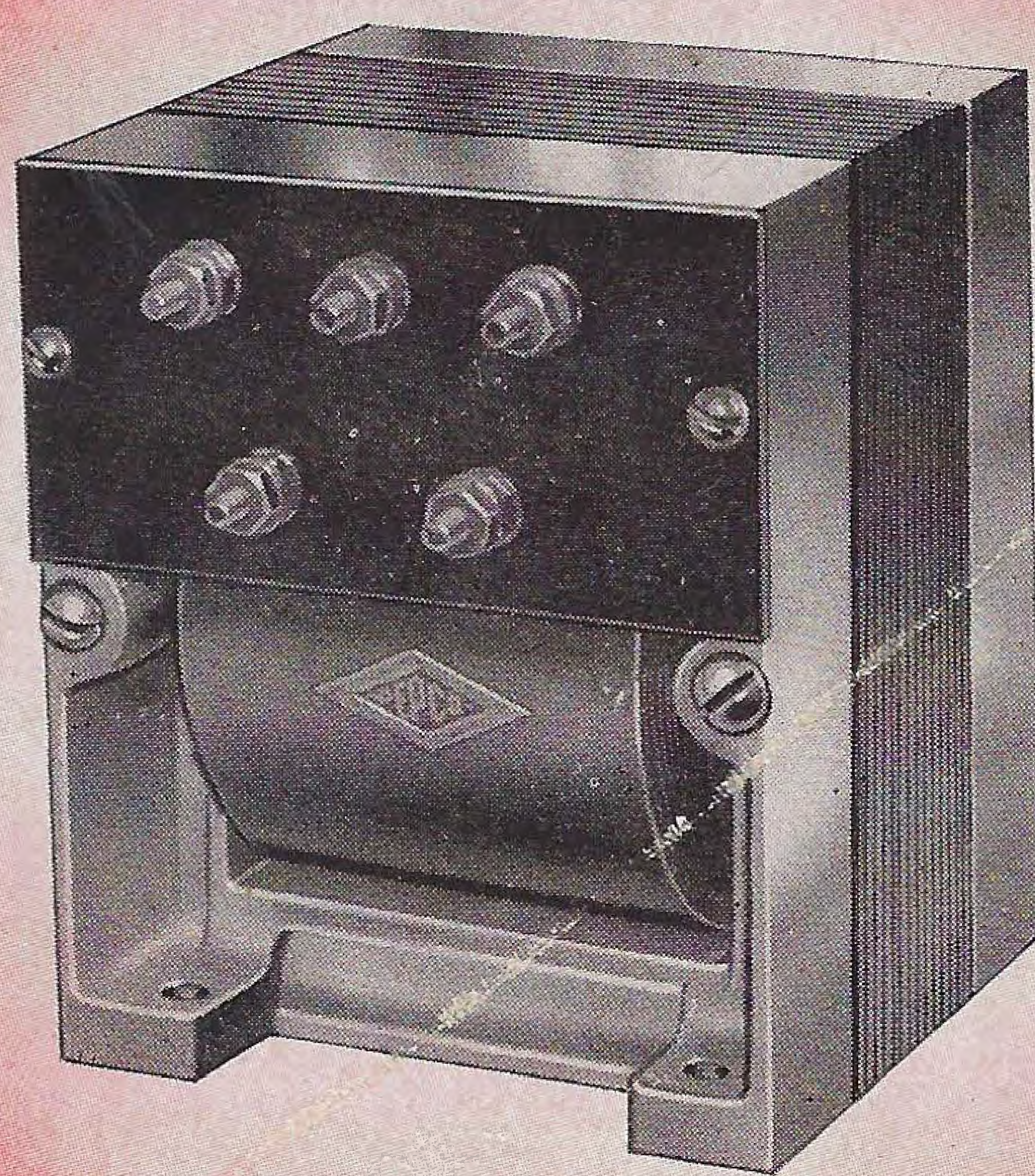


Scott Radio Supply,
266 Alamitos Ave.,
Long Beach 2, Calif.

PEERLESS

TRANSFORMERS



Bulletin 431

Radio, Sound, Public Address, Television

PEERLESS ELECTRICAL PRODUCTS CO.
LOS ANGELES, CALIFORNIA

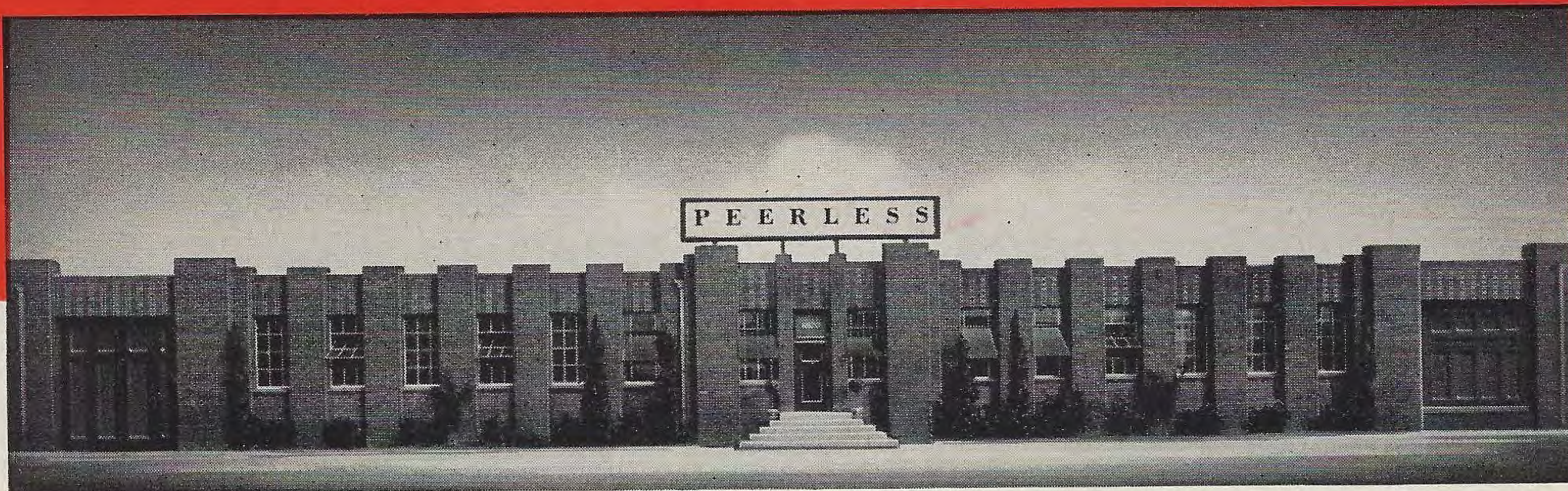
PEERLESS transformer numbers are so arranged as to indicate the type of transformer and type of mounting as well as numerical sequence. The letter used as a prefix indicates the type of transformer as follows: A—audio transformer, C—choke, F—filament transformer, M—modulation transformer, P—Plate transformer, R—replacement power transformer (combined plate and filament), S—speaker coupling (or output) transformer, T—auto-former, V—vibrator transformer. The suffix letter indicates the type of case according to the illustrations throughout the catalog. The index is arranged numerically without reference to prefix or suffix letters.

TRANSFORMER INDEX

Transformer	Page	List Price	Transformer	Page	List Price	Transformer	Page	List Price	Transformer	Page	List Price
S-20X	16	\$1.45	A-4099X	18	2.10	C-5123Q	10	6.30	T-8007L	15	5.15
S-23X	16	1.80	A-4221X	13	1.80	R-5127A	6	5.70	T-8008K	15	23.00
S-24X	16	1.55	A-4222X	15	2.70	R-5127G	6	5.70	T-8009K	15	31.60
S-25X	16	2.60	A-4223X	15	3.30	C-5128X	10	1.45	T-8010B	15	8.60
S-26X	16	2.60	A-4224A	13	3.60	C-5133Q	10	4.80	F-8503J	11	14.40
S-27X	13	2.40	A-4225A	13	3.90	C-5134Q	10	6.30	F-8504X	11	2.00
S-28A	16	4.30	A-4226X	15	2.70	P-5147A	9	9.90	F-8505B	11	2.65
S-29A	16	3.00	A-4227X	13	2.00	P-5148A	9	9.90	F-8506B	11	3.75
S-30A	16	4.80	A-4228X	15	3.00	P-5149A	7 & 9	12.65	F-8507B	11	5.15
S-31X	16	1.45	A-4229Q	12	6.90	P-5150A	7 & 9	4.50	F-8509X	11	2.25
S-32X	16	1.50	A-4230Q	12	7.20	P-5151T	9	22.80	F-8510B	11	2.65
S-33X	16	1.50	A-4231Q	12	7.20	P-5152T	9	35.40	F-8511B	11	3.00
S-34X	16	1.80	A-4232Q	13	6.90	P-5153T	9	17.25	F-8512B	11	4.10
S-35X	13	1.80	A-4233Q	15	7.20	P-5154T	9	20.10	F-8513J	11	14.40
S-36Q	16	9.20	A-4234Q	18	18.00	P-5155T	9	22.80	F-8514B	11	4.10
S-37Z	16	3.30	A-4235Q	18	6.90	P-5156T	9	41.50	F-8515J	11	11.50
S-38Q	16	9.20	A-4236Q	18	6.90	P-5157T	9	54.00	F-8516B	11	7.50
S-39Q	16	9.20	A-4237Q	18	9.00	P-5158T	9	78.00	F-8517B	11	4.80
S-40Q	16	14.40	A-4238Q	18	15.00	R-5159H	7	3.80	F-8518B	11	6.60
S-73Q	16	14.40	A-4239Q	15	7.20	R-5159A	7	4.15	F-8519Q	11	9.60
S-74Q	16	21.00	A-4265Q	13	6.90	R-5160H	7	6.35	F-8520A	11	4.50
S-76Q	16	6.60	A-4273Q	15	7.50	R-5160A	7	6.80	F-8521B	11	3.25
S-78A	16	3.30	A-4274Q	12	13.20	R-5161B	7	3.10	F-8522B	11	6.00
S-95Q	13	6.90	A-4275Q	12	13.80	R-5161H	7	3.10	F-8536Z	11	1.60
T-1060L	10	11.35	A-4276Q	13	13.80	R-5161A	7	3.45	F-8794A	11	4.50
T-1061L	10	7.35	A-4277X	12	2.35	R-5162H	7	4.50	T-10516T	10	62.50
M-2103X	18	3.90	A-4278X	12	2.10	R-5162A	7	4.80	T-10517T	10	95.00
M-2104X	18	2.10	A-4279X	12	2.20	R-5163H	7	5.40	V-13002A	7	4.00
M-2105Q	18	18.40	A-4280X	12	2.00	R-5163A	7	5.95	V-13004B	7	3.45
M-2106T	18	24.20	A-4281X	12	2.10	R-5164A	6	4.90	V-13005A	7	5.75
M-2107T	18	31.60	A-4282X	12	2.15	R-5164G	6	4.90	V-13006A	7	7.50
M-2116T	18	45.00	A-4287X	12	2.40	R-5165A	7	4.80	C-13504X	10	1.55
M-2121T	18	78.00	C-5067X	10	2.30	R-5165H	7	4.50	C-13505X	10	1.45
M-2131Q	18	15.50	C-5067A	10	2.85	R-5166A	6	5.75	C-13506A	10	6.00
M-2133T	18	138.00	R-5069A	6	3.35	R-5166G	6	5.75	C-13506B	10	5.60
M-2134X	18	1.80	R-5069G	6	3.35	R-5166Q	6	11.50	C-13507A	10	9.60
A-4078X	12	2.20	R-5090A	6	8.25	R-5167A	6	3.10	C-13507B	10	9.00
A-4079X	18	3.75	F-5091B	11	2.65	R-5168A	6	3.10	C-13508A	10	2.85
M-4080Q	18	10.90	C-5092B	10	2.60	R-5169Q	6	15.00	C-13508X	10	2.30
M-4081Q	18	8.60	C-5093X	10	1.45	R-5172A	7	7.15	C-13509A	10	3.30
A-4082X	18	3.60	R-5097A	6	4.00	P-5182A	9	11.50	C-13509X	10	2.50
A-4086Q	18	9.00	R-5097G	6	4.00	P-5196A	9	15.00	C-13510T	10	41.50
A-4088Q	12	6.90	C-5099X	10	1.20	P-5197A	9	12.65	C-13511T	10	57.00
A-4091X	12	2.40	R-5112Q	7	21.60	R-5212A	6	9.30	C-13512T	10	18.00
A-4092X	18	2.10	R-5113A	6	7.15	R-5213Q	7	9.60	C-13513B	10	4.35
A-4093X	18	2.10	R-5114A	6	11.70	R-5406A	6	3.10	C-13513A	10	5.00
A-4094X	18	1.90	R-5119Q	6	8.65	R-5406H	6	2.75	C-13514T	10	18.00
A-4095X	18	1.90	R-5120G	6	7.15	T-8002B	15	15.50	C-13515B	10	9.00
A-4096X	13	2.20	R-5120Q	6	14.40	T-8003L	15	6.90	C-13516T	10	43.80
A-4097X	13	3.00	R-5121Q	6	16.20	T-8005L	15	15.80	C-13517X	10	1.10
A-4098X	15	1.80	F-5122A	11	3.30	T-8006T	15	27.50	C-13519Q	10	12.35
									C-13530Q	10	7.35

GUARANTEE

Peerless transformers are guaranteed against failure due to defective workmanship or material. Inoperative transformers returned to us prepaid within one year from the time of sale will be examined; and, if found defective, will be repaired or replaced. The Peerless Electrical Products Company cannot assume responsibility for associated equipment or other material which may be damaged due to use of such defective transformers. Present manufacturing conditions frequently force changes in materials used in standard types of transformers, sometimes causing variation from dimensions given in this catalog. Such changes are held to a minimum, and we cannot be responsible for delays or inconvenience which may be so caused. Prices subject to change without notice.



The Peerless Electrical Products Company was established in 1934 and has shown steady growth, until today it offers a complete transformer service to the electronics manufacturer—from engineering design to correctly cased unit.

This growth has been solidly based upon quality merchandise, advanced engineering of technical developments, and a sales policy of close cooperation with the customer's needs.

Working with our customers, Peerless engineers have been responsible for many developments of importance to the industry. Particularly is this true when we have been 100% in war production. Some of these developments are still exclusive with out organization and are available to our customers for the planning and production of their products.

For example, the winding and impregnation equipment used in the manufacture of Peerless transformers was developed in our own plant to the standards and designs of our engineers. Much of our success in the

manufacture of difficult specifications is due to the superior design of this equipment.

Original designs of Peerless engineers include case Q on Page 14, case T on page 9, case K on page 3, and the terminal panel on case H, page 6. Peerless engineers did the first commercial work on the multiple alloy type of shield design, which permits wide range audio trnsformers to be operated at extremely low levels. They also originated the "Vac-Sealing" impregnation cycle, the use of which has made possible the operation of standard types of American-built transformers in the East Indies and similar districts of high humidity and temperature.

Our ability to meet difficult specifications and heavy production schedules during World War II has stimulated the already wide acceptance of our transformers.

To those who are producing quality merchandise in which our products may become a part, the following pages are an indication of the scope of our facilities. We hope that you will find this catalog useful.

PEERLESS ELECTRICAL PRODUCTS CO.

6920 McKinley Avenue • Los Angeles 1, California



A corner of the stamping department. Punch press operators are forming Peerless transformer cases. In the background are dies for making laminations and various sized cases.



Peerless mechanical excellence is due in part to the fact that the company makes its own tools and dies in this well-equipped machine shop.

Series of vacuum impregnating tanks where the transformers go through Peerless's exclusive Vac-Seal process. Center is an electric baking oven; left and right are vacuum tanks.



Final assembly department for Peerless transformers—the last stage before testing. Various sizes and forms of transformers can be noted.



"LOOK FOR THE



MONOGRAM"



Transformer coils in groups of from 5 to 40, are wound at one time on semi-automatic winding machines of Peerless design.

Part of the testing equipment at Peerless. Every transformer manufactured at Peerless is individually tested, sometimes five times in the course of manufacture, besides this final test.



In Peerless's modern factory, facilities are available to produce quality transformers in a size and capacity to meet today's requirements. Here new techniques are constantly being developed to provide you with as fine a product as possible at a reasonable price. Every Peerless transformer must measure up to the high standards set by our Engineering Department. To be sure of this, each one goes through a cycle of tests before delivery. When you buy a Peerless transformer, you buy a quality transformer, one that can be depended upon to give maximum service.

PEERLESS POWER TRANSFORMERS

Peerless combined plate and filament type power transformers have many applications for replacement and for use in original equipment. Several attractive types of mountings are available to permit the best physical layouts for each individual design. Liberal use of the finest materials insures cool-running, long-lived transformers. All transformers in this group are supplied with a static shield which is grounded to the case and core.

