

FERRANTI LINE OUTPUT PENTODE

An indirectly heated output pentode designed for use in Television Receivers as a Line Time Base Output Valve. It is intended for use in a.c. or d.c. series heater chains.

PHYSICAL DETAILS.

Base	...	...	B9A—Noval.
Top Cap	...	...	CT1.
Max. Overall Length	...	...	83 mm. ($3\frac{3}{8}$ in.).
Max. Seated Height	...	...	76 mm. (3 in.).
Max. Diameter	...	...	22.2 mm. ($\frac{7}{8}$ in.).
Mounting Position	...	...	Any.

BASE CONNECTIONS.

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

HEATER.

Heater Current	...	0.3 amp.
Heater Voltage	...	21.5 volts.

RATINGS.

Max. DC. Supply Voltage	...	550 volts.
Max. Anode Voltage	...	250 volts.
*Max. Peak Anode Voltage	...	7 kV.
†Max. Anode Dissipation	...	8 watts.
Max. Screen Voltage	...	250 volts.
‡Max. Screen Dissipation	...	4.5 watts.
Max. Cathode Current	...	180 mA.
**Min. Neg. Grid Voltage	...	1.3 volts.
Max. V _{h-k}	...	200 volts.
Max. R _{h-k}	...	20 kΩ
§Max. R _{g1-k}	...	500 kΩ
Max. Bulb Temperature	...	185 °C.

CHARACTERISTICS.

Anode Voltage	...	170	200	volts.
Screen Voltage	...	170	200	volts.
Suppressor Grid Voltage	...	0	0	volts.
Control Grid Voltage	...	-22	-28	volts.
Anode Current	...	45	40	mA.
Screen Current	...	3	2.8	mA.
Mutual Conductance	...	6.2	6.0	mA/V.
Anode Impedance	...	10	11	kΩ
Inner μ (μ_{g1-g2})	...	5.5	5.5	

TYPICAL OPERATION.

As Line Output Pentode.

Anode Voltage	...	70	70	volts.
Screen Voltage	...	170	200	volts.
Control Grid Voltage	...	-1	-1	volt.
Anode Current	...	380	470	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 around the following values :—

Anode Voltage	...	70	70	volts.
Screen Voltage	...	170	200	volts.
Anode Current	...	<250	<310	mA.

As Audio Amplifier (2 valves in push pull).

Anode Voltage	...	170	200	volts.
Suppressor Grid Voltage	...	0	0	volts.
Screen Grid Voltage	...	170	200	volts.
Control Grid Voltage	...	-27	-31.5	volts.
Screen Feed Resistor	...	1	1	kΩ
Anode Current (Zero signal)	...	2 x 20	2 x 25	mA.
Anode Current (Max. signal)	...	2 x 73	2 x 87	mA.
Screen Current (Zero signal)	...	2 x 1.5	2 x 2	mA.
Screen Current (Max. signal)	...	2 x 10	2 x 12.5	mA.
Optimum Load (Anode to Anode)	...	2.5	2.5	kΩ

*Max. pulse duration of 18% of one cycle, with a maximum of 18 μ secs.

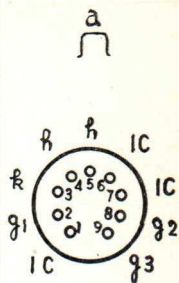
†pa+pg2 should not exceed 10 watts.

‡Max. average pg2 is 6 watts for the period between the start of screen current and the instant when the anode current attains one half of its normal operating value.

**For grid current of 0.3 μ A.

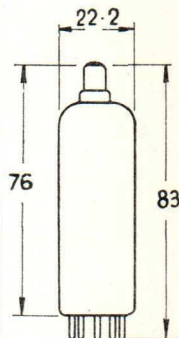
§For line output operation the max. value of R_{g1-k} may be 3.3 MΩ

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Base
Connections

Underside View
of Base



All Dimensions
shown are in
millimetres
(max.).

