

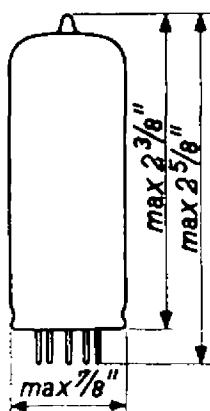
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DOUBLE DIODE-REMOTE CUTOFF PENTODE for use as RF, IF or AF amplifier

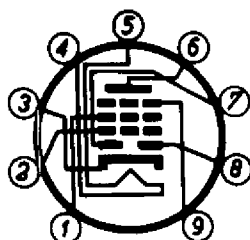
MECHANICAL DATA

Cathode	Coated unipotential
Base	E9-1
Bulb	T6½
RETMA basing designation	9T

TUBE OUTLINE



BOTTOM VIEW OF BASE



BASE PIN NO.

ELEMENT

1	Grid No.2
2	Grid No.1
3	Cathode, internal shield
4	Heater
5	Heater
6	Pentode plate
7	Diode No.1 plate
8	Diode No.2 plate
9	Grid No.3

ELECTRICAL DATA

HEATER DATA

Heater voltage	17 volts
Heater current	100 mamps

DIRECT INTERELECTRODE CAPACITANCES

Pentode grid No.1 to all other elements	4.2 μμF
Pentode plate to all other elements	4.9 μμF
Between pentode plate and grid No.1	max. 0.0025 μμF
Between pentode grid No.1 and heater	max. 0.07 μμF
Between diode No.1 plate and cathode	2.2 μμF
Between diode No.2 plate and cathode	2.35 μμF
Between diode plates	max. 0.35 μμF
Between diode No.1 plate and heater	max. 0.02 μμF
Between diode No.2 plate and heater	max. 0.005 μμF
Between diode No.1 plate and grid No.1	max. 0.0008 μμF
Between diode No.2 plate and grid No.1	max. 0.001 μμF
Between diode No.1 plate and pentode plate	max. 0.2 μμF
Between diode No.2 plate and pentode plate	max. 0.05 μμF

MAXIMUM RATINGSPentode section

Plate voltage (without current)	550 volts
Plate voltage	250 volts
Plate dissipation	1.5 watts
Screen grid voltage (without current)	550 volts
Screen grid voltage (plate current less than 2 mamps)	250 volts
Screen grid voltage (plate current = 5 mamps)	125 volts
Screen grid dissipation	0.3 watts
Cathode current	10 mamps
External resistance between grid No.1 and cathode with cathode bias	3 megohms ¹⁾
External resistance between heater and cathode	20,000 ohms
Voltage between heater and cathode	150 volts

Diode sections (each diode)

Peak plate inverse voltage	350 volts
Plate current	0.8 mamp
Peak plate current	5 mamps
External resistance between heater and cathode	20,000 ohms
Voltage between heater and cathode	150 volts

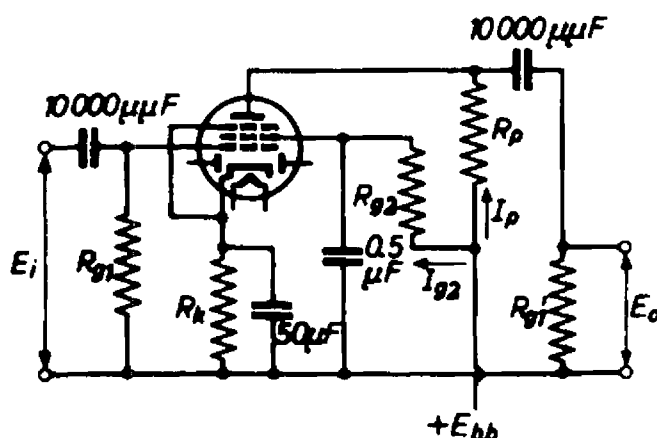
¹⁾The maximum value of this resistance is 22 megohms when the grid bias is obtained by means of grid current biasing only