Single 6.3 Volt Filament

Type No.	Secondary AC Volts	DC Ma.	Filament Windings No. 1	No. 2	No. 3	Dimensions-In. H. W. D.	Wt. lbs.	Code Word	List Price
R-5406H	660 CT.	40	5V-2A	6.3V-1.3A CT.		2 $\frac{1}{8}$ 2 $\frac{5}{8}$ 2	2	Crept	\$2.75
R-5406A	660 CT.	40	5V-2A	6.3V-1.3A CT.		3 $\frac{1}{8}$ 2 $\frac{5}{8}$ 2 $\frac{11}{16}$	2 $\frac{1}{4}$	Cress	3.10
R-5167A	580 CT.	40	5V-2A	6.3V-1.85A CT.		3 $\frac{1}{8}$ 2 $\frac{5}{8}$ 3	2 $\frac{1}{4}$	Avfzu	3.10
R-5168A	660 CT.	50	6.3V-2.5A			3 $\frac{1}{8}$ 2 $\frac{5}{8}$ 3	2 $\frac{1}{2}$	Acgau	3.10
R-5069A	660 CT.	50	5V-2A	6.3V-1.6A CT.		3 $\frac{1}{8}$ 2 $\frac{5}{8}$ 3	2 $\frac{1}{2}$	Cover	3.35
R-5069G	660 CT.	50	5V-2A	6.3V-1.6A CT.		2 $\frac{5}{8}$ 2 $\frac{5}{8}$ 3 $\frac{1}{8}$	2 $\frac{1}{2}$	Zesgi	3.35
R-5097A	700 CT.	75	5V-3A	6.3V-2.5A CT.		3 $\frac{5}{8}$ 2 $\frac{13}{16}$ 3 $\frac{3}{8}$	3 $\frac{1}{2}$	Zeibd	4.00
R-5097G	700 CT.	75	5V-3A	6.3V-2.5A CT.		2 $\frac{9}{16}$ 2 $\frac{13}{16}$ 3 $\frac{3}{8}$	3 $\frac{1}{2}$	Zehux	4.00
R-5119Q	700 CT.	75	5V-3A	6.3V-2.5A CT.		4 $\frac{7}{8}$ 3 $\frac{5}{8}$ 3 $\frac{3}{8}$	4 $\frac{1}{4}$	Avbut	8.65
R-5164A	700 CT.	85	5V-3A	6.3V-3.5A CT.		3 $\frac{5}{8}$ 2 $\frac{13}{16}$ 3 $\frac{5}{8}$	3 $\frac{3}{4}$	Croak	4.90
R-5164G	700 CT.	85	5V-3A	6.3V-3.5A CT.		2 $\frac{15}{16}$ 2 $\frac{7}{8}$ 2 $\frac{13}{16}$	3 $\frac{3}{4}$	Zejhj	4.90
R-5166A	700 CT.	120	5V-3A CT.	6.3V-4.8A CT.		4 $\frac{1}{8}$ 3 $\frac{3}{4}$ 3 $\frac{5}{8}$	5 $\frac{3}{4}$	Auzaa	5.75
R-5166G	700 CT.	120	5V-3A CT.	6.3V-4.8A CT.		2 $\frac{7}{8}$ 3 $\frac{5}{8}$ 4 $\frac{1}{8}$	5 $\frac{3}{4}$	Auzbb	5.75
R-5166Q	700 CT.	120	5V-3A CT.	6.3V-4.8A CT.		5 $\frac{1}{2}$ 4 $\frac{1}{4}$ 3 $\frac{3}{4}$	7	Avbvu	11.50
R-5090A	825 CT.	200	5V-3A CT.	6.3V-6A CT.		4 $\frac{1}{4}$ 3 $\frac{3}{4}$ 4 $\frac{1}{4}$	7	Anode	8.25

6.3 and 2.5 Volt Filaments

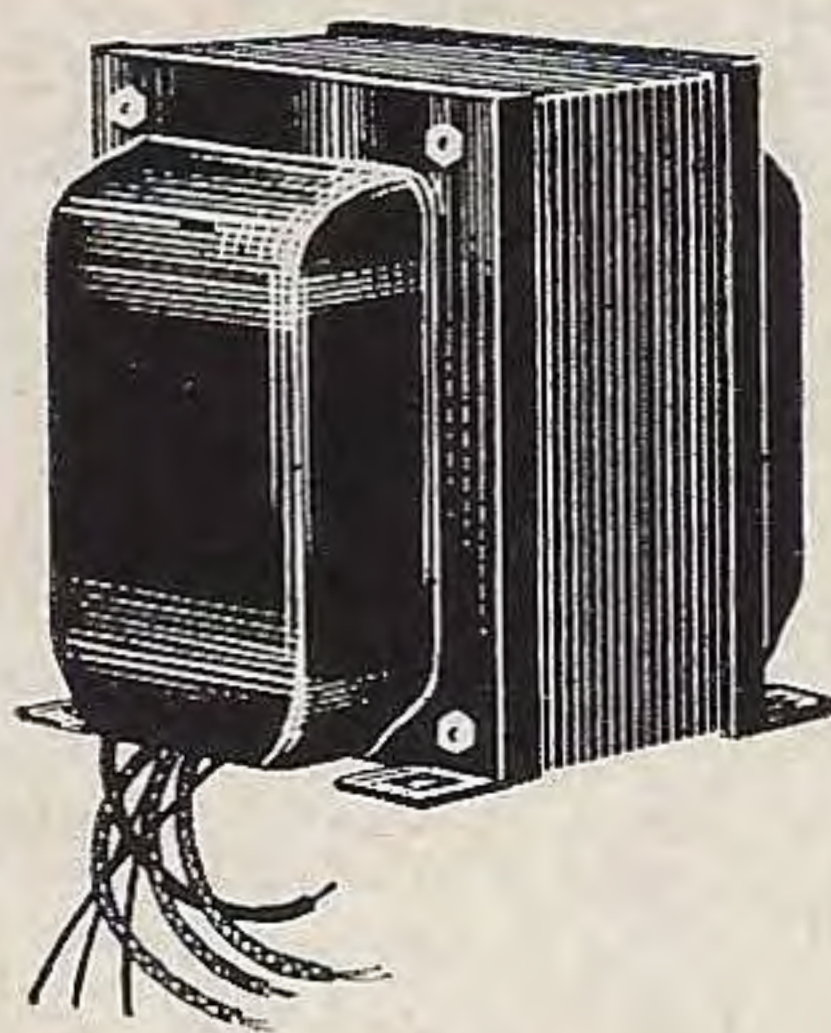
R-5127A	750 CT.	110	5V-3A CT.	6.3V-5A CT.	2.5V-3.5A CT.	4 $\frac{1}{8}$ 3 $\frac{5}{8}$ 3 $\frac{13}{16}$	5 $\frac{1}{4}$	Zehvy	5.70
R-5127G	750 CT.	110	5V-3A CT.	6.3V-5A CT.	2.5V-3.5A CT.	3 3 $\frac{1}{2}$ 4	5 $\frac{1}{4}$	Zesik	5.70
R-5113A	750 CT.	160	5V-4A CT.	6.3V-5A CT.	2.5V-5A CT.	4 $\frac{1}{8}$ 3 $\frac{3}{4}$ 4 $\frac{5}{16}$	8	Zejdf	7.15
	850 CT.								
R-5120G	750 CT.	160	5V-4A CT.	6.3V-5A	2.5V-5A CT.	3 $\frac{5}{8}$ 3 $\frac{1}{2}$ 4	8	Autel	7.15
	850 CT.								
R-5120Q	750 CT.	160	5V-4A CT.	6.3V-5A CT.	2.5V-5A CT.	5 $\frac{1}{2}$ 4 $\frac{1}{4}$ 3 $\frac{3}{4}$	9	Avbyx	14.40
	850 CT.								

6.3 and 2.5 Volt Filaments (WITH 80 VOLT BIAS TAP)

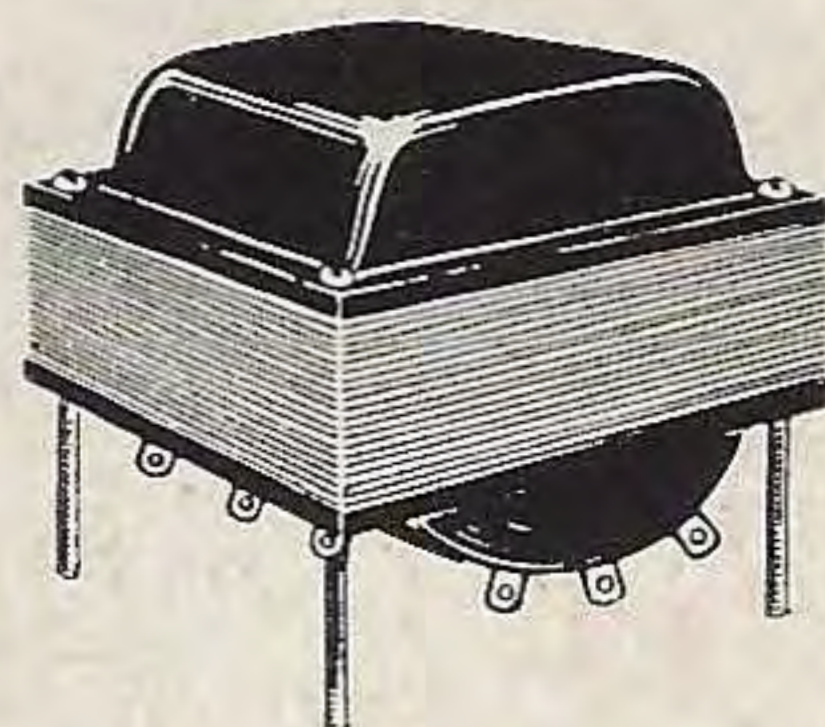
R-5212A	750 CT. 850 CT.	200	5V-4A CT.	6.3V-5.7A CT.	2.4V- 7A CT.	5 4 $\frac{3}{8}$ 3 $\frac{7}{8}$	9	Cramp	9.30
R-5114A	750 CT.	300	5V-4A CT.	6.3V-5A CT.	2.5V-10A CT.	5 4 $\frac{3}{8}$ 5 $\frac{1}{4}$	10 $\frac{1}{2}$	Zehhk	11.70
	850 CT.								
R-5121Q	750 CT. 850 CT.	300	5V-4A CT.	6.3V-5A CT.	2.5V-10A CT.	6 5 4 $\frac{7}{8}$	12	Avbzy	16.20

6.3, 2.5, and 7.5 Volt Filaments

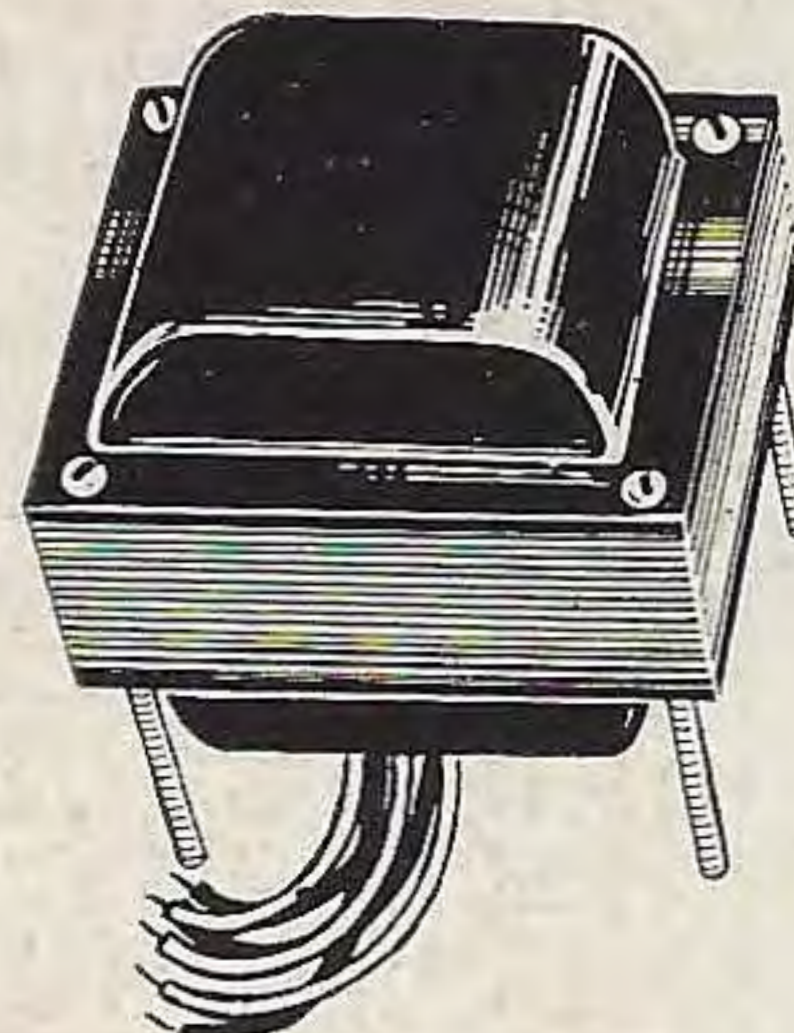
R-5169Q	1200 CT.	150	7.5/6.3V-3A	7.5/5/2.5V-3A	6.3/2.5V 3.5/8.5A	6 5 4 $\frac{7}{8}$	11	Avbpo	15.00
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Case "A"



Case "H"



Case "G"



Case "Q"

Single 2.5 Volt Filament

Type No.	Secondary AC Volts	DC Ma.	No.1	Filament Windings No. 2	No. 3	Dimensions-In. H. W. D.			Wt. lbs.	Code Word	List Price
R-5161H	700 CT.	50	5V-2A	2.5V-5A CT.		2 $\frac{1}{8}$	2 $\frac{5}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	Zeseg	3.10
R-5161B	700 CT.	50	5V-2A	2.5V-5A CT.		3 $\frac{1}{8}$	2 $\frac{5}{8}$	2 $\frac{1}{16}$	2 $\frac{1}{4}$	Zehsv	3.10
R-5161A	700 CT.	50	5V-2A	2.5V-5A CT.		3 $\frac{1}{8}$	2 $\frac{5}{8}$	2 $\frac{3}{4}$	2 $\frac{1}{2}$	Cadge	3.45
R-5159H	700 CT.	75	5V-3A CT.	2.5V-9A CT.		2 $\frac{11}{16}$	2 $\frac{13}{16}$	3 $\frac{3}{8}$	3 $\frac{1}{2}$	Zeikm	3.80
R-5159A	700 CT.	75	5V-3A CT.	2.5V-9A CT.		3 $\frac{1}{2}$	2 $\frac{13}{16}$	3 $\frac{3}{8}$	3 $\frac{1}{2}$	Crime	4.15
R-5165H	700 CT.	90	5V-3A CT.	2.5V-12.5A CT.		2 $\frac{3}{4}$	2 $\frac{13}{16}$	3 $\frac{3}{8}$	3 $\frac{3}{4}$	Auyza	4.50
R-5165A	700 CT.	90	5V-3A CT.	2.5V-12.5A CT.		3 $\frac{1}{2}$	2 $\frac{13}{16}$	3 $\frac{3}{8}$	4	Auyyz	4.80

Two 2.5 Volt Filaments

R-5162H	700 CT.	85	5V-3A	2.5V-3.5A CT.	2.5V-9A	3 $\frac{1}{2}$	2 $\frac{13}{16}$	3 $\frac{3}{8}$	4 $\frac{1}{4}$	Crimp	4.50
R-5162A	700 CT.	85	5V-3A	2.5V-3.5A CT.	2.5V-9A	3 $\frac{1}{2}$	2 $\frac{13}{16}$	3 $\frac{3}{8}$	4 $\frac{1}{4}$	Crisp	4.80
R-5163H	700 CT.	110	5V-3A CT.	2.5V-3.5A CT.	2.5V-12.5A	3 $\frac{1}{2}$	3 $\frac{3}{4}$	4 $\frac{1}{8}$	5	Zesbd	5.40
R-5163A	700 CT.	110	5V-3A CT.	2.5V-3.5A CT.	2.5V-12.5A	4 $\frac{1}{8}$	3 $\frac{3}{4}$	3 $\frac{1}{2}$	5 $\frac{3}{4}$	Zehos	5.95
R-5172A	850 CT. 750 CT.	160	5V-3A CT.	2.5V-5A CT.	2.5V-9A	4 $\frac{1}{8}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	8	Zehpt	7.15
R-5160H	750 CT.	100	5V-2A	2.5V-3.5A CT.	2.5V-16A	3 $\frac{1}{2}$	3 $\frac{5}{8}$	4 $\frac{1}{4}$	5	Crony	6.35
R-5160A	750 CT.	100	5V-2A	2.5V-3.5A CT.	2.5V-16A	4 $\frac{1}{8}$	3 $\frac{5}{8}$	3 $\frac{1}{2}$	5 $\frac{1}{4}$	Cross	6.80

Bias and Field Supply Transformers

P-5150A	440 CT. or 220 CT.	160	5V-3A CT.			3 $\frac{1}{2}$	2 $\frac{13}{16}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	Braid	4.50
P-5149A	600 CT. or 300 CT.	500	5V-6A CT.			5	4 $\frac{1}{4}$	4 $\frac{5}{8}$	11 $\frac{1}{4}$	Autua	12.65

Power Transformers for Cathode— Ray and Television

R-5213Q	1500 (1950 D.C.)	10	6.3/2.5V- .6/2.1A	2.5V-2.1A	2.5V-2.1A	4 $\frac{1}{2}$	2 $\frac{7}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{2}$	Avajj	9.60
R-5112Q	4600 (6000 D.C.)	10	2.5V-5A	2.5V-2.1A		5 $\frac{1}{2}$	3 $\frac{7}{8}$	4 $\frac{3}{8}$	7 $\frac{1}{2}$	Avall	21.60

All of the above transformers are for operation on 105-135 volts, 50-60 cycles. Any of them may be supplied for 220 volt operation or for 25 cycle or both. For 220 volt, increase price 15%; for 25 cycle, 60%; and for 220 volt, 25 cycle, 60% and 15%.

