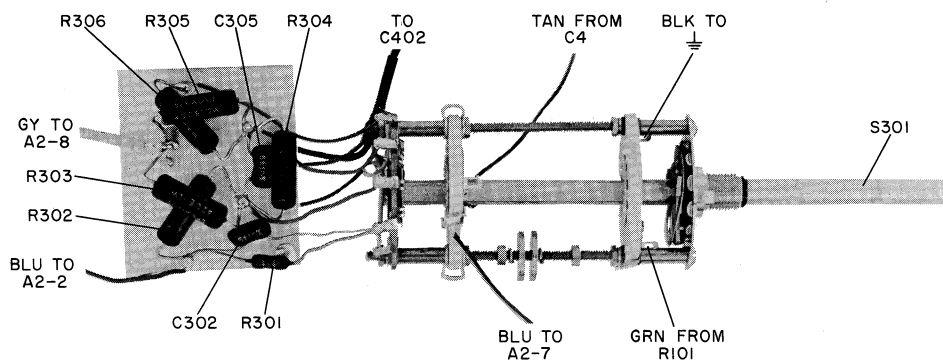
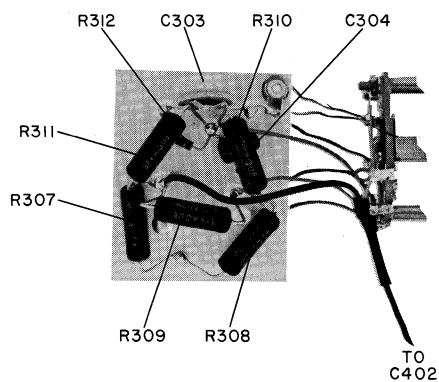


NOTES

1. ALL DC AND AC VOLTAGE LEVELS SHOWN IN RED ARE WITH 1 MV INPUT (FULL SCALE DEFLECTION). A TOLERANCE OF $\pm 10\%$ SHOULD BE ALLOWED FOR VARIATIONS FROM INSTRUMENT TO INSTRUMENT.
2. ALL AC VOLTAGES ARE UNDERLINED. ALL DC VOLTAGES HAVE A POLARITY INDICATION.



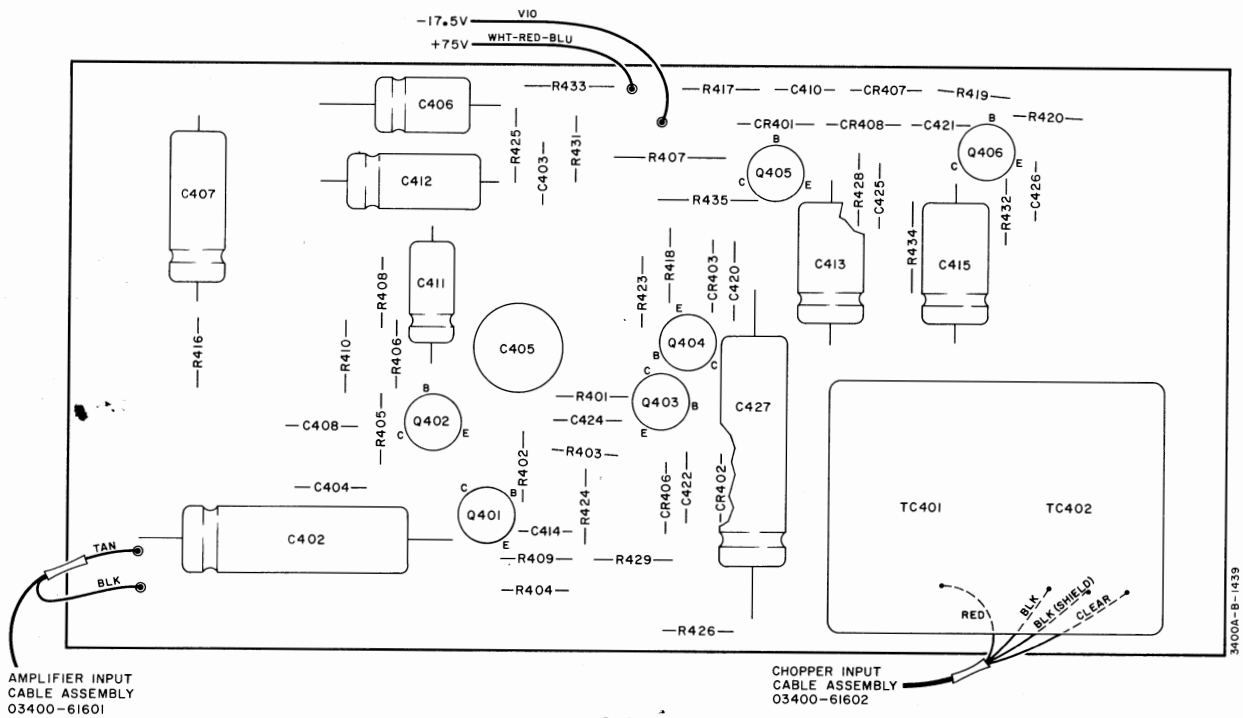
3400A-A-0107



A3
 (hp PART NO. 03400-63401)
 (BOARD ONLY)

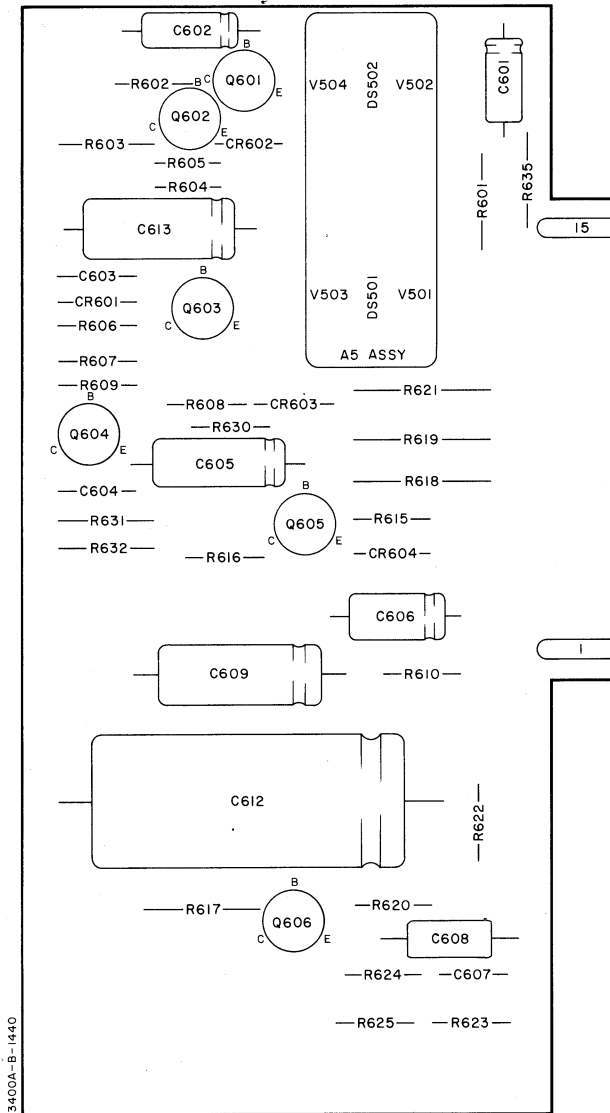
NOTES

1. ALL DC AND AC VOLTAGE LEVELS SHOWN IN RED ARE WITH 1 MV INPUT (FULL SCALE DEFLECTION). A TOLERANCE OF $\pm 10\%$ SHOULD BE ALLOWED FOR VARIATIONS FROM INSTRUMENT TO INSTRUMENT.
2. ALL AC VOLTAGES ARE UNDERLINED. ALL DC VOLTAGES HAVE A POLARITY INDICATION.
3. AC VOLTAGE LEVELS AT Q405 AND Q406 MUST BE OBSERVED WITH 10:1 DIVIDER PROBE.
4. IF C427 IS REPLACED, IT MAY BE NECESSARY TO SELECT THE VALUE OF C427 FOR PROPER FREQUENCY RESPONSE. THIS IS DUE TO CAPACITOR TOLERANCE.



A4

(hp PART NO. 03400-66503)



3400A-B-1440

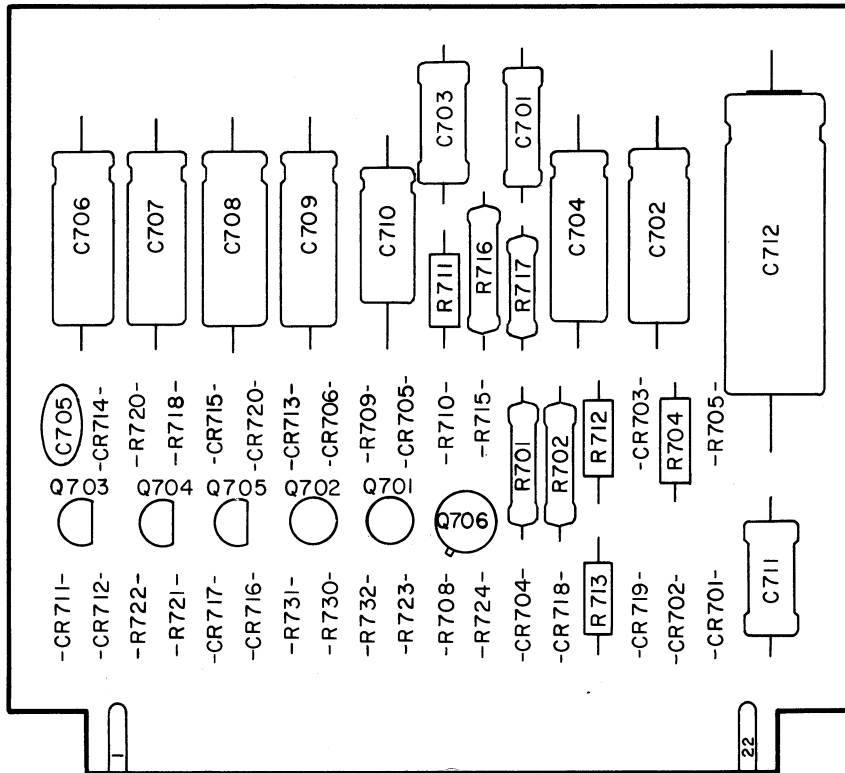
A6

(hp PART NO. 03400-66508)

A7

(hp Part No. 03400-66510)

Rev A



3400A-B-2672

MODEL 3400A
RMS VOLTMEETER

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Table C-1. Replaceable Parts

REFERENCE DESIGNATION	-hp- PART NO.	DESCRIPTION
NOTE This table applies to instruments with serials prefixed 322-, 401-, 528-, and 714-, with chopper amplifier board 03400-66504. If a 03400-66508 chopper amplifier board is installed use Table 7-1 and Figure 6-3.		
A6	03400-66504	Assembly: chopper amplifier board
A5	1990-0017	Assembly: photoconductor chopper part of A6
		Note
		Matched neon subassembly (DS501 and DS502) available under -hp- Part No. 1990-0206
C601	0180-0081	50 μ F +20% -15% 10 vdcw
C602	0180-0032	10 μ F +75% -10% 12 vdcw
C603 and C604	0150-0084	0.1 μ F -20% +80% 50 vdcw
C605	0180-0111	2 μ F 25 vdcw
C606	0180-0224	10 μ F 10 vdcw
C607	0150-0093	0.01 μ F -20% +80% 100 vdcw
C608	0180-0022	3.9 μ F 35 vdcw
C609	0180-0039	100 μ F 12 vdcw
C610	0180-0119	1 μ F -10% +100% 25 vdcw
C611	0150-0093	0.01 μ F -20% +80% 100 vdcw
C612	0180-0156	880 μ F -10% +100% 1 vdcw
C613	0180-0039	100 μ F 12 vdcw
CR601	1902-0046	Diode breakdown 7.15 V $\pm$ 10%
CR602	1910-0016	Diode germanium 60 piv
CR603 and CR604	1901-0025	Diode silicon 100 piv
Q601 thru Q603	1853-0036	Transistor silicon PNP 2N3906
Q604	1854-0033	Transistor silicon NPN 2N3391
Q605	1853-0016	Transistor silicon PNP 2N3638
R601	0683-3335	33 k Ω $\pm$ 5% 1/4 W
R602 thru R605	0683-6825	6800 Ω $\pm$ 5% 1/4 W
R606	0683-3325	3300 Ω $\pm$ 5% 1/4 W
R607	0683-8225	8200 Ω $\pm$ 5% 1/4 W
R608	0683-1035	10 k Ω $\pm$ 5% 1/4 W
R609	0683-5605	56 Ω $\pm$ 5% 1/4 W
R610	0683-3915	390 Ω $\pm$ 5% 1/4 W
R611 thru R614	Not assigned	
R615	0683-3335	33 k Ω $\pm$ 5% 1/4 W
R616	0683-2235	22 k Ω $\pm$ 5% 1/4 W
R617	0758-0043	1800 Ω $\pm$ 5% 1/4 W
R618	0727-0100	1000 Ω $\pm$ 1% 1/2 W
R619	0727-0063	292.4 Ω $\pm$ 1% 1/2 W

SECTION VII

REPLACEABLE PARTS

7-1. INTRODUCTION.