OPERATING CHARACTERISTICS OF THE PENTODE SECTION AS R.F. OR I.F. AMPLIFIER

Plate and supply voltage	200	volts
Grid No.3 voltage	0	volt
Grid No.2 series resistor	68,000	ohms
Cathode resistor	295	ohms
Grid No.1 voltage	-2 -31.5	volts
Plate current	5	- milli-amps
Grid No.2 current	1.75	- milli-amps
Transconductance	2200	22 micromhos
Plate resistance	1.0	>10 megohms
Amplification factor of grid No.2 with respect to grid No.1	18	-
Equivalent noise resistance	6,200	- ohms

Plate and supply voltage	170	100	volts
Grid No.3 voltage	0	0	volts
Grid No.2 series resistor	47,000	47,000	ohms
Cathode resistor	295	295	ohms
Grid No.1 voltage	-2 -26.5	-1.15 -15.5	volts
Plate current	5.0	-	2.8 - mamps
Grid No.2 current	1.75	-	1.0 - mamps
Transconductance	2200	22	1900 19 micromhos
Plate resistance	0.9	>10	0.9 >10 megohm
Amplification factor of grid No.2 with respect to grid No.1	18	-	18 -
Equivalent noise resistance	6200	-	4600 - ohms

OPERATING CHARACTERISTICS OF THE PENTODE SECTION AS
RESISTANCE COUPLED A.F. AMPLIFIER



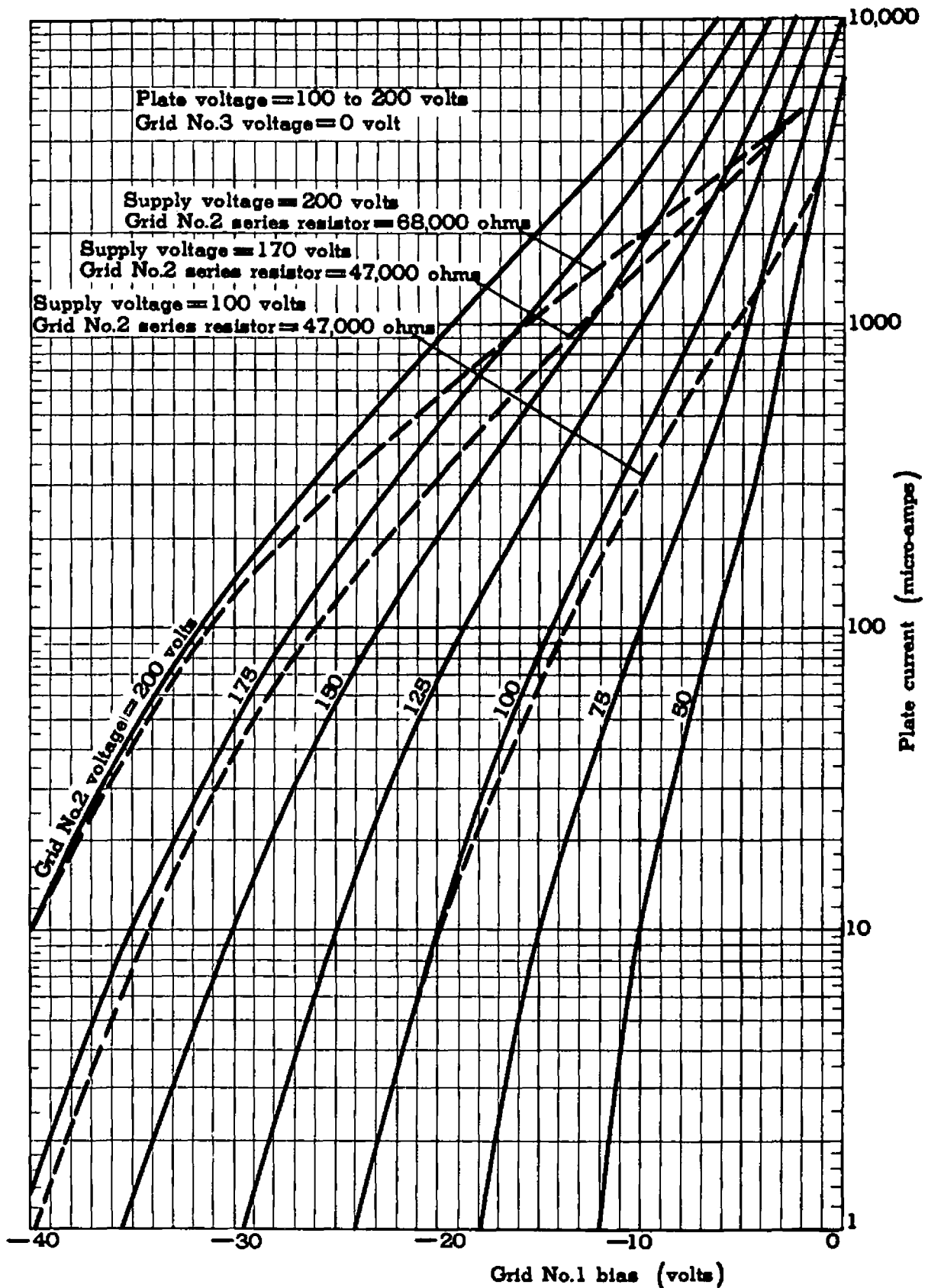
In circuits with a loudspeaker with an acoustical efficiency of 5% this valve can be used without special precaution against microphonic effects if the input voltage for an output of 50 milli-watts of the output tube is more than 25 milli-volts