Vibrator Transformers — For Battery Operation

Primary Operates on 6 Volts DC Interrupter.

Type No.	DC Volts	DC Mills	Dimensions-In. H. W. D.			Wt. lbs.	Code Word	List Price
V-13004B	200	40	2 $\frac{3}{4}$	2 $\frac{5}{16}$	2 $\frac{3}{4}$	1 $\frac{3}{4}$	Crust	3.45
V-13002A	250	60	3 $\frac{1}{8}$	2 $\frac{5}{8}$	2 $\frac{7}{8}$	2 $\frac{3}{4}$	Autek	4.00
V-13005A	300	100	3 $\frac{7}{8}$	3 $\frac{1}{4}$	3 $\frac{3}{8}$	4 $\frac{1}{4}$	Avcay	5.75
V-13006A	400	150	4 $\frac{1}{8}$	3 $\frac{3}{4}$	4 $\frac{1}{8}$	7 $\frac{1}{2}$	Avcaa	7.50

POWER SUPPLY DESIGN

The diagrams illustrate the four most popular ways in which Peerless transformers may be connected to obtain DC from the AC line. In these circuits the following formulae may be used to calculate the circuit constants. It must be remembered that the circuits are based on choke input construction but that the value of E_{av} does not include any allowance for choke IR drop. E_{max} and I_{max} are the maximum values which should be taken from the rectifier tubes selected for the circuit.

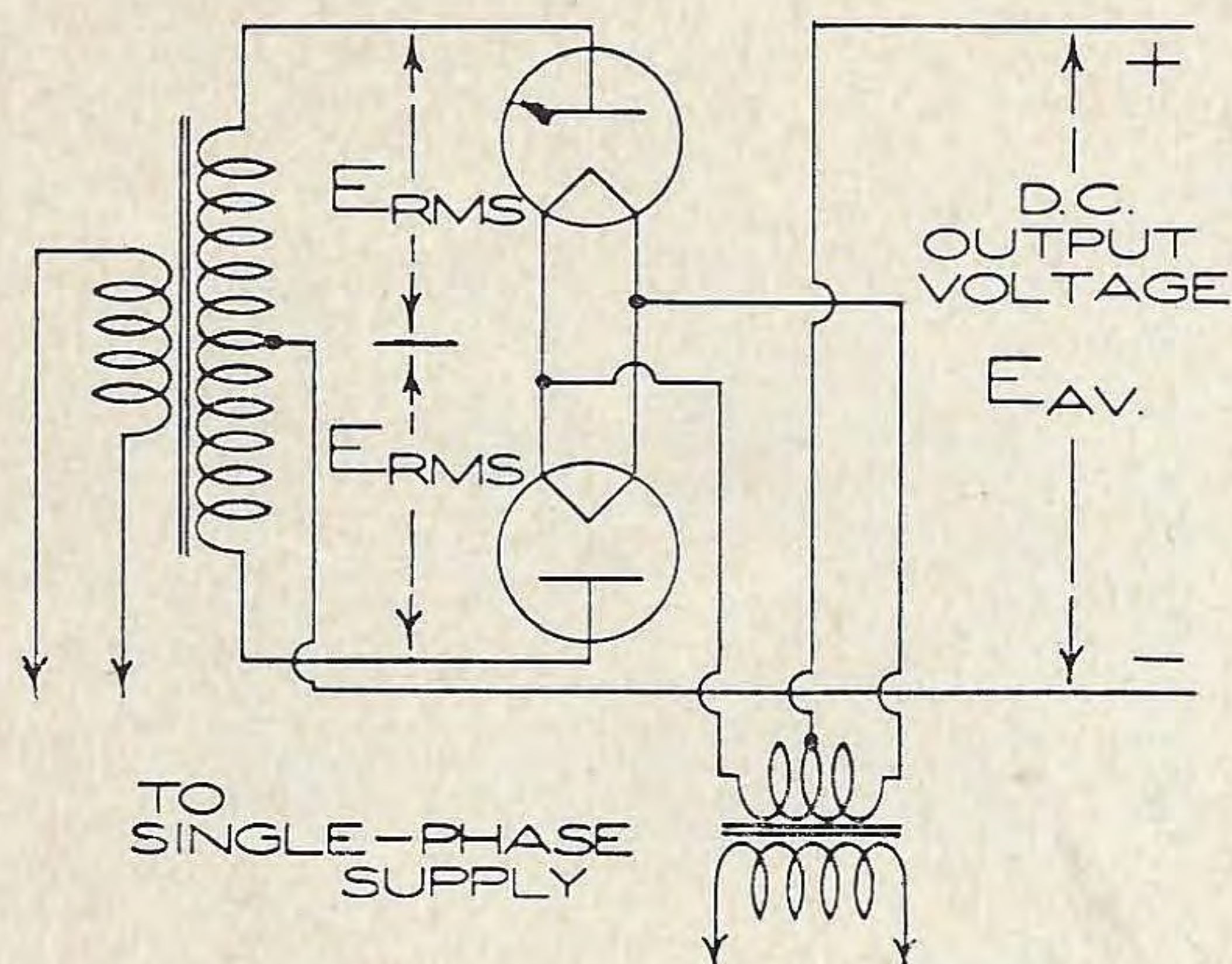


Fig. 1—Single-Phase Full-Wave Rectifier

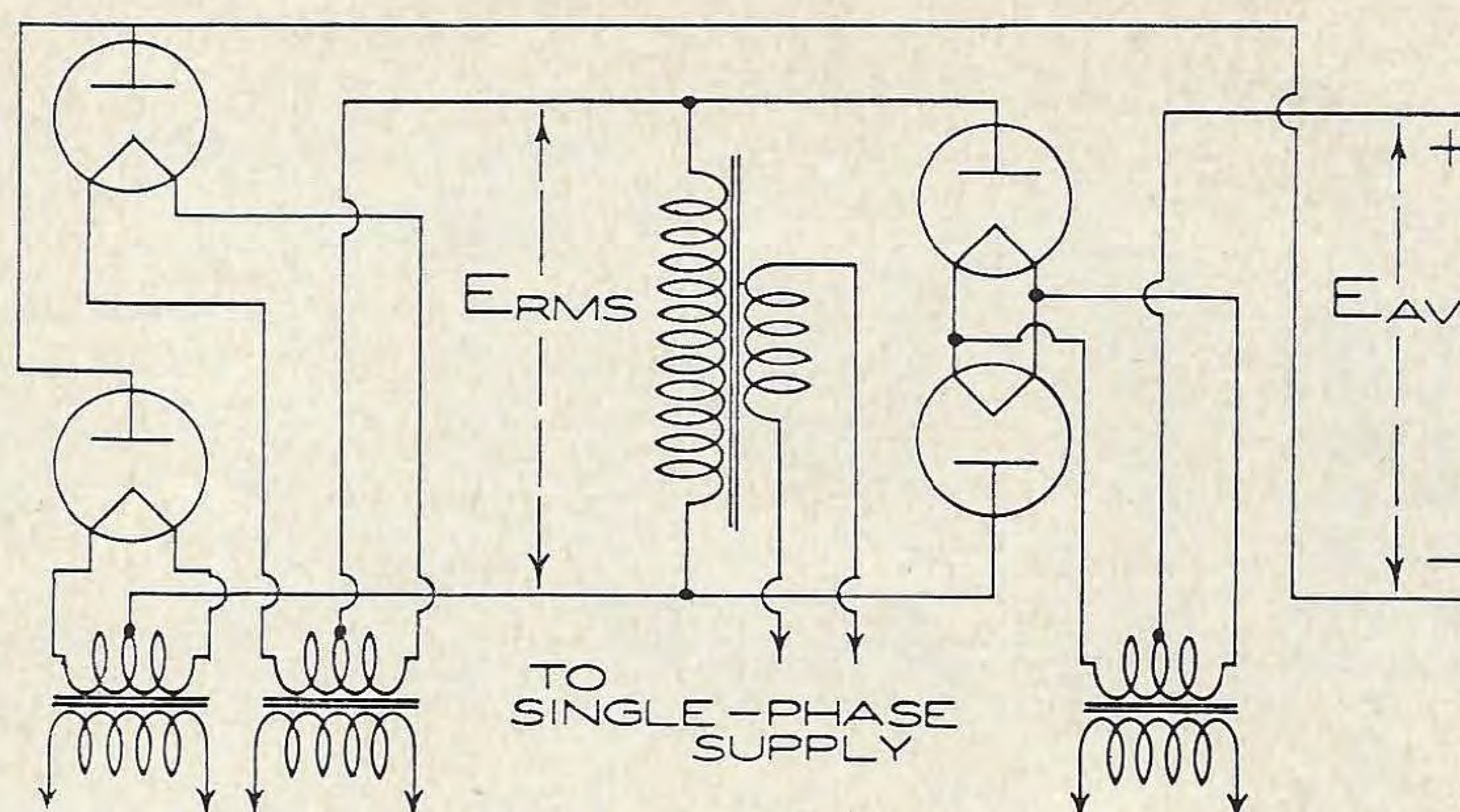


Fig. 2—Single-Phase Full-Wave Bridge Rectifier

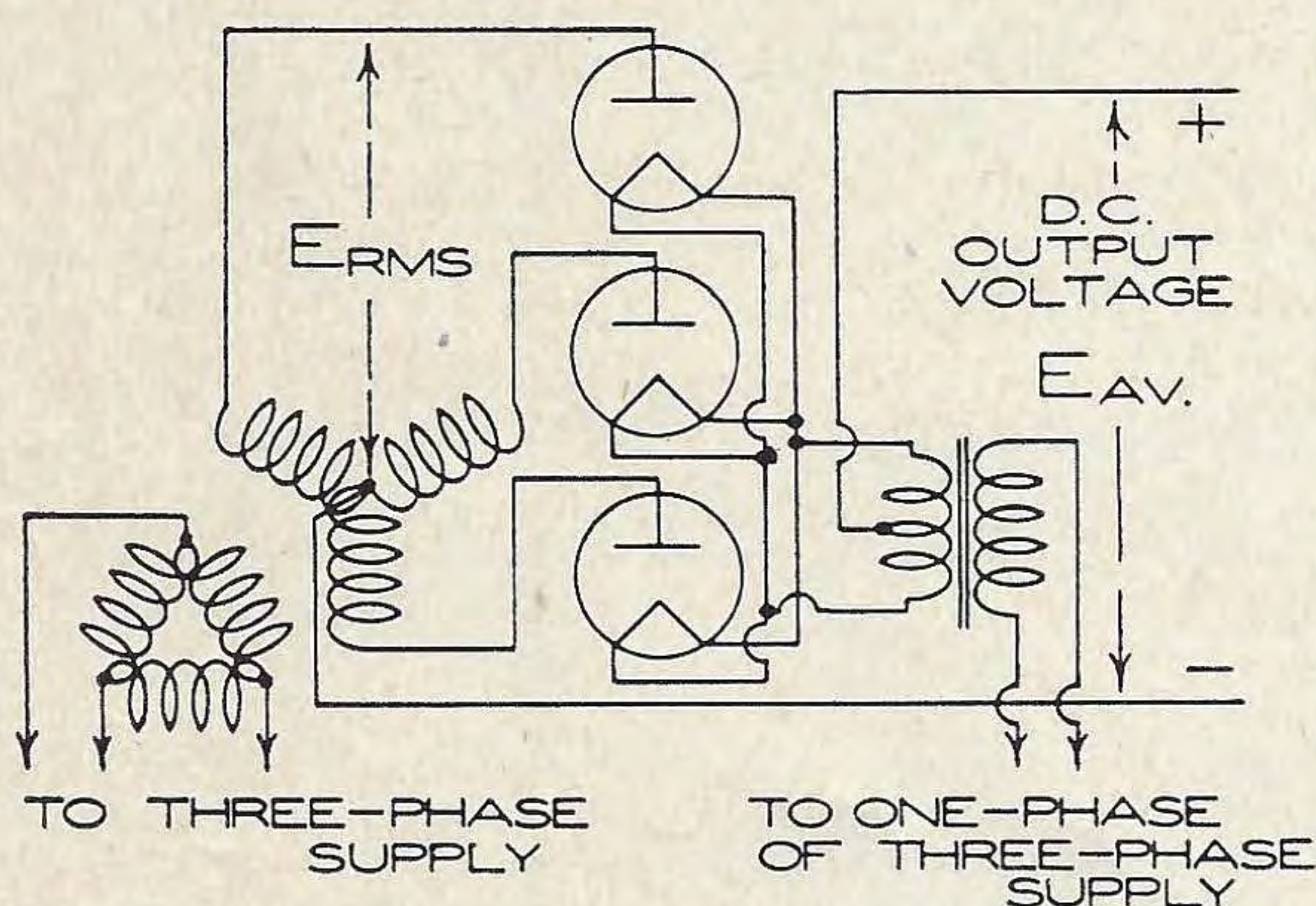


Fig. 3—Three-Phase Half-Wave Rectifier

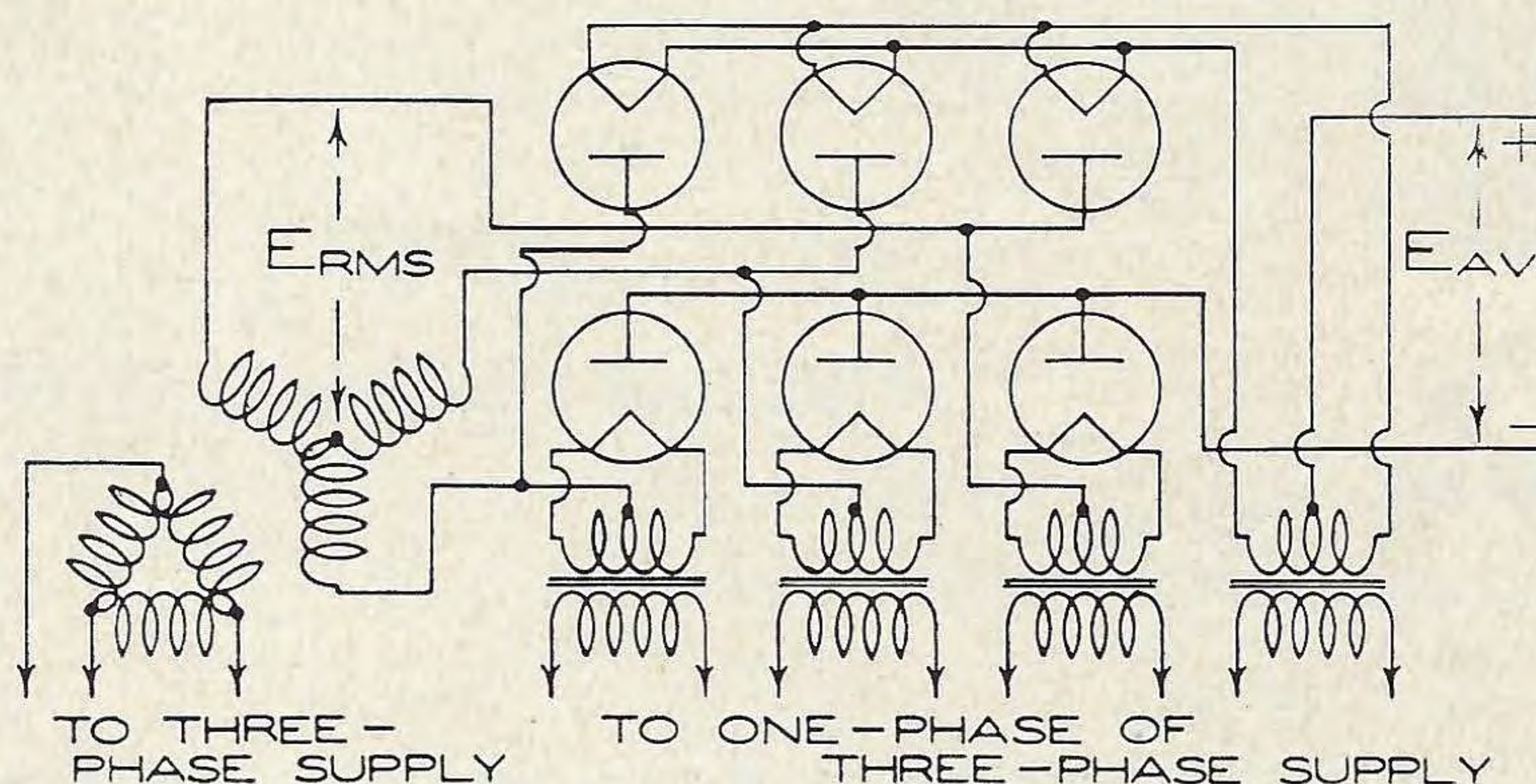


Fig. 4—Three-Phase Full-Wave Rectifier

Single phase full-wave rectifier (Fig. 1)

$$\begin{aligned} E_{rms} &= 1.11 E_{av} \\ E_{av} &= .9 E_{rms} \\ E_{max} &= .535 \times \text{Max. peak inverse voltage for tube.} \\ I_{max} &= 2 \times \text{max. average plate current per tube.} \\ \text{Ripple frequency} &= 2 \times \text{line frequency.} \end{aligned}$$

Single phase full-wave bridge rectifier (Fig. 2)

$$\begin{aligned} E_{rms} &= 1.11 E_{av} \\ E_{av} &= .9 E_{rms} \\ E_{max} &= .706 \times \text{max. peak inverse voltage for tube.} \\ I_{max} &= 2 \times \text{max. average plate current per tube.} \\ \text{Ripple frequency} &= 2 \times \text{line frequency.} \end{aligned}$$

3 phase half-wave rectifier (Fig. 3)

$$\begin{aligned} E_{rms} &= .855 E_{av} \\ E_{av} &= 1.17 E_{rms} \\ E_{max} &= .408 \times \text{Max. peak inverse voltage per tube.} \\ I_{max} &= 3 \times \text{max. average plate current per tube.} \\ \text{Ripple frequency} &= 3 \times \text{line frequency.} \end{aligned}$$

3 phase full wave rectifier (Fig. 4)

$$\begin{aligned} E_{rms} &= .428 E_{av} \\ E_{av} &= 2.34 E_{rms} \\ E_{max} &= .408 \times \text{Max. peak inverse voltage for tube.} \\ I_{max} &= 3 \times \text{max. average plate current per tube.} \\ \text{Ripple frequency} &= 6 \times \text{line frequency.} \end{aligned}$$



Case "T"

POWER SUPPLY TRANSFORMERS

Peerless plate transformers are constructed from the best in silicon core steels, enameled copper wire, and high quality insulating materials to provide a product capable of continued long life under the most difficult conditions of heat and humidity. The "T" series case used in many of this group offers excellent moisture-proofing due to Peerless "vac-sealing" and compound-filled construction. Its exposed laminations provide good heat radiation characteristics. Larger space allowed for terminals means freedom from insulation breakdown.

