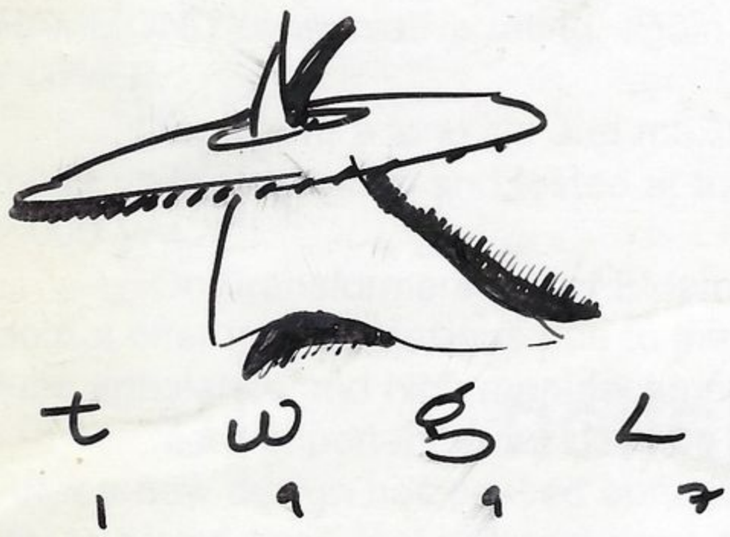
HAMMOND MANUFACTURING™

Classic Transformers & Enclosures



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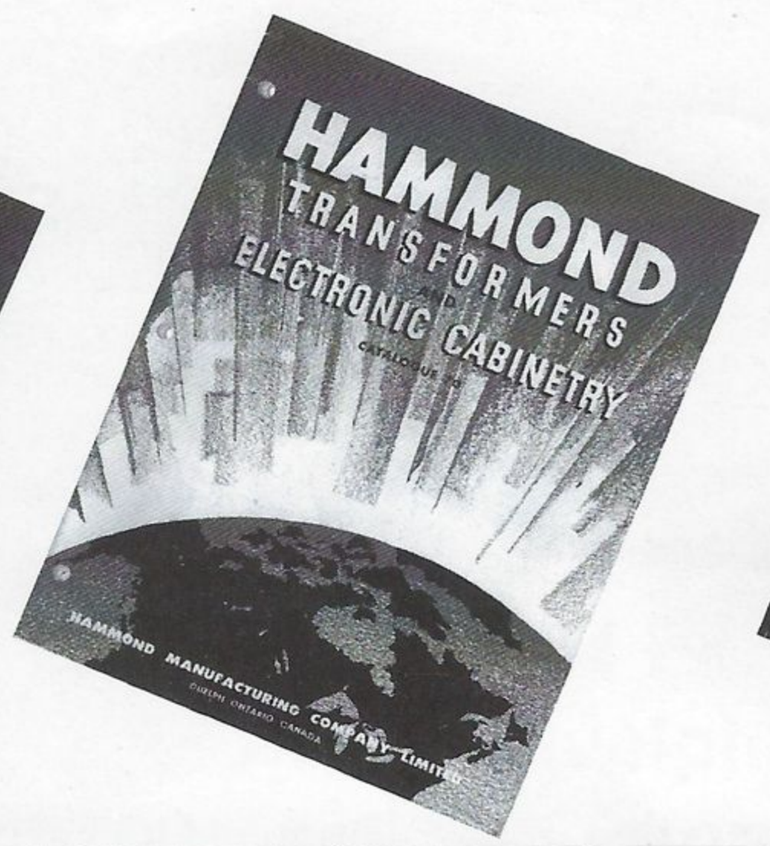
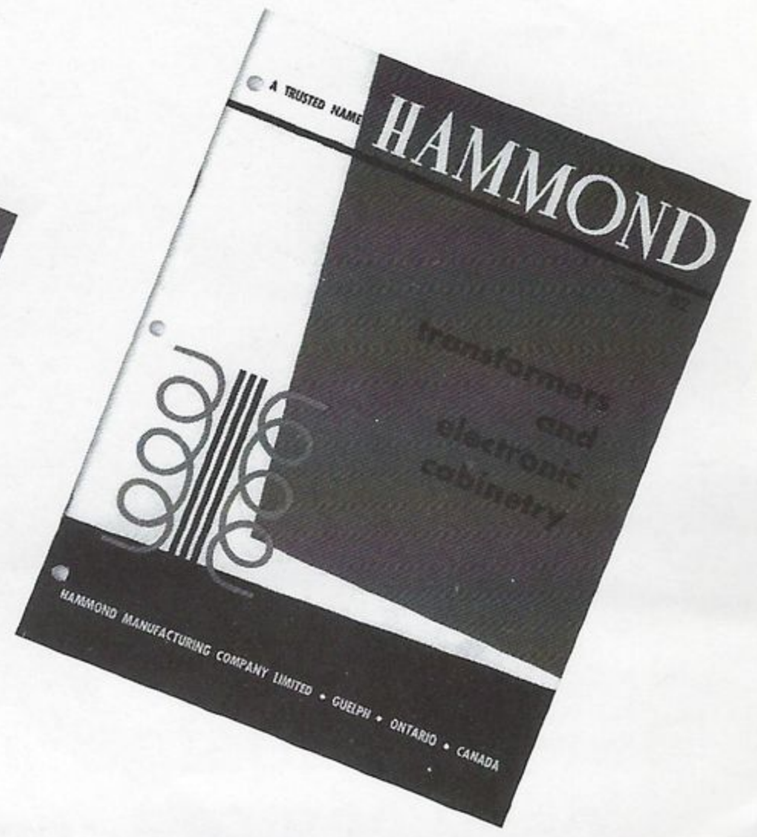
Quality Transformers & Enclosures
Since 1917





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Hammond Tube Output Transformers (Overview)

Audiophile Tube Output Transformers

Whether you are into the clean, free spirited "Single Ended" tube output or high efficiency, high power, "Push-Pull" audio, we have the output transformer for you.

We have been producing tube output transformers ***continuously*** for over half a century, constantly improving and tweaking their performance. The output transformer is one of the most critical components in a audiophile amplifier. These excellent designs have survived the years and have enjoyed a recent resurgence along with the tube industry.

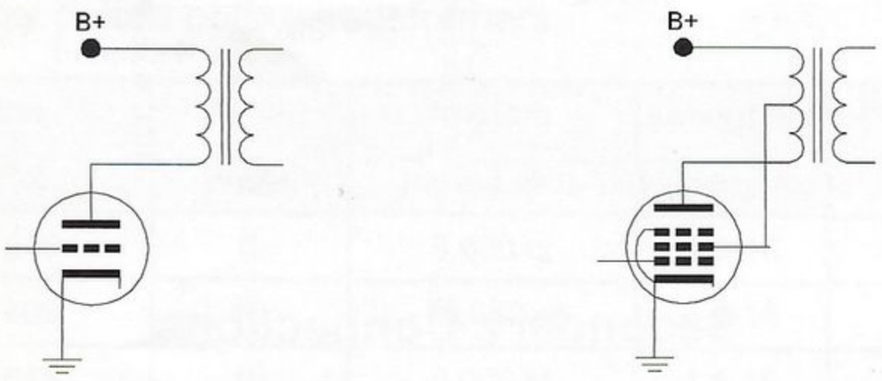
Please note, our specifications are at ***FULL OUTPUT*** power. Many "newbies" to the industry use frequency specification data at milliwatt ranges to inflate their claims. Check carefully when comparing manufacturers specs. We use -1db roll off points to ensure a typical HAMMOND conservative rating, again at ***FULL OUTPUT POWER.***

To ensure a long life and maximum versatility these units are built to and tested at a Hi-Pot rating of 2,000 VAC!!!!!

Our transformers are of EI laminated design, we do not offer toroidal designs due to their inability to handle tube imbalance and high manufacturing cost.

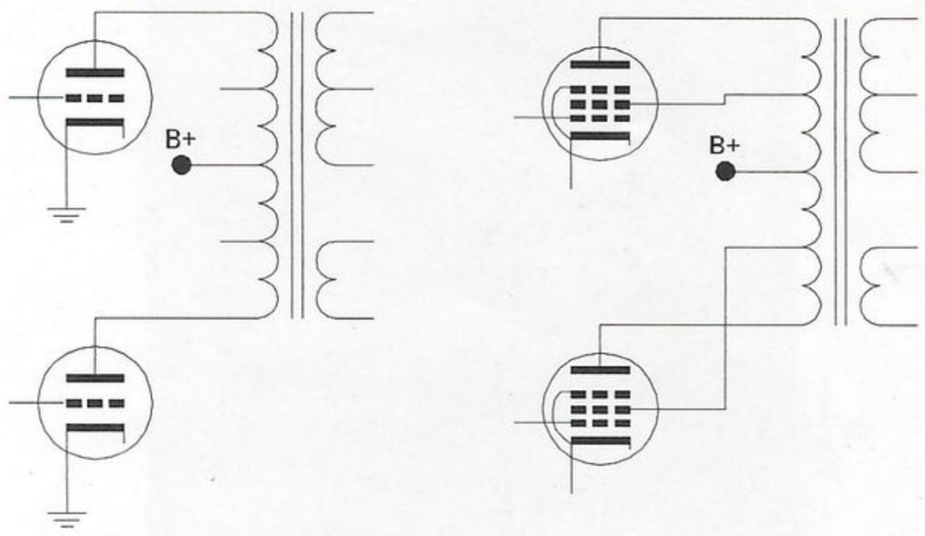
More importantly, our designs are "ear tested". After a new design has passed our extensive testing, it's got to sound good too, before we put it on the market! From Bach to rock & three watts to 280 watts, we have your output transformer ***IN STOCK.***

Single Ended Tube Output Transformers



These high quality units are designed for maximum versatility. Designed for both triode or pentode operation - Class A operation. All units include an optional use - 40% screen tap (a proven pentode "sweet spot") for "Ultra-Linear" operation. The ratings shown are at full power and rated plate current. Rather than the typical single air gap, to eliminate core saturation, most models use the ingenious HAMMOND "distributed air gap". This accounts for the units conservative ratings and manufacturing repeatability, to ensure matched units.

Push Pull Tube Output Transformers



These high quality units are also designed for maximum versatility. All units include an optional use - 40% screen tap (a proven pentode "sweet spot") for "Ultra-Linear" operation. They are designed to be used with most all power output tubes available today. The ratings shown are at full power and rated plate current. We have also added an epoxy potted series to our line for the ultimate in tube output transformers.

HAMMOND Interleaved Windings

The reason for our sparkling high frequency performance is the use of interleaved windings between the primary and secondary. All windings are machine wound with high quality copper wire. All output models include multiple interleaved windings to maximize high frequency response. The multiple interleaved secondaries are wound (series or parallel connecting them) to match to 4, 8 or 16 ohm load impedances.

The primaries of each model (including the "single-ended" series) include Ultra-Linear taps at the 40% point.

Tube Output Transformers - Esthetics

We have also paid close attention to the "look" of our units as they are as much on display in some designs as the tubes themselves. Our units are manufactured with high grade laminations and machine wound with high quality copper wire. The core is varnished and oven baked to ensure quiet operation - even at high ambient temperatures. Then the end bells are bolted on. These end bells are finished in a tough, low gloss, black powder paint finish to resist scratching. The end bells include knockouts for optional above chassis wiring.

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HAMMOND MANUFACTURING™

Single Ended Audiophile Tube Output Transformers

SINGLE-ENDED "CLASSIC" TUBE TYPE - ULTRA-LINEAR OUTPUT TRANSFORMERS

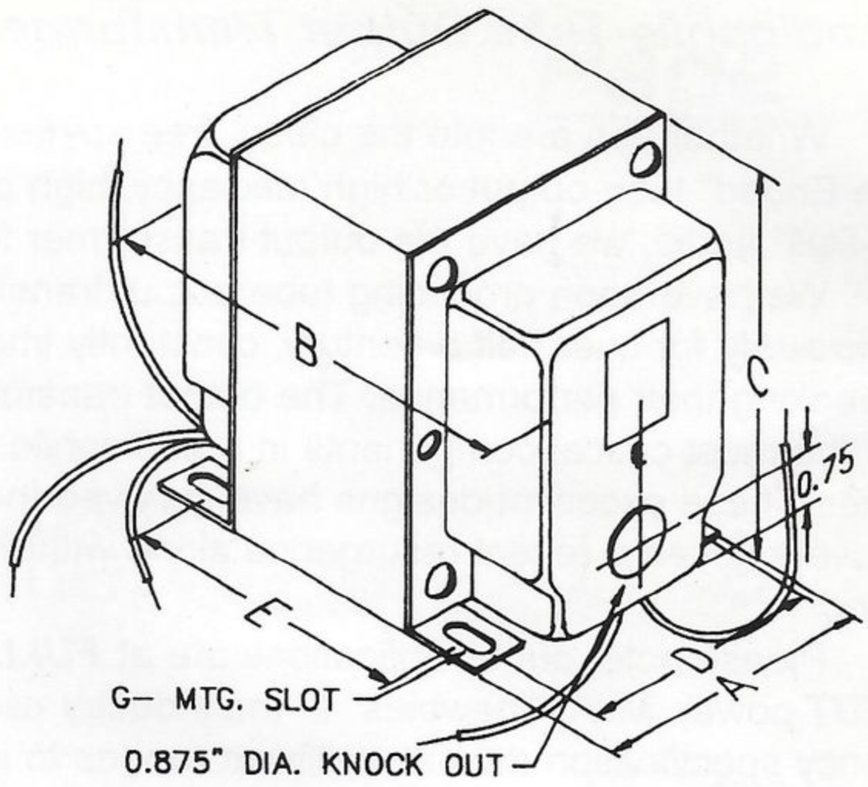
- Designed for single ended tube output circuits (triode, tetrode or pentode tubes).
- Enclosed (shielded), 4 slot, above chassis Type "X" mounting, both end bells include knockouts for optional above chassis wiring.
- Frequency response 30 Hz. to 30 Khz. at full rated power (+- 1 db max. ref. 1 Khz minimum).
- Insulated flexible leads 8" min.
- All units include a 40% screen tap for Ultra-Linear operation (if desired).