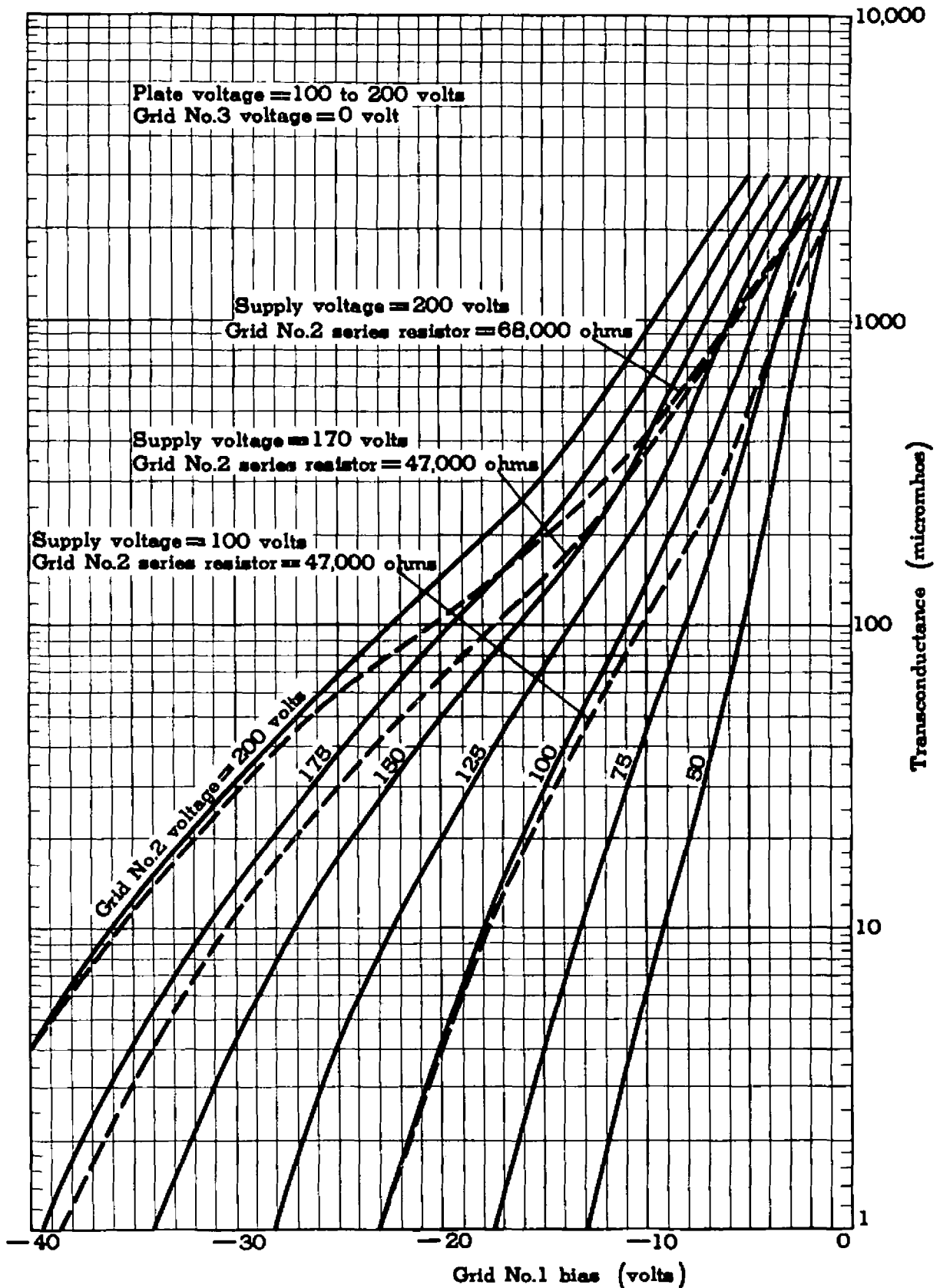
E_{bb} (volts)	R_p (M Ω)	R_{g2} (M Ω)	R_{g1} (M Ω)	R_k (Ω)	R'_{g1} (M Ω)	I_p (mA)	I_{g2} (mA)	$\frac{E_o}{E_i}$	Distortion(%) at E_o (r.m.s.)=		
									3 volts	5 volts	8 volts
170	0.22	0.68	1	2700	0.68	0.56	0.20	85	1.2	1.5	1.8
170	0.10	0.27	1	1000	0.33	1.25	0.50	70	1.2	1.6	2.0
170	0.22	0.82	10	0	0.68	0.56	0.19	140	0.8	1.0	1.4
170	0.10	0.33	10	0	0.33	1.16	0.46	100	0.8	1.4	2.0
100	0.22	0.68	1	2700	0.68	0.32	0.12	82	1.4	1.9	
100	0.10	0.27	1	1000	0.33	0.73	0.29	67	1.4	1.8	
100	0.22	0.82	10	0	0.68	0.32	0.11	100	2.8	3.0	
100	0.10	0.33	10	0	0.33	0.66	0.25	70	1.7	3.2	

