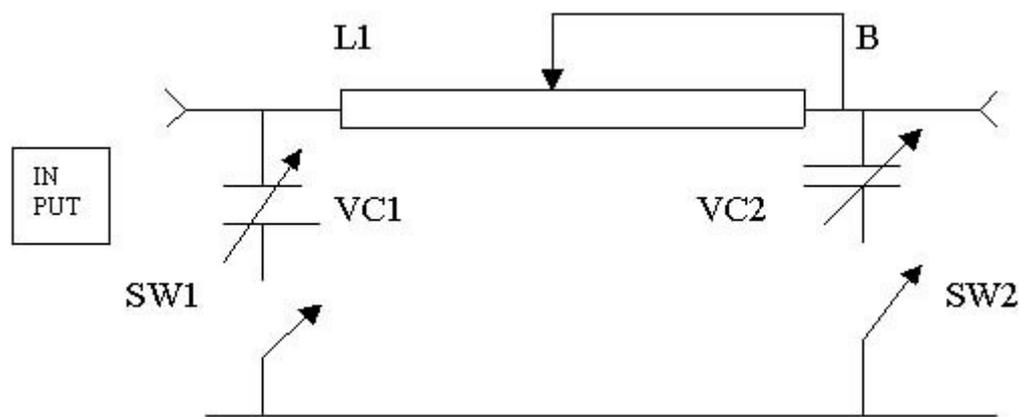


ATU's

Most ATU's that you can buy are a compromise; firstly you do not crush up the components into a tiny small metal box. Doing this with no thought to coupling effects will make efficient ATU into a wonderful dummy load, unfortunately the more inefficient your ATU the better apparent SWR you will have its just a pity most of the power is re-circulating in the ATU. So what's the answer? The best option would be to build an ATU for every band you are going to use, in this way the L/C ratio can be optimised for minimum loss. Remember Q in the crystal set? The more C you have against L the better the Q and the better the Q the more efficient your ATU will be.

Next problem is your aerial feed impedance, high or low? Again two different types of ATU are required, most shop bought ATU's can only match a very narrow range of impedance's from 25 to 300 ohms (this includes AUTO ATU's) so its time to get out that soldering iron folks and make an ATU.



L1 is about 55 turns of 1.5mm wire on a 2 inch former with small loops of wire soldered every 5 turns, these are used to set the inductance by using a shorting link made from a flexible wire with a crock clip on one end which clips to the loops and the other soldered to point B

Now the both VC's must be isolated from earth and are in value 150pf up to 500pf max, so the best way to make this ATU is to put it into a plastic or wood box. The reason for this is you are going to switch in or out one or more of the capacitors with SW1 or SW2 in this way you now have 3 different types of ATU in one box. SW1 and SW2 are single pole single throw toggle type's which is more than adequate for 100 watts, place the switch's in the stator of the capacitors

In use find the best place on the inductor with the shorting link to give you maximum received signal then try different switch positions of SW1/SW2 and swing the VC's for absolute best signal or best SWR

Now the L match is one of the most efficient ATU's so always aim to use only one of the capacitors also use the most capacitance you can in conjunction with L1 the coil. With a transmitter it is possible to get 2 or 3 settings of a ATU were you have a SWR of 1 to 1, use the one that gives you the best field strength. Don't have a field strength meter? Your next project OK.