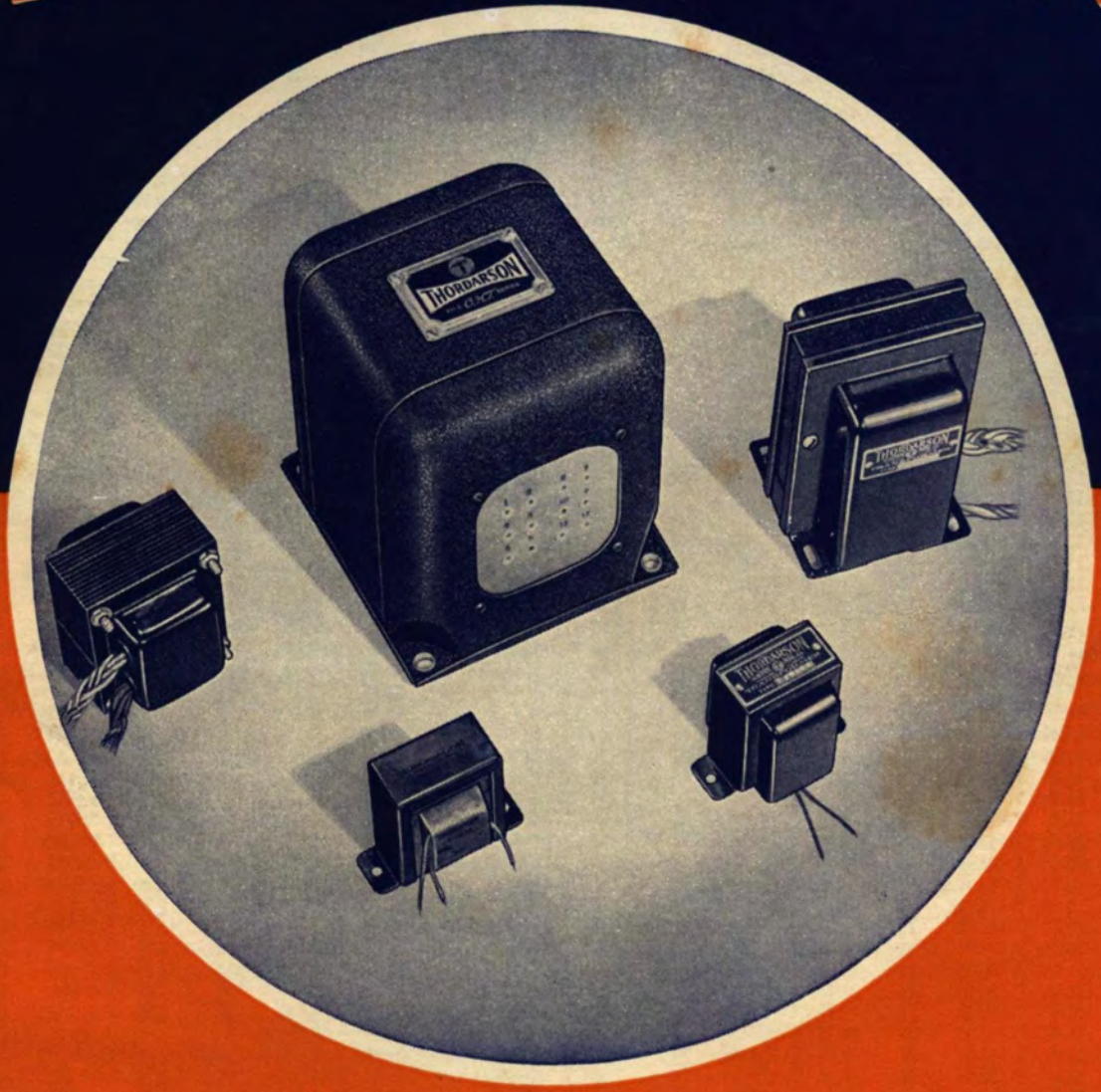
Transformers by THORDARSON



COMPLETE TRANSFORMER CATALOG

No. 400-FX 1942

THORDARSON ELECTRIC MFG. CO., CHICAGO, ILL., U. S. A.

INDEX

EFFECTIVE OCTOBER 15, 1941

Catalog prices are list, subject to trade discount and change without notice. Add 100% for 25 cycle 115 v. primary; 60% for 230 v. 60 cycle primary; 100% for 230 v. 25 cycle primary.

The letter separating the first two digits of the type number from the last two indicates the classification of the unit. The following legend will further explain:

A = Audio, C = Choke, D = Driver, F = Filament, K = Foundation Unit, M = Modulation, P = Plate, R = Power, S = Output or Speaker, V = Voltage Changer, W = Wired Amplifier.

THIS catalog presents the complete Thordarson line of transformers and chokes for radio replacement, amplifier, amateur transmitter, commercial laboratory and experimental use. Several choices are offered in mounting style, coil impregnation and electrical characteristics. Each unit, is built by highly skilled Thordarson craftsmen, and of finest quality materials is the result of experience gained in over 46 years of transformer design and manufacture.

THORDARSON AIR COOLED TRANSFORMERS AND CHOKES

These units are compact and comparatively light in weight. They are designed for consistent performance at rated characteristics. Open frame styles are 2B, 3B, 2C, 3C, 2E, and 3E. Mounting styles 3A, 2D, 4D, 4E, 2F, 2G, 4G, 2H, 2J, 2K, 2M, 2N, 2V, and 2W are mechanically shielded. Cases 2Q and 3V are compound filled for complete coil protection.

THORDARSON C.H.T. TRANSFORMERS AND CHOKES

A premium quality line offering these outstanding advantages: *Uniform case design, conservative ratings, extended frequency range, humbucking coils in audio and driver types, plug-in jack terminal board, compound filled cases for complete coil protection against humidity.*

THORDARSON TRU-FIDELITY TRANSFORMERS

Tru-Fidelity transformers, as the name implies, make possible better audio response. Superior coil and core materials, the result of metallurgical research, are used throughout. Every Tru-Fidelity unit is engineered and manufactured to precision standards. A representative listing of Incher, Bantam and Major types is included in the Audio listing. Major output units are catalogued in the Output transformer section. For information on the complete line of Thordarson Tru-Fidelity components see Catalog No. 500.

COIL IMPREGNATION

Salt air and high humidity are formidable enemies of transformer life. A very minute absorption of salt laden moisture by a fine wire audio coil may result in fatal electrolytic action and corrosion. This is especially true of fine wire audio coils which operate with direct current voltage above ground, since this polarizing voltage in combination with an extremely minute salt concentration will drive electrolytic currents from the copper wire to ground. While this current may be much less than a microampere it will, over a period of time, take enough copper from the fine wire to cause an open circuit.

Radio receiver power transformers and the larger amateur type transformers are not nearly so subject to the electrolytic and corrosive action as the small fine wire audio transformers. This is due partly to the fact that the coils on these transformers do not have a direct current voltage applied between them and the ground. The alternating current voltage present is not nearly as effective in driving electrolytic current as a direct current potential. The wire sizes used on these transformers are ordinarily so large that even though a minute electro lytic current might be present it would take a very long time (years in most cases) for enough copper to be taken to open the coil or cause trouble. Then, too, there is usually enough heat generated in these transformers, since they are power operating units, to drive out moisture which might otherwise be absorbed.

It has been found that many common impregnating compounds, while for most purposes considered waterproof, are yet hydroscopic enough to permit a fatal amount of moisture absorption if it is accompanied with salt. Complete enclosure of the core and coil in cases filled with moisture-proof high melting compounds as used in Thordarson C.H.T. and Tru-Fidelity components is the best protection against such action.

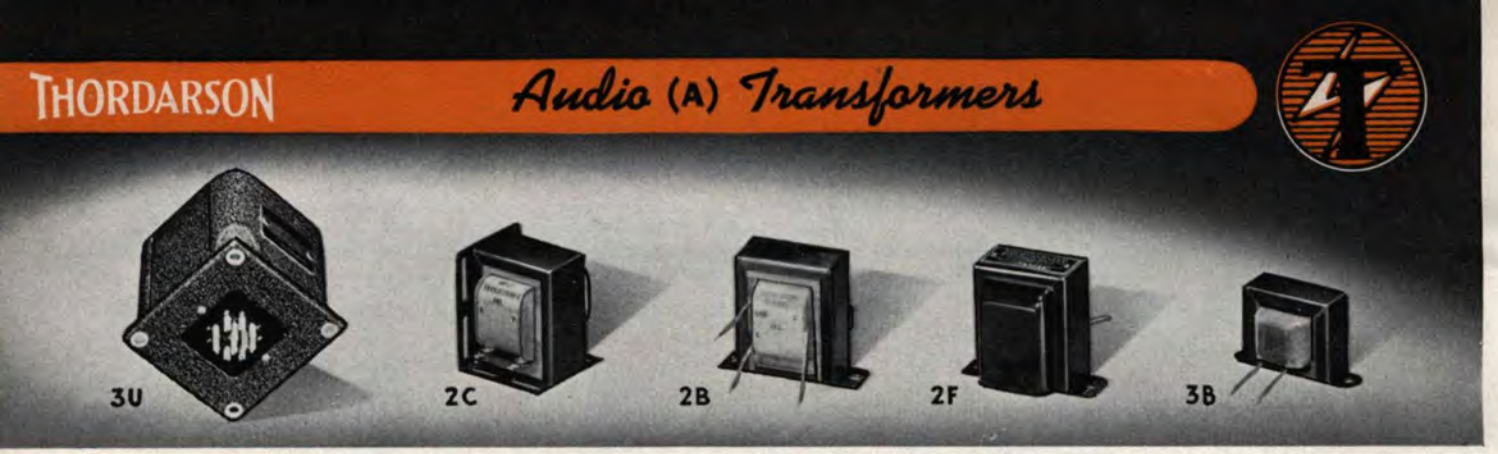
TROPEX

Space and weight considerations are often as important as coil protection; here an open frame mounting is most desirable. Thordarson Tropex coating was developed for full protection on such mountings. The Tropex coating is *entirely* impervious to moisture and fully protects the coil against salt moisture conditions. Tropex is a special process which may be applied to any Thordarson open mounting type transformer or choke. It is especially adaptable to fine wire audio transformers and chokes and is not ordinarily recommended for power transformers nor for encased types.

The additional cost for Thordarson Tropex transformers is surprisingly small. The following table has been compiled to enable you to easily determine this price increase by referring to the weight of the transformer as listed. When ordering Tropex add an "X" to the regular type number. For example, T-13S38-X is the Tropex equivalent of T-13S38.

WEIGHT OF TRANSFORMER	ADD TO LIST PRICE
Up to 7/8 lb.	$ .40
From 1 lb. to 1 7/8 lbs.	.50
From 2 lbs. to 2 7/8 lbs.	.70
From 3 lbs. to 4 7/8 lbs.	.85
From 5 lbs. to 6 7/8 lbs.	1.00
Over 7 lbs.	18c per lb.

Audio (A) Transformers



AUDIO (A) INTERSTAGE TRANSFORMERS

For coupling the plate or plates of an amplifier stage to the grid or grids of the next stage where grid current is not drawn. C. H. T. interstage audio transformers have hum-bucking coil construction and balanced windings. Frequency response, using parallel feed in the primary winding, is flat within ± 1½ db from 60 to 8,000 c.p.s.

Type No.	List Price	Classification	Turns Ratio	Ohms Impedance Pri.	Ohms Impedance Sec.	Pri. M.A.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
		Single Plate To Single Grid *Maximum Signal Level + 15 db. †Parallel feed recommended.											
★ T-13A34	$1.60	RECEIVER (midget)	3:1	10,000	90,000	8	3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4
★ T-29A99	2.40	RECEIVER	3:1	10,000	90,000	8	2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/4
T-57A36	2.70						2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
T-47A25	2.70						2C	1 9/16	1 1/2	2 1/8	2 1/4	2 3/8	1
T-75A74	3.30	RECEIVER	2:1	10,000	40,000	8	2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
For super-regenervative detector; has static shield between windings.													
T-57A38	3.60	AMPLIFIER	3:1	10,000	90,000	8	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
T-15A73–*	9.00	C.H.T.	2:1	10000/2500	40000/10000	10†	3U	2 3/8	2 1/2	3	3	3 5/16	2 1/2
		Single Plate To Push-Pull Grids *Max. signal level + 15 db. †Parallel feed recommended.											
T-14A92	$1.60	RECEIVER (midget)	3:1	10,000	90,000	8	3B	2		2 3/8	1 5/8	1 3/8	1/2
★ T-13A35	1.80	RECEIVER (midget)	3:1	10,000	90,000	8	3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4
★ T-33A91	2.40	RECEIVER	3:1	10,000	90,000	8	2B	2 3/8		2 7/8	2 1/16	2 3/8	1 1/4
T-86A03	2.70						3B	2 3/4		3 3/16	2 1/16	2	1 1/2
T-14A29	3.00						2C	1 1/2	1 1/2	2	1 5/16	2 3/8	1 1/4
T-57A39	3.00						2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
T-57A40	3.90	AMPLIFIER	3:1	10,000	90,000	8	2B	2 5/16		3 3/8	2 1/8	3	2
★ T-57A41	4.20						2F	2 5/16		3 3/8	2 1/2	3	2 1/4
T-74A31	4.20	AMPLIFIER	1:1	10,000	10,000	8	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
T-57A42	4.20	RECEIVER (large)	3:1	10,000	90,000	8	2B	2 5/16		3 3/8	2 1/8	3	2
For coupling screen grid or power detector (Clarion AC-60).													
★ T-15A74*	8.40	C.H.T.	2:1	10,000/2,500	40,000/10,000	10†	3U	2 3/8	2 1/2	3	3	3 5/16	2 1/2
		Push-Pull Plates To Push-Pull Grids *Maximum signal level + 15 db. †Each side.											
T-13A36	$2.40	RECEIVER (midget)	1:1	20,000	20,000	8†	3B	2 11/16		3 1/16	1 3/4	2	1
T-67A91	4.20	AMPLIFIER	1.5:1	20,000	45,000	10†	2B	2 5/16		3 3/8	2 1/8	3	2
★ T-58A70	4.50	Has split Secondary.					2F	2 5/16		3 3/8	2 1/2	3	2 1/4
T-15A75*	8.70	C.H.T.	1.5:1	20,000/5,000	45,000/11,250	10†	3U	2 3/8	2 1/2	3	3	3 5/16	2 1/2

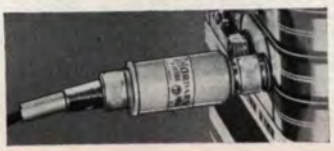
Universal Interstage Replacement Transformer

Will couple single plate to single grid, single plate to push-pull grids or push-pull plates to push-pull grids. Has split secondary.

★ T-17A02	$3.00	RECEIVER	3:1	Universal		10	2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2

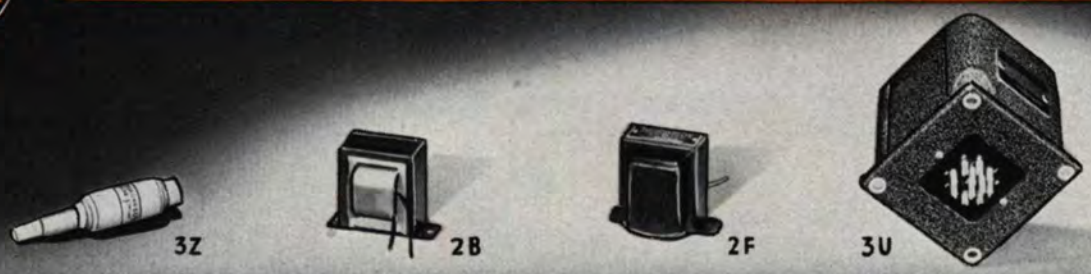
MICROPHONE CABLE TRANSFORMERS

Permit quick and efficient change from high to low impedance microphone input on any amplifier. Hum pick-up is reduced to a minimum through the use of magnetic shielding. As the illustration shows, these Microphone Cable transformers, exclusively Thordarson, are connected in series with the microphone cable and the amplifier input connector and are small and inconspicuous. Frequency Response ±1½ db from 30 to 15,000 c.p.s.



Type No.	List Price	Ohms Impedance Pri.	Ohms Impedance Sec.	Turns Ratio	Mtg. Fig.	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs
T-14A75	$17.40	30–50	50,000	1:31.6	3Z	1	1	2 11/16	3/4
T-14A76	17.40	200–250	50,000	1:14.14	3Z	1	1	2 11/16	3/4

Prices subject to change without notice.



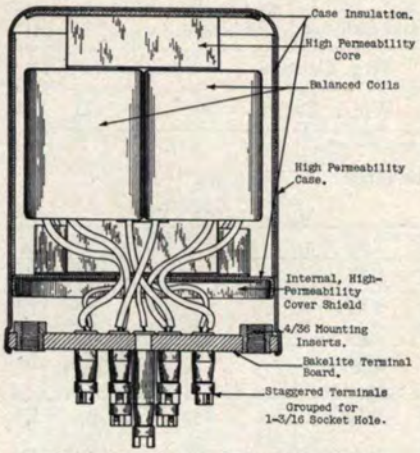
AUDIO (A) INPUT TRANSFORMERS

For coupling a signal source to the grid or grids of a Class A amplifier stage. Frequency range of C. H. T. types is flat within ± 1½ db from 60 to 8,000 c.p.s. Other features include hum-bucking coil construction and balanced windings.

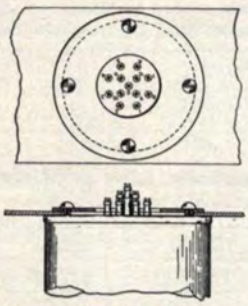
Type No.	List Price	Application	Ohms Impedance Pri.	Ohms Impedance Sec.	Turns Ratio	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
		Low Impedance Source (Microphone, Line or Mixer) to Grid										
T-65A73	$3.60	DB mike to grid	200/50	100,000	1:22.2	2F	2 15/16		3 3/8	2½	3	2
T-58A37	2.70	DB mike to grid	200/50	100,000	1:22.2	2F	2 3/8		2 7/8	2 1/8	2 3/8	1½
★ T-83A78	2.70	Single button mike to single or P-P grids	100	400,000 Ct.	1:64	2F	2 3/8		2 7/8	1 7/8	2 3/8	1¼
T-86A02	2.70					2B	2 3/8		2 7/8	1¾	2 3/8	1
★ T-55A16	3.30	Dyn. mike, line or mixer to single or P-P grids	200/50	100,000 Ct.	1:22.3	2F	2 3/8		2 7/8	2 1/8	2 3/8	1½
★ T-61A94	3.90	Line to single or P-P Cl.A grids	500/125	100,000 Ct.	1:14.1	2F	2 15/16		3 3/8	2½	3	2¼
★ T-72A59	2.00	Plate and Single Button microphone to grid	5,000 200	100,000	1:3.25 1:35	2B	2 1/8		2 5/8	1 5/8	2	¾
T-14A94	3.00	Voice Coil to grid	4-8	100,000	1:112	2B	2 3/8		2 7/8	2 1/16	2 3/8	1
T-15A66	9.60	C.H.T. Low Impedance to grid	500/333/250/ 200/125/50	60,000/15,000 Single Grid	1:10.95	3U	2 3/8	2½	3	3	3 5/16	2¼
T-15A67	9.60	C.H.T. Low Impedance P-P grids	500/333/250/ 200/125/50	120,000/30,000 P-P Grids	1:15.5	3U	2 3/8	2½	3	3	3 5/16	2¼
T-15A68	9.60	C.H.T. Low Impedance to single grid	60/38/30/22/ 15/10/5.5/2.5	60,000/15,000 Single Grid	1:31.6	3U	2 3/8	2½	3	3	3 5/16	2½
T-17A42	12.00	C.H.T. With Triple Telescopic High-Permeability Magnetic Shields	500†/333/250/ 200†/125/50	50,000 Single Grid	1:10	3U	2 3/8 Min. level —20 db.	1 7/8	3	2½	3 1/8	1¼
		Microphone or Line to Mixer or Line										
T-70A82	$4.20	DB mike to line	200/50	500/125	1:1.68	2F	2 15/16		3 3/8	2½	3	2¼
T-70A83	4.20	Crystal mike to line or mixer	100,000	200/50	1:22.4	2F	2 15/16		3 3/8	2½	3	2¼
T-15A69	9.60	C.H.T. Low Impedance to mixer or line	500/333/250/ 200/125/50	500/333/250/ 200/125/50	1:1	3U	2 3/8	2½	3	3	3 5/16	2
T-15A70	9.60	C.H.T. Dyn. mike to mixer or line	60/38/30/22/ 15/10/5.5/2.5	500/333/250/ 200/125/50	1:2.88	3U	2 3/8	2½	3	3	3 5/16	2
		Tube to Line or Mixer (Low Level)										
★ T-14A90	$3.00	Sgl. or P-P Plates to line or mixer	20,000 Ct.	500/125	8*	2F	2 3/8		2 7/8	2 1/8	2 3/8	1½
★ T-14A91	3.00	Sgl. or P-P Plates to line or mixer	20,000 Ct.	200/50	8*	2F	2 3/8		2 7/8	2 1/8	2 3/8	1½
T-72A59	2.00	Plate and sgl. button mike to grid	5,000 and 200	100,000	10*	2B	2 1/8		2 5/8	1 5/8	2	¾
T-15A71	9.60	C.H.T. single plate to line or mixer.	20,000/5,000 Single Plate	500/333/250/ 200/125/50	8*	3U	2 3/8	2½	3	3	3 5/16	1¾
T-15A72	9.60	C.H.T. P-P plates to line or mixer.	20,000/5,000 P-P Plates	500/333/250/ 200/125/50	0*	3U	2 3/8	2½	3	3	3 5/16	1¾
T-17A43	12.00	C.H.T. With Triple Telescopic High-Permeability Magnetic Shields	10,000 to 15,000	500†/333/250/ 200†/125/50	0*	3U	2 3/8	1 7/8	3	2½	3 1/8	1¼

†Indicates balanced center tap. *Indicates Primary M.A.