It will be noted that two current ratings are given for PEERLESS plate transformers. In intermittent service, such as cw. telegraphy, diathermy, etc., the "Int. Amp." column may be used. For continuous or near

continuous service at ordinary temperature the "Cont Amp." ratings should be applied. If for any reason the transformer is to be operated continuously in restricted space or at high ambient temperatures, it may be necessary to reduce even these ratings by as much as 25%.

Where especially good regulation is desired, as for Class B Audio, it is best to reduce resistance in the circuit. This may be accomplished by using transformers and chokes of higher current rating, and hence of lower resistance, than is normally necessary. Power supplies of higher voltage will show relatively less percentage of voltage regulation for the same current change than will lower voltage supplies of the same wattage output.

Type No.	Primary Volts	DC. Volt	Secondary Cont. Amp.	Int Amp.	AC. Volts	Dimensions-In. H. W. D.	Wt. lbs.	Code Word	List Price
P-5150A	115	90 or 180	.160 3.0	.190	440- 220 CT. 5 CT.	3½ 2⅜ 3½	4½	Braid	\$4.50
P-5149A	115	125 or 250	.500 6.0	.600	600- 300 CT. 5 CT.	5 4¼ 4⅝	11¼	Autua	12.65
P-5147A	115	400	.250 3.0	.300	1110 CT. 5 CT.	5 4⅜ 4⅝	9½	Board	9.90
P-5148A	115	525	.225	.270	1400 CT.	5 4⅜ 4⅜	10½	Boast	9.90
P-5182A	115	600	.300	.360	1500 CT.	5 4⅜ 5	10½	Avcki	11.50
P-5153T	115	600 or 750	.300	.360	1550-1940 CT.	7½ 8¼ 5	22½	Bland	17.25
P-5197A	115	750	.300	.360	1872 CT.	5 4⅜ 5½	12	Avcom	12.65
P-5154T	115	750 or 1000	.300	.360	1700-2560 CT.	8 5 8¼	25	Bolas	20.10
P-5196A	115	1000	.300	.360	2428 CT.	5 4⅜ 5	15	Avcro	15.00
P-5151T	115	1000 or 1250	.350	.420	2460-3120 CT.	8½ 8¼ 5	31	Blast	22.80
P-5152T	115	1000 or 1250	.500	.600	2476-3120 CT.	8½ 8⅜ 6¾	49	Bliss	35.40
P-5155T	115	1000 or 1500	.300	.360	2360-3630 CT.	9½ 8¼ 5	31	Booth	22.80
P-5156T	230/115	1500 or 2000	.350	.420	3538-4810 CT.	9½ 8¼ 7½	72	Zenwz	41.50
P-5157T	230/115	1500 or 2000	.500	.600	3580-4720 CT.	10½ 9 8¾	85	Zejjl	54.00
P-5158T	230/115	1500 or 2000	.750	.900	3560-4720 CT.	12½ 9 8¾	127	Zejkm	78.00

All of the above transformers are for operation on 105-135 volts, 50-60 cycles. Any of them may be supplied for 220 volt operation or for 25 cycle or both. For 220 volt increase price 15%; for 25 cycle, 50%; and for 220 volt, 25 cycle, 60% and 15 %.

FILTER REACTORS

PEERLESS filter chokes are designed to harmonize with PEERLESS plate transformers and filament transformers to make a well-balanced power supply of good regulation, professional appearance and long life. Designs are such as to insure low temperature rise and freedom from insulation breakdown.

Voltage insulation figures given in the table are **operating** values. All chokes are actually tested at the AIEE recommended figure of twice operating voltage plus one thousand volts.

"Swinging" Input Chokes

TWO VALUES REFER TO MAXIMUM AND BLEEDER CURRENTS

Type No.	Current Ma.	Inductance Henries	Res. ohms	Voltage Ins.*	Dimensions-In.			Wt. lbs.	Code Word	List Price
					H.	W.	D.			
C-13513B	25/250	40/8	160	2000	4	3½	3¼	4½	Daily	\$4.35
C-13513A	25/250	40/8	160	1000	4⅛	3⅝	3⅞	4¾	Avffa	5.00
C-13515B	35/350	60/12	110	2000	4⅞	4¼	4	10½	Dandy	9.00
C-13514T	50/500	60/12	90	3500	8¼	6½	5	25	Death	18.00
C-13516T	75/750	40/8	60	4500	9	7½	6½	77	Zeihn	43.80

Smoothing Chokes

TWO VALUES REFER TO SERIES AND PARALLEL CONNECTION

C-13504X	35	5	180	600	1 $\frac{1}{8}$	1 $\frac{15}{16}$	1	1/6	Avlla	1.55
C-13517X	40	6	400	600	1 $\frac{3}{8}$	2 $\frac{1}{4}$	1 $\frac{1}{8}$	$\frac{1}{2}$	Arass	1.10
C-5099X	40	12	420	600	1 $\frac{5}{8}$	2 $\frac{11}{16}$	1 $\frac{3}{8}$	$\frac{3}{4}$	Dizen	1.20
C-13505X	50	20	600	600	2	3 $\frac{1}{2}$	2	1	Dizzy	1.45
C-5133Q	50/100	30/7.5	550/138	600	4 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{4}$	Avbba	4.80
C-5128X	85	10	375	600	2	3 $\frac{1}{2}$	2	1	Avbaz	1.45
C-13508X	85	20	610	600	2 $\frac{5}{16}$	3 $\frac{11}{16}$	2 $\frac{1}{8}$	1 $\frac{1}{2}$	Dodge	2.30
C-13508A	85	20	610	600	2 $\frac{3}{4}$	2 $\frac{5}{16}$	2 $\frac{5}{8}$	1 $\frac{3}{4}$	Avfid	2.85
C-5134Q	90/180	25/6.25	240/60	600	4 $\frac{1}{4}$	2 $\frac{7}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{2}$	Avbed	6.30
C-5093X	125	2	105	600	2	3 $\frac{1}{2}$	2	1	Delve	1.45
C-5067X	125	12	240	600	2 $\frac{5}{16}$	3 $\frac{11}{16}$	2 $\frac{1}{4}$	1 $\frac{1}{2}$	Doily	2.30
C-5067A	125	12	240	600	2 $\frac{3}{4}$	2 $\frac{5}{16}$	2 $\frac{5}{8}$	1 $\frac{3}{4}$	Avfje	2.85
C-13509X	160	8	160	600	2 $\frac{5}{8}$	4 $\frac{1}{8}$	2 $\frac{1}{2}$	1 $\frac{1}{2}$	Zeiac	2.50
C-13509A	160	8	175	600	3 $\frac{1}{4}$	2 $\frac{3}{4}$	3	2 $\frac{3}{4}$	Avfni	3.30
C-5123Q	175/350	10/2.5	120/30	600	4 $\frac{1}{4}$	2 $\frac{7}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{2}$	Avbfe	6.30
C-5092B	200	4	140	1500	2 $\frac{5}{8}$	2 $\frac{3}{16}$	2	1 $\frac{3}{4}$	Demit	2.60
C-13506B	250	20	150	2000	4 $\frac{1}{8}$	3 $\frac{5}{8}$	2 $\frac{9}{16}$	6	Donor	5.60
C-13506A	250	20	150	1000	4 $\frac{1}{8}$	3 $\frac{3}{4}$	3 $\frac{3}{8}$	6 $\frac{1}{4}$	Avfoj	6.00
C-13530Q	300	6	120	2000	4 $\frac{5}{8}$	3 $\frac{3}{8}$	3 $\frac{5}{8}$	5	Avbih	7.35
C-13519Q	300/600	20/5	140/35	2000	6	5	4 $\frac{7}{8}$	15	Avbjl	12.35
C-13507B	350	20	130	2000	4 $\frac{7}{8}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	10	Dough	9.00
C-13507A	350	20	130	1000	4 $\frac{7}{8}$	4 $\frac{1}{4}$	4 $\frac{1}{2}$	11	Avfuo	9.60
C-13512T	500	20	90	3500	7	8 $\frac{1}{4}$	5	25	Dowry	18.00
C-13510T	750	20	50	4500	9	8 $\frac{1}{4}$	7 $\frac{1}{2}$	72	Zeizb	41.50
C-13511T	1000	10	29	4500	10 $\frac{1}{2}$	8 $\frac{1}{4}$	7 $\frac{1}{2}$	101	Zeimo	57.00

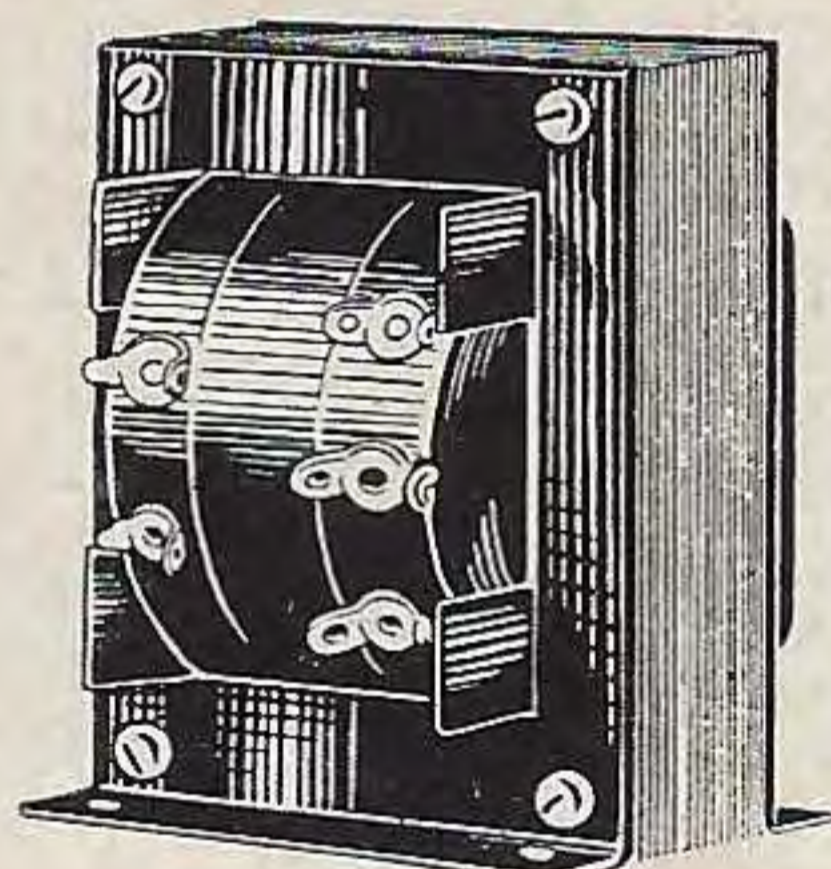
ISOLATION TRANSFORMERS

Statically Shielded Between Windings

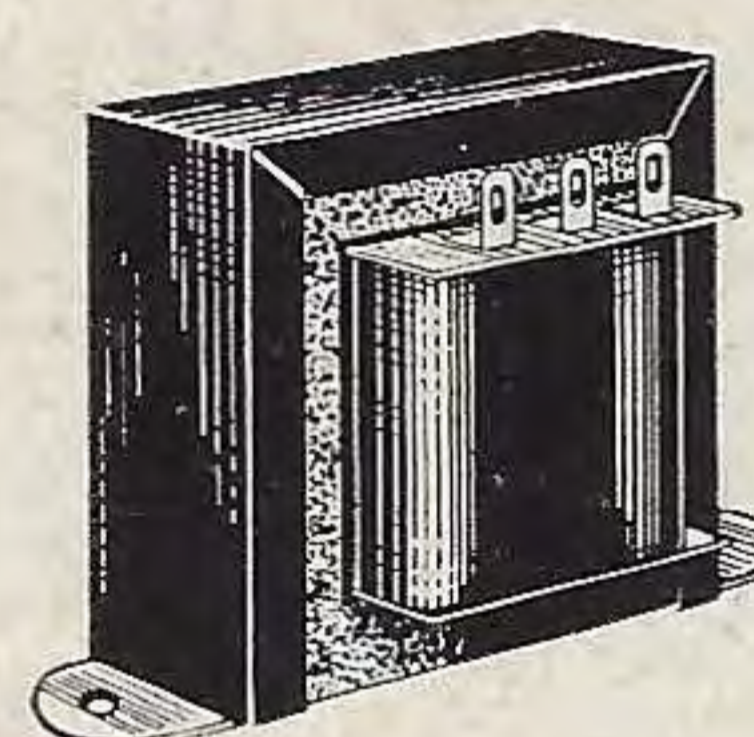
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				H.	W.	D.			
T-1061L	115	115	75	4	3½	3¼	7	Avfyt	\$7.35
T-1060L	115	115	150	4	3½	4½	10	Crier	11.35
T-10516T (leads)	230/115	230/115	1000	10½	8¼	7½	65	Zeizw	62.50
T-10517T (leads)	230/115	230/115	2500	12½	9	8¾	122	Auzce	95.00



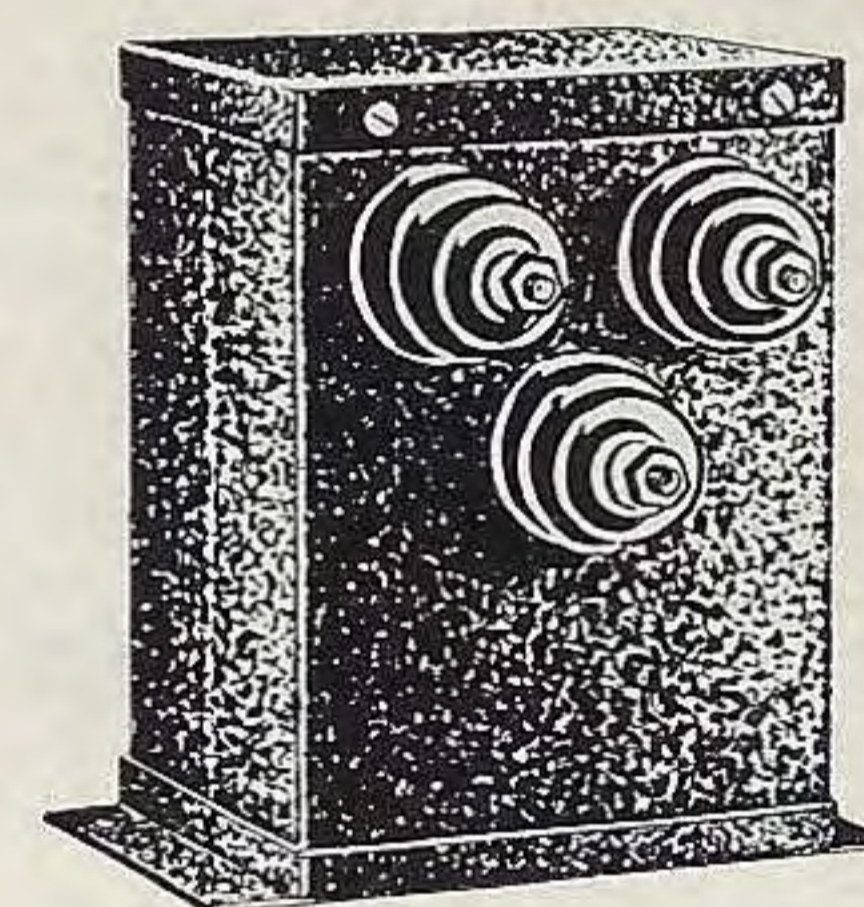
Case "Q"



