



DIAGRAMS AND PARTS MANUAL  
7970B/E

DIGITAL MAGNETIC TAPE UNITS

Manual Part No. 07970-90886  
Microfiche Part No. 07970-90891

Serial Numbers Prefixed:  
7970B--1107 thru 1648  
7970E--1127 thru 1631

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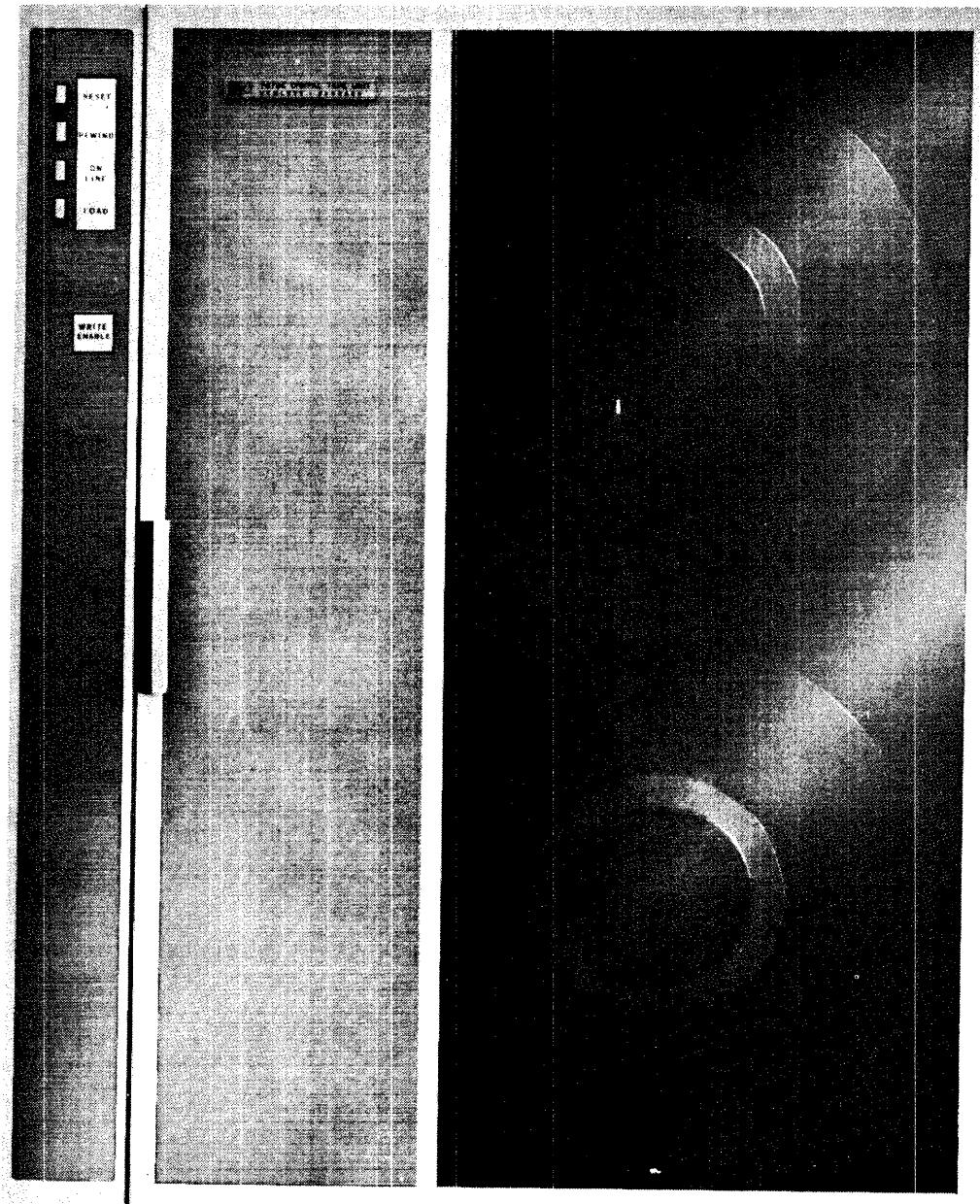
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7970-449

Figure 1-1. HP 7970B/E Digital Magnetic Tape Unit

## SECTION I. GENERAL INFORMATION

### 1-1. INTRODUCTION.

This manual contains schematic diagrams, parts location diagrams, illustrated parts breakdowns (IPB's), and replaceable parts lists for standard configurations of the HP 7970B/E Digital Magnetic Tape Units. Special product configurations are described by updating supplements supplied with this manual.

### 1-2. USING THIS MANUAL.

It is important to properly match the diagrams and parts lists with the unit needing repair. Each printed-circuit assembly (PCA) is etched or labeled with an assembly part number and series code. Both these numbers must match the assembly number and series code of the schematic diagram being used, or there will be differences between the assembly and the schematic diagram.

Parts location diagrams, parts lists, and IPB's are located on the same page or the following pages of the schematic which they accompany.

Table 1-1 lists standard configurations of the magnetic tape unit and indicates the assemblies installed in each configuration. Although this table contains assemblies from both old and new configurations, only assemblies from the new configurations are marked. Older configuration assemblies are noted only as being used in high or low speed 7970B or 7970E tape units. Refer to figure 2-1 for the location of these assemblies in the unit.

### 1-3. DESCRIPTION OF PARTS LIST.

The heading for each parts list contains all assembly part numbers (with applicable series codes) covered by that list. The first entry in the parts list will indicate the assembly on which the list is based. Changes in the base parts list to cover secondary assemblies or series changes are marked by an asterisk or footnote. Changes marked by an asterisk are described following the last entry of the base parts list. Footnotes are entered after the last entry of the complete parts list.

The columns in the parts lists furnish the following information for each part:

- a. REF. DES./INDEX NO. This column lists the reference designator or index number (callout number) which identifies each part in the appropriate schematic diagram, parts location diagram, or IPB. Asterisks and footnote symbols are entered to the left of any entry which varies from the base parts list. Entries are arranged alphanumerically.
- b. HP PART NO. This column lists the Hewlett-Packard part number for each part.
- c. DESCRIPTION. This column gives the name and a brief description of the part. An indented item indicates it is an attaching part for the major item which it follows. In the case of electronic components called out by an index number, this column includes a reference designation, in parenthesis, as given on the appropriate schematic diagram.

Selected components (transistors, diodes, and IC's) having common usage are cross referenced from the HP part number to a manufacturers part number. Refer to table 1-2 for a listing of theses components. Table 1-3 cross references the manufacturer code used in table 1-2 to the manufacturers name.

#### 1-4. PARTS ORDERING PROCEDURE.

To order parts from Hewlett-Packard, or to obtain further information about parts, address the order or inquiry to the nearest Hewlett-Packard Sales and Service Office. When ordering from Hewlett-Packard give the following information on each part:

- a. Tape unit model and serial number.
- b. Hewlett-Packard part number.
- c. Description of the part.
- d. Circuit reference designation or index number if applicable.
- e. If the part is installed on a PCA give the series code stamped or etched on the PCA.

Table 1-1. Assembly/Option Cross Reference List

Up to 37.5 IPS

**Slave "E" only**

 Multiformat "E" only

07970-90886-001

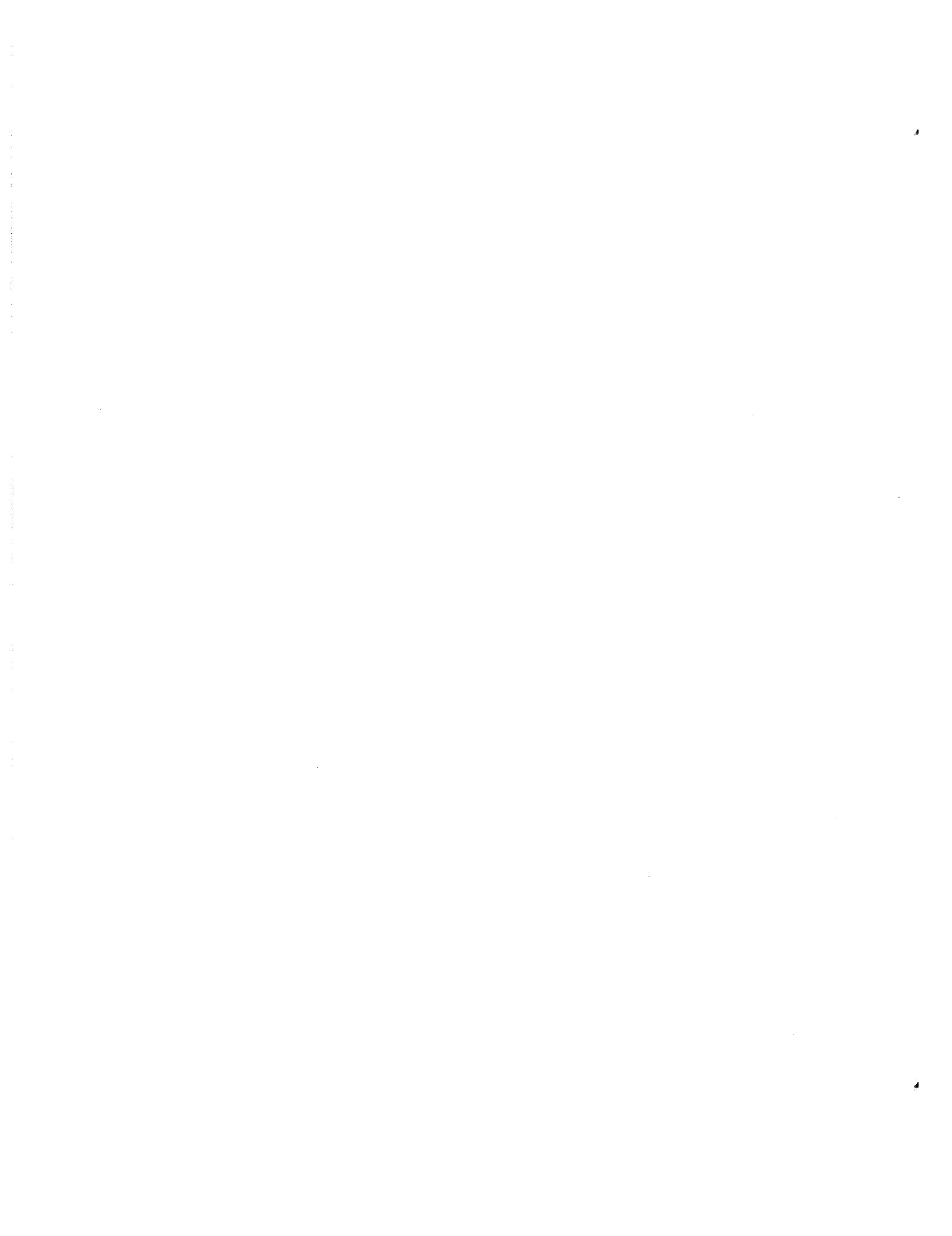


Table 1-2. Parts Cross Reference

HP Part No.	Mfr. Part No.	Mfr. Code	HP Part No.	Mfr. Part No.	Mfr. Code
1820-0054	SN7400N	01295	1820-0752	SN74H76N	01295
1820-0068	SN7410N	01295	1820-0778	93L16DC	07263
1820-0069	SN7420N	01295	1820-0856	SN7400J	01295
1820-0070	SN7430N	01295	1820-0857	SN7420J	01295
1820-0074	SN7454N	01295	1820-0858	SN7476J	01295
1820-0076	SN7476N	01295	1820-0859	SN7474J	01295
1820-0077	SN7474N	01295	1820-0860	MC8516	04713
1820-0088	MC851P	04713	1820-0861	MC846L	04713
1820-0094	SN15846N	01295	1820-0862	MC848L	04713
1820-0095	MC854P	04713	1820-0863	9158DC	07263
1820-0128	937DC	07263	1820-0864	SN7403J	01295
1820-0141	MC3001P	04713	1820-0865	MC844L	04713
1820-0174	SN7404N	01295	1820-0866	MC849J	04713
1820-0175	SN7405N	01295	1820-0867	SN74H40J	01295
1820-0205	MC3003P	04713	1820-0868	MC1801L	04713
1820-0207	9601PC	07263	1820-0869	MC835L	04713
1820-0223	LM301AH	27014	1820-0870	SN7408J	01295
1820-0231	9316DC	07263	1820-0894	SN7404J	01295
1820-0239	MC3002P	04713	1820-1066	7411PC	07263
1820-0256	MC858P	04713	1820-1524	MC8602L	04713
1820-0269	SN7403N	01295	1826-0026	LM311H	27014
1820-0281	SN74107N	01295	1826-0044	739DC	07263
1820-0282	SN7486N	01295	1826-0049	723DC	07263
1820-0348	944DC	07263	1826-0051	MC1414P	04713
1820-0349	949DC	07263	1826-0055	711DC	07263
1820-0372	SN74H11N	01295	1826-0065	LM311N	27014
1820-0376	SN74H40N	01295	1826-0068	LM307	27014
1820-0398	SN72710N	01295	1826-0318	TBA231	18324
1820-0424	SN74H04N	01295	1853-0001	1853-0001	28480
1820-0435	SN74180N	01295	1853-0012	2N2904A	04713
1820-0439	723PC	07263	1853-0015	2N3640	07263
1820-0441	MC1801P	04713	1853-0016	2N3638	07263
1820-0454	MC1805P	04713	1853-0020	1853-0020	28480
1820-0479	MC835P	04713	1853-0027	1853-0027	28480
1820-0493	LM307N	27014	1853-0036	2N3906	04713
1820-0495	9311DC	07263	1853-0052	2N3740	04713
1820-0515	9602DC	07263	1853-0080	2N4888	07263
1820-0545	SN74191N	01295	1853-0203	1853-0203	28480
1820-0621	SN7438N	01295	1853-0204	2N4920	04713
1820-0631	SN74H108N	01295	1853-0232	1853-0232	28480
1820-0637	N8875A	18324	1853-0281	2N2907A	14433
1820-0659	93L00DC	07263	1853-0322	2N2946A	01295
1820-0669	93L10DC	07263	1853-0323	2N4900	04713
1820-0705	9310DC	07263	1854-0019	1854-0019	28480
1820-0742	9308DC	07263	1854-0022	1854-0022	28480
1820-0743	SN74194N	01295	1854-0039	2N3053	02735
1820-0744	SN7497N	01295	1854-0045	1854-0045	28480
1820-0745	9015DC	07263	1854-0053	2N2218	04713

