Brush Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- Remove Quiet Shield
- Disassemble Housing
- Remove Motor
- Remove 2 screws holding brace over brush holder and remove brace. Remove brush assembly. Insert new brush assembly and reinstall brace and screws. Repeat process for the other side of the motor.
- Assemble in reverse order

Main Board Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- Remove Quiet Shield
- Disassemble Housing
- Remove the 9 small phillip screws from the main board.
- Transfer the wires from the terminals of the old main board to the new main board one at a time.

Quiet Shield Sensor/Jar Pad Sensor Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- Remove Quiet Shield
- Disassemble Housing
- Using a small flat tip screwdriver or similar tool, gently pry sensor from upper housing paying attention to the notch in the upper housing and detach wire from appropriate board.
- Sensors are keyed and upper housing is notched for proper placement.

- Identify keyed portion of sensor and firmly press into notched portion of upper housing.
- Reconnect wires to appropriate board, replace wire ties and assemble in reverse order.

Memory Card Board Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- Remove Quiet Shield
- Disassemble Housing
- Remove the 4 Phillips screws securing the existing memory card board and holder.
- Gently pull memory card board and lead wires from memory card holder.
- Replace with new part/parts, replace wire ties and assemble in reverse order.

VFD Board Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- With a small tip screwdriver or similar tool pry the VFD assembly apart from the upper housing. There is a small location at the bottom right corner of the VFD assembly for the screwdriver to be inserted.
- 

- Remove wire connections one at a time and install them to new VFD board
- Press the VFD board assembly back into the upper housing.

Touch Pad Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- Remove VFD Board Assembly
- With a small flat tip screwdriver or similar tool press down on black tab that locks the touch pad ribbon connector into the VFD board and slide the connector tab out of locking tab.
- Gently lift one corner of existing touch pad from outside of upper housing and slowly peel away until removed.
- Remove any remaining adhesive residue from the upper housing left by the touch pad. The new touch pad will not adhere correctly to the upper housing if the residue is not completely removed.
- Peel the paper off of the back of the touch pad and route the ribbon cable through the slot in the upper housing. Start by lining the top corners of the new touch pad up with the top corners in the upper housing and work from top to bottom. The adhesive is on the touch pad is **very sticky**. Accuracy is imperative when placing the touch pad on the upper housing. Once the touch pad is in place, gently work any air pockets out pushing from the center out to the sides.

- Reconnect the ribbon cable to the VFD board by sliding the locking tab into place.
- Assemble in reverse order.

Circuit Breaker / Power Switch Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- Remove Quiet Shield
- Disassemble Housing
- Remove Wires from switch and mark for reference.
- Remove old switch by pressing in on corner retaining springs and push from inside to outside upper housing. Exterior moisture seal will have to be removed.
- Press new switch into place through outside of upper housing until it locks into place. Ensure moisture boot is present on new switch.
- Reassembly in reverse order.

Male Drive Assembly Removal and Replacement

- Turn the switch to the "off" position and unplug the machine
- Remove Quiet Shield
- Place the unit upside down and remove the four screws from the lower housing and remove the lower housing. The feet do not need to be removed.
- With the lower housing removed locate the bottom of the motor drive.
- Place a flat tip screwdriver into the bottom of the motor drive locking it into place.
- Turn the male drive assembly counter clockwise until it is removed.
- Replace the male drive assembly by screwing it onto the motor drive clockwise until secure
- Assemble in reverse order.

How to Determine Cycle Count

- Hold the SELECT button on the unit until "Program Unit Select of Scroll" is displayed.
- Press the down arrow until "Information Select or Scroll" is displayed.
- Press Select
- Scroll through the options until "Cycles into Warranty" is displayed.
- Press select and warranty cycles will be displayed.

Wiring Detail

Note: Terminal positions are relative to orientation. Terminal orientation below refers to the upper housing being removed and upside down.

Power Cord

- Power cord enters into unit with the white wire splitting and connecting to the right terminal of the circuit breaker, and jumps to terminal J106 of the main board.

- The black wire from the power cord connects to the left terminal of the circuit breaker.
- Green routes to the motor bracket to motor chassis.

Motor

- Speed sensor cable runs from just off the motor drive to the 3 pin connector marked Speed on the VFD board.
- The pink wire connects from the TCO side of the motor to terminal J104 on the main board.
- The black wire from the non-TCO side of the motor to terminal J103 on the main board.
- The red/black insulated cable connects to the 2 pin connector on the VFD board marked NTC.

VFD Board

- J7 is a 3 pin modular connector marked JAR and routes to the Jar Pad on the inside of upper housing.
- J6 is a 2 pin, 2 wire, (Red and Black) modular connector marked NTC and routes to the non TCO side of the motor.
- J9 is the 5 pin cable marked MC and connects to the 5 pin connector on the memory card board.
- J5 is the speed sensor cable connects just off the magnet on the motor drive.
- J4 is the 8 pin connector marked Power Board connects to terminal J108 on the main board.
- The touch pad ribbon cable routes to the black tab connector on the VFD board.

