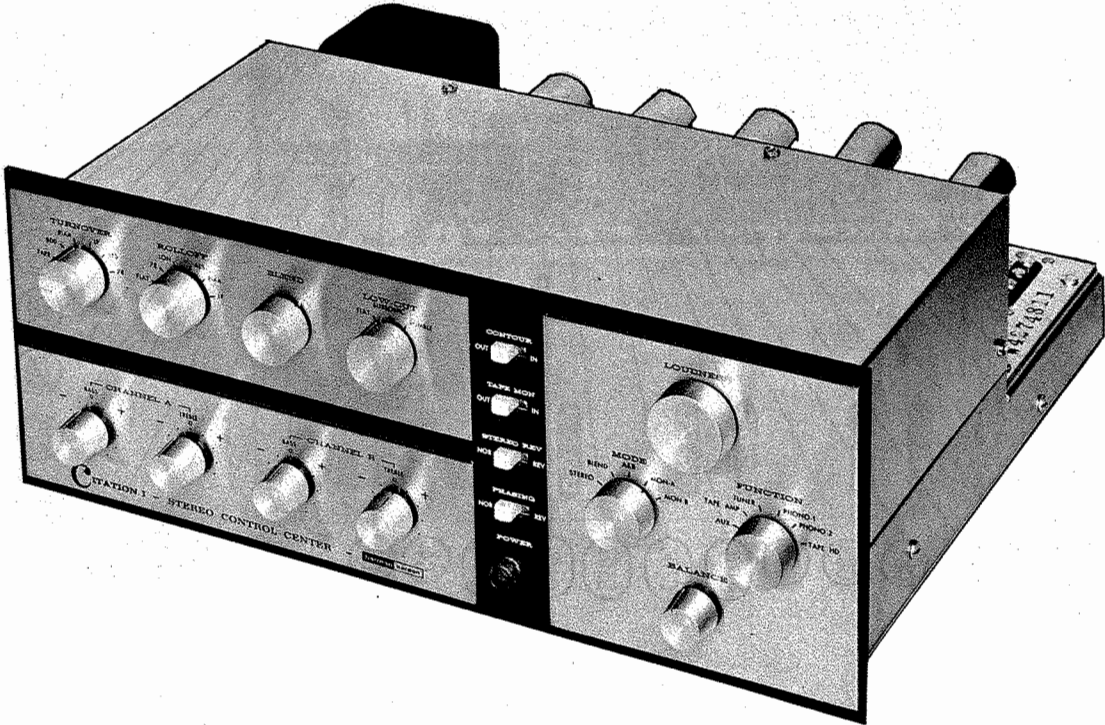


HARMAN-KARDON
MODEL CITATION I



HARMAN-KARDON
MODEL CITATION I

TRADE NAME	Harman-Kardon Model Citation I		
MANUFACTURER	Harman-Kardon, Inc., Ames Court, Plainview L. I., N. Y.		
TYPE SET	AC Operated 9 Tube Stereo Preamplifier		
POWER SUPPLY	105 — 125 Volts AC, 50-60 Cycles	RATING	36 Watts, .36 Amp. @117 Volts AC



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. ©1962 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		IRC PART No.	WORKMAN PART No.			IRC PART No.	WORKMAN PART No.
R53	330K			RI07	100K		
R54	270K			RI08	27K		
R55	270K			RI09	220K		
R56	270K			RI10	560K		
R57	68K 1W			RI11	470K		
R58	430Ω 5%			RI12	68K 1W		
R59	10meg			RI13	430Ω 5%		
R60	10meg			RI14	33K		
R61	10meg			RI15	100K		
R62	10meg			RI16	100K		
R63	10meg			RI17	1000Ω		
R64	10meg			RI18	4.7meg		
R65	10meg			RI19	1meg		
R66	10meg			RI20	680K		
R67	10meg			RI21	330K		
R68	680K			RI22	220K		
R69	220K			RI23	150K		
R70	68K 1W			RI24	100K		
R71	390K			RI25	68K		
R72	1meg			RI26	470K		
R73	430Ω 5%			RI27	150K		
R74	240K 5%			RI28	68K		
R75	240K 5%			RI29	270K		
R76	1meg			RI30	270K		
R77	68K 1W			RI31	10meg		
R78	430Ω 5%			RI32	10meg		
R79	470K			RI33	10meg		
R80	56K			RI34	10meg		
R81	56K			RI35	10meg		
R82	1meg			RI36	10meg		
R83	10K			RI37	10meg		
R84	470K			RI38	10meg		
R85	250K 5%			RI39	10meg		
R86	820Ω 5%			RI40	680K		
R87	180K			RI41	270K		
R88	360K			RI42	68K 1W		
R89	47K 1W			RI43	430Ω 5%		
R90	2.2meg			RI44	220K		
R91	60K 5%			RI45	68K 1W		
R92	62K 5%			RI46	430Ω 5%		
R93	2400Ω 5%			RI47	390K		
R94	1400Ω 5%			RI48	1meg		
R95	2400Ω 5%			RI49	470K		
R96	24K 5%			RI50	220K		
R97	53K 5%			RI51	47K		
R98	100K 5%			RI52	68K 1W		
R99	270K 5%			RI53	430Ω 5%		
R100	215K 5%			RI54	470K		
R101	1820Ω 5%			RI55	47K 2W		
R102	68K 1W			RI56	10K 2W		
R103	47K 1W			RI57	2200Ω 1W		
R104	560Ω 5% 1W			RI58	3.3Ω 5%		
R105	180K			RI59	3.3Ω 5%		
R106	47K			RI60	560K		