Table 1-2. Parts Cross Reference (Continued)

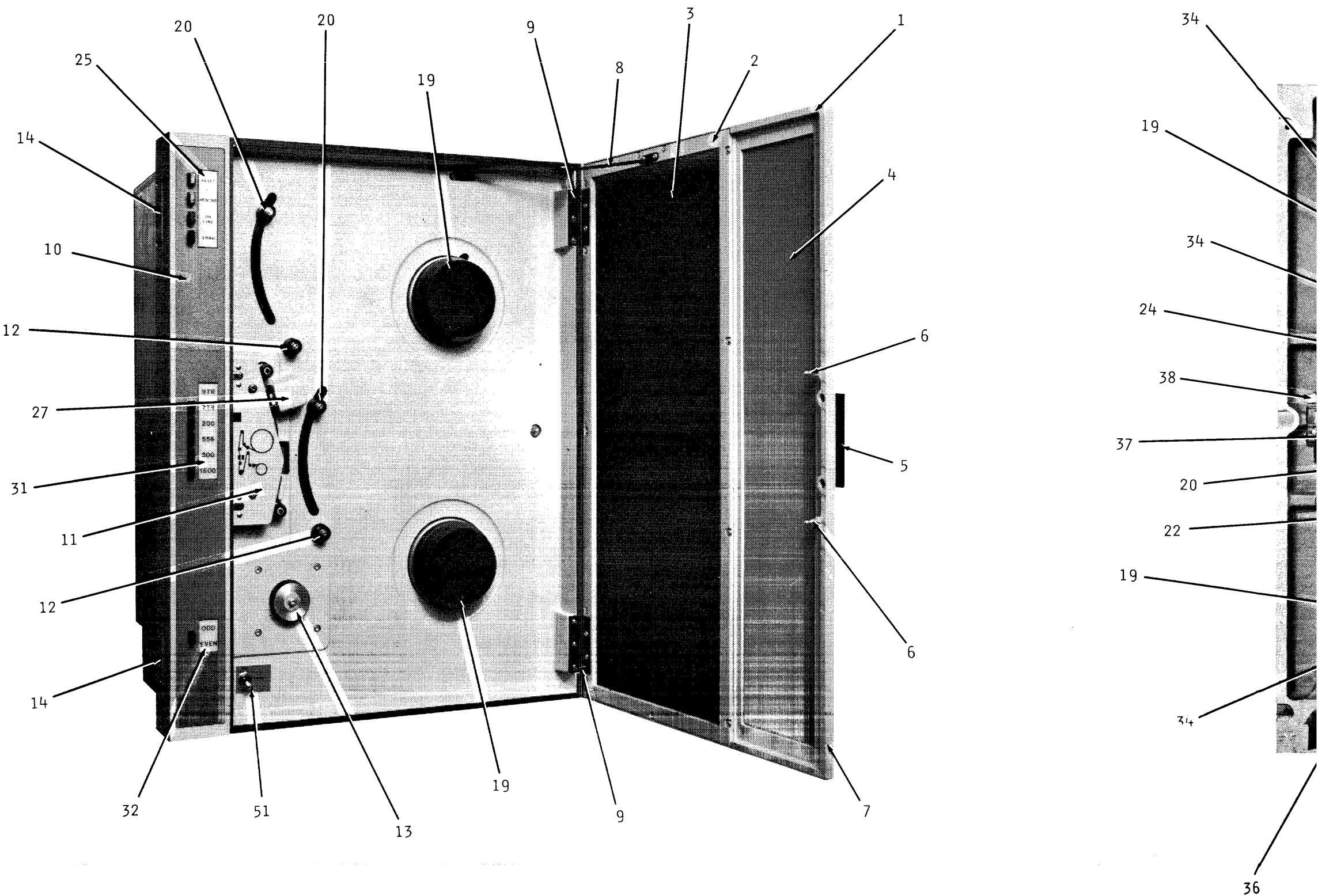
HP Part No.	Mfr. Part No.	Mfr. Code	HP Part No.	Mfr. Part No.	Mfr. Code
1854-0063	2N3055	02735	1901-0450	1901-0450	28480
1854-0071	1854-0071	28480	1901-0460	1901-0460	28480
1854-0072	2N3054	02735	1901-0630	1901-0630	28480
1854-0215	2N3904	04713	1902-0033	1N823	03877
1854-0246	2N3643	07263	1902-0048	1902-0048	28480
1854-0261	1854-0261	28480	1902-0049	1902-0049	28480
1854-0264	2N3715	04713	1902-0546	1902-0546	28480
1854-0347	2N4923	04713	1902-0696	1902-0696	28480
1854-0399	2N4912	04713	1902-1261	1902-1261	28480
1854-0404	1854-0404	28480	1902-1280	1902-1280	28480
1854-0477	2N2222A	14433	1902-1281	1902-1281	28480
1854-0490	1854-0490	28480	1902-1282	1902-1282	28480
1854-0518	2N5877	04713	1902-1283	1902-1283	28480
1855-0056	2N4342	04713	1902-1284	1902-1284	28480
1855-0062	1855-0062	28480	1902-3094	1902-3094	28480
1855-0370	1855-0370	28480	1902-3171	1902-3171	28480
1855-0390	2N3382	32293	1902-3203	1902-3203	28480
1884-0088	2N3228	02735	1902-3311	1902-3311	28480
1901-0025	1901-0025	28480	1906-0007	1906-0007	28480
1901-0026	SR1358-8	04713	1906-0008	1906-0008	28480
1901-0039	1901-0039	28480	1906-0017	1906-0017	28480
1901-0040	1901-0040	28480	1906-0035	1906-0035	28480
1901-0161	1901-0161	28480	1910-0016	1910-0016	28480
1901-0364	1901-0364	28480	1990-0087	1990-0087	28480
1901-0415	1901-0415	28480	1990-0307	1990-0307	28480

Table 1-3. Code List of Manufacturers

Mfr. Code	Manufacturer Name
00660	GTE Sylvania Electronics Components gp.
01295	Texas Instrument Inc.
02735	RCA
03508	General Electric Semiconductor Div.
03877	Transitron Electronic Corp.
03911	Clairex Corp.
04713	Motorola Semiconductor Products
07263	Fairchild Semiconductor
07933	Raytheon
12969	Unitrode Corp.
14433	ITT Semiconductors
15818	Teledyne Semiconductor
17856	Siliconix Inc.
18324	Signetics Corp.
27014	National Semiconductor
28480	Hewlett-Packard Co.
32293	Intersil Inc.



## SECTION II. DIAGRAMS AND PARTS



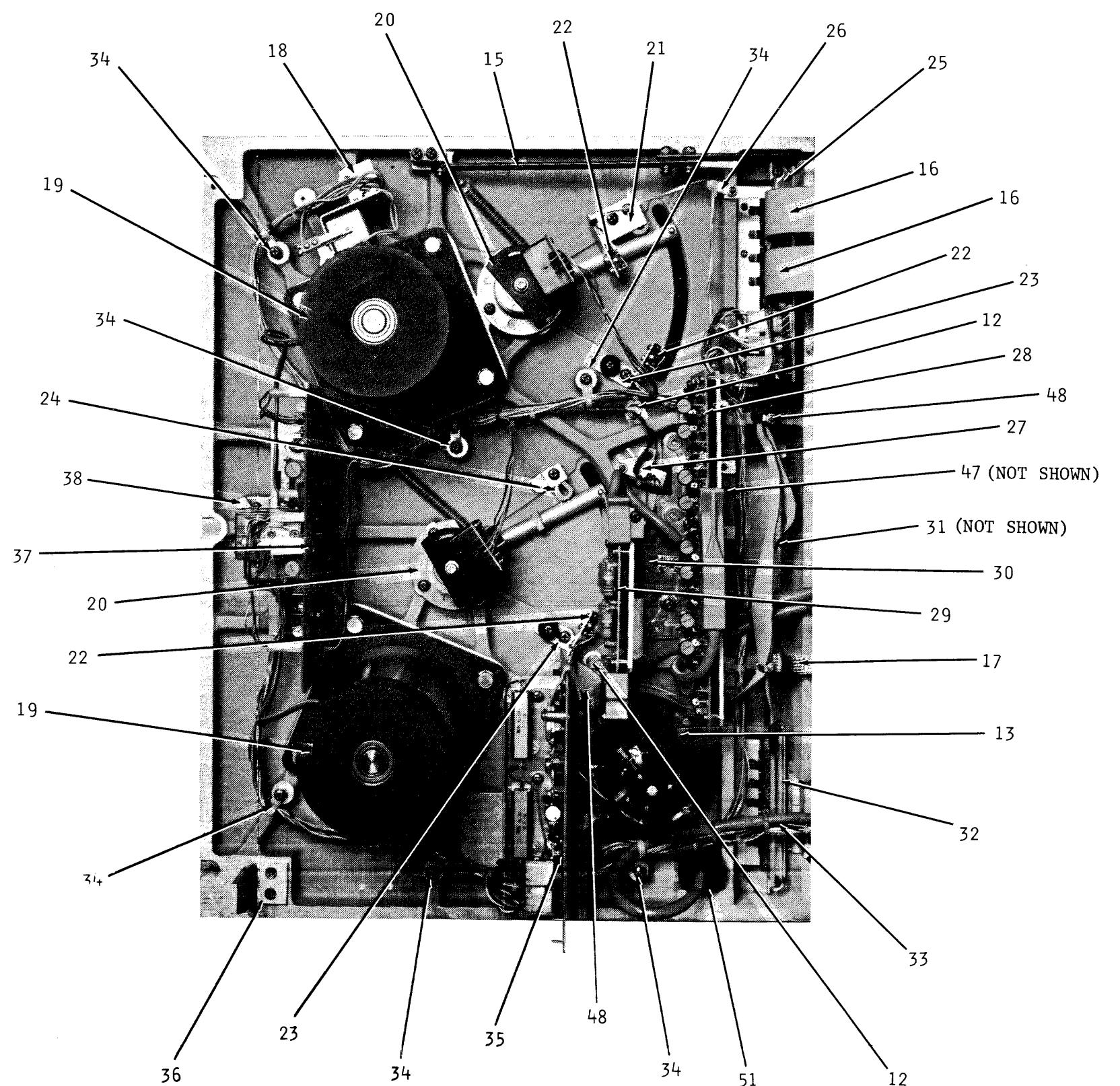
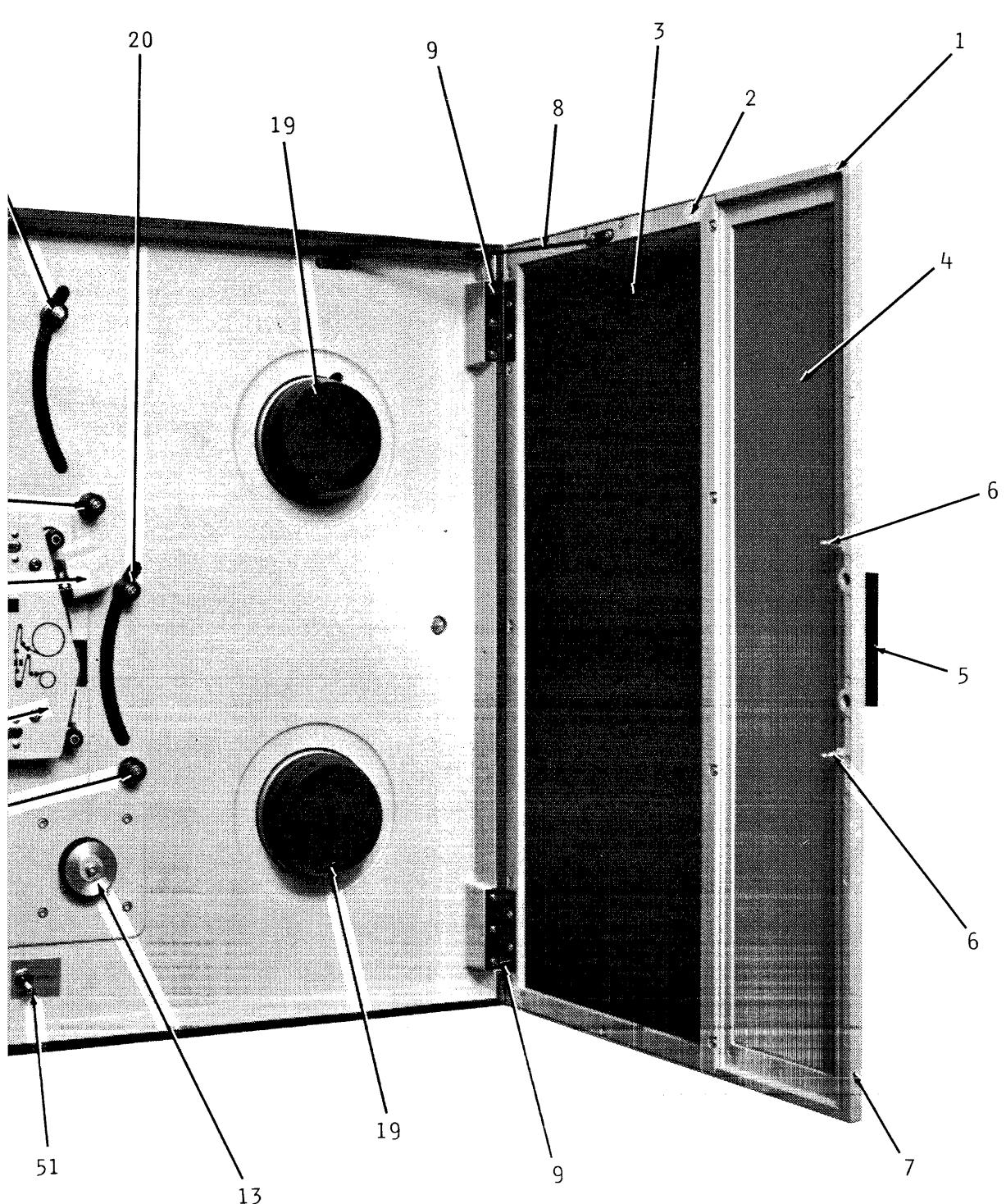