TRU-FIDELITY BANTAM SERIES



Cross sectional view, Bantam Transformer



Bottom view, illustrating ring mounting as used in Bantam and Major Series Transformers

R2 CASE DIMENSION—BANTAM	
Diameter	1 5/8
Height (Including lugs)	2 5/8
Height (Case alone)	2
Mounting centers	1 5/8 x 1 5/8

- One piece drawn high permeability alloy case. Case style R2.
- Maximum operating level + 10 db.
- Uniform frequency response ± 1 db from 30 to 15,000 c.p.s. (Except where otherwise noted).
- Balanced (humbucking) coil construction.
- Electrostatic shields. (Except Interstage types.)
- Relative hum reduction 67 db.
- High permeability alloy laminations.
- Moisture-proof compound filled case.
- One-hole ring mounting, permitting rotation of transformers for maximum hum reduction.
- Grey enamel finish. (Chrome plated case $1.25 list extra.)
- Sturdy solder lugs, machined from solid brass and tinned for quick soldering.
- Terminals arranged circularly to fit within standard tube socket hole.

Type No.	List Price	Application	Ohms Impedance Primary	Ohms Impedance Secondary	Primary M.A. Max. D.C. Per Side	Primary M.A. Unbalance
T-1A50	**$17.40**	Low impedance mixer, pick-up or multiple line	50/125/200*/250 333/500*	50,000	75	.5
T-1A51	**17.40**	Low impedance mixer, pick-up or multiple line	2.5/5.5/10*/22*/30 38/60*	50,000	75	.5
T-1A52	**18.60**	Dynamic Microphone	30*/7.5	50,000 overall in two sections	0	0
T-1A53	**18.60**	Low impedance pick-up, microphone or line	50/125/200*/250 333/500*	80,000 overall in two sections	75	.5
T-1A54	**16.80**	Single plate to multiple line No D.C. in primary	10,000 to 15,000	50/125/200*/250 333/500*	0	0
T-1A55	**17.40**	Single plate to multiple line D.C. in primary †	10,000	50/125/200*/250 333/500*	4	4
T-1A56	**18.00**	Single triode 6F6 etc. to line D.C. in primary §†	4,000	50/125/200*/250 333/500*	25	25
T-1A57	**16.80**	PP low level plates to multiple line	10,000 to 15,000 each side	50/125/200*/250 333/500*	8	0
T-1A59	**16.80**	Single plate to single grid Ratio 1:2	10,000 to 15,000	60,000	0	0
T-1A60	**16.80**	Single plate to push-pull grids Ratio 1:2.31	10,000 to 15,000	80,000* overall in 2 sections	0	0

* Indicates balanced c.t. §Max. + 22 db. †60 to 15,000 c.p.s.

TRU-FIDELITY BANTAM AUDIO REACTORS

Type No.	List Price	Application	Inductance No D.C.	Inductance Rated D.C.	M.A. D.C.	Ohms Res. D.C.
T-1C62	**$12.00**	Parallel feed	475	320/80	2/4	6,000/1,500
T-1C63	**12.00**	Parallel feed	450	200/50	4/8	5,000/1,250

Prices subject to change without notice.

TRU-FIDELITY INCHER SERIES

- Especially small and lightweight — 15/16" diameter, 1⅛" high and wt. 1¼ oz. Case style R1.
- Maximum operating level 0 db (6 milliwatts).
- Uniform frequency response ± 1½ db from 30 to 15,000 c.p.s. (Except where otherwise noted.)
- Single coil shell type construction.
- Electrostatic shields. (Except Interstage types.)
- Minimum hum pick-up.
- High permeability alloy laminations.
- Moisture-proof compound filled case.
- Grey enamel finish. (Chrome plated case 75c list extra.)
- Sturdy solder lugs machined from solid brass and tinned for quick soldering.

CASE DIMENSIONS

	R1	3T	C5
Diameter	15/16		
Width		3 1/16	3 1/16
Depth		2 3/16	2 5/16
Height	1 1/8		3 5/16
Height (Including lugs)	1 1/4	4 1/16	4 3/16
Mounting Centers (Width)	23/32	2 3/8	2 1/16
Mounting Centers (Depth)		1 7/8	2 1/16
Weight	1¼ oz.	4 3/4	4 3/4

Type No.	List Price	Application	Ohms Impedance Primary	Ohms Impedance Secondary	Primary Max. D.C. Per Side	M.A. Unbalance
T-5A1	$12.60	Mike, Line or Pick-up to Single Grid	50/200*/500*	50,000	25	.5
T-5A2	13.20	Mike, Line or Pick-up to P-P Grids	50/200*/500*	80,000*	25	.5
T-5A3	11.40	Dynamic Microphone to Single Grid	7.5/30*	50,000	0	0
T-5A4	10.50	Single Plate to Single Grid Ratio 1:2	10,000 to 15,000	60,000	0	0
T-5A5	9.60	★Single Plate to Single Grid, D.C. in Primary, Ratio 1 to 2	10,000 to 15,000	60,000	2	2
T-5A7	12.00	★Single Plate to P-P Grids, D.C. in Primary, Ratio 1 to 2.5	10,000 to 15,000	95,000*	2	2
T-5A8	12.60	P-P Plates to P-P Grids, Ratio 1 to 1.5	10,000 to 15,000 each side	67,500*	2	.25
T-5A9	12.60	Single Plate to Line	10,000 to 15,000	50/200*/500*	0	0
T-6A0	12.60	★Single Plate to Line, D.C. in Primary	10,000 to 15,000	50/200*/500*	2	2
T-6A1	12.60	Push-pull Plates to Line	10,000 to 15,000 each side	50/200*/500*	2	.25
T-6A3	11.40	Matching and Mixing	50/200*/500*	50/200*	25	.5
T-6A4	12.00	★50:1 Mike or Line to Single Grid	200	500,000	10	10

★ Voice Frequencies Only, 150 to 6000 cycles. *Center tapped.

TRU-FIDELITY MAJOR SERIES

- High operating level.
- Uniform frequency response ± ½ db from 30 to 15,000 c.p.s.
- Balanced (hum-bucking) coil construction.
- Electrostatic shields. (Except Interstage Types.)
- High permeability alloy laminations.
- Moisture-proof compound filled case.
- One-hole ring mounting, permitting rotation of transformers for maximum hum reduction.
- Grey enamel finish cast case.
- Sturdy solder lugs machined from solid brass and tinned for quick soldering.
- Terminals circularly arranged to fit within standard socket hole.

Special Major transformers to meet other audio requirements will be quoted on application.

Type No.	List Price	Ohms Impedance Primary	Ohms Impedance Secondary	Primary Max. D.C. Per Side	M.A. Unbalance	Max. Sig. Level DB	Case Style
CRYSTAL MICROPHONE OR PHOTO CELL TO LINE							
T-90A06-	$20.40	250,000/62,500	500*/125/200*/50	0	0	+10	3T
PLATE TO LINE (LOW LEVEL)							
T-90A02-	20.40	20,000/5000 Single Plate	500*/125/200*/50	8	8	+15	3T
T-3A32	21.00	20,000/5000 Single† or P-P Plates	500*/125/200*/50	10	0	+20	C5
MIXER							
T-90A10-	20.40	500*/125/200*/50	500*/125/200*/50	100	.5	+10	3T
LINE TO GRID							
T-2A66	21.60	500*/125/200*/50	75,000/18,750 Single Grid	100	.5	+10	C5
T-2A68	22.80	500*/125/200*/50	100,000*/25,000 P-P Grids	100	.5	+20	C5
INTERSTAGE							
T-90A03-	20.40	10,000/2500 Ratio overall Single Plate 1 to 2	40,000/10,000 Single Grid	0	0	+15	3T
T-2A36	21.00	10,000/2500 Ratio overall Single Plate 1 to 2	40,000/10,000 P-P Grids	0	0	+15	C5
T-90A05-	20.40	20,000/5000 Ratio overall P-P Plates 1 to 1.5	45,000/11,250 P-P Grids	10	0	+20	3T

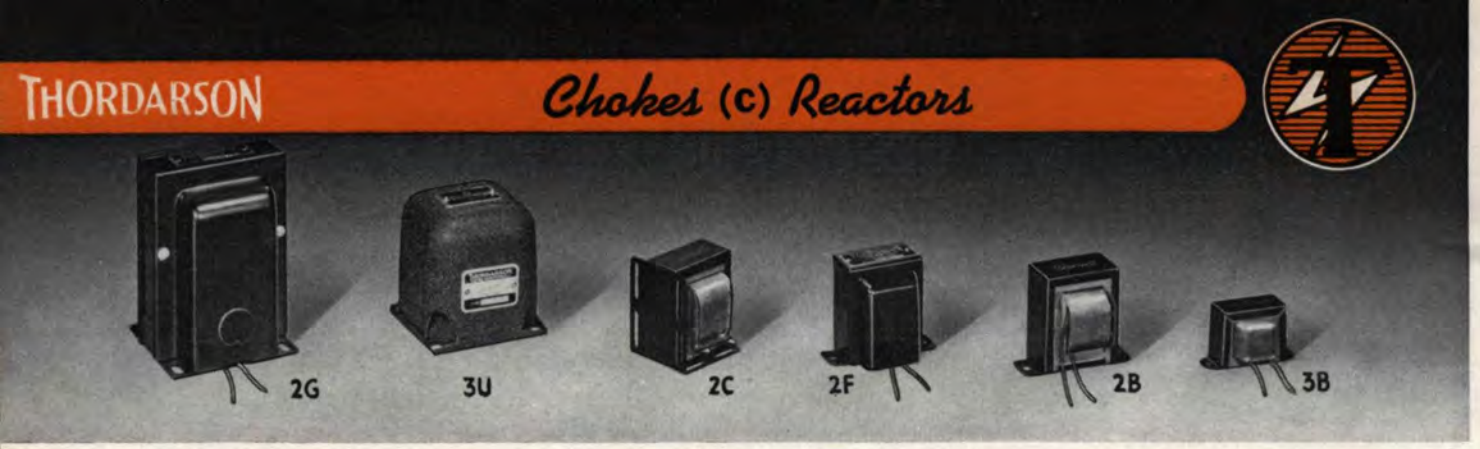
PLATE REACTOR

Type No.	List	Connection	Henries	M.A.	D.C. Ohms	Case Style
T-90C09-	$15.00	Series	300	8	4,000	3T
		Parallel	75	16	1,000	

* Indicates inductive and capacitive balance to center tap for use on balanced transmission lines.
† With single tube use parallel feed with resistor or T-90C09.

Prices subject to change without notice.

Chokes (C) Reactors



CHOKES AND REACTORS (C)

It is well known that as the D.C. current in a choke increases, there is a corresponding decrease in inductance. Thordarson chokes are rated at actual inductance, measured under full operating load conditions.

R. M. S. test volts rating as shown is approximately 2 times the operating D.C. voltage recommended.

Parallel Feed Audio Reactors

For supplying plate current to a vacuum tube where it is desirable to isolate plate current from the transformer primary or where the voltage drop caused by a resistor load is objectionable.

Type No.	List Price	Application	Typical Tubes	Induct. Hen.	Cur. M.A.	D.C. Ohms	R.M.S. Test Volts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-37C36	$2.40	Plate Impedance	56-30-76-6C5-	300	5	6470	1600	2F	2 3/8		2 7/8	2 1/16	2 3/8	1 1/2
★ T-67C46	2.10		55-85, etc.					2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/4
T-52C98	2.40	Plate Impedance for screen Grid	24-57-56-76-6C5-6F5-6J7	500	.5	6150	1600	2F	2 3/8		2 7/8	1 7/8	2 3/8	1 1/4
★ T-29C27	2.10	detector or as grid impedance						2B	2 3/8		2 7/8	1 3/4	2 3/8	1
T-68C08	2.10	Plate Impedance	45-46-10, etc.	22	35	405	1600	2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
★ T-18C92	1.80	or Filter					1100	3B	2 3/4		3 3/16	2 1/8	2	1 1/2

Tuned Audio Circuit Reactors

T-81C15	$2.40	Tuned Audio Circuits	.75	.5	30			2B	2 1/8		2 5/8	1 5/8	2	3/4
T-93C20	3.30	Tuned Audio Circuits	250	.5	6400			2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/4
★ T-74C30	1.80	Tuned Audio Circuits or Filter	42	15	2100			3B	2 11/16		3 1/16	1 3/4	2	1

DUAL TONE CONTROL COMPONENTS

As illustrated and described in Amplifier Guide 346D

★ T-14C70	$3.00	Tone Control, hum-bucking type	22	0	220			3Y	1 7/16		1 9/16	1 9/16	2 1/4	1/2
★ R-1068	3.00	Dual tone control potentiometer												

C. H. T. SPEECH FILTER

This hi-pass filter with a cut-off below 200 c.p.s. provides a definite increase in effective side band power and corresponding reduction of hum pick-up. It may be used instead of an interstage audio transformer to couple a single plate to single or push-pull grids.

T-15C34	$10.80	Plate to Single or P.P. tubes						3U	2 3/8	2 1/8	3	2 3/4	4	3

C. H. T. SPLATTER CHOKES

These tapped chokes are used between any Class B modulator and any Class C stage for eliminating objectionable side band splatter due to excessive audio distortion. Full instructions for operation are furnished.

T-15C30	$6.00	Elimination	.025 to .8	150	54	3000	3U	2 3/8	1 7/8	3	2 1/2	3 1/8	2 1/4
T-15C31	7.20	of side band	.025 to .8	300	20	5000	3U	2 3/8	2 3/4	3	3 3/8	4 5/16	4 1/2
T-15C32	9.60	Splatter	.025 to .8	500	14	7500	3U	3 5/8	3 1/8	4 5/16	3 3/4	4 5/16	5 3/4

C.H.T. AMPLIFIER CHOKES

Two inductance ratings are shown, one for parallel connection of the two windings and the other for series connection. Cases are compound filled for complete coil protection.

Type No.	List Price	Inductance Henries	Current M.A.	D.C. Res.	R.M.S. Test Volts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
★ T-15C52	$6.60	30 Parallel 120 Series	35 17	675 2700	1,600	3U	2 3/8	2 1/2	3	3	3 5/16	3
T-15C53	6.90	12 Parallel 50 Series	100 50	272 1090	1,600	3U	2 3/8	2 1/2	3	3	3 5/16	3 1/4
★ T-15C54	7.50	8 Parallel 32 Series	150 75	184 735	1,600	3U	2 3/8	2 3/4	3	3 3/8	4 5/16	3 1/2
T-15C55	9.00	2 Parallel 8 Series	500 250	32 130	1,600	3U	3 5/8	3 1/8	4 5/16	3 3/4	4 5/16	7 1/2
T-15C56	12.00	2 Parallel 8 Series	700 350	27 107	1,600	3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	9 3/4

Television Filter Reactor

T-17C40	$6.60	1500	3	12,000	10,000	2F	3 3/8		3 5/16	3 1/16	3 1/2	2 1/4

Prices subject to change without notice.

FILTER AND INPUT CHOKES

Replacement Filter Chokes

	Type No.	List Price	Inductance At Zero D.C.	Inductance At Rated D.C.	Current Rating M.A.	D.C. Res. Ohms	R.M.S. Test Volts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
★	T-13C26	$1.10	21	8	40	530	1600	3B	2		2 3/8	1 5/8	1 3/8	1/2
★	T-13C27	1.30	22	10	40	475	1600	3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4
★	T-13C28	1.45	20	10	65	460	1600	3B	2 1/16		3 1/16	1 3/4	2	1
★	T-43C92	2.00	24	10	75	260	1600	2C	1 9/16	1 1/2	2 1/8	2	2 3/8	1 1/4
★	T-47C07	2.00	20	12	75	410	1600	3B	3 1/8		3 9/16	2	2 1/4	1 1/4
★	T-44C02	1.80	31	12	80	405	1600	3B	2 3/4		3 3/16	2 1/8	2	1 1/4
★	T-57C51	1.80	15	6	80	138	1600	2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/4
★	T-13C29	1.90	20	9	85	250	1600	3B	2 3/4		3 3/16	2 1/8	2	1 1/2
★	T-68C07	2.40	32	15	85	375	1600	2B	2 5/16		3 3/8	2 1/2	3	2
★	T-57C53	2.40	27	10	110	200	1600	2B	2 5/16		3 3/8	2 1/2	3	2 1/4
★	T-75C49	1.80	22	8	120	290	1600	3B	2 3/4		3 3/16	2 1/8	2	1 1/2
	T-53C19	1.80						2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
★	T-13C30	2.40	25	8	150	200	1600	2B	2 5/16		3 3/8	2 1/8	3	2 1/4

Filter Chokes for Replacement in AC-DC Receivers

	T-14C61	$1.20	14	7	55	200	1600	3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4
★	T-14C62	1.20	16	8	55	250	1600	3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4
	T-14C63	1.20	19	8	55	300	1600	3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4
★	T-14C64	1.20	21	10	55	350	1600	3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4

Filter Chokes for Amplifiers and Small Transmitters

	T-57C52	$2.10	15	5	80	138	1600	2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
★	T-16C07	2.70	32	15	85	375	1600	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
★	T-57C54	2.70	27	10	110	200	1600	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
	T-49C91	2.10	12	4	120	160	1600	2F	2 3/8		2 7/8	1 7/8	2 3/8	1 1/4
★	T-17C00-B	3.30	28	12	150	231	1600	2F	3 3/8		3 5/16	3	3 1/2	3 3/4
★	T-74C29	4.80	29	15	150	200	2000	2G	2 11/16	2 9/16	3 5/16	3 3/8	4 5/8	5 1/4
★	T-67C49	3.30	12	5	200	80	1600	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 3/4
★	T-75C51	6.00	24	13	250	121	1600	2G	3	2 5/16	3 3/4	3 11/16	4 7/8	8

TRANSMITTER INPUT AND FILTER CHOKES

Matched input and smoothing chokes for amateur, amplifier or experimental applications.

	Type No.	List Price	Inductance Henries	Current D.C. M.A.	D.C. Res. Ohms	R.M.S. Test Volts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
					Input Chokes "19" Series								
★	T-19C39	$3.90	5-20	150	215	3000	2F	3 3/8		3 5/16	3 1/16	3 1/2	3 3/4
★	T-19C35	4.80	5-20	200	130	3000	2D	3 1/4	2 1/16	3 3/4	3 3/8	4	5 1/2
★	T-19C36	8.40	5-20	300	105	5000	2D	2 3/4	3 1/16	3 5/16	4 7/8	4 5/8	10 3/4
	T-19C37	15.00	5-20	400	90	5000	2J	3 1/4	3 7/8	4 1/4	5 1/2	6	19 1/2
★	T-19C38	18.00	5-20	500	75	5000	2J	3 7/8	3 3/4	5	5 1/2	6 5/8	25 1/4
					Smoothing Chokes "19" Series								
★	T-19C46	$3.90	12	150	215	3000	2F	3 3/8		3 5/16	3 1/16	3 1/2	3 3/4
★	T-19C42	4.80	12	200	130	3000	2D	3 1/4	2 1/16	3 3/4	3 3/8	4	5 1/2
★	T-19C43	8.40	12	300	105	5000	2D	2 3/4	3 1/16	3 5/16	4 7/8	4 5/8	10 3/4
	T-19C44	15.00	12	400	90	5000	2J	3 1/4	3 7/8	4 1/4	5 1/2	6	19 3/4
★	T-19C45	18.00	12	500	75	5000	2J	3 7/8	3 3/4	5	5 1/2	6 5/8	25 1/4

C.H.T. Input Chokes

Conservatively designed for continuous and quiet operation. Cases are compound filled for complete coil protection.