Specifications

Cat. No.	Audio Watts	Primary Impedance	Max. DC Bias	Secondary Impedance	Wt. Lbs.
1627SE	25	2,500	100 ma.	4-8-16	6.02
1628SE	25	5,000	100 ma.	4-8-16	6.02
1629SE	25	6,500	100 ma.	4-8-16	6.02
1640SE	50	1,250	200 ma.	4-8-16	11

Suggested Tube Types

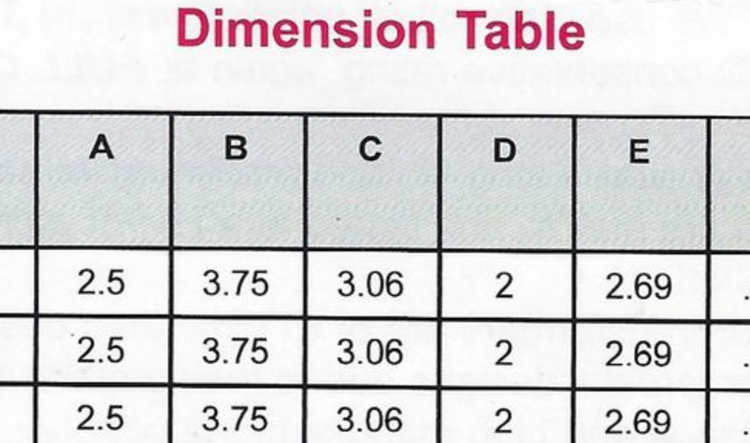
Cat. No.	Triodes	Pentodes
1627SE	2A3, 6A3, 6B4G, 300B	6CA7, 6L6, 807, 5881, 6550, Parallel 6AQ5, 6V6, EL84
1628SE	SV811-3, 211, 300B	6AQ5, 6V6, 6L6, 807, 5881, 6550, EL84
1629SE	SV811-10	-
1640SE	Parallel 2A3, 6A3, 6B4G, 300B	Parallel 6550, 6CA7



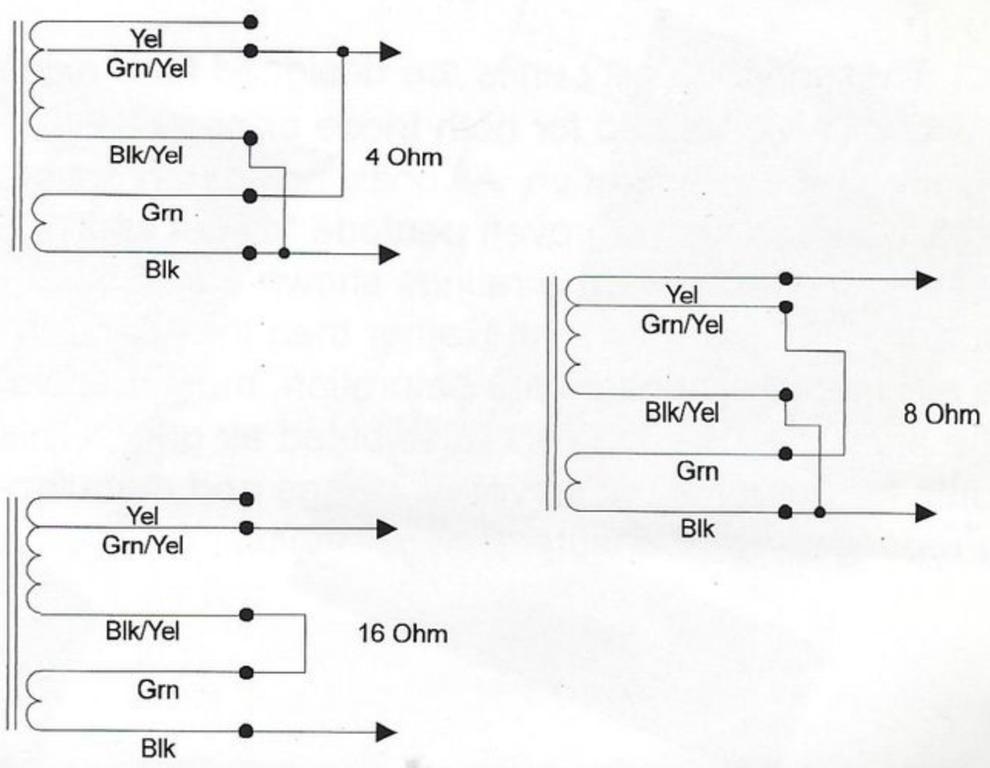
Dimension Table

Cat. No.	A	B	C	D	E	G (Slot)
1627SE	2.5	3.75	3.06	2	2.69	.203 X .38
1628SE	2.5	3.75	3.06	2	2.69	.203 X .38
1629SE	2.5	3.75	3.06	2	2.69	.203 X .38
1640SE	3.13	4	3.81	2.5	2.69	.203 X .38

Transformer Schematic



Secondary Connections



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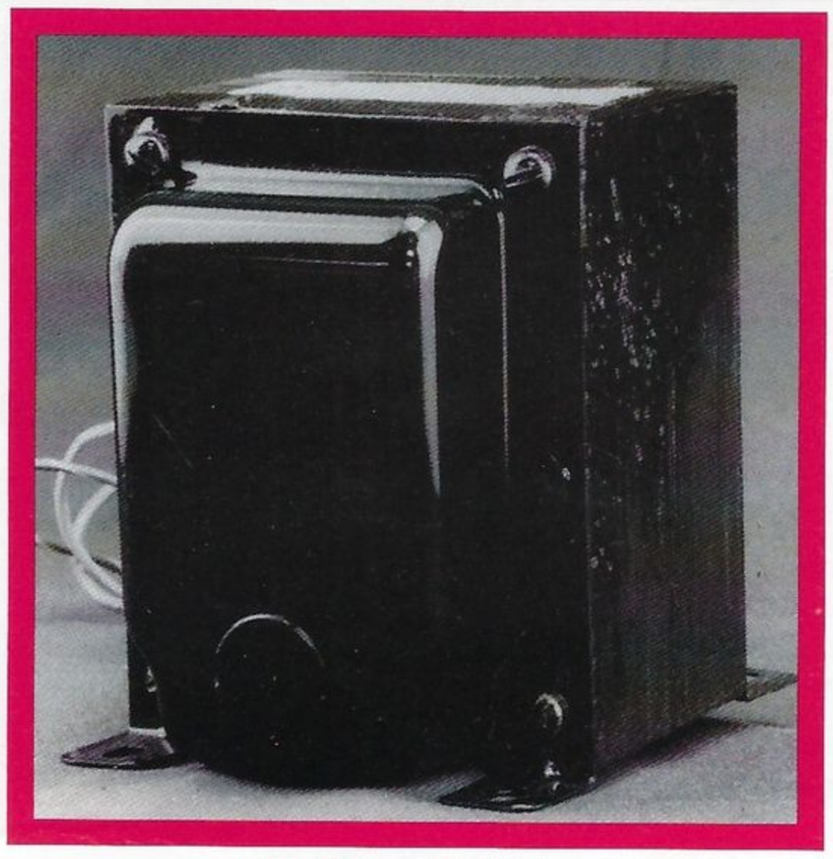
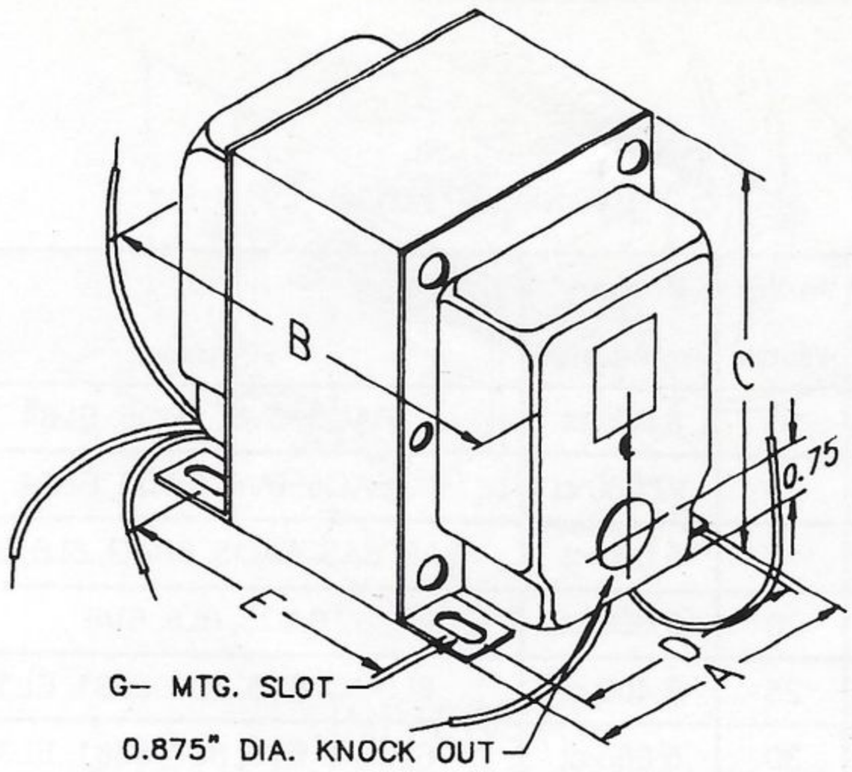
Push - Pull Audiophile Tube Output Transformers



PUSH - PULL
"CLASSIC" TUBE TYPE - ULTRA-LINEAR OUTPUT TRANSFORMERS

- Designed for push-pull tube output circuits.
- Enclosed (shielded), 4 slot, above chassis Type "X" mounting, both end bells include knockouts for optional above chassis wiring.
- Frequency response 30 Hz. to 30 Khz. at full rated power (+- 1 db max. ref. 1 Khz) minimum.
- Insulated flexible leads 8" min.
- All units include 40% screen taps for Ultra-Linear operation (if desired).
- Typical applications - Push-Pull: triode, Ultra-Linear pentode, pentode and tetrode connected audio output.
- For the "ultimate" in Push-Pull output see our line of epoxy potted output transformers.

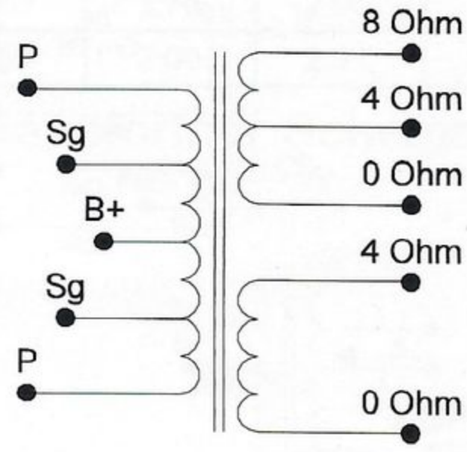
Cat. No.	Audio Watts	Primary Impedance	Secondary Impedance	Wt. Lbs.
1608	10	8,000 ct	4-8-16	2.5
1609	10	10,000 ct	4-8-16	2.5
1615	15	5,000 ct	4-8-16	3.25
1620	20	6,600 ct	4-8-16	3.5
1650F	25	3,400 ct	4-8-16	4
1645	30	5,000 ct	4-8-16	4.5
1650H	40	6,600 ct	4-8-16	6.5
1650K	50	5,000 ct	4-8-16	7
1650N	60	4,300 ct	4-8-16	8
1650P	60	6,600 ct	4-8-16	8
1650R	100	5,000 ct	4-8-16	12
1650T	120	1,900 ct	4-8-16	14
1650W	280	1,900 ct	4-8-16	28



Dimension Table

Cat. No.	A	B	C	D	E +-1/16"	G Slot
1608	2.5	2.75	3.06	2	1.69	.203 X .38
1609	2.5	2.75	3.06	2	1.69	.203 X .38
1615	2.5	3.25	3.06	2	2.19	.203 X .38
1620	2.5	3.5	3.06	2	2.44	.203 X .38
1650F	2.5	3.5	3.06	2	2.44	.203 X .38
1645	3.13	3.5	3.81	2.5	2.19	.203 X .38
1650H	3.13	4	3.81	2.5	2.69	.203 X .38
1650K	3.13	4	3.81	2.5	2.69	.203 X .38
1650N	3.13	4.25	3.81	2.5	2.94	.203 X .38
1650P	3.13	4.25	3.81	2.5	2.94	.203 X .38
1650R	3.75	4.25	4.56	3	3.06	.203 X .38
1650T	3.75	4.5	4.56	3	3.31	.203 X .38
1650W	4.38	7.5	5.25	3.5	5.88	.203 X .38

Transformer Schematic



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HAMMOND MANUFACTURING™

Push - Pull Audiophile Tube Output Transformers

1600 Series Continued...

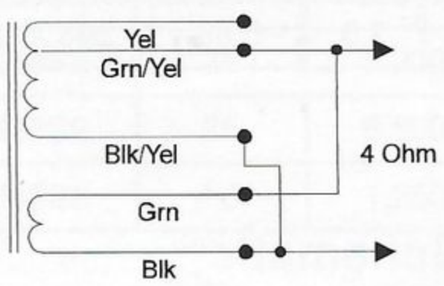
Suggested Tube Types

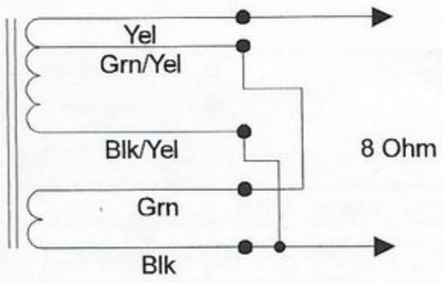
Cat. No.	Audio Watts	Primary Impedance	Tube Types
1608	10	8,000 ct	6AQ5, 6V6, 6BQ5, EL84
1609	10	10,000 ct	6AQ5, 6V6, 6BQ5, EL84
1615	15	5,000 ct	2A3, 6A3, 6AQ5, 6B4G, 6L6, 6V6
1620	20	6,600 ct	6AQ5, 6L6, 6V6
1650F	25	3,400 ct	6L6GC, 6V6, 807, 5881, EL34
1645	30	5,000 ct	6L6GC, 6V6, 807, 5881, EL34
1650H	40	6,600 ct	6L6GC, 807, 5881, EL34
1650K	50	5,000 ct	6L6GC, 807, 5881, EL34, 6146B, 6550B
1650N	60	4,300 ct	6L6GC, 807, 5881, EL34, 6146B, 6550B, KT88
1650P	60	6,600 ct	6L6GC, 807, 5881, EL34, 6146B, 6550B, KT88
1650R	100	5,000 ct	807, 5881, EL34, 6146B, 6550B, KT88
1650T	120	1,900 ct	6L6GC, 5881, EL34, 6550B, KT88
1650W	280	1,900 ct	6L6GC, 5881, EL34, 6550B, KT88

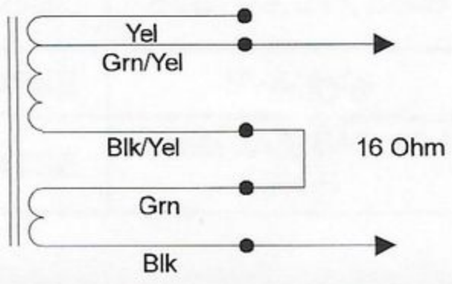
Notes: The above examples of possible combinations are to help you narrow down the choices of transformers for your favorite tube types. How you operate the tubes (push-pull, push-pull parallel, ultra-linear, class, B+, bias, operating points, etc.) will change optimum plate to plate load impedance. Only a few of the most popular tubes are shown. As more tubes become available we will add them to the list.

A tube manual or tube manufacturer's technical data sheets should be consulted first, before making a decision on a proper output transformer.

Secondary Connections





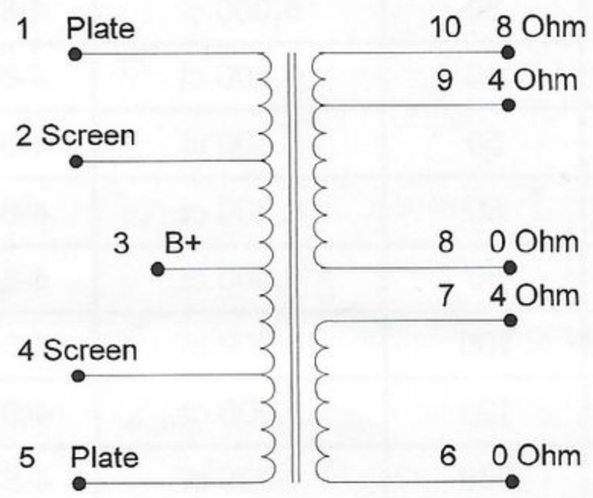


PUSH - PULL "CLASSIC" TUBE TYPE - ULTRA-LINEAR POTTED OUTPUT TRANSFORMERS

- Designed for push-pull tube output circuits.
- Enclosed in a drawn steel case, the transformer is completely potted in epoxy.
- Frequency response 30 Hz. to 30 Khz. at full rated power (+- 1 db max. ref. 1 Khz) minimum.
- Lead connection is via 10 bottom mounted lugs.
- All units include 40% screen taps for Ultra-Linear operation (if desired).
- Typical applications - Push-Pull: triode, Ultra-Linear pentode, pentode and tetrode connected audio output.

