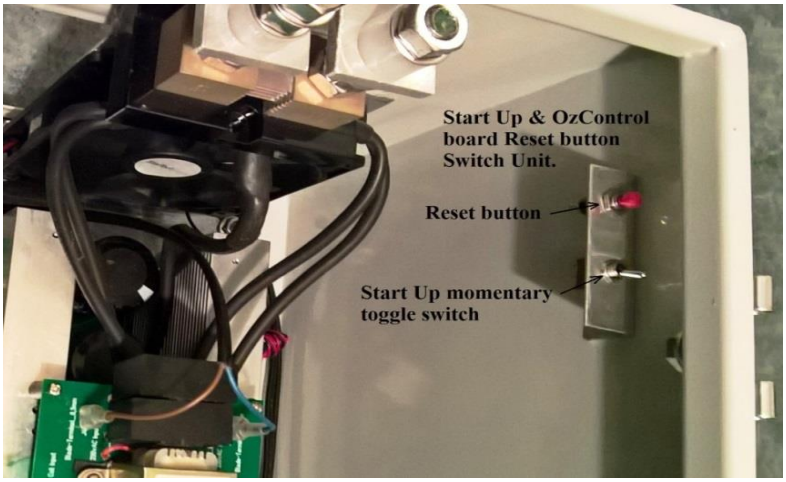
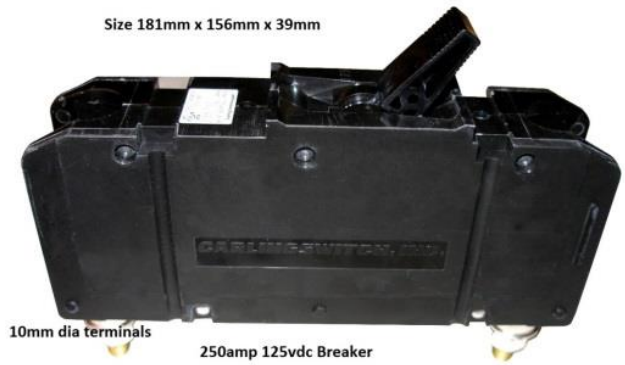




... imagine that as a one hundredth of a second.... suddenly we are generating 7500 watts... at one thousandth it is getting out of hand at 75000 watts or 75 kilowatts.... in the hundredths scenario we are in the 7500/50 or 150 amps..... I know from tests it is very very much higher than this.. around the 400 amps and more.

We can see that this takes the end of your screw fittings easily.. so start up current is massive if you don't introduce some resistance into the start-up procedure.... I use a 50R resistor to charge the caps then just connect the battery wire without any fireworks....without it, it throws the 180 amp o/load I have and it takes 2 goes to charge the caps."

If you're not using 'oztules' above mentioned method of a small wire with a 50r or 40r resistor, then it's VERY IMPORTANT that you use a heavy duty breaker made for Midnite & Outback between the battery and the OzInverter.

This breaker is rated at 250amps and 125vdc, and has 10mm diameter threaded connections, and is heavy duty made. The breaker still has that 'phut' sound when I close the switch.

Right photo, ….. Main Inverter 19mm diameter latching push button switch. …. Red button push momentary switch for the Reset on the OzControl board. … Toggle switch with momentary action, for charging the Power board capacitors with the 50r or 40r ohm, 3 watt resistor, before switching the Inverter on. If the Inverter hangs and the Inverter will not start, then switch off Inverter and very briefly press the Reset button.

6. OzInverter for the USA, 120vac 60HZ.

The only difference from our normal PCB's is the OzControl board where we slightly alter the HZ setting so the board gives out 60HZ. The control board still needs to see a 240vac for voltage regulation; the current sense coil will remain the same arrangement.

