FOR THOSE WHO WANT THE BEST

TRANSMITTING TUBES
SPECIAL PURPOSE TUBES

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

HYTRON
RADIO TUBES

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 μmhos	

Inter-electrode capacitances
Grid to plate....7.0 μμf.
Grid to filament....6.6 μμf.
Plate to filament....0.75 μμf.

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 μmhos

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 μμf.
Grid to filament....7.9 μμf.
Plate to filament....0.75 μμf.

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 μmhos

Inter-electrode capacitances
Grid to plate....5.6 μμf.
Grid to filament....5.8 μμf.
Plate to filament....0.85 μμf.

Filament heat radiators
Dual grid-stem leads
Ceramic Alsimag base
Speer graphite anode
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 μmhos

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 μμf.
Grid to filament....6.2 μμf.
Plate to filament....0.80 μμf.

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 μmhos

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 μμf.
Grid to filament.6.0 μμf.
Plate to filament 0.70 μμf.

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 μmhos

* For both triode sections

Inter-electrode capacitances
Grid to plate....5.5 μμf.
Grid to filament.5.0 μμf.
Plate to filament 1.9 μμf.

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 μmhos

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)
All-ceramic octal base
Plate and grid to twin top caps

Inter-electrode Capacitances
Grid to plate...1.85 μμf.
Grid to cathode.1.40 μμf.
Plate to cathode.1.45 μμf.

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 μmhos

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

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, AB_1, AB_2 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 μmhos

Fully shielded for R.F.
¼-watt R.F. driving power
Ceramic Alsimag base
Low-drain heater

Inter-electrode Capacitances
Grid to plate....0.2 μμf.
Input electrodes 11.0 μμf.
Output electrodes 7.0 μμf.

HY69 $3.95 Net

Instant-heating filament-type beam tetrode. R.F. power amplifier, oscillator, frequency multiplier; Class A, AB_1, AB_2 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 μmhos

Inter-electrode Capacitances
Grid to plate....0.19 μμf.
Input electrodes 15.35 μμf.
Output electrodes..6.7 μμf.

Ceramic insulators
Ceramic Alsimag base
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, AB_1, AB_2 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 μmhos

Ceramic octal base
½-watt R.F. grid driving power
Fully shielded for R.F.
Low-drain filament

Inter-electrode Capacitances
Grid to plate..0.1 μμf.
Input electrodes.....8.4 μμf.
Output electrodes.....8.2 μμf.

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
Speer graphite anode
Low-loss ceramic insulators
Instant-heating filament
Fully shielded for R.F.
Dual-voltage thoriated-tungsten filament
Four-way rugged internal supports
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 so as to require 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

HYTRONIC LABORATORIES
SALEM, MASSACHUSETTS, U. S. A.

TRANSMITTING *and* SPECIAL PURPOSE RADIO TUBES

For sale by

HYTRON RADIO TUBES

FOR THOSE WHO WANT THE BEST