

INSTRUCTIONS FOR ADDING MEISSNER MODEL FMX PHASE MODULATOR TO THE EX OR 9-1090 SIGNAL SHIFTER ONLY

INTRODUCTION

The Meissner FMX Phase Modulator was designed for conversion of the Signal Shifter to NBFM phone. By incorporating this unit, the Shifter becomes a low powered phone transmitter. The deviation control allows a swing of 5 to 10 KC on all bands. Input for high impedance crystal or dynamic mike provided. Any class C amplifier that the Shifter is capable of driving becomes a phase modulated amplifier.

- (1) Remove power supply from unit by unplugging power cable and removing the 4 screws bolting power supply to main chassis.
- (2) Set phase modulator in place where power supply was removed. Align the 4 holes for bolting the new unit to main chassis. You will now have the exact location of the new hole (7/16") to be drilled in the side of the Shifter chassis for the purpose of coupling the reactance tube (6SG7 pin #8) to the 6V6 plate pin #3. Scribe the location of the 7/16" hole with a short pencil. Drill hole in Shifter chassis carefully so that no damage occurs to the 6V6 socket or associate parts.
- (3) One change is necessary in the main chassis. The 7 Cup trimmer (C2) must be replaced by a 5 Cup trimmer which is furnished with the modulator. The easiest way to change this trimmer is to remove the 1/4" nut, lift off the two lugs and unsolder the black wire to the shell. Two small screws on the top side of the chassis will now free the 7 Cup trimmer. The 5 Cup trimmer can now be put in its place as they are the same size physically. Replace the lugs and the 1/4" nut and solder the black wire to the shell of the trimmer. Be sure to use lock washers in mounting the trimmer to chassis. If the mounting screws are too long you will not be able to reach minimum capacity.
- (4) Bolt the modulator in place with the same hardware used on the power supply.
- (5) Solder in place a short wire from pin #8 of the 6SG7 reactance tube through the 7/16" holes to pin #3 of the 6V6 tube in the Shifter. Dress the wire so there is no possible short to chassis. The wire should be centered in the 7/16" hole in order not to add capacity to the circuit.

- (6) Plug power cable from phase modulator into power supply. Power supply may be placed on the floor.

CAUTION

If, when you first turn the Shifter on and the tubes do not light, turn off switch immediately and reverse the brown and black twisted pair of wires in the FMX that supplies filament voltage.

- (7) Connect microphone to connector on back on phase modulator.
- (8) The deviation control will vary with various microphones. Mid-setting of the control will probably be sufficient for a start after the alignment procedure has been completed. Check with a distant station for correct setting to get proper phase shift. Optimum setting for 80 meters is around 5—10 meters 3.

ALIGNMENT

With the new unit in place with tubes plugged in and deviation control turned to 0, proceed with re-alignment of C2 trimmer. With Shifter dial set a 0 00 on E band, adjust the new C2 trimmer to maximum closing of the tuning eye. This will occur at near minimum capacity of the trimmer.

J-320
(3-24R)