7-2. This section contains information for ordering replacement parts. Table 7-1 lists parts in alphabetic order of their reference designators and indicates the description, -hp- part number of each part, together with any applicable notes, and provides the following:

- a. Total quantity used in the instrument (TQ column). The total quantity of a part is given the first time the part number appears.
- b. Description of the part. (See list of abbreviations below.)
- c. Typical manufacturer of the part in a five-digit code. (See Appendix A for list of manufacturers.)
- d. Manufacturer's part number.

7-3. Miscellaneous parts are listed at the end of Table 7-1.

7-4. ORDERING INFORMATION.

7-5. To obtain replacement parts, address order or inquiry to your local Hewlett-Packard Field Office. (See Appendix B for list of office locations.) Identify parts by their Hewlett-Packard part numbers. Include instrument model and serial numbers.

7-6. NON-LISTED PARTS.

7-7. To obtain a part that is not listed, include:

- a. Instrument model number.
- b. Instrument serial number.
- c. Description of the part.
- d. Function and location of the part.

DESIGNATORS

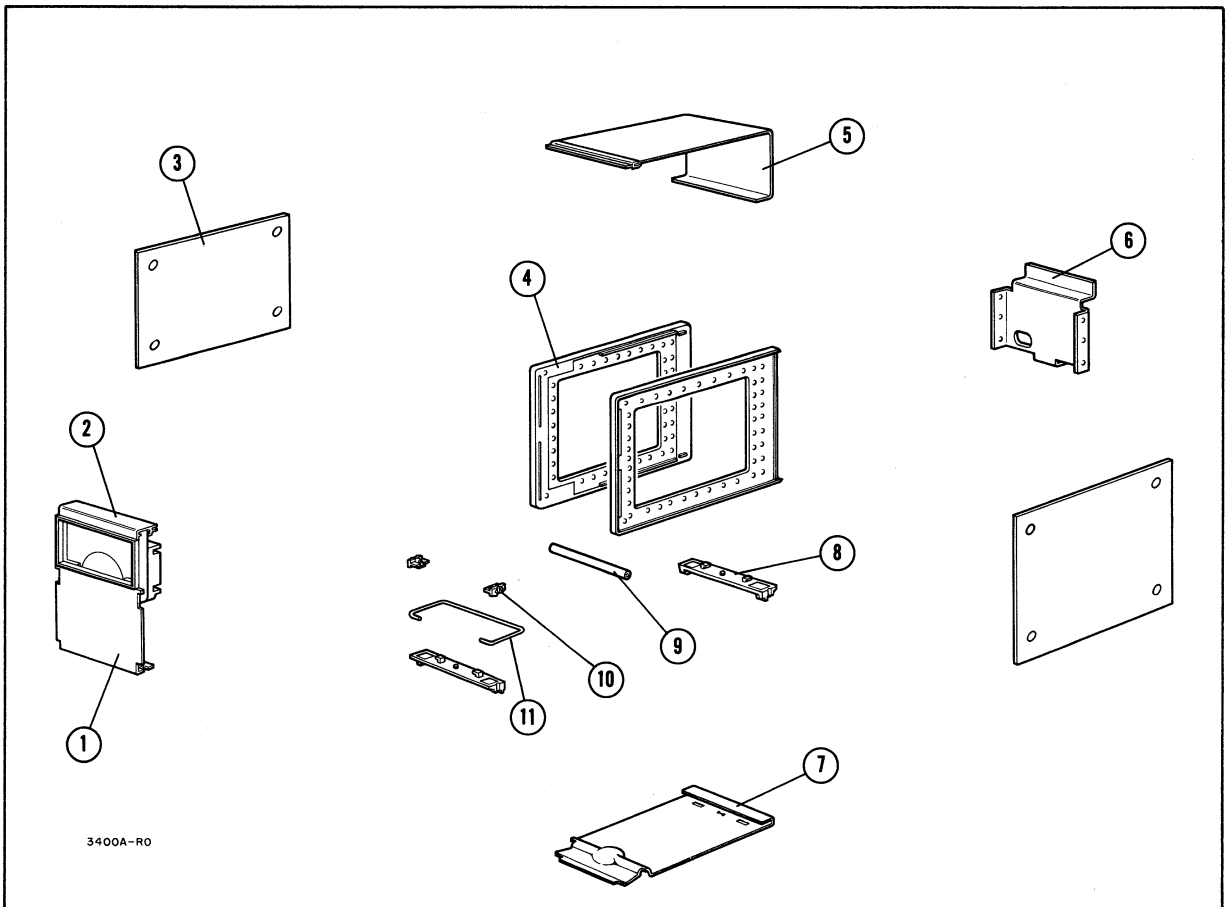
A	= assembly	F	= fuse	MP	= mechanical part	TC	= thermocouple
B	= motor	FL	= filter	P	= plug	V	= vacuum tube, neon bulb, photocell, etc.
BT	= battery	HR	= heater	Q	= transistor	W	= cable
C	= capacitor	IC	= integrated circuit	QCR	= transistor-diode	X	= socket
CR	= diode	J	= jack	R	= resistor	XDS	= lampholder
DL	= delay line	K	= relay	RT	= thermistor	XF	= fuseholder
DS	= lamp	L	= inductor	S	= switch	Z	= network
E	= misc electronic part	M	= meter	T	= transformer		

ABBREVIATIONS

Ag	= silver	ID	= inside diameter	ns	= nanosecond (s) = 10^{-9} seconds	sl	= slide
Al	= aluminum	imp	= impregnated	nsr	= not separately replaceable	SPDT	= single-pole double-throw
A	= ampere (s)	incd	= incandescent			SPST	= single-pole single-throw
Au	= gold	ins	= insulation (ed)			Ta	= tantalum
C	= capacitor	k Ω	= kilohm (s) = 10^3 ohms	Ω	= ohm (s)	TC	= temperature coefficient
cer	= ceramic	kHz	= kilohertz = 10^3 hertz	obd	= order by description	TiO ₂	= titanium dioxide
coef	= coefficient	L	= inductor	OD	= outside diameter	tog	= toggle
com	= common	lin	= linear taper	p	= peak	tol	= tolerance
comp	= composition	log	= logarithmic taper	pc	= printed circuit	trim	= trimmer
conn	= connection	m	= milli = 10^{-3}	pF	= picofarad (s) = 10^{-12} farads	TSTR	= transistor
dep	= deposited	mA	= milliamperes (s) = 10^{-3} amperes	piv	= peak inverse voltage	V	= volt (s)
DPDT	= double-pole double-throw	MHz	= megahertz = 10^6 hertz	p/o	= part of	vacw	= alternating current working voltage
DPST	= double-pole single-throw	M Ω	= megohm (s) = 10^6 ohms	pos	= position (s)	var	= variable
elect	= electrolytic	met flm	= metal film	poly	= polystyrene	vdw	= direct current working voltage
encap	= encapsulated	mfr	= manufacturer	pot	= potentiometer		
F	= farad (s)	mtg	= mounting	p-p	= peak-to-peak		
FET	= field effect transistor	mV	= millivolt (s) = 10^{-3} volts	ppm	= parts per million	W	= watt (s)
fxd	= fixed	μ	= micro = 10^{-6}	prec	= precision (temperature coefficient, long term stability, and/or tolerance)	w/	= with
GaAs	= gallium arsenide	μ V	= microvolt (s) = 10^{-6} volts			wiv	= working inverse voltage
GHz	= gigahertz = 10^9 hertz	my	= Mylar ^(R)			w/o	= without
gd	= guard (ed)	nA	= nanoampere (s) = 10^{-9} amperes	R	= resistor	ww	= wirewound
Ge	= germanium	NC	= normally closed	Rh	= rhodium	*	= optimum value selected at factory, average value shown (part may be omitted)
grd	= ground (ed)	Ne	= neon	rms	= root-mean-square	**	= no standard type number assigned (selected or special type)
H	= henry (ies)	NO	= normally open	rot	= rotary		
Hg	= mercury	NPO	= negative positive zero (zero temperature coefficient)	Se	= selenium		
Hz	= hertz (cycle (s) per second)			sect	= section (s)		
				Si	= silicon		

REV G

(R) Dupont de Nemours



INDEX NO.	DESCRIPTION	QUANTITY	-hp- PART NO.
1	Front Panel	1	03400-00204
2	Meter Trim 1/3 module	1	5020-5388
3	Side Cover 6 x 11 sm	2	5000-8565
4	Frame Assembly	2	5060-0703
5	Top Cover (with handle)	1	03400-64103
6	Rear Panel	1	03400-00203
7	Bottom Cover 5 x 11 sm	1	5000-8571
8	Foot Assembly 1/3 module	2	5060-0727
9	Spacer 1/3 module	1	5020-6852
10	Hinge	2	5040-0700
11	Tilt Stand 1/3 module	1	1490-0031

Figure 7-1. Modular Cabinet

Table 7-1. Replaceable Parts

REFERENCE DESIGNATOR	-hp- PART NO.		T Q	DESCRIPTION	MFR.	MFR. PART NO.
A1	03400-66501			Assembly: Input Attenuator Board		
A2	03400-66502			Assembly: Impedance Converter Board		
A3	03400-63401			Assembly: Second Attenuator		
A4	03400-66503			Assembly: Amplifier Board		
A5	1990-0223			Assembly: Photoconductor Chopper Part of A6. Note: matched neon subassembly (DS501 and DS502) available, -hp- Part No. 1990-0224		
A6	03400-66508			Assembly: Chopper Amplifier Board		
A7	03400-66510			Assembly: Power Supply Board		
C1	0180-0152			C: fxd Al elect 2X40 μ F +30% -10% 200 vdc 200 vdcw	56289	D36975
C2	0180-0148	1		C: fxd Al elect 890 μ F -10% +100% 15 vdcw	00853	Type PL1
C3A, B	0160-3333	2		C: fxd cer 5000 pF $\pm$ 20%	08988	THD-8-502M-1.4KV
C4	0160-0379	1		C: fxd mica 4775 pF $\pm$ 10% 500 vdcw	72982	633-010
C5 thru C100				Not assigned		
C101	0170-0022	1		C: fxd my 0.1 μ F $\pm$ 20% 600 vdcw	09134	Type 27
C102	0132-0003	1		C: var poly 0.7 - 3.0 pF	72982	535-016-4R
C103	0150-0058	1		C: fxd cer 2.2 pF 600 vdcw	72982	301000 C0J0 229C
C104 thru C200				Not assigned		
C201	0170-0019			C: fxd my 0.1 μ F $\pm$ 5% 200 vdcw	56289	192P10452-PTS
C202	0150-0031	1		C: fxd TI 2 pF $\pm$ 5% 500 vdcw	78488	Type GA 2 pF 5%
C203	0180-0060	2		C: fxd elect 200 μ F -10% +100% 3 vdcw	56289	30D116A1
C204	0180-0089	3		C: fxd elect 10 μ F 150 vdcw	56289	30D218A1
C205*	0180-0039	4		C: fxd Al elect 100 μ F +75% -10% 12 vdcw	56289	107G012CC2-DSM
C206	0140-0201	1		C: fxd mica 12 pF $\pm$ 5% 500 vdcw	04062	DM15C120J
C207	0180-0061	1		C: fxd elect 100 μ F -10% +100% 15 vdcw	56289	30D172A1
C208	0150-0093	3		C: fxd cer 0.01 μ F -20% +80% 100 vdcw	91418	TA obd
C209 thru C301				Not assigned		
C302*	0160-0987			C: fxd mica 12 pF $\pm$ 5% 500 vdcw	72136	obd
C303	0121-0039	1		C: var 8-50 pF	72982	557-062-U2PO-34R
C304*	0160-0196	1		C: fxd mica 24 pF $\pm$ 5%	72136	obd
C305*	0160-0987	2		C: fxd mica 12pF $\pm$ 5% 500 vdcw	72136	obd
C306 thru C401				Not assigned		
C402	0180-0063			C: fxd elect 500 μ F -10% +100% 3 vdcw	56289	30D120A1
C403	0150-0052	1		C: fxd cer 0.05 μ F $\pm$ 20% 400 vdcw	72982	847-000-Z5UO-503M
C404	0140-0201			C: fxd mica 12 pF $\pm$ 5% 500 vdcw	04062	DM15C120J
C405	0130-0018	1		C: var cer 1.5-7 pF 500 vdcw	72982	557-019-COPO-10R
C406	0180-0137	1		C: fxd Ta elect 100 μ F $\pm$ 20% 10 vdcw	56289	150D107X0010R2
C407	0180-0060			C: fxd elect 200 μ F -10% +100% 3 vdcw	56289	30D116A1
C408	0160-0127	2		C: fxd cer 1 μ F $\pm$ 20% 25 vdcw	56289	5C13
C409				Not assigned		
C410	0140-0225	2		C: fxd mica 300 pF $\pm$ 1% 300 vdcw	04062	DM15F301J 300 V
C411	0180-0224	2		C: fxd elect 10 μ F 10 vdcw	56289	30D106G015BA4
C412	0180-0039			C: fxd elect 100 μ F 12 vdcw	56289	30D154A1
C413	0180-0142	2		C: fxd elect 20 μ F -10% +100% 25 vdcw	56289	Type 40D
C414	0140-0196	1		C: fxd mica 150 pF $\pm$ 5% 300 vdcw	04062	DM15F151J 300 V
C415	0180-0142			C: fxd elect 20 μ F -10% +100% 25 vdcw	56289	Type 40D obd
C416 thru C419				Not assigned		
C420	0150-0096	1		C: fxd cer 0.05 μ F 100 vdcw	91418	TA obd
C421	0140-0225			C: fxd mica 300 pF $\pm$ 1% 300 vdcw	04062	DM15F301J300V
C422	0160-0127			C: fxd cer 1 μ F $\pm$ 20% 25 vdcw	56289	5C13 obd