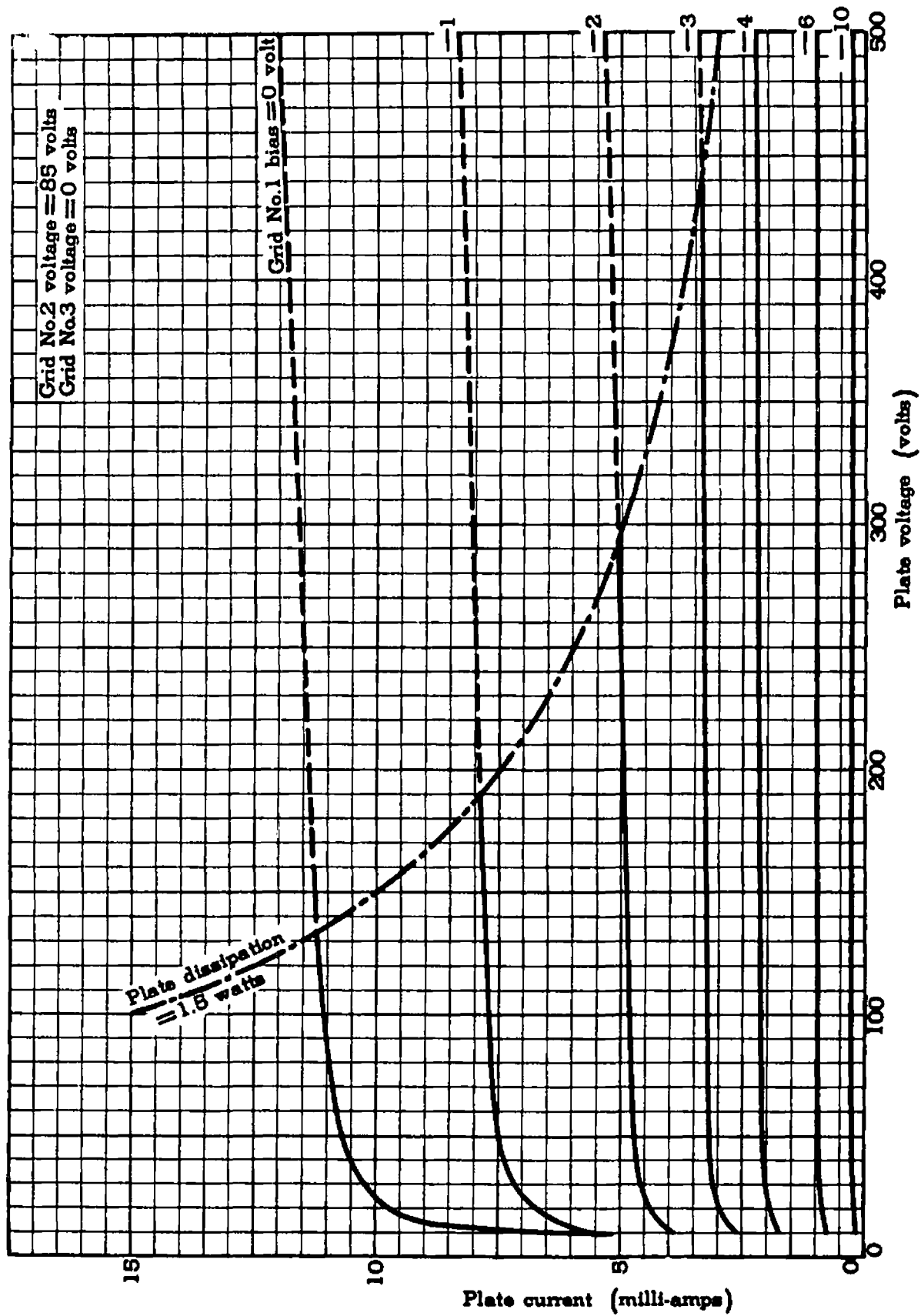
OPERATING CHARACTERISTICS OF THE PENTODE SECTION AS RESISTANCE COUPLED A.F. AMPLIFIER IN TRIODE CONNECTION

