Updates for V2.2

Add after R6-S4.

R6-S5 Door Interlock Fault

Simpson/Electrolux FL with 4 wire interlock switch. The machine goes to "End" when start button is pressed. Replacing the interlock switch fixes the problem. More information can be found at SPFL_Fault.pdf.

The following waas added to update 1 but was not put into the orgainal book

GD7.3 Wiring Harness Failure

These have thinner wires in the wiring loom and is covered with black plastic spaghetti. The wiring loom flexes where it goes from the cabinet to the wash tub. The flexing can cause the wires to become open circuit. It can be tested using an ohmmeter at the circuit board (see illustration 7) Replace the broken wires. This failure can also cause faults in the PCB.

Repair: Purchase a new wiring loom or replace the wires, with thicker wires. Cut and join the wires, tape the wires so no flexing occurs at the joins. I have found trailer wiring has 7 wires and outer sheath is a suitable replacement, replacing all the wires is a good idea.

GD7.3 Removing the hub (top) with no plug

Cut the wires and install a plug and socket. Jaycar have similar ones to the ones original fitted to the some models.

Alternative is to remove wires from the timer. The following is the wire connections for a Simpson esprit 450 (Model 36P450 K*01)

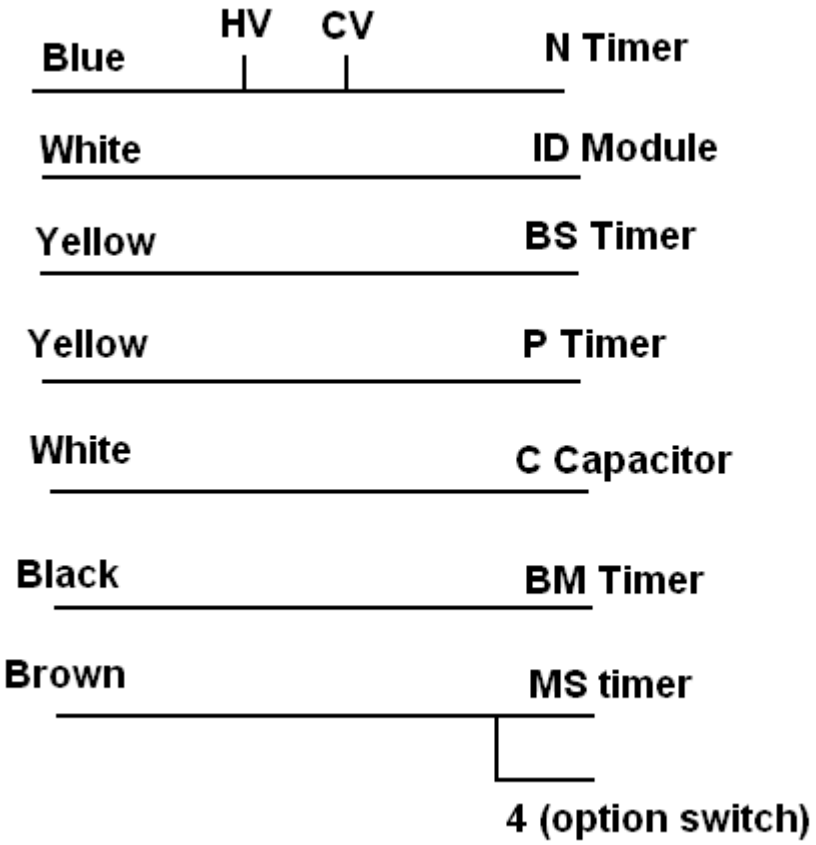

Illustration 8: Wiring in Control Panel

Add to section F
Add to Illustration 11:

Switch Wiring for Motor Tester at end of this section

Add to end of section F

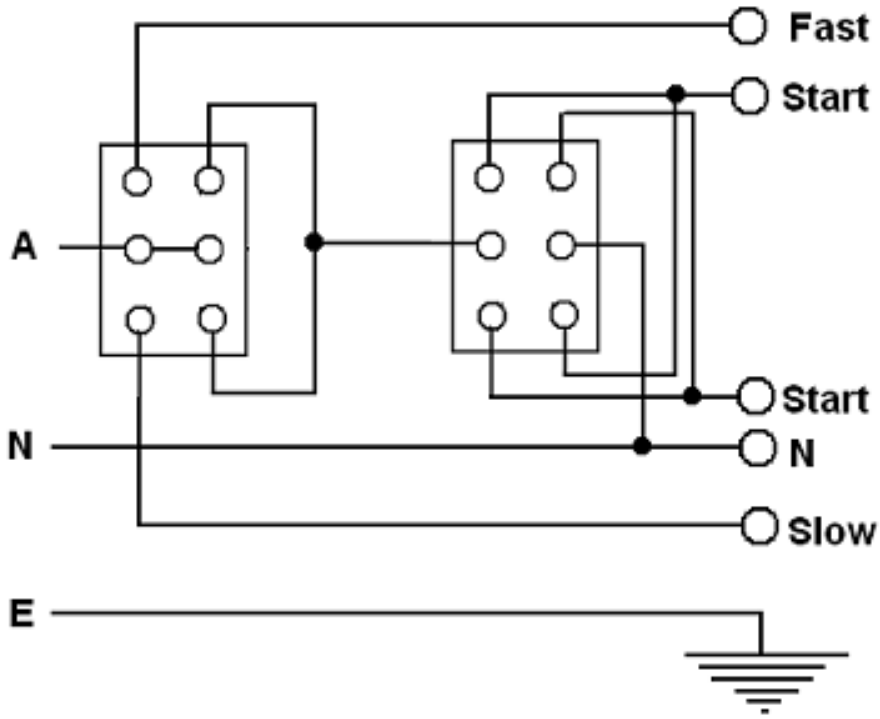

Illustration 19 Switch Wiring for Motor Tester(Illustration 11)