Figure 2-1. 7970B/E Tape Unit Main Assemblies  
(Sheet 1 of 2)

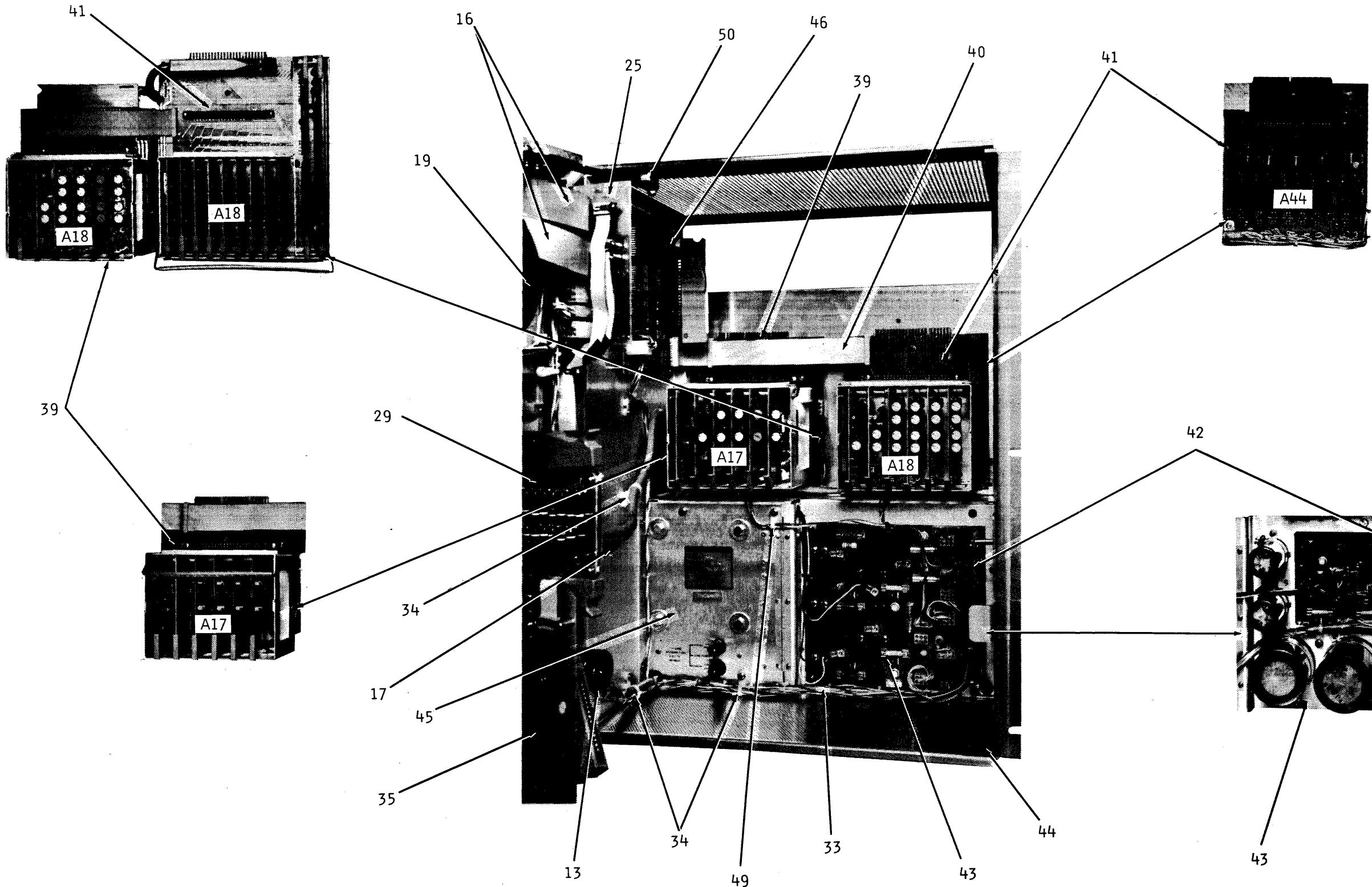


Figure 2-1. 7970B/E Tape Unit  
(Sheet 2 of 2)

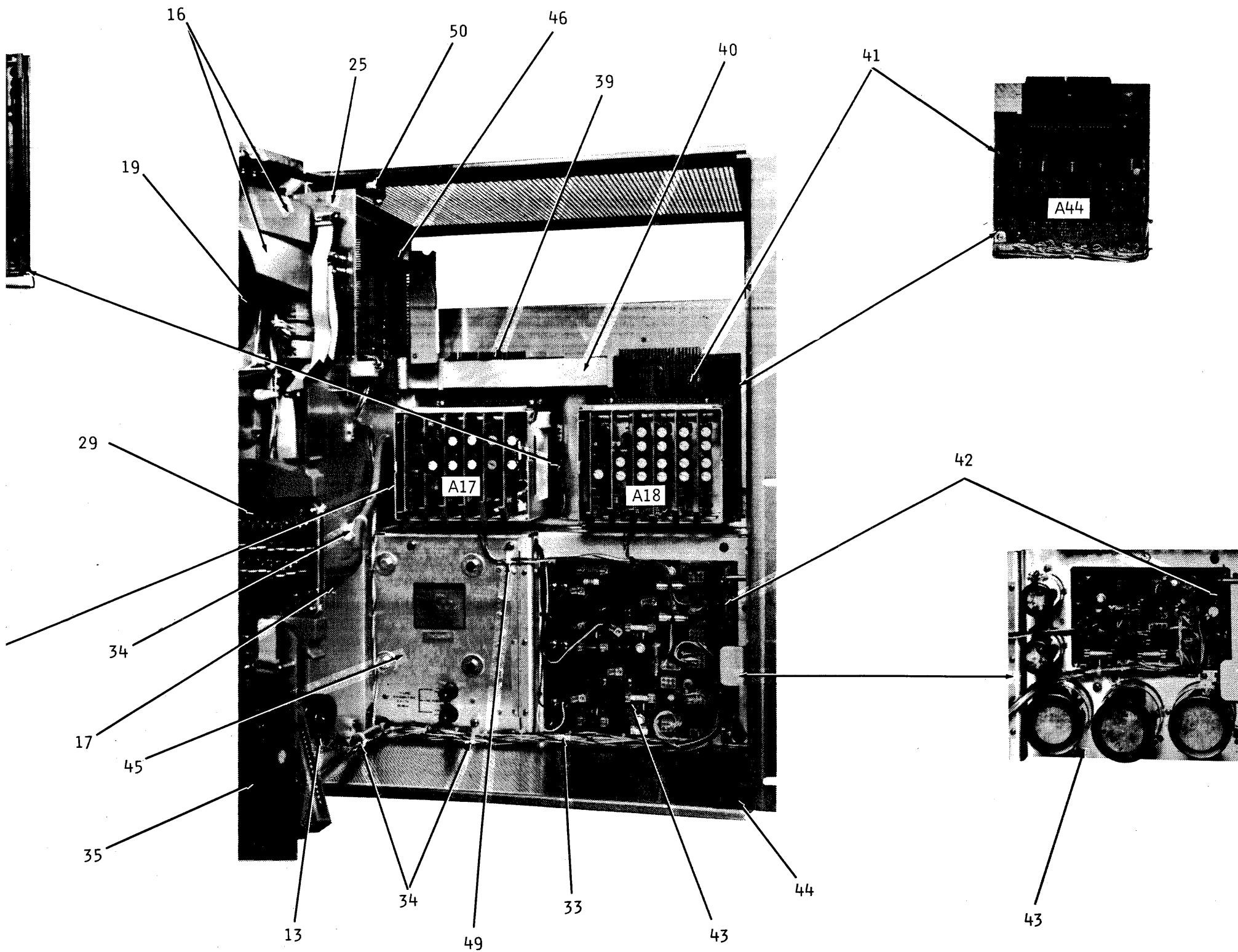


Figure 2-1. 7970B/E Tape Unit Main Assemblies  
(Sheet 2 of 2)

DIGITAL MAGNETIC TAPE UNITS PARTS LIST  
7970B/E

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
		7970B/C/E DIGITAL MAGNETIC TAPE UNIT
1	07970-60160	COVER DOOR ASSEMBLY
2	07970-20830	INSERT, Cover Door
	0624-0282	SCREW, 6-32, .312 Pan
3	07970-20832	WINDOW, Cover Door
4	07970-01186	PANEL, Cover Door
5	07970-20831	HANDLE, Cover Door
	0624-0208	SCREW, 6-32, .5 in., tapping
6	0510-1107	FASTENER, Panel
7	07970-20829	FRAME, Cover Door
8	07970-60010	HINGE ASSEMBLY, Door Stop
	2190-0004	WASHER, Lock, #4, Hel
	2200-0143	SCREW, 4-40, .375 in.
9	07970-20480	HINGE, Cover Door
	0624-0282	SCREW, 4-40, .375 in.
10	- - - -	PANEL, Switch Cover
11	07970-00130	COVER, Head Assembly
	2190-0034	WASHER, Lock, #10, Hel
	2680-0099	SCREW, 10-32, .375 in.
12	07970-60130	TAPE ROLLER AND BEARING ASSEMBLY
	07970-20460	SHAFT, Tape Roller
	2950-0036	NUT, Brass 25-38
	3050-0253	WASHER, Spring #10
13	- - - -	CAPSTAN MOTOR ASSEMBLY (MG 1)
	2190-0429	WASHER, Lock, Hel
	3030-0017	SCREW, 8-32, .5 in, socket head
14	07970-62280	HINGE BLOCK ASSEMBLY
	2680-0104	SCREW, 10-32, .5 in.
15	07970-62106	DOOR STOP ASSEMBLY
	2190-0034	WASHER, Lock, #10, Hel
	3050-0002	WASHER, Flat, #10
	2680-0065	SCREW, 10-32, 1.25 in.
16	07970-60890	RIBBON CABLE ASSEMBLY
17	07970-00510	GROUND STRAP
	3050-0016	WASHER, Flat, #6
	0380-0013	SPACER
	2190-0003	WASHER, Lock Hel
	2190-0008	WASHER, Lock, star
	07970-00610	GUIDE, Cable
	2200-0125	SCREW, 4-40, 1.5 in.
18	- - - -	WRITE ENABLE ASSEMBLY (A10)
	3050-0222	WASHER, Flat, #4
	2190-0003	WASHER, Lock, #4 Hel
	2200-0147	SCREW, 4-40, .5 in.
19	- - - -	REEL MOTOR ASSEMBLY (B1/B2)
	2190-0432	WASHER, Lock, Hel
	0570-0082	SCREW, 5/16 - 18, 1 in.

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1 20	- - - - - 2190-0034 2680-0107 07970-01190 0380-1012 3050-0002 2190-0034 2680-0109 4320-0256 07970-20834 3102-0009	TENSION ARM ASSEMBLY(A3/A4) WASHER, Lock #10 SCREW, 10-32, .75 in. BRACKET, Limit Switch, Upper SPACER WASHER, Flat, #10 WASHER, Lock, Hel SCREW, 10-32, .875 in. BUMPER, Rubber GUIDE, Bumper SWITCH, Limit Sensing, SPDT (W2S1, W2S2, W2S3)
21	0520-0133 2190-0479 2190-0014 0610-0001	SCREW, 2-56, .438 in. WASHER, Flat #2 WASHER, Lock NUT, 2-56, Hex
22	07970-00120 0380-0016 3050-0002 2190-0034 2680-0101 2680-0105 0403-0163	BRACKET, Limit Switch, lower SPACER WASHER, Flat, #10 WASHER, Lock, #10, Hel SCREW, 10-32, .438 in. SCREW, 6-32, .5 in. BUMPER, Stop
23	4320-0256 07970-20834 2190-0034 07970-01191 2680-0109	BUMPER, Rubber GUIDE, Bumper WASHER, Lock, #10, Hel WASHER, Square SCREW, 10-32, .875 in.
24	- - - - - 2190-0034 07970-01191 2680-0109	CONTROL SWITCH ASSEMBLY (A11) WASHER, Lock, #10, Hel SCREW, 10-32, .5 in.
25	1400-0440 3050-0222 2190-0003 2200-0149	CLAMP, Cable WASHER, Flat, #4 WASHER, Lock, #4, Hel SCREW, 4-40, .625 in.
26	- - - - - 07970-01176 3050-0222 2190-0003 2200-0149	PHOTOCODE HEAD ASSEMBLY (A2) INSULATOR, Photosense WASHER, Flat, #4 WASHER, Lock, #4, Hel SCREW, 4-40, .625 in.
27	1400-0440 2190-0034 2680-0105	READ PREAMPLIFIER ASSEMBLY (A15) CLAMP, Cable WASHER, Lock, #10, Hel SCREW, 10-32, .625 in.
28	- - - - - 2190-0034 2680-0105	WRITE INTERCONNECT ASSEMBLY (A14) WASHER, Lock, #10, Hel SCREW, 10-32, .5 in.
29	- - - - - 2190-0034 2680-0103	