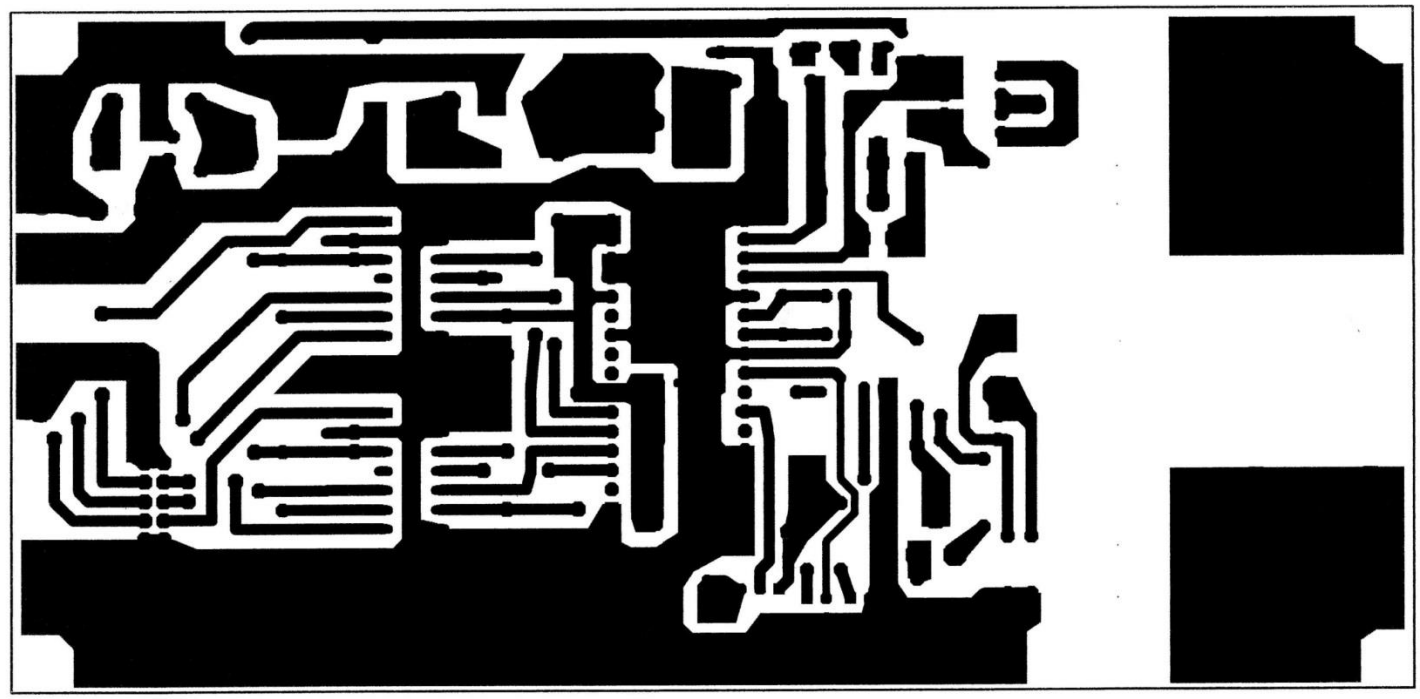
Making the toroid for 120vac`

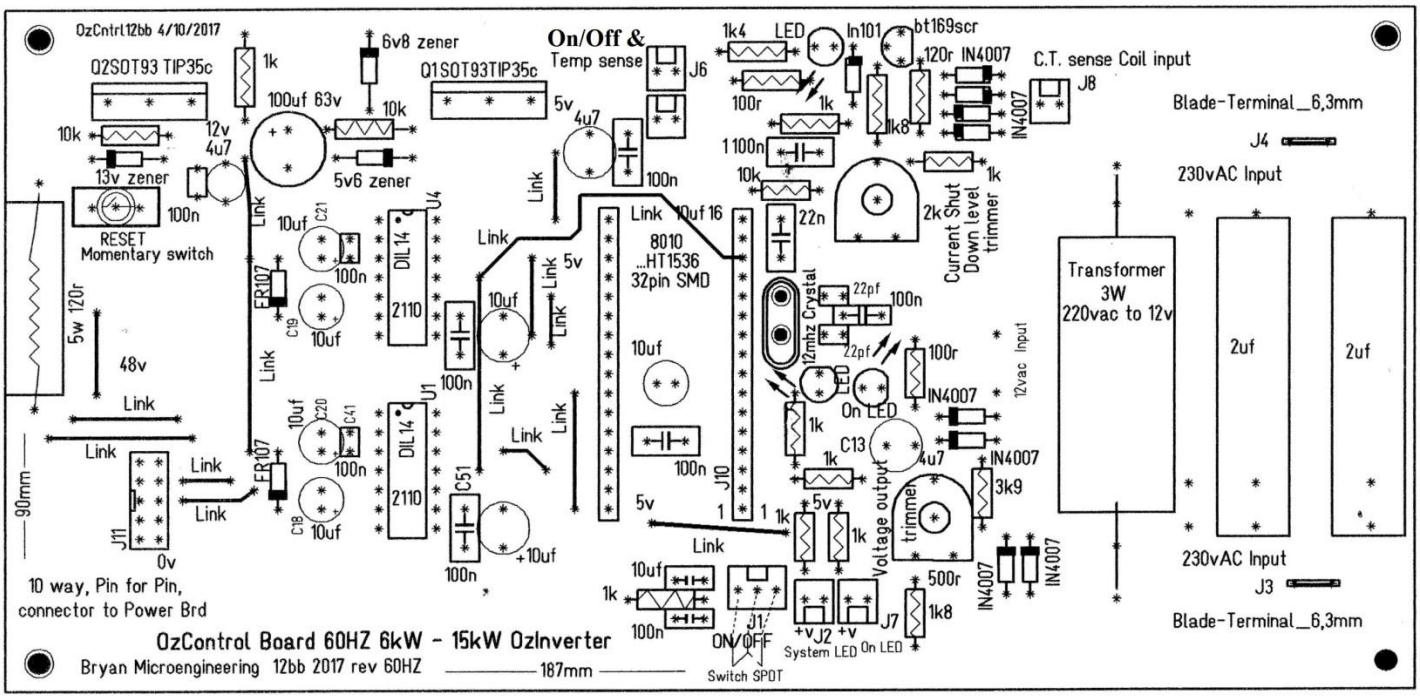
What we do is to take a feed from the secondary windings at half the turns as we wind, ….. ie, if we are doing a 6kW OzInverter the toroid core of 200mm outside diameter, 100mm internal diameter, and 120mm thick, then the secondary turns for 240vac would be about 118 turns.

