

FOR THOSE WHO WANT THE BEST

TRANSMITTING TUBES SPECIAL PURPOSE TUBES

*Laboratory designed and built especially
for use at high and ultra-high frequencies*



Why continuous-service ratings?

In response to numerous inquiries, Hytronic Laboratories presents this explanation of why it *does not* rate its tubes on the basis of *intermittent* operation.

As every user knows, the value received from a tube is dependent as much upon the *length of service or life* as upon the power rating. In fact, value is easily calculated by multiplying the power by the number of *hours service*.

The term "intermittent rating" infers that for short periods of time, such a rating may be used without damaging or shortening the life of the device. It is in this sense that one applies "intermittent" to transformer or motor ratings.

The life of transmitting tubes (also receiving) is, on the other hand, reduced by overloading, even if for very short periods of time — a fact upon which all engineers agree. An extensive series of tests on various makes of tubes and continuous research by Hytron engineers have definitely proved that when tubes are overloaded, as in so-called intermittent

operation, the loss in life greatly exceeds the relative gain in power output.

It is an acknowledged fact that an increase of 25 to 50% in power output of a transmitter is generally not perceptible at the receiving end. This being so, it seems absurd to Hytron engineers that the life of a tube be sacrificed to obtain slightly more power output.

Intermittent service tube ratings do not include a margin of safety to allow for improper tuning and adjustments, inefficient circuits, inaccurate filament voltages, etc., which often exist (in amateur transmitters particularly) due to the lack of expensive measuring and laboratory instruments.

It is for these reasons that Hytronic Laboratories engineers have insisted that all tubes be *honestly* rated on the basis of continuous-service operation. Hytron transmitting tubes are definitely superior in design and quality and are sold on the basis of such, instead of upon misleading power ratings.

HONEST VALUE — HONEST RATINGS — HONESTLY ADVERTISED

HYTRONIC LABORATORIES

The research and electronic division of the Hytron Corporation

MANUFACTURERS OF RADIO TUBES EXCLUSIVELY SINCE 1921

SALEM, MASSACHUSETTS, U. S. A.

TRANSMITTING POWER TRIODES

Hytron triodes are recognized for their long life and efficient performance. A SPEER graphite anode provides an exceptional safety factor in cases of temporary overloads and effectively reduces normal operating temperature. Exclusive designs and the finest materials at no extra cost make Hytron triodes an outstanding value. They are extremely easy to drive because of the unusually high mutual conductance. Full input ratings up to 60 megacycles (5 meters).

HY51A-HY51B \$4.75 Net

Medium-mu graphite-anode R.F. power amplifier, oscillator, class "B" modulator, general-purpose high-efficiency triode.

	HY51A	HY51B
Filament potential	7.5	10.0 volts
Filament current	3.5	2.25 amps.
Plate potential	1000 max. DC volts	
Plate current	175 max. DC ma.	
Grid current	25 max. DC ma.	
Plate dissipation (CCS)	.65 max. watts	
Average amplification factor	.25	
Mutual conductance	.6500 μ mhos	

Inter-electrode capacitances

Grid to plate	7.0 μ pf.
Grid to filament	6.6 μ pf.
Plate to filament	0.75 μ pf.

Speer graphite anode
Ceramic Alsimag base
Dual grid-stem leads
Filament heat radiators
Low-loss lava insulation



HY51Z \$4.75 Net

Zero-bias graphite-anode class "B" modulator, R.F. power amplifier, frequency multiplier, high-mu, high-efficiency triode.

Filament potential	7.5 volts
Filament current	3.5 amps.
Plate potential	1000 max. DC volts
Plate current	175 max. DC ma.
Grid current	.35 max. DC ma.
Plate dissipation (CCS)	.65 max. watts
Average amplification factor	.85
Mutual conductance	7200 μ mhos

Ceramic Alsimag base
Speer graphite anode
Dual grid-stem leads
Filament heat radiators
Low-loss lava insulation

Inter-electrode capacitances

Grid to plate	7.2 μ pf.
Grid to filament	7.9 μ pf.
Plate to filament	0.75 μ pf.

HY40 \$3.75 Net

Medium-mu graphite-anode R.F. power amplifier, oscillator, class "B" modulator, general-purpose high-efficiency triode.

Filament potential	7.5 volts
Filament current	2.25 amps.
Plate potential	1000 max. DC volts
Plate current	125 max. DC ma.
Grid current	25 max. DC ma.
Plate dissipation (CCS)	.40 max. watts
Average amplification factor	.25
Mutual conductance	3800 μ mhos

Inter-electrode capacitances

Grid to plate	5.6 μ pf.
Grid to filament	5.8 μ pf.
Plate to filament	0.85 μ pf.