Cat. No.	Audio Watts	Primary Impedance	Secondary Impedance	Wt. Lbs.
1650KP	50	3,400 ct	4-8-16	11
1650PP	60	6,600 ct	4-8-16	12
1650RP	100	5,000 ct	4-8-16	18

Transformer Schematic



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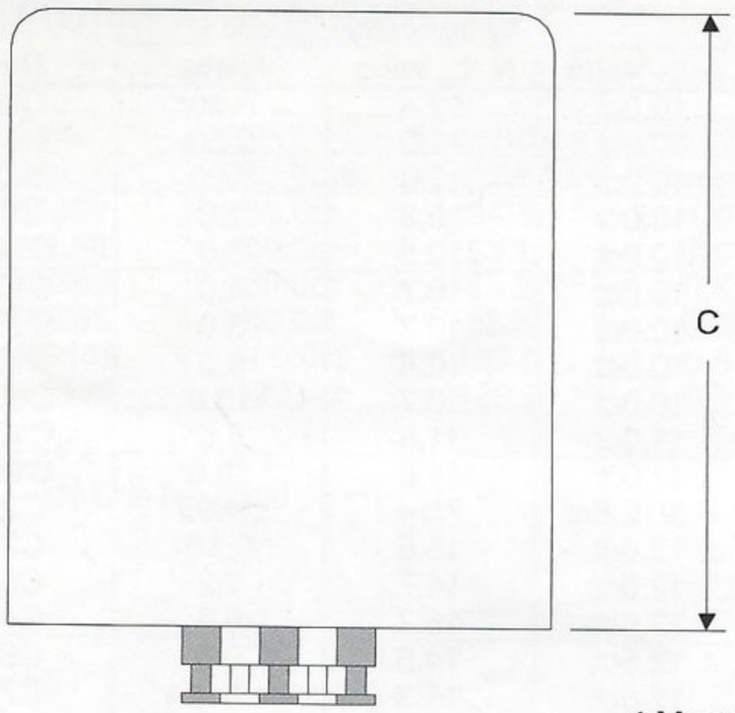
Push - Pull Audiophile & Universal Tube Output Transformers



Dimension Table

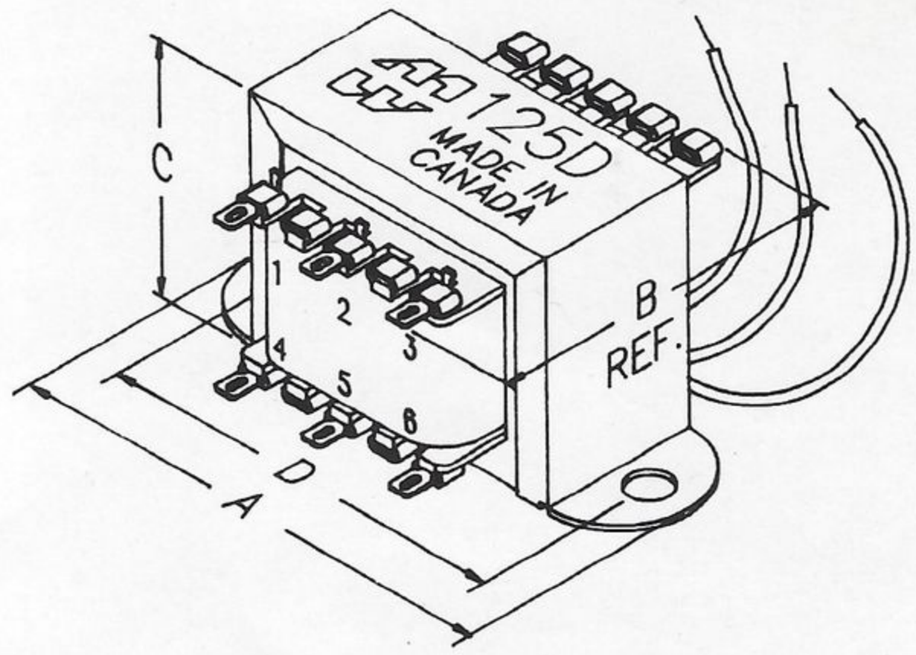
Cat. No.	A	B	C	D	E	F	G
1650KP	3.31	3.88	4.25	2.5	3	3.31	2.56
1650PP	3.31	3.88	4.25	2.5	3	3.31	2.56
1650RP	4.25	5	5.44	3.38	4.25	4.5	3.75

Suggested Tube Types

Cat. No.	Audio Watts	Primary Impedance	Tube Types
1650KP	50	5,000 ct	6L6GC, 807, 5881, EL34, 6146B, 6550B
1650PP	60	6,600 ct	6L6GC, 807, 5881, EL34, 6146B, 6550B, KT88
1650RP	100	5,000 ct	807, 5881, EL34, 6146B, 6550B, KT88

Notes: The above examples of possible combinations are to help you narrow down the choices of transformers for your favorite tube types. How you operate the tubes (push-pull, push-pull parallel, ultra-linear, class, B+, bias, operating points, etc.) will change optimum plate to plate load impedance. Only a few of the most popular tubes are shown. As more tubes become available we will add them to the list.

A tube manual or tube manufacturer's technical data sheets should be consulted first, before making a decision on a proper output transformer.



UNIVERSAL SINGLE ENDED OR PUSH-PULL OUTPUT TRANSFORMERS

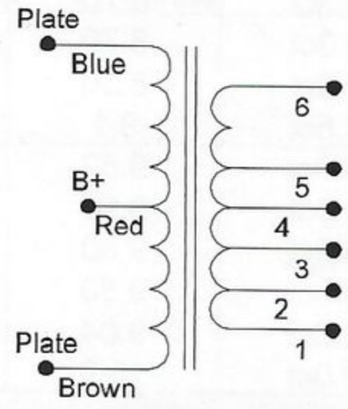
- Designed for general purpose or replacement use in single ended or push-pull tube output circuits.
- Open style with minimum 5" long primary leads, secondary solder lugs for convenient secondary connections.
- Tables provided with each transformer listing 90 precalculated impedance ratios.
- Primary impedances from 1,200 to 25,000 Ohms.
- Secondary impedances from 1.5 to 15 Ohms.

Cat. No.	Audio Watts	Max. DC Bias (ma.)	Wt. Lbs.
125A	3	25	0.19
125B	5	45	0.3
125C	8	60	0.5
125D	10	70	1
125E	15	80	1.5

Dimension Table

Cat. No.	A	B	C	D	G Mtg. Hole
125A	2.06	1.25	1.19	1.75	0.187
125B	2.38	1.38	1.38	2.00	0.187
125C	2.81	1.50	1.69	2.38	0.187
125D	3.25	1.75	2.00	2.81	0.187
125E	3.69	2.00	2.31	3.13	0.187

Transformer Schematic



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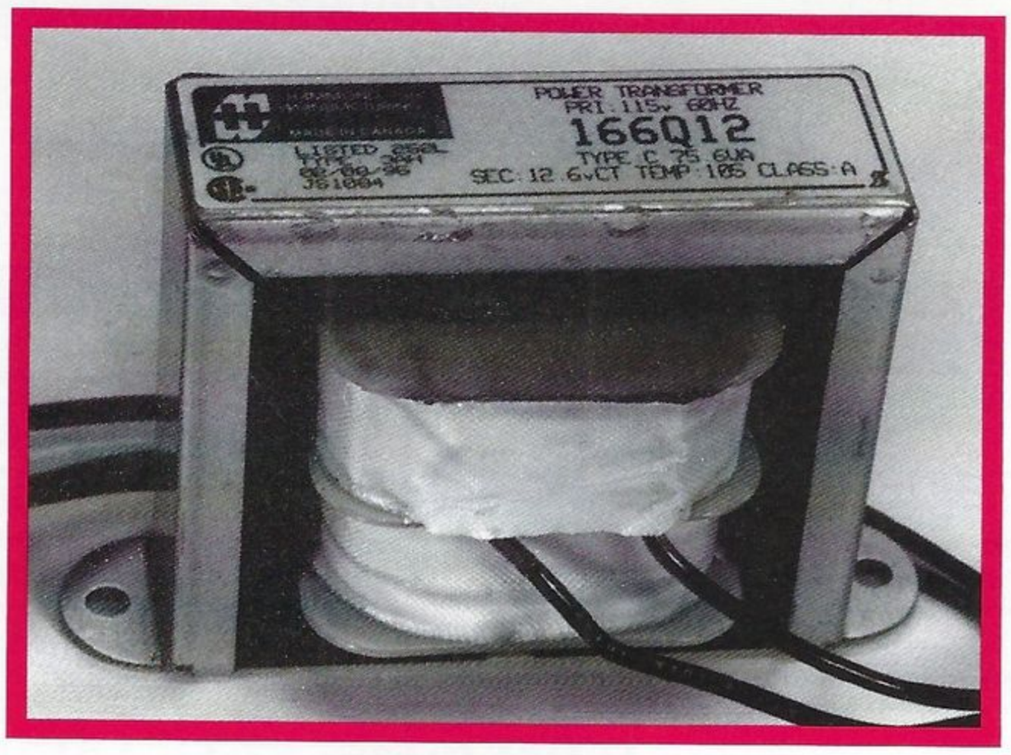
HAMMOND MANUFACTURING™

Filament & L.V. Rectifier Transformers



OPEN STYLE FILAMENT & L.V. RECTIFIER TRANSFORMERS

- Primary 115 VAC, 60 Hz.
- All secondaries center tapped.
- Open style, channel bracket, two hole chassis mount.
- Minimum 6" long leads.
- Dual bobbin design - no electrostatic shield required.
- Class A insulation (105 degrees, C)
- Hi-Pot test of 2,000V RMS.
- UL listed & CSA certified.

Cat. No.	Secondary			Dim. Ref.
	F. L. Volts	N. L. Volts	Amps	
166F2	2.5ct	3.37	0.25	C2H
166G2	2.5ct	3.09	0.50	C2H
166J2	2.5ct	3.10	1.00	C3H
166K2	2.5ct	3.20	1.50	C4H
166L2	2.5ct	2.90	2.50	C6H
166Q2	2.5ct	3.03	6.00	C8H
166F5	5.0ct	6.11	0.25	C2H
166G5	5.0ct	5.83	0.50	C3H
166J5	5.0ct	6.17	1.00	C5H
166L5	5.0ct	5.50	2.00	C7H
166R5	5.0ct	5.35	8.00	C12H
166S5	5.0ct	5.35	10.0	C13H
166U5	5.0ct	5.30	15.0	C14H
166V5	5.0ct	5.30	20.0	C16H
166E6	6.3ct	7.45	0.15	C2H
166F6	6.3ct	7.10	0.30	C3H
166G6	6.3ct	7.80	0.60	C4H
166J6	6.3ct	7.10	1.00	C6H
166K6	6.3ct	7.25	1.20	C6H
166L6	6.3ct	7.14	2.00	C7H
166N6	6.3ct	6.90	4.00	C9H
166Q6	6.3ct	6.70	6.00	C12H
166S6	6.3ct	6.70	10.0	C14H
166G7	7.0ct	8.30	0.70	C5H
166U7	7.5ct	8.1	15.0	C16H
166G8	8.0ct	9.52	0.50	C4H
166J8	8.5ct	9.60	1.00	C6H
166L8	8.5ct	9.60	2.00	C8H
166M8	8.5ct	9.50	3.00	C9H
166N8	8.5ct	9.04	4.00	C10H
166G9	9.0ct	10.9	0.50	C4H

Cat. No.	Secondary			Dim. Ref.
	F. L. Volts	N. L. Volts	Amps	
166F10	10.0ct	12.4	0.30	C3H
166G10	10.0ct	11.0	0.50	C5H
166J10	10.0ct	11.0	1.00	C7H
166L10	10.0ct	10.8	2.0	C9H
166M10	10.0ct	10.5	3.0	C10H
166N10	10.0ct	10.7	4.0	C12H
166P10	10.0ct	10.7	5.0	C13H
166R10	10.0ct	10.6	8.0	C15H
166S10	10.0ct	10.7	10.0	C16H
166P11	11.0ct	11.8	5.0	C13H
166S11	11.0ct	11.8	10.0	C16H
166C12	6.3/12.6ct	7/14	.1/.05	C2H
166E12	12.0ct	15.5	0.15	C3H
166K12	12.0ct	14.7	1.2	C8H
166F12	12.6ct	15.7	0.3	C4H
166G12	12.6ct	14.5	0.5	C6H
166J12	12.6ct	14.3	1.0	C7H
166L12	12.6ct	13.8	2.5	C10H
166N12	12.6ct	13.4	4.0	C13H
166Q12	12.6ct	13.6	6.0	C14H
166R12	12.6ct	13.3	8.0	C16H
166E14	14.0ct	17.5	0.15	C3H
166G14	14.0ct	16.1	0.5	C6H
166J14	14.0ct	16.0	1.0	C7H
166L14	14.0ct	16.0	2.0	C10H
166Q14	14.0ct	15.1	6.0	C15H
166F16	16.0ct	18.6	0.25	C4H
166G16	16.0ct	18.0	0.5	C6H
166J16	16.0ct	17.6	1.0	C8H
166L16	16.0ct	17.0	2.2	C10H
166M16	16.0ct	17.4	3.0	C13H
166B18	9.0/18.0ct	10/20	.06/.03	C2H
166K18	18.0ct	19.6	1.5	C9H
166M18	18.0ct	19.4	3.0	C13H
166P18	18.0ct	18.7	5.0	C15H
166D20	20.0ct	24.6	0.1	C3H
166E20	20.0ct	23.5	0.15	C3H
166F20	20.0ct	22.8	0.3	C5H
166G20	20.0ct	22.0	0.5	C7H
166J20	20.0ct	22.0	1.0	C9H
166L20	20.0ct	21.4	2.0	C11H
166A24	12.6/25.2ct	14/28	.05/.025	C2H
166C24	24.0ct	25.3	.085	C3H
166L24	24.0ct	26.7	2.0	C13H
166N24	24.0ct	25.6	4.0	C16H
166D25	25.0ct	28.8	0.1	C3H
166E25	25.0ct	30.8	0.15	C4H
166F25	25.0ct	29.0	0.3	C6H
166G25	25.0ct	28.0	0.5	C7H
166J25	25.0ct	27.5	1.0	C9H
166K25	25.0ct	26.8	1.5	C11H
166L25	25.0ct	28.1	2.0	C13H
166M25	25.0ct	26.6	3.0	C14H
166F28	28.0ct	31.7	0.25	C6H
166G28	28.0ct	32.0	0.5	C7H
166J28	28.0ct	30.8	1.0	C10H
166L28	28.0ct	29.8	2.0	C13H
166E30	30.0ct	37.4	0.15	C4H
166F30	30.0ct	36.1	0.25	C6H
166G30	30.0ct	34.2	0.50	C8H
166J33	33.0ct	35.0	1.0	C10H
166K35	35.0ct	39.0	1.5	C13H
166E36	36.0ct	40.7	0.15	C5H
166F36	36.0ct	39.4	0.3	C7H
166G36	36.0ct	40.0	0.5	C8H
166J36	36.0ct	39.5	1.0	C11H
166L42	42.0ct	43.9	2.0	C15H
166E44	44.0ct	51.6	0.15	C6H
166F44	44.0ct	50.6	0.25	C7H
166G44	44.0ct	48.1	0.50	C9H
166J44	44.0ct	47.4	1.0	C12H
166C50	50.0ct	62.0	0.075	C4H
166F50	50.0ct	57.0	0.3	C8H
166G50	50.0ct	55.0	0.5	C9H

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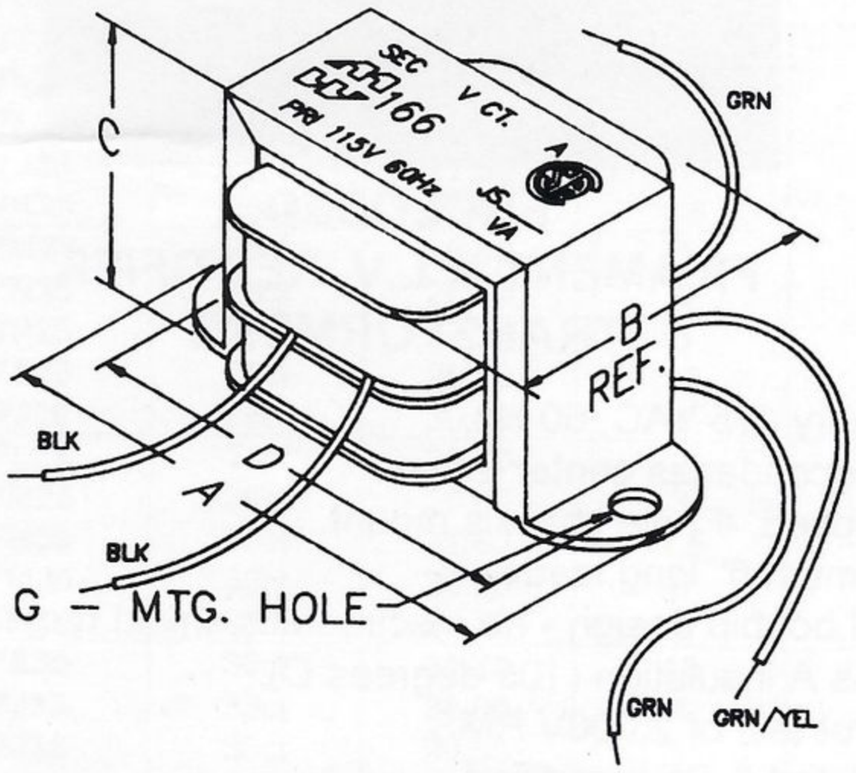
166 Series Continued...