Table 7-1. Replaceable Parts (Cont'd)

REFERENCE DESIGNATOR	-hp- PART NO.		TQ	DESCRIPTION	MFR.	MFR. PART NO.
C423				Not assigned		
C424	0160-0128		1	C: fxd cer 2.2 μ F $\pm 20\%$ 25 vdcw	56289	5C13 obd
C425, C426	0140-0176		2	C: fxd mica 100 pF $\pm 2\%$ 300 vdcw	04062	DM15F101G 300V
C427	0180-0104		1	C: fxd elect 200 μ F 15 vdcw	56289	30D174A1
C428 thru C600				Not assigned		
C601	0180-0081		1	C: fxd Ta elect 50 μ F $+20\%$ -15% 10 vdcw	10411	MTA-50-10
C602	0180-0032		1	C: fxd elect 10 μ F $+75\%$ -10% 12 vdcw	56289	30D106G012 BA2-DSM
C603, C604	0150-0084		2	C: fxd cer 0.1 μ F $+80\%$ -20% 50 vdcw	56289	33C41
C605	0180-0111		1	C: fxd elect 2 μ F 25 vdcw	56289	40D173A2
C606	0180-0224			C: fxd elect 10 μ F 10 vdcw	56289	30D106G015BA4
C607	0150-0093			C: fxd cer 0.01 μ F $+80\%$ -20% 100 vdcw	91418	TA obd
C608	0180-0022		1	C: fxd Ta elect 3.9 μ F 35 vdcw	05397	K3R9J35KS
C609	0180-0039			C: fxd elect 100 μ F 12 vdcw	56289	30D154A1
C610, C611				Not assigned		
C612	0180-0156		1	C: fxd Al elect 880 μ F $+100\%$ -10% 1 vdcw	56289	Type 34D obd
C613	0180-0039			C: fxd elect 100 μ F 12 vdcw	56289	30D154A1
C614 thru C700				Not assigned		
C701	0170-0024		2	C: fxd my 0.022 μ F $\pm 20\%$ 200 vdcw	56289	192P22302
C702	0180-0089			C: fxd elect 10 μ F $+100\%$ -10% 150 vdcw	56289	30D218A1
C703	0160-0166		1	C: fxd my 0.068 μ F $\pm 10\%$ 200 vdcw	56289	192P68392-PTS
C704	0180-0089			C: fxd elect 10 μ F 100% -10% 150 vdcw	56289	30D218A1
C705	0150-0012		1	C: fxd cer 0.01 μ F $\pm 20\%$ 1000 vdcw	56289	H1038 obd
C706, C707	0180-0050		2	C: fxd elect 40 μ F $+100\%$ -15% 50 vdcw	56289	D32538
C708 thru C709	0180-0105		1	C: fxd elect 50 μ F 25 vdcw	56289	S97441
C710	0180-0098		1	C: fxd elect 100 μ F $\pm 20\%$ 20 vdcw	56289	150D107X0020S2-DYS
C711	0160-2192		1	C: fxd my 0.082 μ F $\pm 5\%$ 200 vdcw	56289	192P82352-PTS
C712	0180-0282		1	C: fxd Al elect 35 μ F $+75\%$ -10% 250 vdcw	56289	D38270
CR201	1902-0045		1	Diode: avalanche 732 V $\pm 2\%$ 400 mW	04713	SZ10939-144
CR202	1901-0025		11	Diode: Si 100 piv	93332	D3072
CR203 thru CR400				Not assigned		
CR401	1901-0025			Diode: Si 100 piv	93332	D3072
CR402	1901-0040		1	Diode: Si	03877	SG 5050
CR403	1902-0040		1	Diode: avalanche 14 V $\pm 5\%$ 400 mW	04713	SZ10939-224
CR404, CR405				Not assigned		
CR406	1901-0025			Diode: Si 100 piv	93332	D3072
CR407, CR408	1910-0016		2	Diode: Ge 60 piv	11711	GD 150
CR409 thru CR600				Not assigned		
CR601	1902-0046		2	Diode: breakdown 7.15 V $\pm 10\%$	04713	SZ10939-139
CR602	1910-0016			Diode: Ge 60 piv	11711	GD 150
CR603, CR604	1901-0025			Diode: Si 100 piv	93332	D3072
CR605 thru CR700				Not assigned		
CR701, CR702	1901-0028		2	Diode: Si 0.5 amp 400 piv	01841	obd
CR703 thru CR706	1901-0025			Diode: Si 100 piv	93332	D3072

Table 7-1. Replaceable Parts (Cont'd)

REFERENCE DESIGNATOR	-hp- PART NO.		T Q	DESCRIPTION	MFR.	MFR. PART NO.
CR707 thru CR710				Not assigned		
CR711, CR712	1901-0158		2	Diode: Si 200 piv	04713	SR1358-3
CR713, CR714, CR720	1901-0025			Diode: Si 100 piv	93332	D3072
CR715	1902-3223		1	Diode: Si breakdown 17.4 V $\pm 2\%$ 400 mW	04713	SZ10939-225
CR716, CR717	1901-0045		2	Diode: Si 100 piv	86684	34935
CR718	1902-0046			Diode: breakdown 7.15 V $\pm 10\%$ 400 mW	04713	SZ10939-139
CR719	1901-0028			Diode: Si 400 piv	01841	obd
DS1	1450-0419		1	Light: Indicator - Lamp No. A165	72765	599-237-WHITE
F1	2110-0004		1	Fuse: cartridge 1/4 amp 250 V	75915	3AG/CAT. 312.250
J1	1250-0118		1	Connector: BNC	91737	8427
J2	1251-0205		1	Jack: telephone open circuit	82389	2J-1432
J3	1251-2357		1	Connector: AC power cord receptacle	82389	EAC-301
J4	1251-0208		1	Connector: PC 22 contact	95354	91-6922-1500-00
J5	1251-0194		1	Connector: PC 15 contact	95354	91-6915-1113-00
M1	1120-0320		1	Meter: full scale 3 mA	-hp-	
M1	1120-0308		1	Meter: dB scale uppermost (Option 01) only	-hp-	
Q1	1850-0098		1	TSTR: Ge PNP selected	04713	SP-776
Q2, Q3	1850-0038		2	TSTR: Ge PNP	86684	34879
Q4 thru Q200				Not assigned		
Q201	1854-0215		1	TSTR: Si NPN	04713	SPS 3611
Q202 thru Q400				Not assigned		
Q401 thru Q403	1853-0010			TSTR: Si PNP	04713	SM4713
Q404	1854-0005		2	TSTR: Si PNP 2N708	04713	obd
Q405	1853-0010			TSTR: Si PNP	04713	SM4713
Q406	1854-0005			TSTR: Si Ω N Ω 2N708	04713	obd
Q407 thru Q600				Not assigned		
Q601 thru Q604	1853-0036		4	TSTR: Si PNP 2N3906	04713	2N3906-5
Q605	1854-0033		1	TSTR: Si NPN 2N3391	24446	2N3391
Q606	1853-0016		1	TSTR: Si PNP 2N3638	07263	2N3638
Q607 thru Q700				Not assigned		
Q701, Q702	1853-0066		2	TSTR: Si PNP	12040	ST62122
Q703, Q704	1853-0086		2	TSTR: Si PNP	04713	SPS3322
Q705	1854-0215		1	TSTR: Si NPN	04713	SPS3611
Q706	1854-0022		1	TSTR: Si NPN 2N2102	03877	ST 1657
R1	0687-3331		1	R: fxd comp 33 k Ω $\pm 10\%$ 1/2 W	01121	EB 3331
R2	0687-2211		1	R: fxd comp 220 Ω $\pm 10\%$ 1/2 W	01121	EB 2211
R3*	0758-0070		1	R: fxd met flm 1200 Ω $\pm 5\%$ 1/2 W	75042	CE 57 obd
R4	2100-0805		1	R: var ww lin 50 Ω $\pm 20\%$ 2 W	71450	Series 117-SPC
R5	0812-0048		1	R: fxd ww 80 Ω $\pm 3\%$ 1/2 W	14193	SA10 obd
R6	2100-0721		1	R: var ww 30 Ω $\pm 20\%$	71450	Series 112-SPL
R7	2100-0412		1	R: var ww lin 200 Ω $\pm 20\%$ 2 W	71450	Type 117 obd
R8*	0686-3915		1	R: fxd comp 390 Ω $\pm 5\%$ 1/2 W	01121	EB 3915
R9	0684-4741		1	R: fxd comp 470 k Ω $\pm 10\%$ 1/4 W	01121	EB 4741
R10	0683-3635		1	R: fxd comp 36 k Ω $\pm 5\%$ 1/4 W	01121	CB 3635
R11 thru R100				Not assigned		

Table 7-1. Replaceable Parts (Cont'd)

REFERENCE DESIGNATOR	-hp- PART NO.	T Q	DESCRIPTION	MFR.	MFR. PART NO.
R101	0698-4128	1	R: fxd met flm $10M \pm 1/4\%$ 1/2 W	56289	42DET-2
R102			Not assigned		
R103	0698-6204	1	R: fxd met flm $9.9\text{ k}\Omega \pm 1\%$ 1/8 W	75042	CEA T-O obd
R104	2100-0128	1	R: var comp lin $250\Omega \pm 20\%$ 1/3 W	71450	UPM 70RE (-hp-)
R105 thru R200			Not assigned		
R201	0683-3935	1	R: fxd comp $39\text{ k}\Omega \pm 5\%$ 1/4 W	01121	CB 3935
R202	0683-4715	1	R: fxd comp $470\Omega \pm 5\%$ 1/4 W	01121	CB 4715
R203	0683-3355	1	R: fxd comp $3.3M \pm 5\%$ 1/4 W	01121	CB 3335
R204	0683-1035	4	R: fxd comp $10\text{ k}\Omega \pm 5\%$ 1/4 W	01121	CB 1035
R205	0683-8225	2	R: fxd comp $8200\Omega \pm 5\%$ 1/4 W	01121	CB 8225
R206	0683-8215	1	R: fxd comp $820\Omega \pm 5\%$ 1/4 W	01121	CB 8215
R207	0727-0439	1	R: fxd depc $30.1\text{ k}\Omega \pm 1\%$	91637	DC5 1/2
R208	0683-2715	1	R: fxd comp $270\Omega \pm 5\%$ 1/4 W	01121	CB 2715
R209	0683-1015	1	R: fxd comp $100\Omega \pm 5\%$ 1/4 W	01121	CB 1015
R210			Not assigned		
R211	0683-2725	3	R: fxd comp $2700\Omega \pm 5\%$ 1/4 W	01121	CB 2725
R212	0727-0136	1	R: fxd depc $5.03\text{ k}\Omega \pm 1\%$ 1/2 W	56289	428E
R213	0727-0126	1	R: fxd depc $3.266\text{ k}\Omega \pm 1\%$ 1/2 W	91637	DCS 1/2
R214 thru R300			Not assigned		
R301	0757-0715	1	R: fxd met flm $150\Omega \pm 1\%$ 1/4 W	91637	MFF 1/4-T1
R302	0698-4119	5	R: fxd met flm $410.26\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R303	0698-4118	4	R: fxd met flm $277.48\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R304	0698-4119		R: fxd met flm $410.26\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R305	0698-4118		R: fxd met flm $277.48\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R306	0698-4119		R: fxd met flm $410.26\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R307	0698-4118		R: fxd met flm $277.48\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R308	0698-4119		R: fxd met flm $410.26\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R309	0698-4118		R: fxd met flm $277.48\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R310	0698-4119		R: fxd met flm $410.26\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R311	0698-4117	1	R: fxd met flm $189.72\Omega \pm 0.1\%$ 1/4 W	91637	MFF 1/4 T-3
R312	0683-5115	2	R: fxd comp $510\Omega \pm 5\%$ 1/4 W	91637	MFF 1/4 T-3
R313 thru R400			Not assigned		
R401	0683-3025	2	R: fxd comp $3000\Omega \pm 5\%$ 1/4 W	01121	CB 3025
R402	0683-1035		R: fxd comp $10\text{ k}\Omega \pm 5\%$ 1/4 W	01121	CB 1035
R403	0683-2405	1	R: fxd comp $24\Omega \pm 5\%$ 1/4 W	01121	CB 2405
R404	0757-0346	2	R: fxd met oxide $10\Omega \pm 1\%$ 1/8 W	75042	CEA T-O obd
R405	0683-1515	1	R: fxd comp $150\Omega \pm 5\%$ 1/4 W	01121	CB 1515
R406	0683-3925	2	R: fxd comp $3900\Omega \pm 5\%$ 1/4 W	01121	CB 3925
R407	0727-0065	1	R: fxd depc $300\Omega \pm 1\%$ 1/2 W	56289	428E
R408	0683-1025	2	R: fxd comp $1000\Omega \pm 5\%$ 1/4 W	01121	CB 1025
R409	0683-1005	2	R: fxd comp $10\Omega \pm 5\%$ 1/4 W	01121	CB 1005
R410	0683-1025	2	R: fxd comp $1000\Omega \pm 5\%$ 1/4 W	01121	CB 1025
R411 thru R415			Not assigned		
R416	0683-5115		R: fxd comp $510\Omega \pm 5\%$ 1/4 W	01121	CB 5115
R417	0683-6825	7	R: fxd comp $6800\Omega \pm 5\%$ 1/4 W	01121	CB 6825
R418	0683-1825	1	R: fxd comp $1800\Omega \pm 5\%$ 1/4 W	01121	CB 1825
R419*	0683-2715	1	R: fxd comp $270\Omega \pm 5\%$ 1/4 W Factory selected comp: typical value given	01121	CB 2715
R420	0683-6825		R: fxd comp $6800\Omega \pm 5\%$ 1/4 W	01121	CB 6825
R421, R422			Not assigned		
R423	0683-3325	2	R: fxd comp $3300\Omega \pm 5\%$ 1/4 W	01121	CB 3325

