

UNIVERSAL OUTPUT TRANSFORMERS

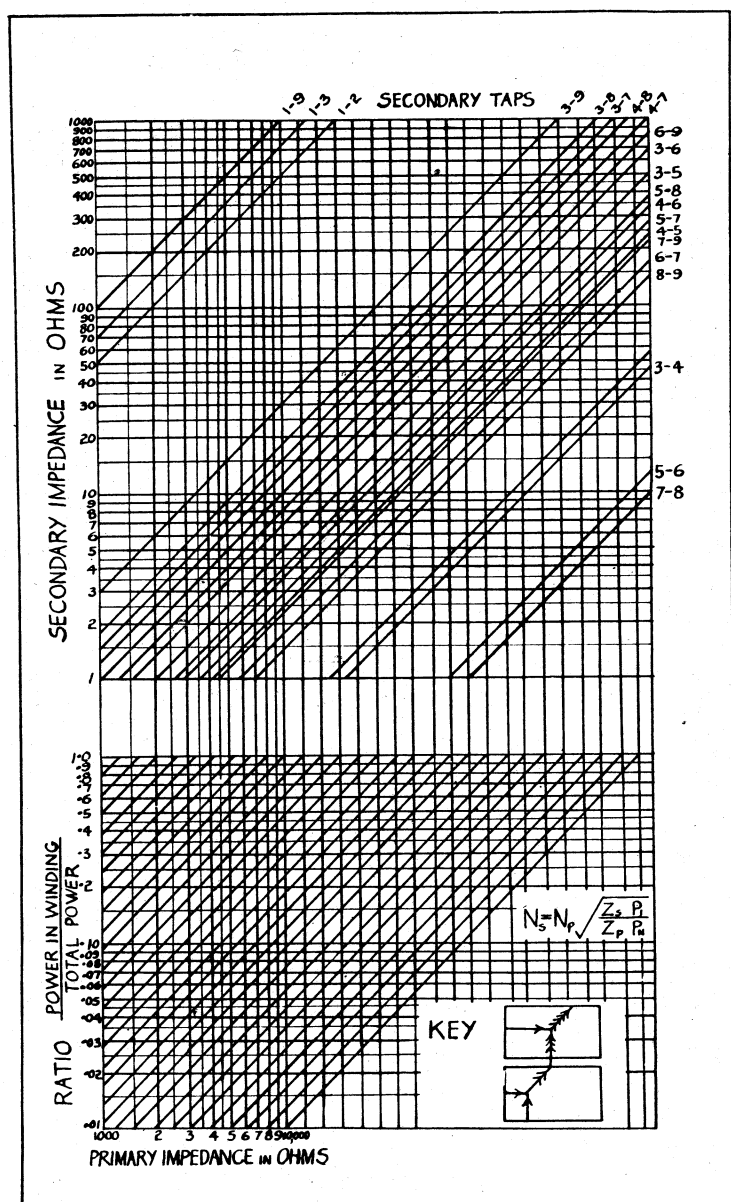
INSTRUCTIONS

20 watt, 35 watt and 60 watt

These BEACON Universal Transformers are designed to give correct impedance matching between push-pull output valves and a line or loudspeaker voice coils over frequencies from 40c/s to 10 kc/s. Provision is made on the graph for choosing secondary taps to match several speakers to the one set of output valves even though each speaker voice coil may have different power requirements.

After a little practice, no difficulty should be experienced in using the graph. To use the graph the following simple directions should be followed. The Key shown on the graph will assist in carrying out the correct sequence of operation.

- (1) Ascertain from published valve data the correct plate to plate load.
- (2) Locate this impedance along the bottom edge of the graph marked **Primary Impedance in ohms** and draw a **vertical** line from this point.



- (3) On the left hand side of the lower portion of the graph locate the decimal quantity that expresses the proportion of power required to be delivered to the loud speaker or line under question. Draw a **horizontal** line through this point. As an example two speakers may be used with one quarter of the total power to be delivered to one and the remaining three-quarters of the total power to the other. The power ratios as decimal quantities would of course be 0.25 and 0.75.

- (4) Using the **diagonal** lines as a guide proceed from the intersection of the ratio and impedance lines to the unity ratio line.

- (5) From this point go **vertically** again until opposite the required voice coil impedance.

- (6) The nearest **diagonal** line through this point of intersection will give the correct secondary taps to use for that speaker.

- (7) Repeat the sequence for the other speakers in turn.

EXAMPLE:—A pair of 6v6 valves working into a plate to plate load of 8000 ohms are required to deliver 12 watts of audio signal to a 15 ohm speaker and 2 watts to a 3 ohm speaker. (The proportion of power is 12/4 or 0.86 and 2/14 or 0.14). From the graph it may be seen that the taps to use for the 15 ohm speaker are 3 and 7. The 3 ohm speaker should be connected to taps 3 and 4.

If the full 14 watts is required to be delivered to the 1.5 ohm speaker it will be seen from the graph that taps 3 and 8 should be used. In this case the lower section of the graph is ignored and a vertical line drawn from the required primary impedance until opposite the correct voice coil impedance.