Cat. No.	Secondary			Dim. Ref.
	F. L. Volts	N. L. Volts	Amps	
166J50	50.0ct	54.5	1.0	C13H
166L50	50.0ct	53.2	2.0	C16H
166G60	60.0ct	65.2	0.5	C10H
166G80	80.0ct	85.5	0.5	C11H
166G100	100.0ct	107.0	0.5	C13H
166F120	120.0ct	129.2	0.3	C11H

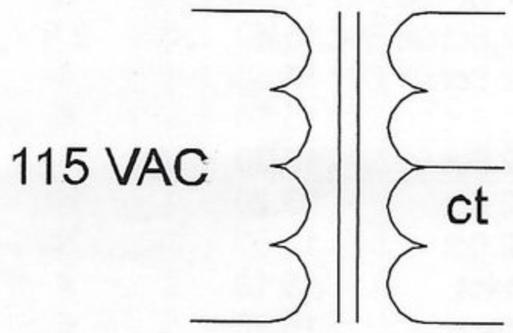
NOTES: F.L. = Full Load
N.L. = No Load



Dimension Table

Mtg. Style	Dimensions				Mtg. Hole
	A	B	C	D	
C0H	1.35	0.69	0.69	1.06	0.125
C1H	1.63	0.88	0.81	1.38	0.125
C2H	2.06	1.25	1.19	1.75	0.187
C3H	2.06	1.38	1.19	1.75	0.187
C4H	2.38	1.38	1.38	2.00	0.187
C5H	2.38	1.50	1.38	2.00	0.187
C6H	2.81	1.50	1.69	2.38	0.187
C7H	2.81	1.63	1.69	2.38	0.187
C8H	3.25	1.63	2.00	2.81	0.187
C9H	3.25	1.75	2.00	2.81	0.187
C10H	3.25	2.00	2.00	2.81	0.187
C11H	3.69	1.88	2.31	3.13	0.187
C12H	3.69	2.00	2.31	3.13	0.187
C13H	3.69	2.13	2.31	3.13	0.187
C14H	4.03	2.25	2.63	3.56	0.187
C15H	4.03	2.50	2.63	3.56	0.187
C16H	4.50	2.50	2.88	4.00	0.203

Transformer Schematic



HIGH CURRENT - OPEN FRAME FILAMENT & L.V. RECTIFIER TRANSFORMERS

- Primary 115 VAC, 60 Hz.
- All secondaries center tapped.
- Open style, 4 hole frame chassis mount.
- Minimum 6" long leads or copper tabs with holes.
- Dual bobbin design - no electrostatic shield required.
- Class A insulation (105 degrees, C).
- Hi-Pot test of 2,000V RMS.
- UL listed & CSA certified.

Cat. No.	Secondary			Dim. Ref.
	F. L. Volts	N. L. Volts	Amps	
165Z3	3.0ct	3.12	50	H10
165X5	5.0ct	5.3	30	H9
165V7	7.5ct	8	21	H9
165V10	10.0ct	10.7	20	H10
165U11	11.0ct	11.7	15	H9
165S12	12.6ct	13.2	10	H7
165V12	12.6ct	13	20	H12
165S18	18.0ct	18.8	10	H10
165U18	18.0ct	18.8	15	H16
165V18	18.0ct	18.5	20	H18
165T22	22.0ct	22.3	12	H16
165V22	22.0ct	22.5	20	H19
165P25	25.0ct	27.2	5	H7
165S25	25.0ct	26.1	10	H12
165P30	30.0ct	31.4	5	H7
165S30	30.0ct	31.4	10	H16
165P60	60.0ct	62	5	H16
165N80	80.0ct	82.5	4	H18

NOTES: F.L. = Full Load
N.L. = No Load

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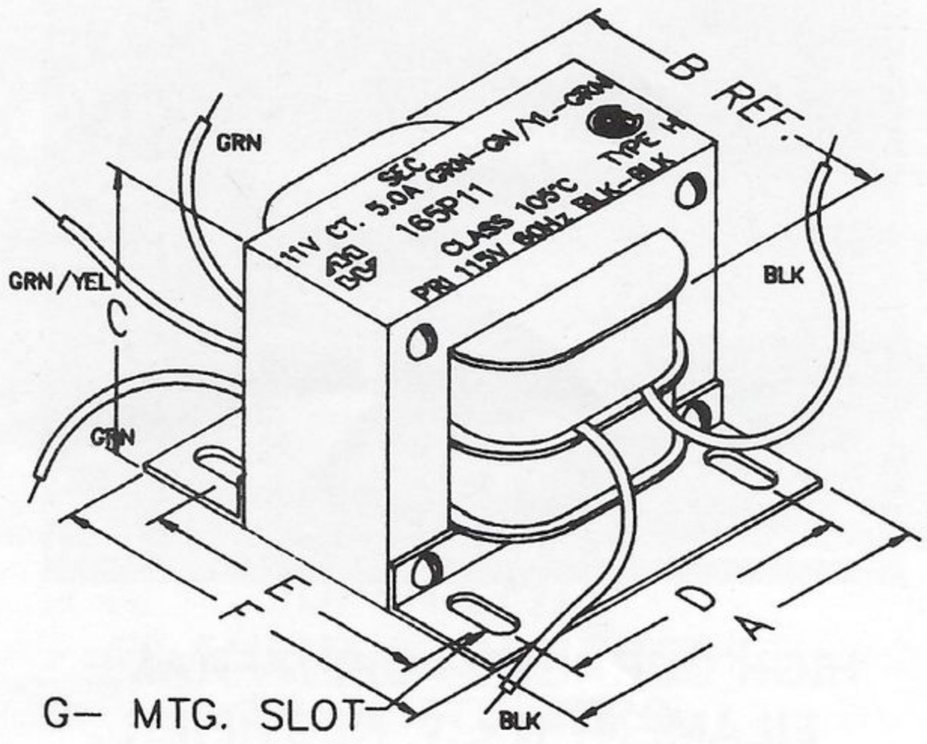
HAMMOND MANUFACTURING™

Filament & L.V. Rectifier Transformers

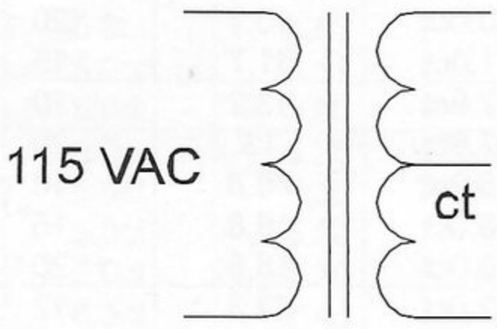
165 Series Continued...



Dimension Table

Mtg. Style	Dimensions						Mtg. Slot
	A	B	C	D	E	F	
H7	3.00	3.25	2.56	2.50	3.25	4.00	.22 x .56
H9	3.75	2.63	3.13	3.13	2.50	3.25	.22 x .56
H10	3.75	3.13	3.13	3.13	2.75	3.50	.22 x .56
H12	3.75	3.63	3.13	3.13	3.25	4.00	.22 x .56
H16	4.50	3.88	3.75	3.75	2.75	3.50	.28 x .56
H18	4.50	4.38	3.75	3.75	3.25	4.00	.28 x .56
H19	4.50	4.38	3.75	3.75	3.75	4.50	.28 x .56

Transformer Schematic



ENCLOSED FILAMENT & L.V. RECTIFIER TRANSFORMERS

- Primary 115 VAC, 60 Hz.
- All secondaries center tapped.
- Enclosed, 4 hole chassis mount.
- Minimum 6" long leads.
- Dual bobbin design - no electrostatic shield required.
- Class A insulation (105 degrees C).
- Hi-Pot test of 2,000V RMS.
- UL listed & CSA certified.

Cat. No.	Secondary			Dim. Ref.
	F. L. Volts	N. L. Volts	Amps	
167M5	5ct	5.40	3	X1
167Q5	5ct	5.43	6	X2
167R5	5ct	5.35	8	X4
167S5	5ct	5.35	10	X5
167U5	5ct	5.30	15	X6
167V5	5ct	5.30	20	X8
167X5	5ct	5.30	30	X10
167N6	6.3ct	6.90	4	X2
167Q6	6.3ct	6.70	6	X3
167R6	6.3ct	6.74	8	X5
167S6	6.3ct	6.70	10	X6
167T6	6.3ct	6.80	12	X6
167U6	6.3ct	6.75	16	X8
167U7	7.5ct	8.10	15	X8
167V7	7.5ct	8.00	21	X10
167N10	10ct	10.70	4	X4
167P10	10ct	10.70	5	X5
167R10	10ct	10.60	8	X7
167S10	10ct	10.70	10	X8
167P11	11ct	11.80	5	X6
167S11	11ct	11.80	10	X8
167U11	11ct	11.70	15	X10
167L12	12.6ct	13.80	2.5	X2
167N12	12.6ct	13.40	4	X5
167Q12	12.6ct	13.60	6	X6
167R12	12.6ct	13.30	8	X8
167S12	12.6ct	13.20	10	X9
167V12	12.6ct	13.00	20	X13
167N14	14ct	15.10	4	X6
167Q14	14ct	15.10	6	X7

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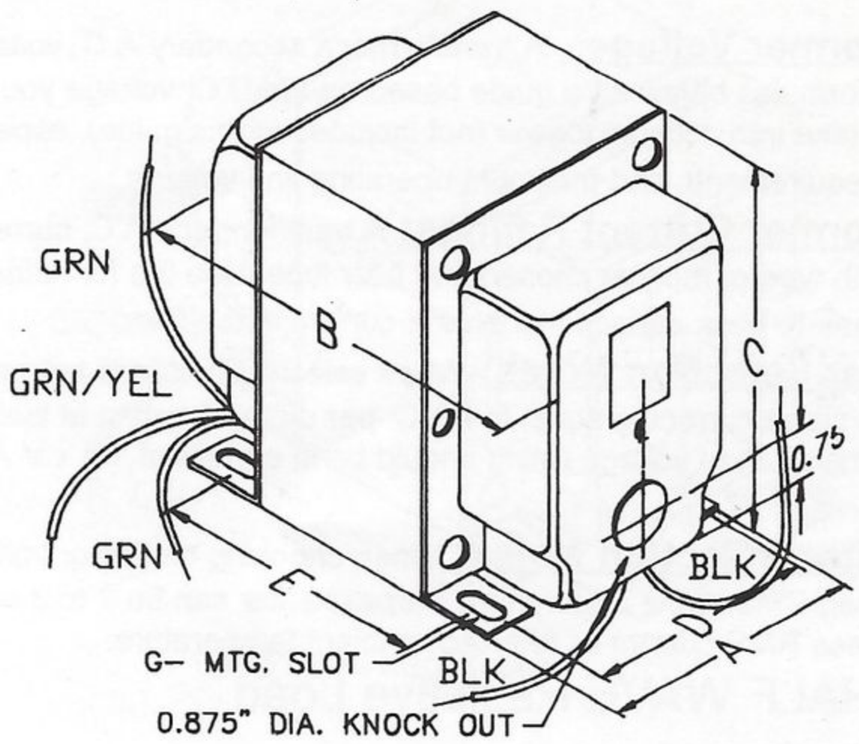
167 Series Continued...

Cat. No.	Secondary			Dim. Ref.
	F. L. Volts	N. L. Volts	Amps	
167M16	16ct	17.40	3	X5
167P16	16ct	17.40	5	X7
167M18	18ct	19.40	3	X6
167P18	18ct	18.70	5	X7
167S18	18ct	18.80	10	X11
167U18	18ct	18.80	15	X13
167V18	18ct	18.50	20	X14
167M20	20ct	20.80	3	X6
167P20	20ct	21.00	5	X8
167U20	20ct	21.40	16	X14
167T22	22ct	22.30	12	X13
167V22	22ct	22.50	20	X15
167L24	24ct	25.60	2	X5
167J25	25ct	27.50	1	X2
167K25	25ct	26.80	1.5	X3
167M25	25ct	26.60	3	X6
167N25	25ct	26.60	4	X8
167P25	25ct	27.20	5	X9
167S25	25ct	26.10	10	X13
167J28	28ct	30.80	1	X2
167L28	28ct	29.80	2	X6
167M28	28ct	29.60	3	X7
167K30	30ct	31.60	1.5	X4
167M30	30ct	32.00	3	X7
167P30	30ct	31.40	5	X10
167S30	30ct	31.40	10	X13
167J33	33ct	35.00	1	X2
167J36	36ct	39.50	1	X3
167L36	36ct	38.30	2	X6
167M36	36ct	37.90	3	X8
167P36	36ct	38.20	5	X11
167R36	36ct	37.40	8	X13
167T36	36ct	38.00	12	X15
167L44	44ct	46.00	2	X7
167J50	50ct	54.50	1	X5
167L50	50ct	53.20	2	X8
167P50	50ct	51.80	5	X13
167G55	55ct	59.70	0.5	X2
167J55	55ct	58.70	1	X6
167L55	55ct	58.50	2	X8
167G60	60ct	65.20	0.5	X2
167J60	60ct	63.50	1	X6
167L60	60ct	64.00	2	X9
167M60	60ct	62.20	3	X11
167P60	60ct	62.00	5	X13
167S64	64ct	67.00	10	X16
167L70	70ct	73.00	2	X9
167N70	70ct	72.00	4	X13
167G80	80ct	85.50	0.5	X4
167J80	80ct	84.50	1	X7
167L80	80ct	82.70	2	X10
167N80	80ct	82.50	4	X6
167G100	100ct	107.00	0.5	X5
167J100	100ct	106.50	1	X8
167P100	100ct	103.70	5	X16
167G120	120ct	127.00	0.5	X6
167H200	200ct	212.00	0.87	X11

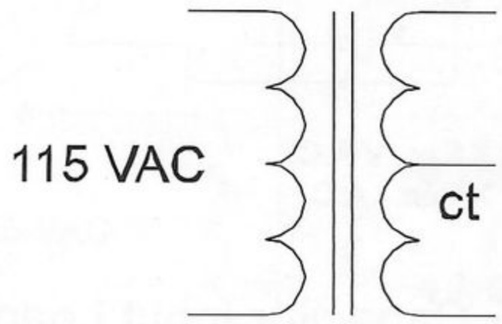
NOTES: F.L. = Full Load
N.L. = No Load



Dimension Table

Mtg. Style	Dimensions					G - Mtg. Slot
	A	B	C	D	E	
X1	1.88	2.19	2.50	1.50	1.31	.19 X .31
X2	1.88	2.44	2.50	1.50	1.56	.19 X .31
X3	2.19	2.38	2.63	1.75	1.31	.19 X .25
X4	2.19	2.50	2.63	1.75	1.44	.19 X .25
X5	2.19	2.63	2.63	1.75	1.56	.19 X .25
X6	2.50	2.75	3.06	2.00	1.69	.203 X .38
X7	2.50	3.00	3.06	2.00	1.94	.203 X .38
X8	2.50	3.25	3.06	2.00	2.19	.203 X .38
X9	2.50	3.75	3.06	2.00	2.69	.203 X .38
X10	3.13	3.50	3.81	2.50	2.19	.203 X .38
X11	3.13	3.75	3.81	2.50	2.44	.203 X .38
X13	3.75	4.00	4.56	3.00	2.81	.203 X .38
X14	3.75	4.50	4.56	3.00	3.31	.203 X .38
X15	3.75	5.00	4.56	3.00	3.81	.203 X .38
X16	3.75	5.50	4.56	3.00	4.31	.203 X .38

Transformer Schematic



TRANSFORMER GUIDE

TRANSFORMER SELECTION GUIDE

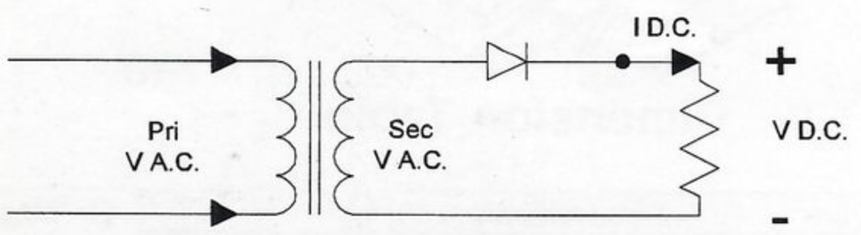
Transformer Voltage: A transformer's secondary A.C. voltage required varies greatly with the type of rectifier chosen and filter arrangement. Use the formulas below as a guide based on the D.C. voltage you require and the rectifier/filter chosen. All A.C. voltage references are R.M.S. Don't forget to take into account losses (not included in this guide), especially diode voltage drop. Leave an adequate safety margin for D.C. regulator voltage requirements and minimum operating line voltage.

Transformer Current Ratings: A transformer's A.C. current rating needs to be recalculated from the D.C. load current. The required current varies with type of rectifier chosen and filter type. Use the formulas below as a guide, shown for common D.C. supplies. Included in the formulas is higher peak to peak capacitor charging current in the filter.

Rectifier Selection Notes: When selecting rectifiers remember, average current in a full wave circuit is .5 x I D.C. per diode. In a half wave circuit, average current is equal to I D.C. per diode. A rating at least twice the output current is recommended to cover turn on surge. In full wave circuits, the reverse voltage rating should be in excess of 1.4 x V A.C. In half wave circuits, the reverse voltage rating should be in excess of 2.8 x V A.C.