Table 7-1. Replaceable Parts (Cont'd)

REFERENCE DESIGNATOR	-hp- PART NO.		TQ	DESCRIPTION	MFR.	MFR. PART NO.
R424	0683-5135		1	R: fxd comp 51 k Ω $\pm 5\%$ 1/4 W	01121	CB 5135
R425	0683-1035			R: fxd comp 10 k Ω $\pm 5\%$ 1/4 W	01121	CB 1035
R426	0757-0346			R: fxd met oxide 10 Ω $\pm 1\%$ 1/8 W	75042	CEA T-O obd
R427				Not assigned		
R428	0683-4305		2	R: fxd comp 43 Ω $\pm 5\%$ 1/4 W	01121	CB 4305
R429	0757-0345		1	R: fxd met oxide 302 Ω $\pm 1\%$ 1/8 W	19701	N60 obd
R430				Not assigned		
R431	0683-3335		2	R: fxd comp 33 k Ω $\pm 5\%$ 1/4 W	01121	CB 3335
R432	0683-4305			R: fxd comp 43 Ω $\pm 5\%$ 1/4 W	01121	CB 4305
R433	0758-0073		1	R: fxd met flm 24 k Ω $\pm 5\%$ 1/2 W	01121	CB 0033
R434, R435	0758-0033		2	R: fxd met flm 2000 Ω $\pm 5\%$ 1/2 W	01121	CB 0033
R436 thru R600				Not assigned		
R601	0757-0454		3	R: fxd met flm 33.2 k Ω $\pm 1\%$ 1/8 W	75042	CEA T-O obd
R602, R603	0757-0459		2	R: fxd met flm 56.2 k Ω $\pm 1\%$ 1/8 W	75042	CEA T-O obd
R604, R605	0683-6835		3	R: fxd comp 68 k Ω $\pm 5\%$ 1/4 W	01121	CB 6835
R606	0683-3325			R: fxd comp 3300 Ω $\pm 5\%$ 1/4 W	01121	CB 3325
R607, R608	0683-1035			R: fxd comp 10 k Ω $\pm 5\%$ 1/4 W	01121	CB 1035
R609	0683-1025		2	R: fxd comp 1000 Ω $\pm 5\%$ 1/4 W	01121	CB 1025
R610	0683-3915		1	R: fxd comp 390 Ω $\pm 5\%$ 1/4 W	01121	CB 3915
R611 thru R614				Not assigned		
R615	0683-3335			R: fxd comp 33 k Ω $\pm 5\%$ 1/4 W	01121	CB 3335
R616	0683-2235		1	R: fxd comp 22 k Ω $\pm 5\%$ 1/4 W	01121	CB 2235
R617	0758-0043		1	R: fxd met flm 1800 Ω $\pm 5\%$ 1/2 W	75042	CE 57
R618	0727-0100		1	R: fxd depc 1000 Ω $\pm 1\%$ 1/2 W	56289	428E
R619	0727-0063		1	R: fxd depc 292.4 Ω $\pm 1\%$ 1/2 W	56289	428E
R620	0683-1245		1	R: fxd comp 120 k Ω $\pm 5\%$ 1/4 W	01121	CB 1245
R621	0727-0013		1	R: fxd depc 24.3 Ω $\pm 1\%$ 1/2 W	56289	428E
R622	0683-3925			R: fxd comp 3900 Ω $\pm 5\%$ 1/4 W	01121	CB 3925
R623	0683-3945		1	R: fxd comp 390 k Ω $\pm 5\%$ 1/4 W	01121	CB 3945
R624	0683-6835			R: fxd comp 68 k Ω $\pm 5\%$ 1/4 W	01121	CB 6835
R625	0683-6835			R: fxd comp 68 k Ω $\pm 5\%$ 1/4 W	01121	CB 6835
R626 thru R629				Not assigned		
R630	0683-3025			R: fxd comp 3000 Ω $\pm 5\%$ 1/4 W	01121	CB 3025
R631, R632	0757-0454			R: fxd met flm 33.2 k Ω $\pm 1\%$ 1/8 W	75042	CEA T-O obd
R633				Not assigned		
R634				Not assigned		
R635	0698-3455			R: fxd met flm 261 k Ω $\pm 1\%$ 1/8 W	75042	CEA T-O obd
R636 thru R700				Not assigned		
R701, R702	0757-0854		2	R: fxd met flm 56.2 k Ω $\pm 1\%$ 1/2 W	91637	MFF 1/2 T-1 obd
R703				Not assigned		
R704	0758-0064		1	R: fxd met flm 36 k Ω $\pm 5\%$ 1/2 W	75042	obd
R705	0683-2035		1	R: fxd comp 20 k Ω $\pm 5\%$ 1/4 W	01121	CB 2035
R706				Not assigned		
R707				Not assigned		
R708	0683-1005			R: fxd 10 Ω $\pm 5\%$ 1/4 W	01121	CB 1005
R709	0683-0335		1	R: fxd comp 3.3 Ω $\pm 5\%$ 1/4 W	01121	CB 33G5
R710	0683-4725		2	R: fxd comp 4700 Ω $\pm 5\%$ 1/4 W	01121	CB 4725
R711	0687-1831		1	R: fxd comp 18 k Ω $\pm 10\%$ 1/2 W	01121	CB 1831
R712	0687-2241		1	R: fxd comp 220 k Ω $\pm 10\%$ 1/2 W	01121	EB 2241
R713	0686-2225		1	R: fxd comp 2.2 k Ω $\pm 5\%$ 1/2 W	01121	EB 2225
R714				Not assigned		
R715	0683-4705			R: fxd comp 47 Ω $\pm 5\%$ 1/4 W	01121	CB 4705

Table 7-1. Replaceable Parts (Cont'd)

REFERENCE DESIGNATOR	-hp- PART NO.		T Q	DESCRIPTION	MFR.	MFR. PART NO.
R716	0727-0188		1	R: fxd depe 38.95 k Ω $\pm$ 1/2% 1/2 W	91637	DCS 1/2 obd
R717	0727-0153		1	R: fxd depe 9.1 k Ω $\pm$ 1% 1/2 W	56289	428E
R718	0683-3335			R: fxd comp 33 k Ω $\pm$ 5% 1/4 W	01121	CB 3335
R719				Not assigned		
R720	0683-5615		1	R: fxd comp 560 Ω $\pm$ 5% 1/4 W	01121	CB 5615
R721	0683-6825			R: fxd comp 6800 Ω $\pm$ 5% 1/4 W	01121	CB 6825
R722	0683-2725			R: fxd comp 2700 Ω $\pm$ 5% 1/4 W	01121	CB 2725
R723	0684-1001		1	R: fxd comp 10 Ω $\pm$ 10% 1/4 W	01121	CB 1001
R724	0683-4725			R: fxd comp 4700 Ω $\pm$ 5% 1/4 W	01121	CB 4725
R725 thru R729				Not assigned		
R730	0698-4121			R: fxd met flm 11.3 k Ω $\pm$ 1% 1/8 W	14674	C4 obd
R731	0698-3258			R: fxd met flm 5.36 k Ω $\pm$ 1% 1/8 W	14674	C4 T-0
R732	0683-2725			R: fxd comp 2700 Ω $\pm$ 5% 1/4 W	01121	CB 2725
S1	3101-0036		1	Switch: toggle SPST 3 amp 250 V	88140	8928K61
S2	3101-1234		1	Switch: slide, marked 115/230 V	82389	11A-1242A
S3 thru S300				Not assigned		
S301	3100-0358		1	Switch: rotary 3 sect 12 pos	76854	obd
T1	9100-1440		1	Transformer	-hp-	
TC401, TC402	0853-0003		2	Thermocouples -- matched pair	11403	obd
V201	1921-0017		1	Electron Tube: 7586 nuvistor triode	86684	7586 obd
W1	8120-1348		1	Power Cord 7-1/2 ft	70903	KHS-7041
XF1	1400-0084		1	Fuseholder: extractor post-type 2-5/64" long	75915	342014
XV201	1200-0086		1	Socket: nuvistor 5-pin	71785	133-65-11-026
	1200-0044			Socket: transistor	97313	1ST1502-3
				<u>MISCELLANEOUS</u>		
	0370-0077		1	Knob: bar (with one arrow)	-hp-	
	1200-0043		1	Insulator: transistor anodized aluminum	000LB	obd
	1200-0081		1	Insulator: transistor nylon .235" od.	26365	974 Special
	1520-0002		1	Plate: capacitor mounting	56137	obd
	1520-0003		1	Plate: capacitor mounting	37942	Type BP2 obd
	03400-01202		1	Clamp: capacitor mounting	-hp-	
	03400-01204		1	Bracket: ground	-hp-	
	03400-61601		1	Cable assembly: amplifier input	-hp-	
	03400-61602		1	Cable assembly: chopper input	-hp-	
	03400-61603		1	Cable assembly: input attenuator	-hp-	
	03400-69501		1	Shock mount impedance converter	-hp-	
	1200-0044		1	Socket: TSTR	97913	Type M7 (PB)obd
	03400-90008		1	Manual: Operating and Service	-hp-	

CODE LIST OF MANUFACTURERS

The following code numbers are from the Federal Supply Code for Manufacturers Cataloging Handbooks H4-1 (Name to Code) and H4-2 (Code to Name) and their latest supplements. The date of revision and the date of the supplements used appear at the bottom of each page. Alphabetical codes have been arbitrarily assigned to suppliers not appearing in the H4 Handbooks.

