

FERRANTI

OUTPUT PENTODE

An indirectly heated output pentode. It is suitable for use in Television Receivers as a Frame Time Base Output Valve, or an Audio Output Valve. It is intended for use in series heater chains.

PHYSICAL DETAILS.

Base	...	...	B9A—Noval.
Max. Overall Length	...	...	78.5 mm. (3 $\frac{1}{8}$ in.).
Max. Seated Height	...	...	71.5 mm. (3 in.).
Max. Diameter	...	...	22.2 mm. ($\frac{7}{8}$ in.).
Mounting Position	...	...	Any.

BASE CONNECTIONS.

Pin 1—Internal Connection.	Pin 5—Heater.
Pin 2—Control Grid.	Pin 6—Internal Connection.
Pin 3—Cathode,	Pin 7—Anode.
Suppressor Grid.	Pin 8—Internal Connection.
Pin 4—Heater.	Pin 9—Screen Grid.

HEATER.

Heater Current	...	...	0.3 Amp.
Heater Voltage	...	...	16.5 volts.

RATINGS.

Max. DC. Supply Voltage	...	550 volts.
Max. Anode Voltage	...	250 volts.
*Max. Peak Anode Voltage	...	2.5 kV.
Max. Anode Dissipation	...	9 watts.
Max. Screen Voltage	...	250 volts.
Max. Screen Dissipation	...	2.5 watts.
Max. Cathode Current	...	75 mA.
Max. Neg. Grid Voltage	...	-1.3 volts.
Max. Vh-k	...	200 volts.
Max. Rh-k	...	20 k Ω
§Max. Rg ₁ -k	...	1 M Ω

CHARACTERISTICS.

Anode Voltage	...	170	200	volts.
Screen Voltage	...	170	200	volts.
Suppressor Grid Voltage	...	0	0	volts.
Control Grid Voltage	...	-10.4	-14.2	volts.
Anode Current	...	53	45	mA.
Screen Current	...	10	8.5	mA.
Mutual Conductance	...	9	7.6	mA/V.
Anode Impedance	...	20	24	k Ω
Inner μ (μ g ₁ -g ₁)	...	10	10	

TYPICAL OPERATION.

As Frame Time Base Output

Anode Voltage	...	50	60	volts.
Screen Voltage	...	170	200	volts.
Control Grid Voltage	...	-1	-1	volt.
Anode Current	...	140	175	mA.

The above figures are for an average new valve. To allow for manufacturing spread of characteristics, and to cover change during life, the output circuit should be designed round the following values:—

Anode Voltage	...	50	60	volts.
Screen Voltage	...	170	200	volts.
Anode Current	...	90	120	mA.

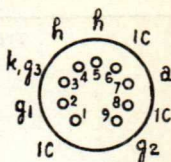
As Audio Amplifier.

Anode Voltage	...	170	200	volts.
Suppressor Grid Voltage	...	0	0	volts.
Screen Grid Voltage	...	170	200	volts.
Control Grid Voltage	...	-10.4	-13.2	volts.
Anode Load Resistor	...	3	4	k Ω
Anode Current	...	53	45	mA.
Screen Current	...	10	8.5	mA.
Input A.F. Voltage	...	6	7	volts (r.m.s.)
Power Output (D=10%)	...	4.0	4.2	watts.

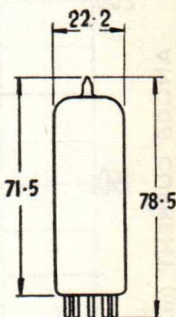
*Max. pulse duration of 10% of one cycle, with a maximum of 2 m/sec.

§For frame output operation the max. value of Rg₁-k may be 2.2 M Ω

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Base
Connections
Underside View
of Base



All Dimensions
shown are in
millimetres
(max.).





