



TYPE "R" UNIVERSAL OUTPUTS

While the average speaker voice coil has an impedance of 8 ohms, speakers of different manufacture diverge widely from this value. If the voice coil impedance can be determined, the chart below will indicate the best possible match to the tubes used. Where the voice coil is not known, trial will indicate the best match.

If it is desired to accentuate the low or high frequencies, the impedance should be mismatched. The lows will be increased if the voice coil is connected to a lower impedance and the highs increased if it is connected to a higher impedance.

The upper section of the chart indicates the tube or tubes from which the transformer operates. If using push pull tubes, the blue leads go to the plates and the yellow to B plus. If using a single tube, 1 blue lead goes to the plate and the other blue lead to B plus. When the tube combination used is found in the upper part of the chart, the various secondary impedances obtainable are read down the column beneath it. To the extreme left of the desired impedance, the corresponding colours are noted.

R-27, R-38, R-38A, R-59, R-60

Push Pull Tubes	31, 33, 46, 47, 2A5, 59 Pent., 79, 89 Pent., 6E6, 6Y7G	49 class B 6Z7G class B	19, 1J6G, 30, 89, 6AC5G, 53, 6A6, 6N6, 6N7, 6B5, 59, 71A, 10, 47, 42	42AP, 45, 43	33, 42, 46, 47	31, 46, 59	2A3, 6A3, 6A5G, 6B4G, 45AB	25L6, 6Y6G 43, 45, 59, 71A, 12A5, 25A6, 25A7	Impedance Ratio Primary to Secondary
Single Tubes	38, 12A7		6G6, 6K6	89 Pent.	49, 89, 2A5, 6F6, 6B5	6V6, 33			
Pri. Impedance P-P	14000	12000	10000	7000	7000	6000	5000	4000	
Brown - Black	1.8	1.5	1.3	.9	.9	.77	.65	.5	7700
Black - Red & White	2.7	2.3	1.9	1.5	1.3	1.2	1	.77	5200
Green - Black	3.6	3.1	2.6	2	1.8	1.6	1.3	1	3900
Red - Green	5.6	4.8	4	3.3	2.8	2.4	2	1.6	2500
Red - Brown	8.2	7.1	5.9	4.1	4.1	3.5	3	2.3	1700
Green - Red & White	12.8	11	9	7.4	6.3	5.5	4.5	3.6	1100
Red - Black	18.2	16	13	10.5	9	7.8	6.5	5.2	770
Red - Red & White	35	30	25	20	17.5	15	12.5	10	400

R-28

Push Pull Tubes	6B5, 2A5, 42, 6F6 Pent. AB	6V6, 10 1602	841	6L6 self bias	46, 59, 2A5 42, 6F6 triode AB	P.P. parallel 53, 6A6, 6B6 6N7	2A3, 6A5G, 6B6 all fixed bias	Impedance Ratio Primary to Secondary
Pri. Impedance P-P	10000	8000	7000	6600	6000	5000	3000	
Brown - Black	2.5	2	1.8	1.6	1.5	1.3	.75	4000
Black - Red & White	3.3	2.7	2.3	2.2	2	1.7	1	3000
Green - Black	4.8	3.8	3.3	3.1	2.9	2.4	1.4	2100
Red - Green	7.1	5.7	5	4.7	4.3	3.6	2.1	1400
Red - Brown	10.5	8.4	7.5	7	6.3	5.3	3.1	950
Green - Red & White	16	13	11	10.5	9.6	8	4.8	625
Red - Black	23.5	19	16.5	15.5	14	12	7	425
Red - Red & White	35	29	25	23	21	18	10.7	280

See reverse side for R-58 color code.