Filament heat radiators
Dual grid-stem leads
Speer graphite anode
Ceramic Alsimag base
Low-loss lava insulation



HY40Z \$3.75 Net

Zero-bias graphite-anode class "B" modulator, R.F. power amplifier, frequency multiplier, high-mu, high-efficiency triode.

Filament potential	7.5 volts
Filament current	2.5 amps.
Plate potential	1000 max. DC volts
Plate current	125 max. DC ma.
Grid current	.30 max. DC ma.
Plate dissipation (CCS)	.40 max. watts
Average amplification factor	.80
Mutual conductance	4200 μ mhos

Dual-grid stem leads
Ceramic Alsimag base
Speer graphite anode
Filament heat radiators
Low-loss lava insulation

Inter-electrode capacitances

Grid to plate	5.6 μ pf.
Grid to filament	6.2 μ pf.
Plate to filament	0.80 μ pf.



HY30Z \$2.75 Net

Zero-bias graphite-anode class "B" modulator, R.F. power amplifier, frequency multiplier, high-mu, high-efficiency triode.

Filament potential (AC or DC)	6.3 volts
Filament current	2.25 amps.
Plate potential	850 max. DC volts
Plate current	.90 max. DC ma.
Grid current	.25 max. DC ma.
Plate dissipation (CCS)	.30 max. watts
Average amplification factor	.87
Mutual conductance	3600 μ mhos

Speer graphite anode
Ceramic Alsimag base
Dual grid-stem leads
Filament heat radiators
Low-loss lava insulation

Inter-electrode capacitances

Grid to plate	4.85 μ pf.
Grid to filament	6.0 μ pf.
Plate to filament	0.70 μ pf.

HY31Z \$3.50 Net

Twin-triode with instant-heating filament. Zero-bias class "B" modulator, R.F. power amplifier, frequency multiplier.

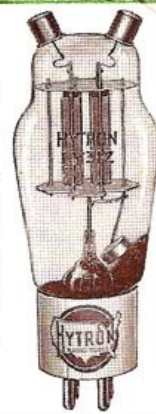
Filament potential (AC or DC)	6.3 volts
Filament current *	2.5 amps.
Plate potential	500 max. DC volts
Plate current *	150 max. DC ma.
Grid current *	.30 max. DC ma.
Plate dissipation (CCS) *	.30 max. watts
Average amplification factor	.45
Mutual conductance	1800 μ mhos

* For both triode sections

Inter-electrode capacitances

Grid to plate	5.5 μ pf.
Grid to filament	5.0 μ pf.
Plate to filament	1.9 μ pf.

Plate connections to twin top caps
Thoriated-tungsten filaments
Ceramic Alsimag base



ULTRA-HIGH-FREQUENCY POWER TRIODES



Actual size

HY114B, HY615 \$2.25 Net

U-H-F triode power oscillator, R.F. amplifier, super-regenerative high-sensitivity detector for receivers, transceivers, and transmitters.

HY114B	HY615
Filament potential 1.25 to 1.4	6.3 v.
Filament current 0.145	0.17 amps.
Plate potential 180	300 max. DC v.
Plate current 15	20 max. DC ma.
Plate dissipation (CCS) 2	3.5 max. watts
Amplification factor 12	22
Mutual conductance	1150 2200 μ mhos

Both the HY615 and HY114B feature short connection leads and low inter-electrode capacitances resulting in more efficient operation on U-H-F since higher L to C ratios are possible.

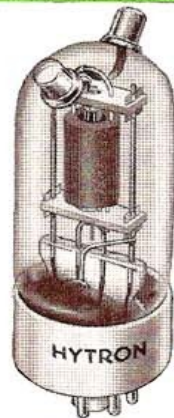
Full input ratings to 300 megacycles (1 meter)	Inter-electrode Capacitances
All-ceramic octal base	Grid to plate . . . 1.85 μ f.
Plate and grid to twin top caps	Grid to cathode . 1.40 μ f.
	Plate to cathode . 1.45 μ f.

HY75 \$3.95 Net

Graphite-anode U-H-F power oscillator, R.F. amplifier, frequency multiplier, high-efficiency triode.