PW4-2200	5W-SQ-2200
----------	------------

RESISTORS (cont)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		IRC PART No.	WORKMAN PART No.			IRC PART No.	WORKMAN PART No.
R53	330K			RI07	100K		
R54	270K			RI08	27K		
R55	270K			RI09	220K		
R56	270K			RI10	560K		
R57	68K 1W			RI11	470K		
R58	430Ω 5%			RI12	68K 1W		
R59	10meg			RI13	430Ω 5%		
R60	10meg			RI14	33K		
R61	10meg			RI15	100K		
R62	10meg			RI16	100K		
R63	10meg			RI17	1000Ω		
R64	10meg			RI18	4.7meg		
R65	10meg			RI19	1meg		
R66	10meg			RI20	680K		
R67	10meg			RI21	330K		
R68	680K			RI22	220K		
R69	220K			RI23	150K		
R70	68K 1W			RI24	100K		
R71	390K			RI25	68K		
R72	1meg			RI26	470K		
R73	430Ω 5%			RI27	150K		
R74	240K 5%			RI28	68K		
R75	240K 5%			RI29	270K		
R76	1meg			RI30	270K		
R77	68K 1W			RI31	10meg		
R78	430Ω 5%			RI32	10meg		
R79	470K			RI33	10meg		
R80	56K			RI34	10meg		
R81	56K			RI35	10meg		
R82	1meg			RI36	10meg		
R83	10K			RI37	10meg		
R84	470K			RI38	10meg		
R85	250K 5%			RI39	10meg		
R86	820Ω 5%			RI40	680K		
R87	180K			RI41	270K		
R88	360K			RI42	68K 1W		
R89	47K 1W			RI43	430Ω 5%		
R90	2.2meg			RI44	220K		
R91	60K 5%			RI45	68K 1W		
R92	62K 5%			RI46	430Ω 5%		
R93	2400Ω 5%			RI47	390K		
R94	1400Ω 5%			RI48	1meg		
R95	2400Ω 5%			RI49	470K		
R96	24K 5%			RI50	220K		
R97	53K 5%			RI51	47K		
R98	100K 5%			RI52	68K 1W		
R99	270K 5%			RI53	430Ω 5%		
R100	215K 5%			RI54	470K		
R101	1820Ω 5%			RI55	47K 2W		
R102	68K 1W			RI56	10K 2W		
R103	47K 1W			RI57	2200Ω 1W		
R104	560Ω 5% 1W			RI58	3.3Ω 5%		
R105	180K			RI59	3.3Ω 5%		
R106	47K			RI60	560K		

PW4-2200	5W-SQ-2200
----------	------------

RESISTORS (cont)

All wattages 1/2 watt, or less, unless otherwise listed.