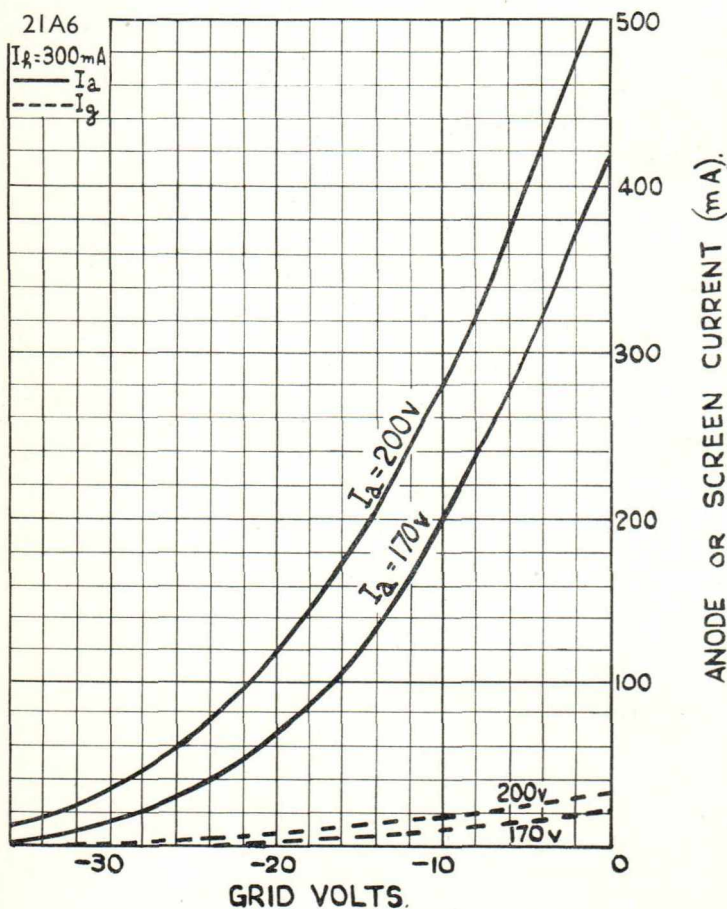


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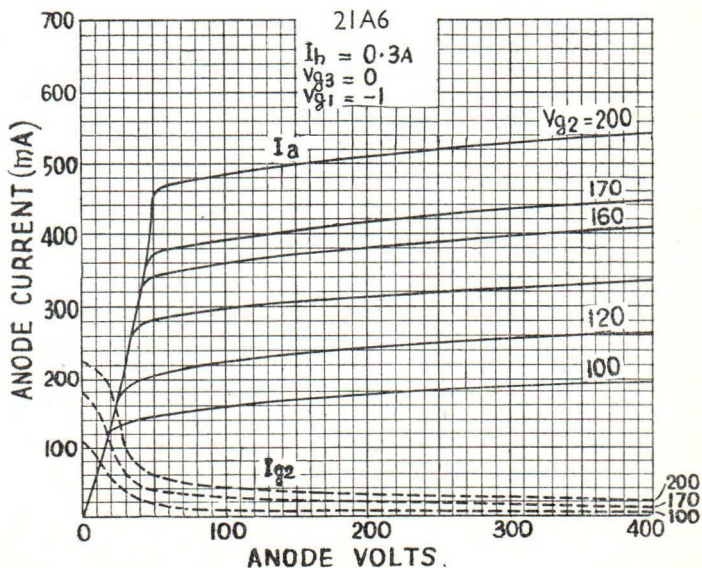
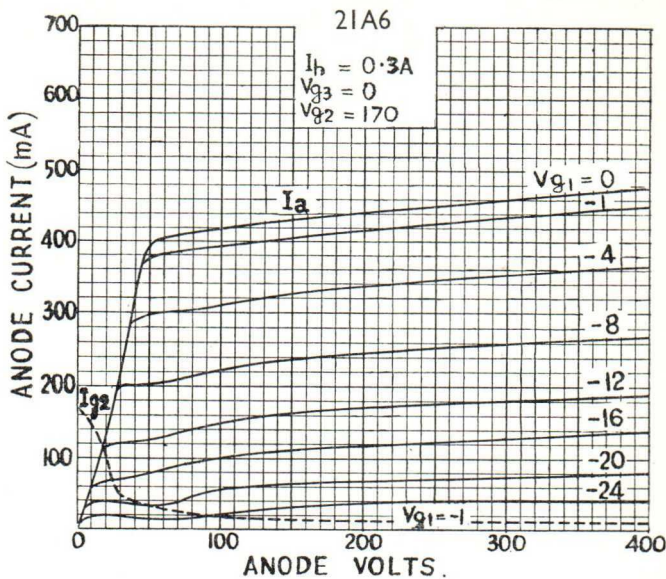
CAPACITANCES.

C_{in}	...	...	...	14.7 pF.
C_{out}	...	...	...	6.4 pF.
C_{a-g1}	...	...	...	<0.8 pF.
C_{a-k}	...	...	...	<0.1 pF.
C_{g1-h}	...	...	...	<0.2 pF.





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