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1 30	- - - - 3050-0002 2190-0034 2680-0107	MAGNETIC TAPE HEAD ASSEMBLY (A1) WASHER, Flat, #10 WASHER, Lock, #10, Hel SCREW, 10-32, .75 Pan
1 31	- - - - 2190-0034 2680-0103	DENSITY SELECT SWITCH ASSEMBLY (A12) WASHER, Lock, #10, Hel SCREW, 10-32, .5 in.
1 32 or 1 32	- - - - 2190-0034 2680-0103	UNIT SELECT SWITCH ASSEMBLY (A13) PARITY SELECT SWITCH ASSEMBLY (A6) WASHER, Lock, #10, Hel SCREW, 10-32, .132 in.
33	07970-60600	TRANSPORT HARNESS ASSEMBLY (W2)
34	1400-0440 2680-0103 2190-0034	CLAMP, Cable SCREW, 10-32, .5 in. WASHER, Lock, #10, Hel
1 35	- - - - 2190-0034 2680-0105	CAPSTAN SERVO ASSEMBLY (A7) WASHER, Lock, #10, Hel SCREW, 10-32, .625 in.
36	07970-20680 2680-0104	GUIDE, Lifter SCREW, 10-32, .5 in.
1 37	- - - - 3050-0002 2190-0034 2680-0103	REEL SERVO ASSEMBLY (A5) WASHER, Flat, #10 WASHER, Lock, #10, Hel SCREW, 10-32, .5 in.
38	1390-0228 2190-0034 2680-0103	PANEL FASTENER WASHER, Lock, #10, Hel SCREW, 10-32, .5 in.
1 39 or 1 39	- - - - 3050-0016 2360-0115	WRITE ASSEMBLY (A17) NRZI READ ASSEMBLY (A18) (7970E Multiformat unit only) WASHER, Flat, #6 SCREW, 6-32, .312 in.
40 or	07970-60890	RIBBON CABLE ASSEMBLY (read only drives)
40 or	07970-60900	RIBBON CABLE ASSEMBLY (read/write drives)
40 or	07970-62115	RIBBON CABLE ASSEMBLY (PE read/write drives)
40 or	07970-62116	RIBBON CABLE ASSEMBLY (PE read only drives)
1 41	- - - - 3050-0016 2360-0115	READ ASSEMBLY (A18 or A44) WASHER, Flat, #6 SCREW, 6-32, .312 in.
1 42	- - - - 3050-0016 2360-0195	POWER REGULATOR ASSEMBLY (A31) WASHER, Flat, #6 SCREW, 6-32, .312 in.
1 43	- - - - 2190-0034 2680-0099	POWER DISTRIBUTION ASSEMBLY (A30) WASHER, Lock, #10, Hel SCREW, 10-32, .375 in.

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
44	2190-0003 2200-0141 07970-00561 2190-0222 2190-0003 2200-0141 - - - - - 2190-0034 2680-0129 - - - - - 3050-0016 2360-0115 47	WASHER, Lock, #4 Hel SCREW, 4-40, .312 in. PAD, Lifter, nylon WASHER, Flat, #4 WASHER, Lock, #4, Hel SCREW, 4-40, .312 in. TRANSFORMER ASSEMBLY (A29) WASHER, Lock, #10, Hel SCREW, 10-32, .132 in. CONTROL AND STATUS ASSEMBLY (A16) WASHER, Flat, #6 SCREW, 6-32, .312 in. COVER DOOR INTERLOCK SWITCH ASSEMBLY (not shown)
48	3101-0877 2680-0103 2190-0034 07970-00200 07970-00610 2200-0123 0380-0013 2190-0003 1400-0440 2680-0105 2190-0034 50	SWITCH, SPDT SCREW, 10-32, .5 in. WASHER, Lock, #10, Hel BRACKET, Mounting GUIDE, Cable SCREW, 4-40, 1.25 in. SPACER WASHER, Lock, #4, Hel CLAMP, Cable SCREW, 10-32, .625 in. WASHER, Lock, #10, Hel BLOCK, Door Stop SCREW, 10-32, .5 in. SCREW, 10-32, 1 in. WASHER, Lock, #10, Hel WASHER, Nylon WASHER, Flat, #10
49	2190-0003 1400-0440 2680-0105 2190-0034 07970-20140 2680-0103 2680-0111 2190-0034 2190-0102 3050-0002 51	WASHER, Lock, #4, Hel CLAMP, Cable SCREW, 10-32, .625 in. WASHER, Lock, #10, Hel BLOCK, Door Stop SCREW, 10-32, .5 in. SCREW, 10-32, 1 in. WASHER, Lock, #10, Hel WASHER, Nylon WASHER, Flat, #10 SWITCH, Power, DPST CAP, Protective PLATE, Indicator WASHER, Lock NUT, Mounting
	3101-0646 1401-0083 7120-4575 2190-0102 2950-0035	

▲ See Table of Contents for appropriate part number or parts breakdown.

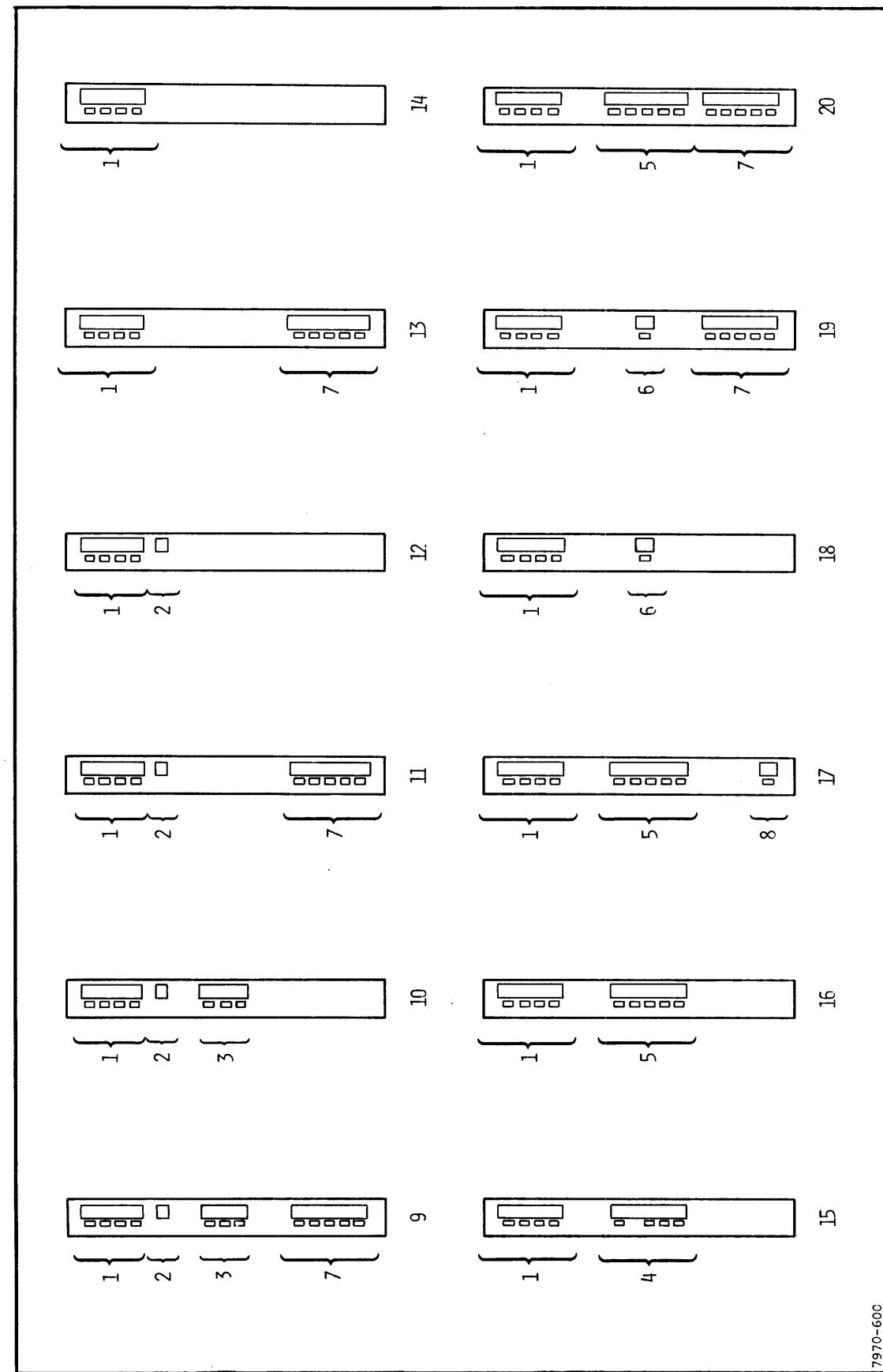
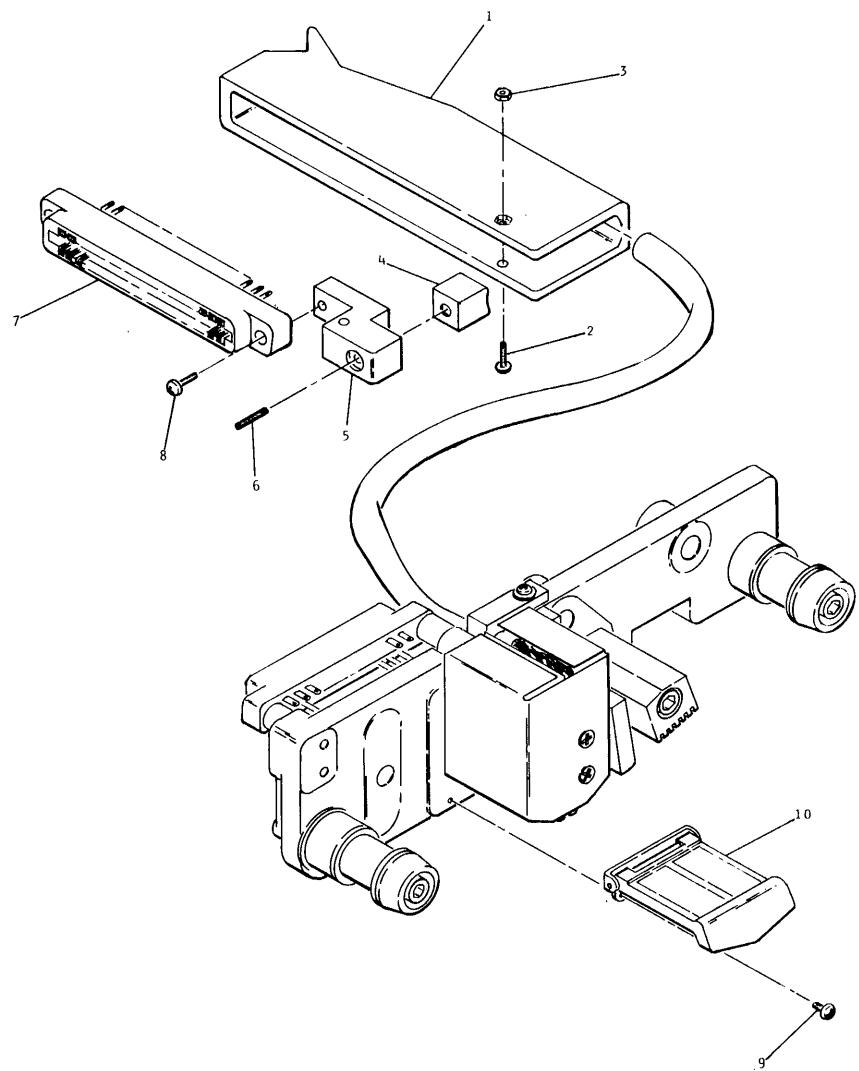


Figure 2-2. Switch Cover Panel

7970-600

## SWITCH COVER PANEL PARTS LIST

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62089 or 07970-62102	CONTROL SWITCH ASSEMBLY (A11)
2		WRITE ENABLE INDICATOR
3	07970-62087	TRIPLE DENSITY SELECT SWITCH ASSEMBLY (A12)
4	07970-62088	READ/READ DENSITY SELECT SWITCH ASSEMBLY (A12)
5	07970-62099	MULTIPLE DENSITY SELECT SWITCH ASSEMBLY (A12)
6	07970-62100	DUAL DENSITY SELECT SWITCH ASSEMBLY (A12)
7	07970-62086	UNIT SELECT SWITCH ASSEMBLY (A13)
8	07970-62101	PARITY SELECT SWITCH ASSEMBLY (A6)
9	07970-01000	PANEL, Switch Cover (read/write drive with unit select and density select)
10	07970-01010	PANEL, Switch Cover (read/write drive with density select)
11	07970-01020	PANEL, Switch Cover (read/write drive with unit select)
12	07970-01030	PANEL, Switch Cover (read/write drive)
13	07970-01060	PANEL, Switch Cover (read only drive with unit select)
14	07970-01070	PANEL, Switch Cover (read only drive basic unit)
15	07970-01160	PANEL, Switch Cover (read only drive with read/read density select)
16	07970-01163	PANEL, Switch Cover (read only drive with multiple density select)
17	07970-01164	PANEL, Switch Cover (read only drive with parity select and multiple density select)
18	07970-01165	PANEL, Switch Cover (read only drive with dual density select)
19	07970-01166	PANEL, Switch Cover (read only drive with dual density select and unit select)
20	07970-01167	PANEL, Switch Cover (read only drive with multiple density select and unit select)



7970-541A

Figure 2-3. Magnetic Head Assembly (A1)

MAGNETIC TAPE HEAD ASSEMBLY

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	1251-2874	MAGNETIC TAPE HEADS
2	1251-0159	HOOD, CONNECTOR
3	0624-0098	CONNECTOR, PC
4	5040-6003	SCREW, Tapping 4-40
5	5040-6072	CLAMP, Cable
6	3030-0143	BLOCK, Connector Mounting
7	1251-0159	SCREW, Set, 6-32, .5 in.
8	0624-0098	CONNECTOR
9	2200-0139	SCREW, Tapping, 4-40
10	07970-62269	SCREW, 4-40 Pan, .250 in. pozi SHIELD, Crosstalk