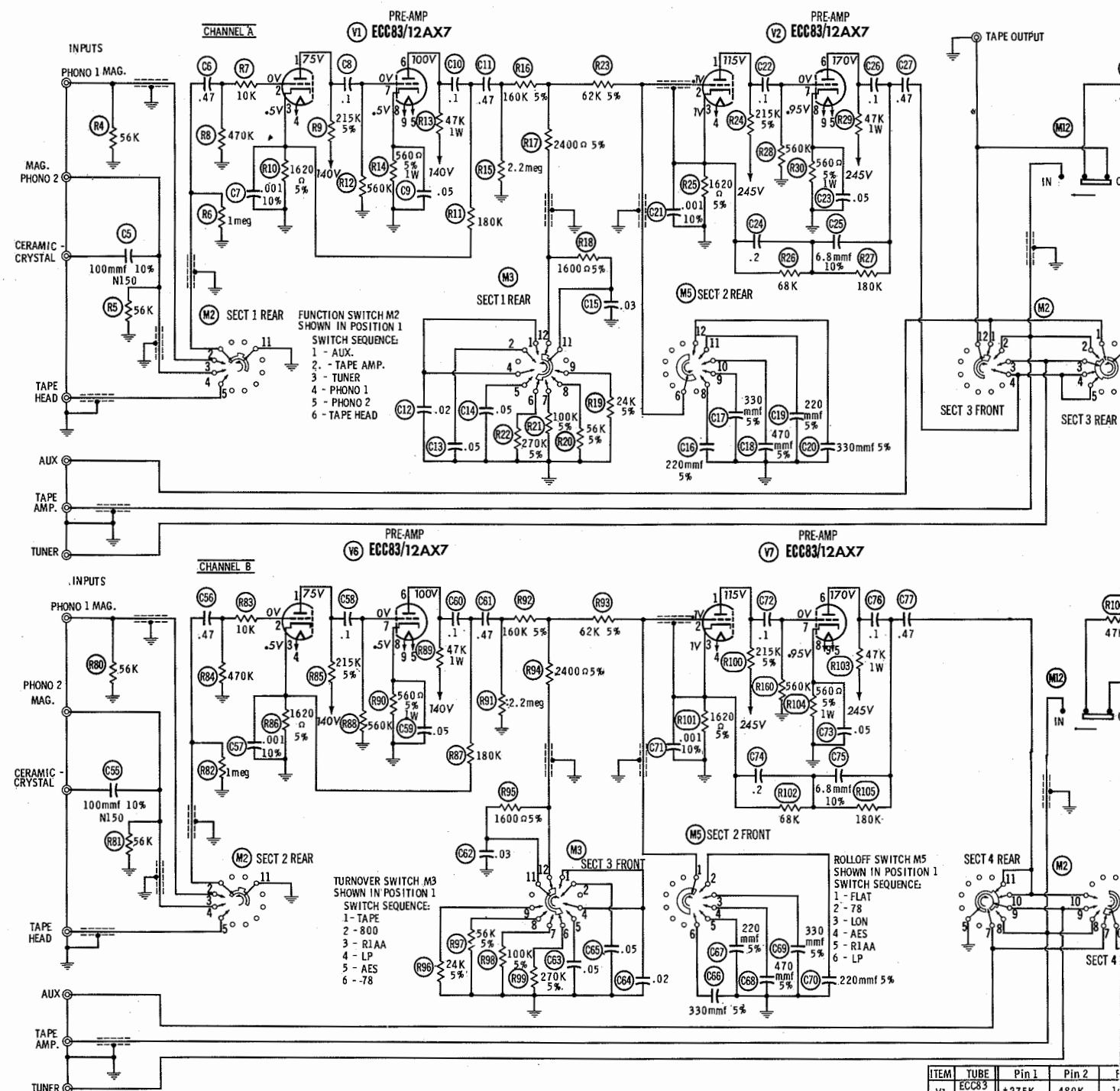
ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		IRC PART No.	WORKMAN PART No.			IRC PART No.	WORKMAN PART No.
R53	330K			RI07	100K		
R54	270K			RI08	27K		
R55	270K			RI09	220K		
R56	270K			RI10	560K		
R57	68K 1W			RI11	470K		
R58	430Ω 5%			RI12	68K 1W		
R59	10meg			RI13	430Ω 5%		
R60	10meg			RI14	33K		
R61	10meg			RI15	100K		
R62	10meg			RI16	100K		
R63	10meg			RI17	1000Ω		
R64	10meg			RI18	4.7meg		
R65	10meg			RI19	1meg		
R66	10meg			RI20	680K		
R67	10meg			RI21	330K		
R68	680K			RI22	220K		
R69	220K			RI23	150K		
R70	68K 1W			RI24	100K		
R71	390K			RI25	68K		
R72	1meg			RI26	470K		
R73	430Ω 5%			RI27	150K		
R74	240K 5%			RI28	68K		
R75	240K 5%			RI29	270K		
R76	1meg			RI30	270K		
R77	68K 1W			RI31	10meg		
R78	430Ω 5%			RI32	10meg		
R79	470K			RI33	10meg		
R80	56K			RI34	10meg		
R81	56K			RI35	10meg		
R82	1meg			RI36	10meg		
R83	10K			RI37	10meg		
R84	470K			RI38	10meg		
R85	250K 5%			RI39	10meg		
R86	820Ω 5%			RI40	680K		
R87	180K			RI41	270K		
R88	360K			RI42	68K 1W		
R89	47K 1W			RI43	430Ω 5%		
R90	2.2meg			RI44	220K		
R91	60K 5%			RI45	68K 1W		
R92	62K 5%			RI46	430Ω 5%		
R93	2400Ω 5%			RI47	390K		
R94	1400Ω 5%			RI48	1meg		
R95	2400Ω 5%			RI49	470K		
R96	24K 5%			RI50	220K		
R97	53K 5%			RI51	47K		
R98	100K 5%			RI52	68K 1W		
R99	270K 5%			RI53	430Ω 5%		
R100	215K 5%			RI54	470K		
R101	1820Ω 5%			RI55	47K 2W		
R102	68K 1W			RI56	10K 2W		
R103	47K 1W			RI57	2200Ω 1W		
R104	560Ω 5% 1W			RI58	3.3Ω 5%		
R105	180K			RI59	3.3Ω 5%		
R106	47K			RI60	560K		