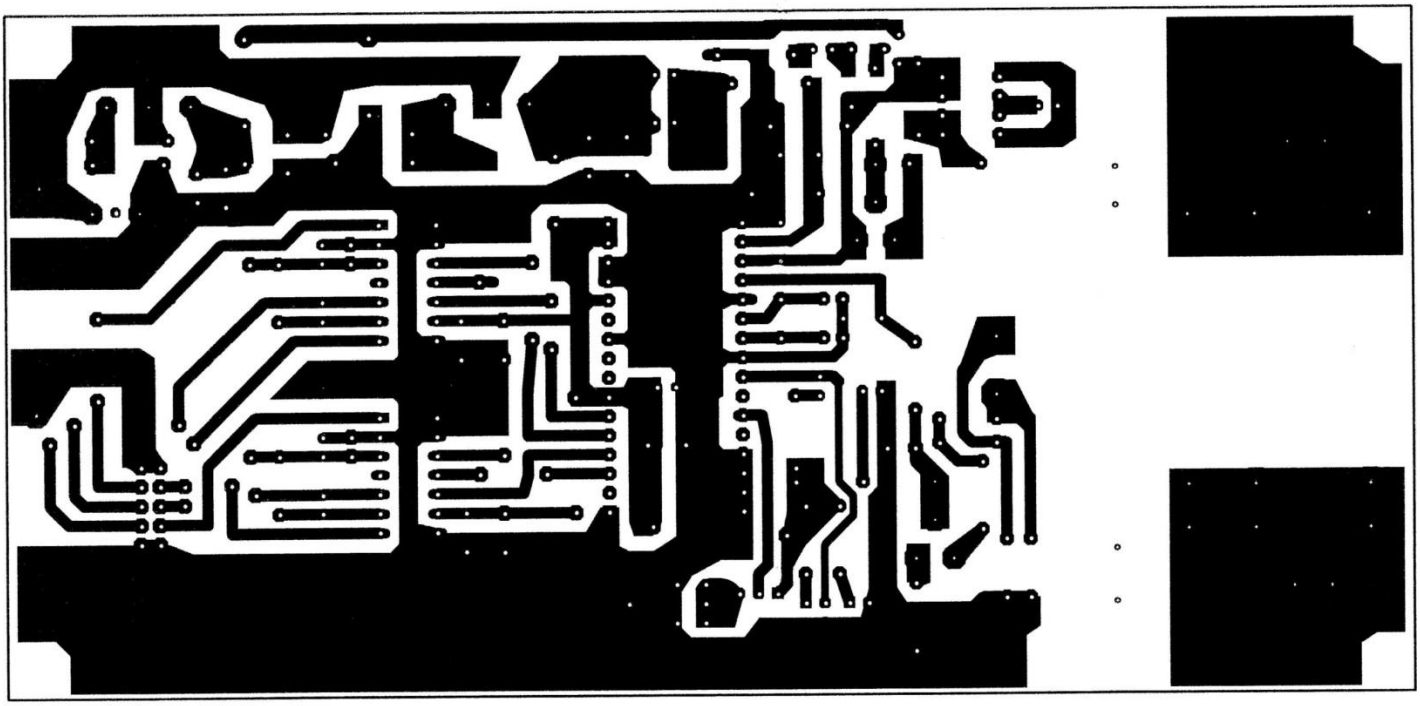
Half of 118 are 59, so we need to take a feed/tap from the 118 turns at 59 turns, remember a turn is when the copper wire goes through the toroid core hole. This half way feed at 59 turns will become neutral 120vac with each end of the full 118 turns of secondary giving 120vac. Don't forget we need 240vac from each end the 118 turns secondary for voltage regulation on the OzControl board.