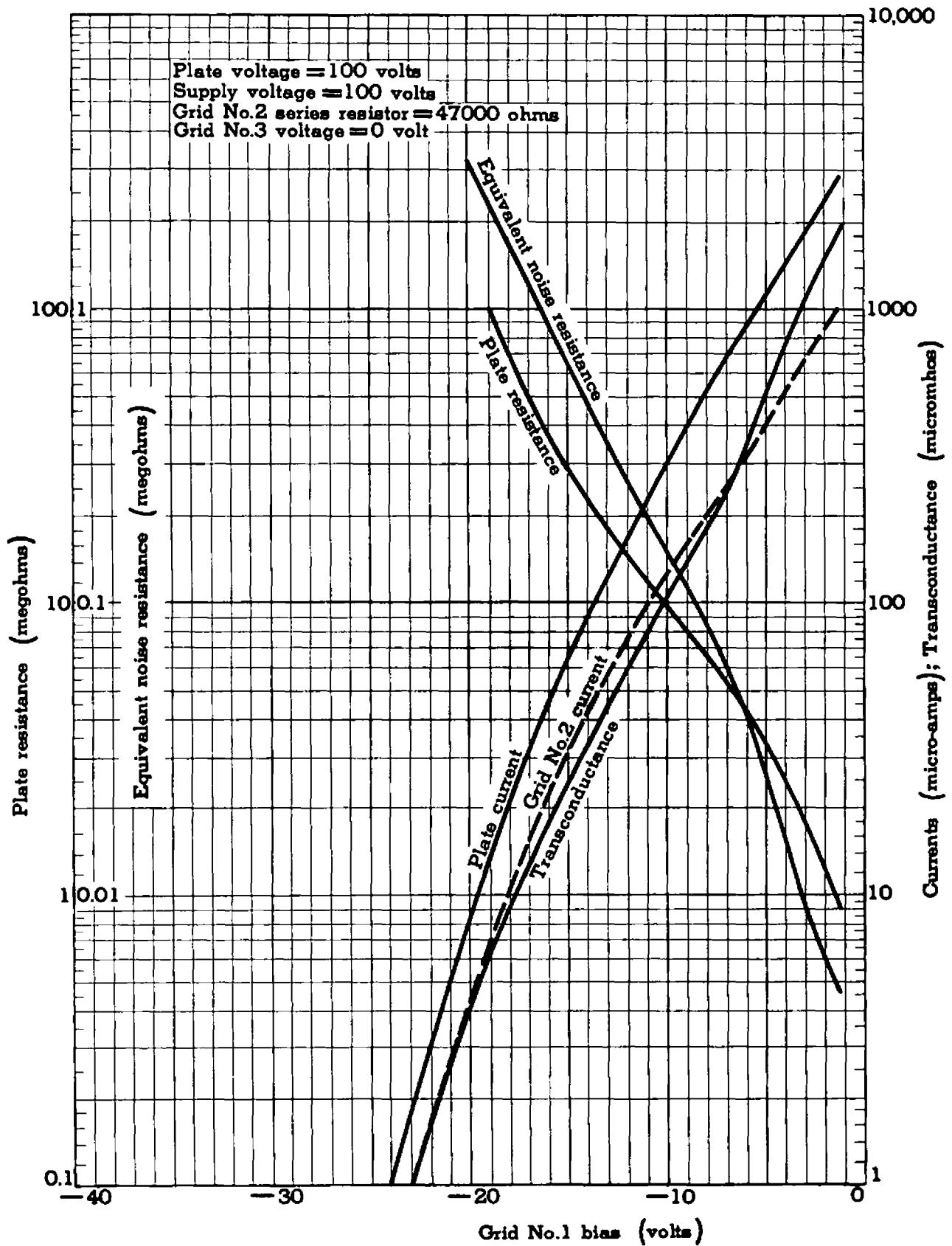
(grid No.2 connected to plate)

E _{bb} (volts)	R _p (MΩ)	R _{g1} (MΩ)	R _k (Ω)	R' _{g1} (MΩ)	I _p (mA)	$\frac{E_o}{E_1}$	Distortion (%) at E _o (r.m.s.) =		
							3volts	5volts	8volts
170	0.1	1	1800	0.33	1.25	11	2.1	3.5	4.8
170	0.047	1	1800	0.15	2.4	11	1.8	3.1	4.6
170	0.1	10	0	0.33	1.4	14	2.5	3.8	5.0
170	0.047	10	0	0.15	2.8	14	2.1	3.4	4.7
100	0.1	1	1800	0.33	0.74	11	3.2	4.9	
100	0.047	1	1000	0.15	1.4	11	3.0	4.8	
100	0.1	10	0	0.33	0.8	12	3.0	4.7	
100	0.047	10	0	0.15	1.5	12	3.0	4.8	









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