Main Board

- Terminal J109 connects to the Quiet Shield sensor slot in the upper housing.
- Terminal J106 connects to the right side terminal of the circuit breaker (with upper housing removed and upside down).
- Terminal J104 to motor lead to TCO side of motor.
- Terminal J103 to motor lead non-TCO side of motor.
- J108 8 wire cable to terminal marked J4 Power Board on VFD board.

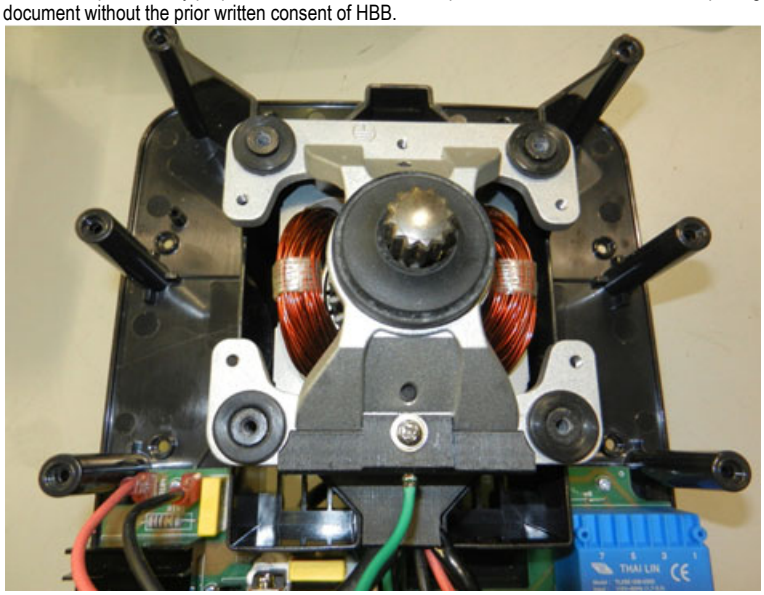

Figure 1Top View with Upper Housing Removed

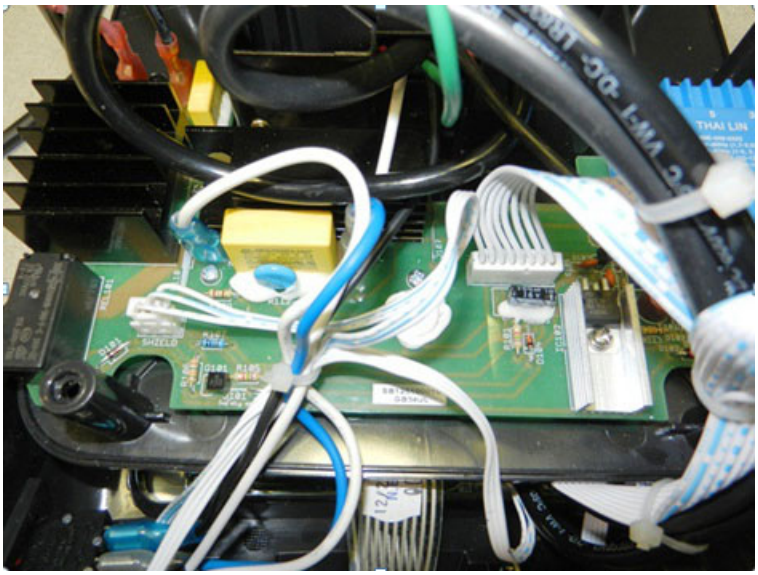

Figure 2 Interior View of Main Board

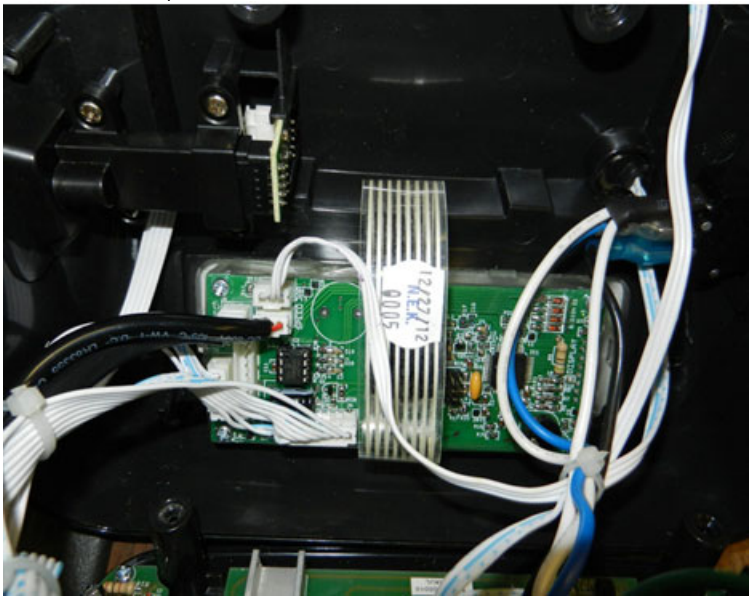

Figure 3 Interior View of VFD Board and Memory Card Board