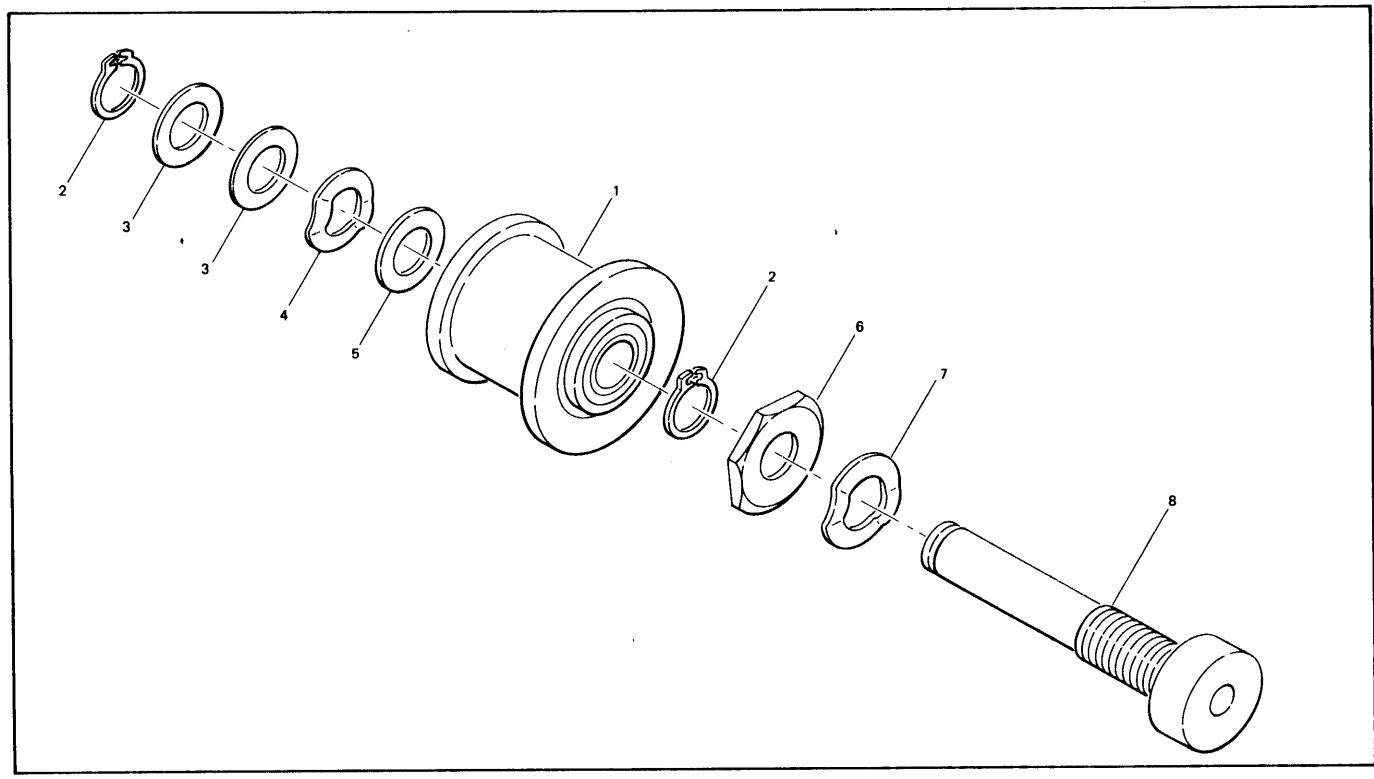
 1 Refer to the following list for tape head replacement. When ordering a replacement head, use the new number. Tape head assemblies must be returned to the factory for repair or refurbishment.

OLD	NEW	DESCRIPTION
07970-60580	07970-62206	9 Tr NRZI R/W 21-45 ips
-60581	-62204	7 Tr NRZI R/W 21-45 ips
-60582	-62202	9 Tr NRZI R/O 21-45 ips
-60583	-62200	7 Tr NRZI R/O 21-45 ips
-60584	-62203	7 Tr NRZI R/W 10-20.9 ips
-60585	-62205	9 Tr NRZI R/W 10-20.9 ips
-60586	-62199	7 Tr NRZI R/O 10-20.9 ips
-60587	-62201	9 Tr NRZI R/O 10-20.9 ips
-60588	-62207	7/9 Tr NRZI R/R 10-20.9 ips
-60589	-62208	7/9 Tr NRZI R/R 21-45 ips
-62028	-62212	9 Tr PE R/W 21-45 ips
-62029	-62214	7/9 Tr NRZI/PE R/R/R 21-45 ips
-62030	-62291	9 Tr NRZI/PE R/R 21-45 ips
-62031	-62211	9 Tr PE R/W 10-20.9 ips
-62032	-62213	7/9 Tr NRZI/PE R/R/R 10-20.9 ips
-62033	-62209	9 Tr PE R/O 10-20.9 ips
-62246	-62210	9 Tr PE R/O 21-45 ips

## TAPE ROLLER ASSEMBLY

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-60130	TAPE ROLLER AND BEARING ASSEMBLY
2	0510-0238	RING, RETAINING
3	2190-0181	WASHER, Flat, .005 in.
4	3050-0253	WASHER, TENSION
5	3050-0032	WASHER, Flat, .010 in.
6	2950-0036	NUT, BRASS, 25-38
7	3050-0424	WASHER, TENSION
8	1530-1878	SHAFT, Tape Roller

**1** One 3050-0032 (Item 5) washer is used in lieu of 2 ea 2190-0181 (Item 3) on some assemblies.



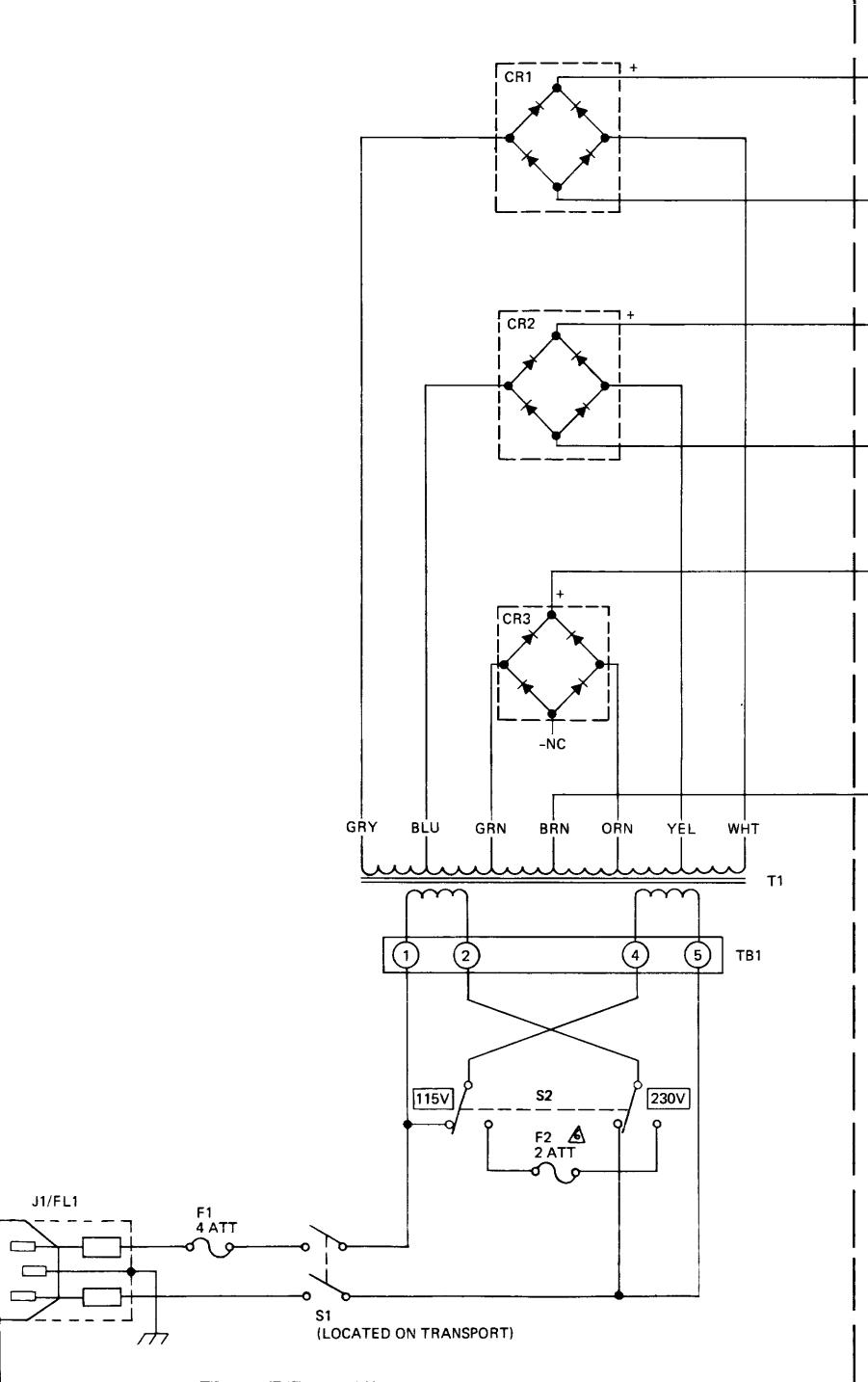
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Figure 2-4. Tape Roller Assembly

2-11/2-12  
Changed 15 June 1976



## TRANSFORMER ASSEMBLY A29 (07970-60471)



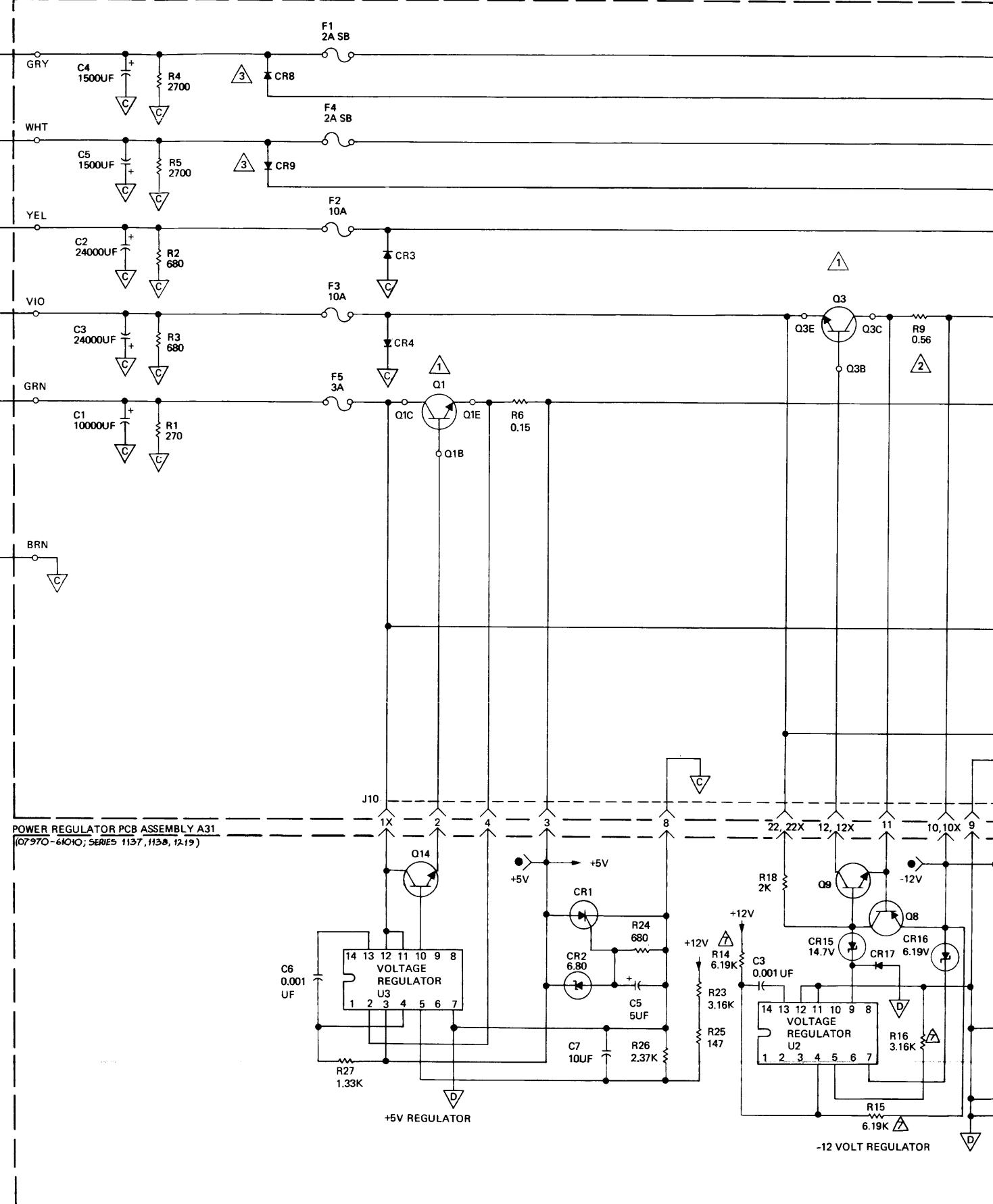
## NOTES:

- 1 THESE COMPONENTS ARE EXTERNALLY MOUNTED ON HEAT SINKS OR CHASSIS.
- 2 IN SERIES NOS. 1411 AND ABOVE F2 IS 2.5 A. A30A1R9 IS 0.82 OHM ON SERIES 1120 ASSEMBLIES.
- 3 DIODES CR8 AND CR9 FIRST USED ON SERIES 1229.
- 4 RESISTOR A31A1R31 IS 21.5K AND A31A1R38 IS 19.6K ON SERIES 1138 ASSEMBLIES.
- 5 JUMPERS A AND B INSTALLED FOR 10-20.9 IPS. JUMPER C FOR 21-45 IPS.
- C THESE POINTS ARE COMMON (GROUND).
- S THESE POINTS ARE COMMON (SIGNAL RETURN).