PW4-2200	5W-SQ-2200
----------	------------

RESISTORS (cont)

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		IRC PART No.	WORKMAN PART No.			IRC PART No.	WORKMAN PART No.
R53	330K			RI07	100K		
R54	270K			RI08	27K		
R55	270K			RI09	220K		
R56	270K			RI10	560K		
R57	68K 1W			RI11	470K		
R58	430Ω 5%			RI12	68K 1W		
R59	10meg			RI13	430Ω 5%		
R60	10meg			RI14	33K		
R61	10meg			RI15	100K		
R62	10meg			RI16	100K		
R63	10meg			RI17	1000Ω		
R64	10meg			RI18	4.7meg		
R65	10meg			RI19	1meg		
R66	10meg			RI20	680K		
R67	10meg			RI21	330K		
R68	680K			RI22	220K		
R69	220K			RI23	150K		
R70	68K 1W			RI24	100K		
R71	390K			RI25	68K		
R72	1meg			RI26	470K		
R73	430Ω 5%			RI27	150K		
R74	240K 5%			RI28	68K		
R75	240K 5%			RI29	270K		
R76	1meg			RI30	270K		
R77	68K 1W			RI31	10meg		
R78	430Ω 5%			RI32	10meg		
R79	470K			RI33	10meg		
R80	56K			RI34	10meg		
R81	56K			RI35	10meg		
R82	1meg			RI36	10meg		
R83	10K			RI37	10meg		
R84	470K			RI38	10meg		
R85	215K 5%			RI39	10meg		
R86	1620Ω 5%			RI40	100K		
R87	180K			RI41	270K		
R88	560K			RI42	28K 1W		
R89	47K 1W			RI43	430Ω 5%		
R90	560Ω 5% 1W			RI44	220K		
R91	2.2meg			RI45	68K 1W		
R92	160K 5%			RI46	430Ω 5%		
R93	62K 5%			RI47	390K		
R94	2400Ω 5%			RI48	1meg		
R95	1600Ω 5%			RI49	470K		
R96	24K 5%			RI50	220K		
R97	56K 5%			RI51	47K		
R98	100K 5%			RI52	68K 1W		
R99	270K 5%			RI53	430Ω 5%		
R100	215K 5%			RI54	470K		
R101	1620Ω 5%			RI55	47K 2W		
R102	68K			RI56	10K 2W		
R103	47K 1W			RI57	2200Ω 4W		
R104	560Ω 5% 1W			RI58	3.3Ω 5%		
R105	180K			RI59	3.3Ω 5%		
R106	47K			RI60	560K		



