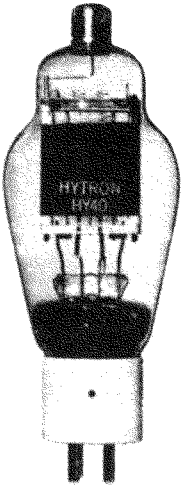
HYTRONIC LABORATORIES

4 - 38

Engineering Bulletin

40 - 1

Type HY40



PHYSICAL DATA

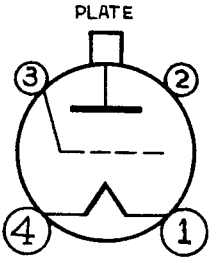
Plate	Processed Graphite
Grid	Molybdenum-Nickel
Filament	Thoriated Tungsten
Insulation	Processed Lava
Base	4 Pin UX Ceramic
Plate Lead	Large Metal Cap
Max. Overall Length	6 9/16"
Max. Diameter	2 7/16"
Bulb	ST-19
Net Weight	3 oz.

ELECTRICAL DATA

Filament Voltage	7.5	volts
Filament Current	2.25	amperes
D.C. Plate Voltage	1000.	volts max.
Plate Dissipation	40.	watts max.
Max. Plate Current	115.	ma.
Max. Grid Current	25.	ma.
Average Amp. Factor	25	
Mutual Conductance	3800	umhos

INTERELECTRODE CAPACITANCE

Grid to Plate	6.3 uuf
Grid to Filament	5.8 uuf
Plate to Filament	1.8 uuf



TOP VIEW

BASE PIN CONNECTIONS

1 - Filament
2 - No Connection
3 - Control Grid
4 - Filament

R.F. POWER AMPLIFIER, OSCILLATOR, CLASS "B" MODULATOR
GENERAL PURPOSE-HIGH EFFICIENCY TRIODE

The Hytron HY40 tube is a high efficiency triode of rugged construction. Because of its high value of transconductance it operates at high efficiency as an R.F. Amplifier requiring low driving power. The internal structure permits operation at maximum rating at frequencies up to 60 megacycles.

GENERAL DESCRIPTION

The construction of the HY40 is similar to that of higher priced tubes. A large sturdy graphite anode with plate lead at top of bulb isolates the plate from all stem wires. All insulating material is of specially processed lava.

The materials and workmanship in this product have been carefully prepared and are the result of lengthy research into the problems surrounding Amateur Radio. The quality and performance of this and other Hytron tubes is definitely assured by 17 years of successful manufacturing experience in the radio tube field.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator Class "B"

D.C. Plate Voltage	1000 max. volts
Maximum Signal D.C. Plate Current*	115 max. ma.
Maximum Signal Plate Input*	115 max. watts
Plate Dissipation*	40 max. watts

* Averaged over any Audio Frequency Cycle.

Typical Operation Two Tubes:
(Unless otherwise specified, values are for 2 tubes)

D.C. Plate Voltage	800	1000	volts
D.C. Grid Voltage	-28	-37½	volts
Static Plate Current	20	20	ma.
Peak A.F. grid to grid voltage	175	190 approx.	volts
Maximum Signal D.C. Plate Current	270	270	ma.
Load Resistance per Tube	1450	1750	ohms
Effective Load Resis. Pl.-Pl.	5800	7000	ohms
Maximum Signal Driving Power	5	6 approx.	watts
Maximum Signal Power Output	140	175 approx.	watts

R.F. POWER AMPLIFIER - CLASS "B" TELEPHONY

(Carrier conditions per tube for use with a max. modulation factor of 1.0)

D.C. Plate Voltage	1000 max. volts
D.C. Plate Current	75 max. ma.
Plate Input	75 max. watts
Plate Dissipation	40 max. watts

Typical Operation:

D.C. Plate Voltage	800	1000	volts
D.C. Grid Voltage	-32	-40	volts
Peak R.F. Grid Voltage	60	60	volts
D.C. Plate Current	75	75	ma.
D.C. Grid Current**	7	6	approx. ma.
Driving Power Required**	8	5.5	approx. watts
Power Output	18	25	approx. watts

PLATE MODULATED R.F. POWER AMPLIFIER - CLASS "C" TELEPHONY
(Carrier conditions per tube for use with a max. modulation factor of 1.0)

D.C. Plate Voltage	850 max. volts
D.C. Grid Voltage	-200 max. volts
D.C. Plate Current	90 max. ma.
D.C. Grid Current	25 max. ma.
Plate Input	77 max. watts
Plate Dissipation	40 max. watts

Typical Operation:

D.C. Plate Voltage	600	850	volts
D.C. Grid Voltage#	-67½	-90	volts
Peak R.F. Grid Voltage	185	195	volts
D.C. Plate Current	90	90	ma.
D.C. Grid Current**	20	15	approx. ma.
Driving Power Required**	4.5	3.5	approx. watts
Power Output	35	52	approx. watts

R.F. POWER AMPLIFIER AND OSCILLATOR-CLASS "C" TELEGRAPHY
(Key down conditions per tube without modulation.)