Case "B"



Case "X"



Case "J"

FILAMENT TRANSFORMERS

Single Filament Types

Type No.	Sec. Volts	Sec. Amps.	Voltage Ins.*	Primary Volts	Dimensions-In.			Wt. lbs.	Code Word	List Price
					H.	W.	D.			
F-8504X	2.5 CT.	4	600	115	2	3¼	2⅛	1	Jelly	\$2.00
F-8505B	2.5 CT.	7	600	115	2⅝	2⅜ ₁₆	2	2	Jenny	2.65
F-8521B	2.5 CT.	4	2000	105-110-115-120	2⅝	2⅜ ₁₆	2	1½	Avmuh	3.25
F-8506B	2.5 CT.	10	2500	105-110-115-120	3⅜	2⅜ ₁₆	2⅜ ₁₆	2¾	Joint	3.75
F-8515J	2.5 CT.	10	4500	105-110-115-120	7⅛	6⅝	6⅞	13	Juice	11.50
F-8513J	2.5 CT.	20	4500	105-110-115-120	7⅛	6⅝	6⅞	17	Auzzd	14.40
F-8510B	5 CT.	4	600	115	2⅝	2⅜ ₁₆	2⅜	2	Jerry	2.65
F-8517B	5.25 CT.	13	1500	105-110-115-120	3⅜	2⅜ ₁₆	3⅝ ₁₆	4	Jupar	4.80
F-8516B	5.25 CT.	20	1500	105-110-115-120	4	3½	3½	6¼	Jupet	7.50
F-8503J	5 CT.	20	4500	105-110-115-120	7⅛	6⅝	6⅞	17	Jumbo	14.40
F-8536Z	6.3 CT.	1.0	600	115	1⅞	2⅜	1¾	¾	Joado	1.60
F-8509X	6.3 CT.	1.8	600	115	2	3¼	2	1	Zesln	2.25
F-5091B	6.3 CT.	3.6	600	115	2⅝	2⅜ ₁₆	2½	1¾	Jetty	2.65
F-5122A	6.3 CT.	5.0	600	115	3⅛	2⅝	2¾	2½	Avhwo	3.30
F-8520A	6.3 CT.	8.0	600	105-110-115-120	3½	2⅜ ₁₆	3	3¾	Avmvi	4.50
F-8514B	10 CT.	5.0	1250	105-110-115-120	3⅜	2⅜ ₁₆	3¼	3¼	Jolly	4.10
F-8507B	10 CT.	10.0	1250	105-110-115-120	4	3½	3⅞ ₁₆	4¾	Joule	5.15

Tapped Filament Types

F-8511B	7.5/6.3 CT.	4.0	750	107-113-120	3 $\frac{1}{16}$	2 $\frac{5}{8}$	2 $\frac{13}{16}$	2	Jewel	3.00
F-8512B	7.5/6.3 CT.	8.0	1250	105-110-115-120	3 $\frac{3}{8}$	2 $\frac{13}{16}$	3 $\frac{3}{16}$	3 $\frac{1}{2}$	Joker	4.10

Multiple Filament Types

F-8794A	6.3 CT. 5.0 CT.	5 3	600	105-110-115-120	3 $\frac{1}{2}$	2 $\frac{13}{16}$	3	3 $\frac{1}{2}$	Avauu	4.50
F-8522B	5 CT. 5 CT. 5 CT.	6 3 3	1250	105-110-115-120	4	3 $\frac{1}{2}$	3 $\frac{3}{16}$	4 $\frac{3}{4}$	Jules	6.00
F-8518B	10 CT. 2.5 CT.	7 10	1250 2000	105-115-125	4	3 $\frac{1}{2}$	3 $\frac{7}{16}$	9	Avge	6.60
F-8519Q	6.3 CT. 5 CT. 2.5 CT.	6 4 8.5	750	105-115-125	4 $\frac{1}{8}$	3 $\frac{5}{8}$	3 $\frac{3}{8}$	9 $\frac{1}{2}$	Avcig	9.60

*Operating voltage. Tested at twice operating voltage plus 1000 volts.

All of the above transformers are for operation on 105-135 volts, 50-60 cycles. Any of them may be supplied for 220 volt operation or for 25 cycle or both. For 220 volt increase price 15%; for 25 cycle, 60%; and for 220 volt, 25 cycle, 60% and 15%.



Case "Q"

PEERLESS

AUDIO EQUIPMENT

Peerless "Q" series transformers were designed to fill the need for a line of audio transformers of intermediate quality and price. They combine the best mechanical features of the "battleship" types with some reduction in frequency range and in shielding. Where standard microphones and speakers are used, well-engineered designs using such transformers give results equal to the "laboratory" types, and permit considerable reduction in weight, size, and cost. Examine the following features found in the Peerless "Q" series:

Hum Reduction: Standard input transformers (A4088Q, A4265Q, etc.) are supplied in an efficient "hum-bucking" construction which reduces pickup by some 40db., sufficient for most applications. For extremely low level operation, or where excessive AC fields are present, additional shielding is available by the use of the 80db. multiple alloy shield found in types A4274Q, A4275Q, and A4276Q.

Wide Frequency Range: These units are linear within one db. over the frequency range from 50 to 10000 cycles.

Reversible Mountings: Mount from either end with 4 bolt holes and circular cut-out for sub-chassis mounting.

Solid Terminals: Heavy, rigid lugs which cannot turn in their mountings.

Low Harmonic Distortion: Low flux densities, extremely close coupling, low resistance windings, all permit very low distortion. Outstanding for Class B or AB amplifiers.

Wide Range of Specifications: In addition to the popular line of low level audio coupling units; modulation, power, filament transformers, and chokes are available in harmonizing cases to make it possible to build equipment of similar appearance throughout.

LOW IMPEDANCE INPUT TRANSFORMERS LINE, MIXER, OR MICROPHONE TO GRID

Type No.	Application	Impedance-Ohms Primary	Secondary	Turn Ratio	Dimensions-In. H. W. D.	Wt. lbs.	Code Word	List Price
A-4274Q†	Line, mixer, microphone, to grid.	50-125-200*- 250-333-500*	60500	1:11	3½ 2¼ 2½	1½	Avgke	\$13.20
A-4088Q†	Line, mixer, microphone, to grid.	125-500*	53000	1:10.3	4¼ 2¼ 2½	2¼	Ausxe	6.90
A-4277X	DB. microphone to grid.	400 CT.	108000	1:16.1	2 3¼ 2	1	Hades	2.35
A-4279X	DB. microphone to grid.	400 CT.	100000	1:15.8	1⅝ 2¾ 1⅞	9 oz.	Avgoi	2.20
A-4281X	DB. microphone to 1 or 2 grids	400 CT.	65000 CT.	1:12.7	1¼ 1⅝ 1¼	2¼ oz.	Avlpe	2.10
A-4229Q†	SB or dynamic mike to grid.	50-200*	43000	1:14.7	4¼ 2¼ 2½	2¼	Autta	6.90
A-4230Q†	Dynamic mike to grid.	7½-30*	49500	1:40.6	4¼ 2¼ 2½	2¼	Ausyf	7.20
A-4078X	SB mike to grid.	100	100000	1:31.7	2 3¼ 2	1	Habit	2.20
A-4278X	SB mike to grid.	100	100000	1:31.7	1⅝ 2¾ 1⅞	9 oz.	Hughy	2.10
A-4091X	SB microphone to 1 or 2 grids. (Voice frequencies only)	100	710000 CT.	1:84	1⅝ 2¾ 1⅞	9 oz.	Auzpp	2.40
A-4280X	SB microphone to 1 or 2 grids.	100	82500 CT.	1:28.7	1¼ 1⅝ 1¼	2¼ oz.	Avlui	2.00
A-4275Q†	Line, mixer, microphone, to p.p. grids.	50-125-200*- 250-333-500*	37500 CT.	1:8.75	3½ 2¼ 2½	1½	Avgun	13.80
A-4231Q†	Line, mixer, microphone, to p.p. grids.	125-500*	53000 CT.	1:10.3	4¼ 2¼ 2½	2¼	Auszg	7.20

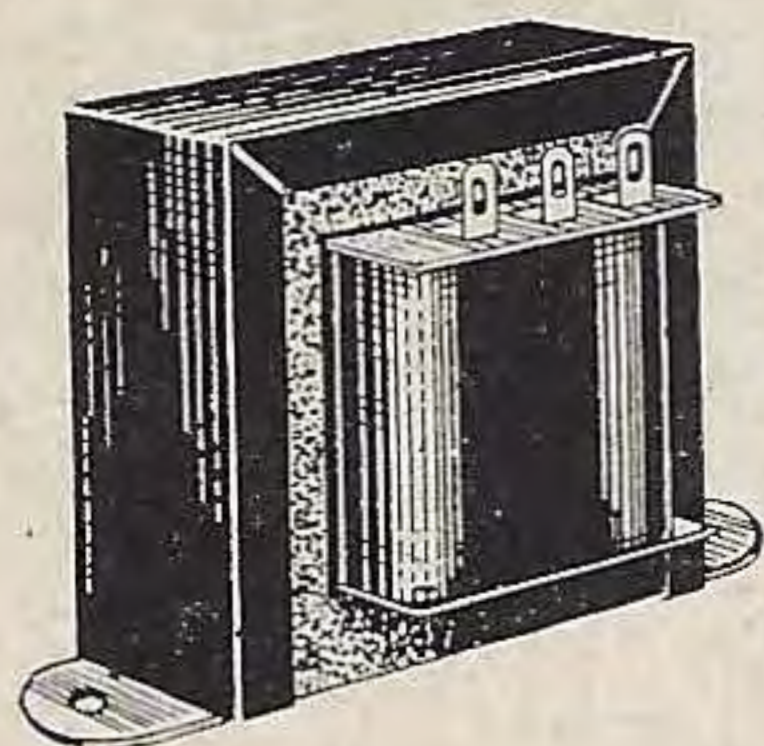
SPECIAL TRANSCEIVER TRANSFORMERS

A-4282X	SB mike or 10000 ohm plate to grid. (2 primaries)	100 10000	43300	1:20.8 1:2	1¼ 1⅝ 1¼	2¼ oz.	Avlym	2.15
A-4287X	SB mike or 10000 ohm plate to grid. (2 primaries)	100 10000	102000	1:32 1:2	1⅝ 2¾ 1⅞	9 oz.	Huffy	2.40

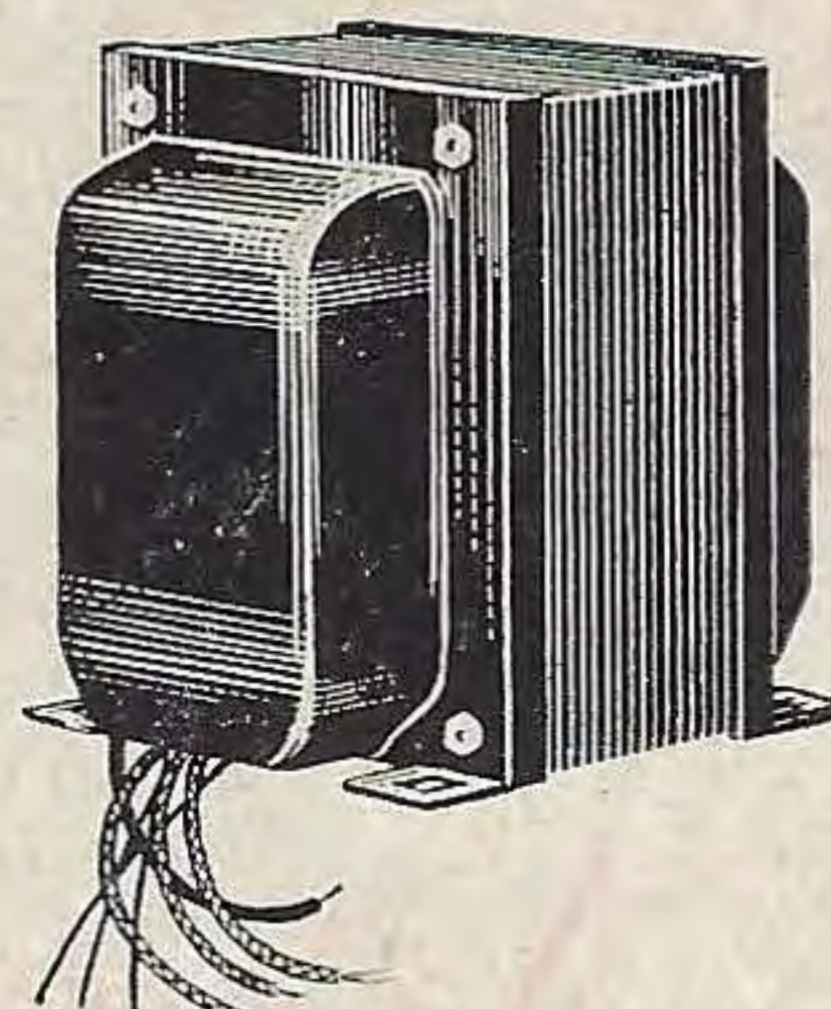
†Hum-bucking construction—40 db. hum pick-up reduction.

‡Quadruple shielding—80 db. hum protection.

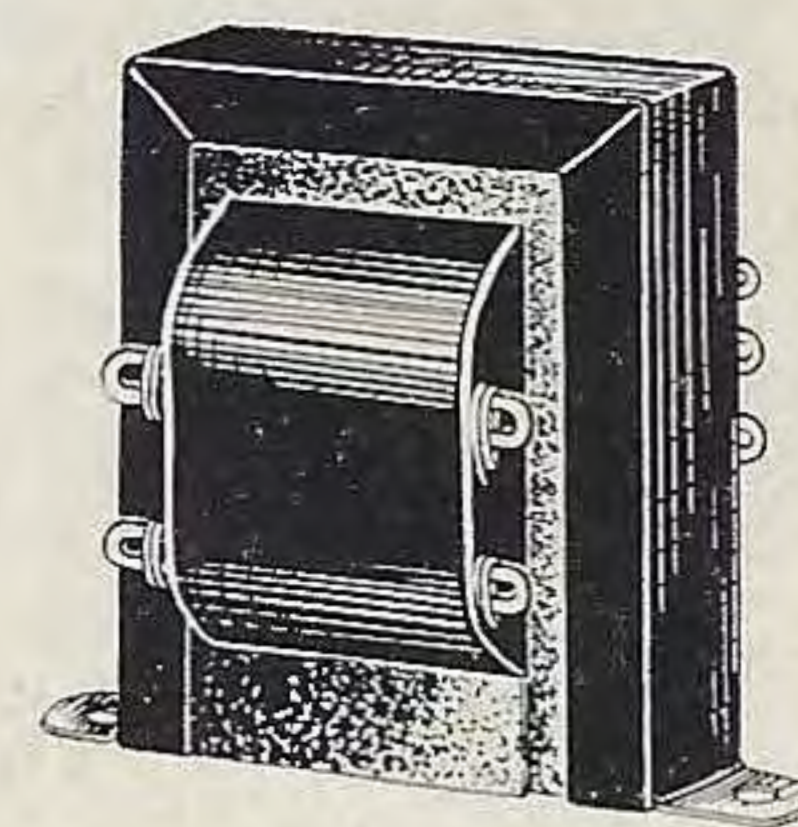
*Balanced center-tapped winding.



Case "X"



Case "A"



Case "Z"

PLATE TO GRID TRANSFORMERS

Type No.	Application	Ohms Pri.	Impedance Sec.	Turn Ratio	Max. Pri. DC.-Ma.	Dimensions-In.			Wt. lbs.	Code Word	List Price
						H.	W.	D.			
A-4096X †	10000 ohm plate to grid.	10000	90000 CT.	1:3	10	2	3¼	2	1	Grass	\$2.20
A-4221X †	10000 ohm plate to grid.	10000	96000 CT.	1:3.1	8	1⅝	2¾	1½	9 oz.	Gamut	1.80
A-4227X †	10000 ohm plate to grid.	10000	40000 CT.	1:2	6	1¼	1⅝ ₁₆	1¼	2¼ oz.	Avman	2.00

†Secondary center-tapped for use as high ratio p.p. input.