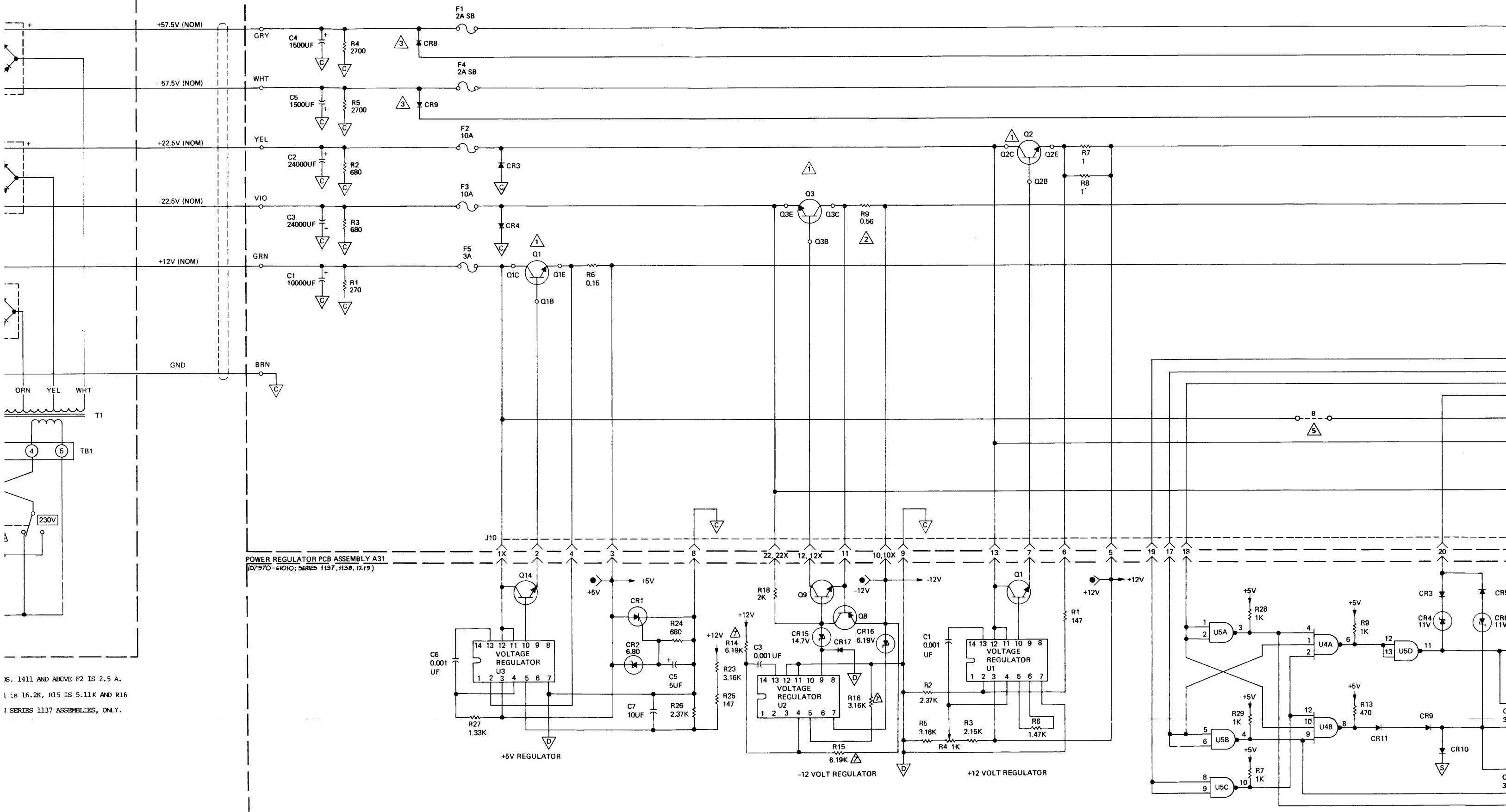
07970-90835 DWG. REV. A

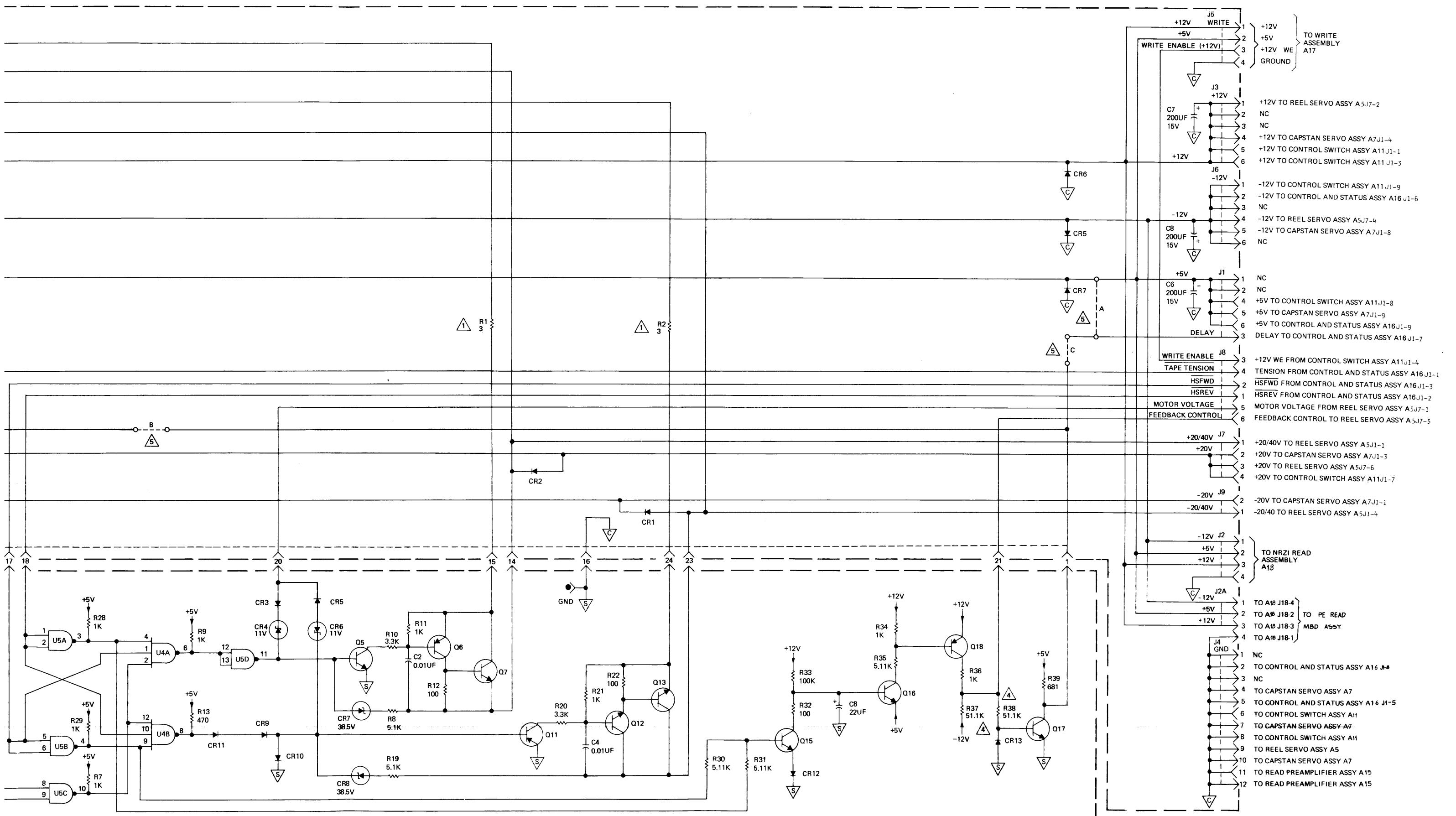
## POWER DISTRIBUTION ASSY A30A1

(07970-61020; SERIES 1120, 1137, 1229)

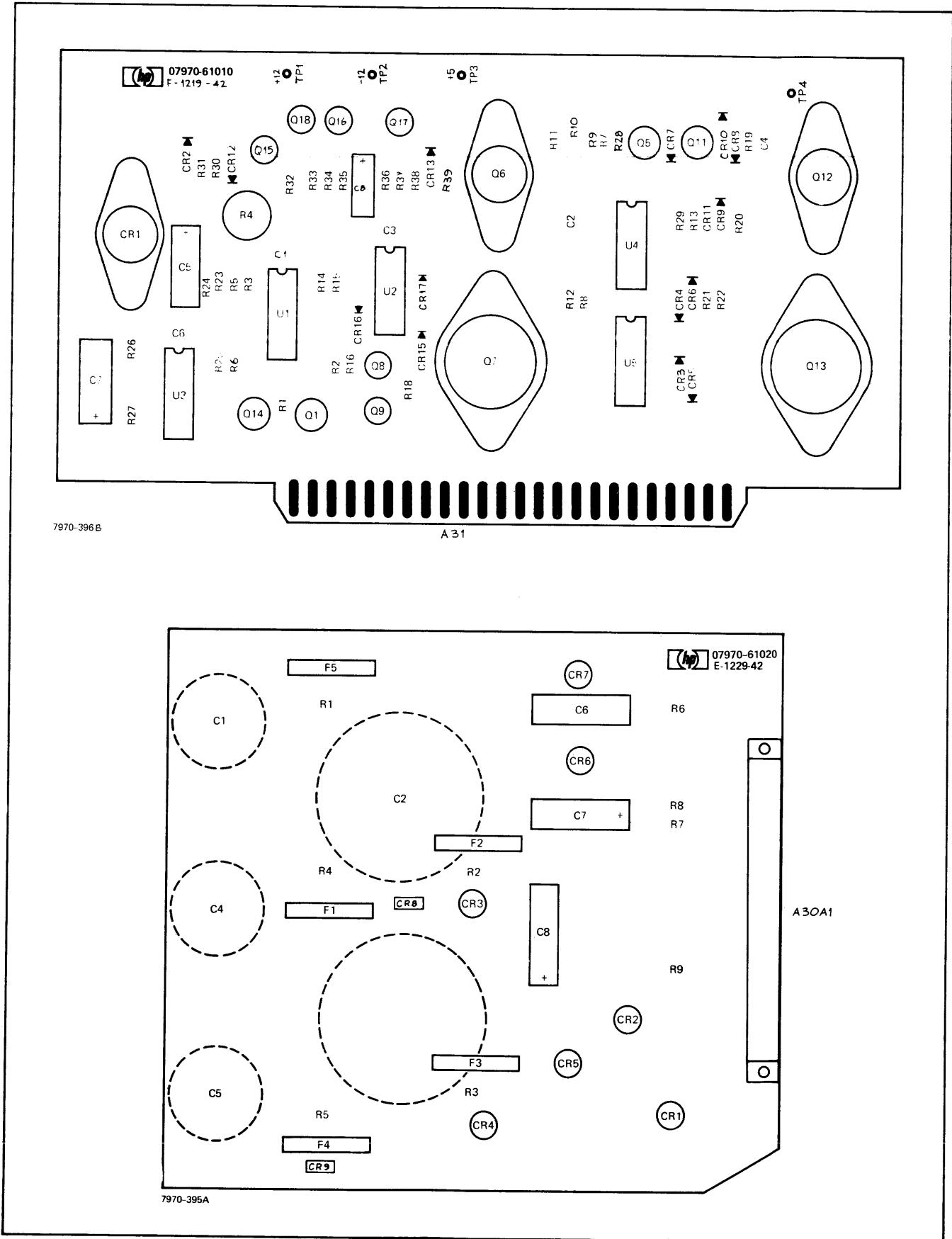


POWER DISTRIBUTION ASSY A30A1 (07970-61020; SERIES 1120, 1137, 1229)





7970 B & Slave "E" Power Supply Assemblies A29/30/31



POWER REGULATOR PCA  
07970-61010 (SERIES 1137, 1138, 1219)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1, C3, C6	07970-61010	POWER REGULATOR PCA (SERIES 1137)
C2, C4	0160-3456	CAPACITOR, fxd, 1000pf, Cer
C5	0160-2055	CAPACITOR, fxd, .01uf, 100V
C7	0180-0172	CAPACITOR, fxd, 5uf, -10 +75%
C8	0180-0059	CAPACITOR, fxd, 10uf, -10 +75%
CR1	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
CR2	1884-0088	THYRISTOR, 2N3228
CR3, CR5	0340-0180	INSULATOR, Friction
CR4, CR6	2360-0195	SCREW, 6-32, .312 Pan
CR7, CR8	2420-0001	NUT, hex, 6-32
CR9-CR13, CR17	1902-0048	DIODE, Zener, 6.81V
CR15	1901-0025	DIODE, 100V, 200MA
CR16	1902-3171	DIODE, Zener, 11V
Q1, Q14	1902-3311	DIODE, Breakdown, 38.3V
Q5	1901-0040	DIODE, 30V, 50MA
Q6	1902-3203	DIODE, Zener, 14.7V
Q7, Q13	1902-0049	DIODE, Zener, 6.19V
Q8, Q18	1854-0039	TRANSISTOR, 2N3053, T05
Q9	1854-0022	TRANSISTOR, 2N2102, T05
Q11	1853-0052	TRANSISTOR, 2N3740, T066
Q12	0340-0180	INSULATOR, Friction
Q15, Q16, Q17	2360-0195	SCREW, 6-32, .312 Pan
R1, 25	2420-0001	NUT, hex, 6-32
R2, 26	1854-0063	TRANSISTOR, 2N3055, T03
R3	0340-0164	INSULATOR, Transistor
R4	2360-0197	SCREW, 6-32, .375 Pan
R5, R16, R23	2420-0001	NUT, hex, 6-32
R6	1853-0036	TRANSISTOR, 2N3906, PL18
R7, 9, 11, 21	1853-0027	TRANSISTOR, PNP, SI, T05
28, 29	1853-0080	TRANSISTOR, 2N4888, PL5
R8, R19	1854-0072	TRANSISTOR, 2N3054, T066
R10, R20	0340-0180	INSULATOR, Friction
R12, R22	2360-0195	SCREW, 6-32, .312 Pan
R13	2420-0001	NUT, hex, 6-32
*R14	1854-0215	TRANSISTOR, 2N3904, PL5
R1, 25	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R2, 26	0698-3150	RESISTOR, fxd, 2.37K, 1%, .125W
R3	0698-0084	RESISTOR, fxd, 2.15K, 1%, .125W
R4	2100-1773	RESISTOR, Variable, 1K
R5, R16, R23	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R6	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
R7, 9, 11, 21	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
28, 29	0683-5125	RESISTOR, fxd, 5.1K, 5%, .25W
R8, R19	0686-3325	RESISTOR, fxd, 3.3K, 5%, .5W
R10, R20	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R12, R22	0683-4715	RESISTOR, fxd, 470, 5%, .25W
R13	0757-0447	RESISTOR, fxd, 16.2K, 1%, .125W