Filament potential (AC or DC) 6.3 volts	
Filament current 2.6 amps.	
Plate potential 450 max. DC volts	
Plate current 100 max. DC ma.	
Plate input	Mod. Unmod.
224MC 24	30 . . . max. DC watts
112MC 28	35 . . . max. DC watts
56MC 36	45 . . . max. DC watts
Plate dissipation (CCS) 15 max. watts	
Average amplification factor 10	
Mutual conductance 2300 μ mhos	

Speer graphite anode	Dual top caps
Low-loss lava insulation	Helically-coiled filament
Tantalum grid	All-ceramic octal base
Instant-heating filament	



BEAM-POWER TRANSMITTING TETRODES

Hytron beam tetrodes are widely used because of the ease of drive and complete R. F. shielding which makes neutralizing unnecessary, even when operated at the maximum rating of 60 megacycles (5 meters). These tetrodes, because of their high power sensitivity, greatly simplify transmitter design and are recommended for bandswitching units.

HY61/807 \$3.50 Net

R.F. power amplifier, oscillator, frequency multiplier; Class A, AB₁, AB₂ modulator; general-purpose beam tetrode.

Heater potential 6.3 volts
Heater current 0.9 amps.
Plate potential 600 max. DC volts
Plate current 100 max. DC ma.
Screen potential 300 max. DC volts
Grid current 5 max. DC ma.
Plate dissipation (CCS) 25 max. watts
Average amplification factor 135
Mutual conductance 6000 μ mhos

Fully shielded for R.F.	Inter-electrode Capacitances
$\frac{1}{4}$ -watt R.F. driving power	Grid to plate . . . 0.2 μ f.
Ceramic Alsimag base	Input electrodes . . . 11.0 μ f.
Low-drain heater	Output electrodes . . . 7.0 μ f.



HY69 \$3.95 Net

Instant-heating filament-type beam tetrode. R.F. power amplifier, oscillator, frequency multiplier; Class A, AB₁, AB₂ modulator; general-purpose tetrode.

Filament potential (AC or DC) . . . 6.0 volts
Filament current 1.5 amps. at 6.0 v.
Plate potential 600 max. DC volts
Plate current 100 max. DC ma.
Screen potential 300 max. DC volts
Grid current 7.5 max. DC ma.
Plate dissipation (CCS) 40 max. watts
Average amplification factor 140
Mutual conductance 3250 μ mhos

Grid to plate . . . 0.19 μ f.	Ceramic insulators
Input electrodes 15.35 μ f.	Ceramic Alsimag base
Output electrodes . . 6.7 μ f.	Thoriated-tungsten filament
	Fully shielded for R.F.
	No filament drain from battery during stand-by



HY65 \$3.00 Net

Instant-heating beam-power tetrode. R.F. power amplifier; oscillator; frequency multiplier; Class A, AB₁, AB₂ modulator; all-purpose shielded tetrode.

Filament potential (AC or DC) 6.0 volts
Filament current 0.85 amps.
Plate potential 450 max. DC volts
Plate current 63 max. DC ma.
Screen potential 250 max. DC volts
Grid current 6 max. DC ma.
Plate dissipation (CCS) . . . 15 max. watts
Average amplification factor 175
Mutual conductance 2850 μ mhos

Ceramic octal base	Inter-electrode Capacitances
$\frac{1}{2}$ -watt R.F. grid driving power	Grid to plate . . . 0.1 μ f.
Fully shielded for R.F.	Input electrodes 8.4 μ f.
Low-drain filament	Output electrodes 8.2 μ f.

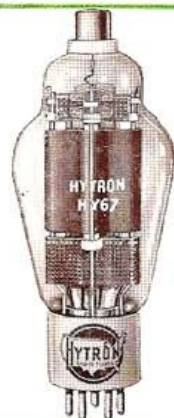


HY67 \$7.75 Net

Graphite-anode beam-power tetrode with instant-heating dual-voltage filament. R.F. power amplifier; oscillator; frequency multiplier, modulator; all-purpose tetrode.

Filament potential (AC or DC) 6.0/12.0 v.
Filament current 4.5/2.25 amps.
Plate potential 1250 max. DC volts
Plate current 175 max. DC ma.
Screen potential 300 max. DC volts
Grid current 15 max. DC ma.
Plate dissipation (CCS) . . . 65 max. watts
Nominal Class C 'phone output . 101 watts
Nominal Class C CW output . 152 watts

Ceramic Alsimag base	Fully shielded for R.F.
Speer graphite anode	Dual-voltage thoriated-tungsten filament
Low-loss ceramic insulators	Four-way rugged internal supports
Instant-heating filament	Low R.F. driving power



MERCURY-VAPOR RECTIFIERS

866A/866 \$1.50 Net

Half-wave mercury-vapor rectifier with internal shield for heavy-duty power supplies.

