

# THE KW 500 LINEAR AMPLIFIER



The KW500 Linear Amplifier is designed to be driven by a medium powered transmitter, such as the K.W. "Viceroy" or K.W. "Vanguard." Good linear operation is achieved for Single Sideband, A.M. or C.W. with a useful power gain.

The Unit employs an 813 valve amplifier with grounded grid and screen and incorporates internal Power Supplies. The H.T. supply produces approximately 1750 volts, which can run the P.A. at over 250 watts on C.W. and A.M. and over 500 watts P.E.P. on S.S.B. A switch for tuning the Linear Amplifier reduces H.T. to 1000 volts.

The Amplifier operates on 10, 15, 20, 40 and 80 metre Bands. The Antenna output is low impedance by Pi section filter. A harmonic trap is provided to help reduce any harmonic content.

Drive from the transmitter/exciter is applied to the Cathode (heater) of the 813. The amount of power required is in the region of 35-40 watts. This power is additive to the output of the Power Amplifier.

The Power Supply employs the latest type Xenon mercury Rectifier Valves which are virtually free from "hash." Automatic safety time delay relay is incorporated. No external connections are required for muting the P.A. as the anode current is only 20-30 m/a without "drive".

In addition to the harmonic trap for TVI proofing, the P.A. stage is completely screened (double screened, with steel cabinet). As the 813 operates in Class AB1, harmonic content is kept to a minimum.

Provision is made at the rear of the cabinet for installing a Low Pass Filter. This can be connected in the co-axial cable connecting the output of the "driver" to the input of the amplifier, or in the amplifier output feed to the Antenna.

|                              |                                                      |
|------------------------------|------------------------------------------------------|
| Valves                       | 2 × GXU1. 1 × 813                                    |
| A.C. Mains Input Supplied in | 200-250v a.c. 45-65 cycles 115v. available to order. |
| Attractive Cabinet           | 21½" × 14½" × 11" high.                              |
| Weight                       | 75 lbs. approx.                                      |
| Price Complete with Valves   | £87 10s. 0d.                                         |

*Easy Terms Available in U.K.*

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## I N S T R U C T I O N S

### FOR INSTALLATION & TUNING THE KW 500 LINEAR AMPLIFIER

1. Make sure both panel switches are in the off position. Remove back plate of cabinet and adjust two mains selector panels to correct operating voltage.
2. Connect RF output of KW "Viceroy" or similar transmitter by means of a short length of 75 ohm co-ax cable co-ax socket at rear of Linear Amplifier.
3. Set Toggle Switch "Tune"-"Normal" to "Tune".
4. Connect Antenna feeder into "Antenna" socket at rear of P.A. Screening compartment.
5. Switch on "Mains" switch. After one minute the protective delay switch will operate, but H.T. will not be applied until the "HT" switch is set to ON.  
Note:- On initial installation or when the Unit has not been in use for a period it is advisable to wait five minutes before operating HT ON switch.
6. Set up "Viceroy" or exciter to required waveband and adjust Linear PA BANDSWITCH to same waveband.
7. Turn OUTPUT COUPLING control fully clockwise and PA TUNE fully counter-clockwise.
8. Apply drive to Linear with "Viceroy" in the low power position (with carrier inserted as though it is being tuned for normal operation) or with other exciter so that the Linear is indicating 20 m/a in the grid current meter.  
Note:- It may be necessary to increase drive to 40 m/a in order to obtain correct PA tuning conditions.
9. Turn off Carrier insertion at Exciter and switch on HT at Linear front panel. Anode current will now be indicated by the Anode current meter.
10. ~~As~~ re-insert carrier and as quickly as possible resonate PA TUNE Control for maximum amount of dip in the Anode Current Meter.



11. Load P.A. by normal method with Pi Output by tuning the Output Coupling in steps counter-clockwise and retuning the PA for anode current "dip". With 20 m/a grid current the loading should be adjusted for an anode current "dip" to approximately 120 m/a.
12. Drive to linear amp can now be increased to 40 m/a grid current and PA loading adjusted for an anode current dip to 150 m/a. Input impedance is approx. 300 ohms.

CARRY OUT QUICKLY THE OPERATION OF P.A. LOADING AND ADJUSTMENTS WITH CARRIER INSERTED AS DAMAGE TO THE P.A. TUBE COULD OCCUR IF LEFT FOR A SHORT PERIOD IN AN OFF RESONANCE CONDITION

13. When the PA is properly in resonance put "Tune"- "Normal" switch to "Normal".
14. Turn off "Carrier Insertion" at the Exciter and adjust audio gain whilst speaking into the microphone so that average peaks indicate 40/50 m/a grid current at the Linear and approximately 200/220 m/a anode current. Should the anode current peaks be lower than this for 40/50 m/a grid current, this indicates that the antenna loading is too light and output coupling can usually be tuned further counter clockwise.

Note:- It is helpful to install an SWR indicator in the Antenna feeder similar to the 'KW Match'. This will indicate correct tuning for maximum power output in relation to P.A. tuning and Output Coupling adjustments.

15. For A.M. Operation. The maximum Anode Current indicated should be 100 m/a with the "Tune"- "Normal" switch at "Normal".
16. For users of other exciters such as the HT37, KWML etc. where no power switching exists, the same tuning procedure should be followed.

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