CONNECTION CHARTS

TYPE "R" TRANSFORMERS

COLOR CODE FOR POWER TRANSFORMERS
BLACK LEADS ALWAYS INDICATE THE PRIMARY

WINDING Center Tap COLORS Terminal TYPE NO.	HIGH-VOLTAGE Red and White		SEC. FIL.	FILAMENT No. 1 Brown and White		FIL. No. 2 Blue-White	FILAMENT No. 3 Blue and White		FIL. No. 4 Blue-White
	RED	YELLOW	BROWN	GREEN	BLUE	SLATE	BLUE	SLATE	
R1	325V.-0-325V. 40 Ma.	5V.-2A.	6.3V.-2A.	2.5V.-4A.					
R2	350V.-0-350V. 70 Ma.	5V.-3A.	6.3V.-2.5A.	2.5V.-8A.					
R3	350V.-0-350V. 95 Ma.	5V.-3A.	6.3V.-4.5A.	2.5V.-4.5A.	2.5V.-9A.				
R4	375V.-0-375V. 120 Ma.	5V.-4A.	6.3V.-5A.	2.5V.-5A.	2.5V.-15A.				
R5	385V.-0-385V. 180 Ma.	5V.-4A.	6.3V.-4A.	2.5V.-6A.					6.3V.-5A.
R11	350V.-0-350V. 75 Ma.	5V.-3A.	6.3V.-3A.	2.5V.-3A.	2.5V.-8A.				
R12	375V.-0-375V. 100 Ma.	5V.-3A.	6.3V.-4A.	2.5V.-4A.		6.3V.-2A.	2.5V.-8A.		
R13	425V.-0-425V. 200 Ma.	5V.-3A.	6.3V.-5A.	2.5V.-5A.		6.3V.-3A.	2.5V.-12A.		
R54	300-0-300V.	5V.-2A.	6.3V.-2A.	2.5V.-5A.					

VARITAP DUPLICATE AUDIO TRANSFORMERS

PRIMARIES—

R23, R24, R26, R27, R28

Blue to plates; Yellow to plate return.

R25

Brown to plates; Yellow to plate return.

R29

Black to microphone or line; Yellow to return.

SECONDARIES—

R23, R29

Green to grid; Red to grid return.

R24, R25, R26

Red to grids; Green to grid return.

R27, R28, R38

See output charts on reverse side of sheet.

NOTE:—R25 connections as above for Class A triodes, step up, 1.5:1.

For step down, 1.5:1, for 6L6's, 2A3's, 2A5's, etc., reverse transformer.

R58

TUBE TYPES	25L6 48	25L6 25B6	42 (tri) 71A 45	2A5 (tri) 43 6F6 (tri) 25A6 43 50 45	25A6 43 59 (tri) 45 6V6 50	59 (pent) 33	2A5 (pent) 6F6 (pent) 31 33 42 (pent) 47	6A4 89 (pent) 6K6G	41	10 38 6A4 49	41	10	6L6 38	38	1F5G			
Pri. Imp.	1000 P-red B-grn.	1500 P-red B-grn.	2000 P-red B-grn.	3000 P-red B-grn.	4000 P-Bl. B-grn.	5000 P-Bl. B-grn.	6000 P-Bl. B-grn.	7000 B-Bl. B-grn.	8000 P-Bl. B-grn.	9000 P-red B-Bl.	10000 P-red B-Bl.	11000 P-red B-Bl.	12000 P-red B-Bl.	13000 P-red B-Bl.	14000 P-red B-Bl.	15000 P-red B-Bl.	16000 P-red B-Bl.	18000 P-red B-Bl.
Red & W Gr & W	.64	.96	1.3	1.9	.56	.68	.84	1.0	1.1	.56	.64	.72	.76	.84	.88	.96	1.0	1.5
Blue & W Brn & W	1.4	2.2	2.9	4.3	1.25	1.5	1.9	2.2	2.5	1.25	1.4	1.6	1.7	1.9	2.0	2.2	2.3	2.8
Blue & W Gr & W	4.0	6.0	8.0	12	3.5	4.2	5.2	6.2	7.0	3.5	4.0	4.5	4.75	5.25	5.5	6	6.5	7.25
Red & W Blue & W	8	11.8	15.5	24	7	8.5	10	12	14	7	8	9	9.5	10	11	11.8	13	14
Brn & W Gr & W	10	15	20	31	9	11	13.5	16	18	9	10	11.5	12	13.5	14	15	17	19
Red & W Brn & W	16	24	32	48	14	17	21	25 89 (tri) 46	28	14	16	18	19	21	22	24	26	29

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