

Simple chassis...

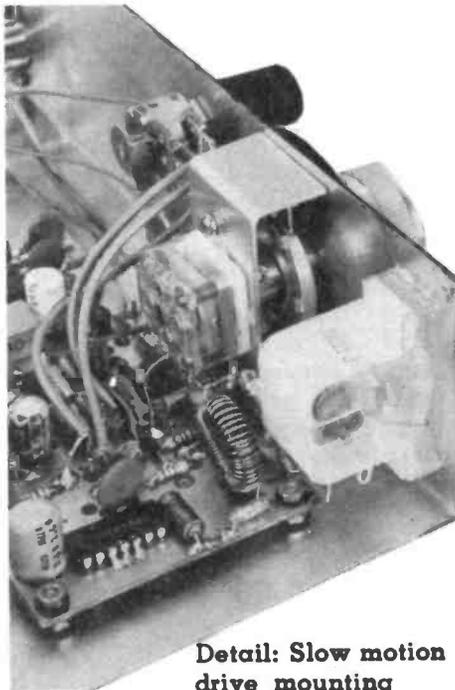
Switching on...

The moment has arrived to switch on. Before doing this, preset RV1 and RV4 fully anticlockwise, and the AF gain control also anticlockwise. With the TX/RX switch in the receive position, apply power — the current taken should be in the region of 60mA. If it is a lot more, then switch off and look for shorts, or incorrect component values/positions. If a lot less, or nothing, then there is most likely a missing connection somewhere.

Turning up the volume should give a slight hiss if on dummy load or even some signals if an aerial is connected. Now switch to transmit. The current should be around 50mA — again, if a lot higher or lower then check as for receive. If there appears to be a short circuit, the most likely answer is that the metal case of the PA transistor is shorting to the pcb somewhere.

Noting the current consumption, adjust RV1 carefully until it rises by 100mA, thus setting the standing current of the PA to 100mA. There should be no output showing on your output monitor at present. Now connect point M on the pcb to +12v. The output should increase as this simulates the key-down position on CW. Alternatively adjust C19 & C21 for maximum power output until no further increase is possible — if you can measure the power you should be getting around 3W minimum into the dummy load or aerial. You will

find that C19/21 will need to be fairly tightly screwed up when tuned. If resonance appears to occur outside of the range of the capacitors, check that you have the right number of turns on the coils. If there is not quite enough capacity available, then extra capacitors can be soldered across these trimmers if required, but this should be unlikely. You may now want to re-peak the circuits in the portion of the band you are most likely to use.



Detail: Slow motion drive mounting

Disconnecting the lead to point M, and connecting a high impedance microphone to the microphone input should enable you to talk the output power up on double sideband, bearing in mind that normal speech will only peak the meter up to about half the indication given for CW — whistling into the microphone should give the same output. If you can only get a low power output even by whistling, then the microphone is probably unsuitable, or something is adrift around Tr5.

The only remaining task is to check the VFO for coverage, and set the CW offset capacitor. The VFO is of course running at signal frequency, so it can easily be checked on another receiver, or coupled into a frequency counter. Alternatively, a signal generator can be used to provide marker signals. The coverage should be at least 3.5 — 3.8MHz, probably greater. If the lower end of the range is above

3.5MHz, then a small amount of extra capacity should be added across C3 (using a polystyrene type). The bandsread can be adjusted if wanted by changing the value of C2 — decrease to increase the bandsread, but this will also increase the lower frequency at the same time.

To enable the rig to copy CW, the VFO has to be on a slightly lower frequency for transmit than receive, as explained earlier. C4 sets this offset and is adjusted so that the receive frequency, with S2 in the CW position, is about 800Hz higher than in transmit. This can be set using a frequency counter very easily. If you don't have a counter then switching between CW and DSB on S2, while in the receive mode will enable you to set this up by ear on a received signal. The adjustment to C4 should be made while in the DSB position, comparing this to the CW setting.

Then, when working CW, you tune to the high frequency side of the CW signal on receive, to a beat note of about 800Hz, and you will then be correctly tuned for transceive operation with any other stations rig.

Optional meter

In order to monitor the PA for overdriving on DSB, a meter (100-200uA FSD) can be connected between points G & H on the pcb. To set up the meter, apply a potential of +1v to point G while in the receive mode, and then adjust RV4 so that the meter just moves of the stop. Then, when transmitting DSB, do not allow the meter to move off the stop while speaking.

Using CW

To get the rig on CW, the key used needs to apply +12v to point M in the key-down position. A small reed relay may be needed to accomplish this if an electronic keyer is being used. An optional CW drive control can be added as shown in Fig. 1, if desired and will enable you to experiment with lower output powers.

Housing the transceiver

The photographs show a simple case that was used for the pro-