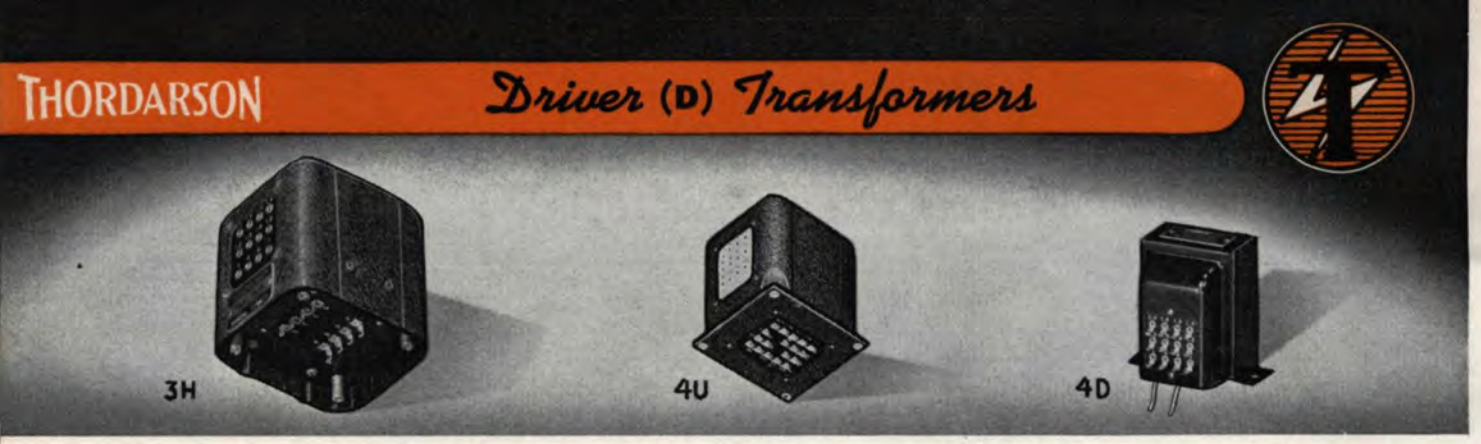
	T-15C36	$10.80	5-25	200-20	105	4,000	3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	10
	T-15C37	15.00	5-25	300-30	78	4,000	3U	4 9/16	4 1/16	5 3/8	4 5/16	6 3/8	22
	T-15C38	18.00	5-25	400-30	95	4,000	3U	4 9/16	4 3/4	5 3/8	5 1/2	6 3/8	24
	T-15C39	27.00	5-25	500-30	86	10,000	3U	6 5/16	5 7/16	7 5/16	6 7/16	8	38 1/2
	T-15C41	33.00	5-25	650-50	46	10,000	3U	6 5/16	5 7/16	7 5/16	6 7/16	8	51

C.H.T. Smoothing Chokes

	T-15C45	$10.80	12	200	105	4,000	3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	10
	T-15C46	15.00	12	300	78	4,000	3U	4 9/16	4 1/16	5 3/8	4 5/16	6 3/8	22
	T-15C47	18.00	12	400	95	4,000	3U	4 9/16	4 3/4	5 3/8	5 1/2	6 3/8	24
	T-15C48	27.00	12	500	86	10,000	3U	6 5/16	5 7/16	7 5/16	6 7/16	8	38 1/2
	T-15C50	33.00	12	650	46	10,000	3U	6 5/16	5 7/16	7 5/16	6 7/16	8	51

Prices subject to change without notice.

Driver (D) Transformers



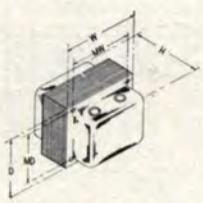
UNIVERSAL AND MULTI-MATCH DRIVER (D) TRANSFORMERS

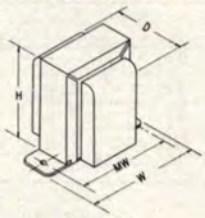
Through the use of five or ten ratios on each transformer, these transformers will handle all driver requirements usually encountered in amateur transmitter circuits. See complete table of Driver and Modulator combinations on pages 12 and 13.

Type No.	List Price	Cap. Watts	Max. Pri. M.A. Per Side	Ratio Pri. to ½ Sec.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
Universal Driver Transformers "19" Series											
T-19D01	$7.50	15	60	1:1, 1.2:1, 1.4:1, 1.6:1, 1.8:1	4D	3⅜		3 15/16	3⅜	3½	3½
T-19D02	7.50	15	60	2:1, 2.2:1, 2.4:1, 2.6:1, 2.8:1	4D	3⅜		3 15/16	3⅜	3½	3½
T-19D03	7.50	15	60	3:1, 3.2:1, 3.4:1, 3.6:1, 3.8:1	4D	3⅜		3 15/16	3⅜	3½	3½
★ T-19D04	7.50	15	60	4:1, 4.5:1, 5:1, 5.5:1, 6:1	4D	3⅜		3 15/16	3⅜	3½	3½
★ T-19D05	7.50	15	Primary for 500 ohm line	1:3.15, 1:2.75, 1:2.5, 1:2.25, 1:2, 1:1.75, 1:1.4, 1:1.25, 1:.85, 1:.75	4D	3⅜		3 15/16	3⅜	3½	3½
C.H.T. Multi-Match Driver Transformers Feature Convenient Switchboard Plug-In Terminal Board and Compound Filled Cases											
T-15D76*–	$10.80	15	60	1:1, 1.2:1, 1.4:1, 1.6:1, 1.8:1	3H	3⅝	3 15/16	4 1/8	4 3/8	4¾	7½
T-15D77*–	10.80	15	60	2:1, 2.2:1, 2.4:1, 2.6:1, 2.8:1	3H	3⅝	3 15/16	4 1/8	4 3/8	4¾	6
T-15D78*	10.80	15	60	3:1, 3.2:1, 3.4:1. 3.6:1, 3.8:1	4U	3⅝	3 15/16	4 5/16	4⅜	4¾	6
T-15D79*	10.80	15	60	4:1, 4.5:1, 5:1, 5.5:1, 6:1	4U	3⅝	3 15/16	4 5/16	4⅜	4¾	6
T-15D82	10.80	15	Primary for 500 ohm line	1:3.15, 1:2.75, 1:2.5, 1:2.25, 1:2, 1:1.75, 1:1.4, 1:1.25, 1:.85, 1:.75	4U	3⅝	3 15/16	4 5/16	4⅜	4¾	5¾
T-15D83	18.00	30	Primary for 500 ohm line	1:3.15, 1:2.75, 1:2.5, 1:2.25, 1:2, 1:1.75, 1:1.4, 1:1.25, 1:.85, 1:.75	4U	3⅝	3 15/16	4 5/16	4⅜	4¾	8½

*P.P. 45 or 2A3, 6B4G. †P.P. Par. 2A3 or 6B4G.

Chart for Determining Overall Physical Dimensions and Mounting Centers


3A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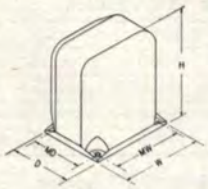
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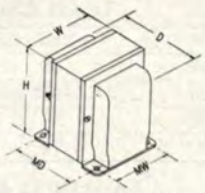
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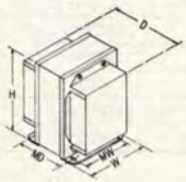
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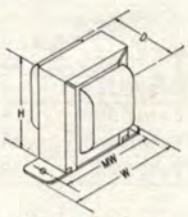

All Open Frame Types

These drawings illustrate the method of determining overall dimensions and mounting centers. MD indicates mounting centers depth, MW indicates mounting centers width. Characteristics are similar wherever mounting styles are somewhat similar.

Beginners Hand Book and Guide—Amateur Radio

AMATEUR RADIO
A Beginners Guide
By J. Douglas Fortune

This text-book was carefully prepared and edited to make learning of radio by all beginners easy and interesting. In addition to presenting fundamental theory, instructions are given for constructing and operating oscillators, receivers and transmitters. The subjects covered include: Learning the Code, Receiver Theory and Construction, Crystal Oscillator Transmitter, Two-stage Transmitter, Three-Stage Transmitter, Construction of the Modulator, and reference notes on receivers, inductance, capacity and many other electrical and radio terms. It is a book recommended to all experimenters, beginning amateurs and even to amateurs of long experience. Profusely illustrated with over 100 comprehensive photographs and drawings. Heavy cover finished in wear-resistant blue cloth, with attractive gold stamping. This is a cloth cover, case bound text-book of approximately 160 pages. Amateur net price 75c.

DRIVER (D) TRANSFORMERS

For coupling single or push-pull plates to the grids of an amplifier stage in which grid current is drawn during a part of the audio cycle.

Type No.	List Price	Driver Tubes	Output Tubes	Class	Ratio Pri. to ½ Sec.	Pri. M.A.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
			DRIVER TRANSFORMERS FOR SPECIFIC APPLICATIONS										
			These driver transformers have the correct primary to secondary ratio for the tubes specified, which assures good regulation and minimum driver distortion on the positive grid peaks. The first three types are specifically designed for replacement requirements.										
★ T-78D46	$1.80	1-30	1-1J6G, 19 2-30	B B	2.4:1	7	2B	2 1/8		2 5/8	1 5/8	2	3/4
★ T-17D01	2.40	1-6F6 Triode 1-42 Triode, 1-2A5 Triode	2-6F6, 6L6, etc.	AB	1.7:1 1.5:1, 1.3:1	31	3B	2 3/4		3 3/16	2 1/8	2	1 1/2
T-14D93	2.10	1-76 Triode	1-6A6, 6N7	B	4:1	8	3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4
★ T-19D06	3.30	1-6A6, 1-6N7, 1-6C5	1-6A6, 6N7	B	5:1, 4:1, 3:1, 2.5:1	10	2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
T-54D63	2.70	1-30, 1-49, 1-6C5	1-1J6G, 19, 2-49, 2-6V6	B, AB2	2.4:1	7	2F	2 3/8		2 7/8	1 7/8	2 3/8	1 1/4
T-67D50	3.30	1-89 Triode	1-79	B	2:1	32	2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
T-67D47	3.00	1-6N7, 6A6, 53	1-6N7, 6A6, 53	B	5.25:1	10	2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
T-81D52	3.90	1-6C5, 76 1-56	2-6F6 Triode 2-42, 2A5 Triode	AB AB	1.82:1 1.67:1	8	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
★ T-84D59*	3.90	2-6C5, 6N7 2-6A6, 53	2-6L6, 6V6 2-6N7, 6A6, 53	AB2 B	5:1	10	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
★ T-74D32	3.90	2-6C5, 76, 56	2-6F6, 42, 2A5 4-2A3, 6B4G	AB2 AB	3:1	10	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
★ T-81D42	3.90	1-6F6 Triode 1-42 Triode 1-2A5 Triode	2-6F6 Triode 2-42 or 2-2A5 Pentode	AB2 AB2 AB2	1.7:1 1.5:1 1.3:1	31	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
★ T-17D03*	5.40	1-6F6 Triode	2-6L6	AB2	1.4:1	40	2F	3 3/8		3 5/16	3 1/16	3 1/2	3 1/2
★ T-17D04*	5.40	2-6F6	4-6L6	AB2	2.6:1	32	2F	3 3/8		3 5/16	3 1/16	3 1/2	3 1/2
★ T-67D78	3.60	1-46, 59, 6F6, 42, 2A5 Triode	2-46, 59 2-6L6	B AB2	2.2:1	32	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
T-15D85	9.60	Sgl. 6F6, 42, 2A5 Triode C. H. T. hum-bucking coils	P.P. 6L6	AB2	1.4:1, 1.3:1 1.2:1	40	3U	2 3/8	2 1/2	3	3	3 5/16	2 1/2
T-15D86	10.80	P.P. 6F6, 42, 2A5 Triode C. H. T. hum-bucking coils	P.P. Par. 6L6	AB2	2.6:1	32	3U	2 3/8	2 1/2	3	3	3 5/16	2 1/2
			Line-to-Grid Driver Transformers (High Level)										
T-83D21	$4.20	Line 500 ohms	2-6L6, 50 12,500/5,100 Ohms	AB	1:3.2, 1:5		2F	2 5/16		3 3/8	2 1/2	3	2 1/4

*Split secondary as required for inverse feedback and separate power tube bias.

THORDARSON AMPLIFIERS

(Factory Wired and Tested)

The finest amplifiers are built by Thordarson — pioneers in producing quality audio components. High fidelity is assured by accurate laboratory design and rigid inspection during production.

The new catalog No. 600F contains complete information on amplifiers from a one watt dry battery amplifier to preamplifiers and boosters large enough to cover the largest amplifier requirement. New rack and panel equipment; 6 volts DC, 115 volt AC models; a loud speaker field supply and other modern equipment also included.

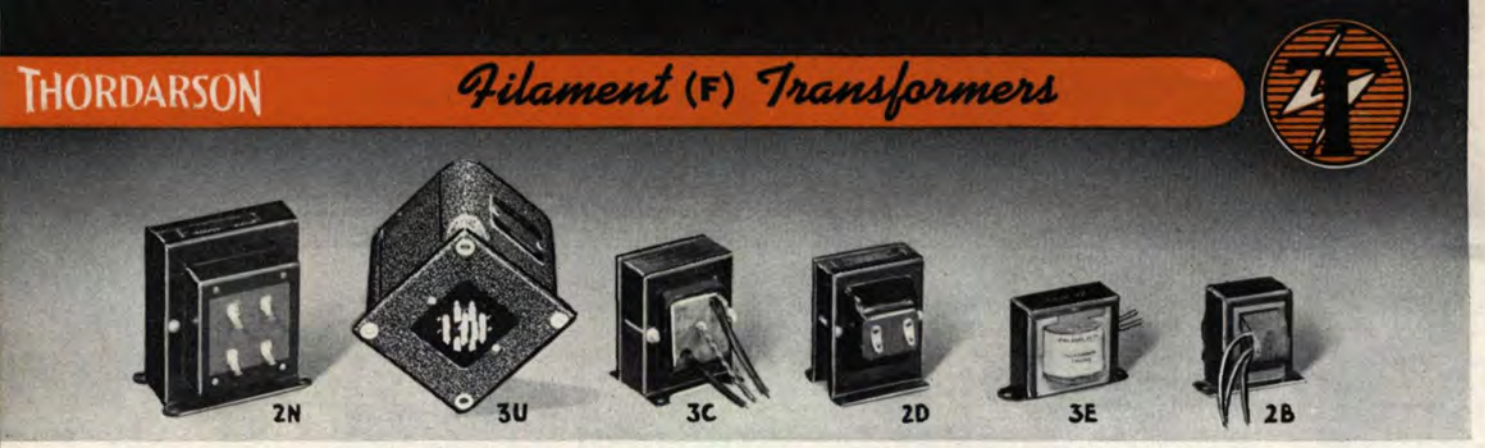
No. 346—Amplifier Guide 15c Postpaid

P. A. men and experimenters interested in building high quality amplifiers find the Thordarson Amplifier Guide No. 346 a worthwhile source of information. It contains laboratory designed and tested circuits of amplifiers from 8 to 120 watts output. Complete parts list, mechanical chassis drawings, and comprehensive illustrations enable the constructor to obtain superior results with matched transformer and choke components. Data are included for pre-amplifiers, dual tone controls, speaker impedance matching and testing.

	Tube Type	MODULATOR STAGE: P-P Class B Tubes	Power Output Watts	Plate Volts	Bias Volts	Pl. to Pl. Load Ohms	Use Mod. Trans. No.	DRIVER STAGE: P-P Driver Tubes	Trans. Ratio, Pri. to ½ Sec.	Use Driver Trans. No.	Trans. for 500 Ohm Line	§Ratio 500 Ohm Line to ½ Sec.
											Where T-15D82 T-19D05 may also	appears be used.
R. C. A.	46		30	400	0	5,600	T-11M74 or T-19M14	*45	5:1	T-15D79 or T-19D04	T-15D82	1:.85
	46		40	500	0	8,000	T-11M75 or T-19M14	*45	5:1	T-15D79 or T-19D04	T-15D82	1:.85
	46		50	600	0	9,600	T-11M75 or T-19M15	*45	5:1	T-15D79 or T-19D04	T-15D82	1:.85
	4-46		56	400	0	2,800	T-11M75 or T-19M15	*45	5:1	T-15D79 or T-19D04	T-15D82	1:.85
	4-46		96	600	0	4,800	T-11M76 or T-19M16	*45	5:1	T-15D79 or T-19D04	T-15D82	1:.85
	203A		200	1000	−35	6,900	T-11M77 or T-19M17	†2A3	2.2:1	T-15D77 or T-19D02	T-15D82	1:1.5
	203A		200	1000	−35	6,900	T-11M77 or T-19M17	**6L6	3.5:1	T-15D84	T-15D82	1:1.25
	203A		260	1250	−45	9,000	T-11M77 or T-19M17	†2A3	2:1	T-15D77 or T-19D02	T-15D82	1:1.5
	203A		260	1250	−45	9,000	T-11M77 or T-19M17	**6L6	3.5:1	T-15D84	T-15D82	1:1.25
	4-203A		400	1000	−35	3,450	T-11M78	†4-2A3	2.25:1	T-15D81	T-15D83	1:1.25
	4-203A		400	1000	−35	4,500	T-11M78	**6L6	3:1	T-15D84	T-15D83	1:1.25
	4-203A		520	1250	−45	3,450	T-11M78	†4-2A3	2:1	T-15D80	T-15D83	1:1.25
	4-203A		520	1250	−45	4,500	T-11M78	**6L6	3:1	T-15D84	T-15D83	1:1.25
	211		200	1000	−77	6,900	T-11M77 or T-19M17	2A3	2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	211		260	1250	−100	9,000	T-11M77 or T-19M17	2A3	1.8:1	T-15D76 or T-19D01	T-15D82	1:2
	800		90	750	−40	6,400	T-11M76 or T-19M16	2A3	2.6:1	T-15D77 or T-19D02	T-15D82	1:1.25
	800		100	1000	−55	12,500	T-11M76 or T-19M16	2A3	2.8:1	T-15D77 or T-19D02	T-15D82	1:1.25
	800		100	1000	−55	12,500	T-11M76 or T-19M16	45	2.2:1	T-15D77 or T-19D02	T-15D82	1:1.2
	801		45	600	−75	10,000	T-11M74 or T-19M14	2A3	2.6:1	T-15D77 or T-19D02	T-15D82	1:1.25
	801		45	600	−75	10,000	T-11M74 or T-19M14	45	2:1	T-15D77 or T-19D02	T-15D82	1:2.25
	801		75	750	−80	11,000	T-11M75 or T-19M16	45	1.8:1	T-15D76 or T-19D01	T-15D82	1:2.25
	801		75	750	−80	11,000	T-11M75 or T-19M16	2A3	2.4:1	T-15D77 or T-19D02	T-15D82	1:1.4
	805		300	1250	0	6,700	T-11M77	2A3	3.4:1	T-15D78 or T-19D03	T-15D82	1:1.25
	805		370	1500	−16	8,200	T-11M78	2A3	3:1	T-15D78 or T-19D03	T-15D82	1:1.25
	806		500	2000	−150	11,500	T-11M78	4-2A3	1.25:1	T-15D80	T-15D83	1:2
	806		500	2000	−150	11,500	T-11M78	**6L6	1.5:1	T-15D84	T-15D83	1:2.5
	808		190	1250	−15	12,700	T-11M77 or T-19M17	2A3	3.4:1	T-15D78 or T-19D03	T-15D82	1:1.25
	809		60	500	0	5,200	T-11M75 or T-19M15	2A3	6:1	T-15D79 or T-19D04	T-15D82	1:.75
	809		60	500	0	5,200	T-11M75 or T-19M15	45	4:1	T-15D79 or T-19D04	T-15D82	1:1.25
	809		100	750	−5	8,400	T-11M76 or T-19M16	2A3	6:1	T-15D79 or T-19D04	T-15D82	1:.75
	809		100	750	−5	8,400	T-11M76 or T-19M16	45	4:1	T-15D79 or T-19D04	T-15D82	1:1.25
	810		510	1500	−30	6,600	T-11M78	4-2A3	2.25:1	T-15D81	T-15D83	1:1.25
	811		175	1250	0	15,000	T-11M77 or T-19M17	2A3	5:1	T-15D79 or T-19D04	T-15D82	1:.85
	811		225	1500	−9	18,000	T-11M77 or T-19M17	2A3	4.5:1	T-15D79 or T-19D04	T-15D82	1:1.25
	830B		175	1000	−35	7,600	T-11M77 or T-19M17	2A3	3:1	T-15D78 or T-19D03	T-15D82	1:1.25
	838		200	1000	0	6,900	T-11M77 or T-19M17	2A3	3.8:1	T-15D78 or T-19D03	T-15D82	1:.85
	838		260	1250	0	9,000	T-11M77 or T-19M17	2A3	3.8:1	T-15D78 or T-19D03	T-15D82	1:.85
	4-838		400	1000	0	3,450	T-11M78	4-2A3	3.25:1	T-15D81	T-15D83	1:.75
	4-838		400	1000	0	3,450	T-11M78	**6L6	3.5:1	T-15D84	T-15D83	1:1.25
	4-838		520	1250	0	4,500	T-11M78	4-2A3	3.25:1	T-15D81	T-15D83	1:.75
	4-838		520	1250	0	4,500	T-11M78	**6L6	3.5:1	T-15D84	T-15D83	1:1.25
	1608		50	425	−15	4,800	T-11M75 or T-19M15	*45	4:1	T-15D79 or T-19D04	T-15D82	1:1.25
TAYLOR	T-20		50	600	−30	8,100	T-11M75 or T-19M15	*45	2.2:1	T-15D77 or T-19D02	T-15D82	1:2
	T-20		70	800	−40	12,000	T-11M75 or T-19M16	*45	2:1	T-15D77 or T-19D02	T-15D82	1:2.25
	TZ-20		70	800	0	12,000	T-11M75 or T-19M16	*45	3.2:1	T-15D78 or T-19D03	T-15D82	1:1.4
	TZ-40		175	1000	0	6,800	T-11M77 or T-19M17	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
	TZ-40		175	1000	0	6,800	T-11M77 or T-19M17	45	2.6:1	T-15D77 or T-19D02	T-15D82	1:1.5
	TZ-40		100	750	0	6,000	T-11M76 or T-19M16	2A3	4.5:1	T-15D79 or T-19D04	T-15D82	1:.75
	TZ-40		100	750	0	6,000	T-11M76 or T-19M16	45	3:1	T-15D78 or T-19D03	T-15D82	1:1.4
	T-55		175	1000	−40	6,900	T-11M77 or T-19M17	2A3	2.8:1	T-15D77 or T-19D02	T-15D82	1:1.25
	T-55		225	1250	−50	9,400	T-11M77 or T-19M17	2A3	2.6:1	T-15D77 or T-19D02	T-15D82	1:1.4
	T-55		275	1500	−60	12,000	T-11M77	2A3	2.4:1	T-15D77 or T-19D02	T-15D82	1:1.4
	T-155	Same as HD-203A										
	203-A 4-203A	Same as RCA 203A										
	HD-203A		300	1500	−50	9,600	T-11M77	2A3	2.6:1	T-15D77 or T-19D02	T-15D82	1:1.25
	HD-203A		300	1750	−67.5	13,000	T-11M77	2A3	2.6:1	T-15D77 or T-19D02	T-15D82	1:1.25
	HD-203A		400	1750	−67.5	10,000	T-11M78	2A3	2.2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	HD-203A		400	2000	−75	12,500	T-11M78	2A3	2.2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	HD-203A		500	2000	−75	10,000	T-11M78	2A3	2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	HD-203A		500	1500	−50	6,400	T-11M78	4-2A3	2:1	T-15D80	T-15D83	1:1.25
	HD-203A		500	1500	−50	6,400	T-11M78	**6L6	3:1	T-15D84	T-15D83	1:1.4
	HD-203A		600	1750	−67.5	7,600	T-11M78	4-2A3	1.75:1	T-15D80	T-15D83	1:1.4
	HD-203A		600	1750	−67.5	7,600	T-11M78	**6L6	2.5:1	T-15D84	T-15D83	1:1.75
	203B		300	1250	−45	7,900	T-11M77	†2A3	1.8:1	T-15D76 or T-19D01	T-15D82	1:2
	4-203B		600	1250	−45	3,900	T-11M78	†4-2A3	1.75:1	T-15D80	T-15D83	1:1.4
	4-203B		600	1250	−45	3,900	T-11M78	**6L6	2.5:1	T-15D84	T-15D83	1:1.75
	203Z		200	1000	0	6,900	T-11M77 or T-19M17	2A3	4.5:1	T-15D79 or T-19D04	T-15D82	1:.75
	203Z		260	1100	0	6,700	T-11M77	†2A3	3.8:1	T-15D78 or T-19D03	T-15D82	1:.85
	203Z		300	1250	0	7,900	T-11M77	†2A3	3.8:1	T-15D78 or T-19D03	T-15D82	1:.85
	211	Same as RCA 211										
	T-756		100	850	−25	9,400	T-11M76 or T-19M16	2A3	3:1	T-15D78 or T-19D03	T-15D82	1:1.25
	T-756		125	850	−25	7,500	T-11M76 or T-19M17	2A3	2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	T-814		500	2000	−150	11,500	T-11M78	4-2A3	1.25:1	T-15D80	T-15D83	1:2
	T-814		500	2000	−150	11,500	T-11M78	**6L6	1.5:1	T-15D80	T-15D82	1:3.15
	T-822	Same as HD-203A										