PUSH - PULL INPUT TRANSFORMERS

Type No.	Application	Ohms Pri.	Impedance Sec.	Turn Ratio	Max. Pri. DC.-Ma.	Dimensions-In.			Wt. lbs.	Code Word	List Price
						H.	W.	D.			
A-4276Q	10000 ohm plate to p.p. grids 80 db. shielding.	10000	55000 CT.	1:2.35	6‡	3½	2¼	2½	1½	Avezv	\$13.80
A-4265Q †	10000 ohm plate to p.p. grids.	10000	40000 CT.	1:2	10	4¼	2¼	2½	2¼	Autwd	6.90
A-4224A	10000 ohm plate to p.p. grids.	10000	62500 CT.	1:2.5	10	2¾	2⅝ ₁₆	2⅞ ₁₆	2	Avfav	3.60
A-4097X	Large plate to p.p. grids.	10000	22500 CT.	1:1.5	10	2¼	3¾	2¼	2	Gaily	3.00
A-4096X	Medium plate to p.p. grids	10000	90000 CT.	1:3	10	2	3¼	2	1	Grate	2.20
A-4221X	Plate to p.p. grids.	10000	96000 CT.	1:3.1	8	1⅝	2¾	1½	9 oz.	Gamut	1.80
A-4227X	10000 ohm plate to p.p. grids.	10000	40000 CT.	1:2	6	1¼	1⅝ ₁₆	1¼	2¼ oz.	Avman	2.00

†Hum-bucking construction—hum pick-up reduced 40 db.

‡Zero DC. necessary for best frequency response.

PUSH - PULL INTERSTAGE TRANSFORMERS

Type No.	Application	Ohms Pri.	Impedance Sec.	Turn Ratio	Max. Pri. DC.-Ma.	Dimensions-In.			Wt. lbs.	Code Word	List Price
						H.	W.	D.			
A-4232Q †	P.p. plates to p.p. grids.	20000 CT.	20000 CT.	1:1	10‡	4¼	2¼	2½	2¼	Autbh	\$6.90
A-4225A	P.p. plates to p.p. grids.	20000 CT.	45000 CT.	1:1.5	10‡	2¾	2⅝ ₁₆	2⅞ ₁₆	2	Aveyu	3.90

†Hum-bucking construction—hum reduced 40 db.

‡DC. effects balanced out in normal connection.

TUBE TO LINE TRANSFORMERS—LOW LEVELS

Type No.	Application	Ohms Primary	Impedance Secondary	Max. Pri. DC.-Ma.	Dimensions-In.			Wt. lbs.	Code Word	List Price
					H.	W.	D.			
S-95Q	Single (or p.p.)	18000 CT.	50/125/200*/250/333/500*	10	3½	2¼	2½	1½	Autxe	\$6.90
S-27X	6C5, 6J5, 76, 56,	18000	50/200/500	10	1⅝	2¾	1¼	9 oz.	Avewu	2.40
S-35X	etc. to line or mixer.	8000 CT.	50/200/500	10	1¼	1⅝ ₁₆	1¼	2¼ oz.	Avmbd	1.80

*Balanced center-tapped winding.

TYPICAL EQUALIZER CIRCUITS FOR AMPLIFIERS

The theoretically perfect amplifier of flat frequency response does not always have the most "pleasing" output since it must operate in connection with transducers of considerable frequency discrimination and from recordings in which the low frequencies are intentionally attenuated. For this reason it is often desirable to construct amplifiers in which the frequency response can be altered to obtain the most pleasing result.

SIMPLE PENTODE EQUALIZER

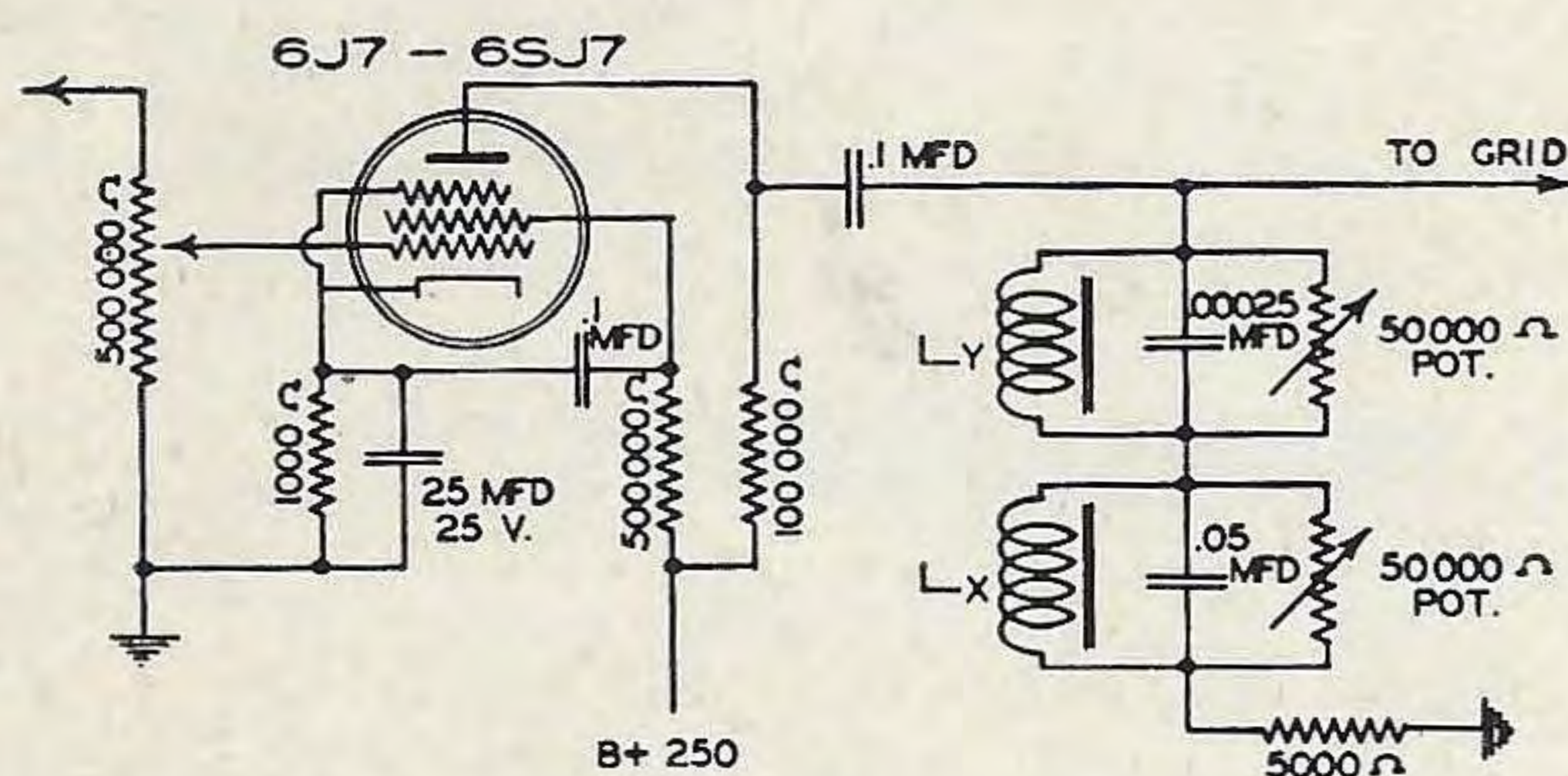


Fig. 1—Simple pentode equalizer circuit.

This simple pentode equalizer depends for its results upon the fact that the voltage gain of a pentode tube is proportional to the value of its plate load. By causing this plate load to vary with frequency it is possible to attain almost any desired degree of frequency correction. In Fig. 1 the A4239Q dual reactor or combination of A4222X and A4223X may be used for the tuning chokes. This equalizer is adaptable only where it may be used in a low-level, single-ended, resistance-coupled stage. It should not be used if more than 2 or 3 volts output is needed, and will permit an input of less than one-half volt; less than the output of a crystal pickup.

NEGATIVE FEEDBACK EQUALIZER

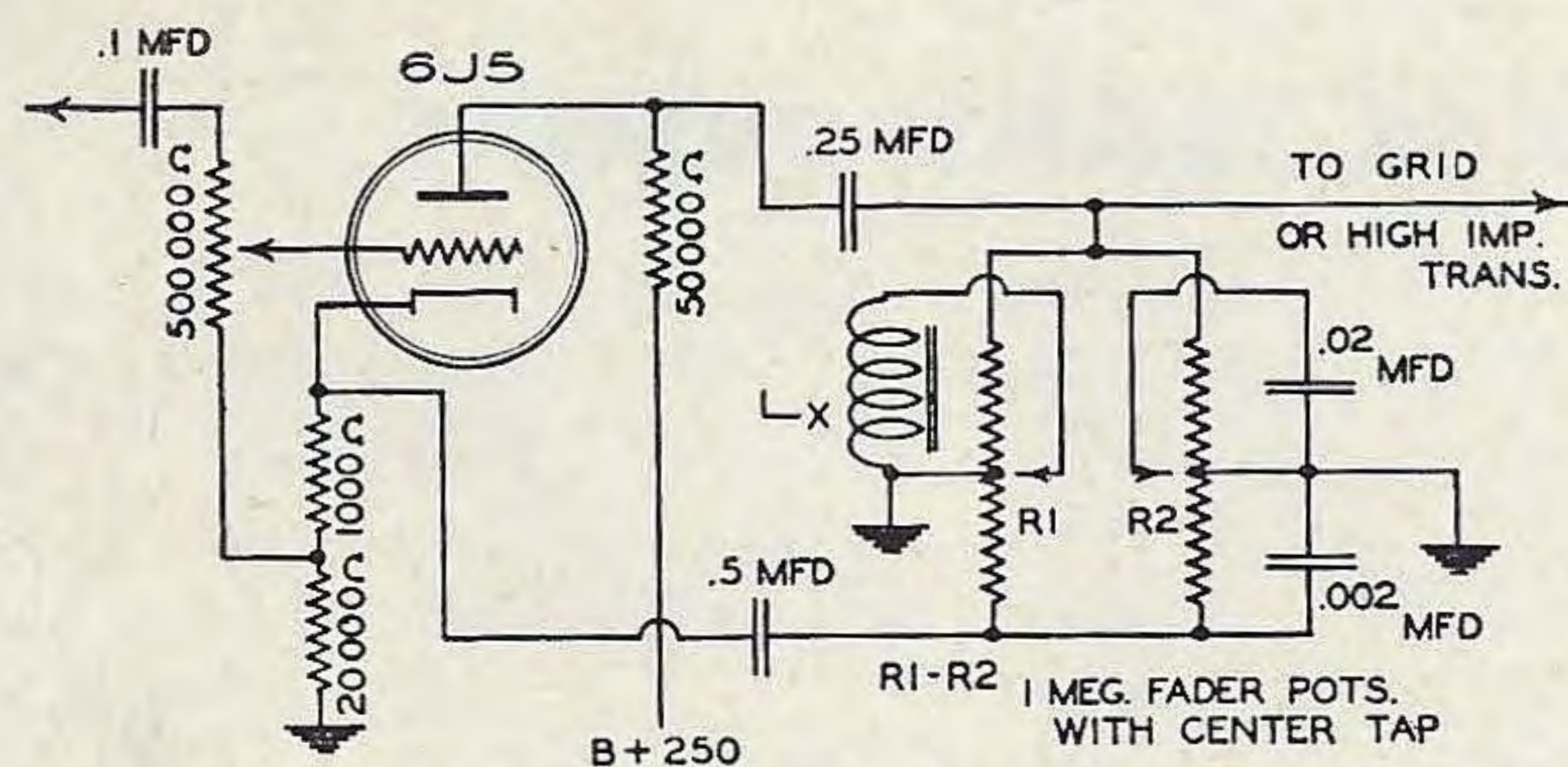
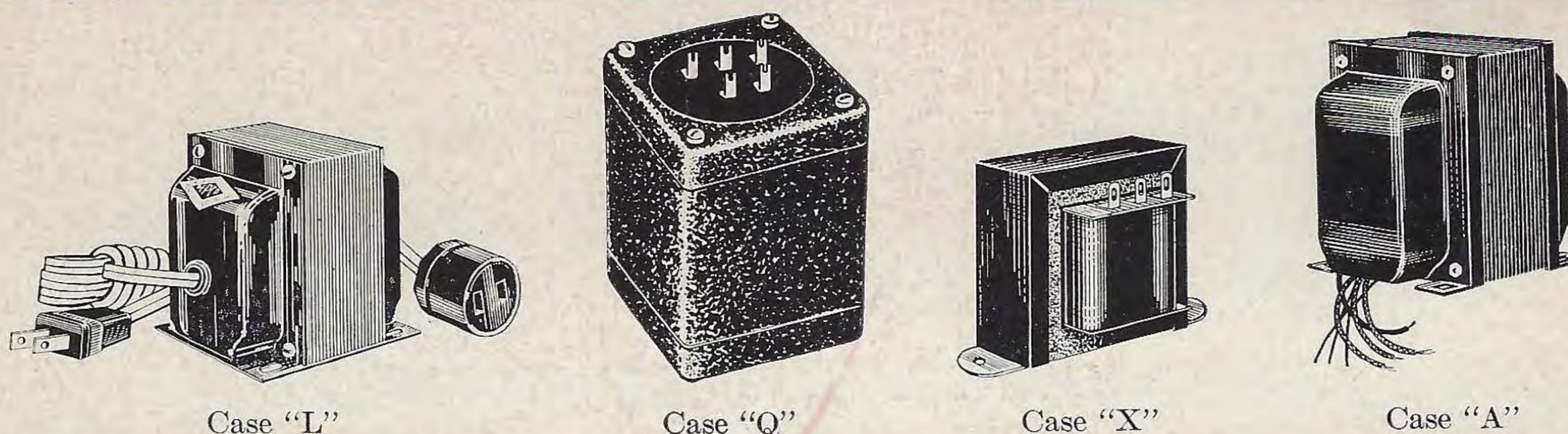


Fig. 2—Negative feedback equalizing circuit.

The negative-feedback equalizing circuit operates by allowing the amount of negative feedback to vary with frequency. It is more universal in that it may be operated at higher levels and may be used with a transformer load. It may thus be used directly from high output phonograph pickups without pre-attenuation and may be used as a driver for push-pull stages or to feed a line. A4273Q is recommended for use in this circuit because of its high degree of shielding. A4228X is also suitable in amplifiers where it does not need to operate in a strong A.C. field.



MIXING & MATCHING TRANSFORMERS—LOW LEVEL

Type No.	Application	Ohms Impedance		Dimensions-In.			Wt. lbs.	Code Word	List Price
		Primary	Secondary	H.	W.	D.			
A-4233Q	Microphone or line to line or mixer.	50/125/200*/ 250/333/500*	50/125/200*/ 250/333/500*	3½	2¼	2½	1¾	Autyf	\$7.20

*Balanced center-tapped winding.

EQUALIZING REACTORS

Type No.	Application	Inductance Henries	DC.-Ma.		Resistance Ohms.	Dimensions-In.			Wt. lbs.	Code Word	List Price
			Normal	Max.		H.	W.	D.			
A-4222X	Simple pentode equalizer for high-frequency peak.	2	2	10	85	1⅝	2¾	1⅞	9 oz.	Auuek	\$2.70
A-4223X	Simple pentode equalizer for low-frequency peak.	160	2	10	7000	1⅝	2¾	1⅝	9 oz.	Autjp	3.30
A-4228X*	Tone control.	23	0		220	2	2¾	1⅞	6 oz.	Avmoc	3.00
A-4239*	Simple pentode equalizer for both high and low frequency.	2 160	2	10	90 11000	4¼	2¼	2½	2¾	Avazz	7.20
A-4273Q‡	Tone control.	23	0		220	3½	2¼	2½	2	Avmre	7.50

AUDIO COUPLING REACTORS

Type No.	Application	Inductance Henries	DC.-Ma.		Resistance Ohms.	Dimensions-In.			Wt. lbs.	Code Word	List Price
			Normal	Max.		H.	W.	D.			
A-4098X	Plate reactor or series filter for 6J5, 6C5, 76, 56, etc.	275	5	10	4000	1⅝	2¾	1⅝	9 oz.	Grist	1.80
A-4226X	Plate reactor for 6F6, 42, 45, 2A3, 2A5, etc.	30	40	85	650	2⅝	3⅞	2¼	1¾	Avext	2.70

LINE VOLTAGE CORRECTING AUTOFORMERS

Step-Down Auto Transformers—230 to 115 Volts

Type No.	Rating Va.	Dimensions-In.			Wt. lbs.	Code Word	List Price
		H.	W.	D.			
T-8007L	70	3½	2⅜	2⅝	6	Oleum	\$5.15
T-8003L	150	3½	2⅜	3⅜	6½	Osram	6.90
T-8005L	500	5	4⅝	4	17	Odast	15.80
T-8006T (leads)	1000	6¼	8¼	5	31	Odarn	27.50

AUTOFORMERS—LINE VOLTAGE CORRECTION

Type No.	Voltages	Rating Va.	Dimensions-In.			Wt. lbs.	Code Word	List Price
			H.	W.	D.			
T-8010B	0-25-50-75-100-105-110-115-120-125	250	4	3½	3¼	6	Zeips	8.60
T-8002B	0-25-50-75-100-105-110-115-120-125	500	4	3½	4⅝	10½	Zekde	15.50
T-8008K	0-25-50-75-100-105-110-115-120-125	1000	6⅜	5⅞	5½	23	Ziert	30.20
T-8009K	0-25-50-75-100-105-110-115-120-125	2000	6⅞	5⅞	5½	39	Zekef	31.60

(Case K illustrated on front cover.)

