



## SUGGESTED CIRCUIT DIAGRAMS USING MAZDA S.P.4I and P.4I VALVES

### SP.4I AND P.4I AS A FREQUENCY CHANGER.

Figure 1 illustrates a representative circuit showing the use of the SP.4I as a mixer and the P.4I as an oscillator, in a television receiver. The circuits are for use in a receiver operating with a vision I.F. of 13 megacycles, and a sound I.F. of 9.5 megacycles. It should be realised when designing oscillators for operation at these frequencies (32 megacycles) that the constants given can only apply to one particular layout, as very small changes in the disposition or length of the leads of the oscillator circuit will appreciably affect its performance. Unless the valve holder tag for the cathode pin can be soldered direct to the common earth point it is essential to connect the .001  $\mu$ F. condenser in the grid circuit of the SP.4I to the cathode tag of that valve and not to chassis.

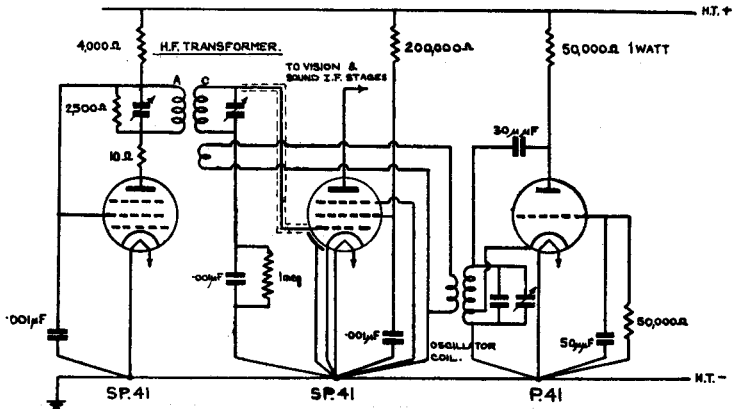


Figure 1.



**SP.41 VARIABLE GAIN.**

It should be remembered that any attempt to vary the gain of a stage using an SP.41 by biasing the control grid, will result in a change of input capacity. If biased to cut-off the change would be about  $4 \mu\mu\text{F.}$ , and if the gain is reduced to one seventh the change would be about  $3 \mu\mu\text{F.}$  Such changes may appreciably affect the overall response of the amplifier. In order to prevent this large change, it is necessary to bias the suppressor grid as well as the control grid. Figure 2 illustrates a circuit of G.1—G.3 control which provides constant input capacity and input loss for gain changes of the order of eight to one.

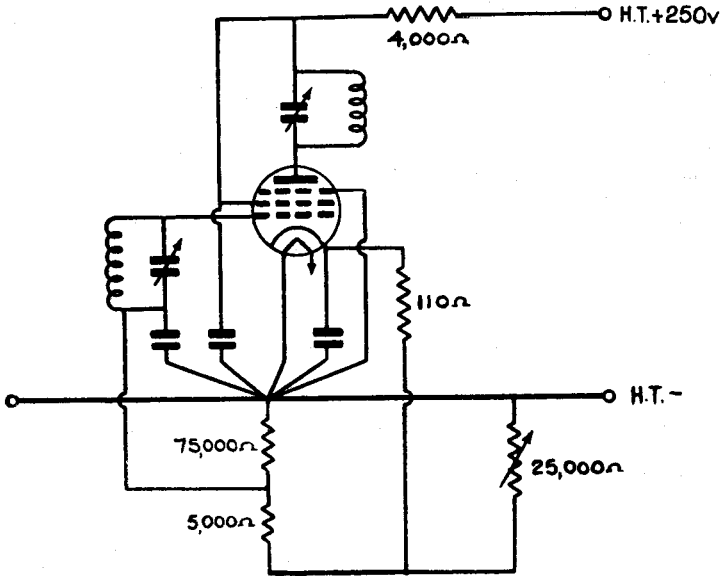


Figure 2.

*Mazda Radio Valves are manufactured in Great Britain for the British Thomson-Houston Co., Ltd., London and Rugby, and distributed by*  
**THE EDISON SWAN ELECTRIC CO., LTD.**  
**155, CHARING CROSS ROAD, LONDON, W.C.2**