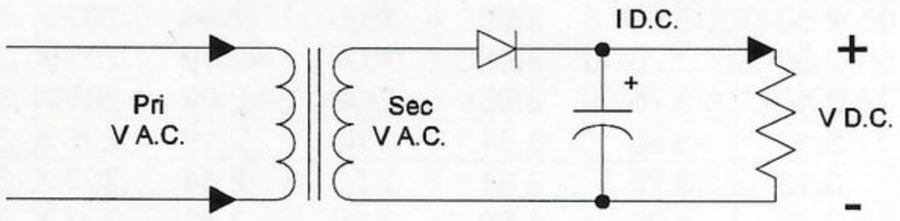
Capacitor Selection Notes: When choosing capacitor voltage, allowances should be made for D.C. voltage rise due to transformer regulation. Remember, RMS ripple current in a filter capacitor can be 2 to 3 times D.C. load current. Capacitor life is greatly increased by reducing it's temperature via less RMS current or reduced ambient temperature.

HALF WAVE Resistive Load



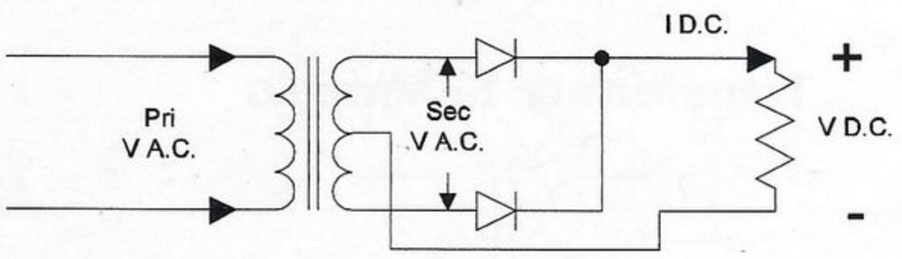
V D.C. = 0.45 X Sec. V A.C.
I D.C. = 0.64 X Sec. I A.C.

HALF WAVE Capacitor Input Load



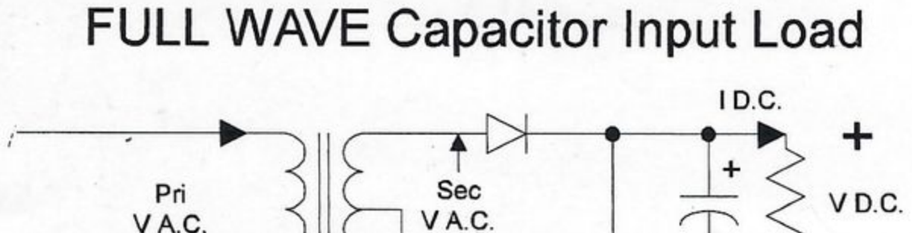
V (Peak) D.C. = 1.41 X Sec. V A.C.
V (Avg) D.C. = 0.90 X Sec. V A.C.
I D.C. = 0.28 X Sec. I A.C.

FULL WAVE Resistive Load



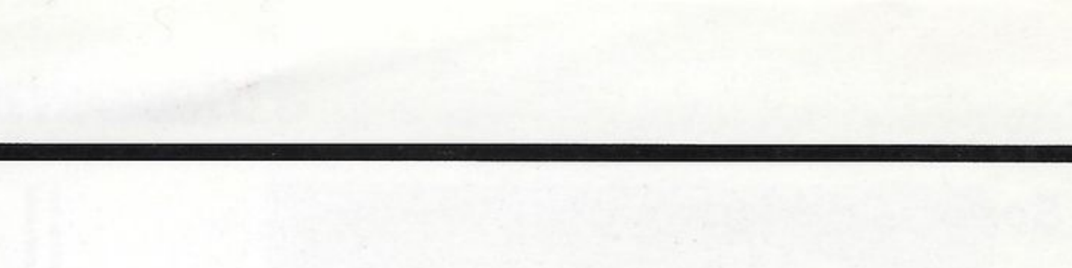
V D.C. = 0.45 X Sec. V A.C.
I D.C. = 1.27 X Sec. I A.C.

FULL WAVE Capacitor Input Load



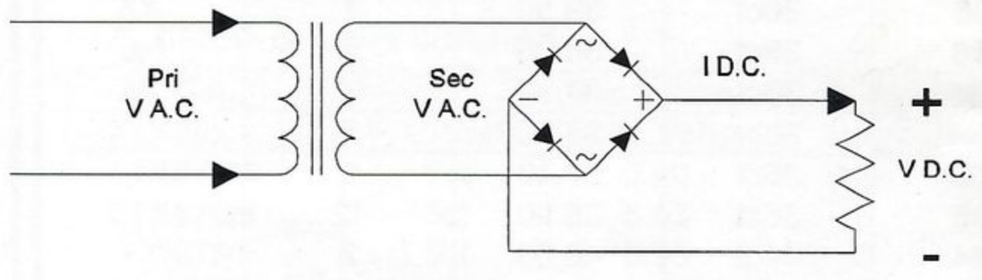
V (Peak) D.C. = 0.71 X Sec. V A.C.
V (Avg) D.C. = 0.45 X Sec. V A.C.
I D.C. = 1.00 X Sec. I A.C.

FULL WAVE Choke Input Load



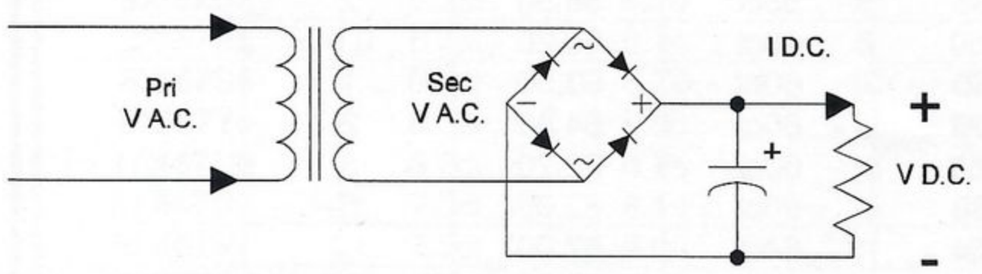
V (Peak) D.C. = 0.45 X Sec. V A.C.
V (Avg) D.C. = 0.45 X Sec. V A.C.
I D.C. = 1.54 X Sec. I A.C.

FULL WAVE BRIDGE Resistive Load



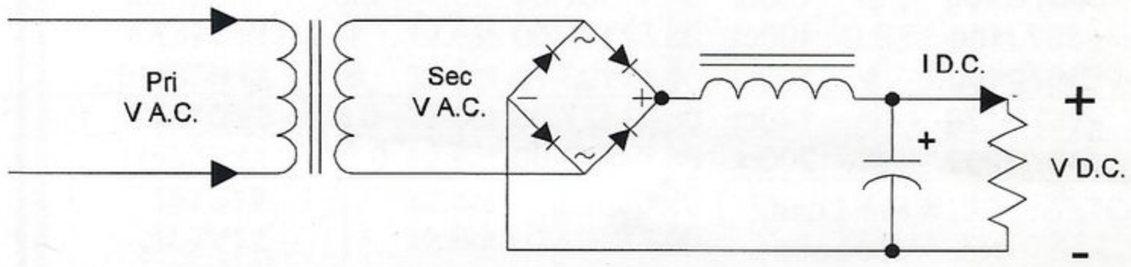
V D.C. = 0.90 X Sec. V A.C.
I D.C. = 0.90 X Sec. I A.C.

FULL WAVE BRIDGE Capacitor Input Load



V (Peak) D.C. = 1.41 X Sec. V A.C.
V (Avg) D.C. = 0.90 X Sec. V A.C.
I D.C. = 0.62 X Sec. I A.C.

FULL WAVE BRIDGE Choke Input Load



V (Peak) D.C. = 0.90 X Sec. V A.C.
V (Avg) D.C. = 0.90 X Sec. V A.C.
I D.C. = 0.94 X Sec. I A.C.

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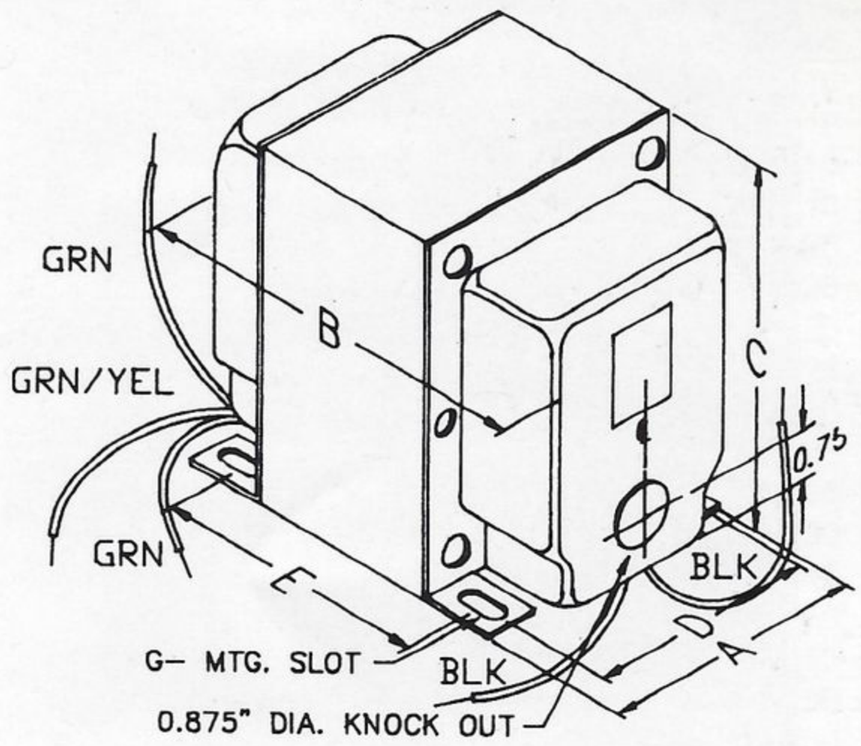
ENCLOSED PLATE & FILAMENT POWER TRANSFORMERS

- Primary 115 VAC, 60 Hz.
- H.V. DC current below, measured with cap. input filter.
- Enclosed, 4 hole chassis mount.
- Minimum 6" long leads.
- Class A insulation (105 degrees C).
- Hi-Pot test of 2,000V RMS.
- Conservative designs are CSA certified.

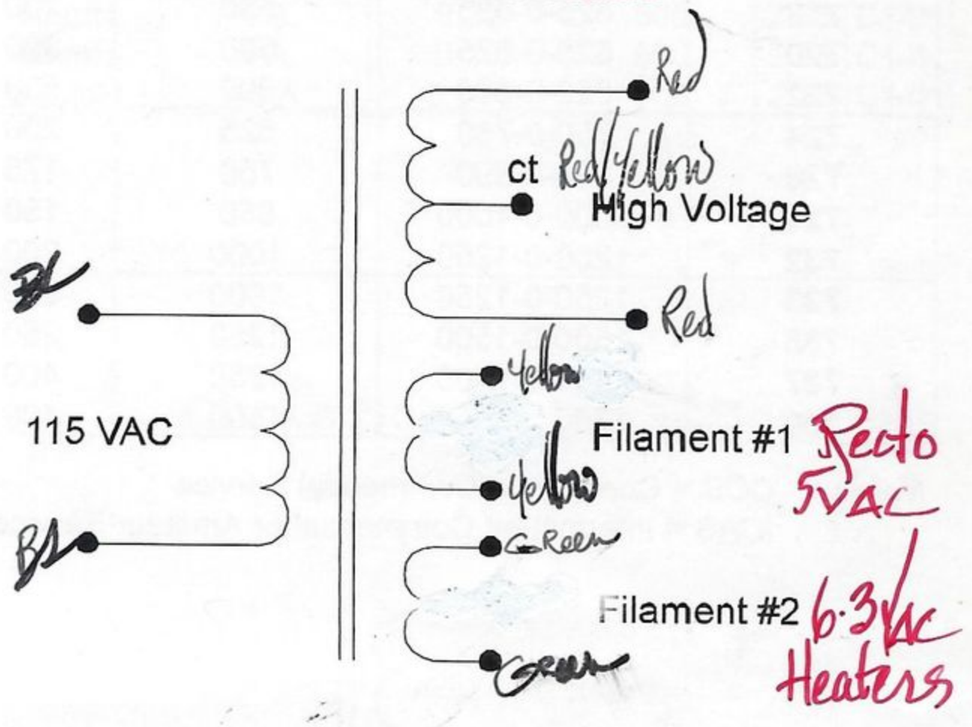
Cat. No.	VA	Secondary R.M.S.	DC ma.	Fil. #1 (Rectifier)	Fil. #2 (Heater)	Dim. Ref.
263AX	32	100-0-100	100	5.0 v., 2a	-	X2
263CX	116	180-0-180	250	5.0 v., 3a ct	-	X9
269AX	40	125-0-125	100	-	6.3 v., 2.0 a	X4
269BX	38	150-0-150	75	-	6.3 v., 2.0 a	X4
269EX	43	190-0-190	65	-	6.3 v., 2.5 a	X5
269GX	48	225-0-225	65	-	6.3 v., 2.5 a	X5
269JX	50	250-0-250	60	-	6.3 v., 2.5 a	X5
270X	41	240-0-240	40	5.0 v., 2a	6.3 v., 1.5 a	X4
270AX	42	240-0-240	50	-	6.3 v., 2.5 a	X4
270BX	53	275-0-275	50	5.0 v., 2a	6.3 v., 2.0 a	X6
270CX	59	275-0-275	65	6.3 v., 0.6 a	6.3 v., 2.5 a	X6
270DX	83	275-0-275	90	5.0 v., 2a	6.3 v., 3.0 a	X7
270EX	118	275-0-275	125	5.0 v., 3a	6.3 v., 4.0 a	X9
270FX	138	275-0-275	150	5.0 v., 3a	6.3 v., 5.0 a ct	X10
270HX	176	275-0-275	200	5.0 v., 3a ct	6.3 v., 6.0 a ct	X19
271X	63	280-0-280	60	5.0 v., 2a	6.3 v., 2.0 a ct	X6
272X	74	310-0-310	70	5.0 v., 2a	6.3 v., 2.4 a	X7
272BX	95	300-0-300	100	5.0 v., 2a	6.3 v., 3.0 a	X8
272DX	123	300-0-300	125	5.0 v., 3a	6.3 v., 4.0 a	X9
272FX	146	300-0-300	150	5.0 v., 3a ct	6.3 v., 5.0 a ct	X10
272HX	186	300-0-300	200	5.0 v., 3a ct	6.3 v., 6.0 a ct	X19
272JX	236	300-0-300	250	5.0 v., 4 a ct	6.3 v., 8.0 a ct	X13
273X	120	350-0-350	110	5.0 v., 2a	6.3 v., 4.0 a ct	X9
273BX	182	350-0-350	175	5.0 v., 3a	6.3 v., 5.0 a ct	X19
274X	138	375-0-375	110	5.0 v., 3a	6.3 v., 5.0 a ct	X10
274BX	198	375-0-375	175	5.0 v., 3a ct	6.3 v., 6.0 a ct	X19
275X	167	400-0-400	135	5.0 v., 3a ct	6.3 v., 5.0 a ct	X11
276X	150	320-0-320	150	5.0 v., 3a ct	6.3 v., 5.0 a ct	X10
278X	229	400-0-400	200	5.0 v., 3a ct	6.3 v., 6.0 a ct	X19
278CX	454	400-0-400	465	-	6.3 v., 6.0 a ct	X15
279X	186	425-0-425	150	5.0 v., 3a	6.3 v., 5.0 a ct	X19
282X	273	500-0-500	200	5.0 v., 3a ct	6.3 v., 6.0 a ct	X14



Dimension Table

Mtg. Style	Dimensions					G - Mtg. Slot
	A	B	C	D	E	
X2	1.88	2.44	2.50	1.50	1.56	.19 X .31
X4	2.19	2.50	2.63	1.75	1.44	.19 X .25
X5	2.19	2.63	2.63	1.75	1.56	.19 X .25
X6	2.50	2.75	3.06	2.00	1.69	.203 X .38
X7	2.50	3.00	3.06	2.00	1.94	.203 X .38
X8	2.50	3.25	3.06	2.00	2.19	.203 X .38
X9	2.50	3.75	3.06	2.00	2.69	.203 X .38
X10	3.13	3.50	3.81	2.50	2.19	.203 X .38
X11	3.13	3.75	3.81	2.50	2.44	.203 X .38
X13	3.75	4.00	4.56	3.00	2.81	.203 X .38
X14	3.75	4.50	4.56	3.00	3.31	.203 X .38
X15	3.75	5.00	4.56	3.00	3.81	.203 X .38
X19	3.13	4.00	3.81	2.50	2.69	.203 X .38