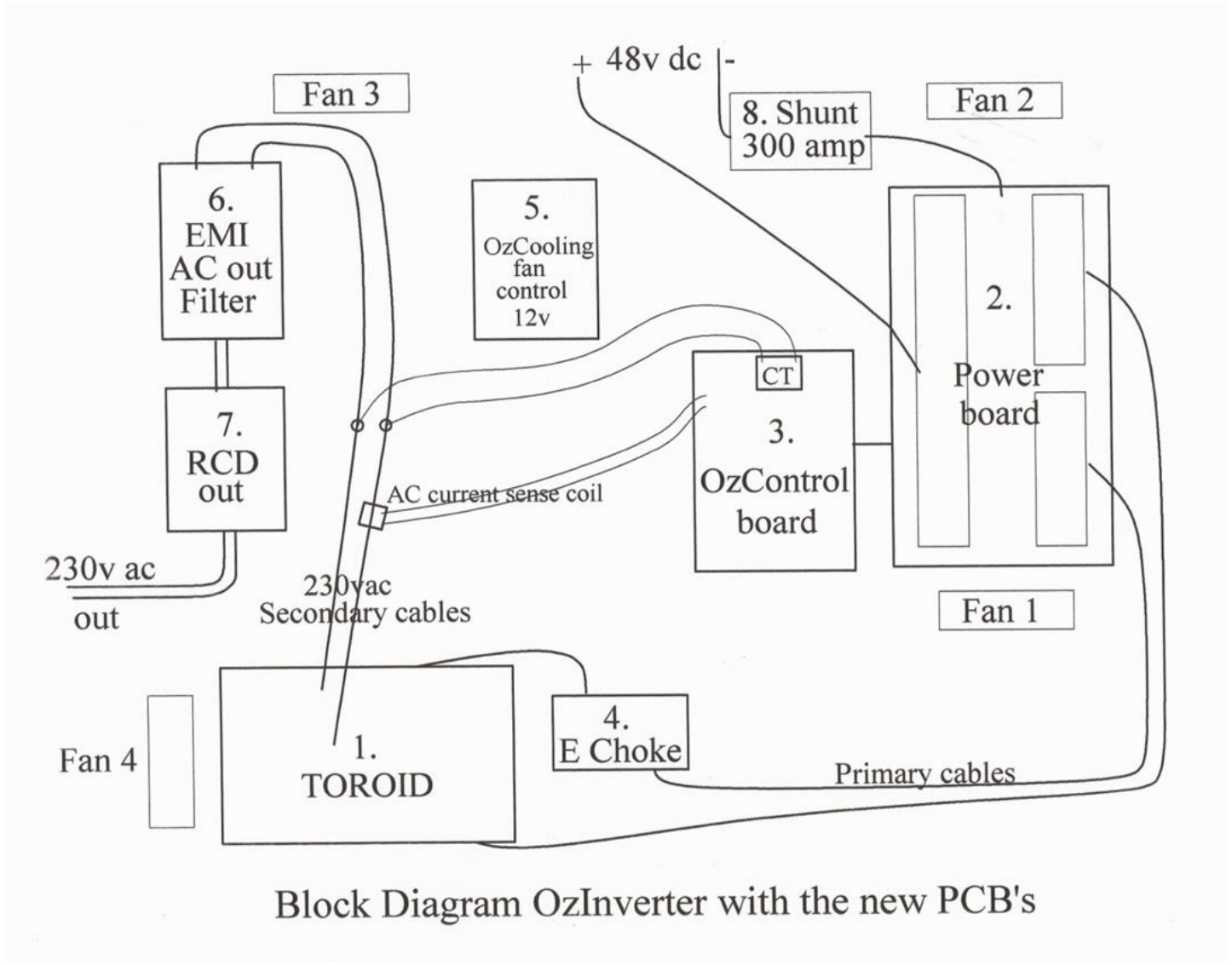
Once you have 59 turns through the hole and the copper wire is coming up the outside, then half way up, bare/scrape away the enamel coating, wrap and solder a feed copper wire and then re-insulate the joint, use the method for joining as I have already mentioned in the Toroid build Chapter. Please do electrical checks before each Mylar wrap.

The next page is the OzControl 60HZ Photo Etch PCB's in real/actual size.









Block Diagram OzInverter with the new PCB's

A Brief description and explanation of the OzInverter MAIN PARTS.

1. The Toroid transformer.

This is the working heart of the inverter. The toroid transformer converts a low voltage DC to a high voltage AC, when stimulated by the Control board and Power board.

It has a strip wound silicone Iron metal core. Four secondary windings of the same diameter enamelled copper wire, we call this 4 in hand and each winding the same number of turns. The Primary 50/2mm thick, is a single winding of a low count, and with normal cable insulation.

For the OzInverter this toroid, depending on the core, can weigh between 29kgs to 46kgs. So will require adequate insulation and good support and securing methods

For longevity and cooling it is very important that we construct the toroid correctly.