Add to end of section K

K6 Simpson Square Motor Repair

Square motors are used used in the last of these models and a smaller version in some clothes dryers. They usually failed in two ways. The start winding would bunt out (or see F6.5.2) or the bush bearings wear (more detail see F3). The centripetal switch is usually reliable but the ones with external micro switches can fail like the Hoover motors (See J3.7), and are available as a spare part.
Repair. Remove the bearing and end plates and rotor from a motor with burnt windings into one with worn bearings. (The bush bearings and shaft are both worn).When assembling put brass shims between the rotor and the field before tightening the end plate bolts. When tight pull the brass strips out with pointy pliers. The motors do not have any method of locating the end plates in the correct position.
Note for Dryer motors. The clothes dryer motors bearing tend to wear due to fluff and dust entering the bearings. The drum belt pulley (flat with multiple ribs) screws on with a left handed thread. Vacuum or blow fluff/dust from the windings, it insulates and can cause overheating.

Add to table of contents
K6 Simpson Square Motor Repair

Add to end of S2.4.7
More details on motor repairs is at K6.

E12 Micro-Switches

Standard micro switches are used in different appliances. Some are bare and others have metal levers such as those used in the old Hoover washing machine motors.

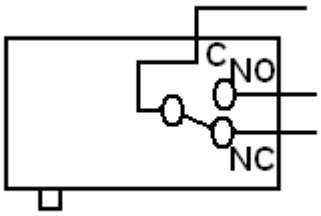

Illustration 18: Micro Switch

E13 Capacitors and Noise Filters

There are three types on capacitors used in appliances. They are all rated at 240V AC or 100V DC (see C1.3). Capacitors allow AC electricity to flow but block DC. Some multimeter have a capacitance range for measuring the value. The two terminals should have insulation resistance between them. (greater than 1MΩ). Visual inspection often show faults but not always. They can become open circuit and have no capacitance.

1. Small capacitors to reduce electrical noise or interference and are placed across switches and motors
2. Capacitors for capacitors run motors(F7). These range in size from 4µF to about 20µF, 8µF the most common.
3. Start capacitors in split phase motors (F6). These range in size from about 50µf to 200µF. They are usually electrolytic capacitors and checking with a multimeter may not be reliable

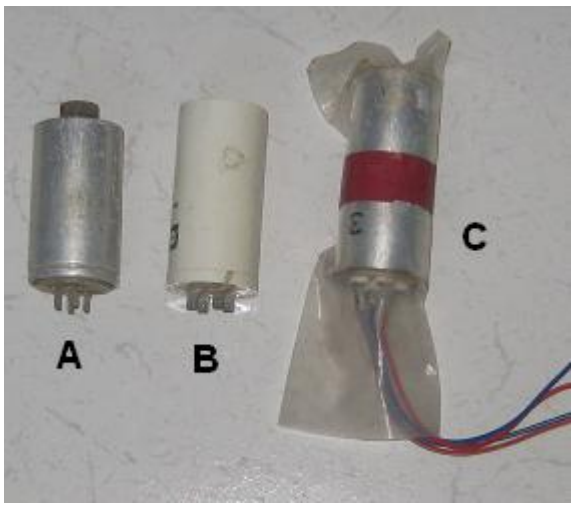

Illustration 19 : Motor Capacitor

A, B capacitor with 2 connectors each end

C Two capacitors in single case

Noise filter are often in the same type of case, read the label to pick the difference. The consist of capacitor and coil to filter out electrical noise.

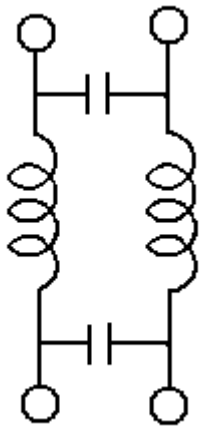

Illustration 20 : Noise filter

Corrections:
Section KD1.3 Two speed motor:
Change T7 to T3

Section KD1.5
Change caption for Illustration 5 to:
Illustration 5 Square Motor Single Speed

Add at end of E6.3.3
Example F/P section M6.5.

Add At end E7
Magnet Reed Lid Switches. Electronic controller may have reed switches, eg Fisher & Paykel see M5.3, M7.3 and Asian machines L5.

Add E7.2
5. Failure of reed switch or loss of magnet. (M5.3,M7.3,L5)

Add to end of Jap/Asian washing machines

L7 Magnetic reed Switch Problem

The controller may produce an "lid error" message. Some machines have the electronic control at the front with a reed switch on the PCB, and a folding lid with a magnet in the lid. Sometimes the magnet gets lost, it can be replace with a suitable magnet with enough strength. Fridge magnets usually do not have enough strength.