REF  
INI  
  
\*R15  
\*R16  
R18  
R24  
R27  
R30  
R32  
R33  
R34  
\*R37  
\*R38  
R39  
U1,  
U4  
U5  
  
\*R14  
\*R16  
  
\*R14  
\*R16  
\*R37

POWER DISTRIBUTION PCA  
07970-61020 (SERIES 1115, 1120, 1229)

DESCRIPTION
LATOR PCA (SERIES 1137) fxd, 1000pf, Cer fxd, .01uf, 100V fxd, 5uf, -10 +75% fxd, 10uf, -10 +75% fxd, 22uf, 15VDC 2N3228 TOR, Friction 6-32, .312 Pan lex, 6-32 er, 6.81V V, 200MA er, 11V breakdown, 38.3V , 50MA er, 14.7V er, 6.19V , 2N3053, T05 , 2N2102, T05 , 2N3740, T066 TOR, Friction 6-32, .312 Pan lex, 6-32 , 2N3055, T03 TOR, Transistor 6-32, .375 Pan lex, 6-32 , 2N3906, PL18 , PNP, SI, T05 , 2N4888, PL5 , 2N3054, T066 TOR, Friction 6-32, .312 Pan lex, 6-32 , 2N3904, PL5 fxd, 147, 1%, .125W fxd, 2.37K, 1%, .125W fxd, 2.15K, 1%, .125W Variable, 1K fxd, 3.16K, 1%, .125W fxd, 1.47K, 1%, .125W fxd, 1K, 5%, .25W  fxd, 5.1K, 5%, .25W fxd, 3.3K, 5%, .5W fxd, 100, 5%, .25W fxd, 470, 5%, .25W fxd, 16.2K, 1%, .125W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
*R15	0757-0438	RESISTOR, fxd, 5.11K, 1%, .125W
*R16	0757-0441	RESISTOR, fxd, 8.25K, 1%, .125W
R18	0686-2025	RESISTOR, fxd, 2K, 5%, .5W
R24	0683-6815	RESISTOR, fxd, 680, 5%, .25W
R27	0757-0317	RESISTOR, fxd, 1.33K, 1%, .125W
R30, R31, R35	0757-0438	RESISTOR, fxd, 5.11K, 1%, .125W
R32	0757-0198	RESISTOR, fxd, 100, 1%, .5W
R33	0757-0465	RESISTOR, fxd, 100K, 1%, .125W
R34, R36	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
*R37	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
*R38	0757-3157	RESISTOR, fxd, 19.6K, 1%, .125W
R39	0757-0419	RESISTOR, fxd, 681, 1%, .125W
U1, U2, U3	1820-0439	IC, Voltage Regulator
U4	1820-0348	IC, Digital, MC844P
U5	1820-0256	IC, Digital, MC858P
SERIES 1138		
*R14, R15	0757-0290	RESISTOR, fxd, 6.19K, 1%, .125W
*R16	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
SERIES 1219		
*R14, R15	0757-0290	RESISTOR, fxd, 6.19K, 1%, .125W
*R16	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
*R37, R38	0757-0458	RESISTOR, fxd, 51.1K, 1%, .125W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	07970-61020 0180-2326 2680-0128 2190-0012	POWER DISTRIBUTION PCA (SERIES 1115) CAPACITOR, 1000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C2, C3	0180-2327 2680-0128 2190-0012	CAPACITOR, 24000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C4, C5	0180-2325 2680-0128 2190-0012	CAPACITOR, 1500uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C6, C8	0180-0104	CAPACITOR, 200uf
CR1, CR2	1901-0630	DIODE, Rectifier, Silicone
CR3-CR7	1901-0415	DIODE, Power 1N4997
CR8, CR9	0340-0164	INSULATOR
F1, F4	1901-0026	DIODE
F2, F3	2110-0303	FUSE, 2A, 250V
F5	2110-0051	FUSE, 10A
	2110-0003	FUSE, 3A
	2110-0257	FUSE, Clip
	7124-2099	LABEL
	0360-1613	LUG, Solder #5
	2680-0099	SCREW, 10-32, .375 Pan
	2740-0003	NUT, Lock
R1	07970-80110	PCB, Power Supply
R2, R3	0698-3629	RESISTOR, Fxd, 270, 5%, 2W
R4, R5	0698-3635	RESISTOR, Fxd, 680, 5%, 2W
R6	0764-0043	RESISTOR, Fxd, 2.7K, 5%, 2W
R7, R8	0812-0045	RESISTOR, Fxd, 0.15, 5%, 3W
*R9	0811-1666	RESISTOR, Fxd, 1.0, 5%, 2W
J10	0811-1552	RESISTOR, Fxd, 0.56, 5%, 2W
	1251-2025	CONNECTOR, PC 2x24 156 D.
	1251-2503	CONNECTOR, (Female Pins) Contact P
	1251-2504	CONNECTOR, (Male Pins) Contact PC
	0361-0013	RIVET, .123DX, .375
	0361-0137	RIVET, 123DX, .188
*R9	0811-1665	RESISTOR, Fxd, 0.82, 5%, 2W
*R9	0811-1552	RESISTOR, Fxd, 0.56, 5%, 2W

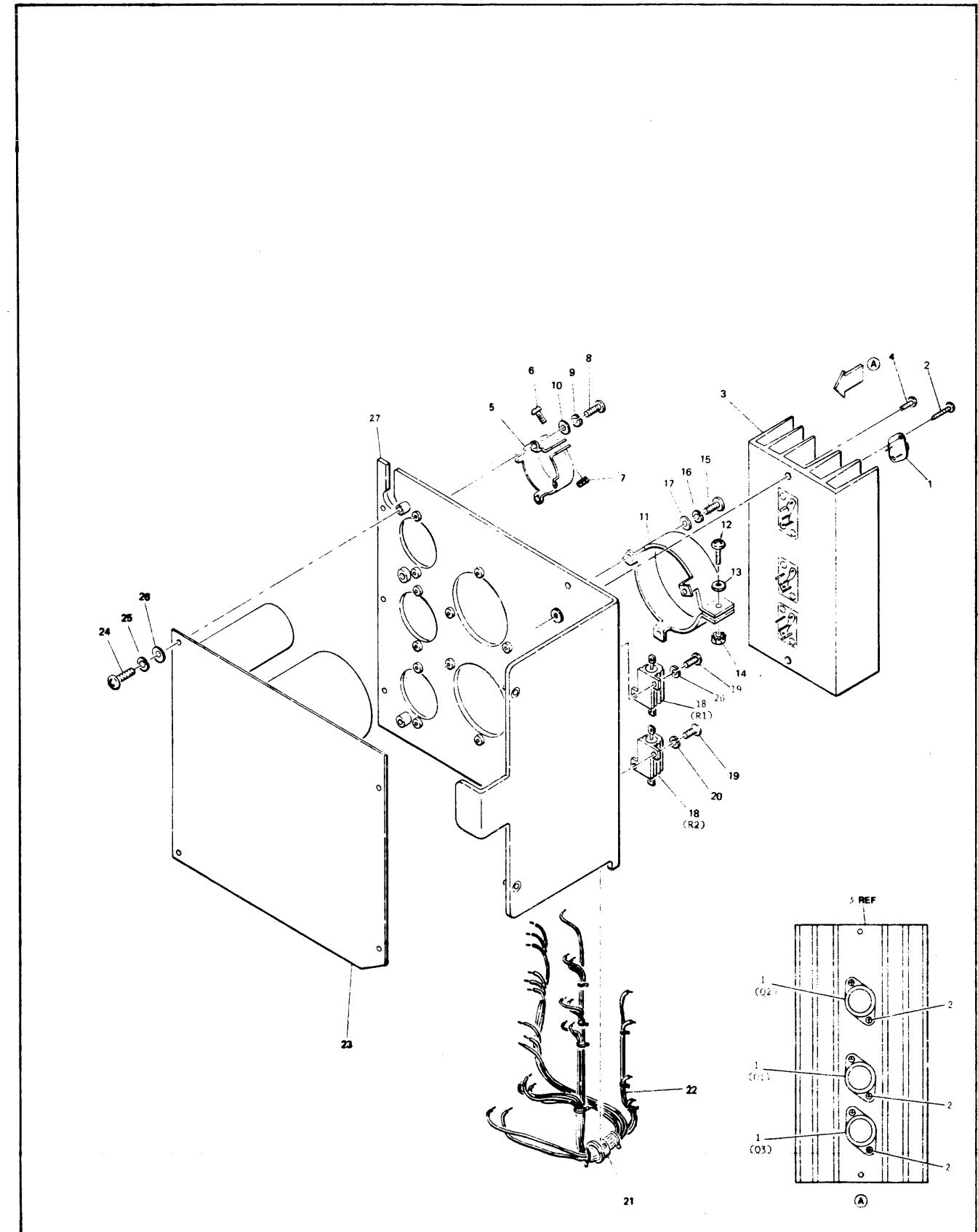
7970 B & Slave "E" Power Supply Assemb:

POWER DISTRIBUTION PCA  
07970-61020 (SERIES 1115, 1120, 1229)