PEERLESS OUTPUT TRANSFORMERS

REPLACEMENT OUTPUT TRANSFORMERS

Tube to Voice Coil

Type No.	Tubes Used	Impedance-Ohms. Primary	Secondary	Audio Watts	Max. Pri. DC.-Ma.	Dimensions-In. H. W. D.			Wt. lbs.	Code Word	List Price
S-34X	1Q5, 3Q5, 1G6, 1S4, 3S4, 1C5.	8000	2½ to 4	1	15	1¼	1½	1¼	2¼ oz.	Avmgu	\$1.80
S-20X	1 - 6F6, 6V6, 41, 6K6, 6G6, 6A4, 25A6.	3500, 5000, 7000, 10000	2 to 6	5	40	1⅜	2½	1⅞	6 oz.	Avayy	1.45
S-31X	1 - 25L6, 35L6, 50L6, 25B6.	1500, 2000, 2500	2 to 6	5	60	1⅜	2½	1⅞	6 oz.	Avgey	1.45
S-32X	1 - 1S4, 1C5, 3Q5, 1Q5, 1T5.	8000, 14000	2 to 6	5	20	1⅜	2½	1⅞	6 oz.	Avgga	1.50
S-33X	1 - 1A5.	25000	2 to 6	5	10	1⅜	2½	1⅞	6 oz.	Avbic	1.50
S-24X	1 or 2 - 42, 41, 6K6, 6V6.	3500, 5000, 7000, 10000 CT.	1.04 to 6	5	40	1⅝	2¾	1⅞	9 oz.	Feber	1.55
S-23X	Universal - 1 or 2 tubes.	4000, 5000, 7000, 10000, 14000, CT.	.13 to 16	10	50	2	3¼	2¼	1	Flake	1.80
S-26X	2 - 6F6, 6V6, 6K6, 42, 2A5.	10000 CT.	2½-4-6-10	15	50‡	2⅝	3⅞	2¼	1½	Zeimo	2.60
S-25X	2 - 45, 71, 50, 42, 6L6.	8000 CT.	2½-4-6-10	15	50‡	2⅝	3⅞	2¼	1½	Zehez	2.60

HIGH LEVEL OUTPUT TRANSFORMERS

Tube to Line or Voice Coil

Type No.	Tubes Used	Impedance Ohms Primary	Secondary	Audio Watts	Max. Pri. DC.	Dimensions-In. H. W. D.			Wt. lbs.	Code Word	List Price
S-76Q	1 - 6F6, 6V6, 6K6, 41, 42, 2A5, etc.	7000	2½-4-8 15-200-500	5	40*	3½	2¼	2½	1½	Avmes	\$6.60
S-29A	1 - 6F6, 6V6, 6K6, 41, 42, 2A5, etc.	7000	2½-4-8 15-500	10	40*	2¾	2⅝	2⅞	2	Avfdy	3.00
S-28A	1 - 6L6 Class A	4500	2½-4-8 15-500	15	80*	3⅞	2⅝	3	2¾	Avdax	4.30
S-78A	2 - 6F6, 6V6, 6K6, 42, 41, 2A5.	10000 CT.	2½-4-8 15-500	10	40‡	2¾	2⅝	2¼	1¾	Aveyw	3.30
S-30A	2 - 6L6 AB	6600 CT.	2½-4-8 15-500	35	80‡	3½	2⅞	3	3½	Avfez	4.80
S-38Q	2 - 6F6, 6V6, 6K6, 42, 41, 2A5, or 2-45, 50, 71.	10000 CT. or 8000 CT.	2½-4-8 15-200-500	15	40‡	4½	2⅞	3⅞	3½	Auzll	9.20
S-40Q	2 - 6L6 AB ¹	6600 CT.	2½-4-8 15-200-500	35	80‡	4⅞	3⅞	3⅝	6	Auznn	14.40
S-39Q	2 - 6A3, 2A3, 6B4, 6L6, etc.	5000 CT. or 3000 CT.	2½-4-8 15-200-500	15	70‡	4½	2⅞	3⅞	3½	Auzmm	9.20
S-73Q	4 - 2A3, 6A3, 6B4, 6A5.	2500 CT. or 1500 CT.	2½-4-8 15-200-500	35	100‡	4⅞	3⅞	3⅝	6	Auzoo	14.40
S-74Q	2 - 6L6 AB ² or 4 - 6L6 AB ¹	3800 CT. or 3300 CT.	2½-4-8 15-200-500	60	160‡	6	5	4⅞	15	Auztt	21.00

Line to Voice Coil

S-37Z	For matching 500 ohm output of amplifier	2000, 1500, 1000, 830, 500, 250.	2½-4-6 10	12		2¾	2⅝	2⅞	1⅜	Zeity	3.30
S36Q	to series and parallel combinations of speakers.	2000, 1500, 1000, 830, 500, 250	2½-4-6 10	30		4½	3⅝	3⅞	4	Found	9.20

*Unbalanced DC.

‡DC. Saturation eliminated by p.p. connection.



Case "T"

DRIVER AND MODULATOR COMBINATIONS

Proper layout of high power amplifiers for modulator use involves several problems not usually considered in amplifiers designed for other purposes. The fixed load offered by the class "C" stage makes possible the use of hi-voltage, high efficiency, class B or AB amplifiers, thus permitting relatively small output tubes and power supplies. Use of these amplifiers

demands, however, that the driver stage be of high output and good regulation. Use of the recommended tubes, or of similar types with the same characteristics, will assure optimum results with Peerless transformers.

Peerless driver and modulation transformers are particularly successful in class B circuits because of their liberal design, close coupling, low leakage reactance, and high open circuit reactance. These factors, when combined with the correct turn ratio, assure an amplifier of high output, low distortion and negligible parasitic oscillation.

Audio Plate Watts Volts	Mod. Tubes	Mod. Trans.	Driver Tubes	Driver Trans.	Audio Plate Watts Volts	Mod. Tubes	Mod. Trans.	Driver Tubes	Driver Trans.
0.5 90	1-1G6G	M-2134X	1-1G4G	A-4095X	175 1000	2-830B	M-2017T	2-2A3	A-4237Q
2.1 135	1-1J6G	M-2134X	1-1H4G	A-4094X	175 1250	2-811	M-2107T	2-2A3	A-4237Q
2.1 135	1-19	M-2104X	1-30	A-4092X	190 1250	2-K54	M-2107T	2-2A3	A-4237Q
3.5 180	2-49	M-2104X	1-31	A-4092X	190 1250	2-HK54	M-2107T	2-2A3	A-4237Q
4.2 180	1-6Z7G	M-2104X	1-6J5	A-4092X	175 1000	2-TZ40	M-2107T	2-2A3	A-4237Q
9.0 250	2-HY60	M-2103X	1-6J5	A-4093X	225 1500	2-811	M-2107T	2-2A3	A-4237Q
10.0 300	1-6A6	M-2103X	1-6A6	A-4093X	225 1500	2-812	M-2107T	2-2A3	A-4237Q
10.0 300	1-6N7	M-2103X	1-6N7	A-4093X	250 1250	2-RK52	M-2107T	2-2A3	A-4237Q
10.0 300	1-RK34	M-2103X	1-RK34	A-4093X	250 1250	2-HF100	M-2107T	2-2A3	A-4237Q
14.0 350	2-6F6	M-2103X	1-6F6	A-4093X	260 1250	2-211	M-2107T	2-2A3	A-4237Q
13.0 300	2-6V6	M-2103X	1-6F6	A-4099X	260 1250	2-203A	M-2107T	2-2A3	A-4237Q
15.0 300	2-2A3	M-4081Q	1-6F6	A-4235Q	260 1250	2-838	M-2107T	2-2A3	A-4237Q
20 400	2-46	M-4081Q	1-46	A-4235Q	260 1250	2-ZB120	M-2107T	2-2A3	A-4237Q
30 300	4-2A3	M-4080Q	1-6F6	A-4235Q	260 1250	2-203Z	M-2107T	2-2A3	A-4237Q
30 400	2-6L6	M-4080Q	1-6F6	A-4235Q	300 1500	2-75T	M-2107T	2-2A3	A-4237Q
30 400	2-807	M-4080Q	1-6F6	A-4235Q	300 1250	2-805	M-2107T	2-2A3	A-4237Q
36 500	2-801	M-4080Q	2-2A3	A-4237Q	300 1250	2-RK57	M-2107T	2-2A3	A-4237Q
40 400	2-6L6	M-4080Q	2-2A3	A-4237Q	300 1500	2-100TH	M-2107T	2-2A3	A-4237Q
45 500	2-HK24	M-4080Q	2-2A3	A-4237Q	330 2000	2-RK38	M-2116T	2-2A3	A-4237Q
50 600	2-TZ20	M-2131Q	2-2A3	A-4237Q	330 2000	2-HK254	M-2116T	2-2A3	A-4237Q
60 400	4-6L6	M-2131Q	1-6F6	A-4235Q	370 1500	2-805	M-2116T	2-2A3	A-4237Q
60 500	2-807	M-2131Q	2-2A3	A-4237Q	370 1500	2-RK57	M-2116T	2-2A3	A-4237Q
60 500	2-809	M-2131Q	2-2A3	A-4237Q	370 1500	2-150T	M-2116T	2-2A3	A-4237Q
70 750	2-TZ20	M-2105Q	2-2A3	A-4237Q	400 2000	2-75T	M-2116T	2-2A3	A-4237Q
70 750	2-HK24	M-2105Q	2-2A3	A-4237Q	400 1500	2-HD203A	M-2116T	2-2A3	A-4237Q
80 600	2-807	M-2105Q	2-2A3	A-4237Q	500 1750	2-T155	M-2121T	4-2A3	A-4238Q
100 1000	2-WE304B	M-2106T	2-2A3	A-4237Q	500 1750	2-HD203A	M-2121T	4-2A3	A-4238Q
100 1000	2-800	M-2016T	2-2A3	A-4237Q	500 2000	2-HF200	M-2121T	4-2A3	A-4238Q
100 1000	2-TZ40	M-2106T	2-2A3	A-4237Q	510 1500	2-810	M-2121T	4-2A3	A-4238Q
100 750	2-809	M-2106T	2-2A3	A-4237Q	535 2000	2-806	M-2121T	4-2A3	A-4238Q
100 850	2-HK54	M-2106T	2-2A3	A-4237Q	590 2000	2-810	M-2121T	4-2A3	A-4238Q
105 1250	2-845	M-2106T	2-2A3	A-4237Q	600 2500	2-HK354	M-2121T	4-2A3	A-4238Q
115 1000	2-35T	M-2106T	2-2A3	A-4237Q	600 2500	2-RK38	M-2121T	4-2A3	A-4238Q
100 1000	2-RK18	M-2106T	2-2A3	A-4237Q	600 2500	2-250TH	M-2121T	4-2A3	A-4238Q
100 850	2-T756	M-2106T	2-2A3	A-4237Q	600 2500	2-806	M-2121T	4-2A3	A-4238Q
135 800	2-830B	M-2106T	2-2A3	A-4237Q	650 2500	2-204A	M-2121T	4-2A3	A-4238Q
160 1000	2-RK31	M-2106T	2-2A3	A-4237Q	650 2500	2-HK300	M-2121T	4-2A3	A-4238Q
175 1250	2-812	M-2107T	2-2A3	A-4237Q	700 3000	2-806	M-2133T	4-2A3	A-4238Q

DRIVER AND MODULATOR COMBINATIONS

DRIVER TRANSFORMERS

TUBE TO CLASS B OR AB GRIDS

Type No.	Driver Tubes	Output Tubes	Ratio Pri./ $\frac{1}{2}$ sec.	Pri. DC. Ma.	Dimensions-In. H. W. D.			Wt. lbs.	Code Word	List Price
A-4235Q	1-6F6, 42, 2A5, 45	2-6L6, 2A3, 6F6, 45 6V6, 6A6, 6N7	2.2, 1.33:1	50	3 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2	Auzgg	\$6.90
A-4082X	1-6F6, 42, 2A5, 45	2-6L6, 2A3, 6F6, 45 6V6	1.33:1	59	2 $\frac{1}{4}$	3 $\frac{3}{4}$	2 $\frac{1}{4}$	1 $\frac{3}{4}$	Groin	3.60
A-4099X	1-6F6, 42, 2A5, 45	2-6L6, 2A3, 6F6, 45 6V6	1.33:1	50	2	3 $\frac{1}{4}$	2	1	Zelsr	2.10
A-4236Q	2-6C5, 6J5, 76, 56 or 1-6F6, 42, 45, 6A6, 6N7	2-6L6, 2A3, 6F6, 45 6V6, 6A6, 6N7	4.4, 2.8:1 or 2.2, 1.4:1	15 $\frac{1}{2}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2	Auzhh	6.90
A-4079X	2-6C5, 6J5, 76, 56 or 1-6A6, 6N7	2-6L6, 2A3, 6F6, 45 6V6, 6A6, 6N7	2.8:1	15 $\frac{1}{2}$	2 $\frac{5}{16}$	3 $\frac{11}{16}$	2 $\frac{1}{2}$	1 $\frac{3}{8}$	Gravy	3.75
A-4094X	1-1H4, 30	1-1J6G or 2-1H4G	2.66:1	15	1 $\frac{1}{4}$	1 $\frac{15}{16}$	1 $\frac{1}{4}$	2 $\frac{1}{4}$ oz.	Avmiw	1.90
A-4095X	1-1G4G	1-1G6G	1.2:1	15	1 $\frac{1}{4}$	1 $\frac{15}{16}$	1 $\frac{1}{4}$	2 $\frac{1}{4}$ oz.	Avmky	1.90
A-4093X	1-6J5, 6A6, 6N7, 76, 30	2-6A6, 6N7, 19, 30	2.3:1	25	2	3 $\frac{1}{4}$	2	1	Lodge	2.10
A-4092X	1-6J5, 6A6, 6N7, 76, 30	2-6A6, 6N7, 19, 30	2.66:1	25	1 $\frac{5}{8}$	2 $\frac{3}{4}$	1 $\frac{3}{8}$	9 oz.	Labat	2.10
A-4237Q	Univ. driver plates to B or AB grids.	Any grids—15 watts audio.	3.1, 2.1:1	70 $\frac{1}{2}$	4 $\frac{1}{2}$	3 $\frac{1}{8}$	2 $\frac{7}{8}$	4	Auzii	9.00
A-4238Q	Univ. driver plates to B or AB grids.	Any grids—30 watts audio.	3.1, 2.1:1	160 $\frac{1}{2}$	4 $\frac{7}{8}$	3 $\frac{5}{8}$	3 $\frac{3}{8}$	6	Auzjj	15.00

LINE TO B OR AB GRIDS

A-4086Q	200 or 500 ohm line	Any B or AB grids— 15 watts audio.	1:1.63, 2.5		4 $\frac{1}{2}$	3 $\frac{1}{8}$	2 $\frac{7}{8}$	4	Auzee	9.00
A-4234Q	200 or 500 ohm line	Any B or AB grids— 30 watts audio.	1:1.63, 2.73		4 $\frac{7}{8}$	3 $\frac{5}{8}$	3 $\frac{3}{8}$	6	Auzff	18.00

‡Per side—Pri. DC. normally balanced.