Transformer Schematic



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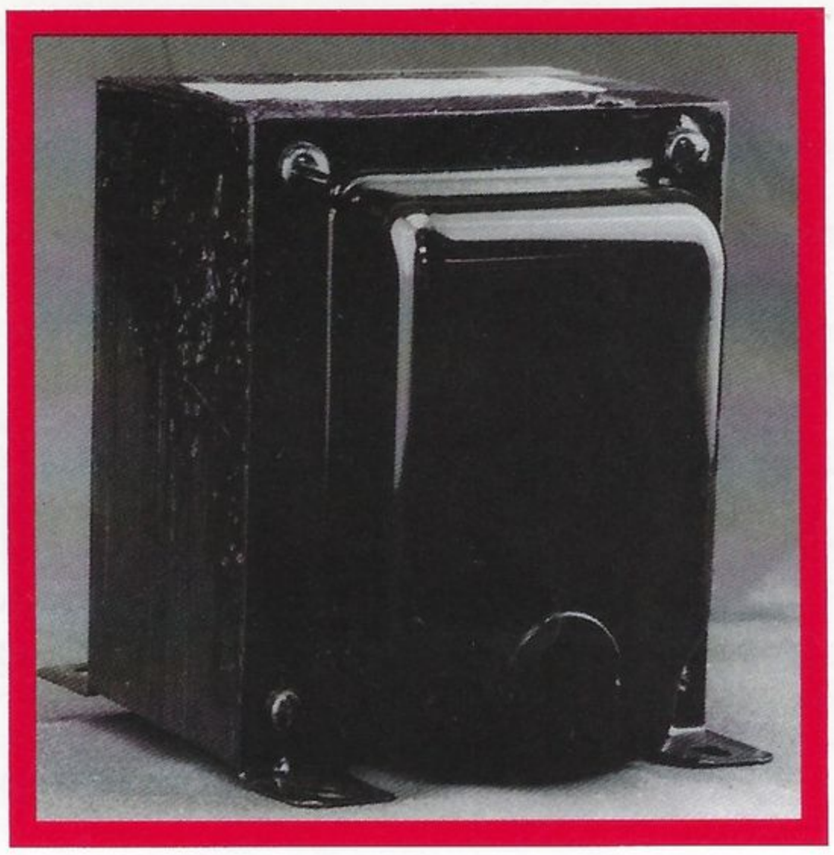
HAMMOND MANUFACTURING™

Plate Transformers



ENCLOSED
PLATE TRANSFORMERS

- Primary 115 VAC, 50/60 Hz.
- Above 1,000 VAC secondary, secondary leads through rubber bushings (figure B).
- Units can be run full wave bridge or full wave C.T.
- Enclosed, 4 hole chassis mount.
- Minimum 6" long leads.
- Class A insulation (105 degrees C).
- Hi-Pot test at a minimum of twice secondary voltage
- Conservative designs are CSA certified.

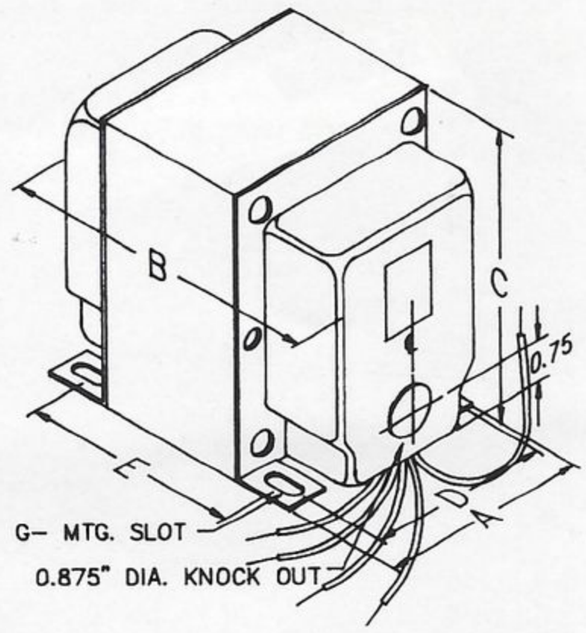


Fig. A

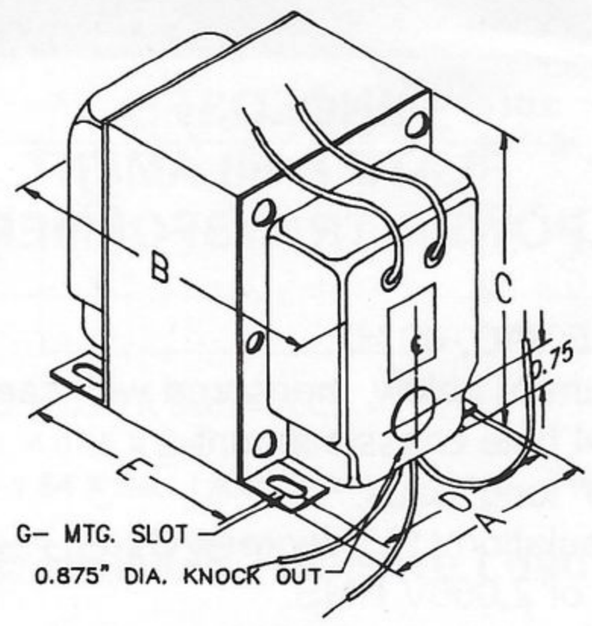
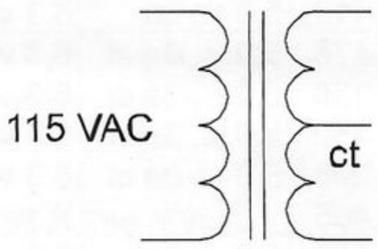


Fig. B

Cat. No.	Secondary R.M.S. Volts	DC Volts Choke Input	DC ma. CCS	DC ma. ICAS	Dwg. Type	Dimensions					Wt. Lb.
						A	B	C	D	E	
710	375-0-375	300	300	450	A	3.75	4.13	4.50	3.00	2.25	7.2
712	425-0-425	350	300	450	A	3.75	4.63	4.50	3.00	2.75	8.8
714	510-0-510	400	170	250	A	3.13	3.75	3.75	2.50	2.38	5.5
715	510-0-510	400	300	450	A	3.75	4.63	4.50	3.00	2.75	9
717	510-0-510	400	500	750	A	5.00	5.25	6.50	4.56	3.25	17.7
718	625-0-625	500	200	300	A	3.75	4.38	4.50	3.00	2.50	8
720	625-0-625	500	300	450	A	3.75	5.38	4.50	3.00	3.50	12
722	625-0-625	500	500	750	A	5.00	5.25	6.50	4.56	3.25	17.7
724	750-0-750	625	200	300	A	3.75	5.25	4.50	3.00	3.38	12
726	890-0-890	750	175	260	A	3.75	5.25	4.50	3.00	3.38	12
728	1000-0-1000	850	150	225	B	3.75	5.25	4.50	3.00	3.38	12
732	1250-0-1250	1000	200	300	B	5.00	5.25	6.50	4.56	3.25	17.7
733	1250-0-1250	1000	300	450	B	5.00	6.00	6.50	4.56	4.00	24
735	1500-0-1500	1250	250	375	B	5.00	6.00	6.50	4.56	4.00	24
737	1500-0-1500	1250	400	600	B	5.00	7.00	6.50	4.56	5.00	28.5
739	1750-0-1750	1500	400	600	B	5.00	7.63	6.50	4.56	5.50	34.7

Notes : CCS = Continuous Commercial Service
ICAS = Intermittant Commercial or Amateur Service

Transformer Schematic



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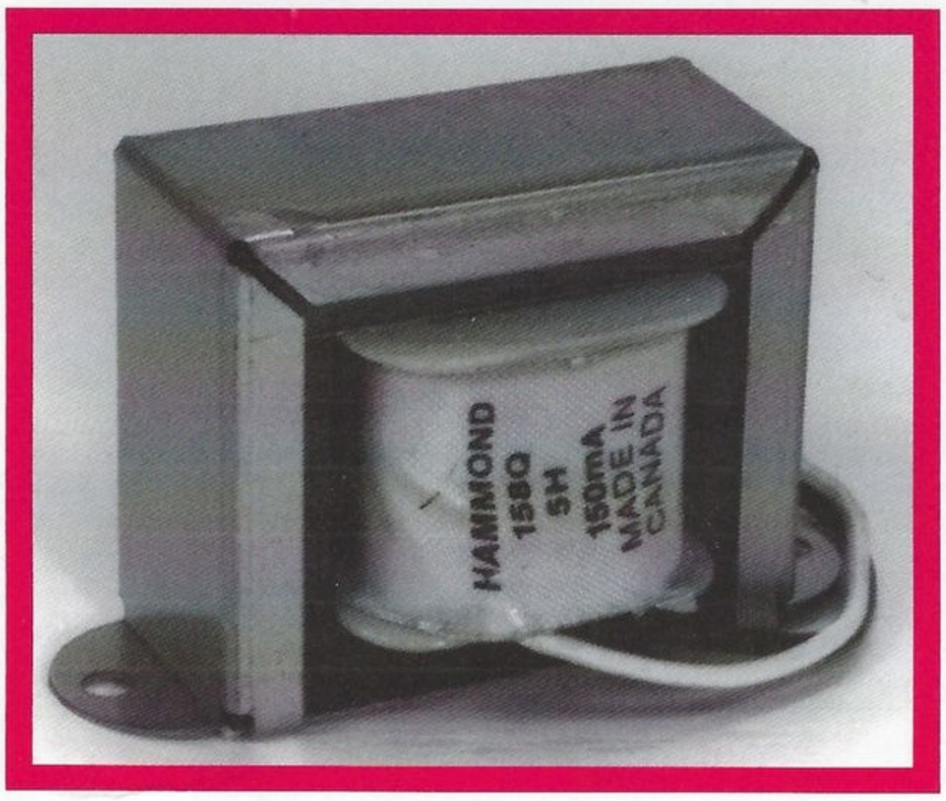
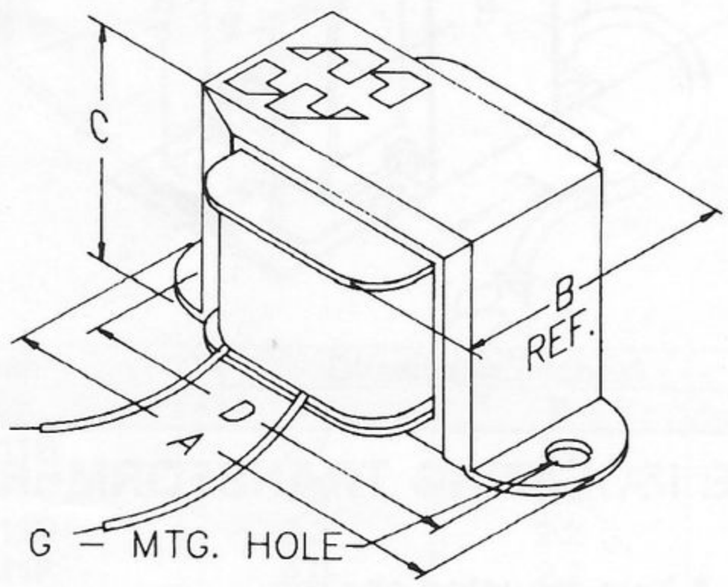
Open Bracket Filter Chokes



OPEN BRACKET D.C. FILTER CHOKES

- Economical "open bracket" - channel mount.
- Tolerance of 15% on both inductance & resistance.
- Inductances measured at rated D.C. current.
- Minimum 5" long leads.
- Units will exhibit less inductance at slightly higher currents or more at lower currents.
- Perfect for high voltage power supply filtering.



Cat. No.	Inductance Henrys	D.C. Current ma.	Resistance Ohms	Max. Oper. Volts D.C.	Wt. Lbs.	Dim. Ref.
153E	7	25	770	300	.10	C1H
153H	2.2	50	305	300	.10	C1H
153L	0.9	75	125	300	.10	C1H
153M	0.6	100	86	300	.10	C1H
154E	20	20	1666	300	.25	C2H
154G	9	40	700	300	.25	C2H
154H	4	50	300	300	.25	C2H
154M	2	100	175	300	.25	C2H
155C	60	8	2750	400	.30	C4H
155G	7	40	340	400	.30	C4H
155H	5	50	270	400	.30	C4H
155J	15	30	1026	400	.30	C4H
156C	150	8	3700	400	.50	C6H
156G	9	40	300	400	.50	C6H
156L	5	75	135	400	.50	C6H
156M	3	100	86	400	.50	C6H
156R	1.5	200	56	400	.50	C6H
157G	30	40	595	400	1.0	C9H
157J	10	65	205	400	1.0	C9H
157L	14	75	429	400	1.0	C9H
157M	8	100	259	400	1.0	C9H
157Q	3.5	150	98	400	1.0	C9H
157R	2	200	57	400	1.0	C9H
158L	15	75	411	400	1.25	C10H
158M	10	100	262	400	1.25	C10H
158Q	5	150	105	400	1.25	C10H
158S	1.5	250	60	400	1.50	C10H
158T	1.0	300	40	400	1.50	C10H
159M	15	100	256	500	2.25	C14H
159P	10	125	155	500	2.25	C14H
159Q	7	150	100	500	2.25	C14H
159S	4	225	65	500	2.25	C14H
159T	2.5	300	43	500	2.25	C14H
159V	1.5	500	27	500	2.25	C14H
159Y	0.6	750	11	500	2.25	C14H
154B	3 mH	1.5 A	0.14	300	.25	C2H
155B	6 mH	2 A	0.3	400	.30	C4H
156B	1.5 mH	5 A	0.07	400	.50	C6H
157D	1 mH	10 A	.038	400	1.0	C9H
159ZA	300 mH	1 A	6.0	500	2.50	C14H
159ZC	60 mH	2 A	0.7	500	2.50	C14H
159ZE	28 mH	3 A	0.43	500	2.75	C14H
159ZG	15 mH	4 A	0.25	500	2.75	C14H
159ZJ	10 mH	5 A	0.16	500	2.75	C14H
159ZL	2.5 mH	10 A	0.044	500	2.75	C14H

Dimension Table

Mtg. Style	Dimensions				Mtg.
	A	B	C	D	Hole
C1H	1.63	0.88	0.81	1.38	0.125
C2H	2.06	1.25	1.19	1.75	0.187
C4H	2.38	1.38	1.38	2.00	0.187
C6H	2.81	1.50	1.69	2.38	0.187
C9H	3.25	1.75	2.00	2.81	0.187
C10H	3.25	2.00	2.00	2.81	0.187
C14H	4.03	2.25	2.63	3.56	0.187

Choke Schematic

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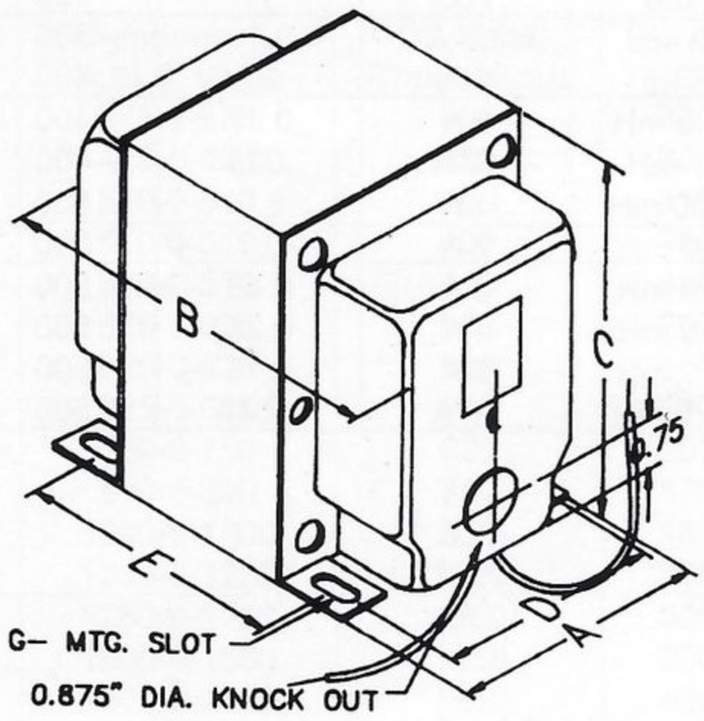
HAMMOND MANUFACTURING™

Shielded Filter Chokes & Line Isolating Transformers

ENCLOSED D.C. FILTER CHOKES

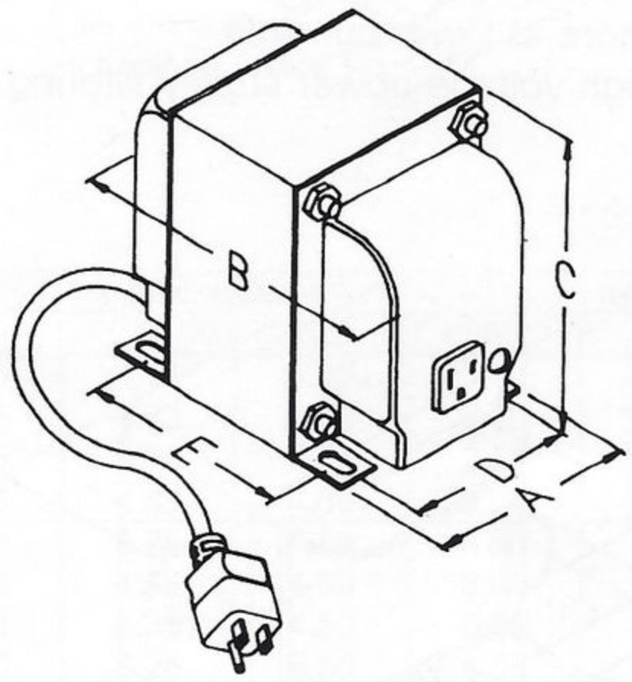
- Enclosed, 4-hole mounted chokes.
- Tolerance of 15% on both inductance & resistance.
- Inductances measured at rated D.C. current.
- Minimum 8" long leads.
- Units will exhibit less inductance at slightly higher currents or more at lower currents.
- Perfect for high voltage power supply filtering, case matches power transformers & tube audio output transformers.