D.C. Plate Voltage	1000 max. volts
D.C. Grid Voltage	-150 max. volts
D.C. Plate Current	115 max. ma.
D.C. Grid Current	25 max. ma.
Plate Input	115 max. watts
Plate Dissipation	40 max. watts

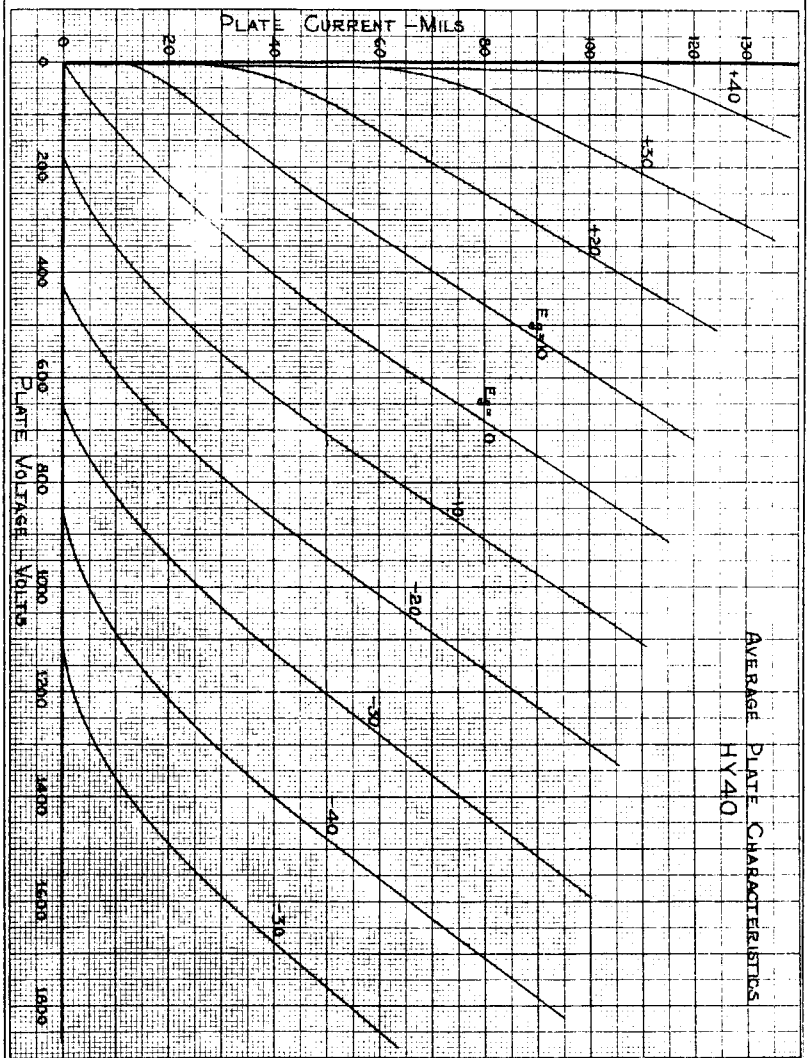
Typical Operation:

D.C. Plate Voltage	600	800	1000	volts
D.C. Grid Voltage#	-50	-67½	-90	volts
Peak R.F. Grid Voltage	165	170	175	volts
D.C. Plate Current	115	115	115	ma.
D.C. Grid Current**	20	20	20	approx. ma.
Driving Power Required**	5	5	5	approx. watts
Power Output	48	67	86	approx. watts

** Subject to wide variations controlled by circuit constants and operating characteristics of associated input and output circuits.
# Grid leak bias is not recommended. If used, care must be taken to maintain grid excitation while plate voltage is applied.

AVERAGE PLATE CHARACTERISTICS

WITH E_{c1} AS VARIABLE



HYTRONIC LABORATORIES

DIVISION OF

HYTRON CORPORATION - SALEM, MASS., U.S.A.

PRINTED IN U.S.A.