		MODULATOR STAGE					DRIVER STAGE				
	Tube Type	P-P Class B Tubes	Power Output Watts	Plate Volts	Bias Volts	Pl. to Pl. Load Ohms	Use Mod. Trans. No.	P-P Driver Tubes	Trans. Ratio, Pri. to ½ Sec.	Use Driver Trans. No.	Trans. for 500 Ohm Line (Where T-15D82 T-19D05 may also be used.)	§Ratio 500 Ohm Line to ½ Sec.
EIMAC	35T		150	1000	-22	7,200	T-11M77 or T-19M17	2A3	2.6:1	T-15D77 or T-19D02	T-15D82	1:1.4
	35T		200	1250	-30	9,600	T-11M77 or T-19M17	2A3	2.4:1	T-15D77 or T-19D02	T-15D82	1:1.5
	100TH		210	1000	0	5,200	T-11M77 or T-19M17	2A3	3.4:1	T-15D78 or T-19D03	T-15D82	1:1.25
	100TH		260	1250	0	7,200	T-11M77	2A3	3.6:1	T-15D78 or T-19D03	T-15D82	1:1.25
	100TH		300	1500	-10	9,600	T-11M77	2A3	3.6:1	T-15D78 or T-19D03	T-15D82	1:1.25
	100TH		380	2000	-20	16,000	T-11M78	2A3	3.8:1	T-15D78 or T-19D03	T-15D82	1:.85
	100TL		170	1000	-90	5,200	T-11M77 or T-19M17	**6L6	2:1	T-15D84	T-15D82	1:2
	100TL		230	1250	-112	7,200	T-11M77	**6L6	1.5:1	T-15D84	T-15D82	1:2.5
	100TL		270	1500	-140	9,600	T-11M77	**6L6	1.5:1	T-15D84	T-15D82	1:2.5
	100TL		350	2000	-185	16,000	T-11M78	**6L6	1.5:1	T-15D84	T-15D82	1:2.5
	150T		500	2000	-150	11,500	T-11M78	4-2A3	1.25:1	T-15D80	T-15D83	1:2
	150T		600	2500	-195	14,000	T-11M78	4-2A3	1.25:1	T-15D80	T-15D83	1:2
	150T		500	2000	-150	11,500	T-11M78	**6L6	1.5:1	T-15D84	T-15D83	1:2.5
	150T		600	2500	-195	14,000	T-11M78	**6L6	1.5:1	T-15D84	T-15D83	1:2.5
	250TH		300	1000	0	4,000	T-11M77	**6L6	3.5:1	T-15D84	T-15D83	1:1.25
	250TH		400	1250	0	5,200	T-11M78	**6L6	3.5:1	T-15D84	T-15D83	1:1.25
	250TH		500	1500	-22.5	6,400	T-11M78	**6L6	3:1	T-15D84	T-15D83	1:1.4
RAYTHEON	RK-12		100	750	0	8,700	T-11M76 or T-19M16	2A3	6:1	T-15D79 or T-19D04	T-15D82	1:.75
	RK-18		100	1000	-50	12,000	T-11M76 or T-19M16	*45	2.4:1	T-15D77 or T-19D02	T-15D82	1:1.75
	RK-18		100	1000	-50	12,000	T-11M76 or T-19M16	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
	RK-31		110	1000	0	13,600	T-11M76 or T-19M17	*45	4:1	T-15D79 or T-19D04	T-15D82	1:1.25
	RK-31		140	1250	0	17,000	T-11M77 or T-19M17	*45	4:1	T-15D79 or T-19D04	T-15D82	1:1.25
	RK-31		110	1000	0	13,600	T-11M76 or T-19M17	2A3	6:1	T-15D79 or T-19D04	T-15D82	1:.75
	RK-31		140	1250	0	17,000	T-11M77 or T-19M17	2A3	6:1	T-15D79 or T-19D04	T-15D82	1:.75
	RK-52		200	1000	0	7,200	T-11M77 or T-19M17	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
	RK-52		250	1250	0	10,000	T-11M77 or T-19M17	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
	RK-57		300	1250	0	6,700	T-11M77	2A3	3.4:1	T-15D78 or T-19D03	T-15D82	1:1.25
	RK-57		370	1500	-16	8,200	T-11M78	2A3	3:1	T-15D78 or T-19D03	T-15D82	1:1.25
	RK-58		200	1000	0	6,900	T-11M77 or T-19M17	2A3	3.8:1	T-15D78 or T-19D03	T-15D82	1:.85
	RK-58		260	1250	0	9,000	T-11M77 or T-19M17	2A3	3.8:1	T-15D78 or T-19D03	T-15D82	1:.85
HYTRON	HY-25		75	800	-9	9,000	T-11M75 or T-19M16	2A3	5:1	T-15D79 or T-19D04	T-15D82	1:.75
	HY-40		140	800	-28	5,800	T-11M77 or T-19M17	2A3	3.4:1	T-15D78 or T-19D03	T-15D82	1:1.25
	HY-40		175	1000	-37.5	7,000	T-11M77 or T-19M17	2A3	3.4:1	T-15D78 or T-19D03	T-15D82	1:1.25
	HY-57		110	800	-9	9,000	T-11M76 or T-19M17	2A3	5:1	T-15D79 or T-19D04	T-15D82	1:.75
	HY-51A		180	1000	-35	7,000	T-11M77 or T-19M17	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
	HY-51B		180	1000	-35	7,000	T-11M77 or T-19M17	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
AMPEREX	HF-100		260	1500	-52	12,000	T-11M77	2A3	3.2:1	T-15D78 or T-19D03	T-15D82	1:1.25
	HF-100		350	1750	-62	16,000	T-11M78	2A3	2.4:1	T-15D77 or T-19D02	T-15D82	1:1.4
	ZB-120		150	750	0	4,800	T-11M77 or T-19M17	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
	ZB-120		200	1000	0	6,900	T-11M77 or T-19M17	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
	ZB-120		245	1250	0	9,000	T-11M77 or T-19M17	2A3	4.5:1	T-15D79 or T 19D04	T-15D82	1:.75
	ZB-120		300	1500	-9	11,200	T-11M77	2A3	4:1	T-15D79 or T-19D04	T-15D82	1:.85
	HF-200		500	2000	-100	11,200	T-11M78	2A3	1.8:1	T-15D76 or T-19D01	T-15D82	1:1.75
	HF-200		500	2500	-130	16,000	T-11M78	2A3	2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	HF-200		600	2500	-130	16,000	T-11M78	2A3	1.8:1	T-15D76 or T-19D01	T-15D82	1:1.75
	HF-200		500	2000	-100	11,200	T-11M78	**6L6	2.5:1	T-15D84	T-15D82	1:1.75
	HF-200		600	2500	-130	16,000	T-11M78	**6L6	2.5:1	T-15D84	T-15D82	1:1.75
HEINTZ & KAUFMAN	HK-24		45	500	0	6,400	T-11M75 or T-19M15	2A3	4.5:1	T-15D79 or T-19D04	T-15D82	1:.75
	HK-24		105	1000	-29	15,000	T-11M76 or T-19M16	2A3	3.2:1	T-15D78 or T-19D03	T-15D82	1:1.25
	HK-54		170	1250	-35	12,500	T-11M77 or T-19M17	2A3	2.4:1	T-15D77 or T-19D02	T-15D82	1:1.4
	HK 54		200	1500	-45	16,800	T-11M77 or T-19M17	2A3	2.4:1	T-15D77 or T-19D02	T-15D82	1:1.4
	HK-154		200	1000	-155	7,500	T-11M77 or T-19M17	2A3	1.4:1	T-15D76 or T-19D01	T-15D82	1:2.25
	HK-154		223	1250	-210	11,400	T-11M77 or T-19M17	2A3	1.2:1	T-15D76 or T-19D01	T-15D82	1:2.75
	HK-254		240	1500	-40	10,000	T-11M77 or T-19M17	2A3	2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	HK-254		328	2000	-65	16,000	T-11M78	2A3	2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	HK-254		418	2500	-80	22,000	T-11M78	2A3	1.8:1	T-15D76 or T-19D01	T-15D82	1:1.75
	HK-354		100	1000	-60	15,000	T-11M76 or T-19M16	2A3	2.6:1	T-15D77 or T-19D02	T-15D82	1:1.25
	HK-354		220	1500	-100	15,000	T-11M77 or T-19M17	2A3	2.2:1	T-15D77 or T-19D02	T-15D82	1:1.75
	HK-354		400	2000	-150	15,000	T-11M78	2A3	1.4:1	T-15D76 or T-19D01	T-15D82	1:2.25
	354E		319	1500	-25	10,000	T-11M77	4-2A3	2.25:1	T-15D81	T-15D83	1:1.25
	354E		472	2000	-37.5	11,000	T-11M78	4-2A3	2:1	T-15D80	T-15D83	1:1.25
	354E		595	2500	-50	16,000	T-11M78	4-2A3	1.75:1	T-15D80	T-15D83	1:1.4
	354F		290	1500	-15	12,000	T-11M77	4-2A3	2.75:1	T-15D81	T-15D83	1:.85
	354F		445	2000	-22.5	12,000	T-11M78	4-2A3	2.5:1	T-15D81	T-15D83	1:.85
W-E	242A, 261A, 276A						Same as R.C.A. 211					

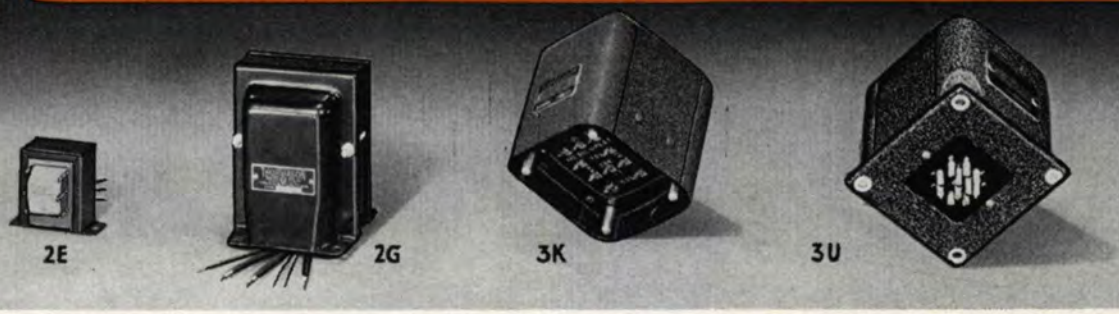
§NOTE: This ratio is correct only when the tubes supplying power to the 500 ohm line are of the same type and operated under the same conditions as the driver tubes listed under "P-P Driver Tubes." 2A3 driver tubes are operated with 300 plate volts, self biased, unless preceded by †. 45 driver tubes are operated with 275 plate volts, self biased, unless preceded by *. †2A3 driver tubes are operated with 300 plate volts, fixed bias. *45 driver tubes are operated with 250 plate volts, self biased. **6L6's with 16.6% feed-back, 400 volts plate, 300 volts screen.

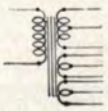


FILAMENT (F) TRANSFORMERS

Type No.	List Price	Primary Volts	Secondary Volts	Sec. Amps.	Pri. V.A.	R.M.S. Test Volts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
				SINGLE SECONDARY									
				Improved voltage regulation and minimum heat rise have been given prime consideration in the design of these units. Ratings given are for continuous operation at full load.									
T-50F61	$2.10	115	2.5 Ct.	3.5	10	1600	2B	2 3/8		2 7/8	1 3/4	2 3/8	1
★ T-19F88	2.40	115	2.5 Ct.	5.25	15	1600	2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/4
T-19F75	2.70	115	2.5 Ct.	5	12.5	7500	2B	2 15/16		3 3/8	2 1/8	3	2
T-19F89	2.70	115	2.5 Ct.	10	25	1600	2B	2 15/16		3 3/8	2 1/8	3	2
★ T-19F90	3.60	115	2.5 Ct.	10	25	7500	3C	2	1 3/4	2 9/16	2 1/4	3 1/4	2 1/4
T-64F33	7.20	105/110/115	2.5 Ct.	10	25	7500	2N	3 1/4	2 1/16	3 3/4	3 1/4	4	4 1/2
T-19F82	6.00	115	2.5 Ct.	15	45	10000	3C	3 1/4	1 15/16	3 3/4	2 7/16	4	4
T-63F99	3.90	115	5 Ct.	4	20	1600	2D	2 1/8	1 9/16	2 7/16	3	3 1/8	2 1/4
★ T-19F83	2.70	115	5 Ct.	5	30	1600	2B	2 15/16		3 3/8	2 1/8	3	2
T-19F84	3.30	115	5 Ct.	8	45	1600	3C	2	1 3/4	2 9/16	2 1/4	3 1/4	2 3/4
★ T-19F85	4.80	115	5 Ct.	13	75	1600	3C	3 1/4	1 15/16	3 3/4	2 7/16	4	4
T-19F86	6.60	115	5 Ct.	21	120	1600	3C	3 1/4	2 7/16	3 3/4	2 15/16	4	4 1/2
T-74F23	6.00	105/110/115	5 Ct.	13	75	1600	2D	3 1/4	1 7/8	3 3/4	3 1/4	4	4 1/4
★ T-74F24	10.20	105/110/115	5 Ct.	21	125	1600	2D	2 3/4	1 13/16	3 7/8	3 5/8	4 9/16	5 1/4
T-19F91	3.00	115	5.25 Ct.	4	25	1600	3C	2	1 3/4	2 9/16	2 1/4	3 1/4	2 1/4
T-19F92	4.20	115	5.25 Ct.	13	75	1600	3C	3 1/4	1 15/16	3 3/4	2 7/16	4	4
★ T-19F80	1.60	115	6.3 Ct.	1	7	1600	2B	2		2 5/16	1 3/4	1 15/16	3/4
★ T-19F81	1.80	115	6.3 Ct.	2	14	1600	2B	2 3/8		2 7/8	1 3/4	2 3/8	1
★ T-19F97	2.10	115	6.3 Ct.	3	21	1600	2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
T-61F85	2.70	115	6.3, 5, 2.5	2.5	18	1600	3E	3 1/8		3 5/8	2 3/8	2 1/4	1 1/2
T-73F60	4.80	105/110/115	6.3 Ct.	5	36	1600	2D	2 1/8	1 3/4	2 7/8	2 13/16	3 11/16	3 1/4
★ T-19F98	3.30	115	6.3 Ct.	6	47	1600	3C	2	1 7/8	2 9/16	2 3/8	3 1/4	2 3/4
★ T-19F99	4.20	115	6.3 Ct.	10	73	1600	3C	3 1/4	1 15/16	3 3/4	2 7/16	4	4
★ T-19F93	3.00	115	7.5 Ct.	4	34	1600	3C	2	1 3/4	2 9/16	2 1/4	3 1/4	2 1/4
★ T-19F94	3.60	115	7.5 Ct.	8	67	1600	3C	2 1/4	2 1/4	3	2 7/8	3 11/16	4
T-92F20-	6.30	115	7.5 Ct.	8	68	1600	2D	3 1/4	2	3 3/4	3 3/8	4	4 3/4
T-19F95	3.30	115	10 Ct.	4	48	1600	3C	2	1 3/4	2 9/16	2 1/4	3 1/4	2 3/4
★ T-19F96	4.20	115	10 Ct.	8	92	1600	3C	2 1/4	2 1/4	2 11/16	2 7/8	3 11/16	4
T-64F14	6.00	105/110/115	10 Ct.	8	90	1600	2D	3 1/4	2	3 3/4	3 3/8	4	5
T-19F87	7.50	115	10 Ct.	12	140	1600	3C	3 1/4	2 11/16	3 3/4	3 3/16	4	6 3/4
				FOR EXCITER LAMP									
T-64F38	$7.20	110/115/120	8.5	4	35	1600	3C	2 1/4	1 7/8	3	2 1/2	3 11/16	3 1/2
				SINGLE SECONDARY—C.H.T. SERIES									
				C.H.T. filament transformers are conservatively designed to operate continuously at full rated load with superior voltage regulation and minimum temperature rise.									
T-11F59	$9.00	105/115	5 Ct.	5	30	2000	3U	2 3/8	2 1/2	3	3	3 5/16	5
T-11F63	11.40	105/115	5 Ct.	13	70	2000	3U	3 5/8	3 1/8	4 5/16	3 3/4	4 13/16	7 1/2
T-11F55	15.00	105/115	5.25 Ct.	22	130	2000	3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	14
T-11F60	9.60	105/115	6.3 Ct.	5	35	2000	3U	2 3/8	2 1/2	3	3	3 5/16	5 3/4
T-11F62	10.20	105/115	7.5 Ct.	8	65	2000	3U	3 5/8	3 1/8	4 5/16	3 3/4	4 13/16	6 1/2
T-11F64	12.00	105/115	10 Ct.	10	110	2000	3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	9 3/4
T-11F53	10.20	105/115	2.5 Ct.	10	25	7500	3U	3 5/8	3 1/8	4 5/16	3 3/4	4 13/16	8 1/2
T-11F61	27.00	105/115	2.5 Ct.	20	55	15,000	3U	4 9/16	4 3/4	5 3/4	6 1/2	6 3/8	14
T-11F54	24.00	105/115	5 Ct.	20	110	10,000	3U	4 9/16	4 3/4	5 3/4	6 5/8	6 3/8	15

Prices subject to change without notice.





