

## LARGE ELECTRIC MOTORS

The receiver must not be connected to large electric motors which are intended for use as the main drive of a model. Do so will invariably damage the output transistors due to excessive current. Do not operate the receiver near to similar electric motors unless they are thoroughly suppressed. Such electric motors generate radio frequency which if un-suppressed will affect and actually operate the receiver. The range of electric motors available is considerable and it is not possible to generalize giving accurate suppression details. It is, therefore, requested that you obtain this information from the respective manufacturers.

## RECEIVER MOUNTING

A piece of plastic foam is supplied in the kit and it is suggested that this is loosely wrapped round the receiver unit and the whole placed in a separate compartment when used in model aircraft. In the case of model boats, where the possibility of damage is much less, the receiver may be mounted in a more rigid form. Remember however, the unit must be protected from becoming wet or even damp.

## PREPARATION OF COMPONENTS

First, remove the sharp edges of both printed circuit boards with a fine file or by scraping along the edge with a knife. The slot provided in the main printed circuit panel should now be gently eased to accommodate the smaller sub-printed circuit panel firmly and truly upright. A nail file is ideal for this purpose. On no account must the smaller printed circuit panel be forced into or out of the slot. This may damage either of the panels. They should not fit too loosely either as this will only place a strain on the soldered connections. If you so wish, a smear of Araldite adhesive can be placed in the slot during assembly and allowed to set. Take care however, that none of this adhesive is allowed to remain on the printed circuit lands as this will prevent proper soldering.

On no account should the tinned copper surface of the conductors on the printed circuit panel be cleaned with wire wool or any other agent. This surface like the wire leads of all the components are ready for soldering with the correct type of solder as supplied in the kit.

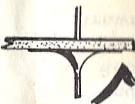
Do not interfere with the tuning and aerial coil assembly or unduly increase or reduce the length of the yellow aerial lead. Minimum length 2ft, maximum 3ft. Certain components, such as the valve-holder, variable resistors, silver mica capacitors and transistors have wire leads, pre-set or vertical to suit their respective hole centres on the printed circuit panel. The remainder of the components such as the resistors, etc., require their wire leads bent at right angles to suit the hole centres. This bending should be done by using a rod 1/8" diameter close to the body of the component. Take care when bending the leads of the H. F. C. in order not to damage the fine coil wire connected to them. On no account, should a sharp bend be made by means of pliers. When bending, do so in such a way that the printed value of the components may be readily seen when positioned on the panel. Offer all the components to the panel in order to check that they are bent correctly and flush to the surface before soldering into position.

## SOLDERING

Providing all the above preparations have been completed, it is now only necessary to insert the components and solder.

At this juncture however, it must be appreciated that in order to get the satisfactory results engineered into this Construction Kit, the final soldering must be carried out in a proper manner. It is, therefore, recommended to carefully read the following paragraphs dealing with soldering before proceeding with the actual assembly.

Of the finished units sent to us for service, by far the larger proportion do not function correctly due to poor soldering - only one badly soldered joint is necessary to fault an entire unit. As shown by our sketch, a badly soldered joint is usually obvious by its appearance. It will be seen as a blob, dull in colour.



Good printed circuit soldering



Bad printed circuit soldering

A good joint however, shows solder run smoothly over the entire area and it is bright in colour. An indication of the standard of soldering required may be seen by examining the finished coil assembly on the printed circuit board.

To produce a good soldered joint, only requires the use of the correct soldering iron and solder, together with a little patience. The soldering iron should be of the electrical variety with a copper bit not larger than 3/16" diameter. The end of this should be kept meticulously clean and tinned. The solder used should be the type with a flux core as supplied in the kit and sold specifically for radio work. On no account, should a corrosive fluid or non-corrosive flux be used.

When making a soldered joint to the printed circuit, on no account bend any component wire flush with the tinned copper conductor. To do so makes it almost impossible to remove the component wires full length which act as a partial heat shunt and then made with the component wires full length which act as a partial heat shunt and then cut off after soldering.

## VALVE

To prevent possible damage to the valve it should not be inserted into the valve-holder until the receiver is ready for testing and tuning. When you are finally satisfied that the receiver is operating correctly, the valve may be secured with the wire clip as shown in the photographic illustration.

This is made in the following manner:- Cut the cotton sleeving provided to 2" long, cut the tinned copper wire provided to 2.1/2" long. Slip the sleeving over the wire so that it is equal from either end. Form into an equal 'U' over a rod 3/4" dia. Place over the valve positioning into the two holes either side. Make certain that the valve is parallel to the surface of the printed circuit board and use a small piece of plastic foam underneath the valve as packing, if necessary. Solder both wire ends and cut off the surplus.