MODULATION TRANSFORMERS

TUBE TO RF LOAD

Type No.	Tubes Used	Pri. Impedance	Audio Watts	Secondary Imp.	DC-Ma.	Dimensions-In. H. W. D.			Wt. lbs.	Code Word	List Price
M-2134X	1 - 1S6G, 1G6G or 2-1H4G, etc.	10000 CT.	2	5000-8000- 10000	25	1 $\frac{1}{4}$	1 $\frac{15}{16}$	1 $\frac{1}{4}$	2 $\frac{1}{4}$ oz.	Avmma	\$1.80
M-2104X	1 - 19, 6N7, 6A6	10000 CT.	10	3500-5000- 8000	50	1 $\frac{5}{8}$	2 $\frac{3}{4}$	1 $\frac{11}{16}$	$\frac{3}{4}$	Largo	2.10
M-2103X	1-6N7, 6A6, 53 2-6F6, 42, 2A5	10000 CT.	10	3500-5000- 8000	100	2 $\frac{1}{4}$	3 $\frac{3}{4}$	2 $\frac{1}{4}$	1 $\frac{3}{4}$	Latch	3.90

UNIVERSAL MODULATION TRANSFORMERS

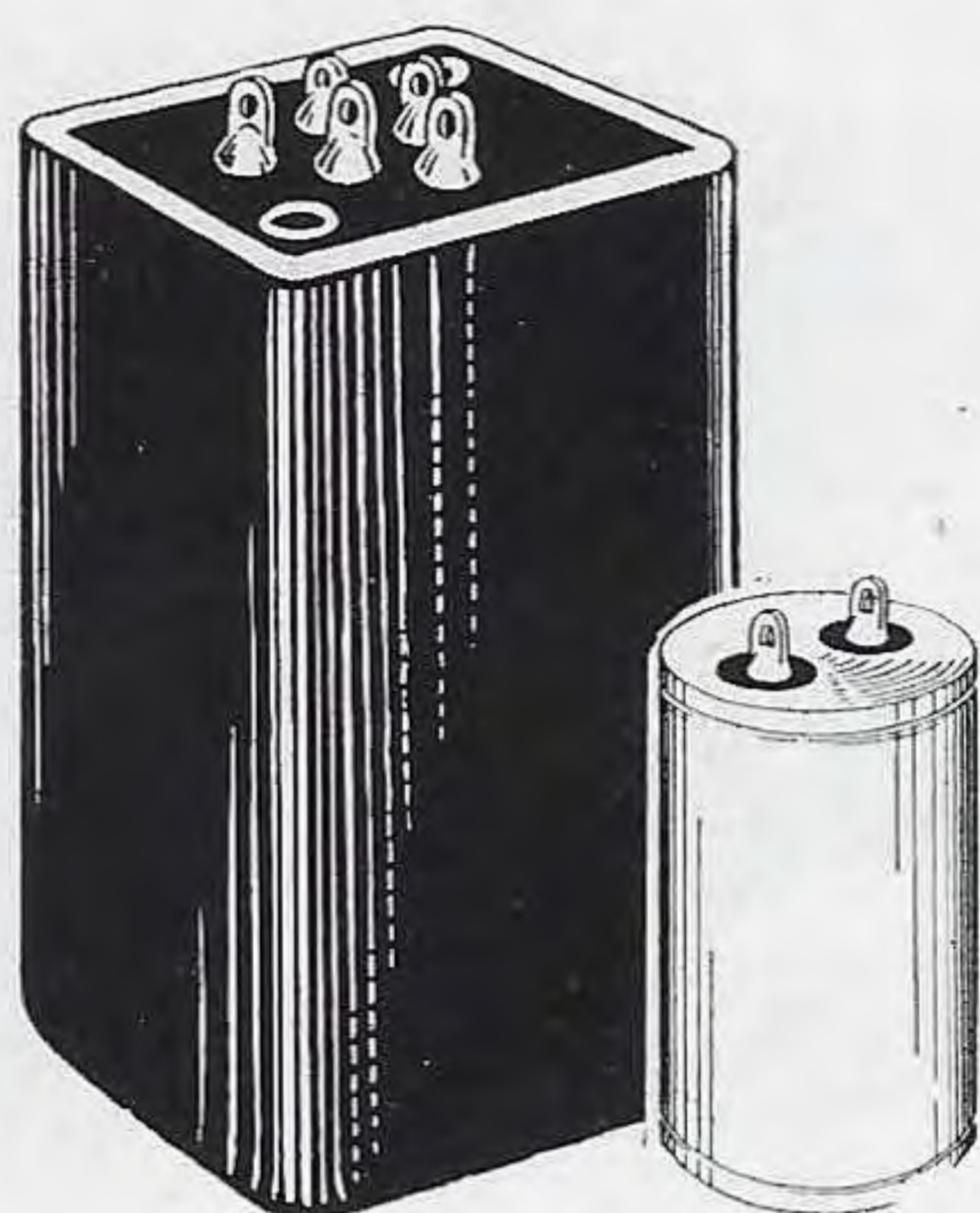
ANY TUBES TO ANY LOAD

Type No.	Audio Watts	Pri. Ma. Per Side	Secondary Series	Ma. Par.	Dimensions-In. H. W. D.			Wt. lbs.	Code Word	List Price
M-4081Q	20	80	80	160	4 $\frac{1}{2}$	2 $\frac{7}{8}$	3 $\frac{1}{8}$	4	Least	\$8.60
M-4080Q	40	100	100	200	5 $\frac{1}{2}$	4 $\frac{1}{4}$	3 $\frac{3}{4}$	6	Autkr	10.90
M-2131Q	60	130	130	260	6	5	4 $\frac{7}{8}$	10 $\frac{1}{2}$	Autls	15.50
M-2105Q	85	160	160	320	6	5	4 $\frac{7}{8}$	13	Zekab	18.40
M-2106T	150	200	200	400	6 $\frac{3}{4}$	7	6 $\frac{1}{4}$	25	Zeinp	24.20
M-2107T	300	250	250	500	7 $\frac{3}{4}$	7	6 $\frac{1}{4}$	29	Zekbc	31.60
M-2116T	450	400	400	800	8 $\frac{3}{4}$	8 $\frac{1}{2}$	6 $\frac{1}{4}$	40	Zeior	45.00
M-2121T	650	500	500	1000	9 $\frac{1}{2}$	9 $\frac{3}{4}$	6 $\frac{1}{4}$	55	Zekcd	78.00
M-2133T	1000	650	650	1300	12	11	9	120	Avdby	138.00

OTHER PEERLESS PRODUCTS

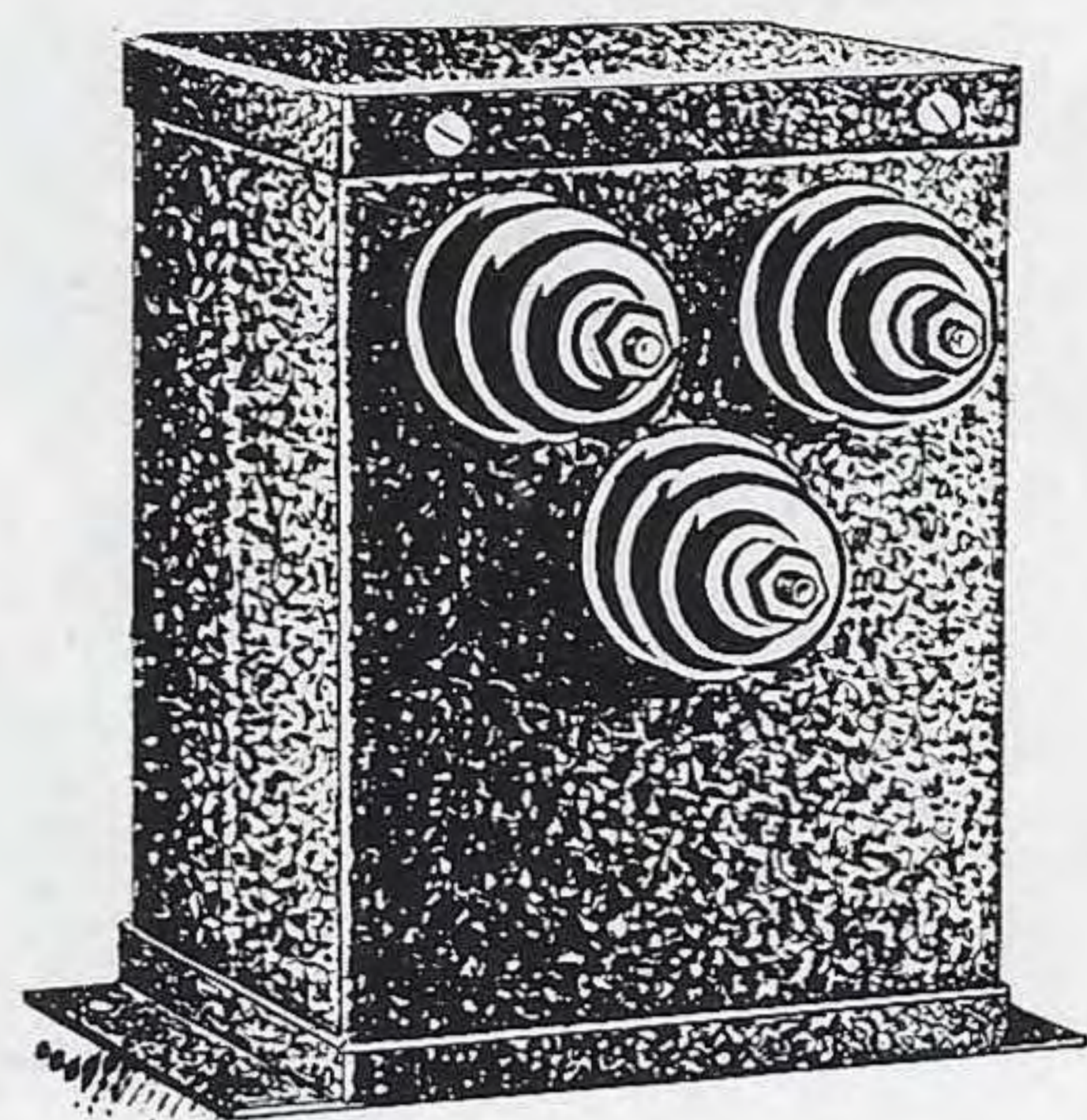
In addition to the radio specialty transformers illustrated within these covers, Peerless products include a wide range of small transformers, windings, reactors, and fluorescent ballasts to cover almost every need in the electrical industry. Many of these items are wound to customer specification, or are designed by our engineering force in cooperation with the customer. Such engineering service is available to all customers to insure them a Peerless transformer which will operate efficiently in each application.

Some other Peerless products are:



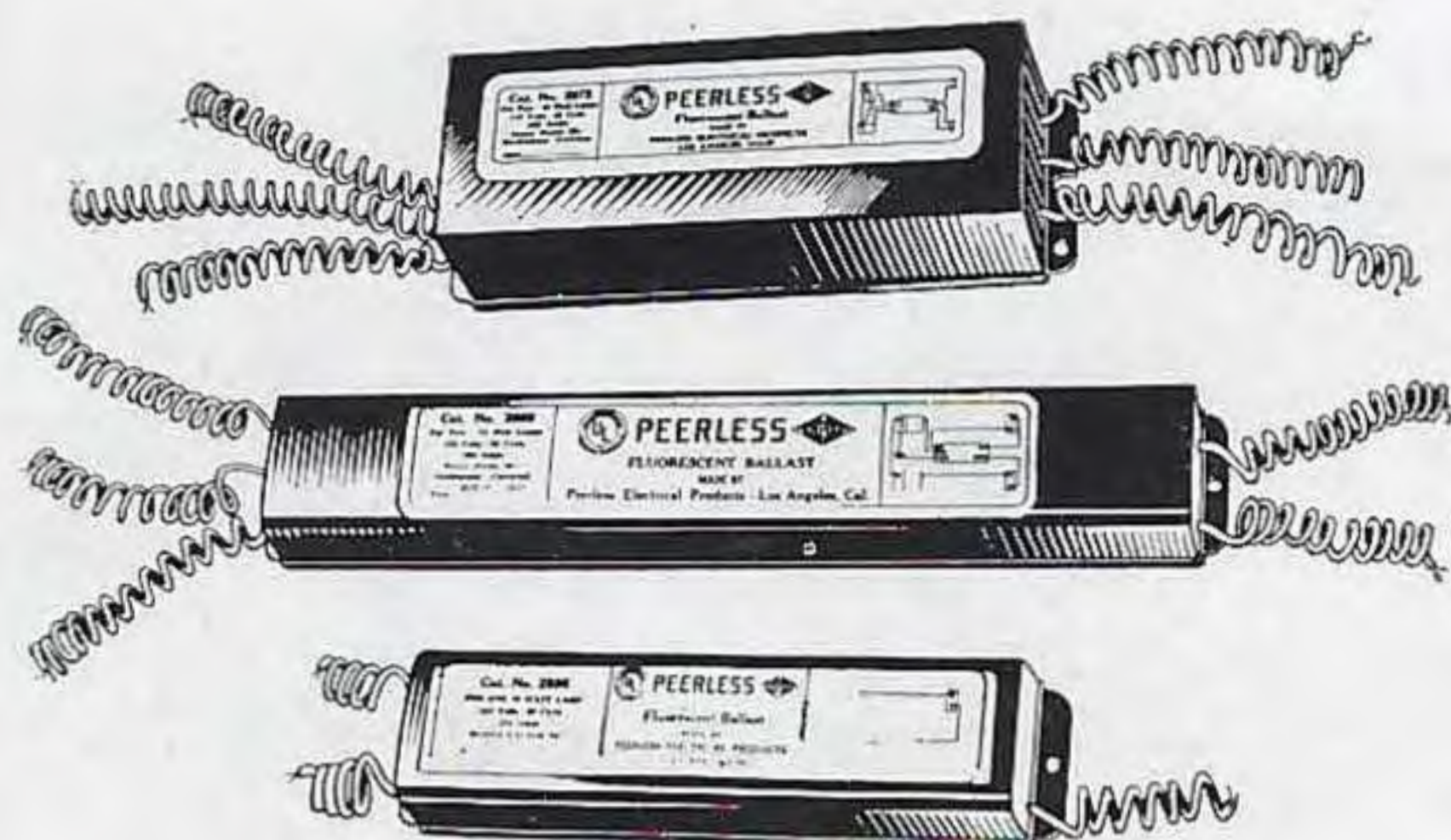
TRANSFORMERS FOR AIRCRAFT

Illustrated are two of the units designed especially to fit the requirements for small size and light weight, with exceptional moisture protection, necessary for operation in every climate and at all altitudes.



TRANSFORMERS For DIATHERMY

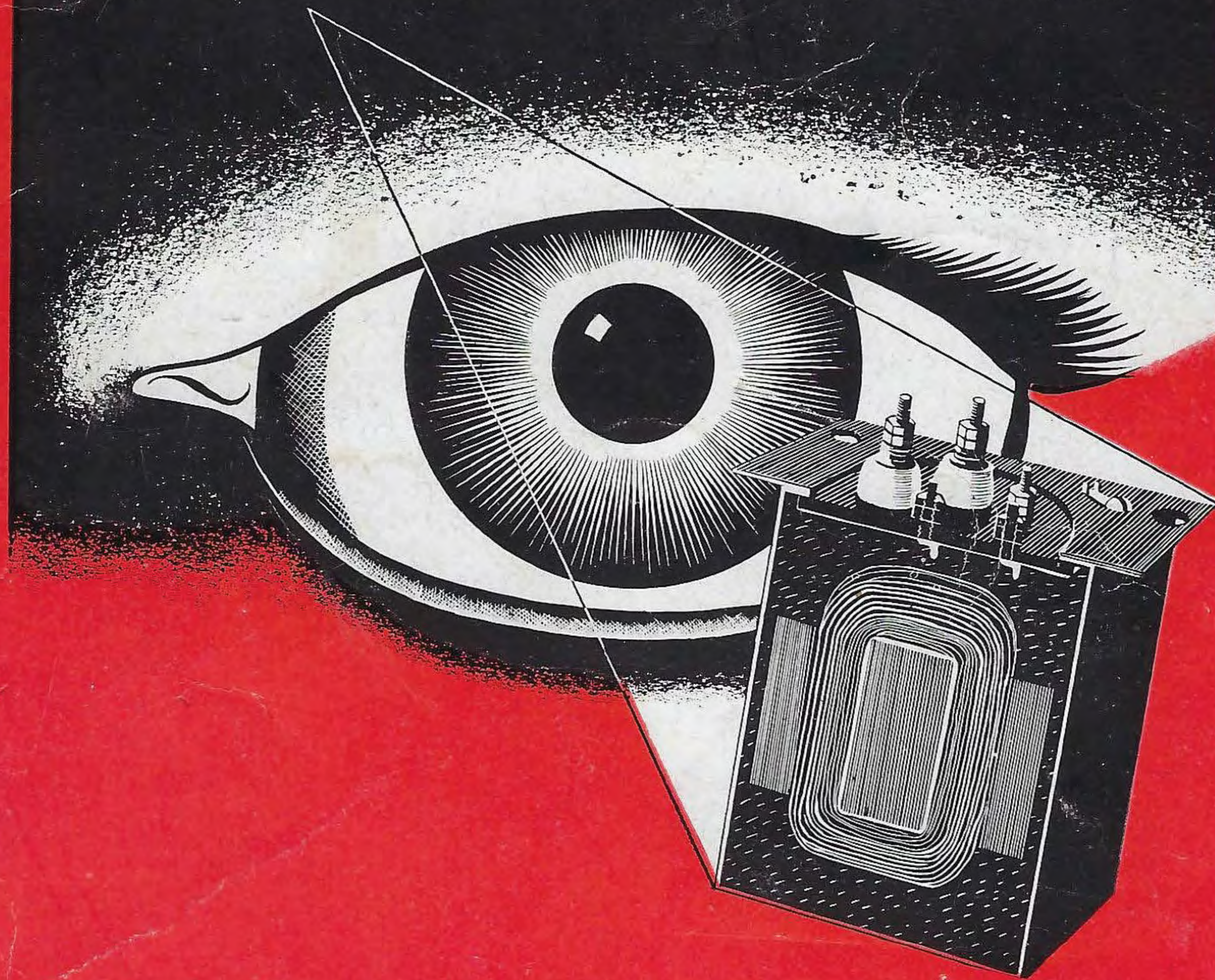
Specialized units used in diathermy are developed from standard Peerless transmitting transformers. Many other types of electrical medical equipment depend upon Peerless transformers for unfailing service.



FLUORESCENT BALLASTS

Peerless was one of the first in the field with ballasts for fluorescent lighting. The Los Angeles area has peculiarly difficult problems in this field, and the solution of these problems has provided our product with a background of technical experience which adds greatly to the excellence of Peerless ballasts.

THE **EYE** CAN'T SEE ITS EXCELLENCE



PEERLESS

ELECTRICAL PRODUCTS CO.

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