FILAMENT (F) TRANSFORMERS

Recommended for complete filament requirements of transmitters or amplifiers. Improved appearance and protection of coils from mechanical injury are afforded by mechanical shields.

Type No.	List Price	Primary Volts	Sec. Volts	Sec. Amps.	Pri. V.A.	R.M.S. Test Volts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
MULTIPLE SECONDARIES — "19" SERIES													
T-19F76	$5.70	115	Sec. 1-5 V. Sec. 2-7.5/6.3/5	3 6	67	1600 1600	2G	2 11/16	2 5/16	3 5/16	3 1/8	4 5/8	4 3/4
T-19F77	9.90	115	Sec. 1-5 V. Sec. 2-2.5 V. Ct. Sec. 3-10/7.5/6.3/5	3 10 8	133	1600 7500 1600	2G	3	2 7/8	3 3/4	3 5/8	4 7/8	7
T-19F78	6.90	115	Sec. 1-2.5 V. Ct. Sec. 2-5 V.	10 3	45	7500 1600	2G	2 11/16	2 9/16	3 5/16	3 3/8	4 5/8	5
T-19F79	8.10	115	Sec. 1-6.3 V. Ct. Sec. 2-10/7.5/6.3/5	3 10	133	1600 1600	2G	2 11/16	2 13/16	3 5/16	3 5/8	4 5/8	6
T-79F84	5.70	115	Sec. 1-2.5 V. Ct. Sec. 2-5 V. Ct. Sec. 3-6.3 V. Ct.	3.5 3 3	48	1600 1600 1600	2G	2 11/16	2 5/16	3 5/16	3 1/8	4 5/8	4 3/4
MULTIPLE SECONDARIES—C. H. T. SERIES													
T-11F57-	$16.50	105/115	Sec. 1- 10 Ct. Sec. 2- 10 Ct. Sec. 3-6.3 Ct. Sec. 4-5 Ct.	8 4 3 3	170	2000	3K	3 13/16	4 1/8	5 3/16	5 9/16	6 3/4	15
T-11F58-	18.00	105/115	Sec. 1-7.5 Ct. Sec. 2-7.5 Ct. Sec. 3-6.3 Ct. Sec. 4-5 Ct.	6.5 3.25 3 3	120	2000	3K	3 13/16	4 1/8	5 3/16	5 9/16	6 3/4	13 1/4
TAPPED SECONDARIES — C. H. T. SERIES													
T-11F50	$10.80	105/115	7.5/6.3/5*/2.5 Ct.	6.5	55	2000	3U	3 5/8	3 1/8	4 5/16	3 3/4	4 13/16	6 1/4
T-11F51	13.20	105/115	10/7.5/6.3 Ct.	8	90	2000	3U	3 5/8	3 1/8	4 5/16	3 3/4	4 13/16	7 3/4
T-11F52	15.90	105/115	11/10/7.5 Ct.	10	125	2000	3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	13 1/2

*Not center tapped.

FILAMENT CORRECTOR AUTOTRANSFORMERS

To compensate for variations in line voltage or for drop in filament leads. Correct filament voltage at the tube is made possible.

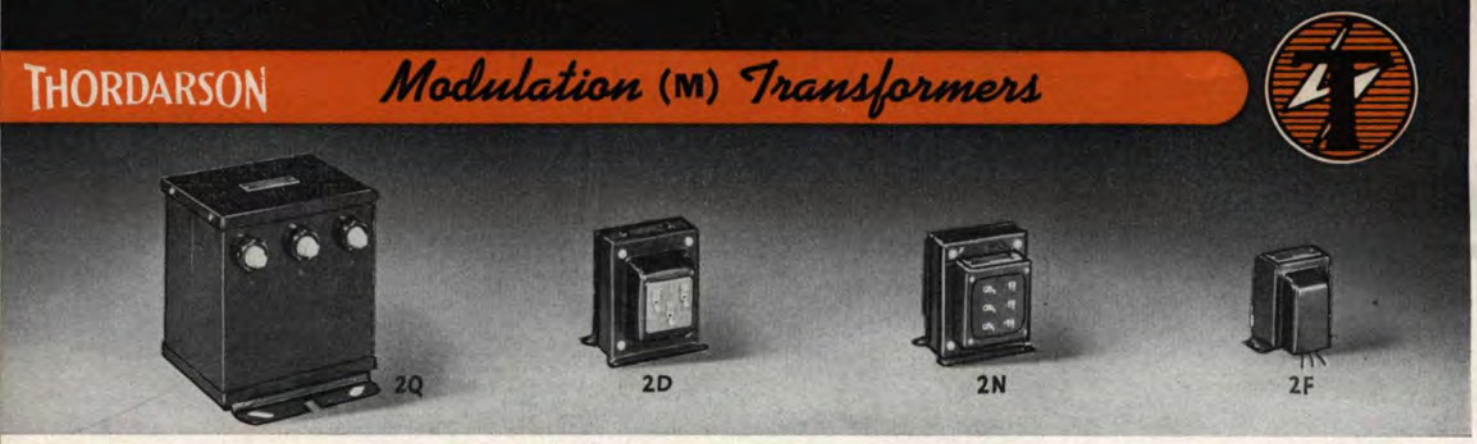
Type No.	List Price	Capacity Filament Power Watts	Primary Taps	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-18V24	$2.70	60	105/110/115/120/125V.	2E	2 3/8		2 7/8	2 1/8	2 3/8	1
T-18V25	4.80	150	105/110/115/120/125V.	2E	2 15/16		3 3/8	2 1/2	3	1 3/4

No. 344E — Transmitter Guide 15c Postpaid

Another Thordarson publication produced for the amateur operator. Complete description and details on practical types of transmitters and short wave apparatus. Schematic diagrams, pictures and parts lists of 12 new, modern transmitters from 10 to 1000 watts including an all-band A.C.-battery, emergency portable unit and a 5–10 meter mobile transmitter. Also ask for free catalog sheet SD464 describing 6 new, modern and economical to build, transmitter kits.

No. 340 — Complete Transformer Manual . . . 35c Postpaid

The Thordarson Transformer Manual is a complete book, containing the Replacement Transformer Encyclopedia and Servicing Guide, the Transmitter Guide, and the Sound Amplifier Guide, plus current Thordarson catalogs. It is bound in a strong, attractive blue and orange cover with loose leaf arrangement, giving the user opportunity to keep the Manual up-to-date by adding later Thordarson releases. This book has proven to be most popular in the technical library.



MODULATION (M) TRANSFORMERS

To couple the plate or plates of an audio output stage to a Class C R.F. load.

Type No.	List Price	Tube Type	Class	Ohms Impedance Pri.	Ohms Impedance Sec.	Max. D.C. Sec. M.A.	Max. Audio Pwr. Watts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-67M69	**$3.30**	1-19	B	10,000	2,700	50	10	2F	2 3/8		2 7/8	2 1/8	2 3/8	1 1/2
★ **T-17M59**	**3.30**	1-6A6, 6N7 or 53	B	10,000	3,000 3,750/4,500	100	10	2F	2 15/16		3 3/8	2 1/2	3	2
T-64M26	**7.20**	2-46 or 59 2-250	B AB	5,800	5,000 10,000	100	40	2D	3 1/4	2	3 3/4	3 3/8	4	5
T-19M21–	**8.40**	2-TZ-20	B	10,000	3,750 6,600	200 150	75	2N	3 1/4	2 15/16	3 3/4	3 5/16	4	7
T-19M22–	**12.00**	2-809 2-RK-12	B B	8,400	5,000 7,850	200 160	100	2N	3 1/4	2 3/4	4 3/8	4 1/2	6 1/16	13 1/4
T-84M70	**12.00**	2-6L6 2-35T 4-210	AB B B	3,800	2,500 5,000 7,500	250 200 150	75	2D	2 3/4	2 15/16	3 7/8	4 5/8	4 9/16	10
T-14M49	**21.60**	2-TZ-40	B	6,900	2,850 4,500 6,500	350 300 235	175	2Q	6 3/4	3 3/16	7 1/2	5 5/8	6 3/8	20
T-82M25	**51.00**	2-805, HD-203A, 822	B	9,000	4,000 6,000/8,000	500	650	2Q	8 5/16	4 1/16	9 1/16	7 1/2	7 3/4	47

GRID MODULATION TRANSFORMERS

T-67M73–	**$4.20**	1-42, 46, 6F6, Triode A		6,300	5,400	32	10	2D	2 1/8	1 9/16	2 7/16	2 15/16	3 1/8	2 1/4
T-67M74–	**5.40**	P.P. 45-2A3	AB	5,000	5,000	60	20	2D	2 1/8	1 21/32	2 7/8	2 15/16	3 11/16	3 1/2

MATCHING LINE TO R. F. LOAD MODULATION TRANSFORMERS

This popular series is designed for direct connection to 500 ohm output terminals of a receiver or amplifier. 200 ohm tap is also provided on type T-83M22.

Type No.	List Price	Pri. Ohms	Secondary Ohms Load	Max. D.C. Sec. M.A.	Max. Watts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-73M52	**$27.00**	500	5,000/6,000/7,000/8,000/9,000/10,000	215	80	2Q	6 3/4	3 3/16	7 1/2	5 5/8	6 3/8	21
T-83M22	**13.80**	500/200	5,000/6,000/7,000/8,000/9,000/10,000	150	30	2N	2 3/4	2 3/8	3 7/8	3 5/16	4 1/16	8

THORDARSON OSCILLOSCOPE KIT

Accurately designed circuit uses a 913 tube. Magnifying lens gives clear 2″ image and small over all size of unit makes it ideal for relay rack of servicemen and for amateur and experimental uses. Circuit diagram, description and complete parts list given in catalog bulletin SD-266.

Type No.	List Price	Description
T-11K99	**$18.00**	Foundation Unit (Consists of punched chassis, panel, light shield, etched panel, ventilated cabinet and 2″ magnifying lens with retainer ring, also complete circuit, constructional and operating data.) In addition to the foundation unit, one T-92R33 power transformer (see page 19) and one T-74C30 filter choke (see page 8) are required.

Prices subject to change without notice.

UNIVERSAL AND MULTI-MATCH MODULATION (M) TRANSFORMERS

The radio amateur or experimenter regularly makes changes in equipment to take advantage of new circuits and tubes. To enable quick and accurate matching of various tube loads without changing transformers, and to assure peak transformer performance while testing new tubes or making circuit changes, these Universal and Multi-Match transformers are made available. A complete table of driver and modulator combinations on pages 12 and 13 makes easy the selection of the proper driver or modulation transformer. Larger modulation transformers are available on special order. Please consult the Thordarson Sales Engineering Department concerning special requirements.

"19" SERIES UNIVERSAL MODULATION TRANSFORMERS

Type No.	List Price	Capacity Watts	Pri. M.A. Each Side	Secondary M.A. Series	Secondary M.A. Parallel	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
★ T-19M13	$5.70	15	50	50	100	4D	2 5/16		3 3/8	2 1/2	3	2
★ T-19M14	9.90	30	75	75	150	2N	3 1/4	1 5/16	3 3/4	3 1/8	4	4 1/2
T-19M15	14.40	60	125	125	250	2N	3 1/4	2 5/16	3 3/4	3 7/8	4	6 1/2
T-19M16	20.40	100	175	175	350	2N	3 1/4	2 3/4	4 1/4	4 1/4	6 1/16	12 1/2
T-19M17	33.00	250	225	225	450	2Q	7 3/4	3 3/16	8 1/2	5 3/4	6 7/8	30 3/4

C. H. T. MULTI-MATCH MODULATION TRANSFORMERS

*Feature Thordarson Switchboard Plug-in terminal board for quick and accurate matching of tube loads.

T-11M74	$13.20	40	100	80	160	4U*	3 5/8	3 5/16	4 5/16	4 3/8	4 3/4	7 3/4
★ T-11M75	15.30	75	145	145	290	4U*	3 5/8	3 5/16	4 5/16	4 3/8	4 3/4	9
★ T-11M76	27.00	125	210	160	320	4U*	4 9/16	4 3/4	5 3/8	5 1/2	6 3/8	18
★ T-11M77	36.00	300	250	250	500	4U*	5 3/8	6 1/8	6 3/16	7 5/8	7 7/16	30
★ T-11M78	72.00	500	320	320	640	3P	3 1/16	10 3/8	5 3/8	13 1/4	6 7/8	54

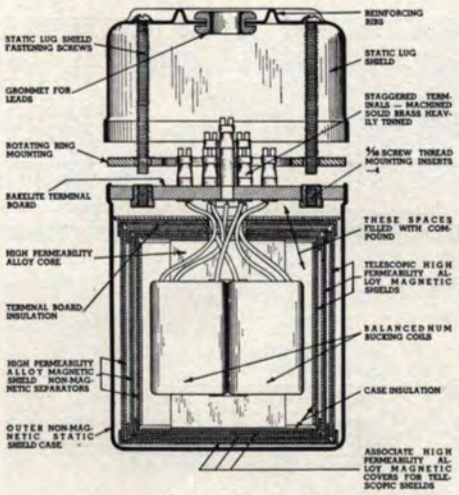
C. H. T. MULTI-MATCH CATHODE MODULATION TRANSFORMERS

Audio power is 10% of the Class C input. R. F. efficiency is 44%. With the exclusive Thordarson Switchboard Plug-in Terminal Board.

T-11M69	$10.80	15	5,000, 7,000, 10,000	80 to 2,000	300	4U	3 5/8	3 1/8	4 5/16	3 3/4	3 5/8	3
T-11M70	15.00	40	3,000, 6,600, 10,000	80 to 2,000	400	4U	3 5/8	4 1/4	4 5/16	4 5/16	5 7/16	7
T-11M71	18.00	100	6,000, 8,000, 10,000	80 to 2,000	600	4U	3 5/8	4 1/4	4 5/16	4 7/8	5 3/8	10

THORDARSON BROADCAST UNITS

CATALOG No. 500-F



Cross section view
Multi-shield Audio Transformer

See Bantam, Incher and Major Series listed on pages 6 and 7.

The same high quality transformers that have been made to the special requirements of discriminating engineers, broadcast stations and laboratories are now available as stock catalog items. Thordarson offers a complete line of transformers and chokes for broadcast use, each capable of meeting and surpassing the most rigid broadcast tolerances. Audio transformers perfectly designed and manufactured to assure uniform frequency response are listed. Filters, line equalizers, many types of filament transformers and filter reactors, plate transformers, modulation transformers and reactors round out an unusually complete line of broadcast components. Station engineers, experimentors, laboratories or air-craft equipment manufacturers and engineers are urged to secure a copy of catalog 500-F — FREE.

Prices subject to change without notice.

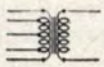
Plate (P) Transformers


2K


2F


2G

PLATE SUPPLY (P) TRANSFORMERS — "19" SERIES



Supply the voltage potential between cathode and anodes of vacuum tubes in a rectifier circuit. Thordarson plate transformers are rated in D.C. voltages from a two section filter which includes the voltage drop through the rectifier tubes. Designed especially for Amateur Short Wave or experimental equipment. Electrostatic shielding is provided between primary and secondary windings.

Type No.	List Price	Primary Volts	Sec. A.C. Load Volts	D.C. Volts	Bias Tap	D.C. M.A.	Pri. V.A.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-19P54	$7.20	115	560-0-560	400		150	115	2G	3	2 5/8	3 3/4	3 3/8	4 7/8	7
★ T-19P55	7.80	115	660-0-660 550-0-550	500 400	30 V.	250	200	2G	3	3 7/16	3 3/4	4 3/16	4 7/8	8
T-84P60	9.00	115	515-0-515	400	30 V.	250	190	2G	3	4	3 3/4	4 3/4	4 7/8	11 3/4
T-19P70	13.80	115	900-0-900 605-0-605	750* 400		100 225	260	2G	3	3 7/8	3 3/4	4 5/8	4 7/8	11 1/2
★ T-19P57	10.20	115	1075-0-1075 500-0-500	1000* 400		125 150	245	2G	3	3 3/4	3 3/4	4 1/2	4 7/8	10 1/2
★ T-19P58	18.00	115	1200-0-1200 900-0-900	1000* 750		200 150	500	2G	3 1/4	3 11/16	4 3/8	5 5/8	6 1/8	19
T-19P71	16.80	115	1325-0-1325 595-0-595	1250* 400		125 200	320	2G	3	4 1/16	3 7/8	5 1/8	4 5/8	13
★ T-19P56	8.40	115	900-0-900 800-0-800	750 600		225	260	2G	3	3 1/2	3 3/4	4 1/4	4 7/8	10
T-19P69	18.00	115	1180-0-1180 900-0-900	1000 750		300	430	2G	3 3/4	3 5/8	5 1/16	6 1/4	6 3/4	20
★ T-19P59	21.00	115	1560-0-1560 1250-0-1250	1250 1000		300	550	2K	4 3/16	3 5/16	5 7/8	7 5/8	6 1/16	26 1/2
★ T-19P60	25.20	115	1875-0-1875 1560-0-1560	1500 1250		300	620	2K	5 3/4	4 3/8	6 11/16	7 1/8	6 3/4	29 1/4
T-19P61	27.00	115	2125-0-2125 1875-0-1875	1750 1500		300	745	2K	5 3/4	4 5/8	6 11/16	7 3/8	6 3/4	31 1/2
★ T-19P62	32.10	115	2420-0-2420 2125-0-2125	2000 1750		300	860	2K	5 3/4	5	6 11/16	7 3/4	6 3/4	34 1/2
T-19P65	37.20	115	3000-0-3000 2420-0-2420	2500 2000		300	1195	2K	5 3/4	6	6 11/16	9 1/8	6 3/4	44
★ T-19P63	30.90	115	1560-0-1560 1265-0-1265	1250 1000		500	925	2K	5 3/4	5 1/4	6 11/16	8 5/8	6 3/4	38
★ T-19P64	35.70	115	1875-0-1875 1560-0-1560	1500 1250		500	1130	2K	5 3/4	6	6 11/16	9 1/8	6 3/4	43 1/4
T-19P66	49.80	115	2125-0-2125 1875-0-1875	1750 1500		500	1185	2K	5 3/4	4 3/8	6 11/16	7 1/4	9 15/16	45 1/2
T-19P67	60.00	115	2450-0-2450 2125-0-2125	2000 1750		500	1380	2K	5 3/4	4 5/8	6 11/16	7 1/2	9 15/16	51
T-19P68	70.20	115	3000-0-3000 2450-0-2450	2500 2000		500	1760	2K	5 3/4	5 5/8	6 11/16	8 1/2	9 15/16	61

*These transformers designed for double rectifiers and will deliver both secondary ratings simultaneously. If only the lower voltage taps are used the current rating is equal to the current rating of both windings.