Code No.	Manufacturer	Address	Code No.	Manufacturer	Address	Code No.	Manufacturer	Address
00000	U. S. A Common	Any supplier of U.S.	05347	Ultronix, Inc.	San Mateo, Cal.	11236	CTS of Berne, Inc.	Berne, Ind.
00136	McCoy Electronics.	Mount Holly Springs, Pa.	05397	Union Carbide Corp., Elect.		11237	Chicago Telephone of	
00213	Sage Electronics Corp.	Rochester, N. Y.		Div.	New York, N. Y.		California, Inc.	So. Pasadena, Cal.
00287	Cemco, Inc.	Danielson, Conn.	05574	Viking Ind. Inc.	Canoga Park, Cal.	11242	Bay State Electronics Corp.	Waltham, Mass
00334	Humidial	Colton, Calif.	05593	Icore Electro-Plastics Inc.	Sunnyvale, Cal.	11312	Teledyne Inc., Microwave	
00348	Mictrom, Co., Inc.	Valley Stream, N. Y.	05616	Cosmo Plastic (c/o Electrical			Div.	Palo Alto, Cal.
00373	Garlock Inc.	Cherry Hill, N. J.		Spec. Co.)	Cleveland, Ohio	11314	National Seal	Downey, Cal.
00656	Aerovox Corp.	New Bedford, Mass.	05624	Barber Colman Co.	Rockford, Ill.	11453	Precision Connector Corp.	Jamaica, N. Y.
00779	Amp, Inc.	Harrisburg, Pa.	05728	Tiffen Optical Co.		11534	Duncan Electronics Inc.	Costa Mesa, Cal.
00781	Aircraft Radio Corp.	Boonton, N. J.			Roslyn Heights, Long Island, N. Y.	11711	General Instrument Corp.,	
00809	Crown, Ltd.	Whitby, Ontario, Canada	05729	Metro-Tel Corp.	Westbury, N. Y.		Semiconductor Division Products	
00815	Northern Engineering		05783	Stewart Engineering Co.	Santa Cruz, Cal.		Group	Newark, N. J.
	Laboratories, Inc.	Burlington, Wis.	05820	Wakefield Engineering Inc.	Wakefield, Mass.	11717	Imperial Electronic, Inc.	Buena Park, Cal.
00853	Sangamo Electric Co.,		06004	Bassick Co., Div. of Stewart		11870	Melabs, Inc.	Palo Alto, Cal.
	Pickens Div.	Pickens, S. C.		Warner Corp.	Bridgeport, Conn.	12136	Philadelphia Handle Co.	Camden, N. J.
00866	Goe Engineering Co.	City of Industry, Cal.	06090	Raychem Corp.	Redwood City, Cal.	12361	Grove Mfg. Co., Inc.	Shady Grove, Pa.
00891	Carl E. Holmes Corp.	Los Angeles, Cal.	06175	Bausch and Lomb Optical		12574	Gulton Ind. Inc., Data System	
00929	Microfab Inc.	Livingston, N. J.		Co.	Rochester, N. Y.		Div.	Albuquerque, N. M.
01002	General Electric Co.,		06402	E. T. A. Products Co. of		12697	Clarostat Mfg. Co.	Dover, N. H.
	Capacitor Dept.	Hudson Falls, N. Y.		America	Chicago, Ill.	12728	Elmar Filter Corp.	W. Haven, Conn.
01009	Alden Products Co.	Brocton, Mass.	06540	Amatam Electronic Hardware		12859	Nippon Electric Co., Ltd.	Tokyo, Japan
01121	Allen Bradley Co.	Milwaukee, Wis.		Co., Inc.	New Rochelle, N. Y.	12881	Metex Electronics Corp.	Clark, N. J.
01255	Litton Industries, Inc.	Beverly Hills, Cal.	06555	Beebe Electrical Instrument		12930	Delta Semiconductor Inc.	Newport Beach, Cal.
01281	TRW Semiconductors, Inc.	Lawndale, Cal.		Co., Inc.	Penacook, N. H.	12954	Dickson Electronics Corp.	Scottsdale, Arizona
01295	Texas Instruments, Inc.,		06666	General Devices Co., Inc.	Indianapolis, Ind.	13019	Aircro Supply Co., Inc.	Wichita, Kansas
	Transistor Products Div.	Dallas, Texas	06751	Components Inc., Ariz. Div.	Phoenix, Arizona	13061	Wilco Products	Detroit, Mich.
01349	The Alliance Mfg. Co.	Alliance, Ohio	06812	Torrington Mfg. Co., West Div.	Van Nuys, Cal.	13103	Thermolloy	Dallas, Texas
01538	Small Parts Inc.	Los Angeles, Cal.	06980	Varian Assoc. Etmac Div.	San Carlos, Cal.	13327	Soliton Devices Inc.	Tappan, N. Y.
01589	Pacific Relays, Inc.	Van Nuys, Cal.	07088	Kelvin Electric Co.	Van Nuys, Cal.	13396	Telefunken (GmbH)	Hanover, Germany
01670	Gudebrod Bros. Silk Co.	New York, N. Y.	07126	Digitran Co.	Pasadena, Cal.	13835	Midland-Wright Div. of	
01930	Amerock Corp.	Rockford, Ill.	07137	Transistor Electronics			Pacific Industries, Inc.	Kansas City, Kansas
01960	Pulse Engineering Co.	Santa Clara, Cal.		Corp.	Minneapolis, Minn.	14099	Sem-Tech	Newbury Park, Cal.
02114	Ferroxcube Corp. of		07138	Westinghouse Electric		14193	Calif. Resistor Corp.	Santa Monica, Cal.
	America	Saugerties, N. Y.		Corp., Electronic Tube Div.	Elmira, N. Y.	14498	American Components, Inc.	Conshohocken, Pa.
02116	Wheelock Signals, Inc.	Long Branch, N. J.	07149	Filmohm Corp.	New York, N. Y.	14433	ITT Semiconductor, a Div. of	
02286	Cole Rubber and Plastics Inc.	Sunnyvale, Cal.	07233	Cinch-Graphik Co.	City of Industry, Cal.		Int. Telephone and Telegraph	
02660	Amphenol-Borg Electronics		07256	Silicon Transistor Corp.	Carle Place, N. Y.		Corporation	West Palm Beach, Fla.
	Corp.	Broadview, Ill.	07261	Avnet Corp.	Culver City, Cal.	14493	Hewlett-Packard Company.	Loveland, Colo.
02735	Radio Corp. of America, Semi-		07263	Fairchild Camera & Inst. Corp.,		14655	Cornell Dublier Electric Corp.	Newark, N. J.
	conductor and Materials			Semiconductor Div.	Mountain View, Cal.	14674	Corning Glass Works	Corning, N. Y.
	Division	Somerville, N. J.	07322	Minnesota Rubber Co.	Minneapolis, Minn.	14752	Electro Cube Inc.	San Gabriel, Cal.
02771	Vocaline Co. of America, Inc.		07387	Birther Corp. The	Monterey Park, Cal.	14960	Williams Mfg. Co.	San Jose, Cal.
	Co.	Old Saybrook, Conn.	07397	Sylvania Elect. Prod. Inc.,		15106	The Sphere Co., Inc.	Little Falls, N. J.
02777	Hopkins Engineering Co.	San Fernando, Cal.		Mt. View Operations	Mountain View, Cal.	15203	Webster Electronics Co.	New York, N. Y.
02875	Hudson Tool & Die	Newark, N. J.	07700	Technical Wire Products		15287	Scionics Corp.	Northridge, Cal.
03296	Nylen Molding Corp.	Springfield, N. J.		Inc.	Cranford, N. J.	15291	Adjustable Bushing Co.	N. Hollywood, Cal.
03508	G. E. Semiconductor Prod.		07829	Bodine Elect. Co.	Chicago, Ill.	15558	Micron Electronics. Garden City, Long Island, N. Y.	
	Dept.	Syracuse, N. Y.	07910	Continental Device Corp.	Hawthorne, Cal.	15566	Amprobe Inst. Corp.	Lyndbrook, N. Y.
03705	Apex Machine & Tool Co.	Dayton, Ohio	07933	Raytheon Mfg. Co., Semi-		15631	Cabletronics	Costa Mesa, Cal.
03797	Eldema Corp.	Compton, Calif.		conductor Div.	Mountain View, Cal.	15772	Twentieth Century Coil	
03818	Parker Seal Co.	Los Angeles, Cal.	07980	Hewlett-Packard Co.,			Spring Co.	Santa Clara, Cal.
03877	Transitron Electric Corp.	Wakefield, Mass.		New Jersey Division	Rockaway, N. J.	15801	Fenwal Elect. Inc.	Framingham, Mass.
03888	Pyrofilm Resistor Co.,		08145	U. S. Engineering Co.	Los Angeles, Cal.	15818	Amelco Inc.	Mountain View, Cal.
	Inc.	Cedar Knolls, N. J.	08289	Blinn, Delbert Co.	Pomona, Cal.	16037	Spruce Pine Mica Co.	Spruce Pine, N. C.
03954	Singer Co., Diehl Div.,		08358	Burgess Battery Co.		16179	Omni-Spectra Inc.	Detroit, Ill.
	Finderne Plant	Sumerville, N. J.			Niagara Falls, Ontario, Canada	16352	Computer Diode Corp.	Lodi, N. J.
04009	Arrow, Hart and Hegeman		08524	Deutsch Fastener Corp.	Los Angeles, Cal.	16554	Electroid Co.	Union, N. J.
	Elect. Co.	Hartford, Conn.	08664	Bristol Co., The	Waterbury, Conn.	16585	Borts Aircraft Nut Corp.	Pasadena, Cal.
04013	Tarus Corp.	Lambertville, N. J.	08717	Sloan Company	Sun Valley, Cal.	16688	Ideal Prec. Meter Co., Inc.,	
04062	Arco Electronic Inc.	Great Neck, N. Y.	08718	ITT Cannon Electric Inc.,			De Jur Meter Div.	Brooklyn, N. Y.
04217	Essex Wire	Los Angeles, Cal.		Phoenix Div.	Phoenix, Arizona	16758	Delco Radio Div. of G. M. Corp.	Kokomo, Ind.
04222	Hi-Q Division of Aerovox.	Myrtle Beach, S. C.	08727	National Radio Lab. Inc.	Paramus, N. J.	17109	Thermometrics Inc.	Canoga Park, Cal.
04354	Precision Paper Tube Co.	Wheeling, Ill.	08792	CBS Electronics Semiconductor		17474	Tranex Company	Mountain View, Cal.
04404	Palo Alto Division of Hewlett-			Operations, Div. of CBS Inc.	Lowell, Mass.	17675	Hamlin Metal Products Corp.	Akron, Ohio
	Packard Co.	Palo Alto, Cal.	08806	General Electric Co.,		17745	Angstrom Prec. Inc.	No. Hollywood, Cal.
04651	Sylvania Electric Products,			Miniature Lamp Dept.	Cleveland, Ohio	17856	Siliconix Inc.	Sunnyvale, Cal.
	Microwave Device Div.	Mountain View, Cal.	08984	Mel-Rain	Indianapolis, Ind.	17870	McGraw-Edison Co.	Manchester, N. H.
04673	Dakota Engr. Inc.	Culver City, Cal.	09026	Babcock Relays Div.	Costa Mesa, Cal.	18042	Power Design Pacific Inc.	Palo Alto, Cal.
04713	Motorola Inc. Semiconductor		09097	Electronic Enclosures Inc.	Los Angeles, Calif.	18083	Clevite Corp. Semiconductor Div.	Palo Alto, Cal.
	Prod. Div.	Phoenix, Arizona	09134	Texas Capacitor Co.	Houston, Texas	18324	Signetics Corp.	Sunnyvale, Cal.
04732	Filtrom Co., Inc. Western		09145	Tech. Ind. Inc. Atohm		18476	Ty-Car Mfg. Co., Inc.	Holliston, Mass.
	Div.	Culver City, Cal.		Elect.	Burbank, Cal.	18486	TRW Elect. Comp. Div.	Des Plaines, Ill.
04773	Automatic Electric Co.	Northlake, Ill.	09250	Electro Assemblies, Inc.	Chicago, Ill.	18565	Chomerics	Plainville, Mass.
04796	Sequoia Wire Co.	Redwood City, Cal.	09353	C & K Components Inc.	Newton, Mass.	18583	Curtis Instrument, Inc.	Mt. Kisco, N. Y.
04811	Precision Coil Spring Co.	El Monte, Cal.	09569	Mallory Battery Co. of		18612	Vislay Instruments Inc.	Malvern, Pa.
04870	P. M. Motor Company	Westchester, Ill.		Canada, Ltd.	Toronto, Ontario, Canada	18873	E. I. DuPont and Co., Inc.	Wilmington, Del.
04919	Component Mfg. Service		09795	Pennsylvania Florocarbon.	Clifton Heights, Penn.	18911	Durant Mfg. Co.	Milwaukee, Wis.
	Co.	W. Bridgewater, Mass	09922	Burdyn Corp.	Norwalk, Conn.	19315	The Bendix Corp., Navigation &	
05006	Twentieth Century Plastics,		10214	General Transistor Western			Control Div.	Teterboro, N. J.
	Inc.	Los Angeles, Cal.		Corp.	Los Angeles, Cal.	19500	Thomas A. Edison Industries,	
05277	Westinghouse Electric Corp.		10411	Ti-Tal, Inc.	Berkeley, Cal.		Div. of McGraw-Edison	West Orange, N. J.
	Semiconductor Dept.	Youngwood, Pa.	10646	Carborundum Co.	Niagara Falls, N. Y.	19589	Concoa	Baldwin Park, Cal.