Dimension Table

Mtg. Style	Dimensions					G - Mtg. Slot
	A	B	C	D	E	
X6	2.50	2.75	3.06	2.00	1.69	.203 X .38
X8	2.50	3.25	3.06	2.00	2.19	.203 X .38
X10	3.13	3.50	3.81	2.50	2.19	.203 X .38
X11	3.13	3.75	3.81	2.50	2.44	.203 X .38
X13	3.75	4.00	4.56	3.00	2.81	.203 X .38
X14	3.75	4.50	4.56	3.00	3.31	.203 X .38
X16	3.75	5.50	4.56	3.00	4.31	.203 X .38
X17	3.13	3.25	3.81	2.50	1.94	.203 X .38

Cat. No.	Inductance Henrys	D.C. Current ma.	Resistance Ohms	Max. Oper. Volts D.C.	Wt. Lbs.	Dim. Ref.
193B	12	100	155	600	2.5	X6
193C	20	100	181	600	3.25	X8
193D	8	150	75	600	3.25	X8
193G	10	150	102	800	4.25	X17
193H	5	200	65	600	2.5	X6
193J	10	200	82	800	5.5	X11
193K	2.6	300	21	800	3.25	X8
193L	5	300	57	800	5.5	X11
193M	10	300	63	800	10.5	X14
193N	3	500	35	600	5.0	X11
193P	5	500	26	800	10.75	X14
193Q	10	500	53	1000	21.0	X16
193R	.3	1000	3.50	1000	4.5	X10
193S	1.0	1000	5.75	1000	8.0	X13
193T	.05	2000	0.7	300	2.5	X6
193U	.2	2000	1.7	300	6.0	X12
193V	.15	3000	1.0	300	9.0	X14



LINE ISOLATING TRANSFORMERS

- Enclosed, 4-hole mounted chokes.
- 115V Primary, 115V Secondary - 50/60 Hz. operation
- Provides circuit isolation.
- 5 foot long "U ground" cord & plug.
- Electrostatic shield between primary & secondary.
- Standard outlet receptacle on secondary.
- CSA certified.

Cat. No.	VA	Dimensions					Wt. Lb.
		A	B	C	D	E	
171A	100	3.75	4.00	5.00	3.00	1.88	6.5
171B	200	3.75	4.50	5.00	3.00	2.38	8
171C	300	3.75	5.00	5.00	3.00	2.88	11
171E	500	3.75	6.00	5.00	3.00	3.88	14
171F	900	4.38	8.00	5.50	3.50	5.44	30

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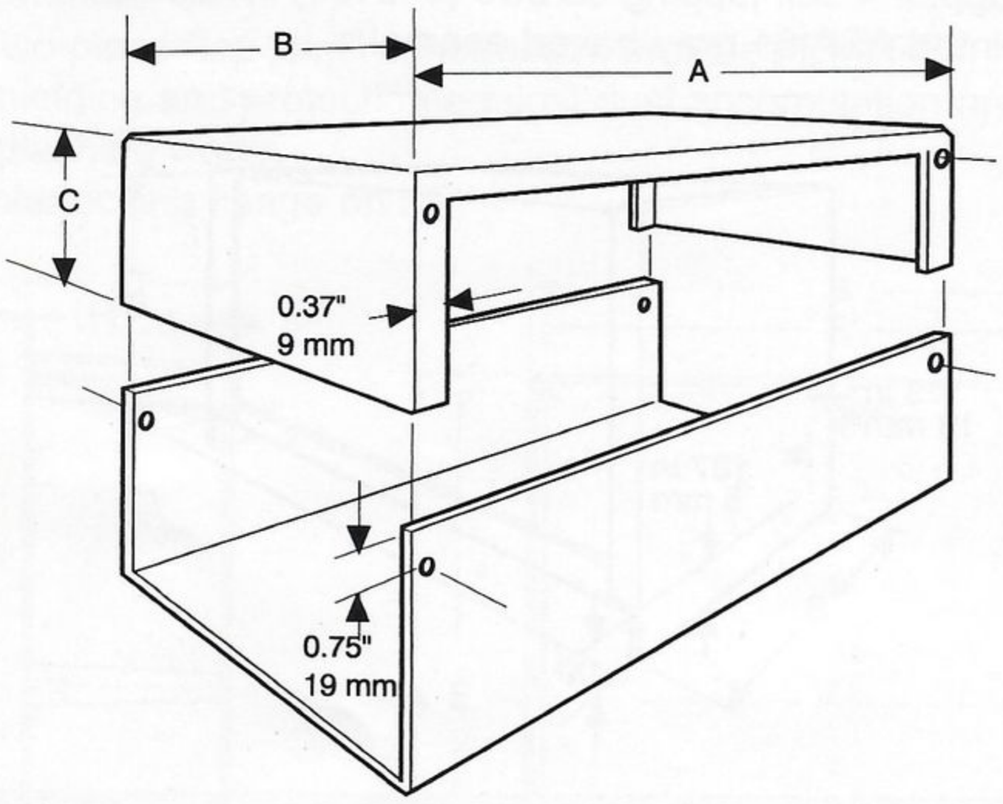
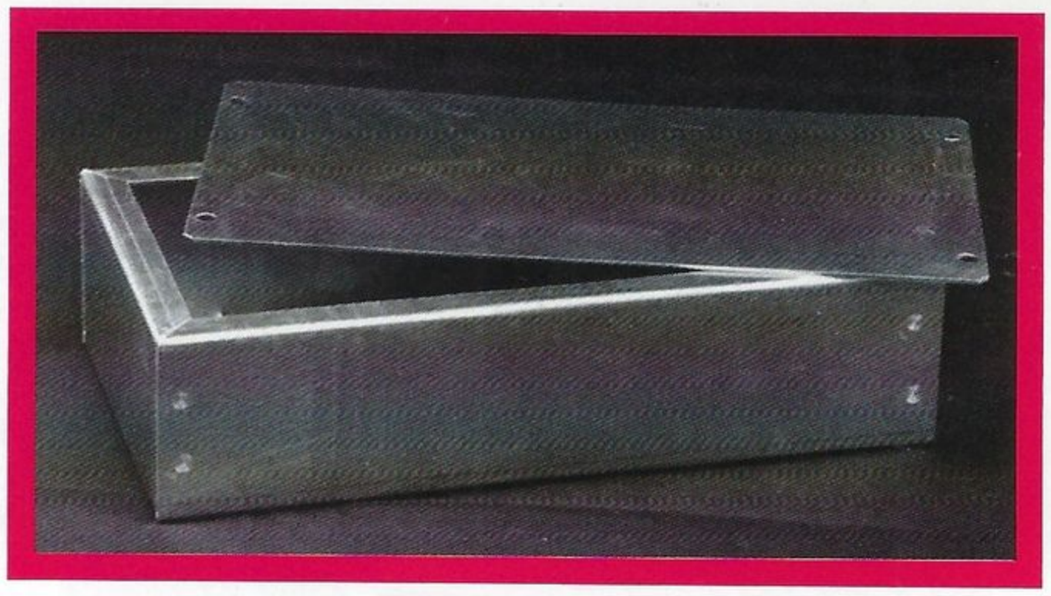
Aluminum Utility Cases & Aluminum Chassis

ALUMINUM UTILITY CASES

- .040" thick aluminum.
- 4 self-tapping screws included.
- ASA 61 gray baked enamel finish (exterior only).

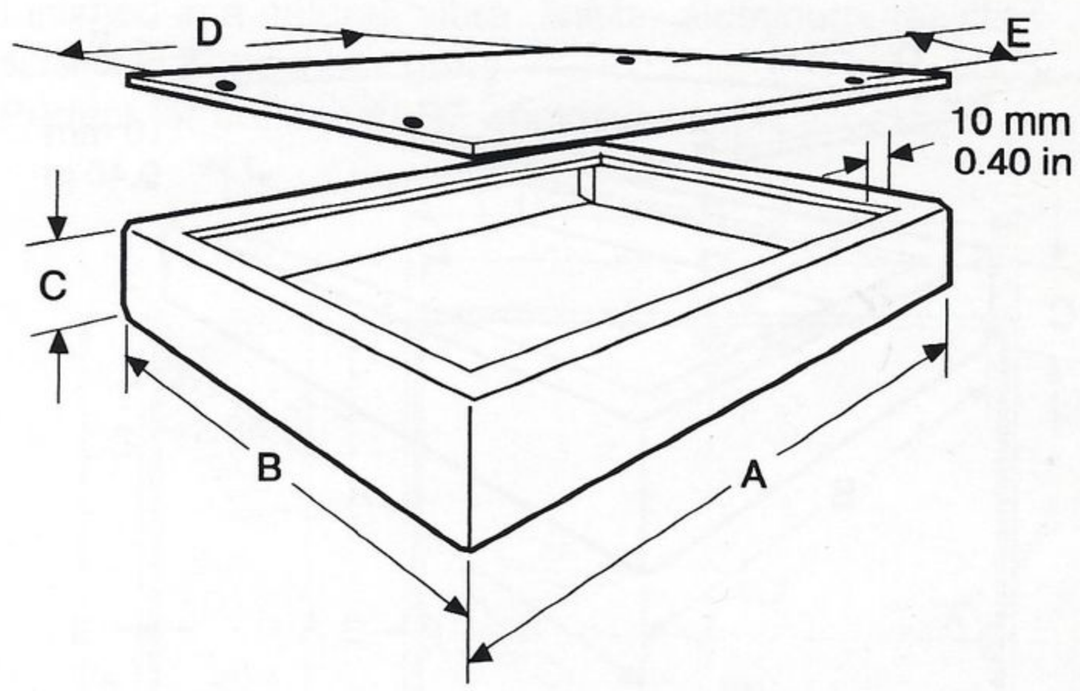


Cat. No.	Dimension (inches)		
	A	B	C
1411B	2.7	2.2	1.6
1411C	3.2	2.2	1.1
1411D	3.2	2.2	1.6
1411F	4.0	2.2	3.0
1411G	4.0	2.2	1.6
1411H	4.0	2.2	2.2
1411K	5.0	2.2	2.2
1411L	5.0	4.0	3.0
1411M	6.0	3.0	3.0
1411N	5.0	3.0	2.2
1411P	6.0	5.0	4.0
1411Q	7.0	5.0	3.0
1411R	8.0	6.0	3.5
1411S	8.0	4.0	3.0
1411T	10.0	2.2	1.6
1411U	10.0	6.0	3.5
1411W	12.0	3.0	2.2
1411X	12.0	7.0	4.0
1411Z	17.0	5.0	4.0



ALUMINUM CHASSIS

- Spot welded heavy duty construction, all four sides are folded in for strength and bottom plate mounting.
- Chassis bottom plate is punched with 4 holes (hardware not included).
- Natural aluminum finish.



Chassis Cat. No.	Bottom Plate Cat. No.	Thick (In)	Dimesions (In)				
			A	B	C	D	E
1444-6	**1434-6**	.040	4	4	2	3.6	3
1444-8	**1434-8**	.040	6	4	2	5.6	3
1444-9	**1434-10**	.040	8	4	1	7.6	3
1444-10	**1434-10**	.040	8	4	2	7.6	3
1444-12	**1434-12**	.040	7	5	2	6.6	3
1444-14	**1434-14**	.040	9	5	2	8.6	3
1444-15	**1434-16**	.040	10	6	1	9.6	4
1444-16	**1434-16**	.040	10	6	2	9.62	4
1444-18	**1434-18**	.040	13.5	5	2	13.1	3
1444-20	**1434-20**	.040	17	4	3	16.6	3
1444-22	**1434-22**	.051	12	8	2	11.6	6
1444-24	**1434-22**	.051	12	8	3	11.6	6
1444-26	**1434-26**	.051	16	8	2	15.6	6
1444-28	**1434-26**	.051	16	8	3	15.6	6
1444-29	**1434-29**	.051	12	10	2	11.6	8
1444-30	**1434-30**	.051	17	10	2	16.6	8
1444-32	**1434-30**	.051	17	10	3	16.6	8
1444-33	**1434-30**	.051	17	10	4	16.6	8

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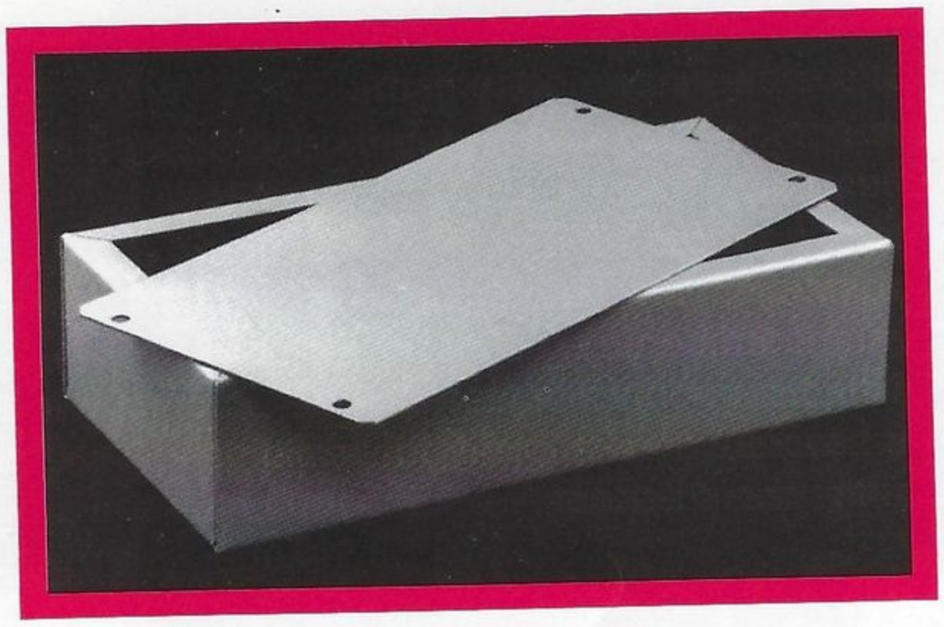
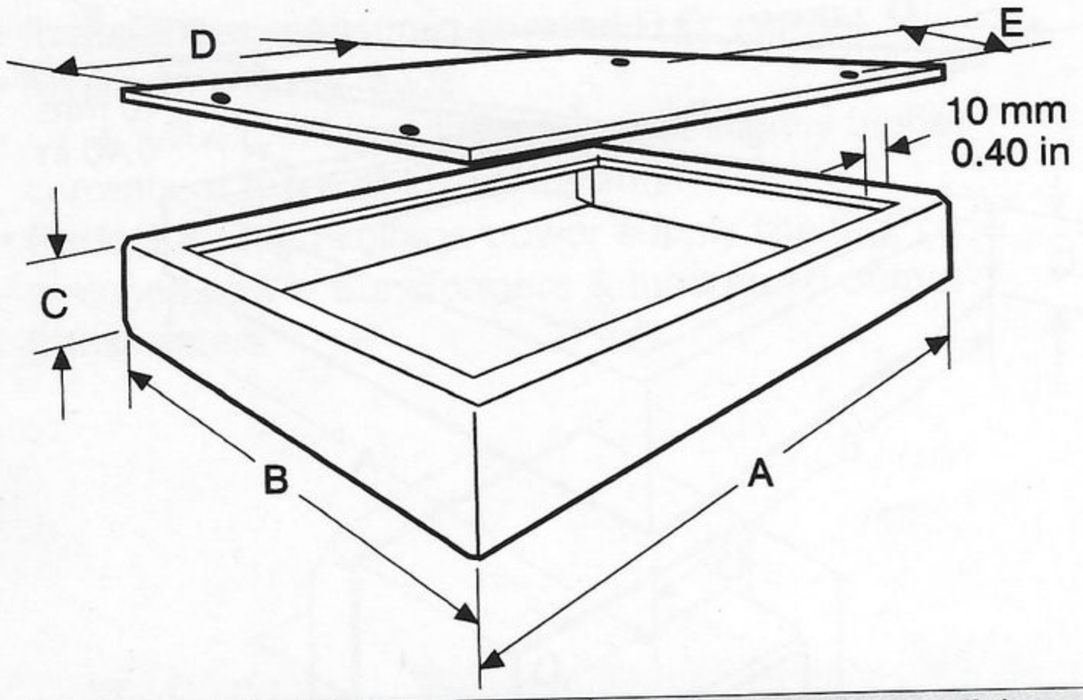
HAMMOND MANUFACTURING™