POWER (R) TRANSFORMERS

TELEVISION POWER TRANSFORMERS

Type No.	List Price	Kinescope Tubes	Secondary		R.M.S. Test Volts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-17R32	$12.30	5"	No. 1 — 2300V AC No. 2 — 2.5V at 2A No. 3 — 2.5V at 2A	3000V DC	7500	2G	2 11/16	2 5/16	3 5/16	3 1/8	4 5/8	4 1/2
T-17R33	20.40	9"	No. 1 — 4500V AC No. 2 — 2.5V at 5A No. 3 — 2.5V at 2A	6000V DC	10,000	2G	2 11/16	3 1/16	3 5/16	3 7/8	4 5/8	6 1/2

For suitable filter reactor, see listing of chokes on page 8. (See T-17C40)

Prices subject to change without notice.

Plate (P) — Power (R) Transformers

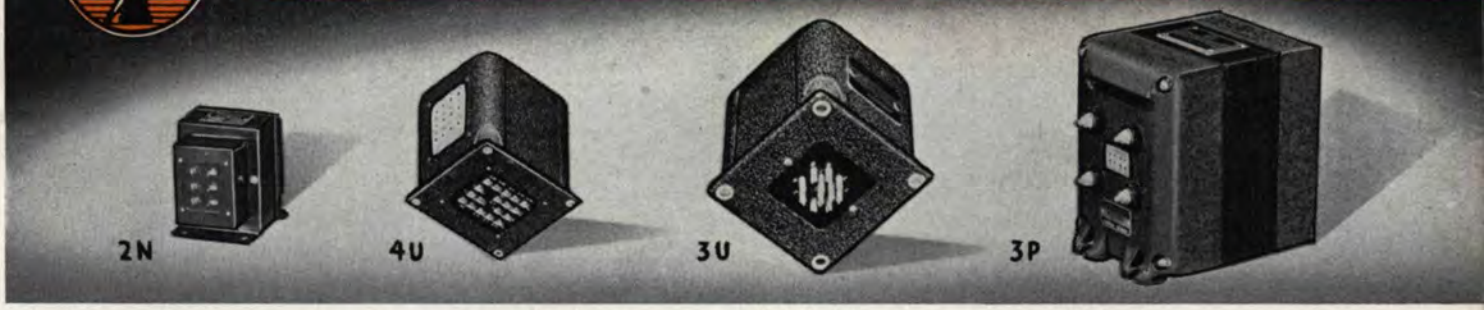


PLATE SUPPLY (P) TRANSFORMERS — C. H. T. SERIES

Will operate continuously under full rated load conditions with excellent regulation and with minimum temperature rise. Cases are compound filled for complete coil protection.

Type No.	List Price	Primary Volts	Sec. A.C. Load Volts	D.C. Volts	D.C. M.A.	Pri. V.A.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-15P11	$16.80	115-230	665-0-665 535-0-535	500 400	200	160	3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	15 3/4
T-15P12	19.20	115-230	835-0-835 655-0-655	650 500	200	200	3U	4 9/16	4 1/16	5 3/8	4 5/16	6 3/8	19 1/2
T-15P13	28.80	115-230	945-0-945 770-0-770	750 600	300	315	3U	5 3/8	5 5/16	6 3/16	7 5/8	7 7/16	31 3/4
T-15P14	36.00	115-230	1225-0-1225 945-0-945	1000 750	300	427	3U	5 3/8	5 5/16	6 3/16	6 5/8	7 7/16	41
T-15P15	42.00	115-230	1450-0-1450 1190-0-1190	1250 1000	300	520	3U	6 5/16	6 1/4	7 5/16	7 1/8	8	51 1/4
T-15P17	45.00	115-230	1815-0-1815 1535-0-1535	1500 1250	300	665	3U	6 5/16	6 1/4	7 5/16	8 1/8	8	55
★ T-15P19	81.00	115-230	2950-0-2950 2365-0-2365	2500 2000	300	1160	3P	3 1/4	10 1/8	6 3/8	12 3/4	9	85
T-15P16	63.00	115-230	1540-0-1540 1255-0-1255	1250 1000	500	875	3P	3 1/4	9 5/8	6 3/8	12 1/4	9	81
T-15P18	84.00	115-230	2130-0-2130 1845-0-1845	1750 1500	500	1210	3P	3 1/4	10 7/8	6 3/8	13 1/2	9	96
★ T-15P21	114.00	115-230	3440-0-3440 2980-0-2980 2340-0-2340 1815-0-1815	3000 2500 2000 1500	500	2180	3P	4 1/4	11 1/8	7 9/16	11 7/8	9 5/8	129
T-15P20	120.00	115-230	2960-0-2960 2390-0-2390	2500 2000	650	2380	3P	4 1/4	11 7/8	7 9/16	14 5/8	9 5/8	140

POWER (R) TRANSFORMERS

Universal Bias Transformers — "19" Series

Type No.	List Price	Pri. V.A.	Secondary D.C. Volts	Secondary M.A.	Filament V.	Filament A.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-19R31	$11.40		10 to 100 in app. 5 volt steps	200			2N	3 1/4	2 1/16	3 3/4	3 3/8	4	4
T-19R32	15.00		100 to 400 in app. 15 volt steps	200			2N	2 3/4	2 11/16	3 5/16	4 1/8	4 5/8	9 1/4

C. H. T. Multi-Volt Bias Transformers

Have the convenient feature of Switchboard plug-in terminal board facilitating changes of voltage.

Type No.	List Price	Pri. V.A.	Secondary D.C. Volts	Secondary M.A.	Filament V.	Filament A.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-15R60	$23.40	65	150/135/120/110/100/90	200	5	3	4U	3 5/8	3 5/16	4 5/16	4 3/8	4 3/4	6 3/4
T-15R61	21.00	100	275/250/225/200/175/150	200	5	3	4U	3 5/8	3 5/16	4 5/16	4 3/8	4 3/4	8 1/2
T-15R62	23.40	155	500/450/400/350/300/275	200	5	3	4U	3 5/8	4 1/4	4 5/16	4 7/8	5 3/8	15 1/4

POWER TRANSFORMERS FOR CATHODE RAY TUBES

Type No.	List Price	Volts D.C.	M.A.	Filament Windings Rect. Fil.	Fil. No. 1	Fil. No. 2	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-92R33 For 913 tube	$5.40	**500 tap—400	3 15	6.3V—.9A	6.3V—.6A	6.3V—.6A (No. 3 2.5V—1.4A)	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/4
T-14R32–	9.00	400	15	5V—2A 5V—2A Ct.	6.3V—.6A	2.5V—2A (No. 3 6.3V—.6A)	2G	2 1/8	2 1/8	2 7/8	3 3/8	3 11/16	4

For Dumont 24-XH; RCA 902, 913; National 2002 Tubes.

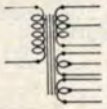
**With half wave rectification.

No. 352 — Replacement Transformer Encyclopedia. Free

Thordarson Replacement Transformer Encyclopedia No. 352 indicates proper transformer and choke replacement for receivers listed in Rider's Manuals. This handy, useful time-saver, originated by Thordarson, is now used by good service engineers the world over. In addition, it contains electrical and physical characteristics of all transformers and chokes listed in the Guide. Also included is a convenient table for choosing the correct output transformer for each application.

POWER (R) TRANSFORMERS

To furnish plate and filament voltage requirements of amplifiers, receivers and exciter stages of transmitters.



UNIVERSAL REPLACEMENT POWER TRANSFORMERS — "13R" SERIES

The choice of servicemen in all parts of the world because of the universal adaptability to receiver replacement, both electrically and mechanically. Adjustable mounting brackets permit flush, vertical or horizontal mounting. Replacement recommendations are given in Thordarson Replacement Transformer Encyclopedia No. 352.

	Type No.	List Price	Pri. V.A.	Secondary A.C. Load Volts	Secondary D.C. M.A.	Filament Windings: Rect. Fil.	Fil. No. 1	Fil. No. 2	Fil. No. 3	Mtg. Fig.	Mtg. Centers: Width	Mtg. Centers: Depth	Dimensions: W.	D.	H.	Wt. Lbs.
★	T-13R19	$3.60	45	240-0-240	40	5V—2A	6.3V—2A Ct.			3A	2½	2 1/16	3	2½	2½	2½
★	T-13R11	3.90	60	290-0-290	50	5V—3A	6.3V—2A Ct.			3A	2½	2 1/16	3	2½	2¾	3¼
	T-13R20	4.50	60	305-0-305	70	5V—2A	6.3V—3.5A Ct.			3A	2½	2 1/16	3	2½	3 5/16	3¼
★	T-13R12	4.50	65	350-0-350	70	5V—3A	6.3V—2.5A Ct.			3A	2½	2 1/16	3	2½	3 5/16	3¼
★	T-13R13	5.40	90	350-0-350	90	5V—3A	6.3V—3.5A Ct.			3A	3⅛	2½	3¾	3⅛	3½	5¼
★	T-13R14	6.00	115	350-0-350	120	5V—4A	6.3V—4.7A Ct.			3A	3⅛	2½	3¾	3⅛	3⅝	5¼
★	T-13R15	6.90	140	375-0-375	150	5V—4A	6.3V—5A Ct.			3A	3¾	3	4½	3¾	3 7/16	6½
★	T-13R16	7.80	180	400-0-400	200	5V—4A	6.3V—5.14A Ct.			3A	3¾	3	4½	3¾	3¾	7¾
	T-13R17	5.10	85	300-0-300	60	5V—3A	6.3V—2.5A Ct.	2.5V—7.5A Ct.		3A	2 13/16	2¼	3⅜	2 13/16	3 1/16	4½
	T-13R18	6.00	115	350-0-350	90	5V—3A	6.3/2.5—3.5A Ct.	2.5V—9A Ct.		3A	3¾	3	4½	3¾	3 5/16	5¾
	T-13R08	6.00	105	350-0-350	90	5V—3A	6.3V—3.3A Ct.	2.5V—6A Ct.		3A	3⅛	2½	3¾	3⅛	3⅝	5¼
	T-13R09	7.50	160	375-0-375	180	5V—3A	6.3V—3.3A Ct.	2.5V—6A Ct.		3A	3¾	3	4½	3¾	3⅝	7½
	T-13R00	5.40	70	275-0-275	70	5V—3A	5V—.5A Ct.	2.5V—10.5A Ct.		3A	2 13/16	2¼	3⅜	2 13/16	3¼	4
★	T-13R01	4.20	60	325-0-325	40	5V—3A	2.5V—4A Ct.			3A	2½	2 1/16	3	2½	2¾	3¼
★	T-13R02	4.50	60	350-0-350	50	5V—3A	2.5V—7.25A Ct.			3A	2½	2 1/16	3	2½	2 5/16	3¼
★	T-13R03	5.10	75	350-0-350	70	5V—3A	2.5V—9A Ct.			3A	2 13/16	2¼	3⅜	2 13/16	3¼	4
	T-13R04	6.00	115	350-0-350	100	5V—3A	2.5V—12.5A Ct.			3A	3⅛	2½	3¾	3⅛	3⅞	5¼
★	T-13R05	6.00	110	350-0-350	70	5V—3A	2.5V—9A Ct.	2.5V—3.5A Ct.		3A	3⅛	2½	3¾	3⅛	3⅝	5¼
★	T-13R06	6.90	130	350-0-350	120	5V—3A	2.5V—12.5A Ct.	2.5V—3.5A Ct.		3A	3¾	3	4½	3¾	3⅛	6½
	T-13R07	7.20	140	400-0-400	110	5V—3A	2.5V—15A Ct.	2.5V—3.5A Ct.		3A	3¾	3	4½	3¾	3 7/16	6¾

AMPLIFIER, TRANSMITTER AND REPLACEMENT — Half Shell or Flush Mounting

Lugs are brought out through solder terminals facilitating circuit changes for the experimenter.

	T-60R49	$3.60	30	280-0-280	30	5V—2A	2.5V—3.5A Ct.			2H		2 3/16	2 7/8	2½	2	2
	T-50R03-	3.90	75	350-0-350	80	5V—2A	2.5V—12A Ct.			2H	3⅛	2½	3 5/16	3 5/16	3 1/16	5½
	T-63R63-	3.90	75	350-0-350	80	5V—2A	2.5V—9A Ct.	2.5V—3A Ct.		2H	3⅛	2½	3 5/16	3 5/16	3 1/16	5½
★	T-70R20	3.90	45	300-0-300	50	5V—2A	6.3V—2A Ct.			2H		2½	3 7/16	2 5/16	2	3
	T-70R21	5.40	70	350-0-350	70	5V—2A	2.5V—4A Ct.	6.3V—3A Ct.		2H		2 7/8	4	3⅜	2 5/16	4¼
★	T-75R47	5.70	85	340-0-340	125	5V—2A	6.3V—2A Ct.			2H		2 7/8	4	3⅜	2 13/16	6

VIBRATOR POWER TRANSFORMERS

For operation with a vibrator from a six volt battery source.

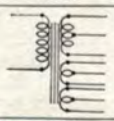
	Type No.	List Price	Secondary D.C. Volts to Filter	Secondary M.A.	Mtg. Fig.	Mtg. Centers: Width	Mtg. Centers: Depth	Dimensions: W.	D.	H.	Wt. Lbs.
★	T-14R33	$3.60	225	40	3C	2 1/16	1 15/16	2½	2 5/8	3 1/8	2
★	T-14R34	4.20	250	50	3C	2 1/16	2 1/16	2½	2¾	3¼	2¼
★	T-14R35	4.50	260	60	3C	2	2 1/16	2½	2⅞	3 1/8	2½
	T-14R36	5.70	285	75	3C	2	2 1/16	2½	3 1/8	3 1/8	3
	T-14R37	6.00	350	75	3C	2	2 1/16	2½	3⅜	3 1/8	3½
	T-14R38	6.90	320	100	2G	2 11/16	2 5/16	3 5/16	3 1/8	4 5/8	5
★	T-14R39	3.30	150	40	2B	2⅜		2⅞	2 1/8	2⅜	1¼

UNIVERSAL 115 VOLT A. C. OR 6 VOLT D. C. VIBRATOR POWER TRANSFORMER

★	T-14R40	$9.00	350 D. C. @ 1.35 Ma.	Fil. 6.3 @ 4.75 Amp.	2G	3	3¼	3¾	4	4⅞	8½

Prices subject to change without notice.

POWER (R) TRANSFORMERS — Amplifier, Transmitter and Replacement

Type No.	List Price	Pri. V.A.	Secondary A.C. Load Volts	Secondary D.C. M.A.	Bias Tap	Filament Windings: Rect. Fil.	Fil. No. 1	Fil. No. 2	Fil. No. 3	Mtg. Fig.	Mtg. Centers: Width	Mtg. Centers: Depth	Dimensions: W.	Dimensions: D.	Dimensions: H.	Wt. Lbs.
																
FULLY SHIELDED — UPRIGHT MOUNTING Leads are brought out through an opening in the base.																
T-56R01	$6.90	60	325-0-325	70		5V—2A	2.5V—3A Ct.	1.5V—1A 1.5V—4A	5V—.5A Ct.	2G	2 11/16	2 13/16	3 5/16	3 5/8	4 5/8	5 3/4
T-56R02	5.10	70	350-0-350	70		5V—2A	2.5V—9A Ct.	2.5V—1.5A Ct.		2G	2 11/16	2 13/16	3 5/16	3 5/8	4 5/8	6
T-56R03	8.10	85	350-0-350	105		5V—3A	2.5V—3A Ct.	2.5V—1.75A Ct.	1.5V—5A 1.5V—1A	2G	3	2 13/16	3 3/4	3 9/16	4 7/8	7 1/4
T-56R05	8.10	115	350-0-350	110		5V—3A	2.5V—9A Ct.	2.5V—3A Ct.	2.5V—3A Ct.	2G	3	2 15/16	3 3/4	3 11/16	4 7/8	7 3/4
T-37R70-C	9.00	95	350-0-350	80		5V—2A Ct.	3V—10A Ct.	5V—2.5A Ct.		2G	2 11/16	3 1/16	3 5/16	3 7/8	4 5/8	6 3/4
For Sparton Models 235, 589, 593, 600 Series, 737, 931 and other receivers using Kellogg and other 3V tubes.																
★ T-70R78	5.10	60	340-0-340	55		5V—2A	6.3V—1.5A Ct.			2G	2 11/16	2 1/8	3 5/16	2 3/4	4 5/8	4
T-17R34	6.30	90	300-0-300	125		5V—2A	6.3V—4.8A Ct.			2G	2 11/16	2 13/16	3 5/16	3 5/8	4 5/8	5 3/4
T-17R35	4.20	60	290-0-290	50		5V—3A	6.3V—2A Ct.			4G	2	1 15/16	2 5/8	3	3 1/8	3 1/2
T-17R36	4.80	65	350-0-350	70		5V—3A	6.3V—2.5A Ct.			4G	2	2 1/2	2 5/8	3 9/16	3 1/8	3 1/2
T-17R37	5.70	90	350-0-350	90		5V—3A	6.3V—3.5A Ct.			2G	2 11/16	2 11/16	3 5/16	3 1/2	4 5/8	5 1/2
T-17R38	6.30	115	350-0-350	120		5V—4A	6.3V—4.7A Ct.			2G	2 11/16	2 13/16	3 5/16	3 5/8	4 5/8	5 1/2
★ T-70R61	5.70	60	385-0-385	70		5V—2A	6.3V—2.5A Ct.			2G	2 11/16	2 5/16	3 5/16	3 1/8	4 5/8	4 3/4
★ T-70R62	7.50	110	350-0-350	145		5V—3A	6.3V—4.5A Ct.			2G	3	3 1/8	3 3/4	3 7/8	4 15/16	8 1/2
★ T-92R21	9.00	150	389-0-389	200		5V—3A	6.3V—5A Ct.			2G	3	3 1/2	3 3/4	4 1/4	4 7/16	9
★ T-17R30	10.20	200	370-0-370	280		5V—3A	6.3V—7A Ct.			2G	3	3 5/8	3 3/4	4 3/8	4 7/8	9 1/2
T-17R31	15.00	300	430-0-430	325		5V—6A	6.3V—8A Ct.			2G	3	3 1/2	3 3/4	4 1/4	4 7/8	13 1/2
T-74R28	8.10	105	440-0-440	125	38V	5V—3A 2.5V—3A	6.3V—3.3A Ct.			2G	3	2 15/16	3 3/4	3 11/16	4 7/8	8
★ T-87R85	9.00	145	330-0-330	160	77V	5V—3A 5V—2A	6.3V—2A Ct.	2.5V—5A Ct.		2G	3	3 1/8	3 3/4	3 7/8	4 7/8	8 1/2
T-68R26	8.70	160	550-0-550	150		5V—3A	7.5V—2.5A Ct.	2.5V—5A Ct.		2G	3	3 1/2	3 3/4	4 1/4	4 15/16	10 1/8
T-69R35	8.10	135	390-0-390	200		5V—3A	6.3V—3A Ct.			2G	3	3 1/2	3 3/4	4 1/4	4 15/16	9 1/2
★ T-75R50	9.30	160	435-0-435	250	80V	5V—3A 2.5V—3A	6.3V—1.5A Ct.	2.5V—10A Ct.		2G	3	3 1/2	3 3/4	4 1/4	4 15/16	10 1/2
T-83R82	12.00	200	740-0-740	140	150V	5V—3A 2.5V—3A	7.5V—2.5A Ct.			2G	3	4	3 3/4	4 3/4	4 15/16	11 1/2
T-83R85	15.00	290	740-0-740 325-0-325	200	150V	5V—3A 2.5V—3A	7.5V—5A Ct.			2G	3	4 1/2	3 3/4	5 1/4	4 7/8	13 1/2
★ T-89R28	13.80	250	550-0-550	275 75		5V—3A Ct. 5V—2A Ct.	6.3V—6A Ct.			2G	3	4 1/2	3 3/4	5 1/4	4 7/8	15
T-19R30	9.60	170	560-0-560	150		5V—3A	6.3V—3A Ct.	7.5V—2.5A Ct.		2G	3	3 1/4	3 3/4	4	4 7/8	8 3/4
C. H. T. POWER TRANSFORMERS For amplifiers, transmitters, or deluxe receivers. Designed to operate continuously at full rated load. Cases compound filled for complete coil protection.																
T-15R00	$15.00	140	500-0-500	150		5V—3A	7.5V/6.3—5A			3U	4 9/16	3 3/4	5 3/8	4 9/16	5 3/4	15
T-15R01	21.00	310	500-0-500	400		5V—6A	6.3V—6A			3U	5 3/8	4 9/16	6 3/16	5 3/8	6 11/16	24 1/2
T-15R02	15.90	220	750-0-750	200		2.5V—10A	7.5V/6.3—3A			3U	4 9/16	4 1/16	5 3/8	4 13/16	6 3/8	17
T-15R03	16.50	205	400-0-400	200		5.V—3A	6.3V—3A	2.5V—4A		3U	4 9/16	4 1/16	5 3/8	4 13/16	6 3/8	19
T-15R04	9.00	30	255-0-255	25			6.3V—2.1A Ct.			3U	2 3/8	2 1/2	3	3	3 5/16	3
T-15R05	15.90	150	340-0-340	135	77V	5V—3A 5V—2A	6.3V—4A Ct.	*6.3V—2A Ct. *2.5V—5A Ct.		3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	10
T-15R06	14.70	155	360-0-360	175		5V—3A	6.3V—5A Ct.			3U	3 5/8	3 7/16	4 5/16	4 1/8	5 7/16	11
T-15R07	15.90	238	380-0-380	280		5V—3A	6.3V—7A Ct.			3U	3 5/8	4 1/4	4 5/16	4 7/8	5 3/8	12
T-15R08	19.20	253	450-0-450	325		5V—6A	6.3V—8A Ct.			3U	4 9/16	4 1/16	5 3/8	4 13/16	6 3/8	22
SPEAKER FIELD SUPPLY TRANSFORMERS																
★ T-67R97	$5.10	55	115 V.D.C. @ 50 to 250			5V—3A				4G	3 1/4	1 11/16	3 5/16	3 3/16	3 5/16	4 3/4
T-92R53	6.90	120	300 V.D.C. @ 200			5V—3A				4G	3 1/4	2 3/8	3 5/16	3 7/8	3 5/16	6 1/4

*Not simultaneous—for 2A3's or 6A3's Fil.