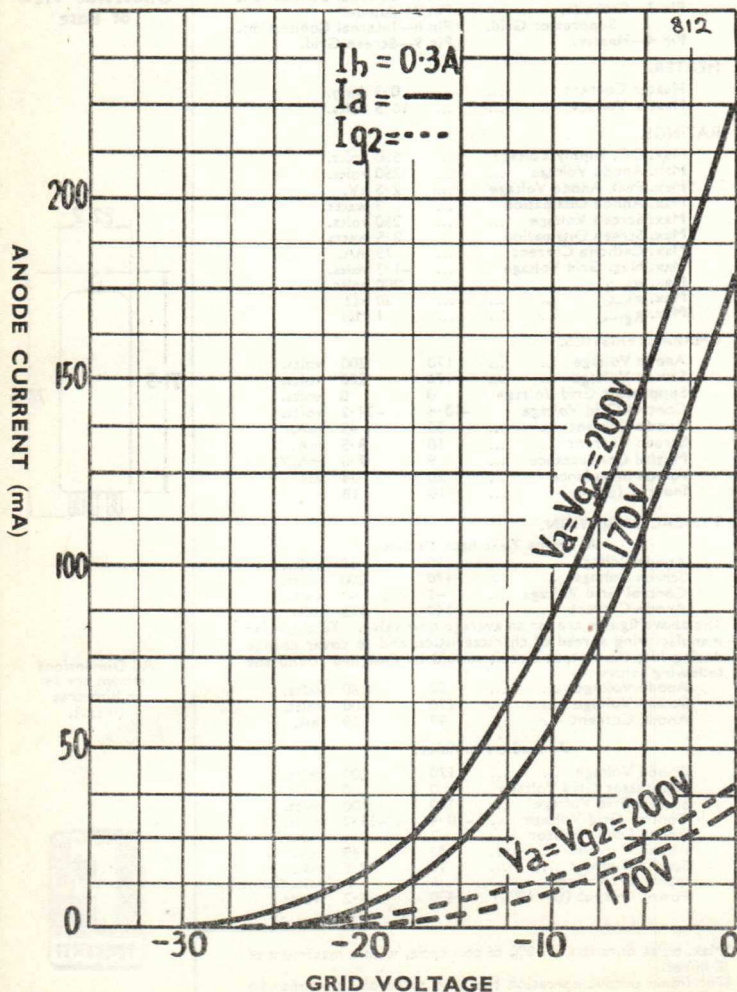
TYPICAL OPERATION (cont.)

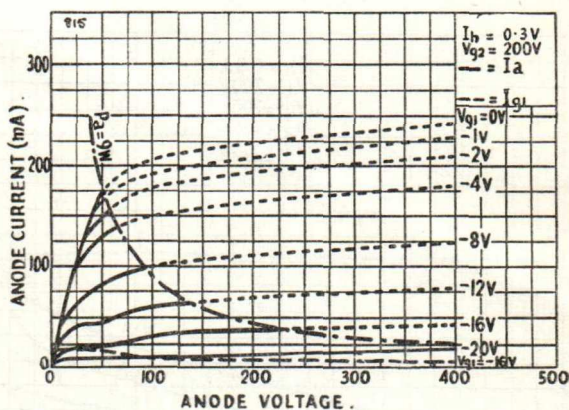
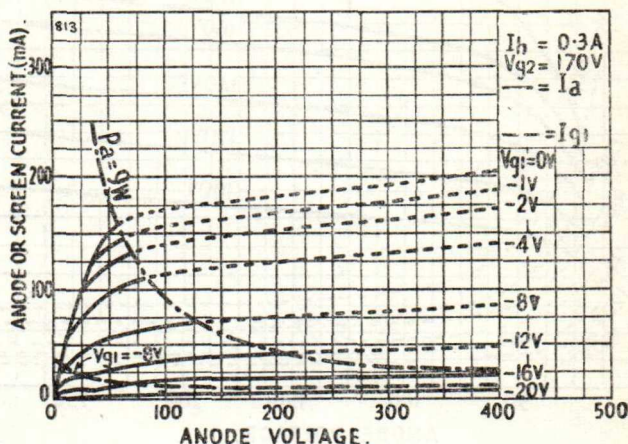
As Audio Amplifier (2 valves in push pull).

Anode Voltage	...	...	200 volts.
Screen Voltage	...	...	200 volts.
Auto Bias Resistor (R_k)	...	...	135 ohms.
Optimum Load Resistance (Anode to Anode)	...	...	4 k Ω
Input A.F. Voltage	...	...	13.5 volts (r.m.s.).
Power Output ($D=5\%$)	...	...	12 watts.

CAPACITANCES.

C_{in}	...	...	11.0 pF.
C_{out}	...	...	6.2 pF.
C_{a-g_1}	...	...	<1.0 pF.
C_{g_1-h}	...	...	<0.15 pF.





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