Steel Chassis & Covers

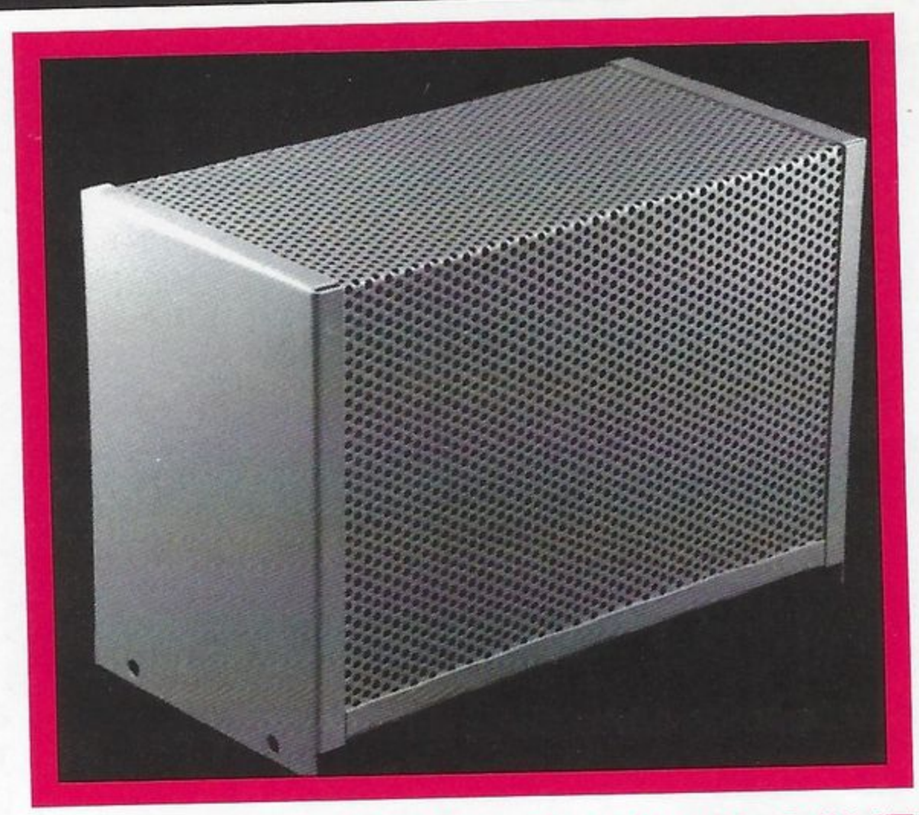


HEAVY DUTY STEEL CHASSIS

- Spot welded heavy duty construction, all four sides are folded in for strength and bottom plate mounting.
- Chassis bottom plate is punched with 4 holes (hardware not included).
- Painted ASA 61 gray baked enamel.

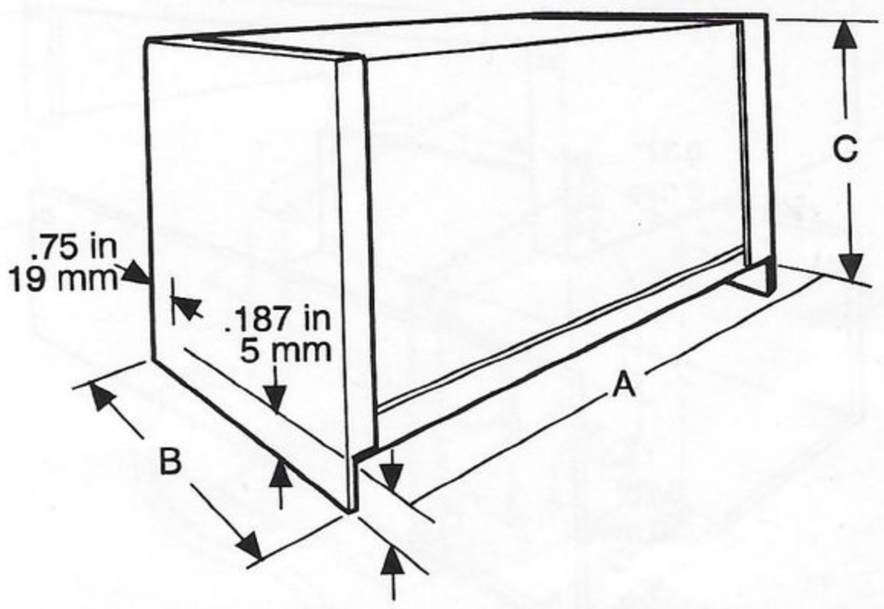


Chassis Cat. No.	Bottom Plate Cat. No.	Thick Ga.	Dimesions (In) A	B	C	D	E
1441-6	1431-6	20	4	4	2	3.6	3
1441-8	1431-8	20	6	4	2	5.6	3
1441-9	1431-10	20	8	4	1	7.6	3
1441-10	1431-10	20	8	4	2	7.6	3
1441-12	1431-12	20	7	5	2	6.6	3
1441-14	1431-14	20	9	5	2	8.6	3
1441-15	1431-16	20	10	6	1	9.6	4
1441-16	1431-16	20	10	6	2	9.62	4
1441-18	1431-18	20	13.5	5	2	13.1	3
1441-20	1431-20	20	17	4	3	16.6	3
1441-22	1431-22	20	12	8	2	11.6	6
1441-24	1431-22	20	12	8	3	11.6	6
1441-26	1431-26	20	16	8	2	15.6	6
1441-28	1431-26	20	16	8	3	15.6	6
1441-29	1431-29	20	12	10	2	11.6	8
1441-30	1431-30	20	17	10	2	16.6	8
1441-32	1431-30	20	17	10	3	16.6	8
1441-33	1431-30	20	17	10	4	16.6	8
1441-34	1431-34	18	17	12	2	16.6	10
1441-36	1431-34	18	17	12	3	16.6	10
1441-38	1431-38	18	17	14	3	16.6	12
1441-40	1431-38	18	17	14	4	16.6	12
1441-42	1431-38	16	17	14	5	16.6	12



VENTILATED STEEL CHASSIS COVER

- For use with the 1441 or 1444 chassis.
- 20 guage steel ends welded to a perforated steel wrapper. 4 self tapping screws (1421J6) included.
- Painted ASA 61 gray baked enamel.



Cat. No.	Dimension (inches) A	B	C	Use with Chassis
1451-10	8	4	5.2	4X8
1451-14	9	5	5.2	5X9
1451-16	10	6	5.2	6X10
1451-22	12	8	5.2	8X12
1451-26	16	8	5.2	8X16
1451-30	17	10	5.2	10X17

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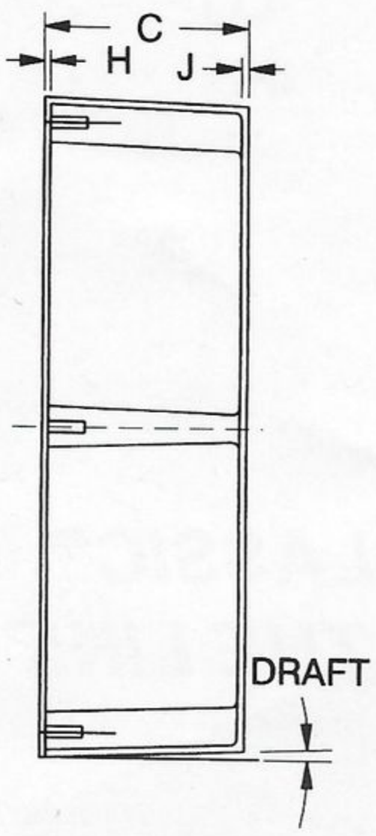
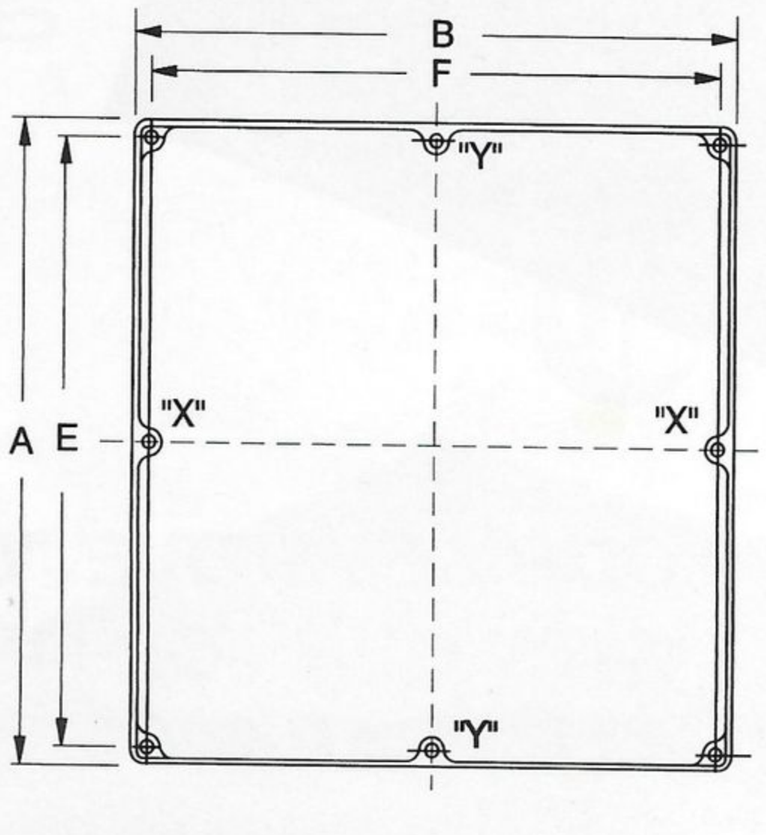
DIECAST ALUMINUM ENCLOSURES

Cat. No.	Dimensions (In) A	B	C	D	E	F	G	H	J
1590LB	1.98	1.98	1.07	1.84	1.60	1.60	0.17	0.08	0.07
1590A	3.63	1.52	1.07	3.49	3.25	1.14	0.17	0.08	0.07
1590S	4.33	3.23	1.58	4.14	3.96	2.85	0.16	0.09	0.08
1590B	4.38	2.40	1.07	4.24	4.00	2.02	0.17	0.08	0.07
1590BB	4.70	3.70	1.18	4.50	4.31	3.31	0.17	0.09	0.08
1590C	4.70	3.70	2.06	4.50	4.31	3.31	0.17	0.09	0.08
1590T	4.72	3.15	2.17	4.54	4.35	2.78	0.16	0.09	0.08
1590U	4.72	4.72	2.17	4.54	4.35	4.35	0.16	0.09	0.08
1590V	4.72	4.72	3.54	4.54	4.35	4.35	0.16	0.09	0.08
1590D	7.39	4.72	2.06	7.19	7.00	4.31	0.16	0.09	0.09
1590E	7.39	4.72	3.06	7.19	7.00	4.31	0.16	0.09	0.09
1590F	7.41	7.41	2.50	7.19	7.00	7.00	0.16	0.09	0.09

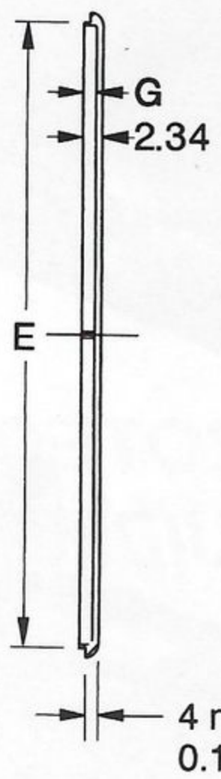
NOTES: Side wall draft is 2 degrees or less on all sizes.

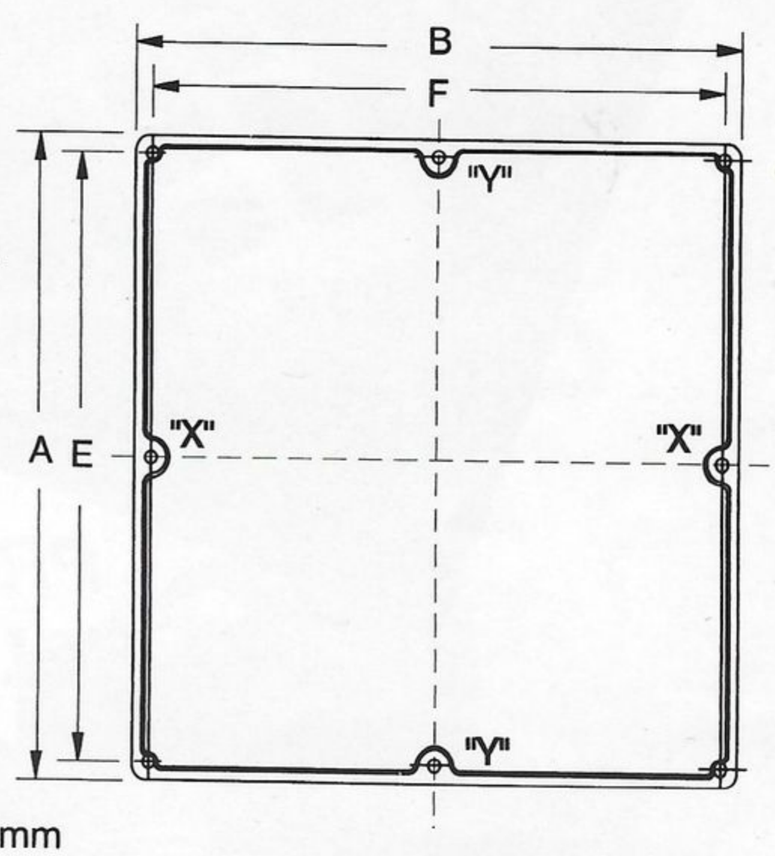
- Rugged enclosure made of easy to punch and drill aluminum alloy.
- Two piece "lap joint" construction provides EMI/RFI shielding and protection against dust accumulation and splashing water.
- Interlocking flange on lid.
- Lid secured by 6-32 x 1/2" nickel plated, philips head machine screws, (spares 1590MS100) countersunk lid in tapped holes.
- Finished in a natural "vibra" finish - aluminum, resists scratching and looks great.
- Perfect for audio and RF enclosure applications.





Base Detail





Lid Detail

Note: Assembled height = dimension "C" + 0.16" (4.0 mm)

ACCESSORIES

Rubber Feet

- Round, self adhesive, .37" dia. X .12" high - Pkg. of 24 - Catalog No. **1421T2**
- Square .5" X .5", self adhesive, .25" high - Pkg. of 24 - Catalog No. **1421T3**
- Square .7" X .7", self adhesive, .31" high - Pkg. of 24 - Catalog No. **1421T4**
- Round, screw-on (with self tapping screws provided), .75" dia. X .5" high - Catalog No. **1421T7**

Screws

- Self tapping screws - for all metal chassis parts - Pkg. of 25 - Catalog No. **1421J6**
- Replacement nickel plated machine screws for diecast alum. enclosures (1590 series) - Pkg. of 100 - Catalog No. **1590MS100**

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