CODE LIST OF MANUFACTURERS (Continued)

Code No.	Manufacturer	Address	Code No.	Manufacturer	Address	Code No.	Manufacturer	Address
19644	LRC Electronics	Horseheads, N. Y.	71482	C. P. Clare & Co.	Chicago, Ill.	78452	Thompson-Bremer & Co.	Chicago, Ill.
19701	Electra Mfg. Co.	Independence, Kansas	71590	Centralab Div. of		78471	Tilley Mfg. Co.	San Francisco, Cal.
20183	General Atomics Corp.	Philadelphia, Pa.		Globe Union Inc.	Milwaukee, Wis.	78488	Stackpole Carbon Co.	St. Marys, Pa.
21226	Executone, Inc.	Long Island City, N. Y.	71616	Commercial Plastics Co.	Chicago, Ill.	78493	Standard Thomson Corp.	Waltham, Mass.
21355	Fanstr Bearing Co., The	New Britain, Conn.	71700	Cornish Wire Co., The	New York, N. Y.	78553	Tinnerman Products, Inc.	Cleveland, Ohio
21520	Fansteel Metallurgical Corp.	N. Chicago, Ill.	71707	Coto Coil Co., Inc.	Providence, R. I.	78790	Transformer Engineers	San Gabriel, Cal.
23020	General Reed Co.	Metuchen, N. J.	71744	Chicago Miniature Lamp Works	Chicago, Ill.	78947	Ucinite Co.	Newtonville, Mass.
23042	Texscan Corp.	Indianapolis, Ind.	71785	Cinch Mfg. Co.		79136	Waldes Kohinor Inc.	Long Island City, N. Y.
23783	British Radio Electronics Ltd.	Washington, D.C.		Howard B. Jones Div.	Chicago, Ill.	79142	Veeder Root, Inc.	Hartford, Conn.
24455	G. E. Lamp Division, Nela Park	Cleveland, Ohio	71984	Dow Corning Corp.	Midland, Mich.	79251	Wenco Mfg. Co.	Chicago, Ill.
24655	General Radio Co.	West Concord, Mass.	72136	Electro Motive Mfg. Co., Inc.		79727	Continental-Wirt Electronics Corp.	
24681	Memcor Inc., Comp. Div.	Huntington, Ind.		Dialight Corp.	Brooklyn, N. Y.	79963	Zierick Mfg. Corp.	New Rochelle, N. Y.
26365	Gries Reproducer Corp.	New Rochelle, N. Y.	72656	Indiana General Corp.		80031	Mepco Division of Sessions Clock Co.	
26462	Grobart File Co. of America, Inc.	Carlstadt, N. J.		Electronics Div.	Keasby, N. J.	80033	Prestole Corp.	Morristown, N. J.
26851	Compac/Hollister Co.	Hollister, Cal.	72699	General Instrument Corp.		80120	Schnitzer Alloy Products Co.	Elizabeth, N. J.
26992	Hamilton Watch Co.	Lancaster, Pa.		Cap Division	Newark, N. J.	80131	Electronic Industries Association	
28480	Hewlett-Packard Co.	Palo Alto, Cal.	72765	Drake Mfg. Co.	Harwood Heights, Ill.		Standard tube or semi-conductor device, any manufacturer.	
28520	Heyman Mfg. Co.	Kenilworth, N. J.	72825	Hugh H. Eby Inc.	Philadelphia, Pa.	80207	Unimax Switch, Div. Maxon Electronics Corp.	Wallingford, Conn.
30817	Instrument Specialties Co., Inc.	Little Falls, N. J.	72928	Gudeman Co.	Chicago, Ill.	80223	United Transformer Corp.	New York, N. Y.
33173	G. E. Receiving Tube Dept.	Owensboro, Ky.	72962	Elastic Stop Nut Corp.	Union, N. J.	80248	Oxford Electric Corp.	Chicago, Ill.
35434	Lectrohm Inc.	Chicago, Ill.	72964	Robert M. Hadley Co.	Los Angeles, Cal.	80294	Bourns Inc.	Riverside, Cal.
36196	Stanwyck Coil Products, Ltd.	Hawkesbury, Ontario, Canada	72982	Erie Technological Products, Inc.	Erie, Pa.	80411	Arco Div. of Robertshaw Controls Co.	
36287	Cunningham, W. H. & Hill, Ltd.	Toronto, Ontario, Canada	73061	Hansen Mfg. Co., Inc.	Princeton, Ind.	80486	All Star Products Inc.	Columbus, Ohio
37942	P. R. Mallory & Co., Inc.	Indianapolis, Ind.	73076	H. M. Harper Co.	Chicago, Ill.	80509	Avery Label Co.	Monrovia, Cal.
39543	Mechanical Industries Prod. Co.	Akron, Ohio	73138	Helipot Div. of Beckman Inst., Inc.		80563	Hammarlund Co., Inc.	Mars Hill, N. C.
40920	Miniature Precision Bearings, Inc.	Keene, N. H.	73293	Hughes Products Division of Hughes Aircraft Co.	Newport Beach, Cal.	80640	Stevens, Arnold, Co., Inc.	Boston, Mass.
40931	Honeywell Inc.	Minneapolis, Minn.	73445	Amperex Elect. Co.	Hicksville, L. I., N. Y.	80813	Sicon Gray Co.	Dayton, Ohio
42190	Muter Co.	Chicago, Ill.	73506	Bradley Semiconductor Corp.		81030	International Inst. Inc.	Orange, Conn.
43990	C. A. Norgren Co.	Englewood, Colo.		Carling Electric, Inc.	New Haven, Conn.	81073	Grayhill Co.	LaGrange, Ill.
44655	Ohmite Mfg. Co.	Skokie, Ill.	73559	Circle F Mfg. Co.	Hartford, Conn.	81095	Triad Transformer Corp.	Venice, Cal.
46384	Penn. Eng. & Mfg. Corp.	Doylestown, Pa.	73586	George K. Garrett Co.	Trenton, N. J.	81312	Winchester Elec. Div. Litton Ind., Inc.	Oakville, Conn.
47904	Polaroid Corp.	Cambridge, Mass.	73682	Div. MSL Industries, Inc.	Philadelphia, Pa.	81349	Military Specification	
48620	Precision Thermometer & Inst. Co.	Southampton, Pa.	73734	Federal Screw Products, Inc.	Chicago, Ill.	81483	International Rectifier Corp.	El Segundo, Cal.
49956	Microwave & Power Tube Div.	Waltham, Mass.	73743	Fischer Special Mfg. Co.	Cincinnati, Ohio	81541	Airpac Electronics, Inc.	Cambridge, Maryland
50290	Rowan Controller Co.	Westminster, Md.	73793	General Industries Co., The	Elyria, Ohio	81860	Barry Controls, Div. Barry Wright Corp.	
52983	HP Co., Med. Elec. Div.	Waltham, Mass.	73846	Goshen Stamping & Tool Co.	Goshen, Ind.	82042	Carter Precision Electric Co.	Skokie, Ill.
54294	Shallcross Mfg. Co.	Selma, N. C.	73899	JFD Electronics Corp.	Brooklyn, N. Y.	82047	Sperit Faraday Inc.	Copper Hewitt
55026	Simpson Electric Co.	Chicago, Ill.	73905	Jennings Radio Mfg. Corp.	San Jose, Cal.	82116	Electric Regulator Corp.	Norwalk, Conn.
55933	Sonotone Corp.	Elmsford, N. Y.	73957	Groove-Pin Corp.	Ridgefield, N. J.	82142	Jeffers Electronics Division of Speer Carbon Co.	Du Bois, Pa.
55938	Raytheon Co. Commercial Apparatus & System Div.	So. Norwalk, Conn.	74276	Signalite Inc.	Neptune, N. J.	82170	Fairchild Camera & Inst. Corp.	Paramus, N. J.
56137	Spaulding Fibre Co., Inc.	Tonawanda, N. Y.	74455	J. H. Wines, and Sons	Winchester, Mass.	82209	Space & Defense Systems Div.	Greenwich, Conn.
56289	Sprague Electric Co.	North Adams, Mass.	74861	Industrial Condenser Corp.	Chicago, Ill.	82219	Magurie Industries, Inc.	Greenwich, Conn.
58474	Superior Elect. Co.	Bristol, Conn.	74868	R. F. Products Division of Amphenol-Borg Electronic Corp.		82376	Sylvania Electric Prod., Inc.	
59446	Telex Corp.	Tulsa, Okla.	74970	E. F. Johnson Co.	Waseca, Minn.	82376	Electronic Tube Division of Astron Corp.	East Newark, Harrison, N. J.
59730	Thomas & Betts Co.	Elizabeth, N. J.	75042	International Resistance Co.	Philadelphia, Pa.	82389	Switchcraft, Inc.	Chicago, Ill.
60741	Triplet Electrical Inst. Co.	Bluffton, Ohio	75263	Keystone Carbon Co., Inc.	St. Marys, Pa.	82647	Metals & Controls Inc.	
61775	Union Switch and Signal Div. of Westinghouse Air Brake Co.	Pittsburgh, Pa.	75378	CTS Knights, Inc.	Sandwich, Ill.	82768	Spencer Products	Attleboro, Mass.
62119	Universal Electric Co.	Owosso, Mich.	75382	Kulka Electric Corp.	Mt. Vernon, N. Y.	82866	Phillips-Advance Control Co.	Joliet, Ill.
63743	Ward-Leonard Electric Co.	Mt. Vernon, N. Y.	75818	Lenz Electric Mfg. Co.	Chicago, Ill.	82877	Research Products Corp.	Madison, Wis.
64959	Western Electric Co., Inc.	New York, N. Y.	75915	Littlefuse, Inc.	Des Plaines, Ill.	82893	Reitor Mfg. Co., Inc.	Woodstock, N. Y.
65092	Weston Inst. Inc. Weston-Newark	Newark, N. J.	76005	Lord Mfg. Co.	Erie, Pa.	83058	Volt Electric Co.	Glendale, Cal.
66295	Witteck Mfg. Co.	Chicago, Ill.	76210	C. W. Marwedel	San Francisco, Cal.	83086	Carr Fastener Co.	Cambridge, Mass.
66346	Minnesota Mining & Mfg. Co.		76433	General Instrument Corp.		83125	New Hampshire Ball Bearing, Inc.	Peterborough, N. H.
70276	Revere Mincon Div.	St. Paul, Minn.	76545	Micamold Division	Newark, N. J.		Capacitor Div.	Darlington, S. C.
70309	Allen Mfg. Co.	Hartford, Conn.	76487	James Millen Mfg. Co., Inc.	Malden, Mass.	83148	ITT Wire and Cable Div.	Los Angeles, Cal.
70309	Allied Control	New York, N. Y.	76493	J. W. Miller Co.	Los Angeles, Cal.	83186	Victory Eng. Corp.	Springfield, N. J.
70318	Almetal Screw Product Co., Inc.		76530	Cinch-Monadnock, Div. of United Carr		83298	Bendix Corp., Red Bank Div.	Red Bank, N. J.
70417	Amplex, Div. of Chrysler Corp.	Garden City, N. Y.		Fastener Corp.	San Leandro, Cal.	83315	Hubbell Corp.	Mundelein, Ill.
70485	Atlantic India Rubber Works, Inc.	Chicago, Ill.	76545	Mueller Electric Co.	Cleveland, Ohio	83315	Rosan Inc.	Newport Beach, Cal.
70563	Amperite Co., Inc.	Union City, N. J.	76703	National Union	Newark, N. J.	83330	Smith, Herman H., Inc.	Brooklyn, N. Y.
70674	ADC Products Inc.	Minneapolis, Minn.	76854	Oak Manufacturing Co.	Crystal Lake, Ill.	83332	Tech Labs	Palisades Park, N. Y.
70903	Belden Mfg. Co.	Chicago, Ill.	77068	The Bendix Corp.		83385	Central Screw Co.	Chicago, Ill.
70998	Bird Electric Corp.	Cleveland, Ohio		Electrodynamics Div.	N. Hollywood, Cal.	83501	Gavitt Wire and Cable Co., Div. of Amerace Corp.	Brookfield, Mass.
71002	Birnbach Radio Co.	New York, N. Y.	77075	Pacific Metals Co.	San Francisco, Cal.	83594	Burroughs Corp., Electronic Tube Div.	Plainfield, N. J.
71034	Billey Electric Co., Inc.	Erie, Pa.	77221	Paostran Instrument and Electronic Co.	So. Pasadena, Cal.	83777	Model Eng. and Mfg., Inc.	Huntington, Ind.
71041	Boston Gear Works Div. of Murray Co. of Texas	Quincy, Mass.	77252	Philadelphia Steel and Wire Corp.	Philadelphia, Pa.	83821	Loyd Scruggs Co.	Festus, Mo.
71218	Bud Radio, Inc.	Willoughby, Ohio	77342	American Machine & Foundry Co.	Princeton, Ind.	83942	Aeronautical Inst. & Radio Co.	Lodi, N. J.
71279	Cambridge Thermionics Corp.	Cambridge, Mass.	77630	Potter & Brumfield Div.		84171	Arco Electronics Inc.	Great Neck, N. Y.
71286	Camloc Fastener Corp.	Paramus, N. Y.	77638	TRW Electronic Components Div.	Camden, N. J.	84396	A. J. Glesener Co., Inc.	San Francisco, Cal.
71313	Cardwell Condenser Corp.			General Instrument Corp.		84411	TRW Capacitor Div.	Ogallala, Neb.
71400	Bussmann Mfg. Div. of McGraw-Edison Co.	St. Louis, Mo.		Rectifier Division	Brooklyn, N. Y.			
71436	Chicago Condenser Corp.	Chicago, Ill.	77764	Resistance Products Co.	Harrisburg, Pa.			
71447	Calif. Spring Co., Inc.	Pico-Rivera, Cal.	77969	Rubbercraft Corp. of Calif.	Torrance, Cal.			
71450	CTS Corp.	Elkhart, Ind.	78189	Shakeproof Division of Illinois Tool Works	Elgin, Ill.			
71468	ITT Cannon Electric Inc.	Los Angeles, Cal.	78277	Sigma	So. Braintree, Mass.			
71471	Cinema, Div. Aerovox Corp.	Burbank, Cal.	78283	Signal Indicator Corp.	New York, N. Y.			
			78290	Struthers-Dunn Inc.	Pitman, N. J.			