Choosing Output Transformers

This accurate and convenient table has been compiled to facilitate choosing the correct output transformer. Two types are offered for most tubes: the universal type, which is designed to accommodate a wide range of tube and voice coil impedances, and the specific duty type.

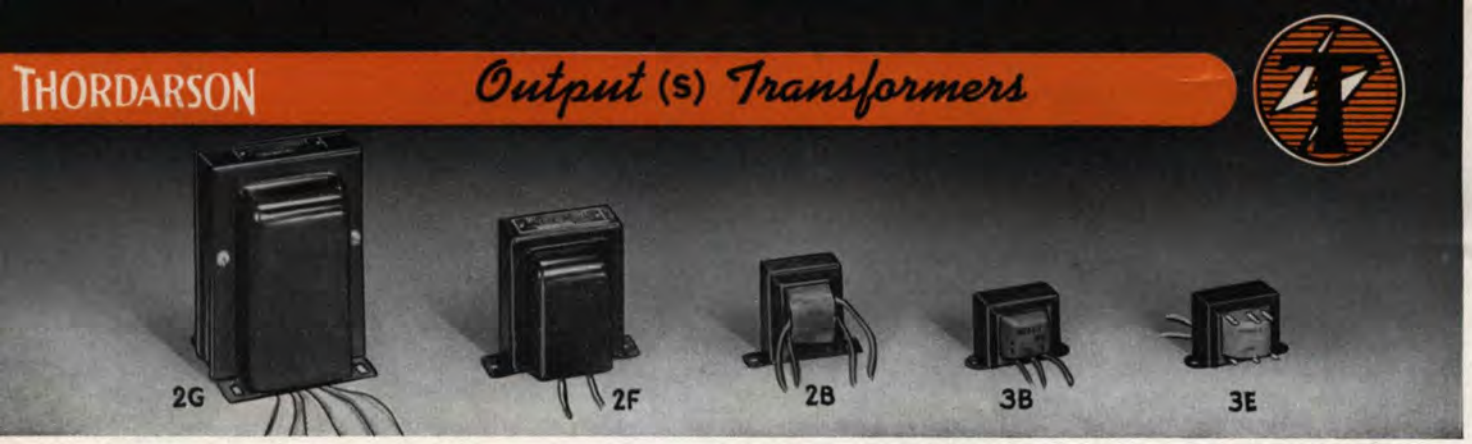
Tube	Plate Volts	Bias Volts	Plate M. A.	Plate Load Ohms	Watts Output	Universal Type Transformer	Specific Duty Transformer
1A5G	90	−4.5	4.0	25,000	.115		T-14S83
1C5G	90	−7.5	7.5	8,000	.240	T-13S38†	T-14S84
1D8GT	90	−9.0	5.0	12,000	.200	T-13S38†	
1E7G (1 section)	135	−4.5	7.5	16,000	.290	T-13S38†	T-13S43
(2 sections, P-P)	135	−7.5	*3.5	24,000	.575		T-14S83
1F4, 1F5G	135	−4.5	8.0	16,000	.310	T-13S38†	T-13S43
1G5G	90	−6.0	8.5	8,500	.250	T-13S38†	T-14S84
1G6G	90	0	*1.0	12,000	.675	T-13S38†	
1J5G	135	−16.5	7.0	13,500	.450	T-13S38†	
1J6G	135	0	*5.0	10,000	2.1	T-13S38†	T-81S01
1N6G	90	−4.5	3.1	25,000	.100		T-14S83
1Q5G, 1Q5GT	90	−4.5	9.5	8,000	.270	T-13S38†	T-14S84
1S4	45	−4.5	3.8	8,000	.065	T-13S38†	T-14S84
1T5GT	90	−6.0	6.5	14,000	.170	T-13S38†	T-13S43
2A3 (Single Cl. A)	250	−45.0	60.0	2,500	3.5	T-13S42	T-17S10
(P-P AB fixed bias)	300	−62.0	*40.0	3,000	15.0	T-13S41	T-58S72 (C.H.T., T-15S91)
(P-P AB self bias)	300	−62.0	*40.0	5,000	10.0	T-13S41	T-67S54 (C.H.T., T-15S90)
2A5 (Single Cl. A)	250	−16.5	34.0	7,000	3.1	T-13S42	T-13S37
(Single Cl. A)	285	−20.0	38.0	7,000	4.5	T-13S42	T-13S37
(P-P Cl. A)	250	−16.5	*34.0	14,000	6.2	T-57S01§	T-67S51
(P-P Cl. AB_1)	315	−24.0	*31.0	10,000	11.0	T-13S41	T-75S75
(P-P Cl. AB_2)	375	−21.0	*27.0	10,000	19.0	T-13S41	T-75S75
3Q5GT (Fil. par.)	90	−4.5	9.5	8,000	.270	T-13S38†	T-14S84
(Fil. series)	90	−4.5	7.5	8,000	.230	T-13S38†	T-14S84
4A6G	90	−1.5	*1.1	8,000	1.0	T-13S38†	T-14S81
6A3	250	−45.0	60.0	2,500	3.2	T-13S42	T-17S10
6A4	180	−12.0	22.0	8,000	1.4	T-13S38†	T-13S37
6A5G	250	−45.0	60.0	2,500	3.2	T-13S42	T-17S10
6A6	300	0	*17.5	8,000	10.0	T-13S41	T-67S48
6AC5G	250	self	32.0	7,000	3.7	T-13S42	T-13S37
(P-P Cl. B)	250	0	*2.5	10,000	8.0	T-13S41	T-75S75
6AL6G	250	−14.0	72.0	2,500	6.5	T-13S42	T-17S10
6B4G (Single Cl. A)	250	−45.0	60.0	2,500	3.2	T-13S42	T-17S10
(P-P AB fixed bias)	325	−68.0	*40.0	3,000	15.0	T-13S41	T-58S72 (C.H.T., T-15S91)
(P-P AB self bias)	325	−68.0	*40.0	5,000	10.0	T-13S41	T-67S54 (C.H.T., T-15S90)
6B5	300	0	42.0	7,000	4.0	T-13S42	T-13S37
6E6	250	−27.5	*18.0	14,000	1.6	T-57S01§	T-13S40
6F6	250	−16.5	34.0	7,000	3.1	T-13S42	T-13S37
6G6G	180	−9.0	15.0	10,000	1.1	T-13S38†	
6G6G	135	−6.0	11.5	12,000	.6	T-13S38†	
6K6G	315	−21.0	25.5	9,000	4.5	T-57S01§	
6K6G	250	−18.0	32.0	7,600	3.4	T-13S42	T-13S37
6L6 (Single Cl. A)	250	−14.0	72.0	2,500	6.5	T-13S42	T-17S10
(Single Cl. A)	320	−20.0	76.0	2,500	8.0		T-17S10
(P-P Cl. A_1)	270	−16.5	*67.5	5,000	18.5		T-67S54 (C.H.T., T-15S90)
(P-P Cl. AB_1)	319	−23.0	*50.0	4,300	25.0		T-17S12 (C.H.T., T-15S91)
(P-P Cl. AB_1)	400	−25.0	*51.0	6,600	34.0		T-17S13 (C.H T., T-15S92)
(P-P Cl. AB_2)	430	−20.0	*47.0	5,500	40.0		T-17S14 (C.H.T., T-15S92)
(P-P-Par. Cl. AB_1)	410	−28.0	*50.0	3,300	60.0		T-17S15 (C.H.T., T-15S93)
(P-P-Par. Cl. AB_2)	430	−24.5	*52.0	1,900	120.0		T-17S16 (C.H.T., T-15S94)

* Zero signal per plate. † T-14S85 may be used when a transformer with lugs is preferred to one with leads.
§ T-57S02 may be used when a transformer with leads is preferred to one with lugs.

Tube	Plate Volts	Bias Volts	Plate M. A.	Plate Load Ohms	Watts Output	Universal Type Transformer	Specific Duty Transformer
6N6G	300	0	42.0	7,000	4.0	T-13S42	T-13S37
6N7	300	0	*17.5	8,000	10.0	T-13S41	T-67S48
6V6 (Single Cl. A)	250	−12.5	44.5	5,000	4.5	T-13S42	
(Single Cl. A_1)	315	−13.0	34.0	8,500	5.5	T-57S01§	
(P-P Cl. AB_1)	250	−15.0	*35.0	10,000	10.0	T-13S41	T-75S75
(P-P Cl. AB_1)	306	−20.0	*50.0	8,000	15.0	T-13S41	T-17S11 (C.H.T., T-15S90)
6Y6G	135	−13.5	58.0	2,000	3.6	T-13S42	T-17S10
6Y6G	200	−14.0	61.0	2,600	6.0	T-13S42	T-17S10
6Y7G	180	0	*3.8	7,000	5.5	T-13S42	T-67S48
6Y7G	250	0	*5.3	14,000	8.0	T-57S01§	T-13S40
6Z7G	135	0	*3.0	9,000	2.5	T-13S38†	T-81S01
6Z7G	180	0	*4.2	12,000	4.2	T-13S38†	T-13S40
7A5	110	−7.5	35.0	2,500	1.4	T-13S42	T-17S10
7B5	100	−7.0	9.0	12,000	.35	T-13S38†	
7B5	250	−18.0	32.0	7,600	3.4	T-13S42	T-13S37
7C5	250	−12.5	45.0	5,000	4.5	T-13S42	T-89S74
(P-P Cl. AB_1)	250	−15.0	*35.0	10,000	10.0	T-13S41	T-75S75
10	425	−50.0	18.0	10,000	1.6	T-57S01§	
12A5	100	−15.0	17.0	4,500	.8	T-13S42	T-13S39
12A5	180	−25.0	45.0	3,300	3.4	T-13S42	T-13S39
12A7	135	−13.5	9.0	13,500	.55	T-13S38†	T-13S43
18	250	−16.5	34.0	7,000	3.0	T-13S42	T-13S37
19	135	0	*5.0	10,000	2.1	T-13S38†	T-81S01
25A6	95	−15.0	20.0	4,500	.9	T-13S42	T-13S39
25A7G	100	−15.0	20.5	4,500	.770	T-13S42	T-13S39
25AC5GT	180	0	27.0	8,000	2.0	T-13S38†	T-13S37
(P-P Cl. B)	180	0	*2.0	4,800	6.0	T-13S41	T-67S54
25B6G	105	−16.0	48.0	1,700	2.4	T-13S42	T-14S82
25L6	110	−7.5	49.0	1,500	2.1	T-13S42	T-14S82
31	135	−22.5	8.0	7,000	.185	T-13S42	T-13S37
32L7GT	110	−7.5	40.0	2,500	1.5	T-13S42	T-17S10
33	135	−13.5	14.5	7,000	.7	T-13S42	T-13S37
35A5-LT	110	−7.5	40.0	2,500	1.5	T-13S42	T-17S10
35L6GT	110	−7.5	40.0	2,500	1.5	T-13S42	T-17S10
38	135	−13.5	9.0	13,500	.55	T-13S38†	
38	250	−25.0	22.0	10,000	2.5	T-13S38†	
41	250	−18.0	32.0	7,600	3.4	T-13S42	T-13S37
42	250	−16.5	34.0	7,000	3.1	T-13S42	T-13S37
43	95	−15.0	20.0	4,500	.9	T-13S42	T-13S39
45 (Single Cl. A)	250	−50.0	34.0	3,900	1.6	T-13S42	T-89S74
(P-P Cl. AB_2)	275	−56.0	*36.0	5,060	12.0	T-13S41	T-67S54
46 (Single Cl. A Triode)	250	−33.0	22.0	6,400	1.25	T-13S42	T-13S37
(P-P Cl. B)	400	0	*6.0	5,800	20.0	T-13S41	T-67S52
47	250	−16.5	31.0	7,000	2.7	T-13S42	T-13S37
(P-P Cl. A)	250	−16.5	*31.0	14,000	5.4	T-57S01§	T-67S51
48	96	−19.0	52.0	1,500	2.0	T-13S42	T-14S82
(P-P Cl. A_1 Pent.)	125	−20.0	*50.0	3,000	5.0	T-13S41	T-58S72
49 (P-P Cl. B)	135	0	*1.3	8,000	2.3	T-13S38†	T-14S81
50 (P-P Cl. A)	450	−84.0	*55.0	8,000	9.2	T-13S41	T-65S94
50C6G	135	−13.5	58.0	2,000	3.6	T-13S42	T-17S10
50L6GT	110	−7.5	49.0	1,500	2.1	T-13S42	T-14S82
52	110	0	43.0	2,000	1.5	T-13S42	T-17S10
(P-P Cl. B)	180	0	*1.5	10,000	5.0	T-57S01§	T-81S01
53	300	0	*17.5	8,000	10.0	T-13S41	T-67S48
59 (Single Cl. A Triode)	250	−28.0	26.0	5,000	1.25	T-13S42	T-13S39
(Single Cl. A Pent.)	250	−18.0	35.0	6,000	3.0	T-13S42	T-13S37
(P-P Cl. B)	400	0	*13.0	6,000	20.0	T-13S41	T-67S52
70L7-GT	110	−7.5	40.0	2,000	1.8	T-13S42	T-17S10
71-A	180	−40.5	20.0	4,800	.79	T-13S42	T-13S39
(P-P Cl. A.)	180	−40.5	*20.0	8,000	1.6	T-13S38†	T-33S99
79	180	0	*3.8	7,000	5.5	T-13S42	T-67S48
89	250	−25.0	32.0	6,750	3.4	T-13S42	T-13S37
182B/482B	250	−35.0	20.0	4,500	1.35	T-13S42	T-13S39
183/483	250	−65.0	20.0	4,500	1.8	T-13S42	T-13S39
950	135	−16.5	7.0	13,500	.450	T-13S38†	

See footnote page 22.

Output (S) Transformers

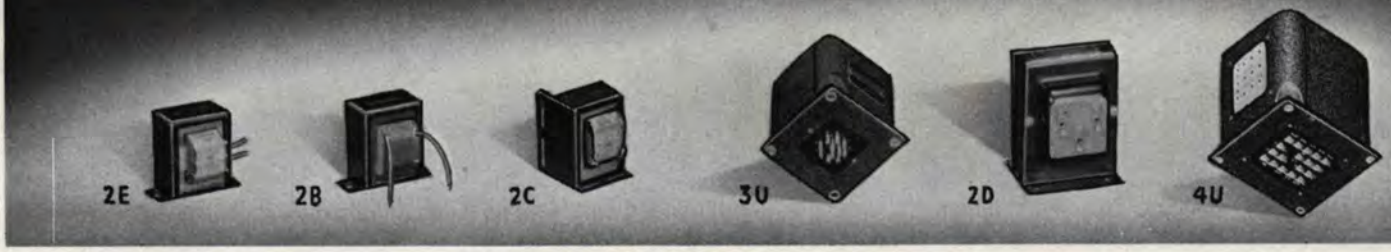


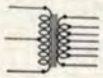
OUTPUT (S) TRANSFORMERS

For coupling audio power amplifier tubes to a loud speaker voice coil or line. Correctly matching the output tubes to a speaker load is important. Efficiency, frequency response and distortion are affected by this matching. Small, unshielded types are listed for use with receivers where the transformer is usually mounted on the loud speaker frame. Larger shielded types have multiple secondary impedances as required in sound amplifiers. C.H.T. output transformers have a greater selection of output impedances, meeting practically all speaker requirements. These units are compound filled and are provided with jacks and plugs to facilitate speaker matching. Tertiary winding included on some types for inverse feed-back connections. Refer to pages 22-23 for complete listing of tubes with recommended output transformers.

Type No.	List Price	Tube Type	Class	Ohms Impedance Pri.	Ohms Impedance Sec.	Pri. M.A. Per Side	Max. Watts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
REPLACEMENT OUTPUT TRANSFORMERS														
T-14S81	**$1.50**	1-42, 2A5, 6F6 or P-P45, 71	A	7,000 Ct.	3 to 6	40	5	3B	2		2 3/8	1 5/8	1 3/8	1/2
T-14S82	**1.50**	1-25L6	A	1,500	3 to 6	55	5	3B	2		2 3/8	1 5/8	1 3/8	1/2
★**T-14S83**	**1.50**	1A5-G, 1E7-G	A	25,000 Ct.	3 to 6	8	5	3B	2		2 3/8	1 5/8	1 3/8	1/2
★**T-14S84**	**1.50**	1-1C5G, 1Q5G	A	8,000	3 to 6	10	5	3B	2		2 3/8	1 5/8	1 3/8	1/2
★**T-13S37**	**1.50**	1-6F6, 42, 2A5, 47	A	7,000	1/2/4	36	5	3E	2		2 3/8	2	1 3/8	1/2
T-13S39	**1.50**	1-45, 12A5, 43, 71A	A	4,000	1/2/4	36	5	3E	2		2 3/8	2	1 3/8	1/2
T-13S43	**1.60**	1-1F4, 1D4, 1F5G	A	16,000	1/2/4	10	5	3E	2		2 3/8	1 5/8	1 3/8	1/2
T-33S99	**1.80**	2-45, 71, 43, 25A6 P-P	A	8,000 Ct.	6 to 12	36	10	2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/4
T-13S40	**1.80**	2-6F6, 42 P-P, 2-2A5, 47 P-P	A	14,000 Ct.	1/2/4	40	10	3E	2 3/8		2 5/16	2	1 5/8	3/4
★**T-81S01**	**1.80**	1-19, 1J6G, 1G6G P-P 2-30, 49 P-P	B B	10,000 Ct.	2/4/8	15	8	2B	2 1/8		2 5/8	1 5/8	2	3/4
HEAVY DUTY OUTPUT TRANSFORMERS TO LINE OR SPEAKER (High Level)														
T-72S58	**$2.00**	Pentode Plate to phones or oscillator.	A	10,000	2,000 50	30	5	2B	2 1/8		2 5/8	1 5/8	2	3/4
★**T-17S10**	**3.60**	1-6L6	A	2,500	2/4/8/500	80	8	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
★**T-17S11**	**5.40**	2-6V6 P-P	AB1	8,000*	4/8/15/250/500	52	15	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/2
★**T-17S12**	**5.40**	2-6L6 P-P	AB1 (with 300 V. on plate and screen)	4,300*	4/8/15/250/500	95	25	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/2
★**T-17S13**	**7.20**	2-6L6 P-P	AB1	6,600*	4/8/15/250/500	80	34	2G	2 11/16	2 9/16	3 5/16	3 3/8	4 5/8	5 1/2
T-17S14	**7.20**	2-6L6 P-P	AB2	5,500*	4/8/15/250/500	90	40	2G	2 11/16	2 9/16	3 5/16	3 3/8	4 5/8	5 1/4
T-17S15	**7.80**	4-6L6 P-P Par.	AB1	3,300*	4/8/15/250/500	155	60	2G	2 11/16	2 5/16	3 5/16	3 5/8	4 5/8	5 3/4
T-17S16	**18.00**	4-6L6 P-P Par.	AB2	1,900*	84/100/125/ 166/250/500	230	120	2G	3	4 1/4	3 3/4	5	4 7/8	14 1/4
T-68S06	**3.00**	1-6F6, 42, 2A5, 1-47	A	7,000	10 or 2,000	36	5	2F	2 3/8		2 7/8	1 7/8	2 3/8	1
★**T-67S51**	**4.20**	2-6F6, 42, 2A5, 47 P-P	A	14,000	4/8/15/500	40	20	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
T-67S48	**4.20**	2-45, 71, 43, 25A6 P-P 1-6N7, 6A6, 53 P-P	A B	8,000	4/8/15/500	36	25	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
T-67S52	**4.80**	2-46, 59 P-P 2-6F6, 42, 2A5 P-P 2-6N7, 6A6, 53 P-P Par.	B AB2 B	5,800	4/8/15/500	60	30	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/2
T-58S72	**4.50**	2-2A3, 6B4G P-P 2-48, 25L6 P-P	AB A	3,000	4/8/15/500	60	30	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/4
★**T-67S54**	**4.80**	2-6L6 P-P 2-2A3, 6B4G, 45 P-P	A AB	5,000	4/8/15/500	60	30	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/2
T-67S92	**4.80**	4-2A3, 6B4G, 45 P-P Par. 4-48, 25L6, P-P Par.	AB A	1,500	4/8/15/500	80	40	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/2
T-65S94	**4.80**	2-50 P-P 2-6F6, 42, 2A5 P-P	A AB2	8,000	4/8/15/500	55	40	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/2
★**T-75S75**	**4.80**	2-6F6, 42 or 2A5 1-6N7, 6A6, 53 P-P 2-6N6G, 6B5, 2B6, 6AC5 P-P	AB2 B A	10,000	4/8/15/500	45	40	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/2
T-84S58	**7.20**	2-6L6 P-P	AB2	3,800	4/8/15/500	115	60	2G	2 11/16	2 5/16	3 5/16	3 5/8	4 5/8	6
T-89S75	**4.80**	2-6L6 P-P	AB1	6,600	4/8/15/500	80	40	2F	3 11/32		3 5/16	3 1/16	3 1/2	3 1/2
T-89S74	**4.50**	1-6L6	A	4,000	4/8/15/500	70	15	2F	2 5/16		3 3/8	2 1/2	3	2 1/4
T-89S68	**7.80**	4-6L6 P-P Par.	AB1	3,300	50/125/200/ 250/333/500	150	75	2G	2 11/16	2 5/16	3 5/16	3 5/8	4 5/8	5 3/4
T-83S87	**10.80**	4-50 P-P Par.	AB2	3,000	4/8/15/500	160	90	2G	3	2 5/16	3 3/4	3 11/16	4 7/8	7 3/4

*10% feed-back winding.