Filament potential 2.5 volts
 Filament current 5.0 amps.
 R.M.S. potential†, 3535 max. AC volts
 Peak inverse potential

10000 max. volts
 Peak plate current . . . 1000 max. ma.
 Average plate current

250 max. DC ma.
 Tube voltage drop 10 to 15 volts
 † One side of secondary, 7070 volts total for two tubes in full-wave circuit.

The Hytron 866A/866 employs an efficient filament shield to reduce ionic bombardment of internal elements. Shield also reduces formation of deposits on envelope and subsequent voltage breakdown.

A spiral-wound mesh filament with greater emitting area increases emission capability and life of tube.

Two Hytron 866A/866 will deliver up to 500 ma. at DC potentials up to 3180 volts. Four 866A/866 tubes in a bridge circuit will deliver a maximum of 6360 volts at 500 ma.



866 Junior \$1.05 Net

Half-wave mercury-vapor rectifier for light-duty applications—filament shielded.

Heater potential 2.5 volts
 Heater current 2.5 amps.
 R.M.S. potential†, 1750 max. AC volts
 Peak inverse potential

5000 max. volts
 Peak plate current . . . 500 max. ma.
 Average plate current

125 max. DC ma.
 Tube voltage drop 10 to 15 volts
 † One side of secondary, 3500 volts total for two tubes in full-wave circuit.

The Hytron 866 Jr.'s have an efficient emitter and the plate connection is to a top cap, the same as in the standard 866.

Two 866 Jr.'s will deliver up to 250 ma. at DC potentials up to 1575 volts. The Hytron 866 Jr.'s are ideal for replacing type 83 rectifiers when the 866 Jr. filaments are series connected.



BANTAM* JUNIOR MINIATURE TUBES

High-sensitivity, ultra-compact miniature tubes for applications where space and weight must be kept to a minimum.

HY113/HY123 \$1.75 Net

General-purpose medium-mu triode suitable as a super-regenerative detector, oscillator, and A.F. amplifier.

HY115/HY145 \$2.50 Net

High-gain non-microphonic A.F. pentode voltage amplifier. Normal plate potential 20 to 90 volts.

HY125/HY155 \$2.50 Net

High-sensitivity A.F. pentode power output amplifier. Normal plate potential 20-90 volts.

The Bantam Jr.'s have been designed to acquire the lowest battery potentials and current drains consistent with long life and trouble-free operation.



Actual Size

HIGH FREQUENCY BANTAMS* with CERAMIC BASE

Laboratory-selected tubes, specially-tested for use in high-frequency communications receivers, where maximum signal gain and circuit stability are needed.

6A8GTX	\$0.95 Net
6J5GTX	\$0.95 Net
6J7GTX	\$0.95 Net
6K7GTX	\$0.95 Net
6K8GTX	\$1.30 Net
6SA7GTX	\$1.05 Net
6SJ7GTX	\$1.05 Net
6SK7GTX	\$1.05 Net
6V6GTX	\$1.05 Net

Use the Hytron ceramic-base GTX Bantams to take full advantage of the expensive low-loss sockets in your communications receivers.

The Hytron GT Bantams are interchangeable with the equivalent Metal, G, and GT tubes.

* Trade-name registered.



Ceramic Base
 Metal base ring grounded to No. 1 pin. Supplied with Shield.

OTHER HYTRON TYPES

HY24	2.0 volt power triode	\$1.50 Net
HY60	15-watt R.F. beam tetrode	\$2.75 Net
HY63	1.4 volt R.F. beam tetrode	\$2.50 Net
HY1231Z	(12-or-6 volt HY31Z)	\$4.50 Net
HY1269	(12-or-6 volt HY69)	\$4.50 Net
6L6GX	ceramic base 6L6G	\$1.25 Net
HY165	hearing aid pentode	\$2.50 Net
HY205	hearing aid pentode	\$3.50 Net
HY245	hearing aid pentode	\$3.00 Net
HY255	hearing aid pentode	\$3.00 Net

Above hearing aid types have no bases

801A/801	20-watt triode	\$2.50 Net
864	Non-microphonic triode	\$1.00 Net

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 SALEM, MASSACHUSETTS, U. S. A.

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 and
 SPECIAL PURPOSE
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 For sale by



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