CODE LIST OF MANUFACTURERS (Continued)

Code No.	Manufacturer	Address	Code No.	Manufacturer	Address	Code No.	Manufacturer	Address
94870	Sarkes Tarzian, Inc.	Bloomington, Ind.	91929	Honeywell Inc., Micro Switch Division	Freeport, Ill.	96095	Hi-Q Div. of Aerovox Corp.	Olean, N. Y.
85454	Boonton Molding Company	Boonton, N. J.	91961	Nahn-Bros. Spring Co.	Oakland, Cal.	96256	Thordarson-Meissner Inc.	Mt. Carmel, Ill.
85471	A. B. Boyd Co.	San Francisco, Cal.	92180	Tru-Connector Corp.	Peabody, Mass.	96296	Solar Mfg. Co.	Los Angeles, Cal.
85474	R. M. Bracamonte & Co.	San Francisco, Cal.	92367	Elgeet Optical Co., Inc.	Rochester, N. Y.	96396	Microswitch, Div. of	
85660	Koiled Kords, Inc.	Hamden, Conn.	92607	Tensolite Insulated Wire Co., Inc.	Tarrytown, N. Y.		Minn.-Honeywell	Freeport, Ill.
85911	Seamless Rubber Co.	Chicago, Ill.	92702	IMC Magnetics Corp.	Westbury, L. I., N. Y.	96330	Carlton Screw Co.	Chicago, Ill.
86174	Fafnir Bearing Co.	Los Angeles, Calif.	92966	Hudson Lamp Co.	Kearney, N. J.	96341	Microwave Associates, Inc.	Burlington, Mass.
86197	Clifton Precision Products Co., Inc.	Clifton Heights, Pa.	93332	Sylvania Electric Prod. Inc., Semiconductor Div.	Woburn, Mass.	96501	Excel Transformer Co.	Oakland, Cal.
86579	Precision Rubber Products Corp.	Dayton, Ohio	93369	Robbins & Myers Inc.	Pallisades Park, N. J.	96508	Xcelite, Inc.	Orchard Park, N. Y.
86684	Radio Corp. of America, Electronic Comp. & Devices Division	Harrison, N. J.	93410	Stemco Controls, Div. of Essex Wire Corp.	Mansfield, Ohio	96733	San Fernando Elec. Mfg. Co.	San Fernando, Cal.
86928	Seastrom Mfg. Co.	Glendale, Cal.	93632	Waters Mfg. Co.	Culver City, Cal.	96881	Thomson Ind. Inc.	Long Island, N. Y.
87034	Marco Industries	Anaheim, Cal.	93929	G. V. Controls	Livingston, N. J.	97464	Industrial Retaining Ring Co.	Irvington, N. J.
87216	Philco Corporation (Lansdale Division)	Lansdale, Pa.	94137	General Cable Corp.	Bayonne, N. J.	97539	Automatic & Precision Mfg.	Englewood, N. J.
87473	Western Fibrous Glass Products Co.	San Francisco, Cal.	94144	Raytheon Co., Comp. Div., Ind. Comp. Operations	Quincy, Mass.	97979	Reon Resistor Corp.	Yonkers, N. Y.
87664	Van Waters & Rogers Inc.	San Francisco, Cal.	94148	Scientific Electronics Products, Inc.	Loveland, Colo.	97983	Littion System Inc., Adler-Westrex Commun. Div.	New Rochelle, N. Y.
87930	Tower Mfg. Corp.	Providence, R. I.	94154	Wagner Elect. Corp., Tung-Sol Div.	Newark, N. J.	98141	R-Tronics, Inc.	Jamaica, N. Y.
88140	Cutler-Hammer, Inc.	Lincoln, Ill.	94197	Curtiss-Wright Corp., Electronics Div.	East Patterson, N. J.	98159	Rubber Teck, Inc.	Gardena, Cal.
88220	Gould-National Batteries, Inc.	St. Paul, Minn.	94222	South Chester Corp.	Chester, Pa.	98220	Hewlett-Packard Co., Medical Elec. Div.	Pasadena, Cal.
88698	General Mills, Inc.	Buffalo, N. Y.	94330	Wire Cloth Products, Inc.	Bellwood, Ill.	98278	Microdot, Inc.	So. Pasadena, Cal.
89231	Graybar Electric Co.	Oakland, Cal.	94375	Automatic Metal Products Co.	Brooklyn, N. Y.	98291	Sealectro Corp.	Mamaronech, N. Y.
89473	G. E. Distributing Corp.	Schenectady, N. Y.	94682	Worcester Pressed Aluminum Corp.	Worcester, Mass.	98376	Zero Mfg. Co.	Burbank, Cal.
89479	Security Co.	Detroit, Mich.	94696	Magnecraft Electric Co.	Chicago, Ill.	98410	Etc. Inc.	Cleveland, Ohio
89665	United Transformer Co.	Chicago, Ill.	95023	George A. Philbrick Researchers, Inc.	Boston, Mass.	98731	General Mills Inc., Electronics Div.	Minneapolis, Minn.
90030	United Shoe Machinery Corp.	Beverly, Mass.	95146	Alco Elect. Mfg. Co.	Lawrence, Mass.	98734	Paeco Division of Hewlett-Packard Co.	Palo Alto, Cal.
90179	U. S. Rubber Co., Consumer Ind. & Plastics Prod. Div.	Passaic, N. J.	95236	Allies Products Corp.	Dania, Fla.	98821	North Hills Electronics, Inc.	Glen Cove, N. Y.
90365	Belleville Speciality Tool Mfg., Inc.	Belleville, Ill.	95238	Continental Connector Corp.	Woodside, N. Y.	98978	International Electronic Research Corp.	Burbank, Cal.
90763	United Carr Fastener Corp.	Chicago, Ill.	95263	Leecraft Mfg. Co., Inc.	Long Island, N. Y.	99109	Columbia Technical Corp.	New York, N. Y.
90970	Bearing Engineering Co.	San Francisco, Cal.	95265	National Coil Co.	Sheridan, Wyo.	99313	Varian Associates	Palo Alto, Cal.
91146	ITT Cannon Elect. Inc., Salem Div.	Salem, Mass.	95275	Vitramon, Inc.	Bridgeport, Conn.	99378	Atlee Corp.	Winchester, Mass.
91260	Connor Spring Mfg. Co.	San Francisco, Cal.	95348	Gordos Corp.	Bloomfield, N. J.	99515	Marshall Ind., Capacitor Div.	Monrovia, Cal.
91345	Miller Dial & Nameplate Co.	El Monte, Cal.	95354	Methode Mfg. Co.	Rolling Meadows, Ill.	99707	Control Switch Division, Controls Co. of America	El Segundo, Cal.
91418	Radio Materials Co.	Chicago, Ill.	95566	Arnold Engineering Co.	Marengo, Ill.	99800	Delevan Electronics Corp.	East Aurora, N. Y.
91506	Augat Inc.	Attleboro, Mass.	95712	Dage Electric Co., Inc.	Franklin, Ind.	99848	Wilco Corporation	Indianapolis, Ind.
91637	Dale Electronics, Inc.	Columbus, Nebr.	95984	Siemon Mfg. Co.	Wayne, Ill.	99928	Branson Corp.	Whippany, N. J.
91662	Elco Corp.	Willow Grove, Pa.	95987	Weckesser Co.	Chicago, Ill.	99934	Rembrandt, Inc.	Boston, Mass.
91673	Epiphone Inc.	New York, N. Y.	96067	Microwave Assoc., West, Inc.	Sunnyvale, Cal.	99942	Hoffman Electronics Corp., Semiconductor Division	El Monte, Cal.
91737	Gremar Mfg. Co., Inc.	Wakefield, Mass.				99957	Technology-Instrument Corp. of California	Newbury Park, Cal.
91827	K F Development Co.	Redwood City, Cal.						
91886	Malco Mfg., Inc.	Chicago, Ill.						

The following HP Vendors have no number assigned in the latest supplement to the Federal Supply Code for Manufacturers Handbook.

0000F	Malco Tool and Die	Los Angeles, Calif.	000CS	Hewlett-Packard Co., Colorado Springs Div.	Colorado Springs, Colorado	000QQ	Cooltron	Oakland, Cal.
0000Z	Willow Leather Products Corp.	Newark, N. J.	000MM	Rubber Eng. & Development	Hayward, Cal.	000WW	California Eastern Lab	Burlington, Cal.
000AB	ETA	England	000NN	A "N" D Mfg. Co.	San Jose, Cal.	000YY	S. K. Smith Co.	Los Angeles, Cal.
000BB	Precision Instrument Comp. Co.	Van Nuys, Cal.						

SUPPLEMENTAL CODE LIST OF MANUFACTURERS

Code No.	Manufacturer	Address
97913	Industrial Electronic Hardware Corp.	New York, N. Y.

ELECTRONIC

SALES & SERVICE OFFICES

UNITED STATES

ALABAMA

P.O. Box 4207
2003 Byrd Spring Road S.W.
Huntsville 35802
Tel: (205) 881-4591
TWX: 810-726-2204

ARIZONA

2336 E. Magnolia St.
Phoenix 85034
Tel: (602) 252-5061
TWX: 910-951-1330

5737 East Broadway
Tucson 85716
Tel: (602) 298-2313
TWX: 910-952-1162

CALIFORNIA

1430 East Orangethorpe Ave.
Fullerton 92631

Tel: (714) 870-1000

3838 Lankershim Boulevard
North Hollywood 91604
Tel: (213) 877-1282
TWX: 910-499-2170

1101 Embarcadero Road
Palo Alto 94303
Tel: (415) 327-6500
TWX: 910-373-1280

2220 Watt Ave.
Sacramento 95825
Tel: (916) 482-1463
TWX: 910-367-2092

9606 Aero Drive
San Diego 92123
Tel: (714) 279-3200
TWX: 910-335-2000

COLORADO

7965 East Prentice
Englewood 80110
Tel: (303) 771-3455
TWX: 910-935-0705

CONNECTICUT

12 Lunar Drive
New Haven 06525
Tel: (203) 389-6551
TWX: 710-465-2029

FLORIDA

P.O. Box 24210
2806 W. Oakland Park Blvd.
Ft. Lauderdale 33307
Tel: (305) 731-2020
TWX: 910-955-4099

P.O. Box 13910
6177 Lake Ellenor Dr.
Orlando 32809
Tel: (305) 859-2900
TWX: 810-850-0113

GEORGIA

P.O. Box 28234
450 Interstate North
Atlanta 30328
Tel: (404) 436-6181
TWX: 810-766-4890

ILLINOIS

5500 Howard Street
Skokie 60076
Tel: (312) 677-0400
TWX: 910-223-3613

INDIANA

3839 Meadows Drive
Indianapolis 46205
Tel: (317) 546-4891
TWX: 910-341-3263

LOUISIANA

P.O. Box 856
1942 Williams Boulevard
Kenner 70062
Tel: (504) 721-6201
TWX: 810-955-5524

MARYLAND

6707 Whitestone Road
Baltimore 21207
Tel: (301) 944-5400
TWX: 710-862-9157

P.O. Box 1648
2 Choke Cherry Road
Rockville 20850
Tel: (301) 948-6370
TWX: 710-828-9684

MASSACHUSETTS

32 Hartwell Ave.
Lexington 02173
Tel: (617) 861-8960
TWX: 710-326-6904

MISSOURI

21840 West Nine Mile Road
Southfield 48075
Tel: (313) 353-9100
TWX: 810-224-4882

MINNESOTA

2459 University Avenue
St. Paul 55114
Tel: (612) 645-9461
TWX: 910-563-3734

MISSOURI

11131 Colorado Ave.
Kansas City 64137
Tel: (816) 763-8000
TWX: 910-771-2087

148 Weldon Parkway
Maryland Heights 63043
Tel: (314) 567-1455
TWX: 910-764-0830

NEW JERSEY

W. 120 Century Road
Paramus 07652
Tel: (201) 265-5000
TWX: 710-890-4951

1060 N. Kings Highway
Cherry Hill 08034
Tel: (609) 667-4000
TWX: 710-892-4945

NEW MEXICO

P.O. Box 8366
Station C
6501 Lomas Boulevard N.E.
Albuquerque 87108
Tel: (505) 265-3713
TWX: 910-989-1665

156 Wyatt Drive
Las Cruces 88001
Tel: (505) 526-2485
TWX: 910-983-0550

NEW YORK

1702 Central Avenue
Albany 12205
Tel: (518) 869-8462
TWX: 710-441-8270

1219 Campville Road
Endicott 13760
Tel: (607) 754-0050
TWX: 510-252-0890

82 Washington Street
Poughkeepsie 12601
Tel: (914) 454-7330
TWX: 510-248-0012

39 Saginaw Drive
Rochester 14623
Tel: (716) 473-9500
TWX: 510-253-5981

5858 East Molloy Road
Syracuse 13211
Tel: (315) 454-2486
TWX: 710-541-0482

1 Crossways Park West
Woodbury 11797
Tel: (516) 921-0300
TWX: 510-223-0811

NORTH CAROLINA

P.O. Box 5188
1923 North Main Street
High Point 27262
Tel: (919) 885-8101
TWX: 510-926-1516

OHIO

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MANUAL BACKDATING CHANGES

MODEL 3400A

RMS VOLTMETER

This manual backdating sheet makes this manual applicable to earlier instruments. Instrument-component values that differ from those in the manual, yet are not listed in the backdating sheet, should be replaced using the part number given in the manual.