UNIVERSAL REPLACEMENT TUBE TO VOICE COIL

Preferred by many because of wide plate impedance and voice coil coverage. Proper matching of load impedances to speaker voice coils is accomplished by using taps as specified in the instruction sheets.

Type No.	List Price	Tube Type	Class	Ohms Impedance Pri.	Ohms Impedance Sec.	Pri. M.A. Per Side	Max. Watts	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
★T-13S38	$1.80	Universal Single or P-P Tubes	A	4,000/7,000	Ajustable .1 to 29	36	8	3E	2 3/8		2 5/16	2	1 5/8	3/4
T-14S85†	1.80			8,000/10,000				3B	2 3/8		2 5/16	1 5/8	1 5/8	3/4
★T-57S01	2.40			14,000 Ct.				2E	2 3/8		2 7/8	2 1/2	2 3/8	1 1/4
T-57S02†	2.40							2B	2 3/8		2 7/8	2 1/8	2 3/8	1 1/4
T-17S57	2.70							2C	1 9/16	1 1/2	2	1 7/8	2 3/8	1 1/4
★T-13S42	1.80	Universal Single Tube	A	1,500/2,000 4,000/5,000 7,000	Ajustable .1 to 29	55	10	3E	2 3/8		2 5/16	2	1 5/8	3/4
★T-13S41	3.30	Universal P-P Tubes	A	3,000/5,000 6,600/7,000 8,000/10,000	Ajustable .1 to 29	60	20	2E	2 15/16		3 3/8	2 1/2	3	2 1/4

†Color coded leads for voice coil connections. Unused leads may be clipped off at coil.

UNIVERSAL TUBE TO LINE

★T-61S25	$3.90	Univ. Single Tube	A	2,500/4,000 5,000/6,000/7,000	500	60	10	2E	2 15/16		3 3/8	2 1/2	3	2 1/4
★T-61S26	4.20	Univ. P-P Tubes	A	8,000/10,000 12,000/14,000 Ct.	500	55	10	2E	2 15/16		3 3/8	2 1/2	3	2 1/4

C. H. T. MULTIPLE TAP OUTPUT TRANSFORMERS

Switchboard plug-in terminal board for quick and accurate selection of secondary impedances. Tertiary winding provides feedback voltage 10% of full primary. Split Primaries.

T-15S90	$12.00	2-6V6 P-P 2-6L6 P-P 2-2A3 P-P (self bias)	AB1 AB1 AB	8,000 5,000 5,000	2/3/4/6/- 8/16/125/- 250/500	70	15	4U	3 5/8	3 5/16	4 5/16	4 3/8	4 3/4	7 1/4
T-15S91	15.00	2-6L6 P-P(300 V. P. & Sc.) 2-2A3 P-P (fixed bias)	AB AB	4,300 3,000	Same as above	95	25	4U	3 5/8	3 5/16	4 5/16	4 3/8	4 3/4	8
T-15S92	18.00	2-6L6 P-P 2-6L6 P-P	AB1 AB2	6,600 5,500	Same as above	90	40	4U	3 5/8	4 1/4	4 5/16	4 7/8	5 3/8	8 3/4
T-15S93	21.00	2-6L6 P-P 4-6L6 P-P Par.	AB1 AB2	3,300 3,800	Same as above	155	60	4U	3 5/8	4 1/4	4 5/16	4 7/8	5 3/8	15 1/2
T-15S94	24.00	4-6L6 P-P Par.	AB2	1,900	500/250/166 /125/100/84	230	120	4U	4 9/16	4 3/4	5 3/8	5 1/2	6 3/8	18

UNIVERSAL LINE TO VOICE COIL

★T-53S81	$5.70	Line to Voice Coil	500/250	4-8-15		35	2D	2 1/8	1 3/4	2 7/8	2 5/16	3 11/16	3 1/2
★T-60S48	3.60	Line to Voice Coil 1-6 may be con. in	500/1,000 1,500/2,000	Pri. as 500 ohm- .06 to 8.; Pri. as		10	2E	2 15/16		3 3/8	2 1/2	3	2
T-17S18	4.50	par. to 500 ohm line	2,500/3,000	1000 ohm .12 to 16, etc.			2D	2 1/16	1 11/16	3	2 3/4	2 5/8	2 1/4
★T-14S80	2.40	Line to Voice Coil	500	2/4/6/8		12	2E	2 3/8		2 7/8	2 1/2	2 3/8	1 1/2
T-17S17	7.80	Line to Voice Coil	500	4/8/16/25/50		75	3C	3 1/4	2 11/16	3 3/4	3 3/16	4	6 1/2
T-76S74	4.50	Line to multiple spkrs. (autotransformer)	500	250/166/125/ 100/84		30	4C	2 1/16	1 5/16	3	2 1/2	2 5/8	2 1/2

C. H. T. MULTIPLE LINE TO VOICE COIL

With Switchboard plug-in terminal board.

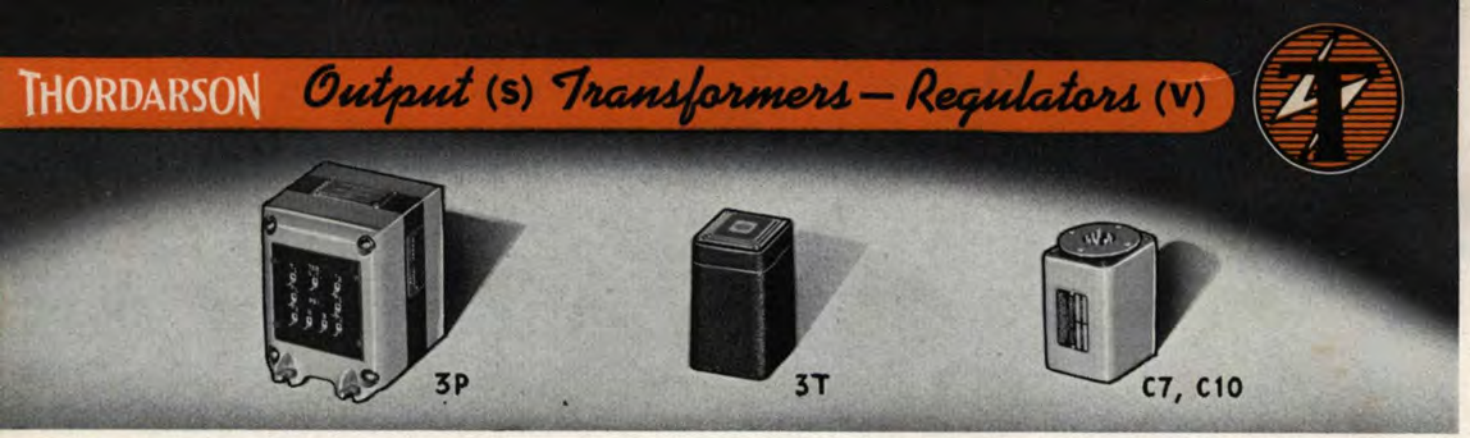
T-15S96	$15.00	Line to Voice Coil	1000/500	50/24/16/8/6/4/3/2	25	4U	3 5/8	4 1/4	4 5/16	4 7/8	5 3/8	7 1/4
T-15S97	19.20	Line to Voice Coil	1000/500	50/24/16/8/6/4/3/2	60	4U	3 5/8	4 1/4	4 5/16	4 7/8	5 3/8	9

C. H. T. CRYSTAL RECORDER TRANSFORMERS

The wave of interest in recording radio programs, speech and other audio happenings has created the desire to build recording equipment. These two transformers are offered to meet the requirements for coupling to a crystal recording head. Secondary designed for constant velocity recording (series connection), and constant amplitude recording (parallel connection).

T-15S98	$12.00	Line to crystal cutting head	500	Series 16,000 Par. 4,000	10	3U	2 3/8	2 1/8	3	2 3/4	4	5
T-15S99	12.00	Push-pull2A3, 6B4G etc. to crystal cutting head	1600	Series 16,000 Par. 4,000	10	3U	2 3/8	2 1/8	3	2 3/4	4	5

Prices subject to change without notice.



TRU-FIDELITY HIGH LEVEL OUTPUT TO LINE OR VOICE COIL TRANSFORMERS

Type No.	List Price	Ohms Impedance Primary	Ohms Impedance Secondary	Max. D.C. per side M.A.	Max. D.C. un-balance M.A.	Max. Sig. Level db	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-90S07-	$21.60	1250/5000* 750/3000*	50/200* 125/500*	60	5	+32	3T	2 3/8	1 7/8	3 1/16	2 9/16	4 1/8	4 3/4
T-3S21	21.60	1250/5000* 750/3000*	1.25/5* 3.75/15*	60	5	+32	C7	1 7/8	2 3/8	3 1/4	3 5/8	4 5/8	4 3/4
★ T-3S22†	22.80	1250/5000* 750/3000*	50/200*/125/500* 1.25/5*/3.75/15*	60	5	+34	C10	1 7/8	2 3/8	3 7/8	4	5 7/16	4 3/4
T-3S16†	45.00	6600* P-P 6L6§ 6000*	62.5/250*/125/500* 1.25/5*/7.5/10 3.75/15*	84	7	+37.5	3P	2 3/16	6 1/8	4 1/8	6 5/8	5 1/4	4 3/4
T-3S17†	54.00	3800* P-P Par. 6L6§ 3300* or P-P 6L6	62.5/250*/125/500* 1.25/5*/7.5/10 3.75/15*	152	7	+40	3P	2 3/16	7 5/8	4 1/8	8 1/8	5 1/4	4 3/4
T-3S23†	45.00	2500*/1500* P-P Par. 2A3, 6B4, 6L6's etc.§	62.5/250*/125/500* 1.25/5*/7.5/10 3.75/15*	140	7	+37	3P	2 3/16	5 7/8	4 1/8	6 3/8	5 1/4	4 3/4
T-90S12-	20.40	50/200*/125/500*	1.25/5*/3.75/7.5/ 10/15*	100	.5	+30	3T	2 3/8	1 7/8	3 1/16	2 9/16	4 1/8	4 3/4

*Indicates inductive and capacitive balance to center tap for use on balanced transmission lines.
† ± 1db 30 to 15,000 c.p.s. § Tertiary winding is 10% of full primary.

AUTOMATIC VOLTAGE REGULATORS

Will deliver a constant voltage (within ± 1%) despite line fluctuations from 95 to 130 volts and/or secondary loads from no load to full load rating. Operation is fully automatic and instantaneous. Once installed no further adjustment is necessary. Supplies optional output voltages of 110, 115 or 120 volts — 60 cycles. Cases are compound filled for coil protection and to minimize operating noise.

The ideal voltage regulator for oscillators, speech amplifiers, monitoring equipment, signal generators, metering equipment, recording equipment — *wherever constant voltages are required.*

Special units can be furnished incorporating various types of transformer windings.

For details on the complete line of Thordarson Automatic Voltage Regulators write for Catalog SD-422.

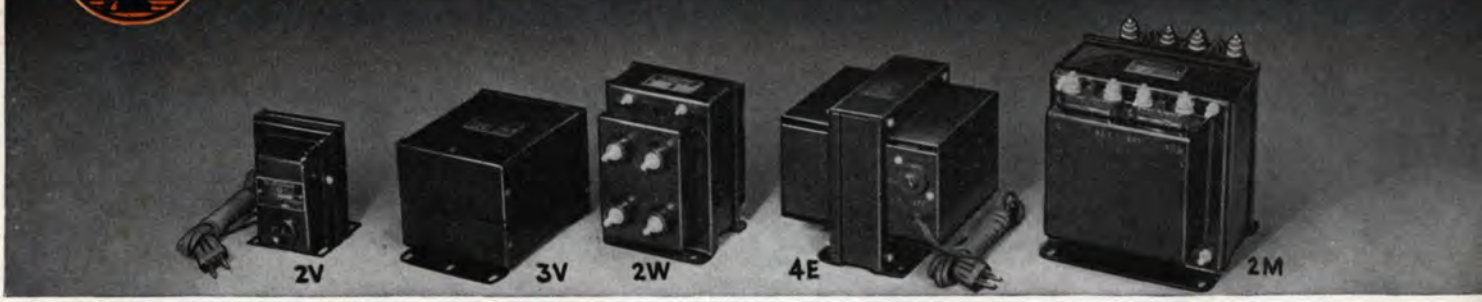
Chart shows actual line voltage fluctuations over 14 hour period and corresponding regulated output delivered by a Thordarson Automatic Voltage Regulator.

Type No.	List Price	Capacity V.A.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
★ T-9V30	$ 51.00	100	S2N	11 5/8	2 5/8	12 7/8	5 1/4	6 3/4	48
★ T-9V31	78.00	250	S2N	11 5/8	3 1/8	12 7/8	6 1/8	8 1/2	68
★ T-9V32	120.00	500	S2N	16	4	17	6 1/8	7 5/8	76
★ T-9V33	210.00	1000	S2N	19	4	20	7 1/8	10 1/4	150

FENCE CONTROLLER TRANSFORMER

For 6 volt D.C. operation, with suitable relays. Open horizontal mounting.

Type No.	List Price	Primary	Sec.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
T-18V10-	$3.60	6 V. D.C.	8,000 V. (37 M.A. Peak) Open circuit 9,000 V. (25 M.A. Peak) Open circuit	2 15/16	1 1/16	3 3/8	1 7/8	3	1



VOLTAGE CHANGER (V) TRANSFORMERS

AUTOTRANSFORMERS

Autotransformers consist of a single winding on an iron core. Voltage variation is accomplished by means of taps.

Step Down — Convenience Outlet Type

Input side equipped with cord and plug. Output side has standard receptacle.

Type No.	List Price	Input Volts	Output Volts	Output Load V.A.	Output Load Amps.	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
★T-26V04	$ 5.70	220–250	110–125	80	0.725	2V	2 11/16	2 1/16	3 3/8	2 7/8	4 5/8	4 1/2
★T-18V06	7.50	220–250	110–125	150	1.35	2V	2 11/16	2 5/16	3 3/8	3 5/8	4 5/8	6 1/4
★T-50V11	9.00	220–250	110–125	250	2.25	2V	3	3 1/2	3 5/16	4 1/4	4 15/16	10 1/4
T-18V07	16.20	220–250	110–125	500	4.5	2V	3	4 1/8	3 3/4	4 7/8	4 15/16	13

Line Voltage Adjusting — Convenience Outlet Type

For boosting or lowering line voltage. Input taps may be selected by means of a convenient plug arrangement as illustrated (Fig. 4E).

T-18V20	$ 7.20	95/105/125	115	100	0.9	2V	2 11/16	2 1/16	3 3/8	2 7/8	4 5/8	4 1/2
T-18V21	8.40	95/105/125	115	150	1.3	2V	2 11/16	2 5/16	3 3/8	3 1/8	4 5/8	5
T-18V22	10.80	95/105/125	115	250	2.2	2V	3	2 5/8	3 5/16	3 3/8	4 15/16	6 1/2
T-18V23	15.00	95/105/125	115	500	4.5	2V	3	3 1/8	3 5/16	3 7/8	4 15/16	9

Primary Regulating Types

For increasing or decreasing line voltage. Taps for 60, 80, 90, 100, 110, 120, and 125 volts. 50-60 cycles. Complete with instructions.

T-82V11	$18.00	60/80/90/100/110/120/125	Variable	500	4.5	2W	3 1/4	3 1/16	4 1/4	4 5/8	6 1/16	16 3/4
T-82V12	24.00	60/80/90/100/110/120/125	Variable	1000	9.0	2W	3 7/8	3	5	4 3/4	6 5/8	22 1/2
T-82V13	36.00	60/80/90/100/110/120/125	Variable	2000	18.0	2M	5 3/4	5 3/4	6 9/16	7 1/2	6 3/4	39 1/2

Line Voltage — Solder Lug Taps

Provide means of increasing or decreasing line voltages from 0 to 135 volts in 5 volt steps, when operated from 100 to 135 volt line.

T-18V03	$ 8.70	0–135	Variable	150	1.35	3C	2 1/4	1 7/8	2 31/32	2 1/2	3 3/4	3 1/2
T-18V04	10.80	0–135	Variable	250	2.25	3C	3 1/4	2 5/16	3 3/4	2 11/16	4	5 1/4
T-18V05	16.20	0–135	Variable	500	4.5	3C	3 1/4	2 7/8	4 1/4	3 3/4	6 1/16	14 1/4

LINE REGULATING AUTOTRANSFORMER

Provides for an increase or decrease of 7.5 volts. May be used on any A.C. line of 50-60 cycle frequency from 90V to 125V as a step-up or step-down transformer. Especially suitable for boosting line voltage for fluorescent lighting units. Fully enclosed (similar to 2H) and mounted on a 4" outlet box cover, allowing for complete enclosure of all wiring in a conduit or BX system.

T-18V26	$ 6.90	90–125	7.5 Variation	1150	10	4L	3 5/8		4 1/8	3 1/2	4 1/8	5

ISOLATION TRANSFORMERS

Electrostatic shield between primary and secondary. Feature unique plug-in primary voltage adjustment — no changing of connections.

★ T-18V00	$12.60	105/115/125	115	100		2V	3	2 7/8	3 7/8	3 5/8	4 15/16	8
★ T-18V01	23.40	105/115/125	115	250		4E	4 3/16	2 9/16	5 7/8	5 7/8	6 1/16	20

SIGNALING TRANSFORMERS — Listed by Underwriters' Laboratories

Cases are compound filled and have separate primary and secondary wiring compartments. Knock-outs permit attachment of rigid or flexible conduit without exposing the wiring. Four secondary leads provide these output voltages — 4, 8, 12, 16, 20 and 24 volts.

Type No.	List Price	Intermittent Duty	Constant Duty	Mtg. Fig.	Mtg. Centers Width	Mtg. Centers Depth	Dimensions W.	Dimensions D.	Dimensions H.	Wt. Lbs.
★ T-47V01	$ 9.00	50 V. A.	35 V. A.	3V	3 3/4	6 1/4	4 1/2	7	4 1/4	6 1/4
★ T-47V02	13.20	100 V. A.	85 V. A.	3V	3 3/4	6 1/4	4 1/2	7 3/4	4 1/4	8
T-47V03	26.10	250 V. A.	190 V. A.	3V	3 3/4	8 1/4	4 1/2	9	4 1/4	14 1/4
T-47V04	42.00	500 V. A.	475 V. A.	3V	3 3/4	9 3/16	5 1/4	10	5 3/4	22 1/2

Prices subject to change without notice.

Classified Index

(See Page 2 for Index by Type No.)

THORDARSON ELECTRIC MFG. CO.

500 W. HURON STREET . . . CHICAGO, ILLINOIS, U. S. A.