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1962

ITEM	TUBE	Pin 1	Pin 2	
V1	ECC83 12AX7	$\dagger 275K$	480K	10
V2	ECC83 12AX7	$\dagger 227K$	$\blacktriangle 300K$ $\blacktriangle 2.4meg$	16
V3	ECC81 12AT7	$\dagger 70K$	170K	43
V4	ECC81 12AT7	$\dagger 70K$	170K	4
V5	ECC81 12AT7	$\dagger 70K$	47K	43
V6	ECC83 12AX7	$\dagger 275K$	480K	16
V7	ECC83 12AX7	$\dagger 227K$	$\blacktriangle 130K$	16
V8	ECC81 12AT7	$\dagger 70K$	170K	4
V9	ECC81 12AT7	$\dagger 70K$	170K	4

VOLTAGES MEASURED IN "AUXILIARY"
 \dagger MEASURED FROM OUTPUT OF X2.
 \blacktriangle MEASURED IN "TAPE" POSITION I

PARTS LIST AND DESCRIPTIONS

CHASSIS BOTTOM VIEW-RESISTOR IDENT

TUBES

AMPEREX			GENERAL ELECTRIC			RAYTHEON			SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel A Preamp.	ECC83/12AX7	V6	Channel B Preamp.	ECC83/12AX7	V7	Channel B Preamp.	ECC83/12AX7	V8	Channel B AF Amp.	ECC8/12AT7
V2	Channel A Preamp.	ECC83/12AX7	V7	Channel B Preamp.	ECC83/12AX7	V8	Channel B AF Amp.	ECC8/12AT7	V9	Channel B AF Amp.	ECC8/12AT7
V3	Channel A AF Amp.	ECC8/12AT7	V8	Channel B AF Amp.	ECC8/12AT7	V9	Channel B AF Amp.	ECC8/12AT7			
V4	Channel A AF Amp.	ECC8/12AT7									
V5	Channel A AF Amp.	ECC8/12AT7									

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		NOTES
			SARKES TARZIAN PART No.	RAYTHEON PART No.	
X1	.028A		30H		
X2	.028A		30H		
X3	.028A		30H		
X4	.028A		10H		
X5	1A		10H		
X6	1A		10H		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLT.	REPLACEMENT DATA			
			GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1	80	250	A0310	FP228	TMS-1470	TVL-1535
C2	250	250	XC1-11	FP228	TMS-1470	TVL-1535
C3	250	250	XC2-28	FP228	TMS-1470	TVL-1535
C4	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C5	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C6	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C7	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C8	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C9	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C10	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C11	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C12	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C13	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C14	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C15	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C16	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C17	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C18	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C19	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C20	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C21	450	450	XC3-40	FP228	TMS-1470	TVL-1535
C22	450	450	XC3-40	FP228	TMS-1470	TVL-1535

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA			
			AEROVOX PART No.	CORNELL DUBILIER PART No.	ELMENC PART No.	SPRAGUE PART No.
C23	100 N150 10%		DI-1000	PM6DI	CCD-102	GP210
C24	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C25	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C26	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C27	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C28	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C29	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C30	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C31	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C32	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C33	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C34	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C35	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C36	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C37	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C38	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C39	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C40	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C41	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C42	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C43	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C44	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C45	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C46	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C47	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C48	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C49	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C50	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C51	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C52	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C53	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C54	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C55	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C56	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C57	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C58	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C59	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C60	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C61	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C62	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C63	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C64	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C65	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C66	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C67	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C68	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C69	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C70	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C71	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C72	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C73	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C74	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C75	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C76	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C77	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C78	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C79	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C80	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C81	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C82	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C83	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C84	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C85	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C86	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C87	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C88	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C89	.001 10%		P488N-1	CUB4P1	CCD-102	GP210
C90	.001 10%		P488N-1	CUB4P1	CCD-102	GP210

PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA			
			AEROVOX PART No.	CORNELL DUBILIER PART No.	ELMENC PART No.	SPRAGUE PART No.
C22	1.400V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C23	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C24	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C25	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C26	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C27	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C28	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C29	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C30	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C31	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C32	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C33	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C34	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C35	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C36	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C37	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C38	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C39	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C40	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C41	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C42	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C43	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C44	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C45	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C46	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C47	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C48	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C49	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C50	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C51	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C52	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C53	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C54	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C55	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C56	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C57	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C58	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C59	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C60	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C61	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C62	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C63	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C64	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C65	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C66	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C67	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C68	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C69	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C70	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C71	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C72	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C73	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C74	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C75	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C76	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C77	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C78	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C79	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C80	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C81	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10
C82	.05 100V		P488N-1	CUB4P1	4DP-3-104	4TM-P10