Instrument Serial Prefix Make Manual Changes

322-, 401-, 528- and 714-	1, 14 and 8 thru 12
322- or 401-00351 thru 00700	1 thru 5, 7 thru 12, and 14
401-00701 thru 02125	1, 3, 4, 5, 14, and 7 thru 12
401-02126 thru 03025	1, 4, 5, 14, and 7 thru 12
528-	1, 5, 14, and 7 thru 12
714-	1, 14, and 6 thru 12
714-06526 thru 06925	Note #1
714-06926 thru 07925	1, 14 and 8 thru 12

Instrument Serial Prefix Make Manual Changes

806-07926 thru 08125	8 thru 12 and 14
806-08126 thru 08614	9, 10, 11, 12, 14
806-08615 thru 09325	10, 11, 12, 14
806-09325 thru 11525	11, 12, 14
952-11526 thru 12125	12, 14
979-12126 thru 0979A13725	13
All	15

CHANGE #1 Figure 6-3, and Replaceable Parts: Substitute Figure C-1 for Figure 6-3 and replace any component according to Table C-1.

Section IV, Theory of Operation:

Serials prefixed 322-, 401, 528- and 714- with chopper amplifier board 03400-66504) does not have an emitter follower stage prior to the demodulator. In Section IV delete any reference to emitter follower Q604, and change reference designator Q605 and Q606 to Q604 and Q605 respectively.

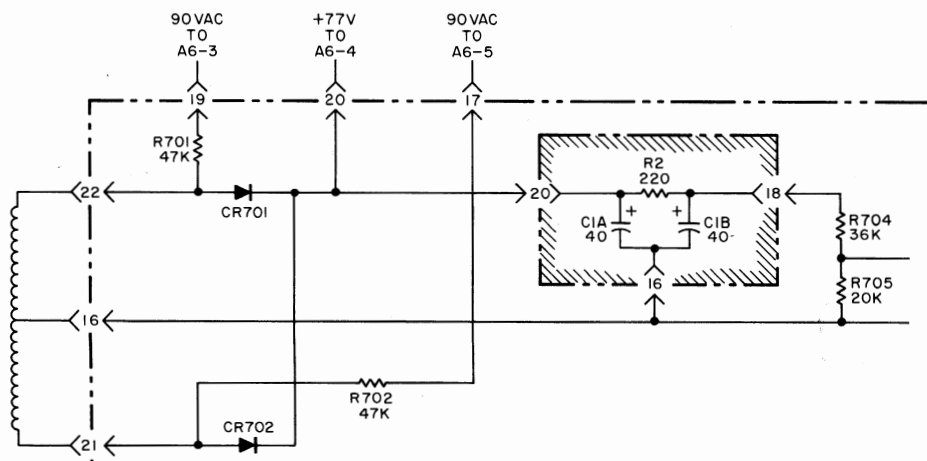
CHANGE #2 Delete C305, -hp- Part No. 0160-0763, on Figure 6-1 and in Table 7-1.
Add a dashed capacitor in parallel with R301 thru R304 and R306.

REASON: This capacitance obtained by connecting a wire from R301 and C302 junction to a blank switch lug near R306 and R308 junction.

CHANGE #3 Change Q405 to -hp- Part No. 1850-0099, and CR401 to -hp- Part No. 1910-0016.

NOTE: Both Q405 and CR401 should be replaced with components listed in Table 7-1 if either component fails as bias on Q405 is a function of both.

CHANGE #4 Change Figure 6-4, Power Supply Schematic, A7, to the following:



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CHANGE #4 (Cont'd) Table 7-1 Replaceable Parts:
 Change R701 and R702 to -hp- Part No. 0693-4731, 47 k Ω . Delete C711 (0160-0167), C712 (0180-0282), R712 (0687-2241), R713 (0686-2225), Q706 (1854-0022), and CR718 (1902-0046).
 Change A7 Board Assembly - Power Supply to -hp- Part No. 03400-66505.
 NOTE: -hp- Part No. 03400-66507 is directly interchangeable with 03400-66505.

CHANGE #5 Figure C-1 and Table C-1:
 Change capacitor C602 to 35 μ F (-hp- Part No. 0180-0064).
 Change resistor R630 to 100 k Ω (-hp- Part No. 0683-1045). Also, change transistors Q601 to -hp- Part No. 1850-0060, Q602 and Q603 to -hp- Part No. 1850-0062.

 NOTE

To reduce meter jitter replace all of the above components with components listed in Table 7-1. It is also recommended to change resistor R606 to a 3300 Ω resistor described in Table 7-1.

CHANGE #6 Some instruments (Serial Prefixed 714-) may have a 1 μ F capacitor for C602 (Figure C-1). If C602 fails or if low frequency oscillations ($\pm 5\%$) occur on meter change C602 to 10 μ F described in Table 7-1.

Instruments with serial number between 714-06226 and 714-07525 have a 4700 Ω resistor for R606. If R606 fails or if meter jitter occurs replace R606 with 3300 Ω resistor described in Table 7-1.

NOTE #1

 NOTE

Some instruments with serial number between 714-06526 and 714-06925 inclusive have a different second attenuator assembly than the one described in this manual. Check the value of resistor R301 on the second attenuator assembly. If resistor R301 is 150 Ω disregard manual changes described below. If the value of R301 is other than 150 Ω , and the Serial No. is within the range shown above, make the following manual changes: (Change #7)

CHANGE #7 Figure 6-1, Second Attenuator Schematic and Table 7-1, Replaceable Parts:
 Change value of R301 thru R311 as follows:

R301	to 180 Ω
R302, R304, R306, R308 and R310	to 410.27 Ω
R303, R305	to 277.0 Ω
R307, R309	to 277.7 Ω
R311	to 189.3 Ω

Add the following note to Schematic and Replaceable Parts List:

 NOTE

Resistors R302 thru R311 are a matched set. A replacement set may be ordered under -hp- Part No. 03400-69502. See Service Note P-03400-69502 for additional information.

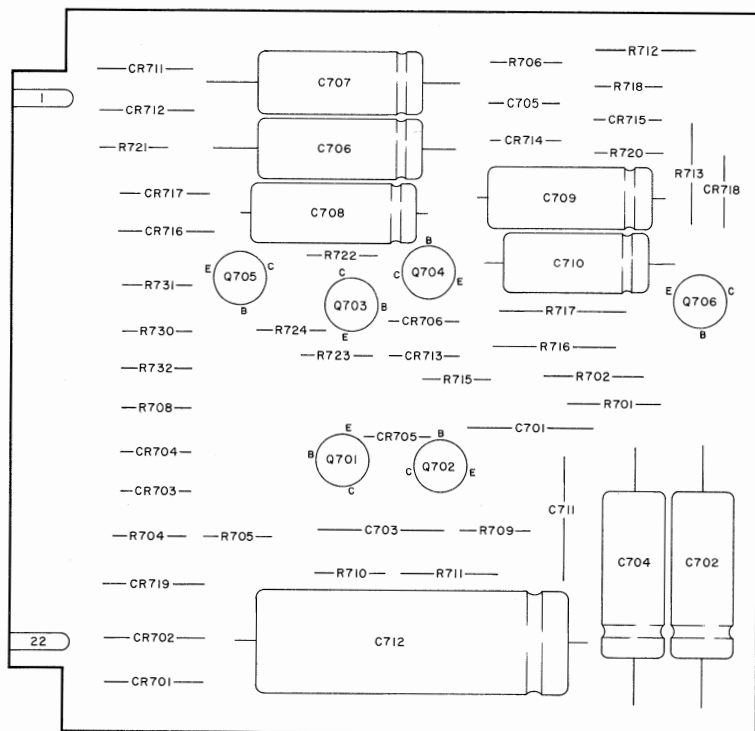
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Table C-1. Replaceable Parts (Cont'd)

REFERENCE DESIGNATION	-hp- PART NO.	DESCRIPTION
R620	0683-1245	120 k Ω $\pm 5\%$ 1/4 W
R621	0727-0013	24.3 Ω $\pm 1\%$ 1/2 W
R622	0683-3925	3900 Ω $\pm 5\%$ 1/4 W
R623	0683-3945	390 k Ω $\pm 5\%$ 1/4 W
R624	0683-6835	68 k Ω $\pm 5\%$ 1/4 W
R625	0758-0076	68 k Ω $\pm 5\%$ 1/4 W (met flm)
R626 thru R629	Not assigned	
R630*	0683-1065	10 M Ω $\pm 5\%$ 1/4 W
R631 and R632	0683-3335	33 k Ω $\pm 5\%$ 1/4 W
R633	0683-1835	18 k Ω $\pm 5\%$ 1/4 W
R634	0683-5605	56 Ω $\pm 5\%$ 1/4 W
R635	0683-2745	270 k Ω $\pm 5\%$ 1/4 W

- CHANGE #8 Table 7-1, Replaceable Parts:
Change Part No. for transformer T1 to 9100-0344. Note: Color of leads given on schematic does not apply to 9100-0344 transformer.
- CHANGE #9 Figure 6-4, Power Supply Schematic, and Table 7-1, Replaceable Parts:
Change value and Part No. of following components:
R701 to 56 k Ω , -hp- Part No. 0687-5631
R702 to 56 k Ω , -hp- Part No. 0687-5631
R709 to 330 Ω , -hp- Part No. 0683-3315
C703 to 0.022 μ F, -hp- Part No. 0170-0024
- CHANGE #10 Page 6-9/6-10 and Table 7-1:
Change following components:
R718 to 75 k Ω , -hp- Part No. 0683-7535
R730 to 11 k Ω , -hp- Part No. 0683-1135
R731 to 6.2 k Ω , -hp- Part No. 0683-6225
- CHANGE #11 Page 6-9.
C3A and C3B were .01 μ F
Page 7-2.
Change rear panel Part No. to 03400-00202
Page 7-3.
Preferred replacement for C3 is shown.
Page 7-5.
Change J3 to Part No. 1251-0148
Page 7-8.
Change W1 to Part No. 8120-0078
- CHANGE #12 Page 6-7.
Some instruments have a separate green wire from + 77 V to DS502 (on A5).
Page 6-9.
Substitute the below parts locator for A7.
Page 7-3.
Change A7 to -hp- Part No. 03400-66507.
- CHANGE #13 Page 6-9.
Substitute the below parts locator for A7.

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A7
(hp PART NO. 03400-66507)

CHANGE #14

Page 6-9.

Delete CR720. Delete C705. Add C705 (.01 μ F) in series with R706 (47 k) from the base of Q704 to A7 Pin 3.

Page 7-5.

Delete CR720. Change Q701, 702 to 1850-0062.

Change Q703, 704 to 1850-0040.

Change Q705 to 1851-0017 (2N1304).

Page 7-7.

Add R706, 0683-4735, R: fxd comp 47 k 5% 1/4 W.

Page 7-8.

Change R731 to 0757-0290 R: fxd met flm 6.19 k 1% 1/8 W.

CHANGE #15

Page 7-2.

The -hp- Part No.'s listed on page 7-2 of this manual are for brown instruments. The part numbers for blue instruments are listed below:

INDEX NO.	DESCRIPTION	-hp- PART NO.
1	Front Panel	03400-00201
3	Side Cover 6 x 11 sm	5000-0703
5	Top Cover (with Handle)	03400-64102
7	Bottom Cover 5 x 11 sm	5000-0711
9	Spacer 1/3 module	5020-5388