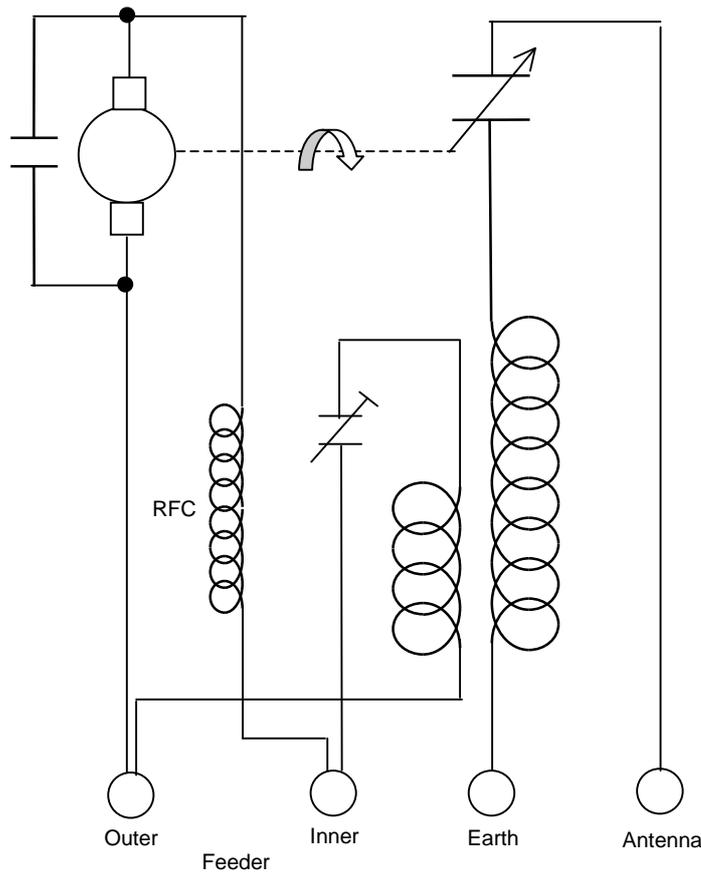


REMOTE LOADING FOR A 160M END FED ANTENNA



Tuning Coil 40 turns 1.5mm enamelled wire on 2.1 inch dia. plastic pipe. (Measured inductance approx. 50uH)

Coupling Coil 5 turns insulated wire over wound at earthy end and tape to secure

Tuning Capacitor approx. 200 pF

Trimmer 1250 pF with plastic mounting. (bit of trunking)

Motor MFA 1.5 to 3 volt including 100:1 reduction gearbox Maplin code WC68Y

Split metal sleeve to convert from 4mm dia to ¼ inch or 6mm dia as required

6mm or ¼ inch coupler as required

6:1 Jackson ¼ inch ball type reduction drive (Mainline Electronics part No. 4511)

Short piece of plastic spindle

Short piece of plastic sleeving chosen to form a slipping clutch

RFC 1.5 to 2mH wound on ferrite ring with plastic strap and screw

Motor suppressor capacitor 0.33uF

4 screw type terminals. (or two terminals and a coax socket if you prefer)

Polypropylene freezer box 11 x 8 x 4 inches with sealing lid. (Whitefurze or similar)

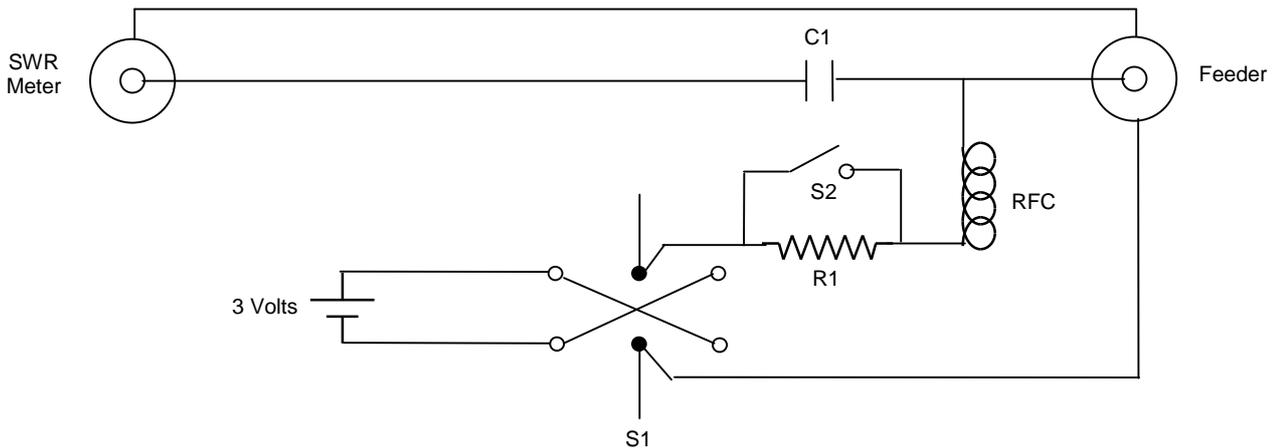
Piece of 15mm furniture board to fit in the box

Hook and loop fastener (Tesco sell useful little pads very cheap)

Various securing brackets and screws

The split sleeve was made from some old ¼ inch diameter aluminium aerial tube. First cut a short length to match half the length of the coupler. Then enlarge hole to 4mm. Finally cut lengthways with a junior hacksaw to form the split sleeve. If you are unable to make this you could just try wrapping the motor spindle with adhesive tape up to the required diameter.

Control Unit



S1 double pole double throw biased to centre off (Non latching both ways)

S2 single pole single throw

R1 5 ohms or as required for slow motor speed

C1 0.1uF 100v

RFC 1.5 to 2mH wound on ferrite ring with plastic strap and fixing

Battery holder for two AA batteries

2 Coax sockets

ABS box 150x80x50mm

Various fixings

Panel labels

It is important that before the loading unit is connected, the antenna must already have been checked for resonance within or below the lower half of the 160 metre band when directly connected to earth, using a dip meter or analyser. If the resonance is high the antenna is short, and will require an additional loading coil between the unit and the antenna.

The loading unit can now be connected and using an analyser, noise bridge, or low level signal, the SWR can be checked. Coupling is adjusted with the trimmer. I have found it possible to cover the whole 160 metre band with SWR varying from 1:1 up to no more than 1.4:1.

Using the control unit, the antenna is first tuned for maximum noise and then for minimum swr by operation of switch S1. To change motor speed operate switch S2.

This device is experimental and the coil and coupling values may vary with the type and height of antenna, and also the earth resistance.