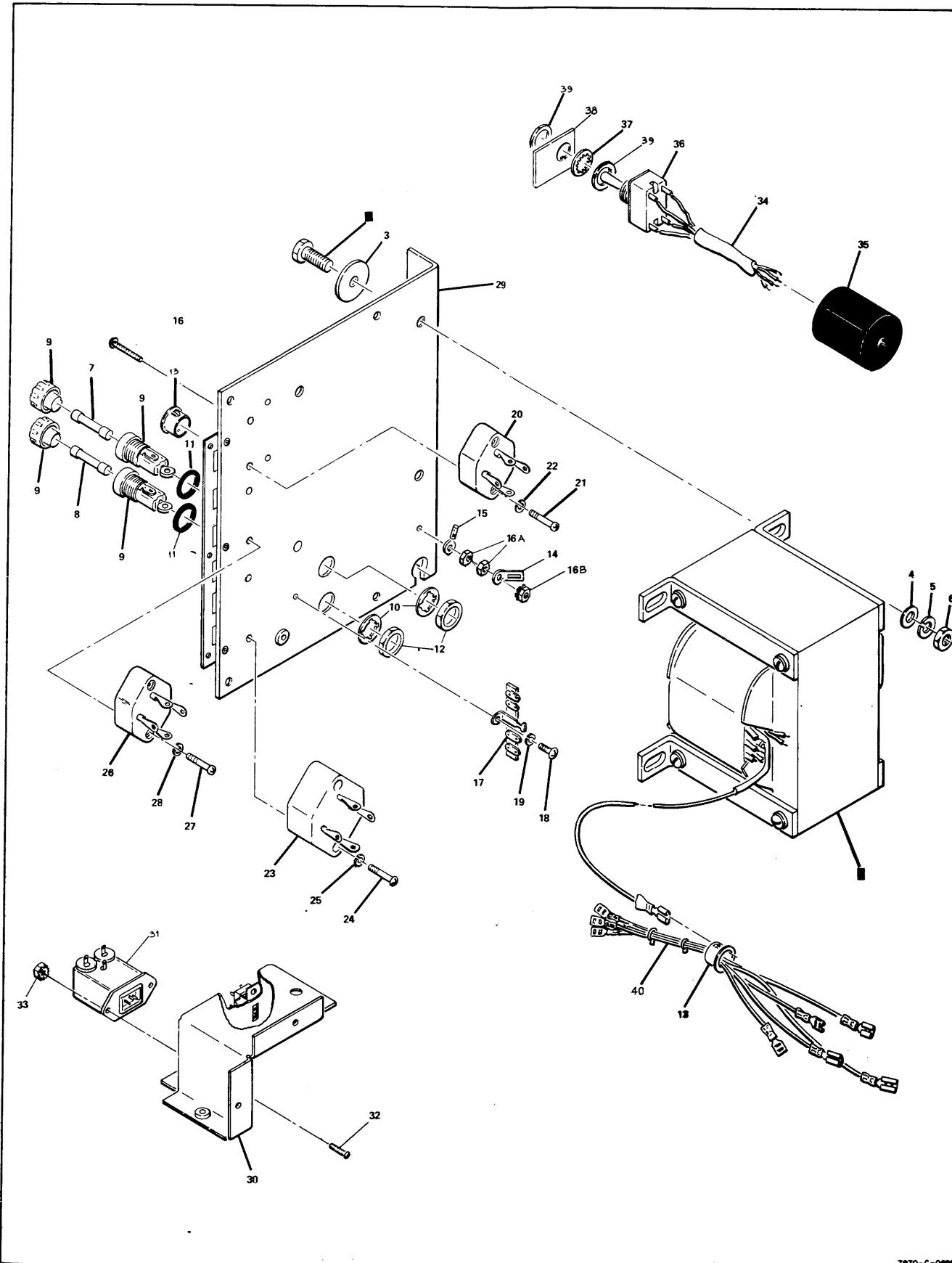
DESCRIPTION	REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
RESISTOR, fxd, 5.11K, 1%, .125W	C1	07970-61020 0180-2326 2680-0128 2190-0012	POWER DISTRIBUTION PCA (SERIES 1115) CAPACITOR, 1000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
RESISTOR, fxd, 8.25K, 1%, .125W	C2, C3	0180-2327 2680-0128 2190-0012	CAPACITOR, 24000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
RESISTOR, fxd, 2K, 5%, .5W	C4, C5	0180-2325 2680-0128 2190-0012	CAPACITOR, 1500uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
RESISTOR, fxd, 680, 5%, .25W	C6, C8	0180-0104	CAPACITOR, 200uf
RESISTOR, fxd, 1.33K, 1%, .125W	CR1, CR2	1901-0630	DIODE, Rectifier, Silicone
RESISTOR, fxd, 5.11K, 1%, .125W	CR3-CR7	1901-0415	DIODE, Power 1N4997
RESISTOR, fxd, 100, 1%, .5W	CR8, CR9	0340-0164	INSULATOR
RESISTOR, fxd, 100K, 1%, .125W	F1, F4	1901-0026	DIODE
RESISTOR, fxd, 1K, 1%, .125W	F2, F3	2110-0303	FUSE, 2A, 250V
RESISTOR, fxd, 21.5K, 1%, .125W	F5	2110-0051	FUSE, 10A
RESISTOR, fxd, 19.6K, 1%, .125W		2110-0003	FUSE, 3A
RESISTOR, fxd, 681, 1%, .125W		2110-0257	FUSE, Clip
IC, Voltage Regulator		7124-2099	LABEL
IC, Digital, MC844P		0360-1613	LUG, Solder #5
IC, Digital, MC858P		2680-0099	SCREW, 10-32, .375 Pan
RESISTOR, fxd, 6.19K, 1%, .125W	R1	2740-0003	NUT, Lock
RESISTOR, fxd, 3.16K, 1%, .125W	R2, R3	07970-80110 0698-3629	PCB, Power Supply
RESISTOR, fxd, 51.1K, 1%, .125W	R4, R5	0698-3635	RESISTOR, Fxd, 270, 5%, 2W
	R6	0764-0043	RESISTOR, Fxd, 680, 5%, 2W
	R7, R8	0812-0045	RESISTOR, Fxd, 2.7K, 5%, 2W
	*R9	0811-1666	RESISTOR, Fxd, 0.15, 5%, 3W
	J10	0811-1552	RESISTOR, Fxd, 1.0, 5%, 2W
		1251-2025	RESISTOR, Fxd, 0.56, 5%, 2W
		1251-2503	CONNECTOR, PC 2x24 156 D.
		1251-2504	CONNECTOR, (Female Pins) Contact PC
		0361-0013	CONNECTOR, (Male Pins) Contact PC
		0361-0137	RIVET, 123DX, .375
		SERIES 1120	RIVET, 123DX, .188
	*R9	0811-1665	RESISTOR, Fxd, 0.82, 5%, 2W
	*R9	SERIES 1229	RESISTOR, Fxd, 0.56, 5%, 2W
		0811-1552	

POWER DISTRIBUTION ASSEMBLY  
07970-61051

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-61051	POWER DISTRIBUTION ASSEMBLY
1	1854-0063	TRANSISTOR, 2N3055, T03
2	0624-0062	SCREW, tapping
3	07970-60442	HEAT DISSIPATOR
4	2200-0143	SCREW, 4-40, .375 pan
5	0160-2149	CLAMP, CAPACITOR
6	2360-0201	SCREW, 6-32, 0.5 in.
7	2420-0001	NUT, hex, 6-32
8	2200-0141	SCREW, 4-40, .312 pan
9	2190-0061	WASHER, lock #4 hel
10	3050-0105	WASHER, #4
11	0180-1970	CLAMP, CAPACITOR
12	2360-0201	SCREW, 6-32, 0.5 in.
13	3050-0066	WASHER, flat, #6, .147D
14	2420-0001	NUT, hex, 6-32
15	2200-0141	SCREW, 4-40, .312 pan
16	2190-0061	WASHER, lock #4 hel
17	3050-0105	WASHER, #4
18	0811-2180	RESISTOR, fxd, 3ohm, 10%, 25w
19	2200-0143	SCREW, 4-40, .375 pan
20	2190-0061	WASHER, lock, #4 hel
21	0400-0166	BUSHING, Snap, Nylon
22	07970-60651	WIRING HARNESS, (W1)
23	07970-61020	POWER DISTRIBUTION PCA
24	2360-0195	SCREW, 6-32 .312 pan
25	2190-0918	WASHER, lock, #6 hel
26	3050-0066	WASHER, #6, .147 flat
27	07970-00281	CHASSIS, Power Supply



7970 B & Slave "E" Power Supply  
Assemblies A29/30/31



TRANSFORMER ASSEMBLY  
07970-60471

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60471	SLAVE UNIT TRANSFORMER ASSEMBLY
1	9100-3120	TRANSFORMER, Power (T1)
2	0570-0108	BOLT, Hex-20, .75 in.
3	3050-0723	WASHER, Flat, 3/4 in. OD
4	3050-0225	WASHER, Flat, 1/4 in. ID
5	2190-0431	WASHER, Lock, 1/4 in.
6	2950-0004	NUT, Hex, 1/4-20
7	2110-0365	FUSE, 4A, 250V, SLO BLO (F1)
8	2110-0303	FUSE, 2A, 250V, SLO BLO (F2)
9	1400-0084	FUSE HOLDER, POST TYPE (XF1, XF2)
10	2190-0037	WASHER, Lock, .5 in.
11	0900-0016	O-RING, .5 in.
12	2950-0038	NUT, 1/2-24
13	0400-0166	BUSHING, Snap, Nylon
14	0360-0043	TERM, Solder Lug, #5
15	0362-0321	LUG, Crimp, #6
16	2360-0203	SCREW, 6-32, .625 Pan
16A	2420-0002	NUT, Hex, 6-32
16B	2420-0001	NUT, Hex, 6-32
17	0360-1590	TERMINAL STRIP, Lug Type
18	2200-0141	SCREW, 4-40, .312 Pan
19	2190-0003	WASHER, Lock, #4
20	1906-0008	DIODE ASSEMBLY (CR3)
21	2200-0149	SCREW, 4-40, .625 in.
22	2190-0003	WASHER, Lock, #4
23	1901-0161	DIODE ASSEMBLY (CR2)
24	2200-0153	SCREW, 4-40, .875 in.
25	2190-0003	WASHER, Lock, #4
26	1906-0007	DIODE ASSEMBLY (CRL)
27	2200-0149	SCREW, 4-40, .625 in.
28	2190-0003	WASHER, Lock, #4

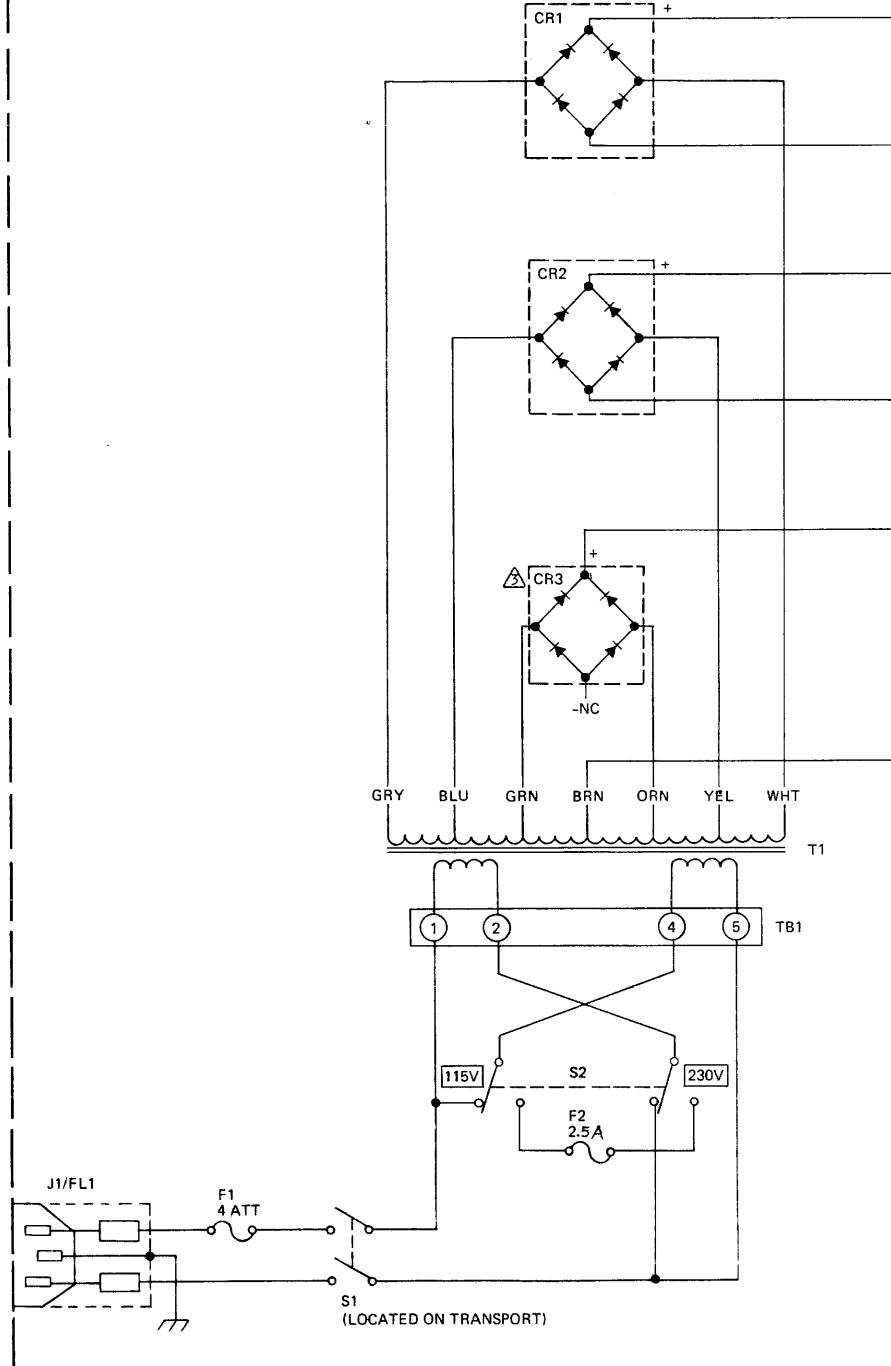
TRANSFORMER ASSEMBLY  
07970-60471

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60471	SLAVE UNIT TRANSFORMER ASSEMBLY
1	9100-3120	TRANSFORMER, Power (T1)
2	0570-0108	BOLT, Hex-20, .75 in.
3	3050-0723	WASHER, Flat, 3/4 in. OD
4	3050-0225	WASHER, Flat, 1/4 in. ID
5	2190-0431	WASHER, Lock, 1/4 in.
6	2950-0004	NUT, Hex, 1/4 -20
7	2110-0365	FUSE, 4A, 250V, SLO BLO (F1)
8	2110-0303	FUSE, 2A, 250V, SLO BLO (F2)
9	1400-0084	FUSE HOLDER, POST TYPE (XF1, XF2)
10	2190-0037	WASHER, Lock, .5 in.
11	0900-0016	O-RING, .5 in.
12	2950-0038	NUT, 1/2-24
13	0400-0166	BUSHING, Snap, Nylon
14	0360-0043	TERM, Solder Lug, #5
15	0362-0321	LUG, Crimp, #6
16	2360-0203	SCREW, 6-32, .625 Pan
16A	2420-0002	NUT, Hex, 6-32
16B	2420-0001	NUT, Hex, 6-32
17	0360-1590	TERMINAL STRIP, Lug Type
18	2200-0141	SCREW, 4-40, .312 Pan
19	2190-0003	WASHER, Lock, #4
20	1906-0008	DIODE ASSEMBLY (CR3)
21	2200-0149	SCREW, 4-40, .625 in.
22	2190-0003	WASHER, Lock, #4
23	1901-0161	DIODE ASSEMBLY (CR2)
24	2200-0153	SCREW, 4-40, .875 in.
25	2190-0003	WASHER, Lock, #4
26	1906-0007	DIODE ASSEMBLY (CRL)
27	2200-0149	SCREW, 4-40, .625 in.
28	2190-0003	WASHER, Lock, #4

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
29	07970-00211	PANEL, POWER TRANSFORMER
30	07970-60461	BRACKET, CONNECTOR (includes S2)
31	9100-0531	FILTER (FL1) and J1
32	2200-0141	SCREW, 4 x 40, .312 Pan
33	2260-0009	NUT, Lock, 4-40
34	8120-1624	CABLE, Power
35	1401-0083	CAP, Protective
36	3101-0646	SWITCH, power dpst
37	2190-0102	WASHER, Lock, 7/16
38	7120-4575	PLATE, Indicator
39	2950-0035	NUT, 15/32-32
40		WIRING HARNESS, Pwr Transformer

7970 B & Slave "E" Power Supply  
Assemblies A29/30/31

**TRANSFORMER ASSEMBLY A29**  
07970-60471 SERIES 1411  
07970-62351 SERIES 1648

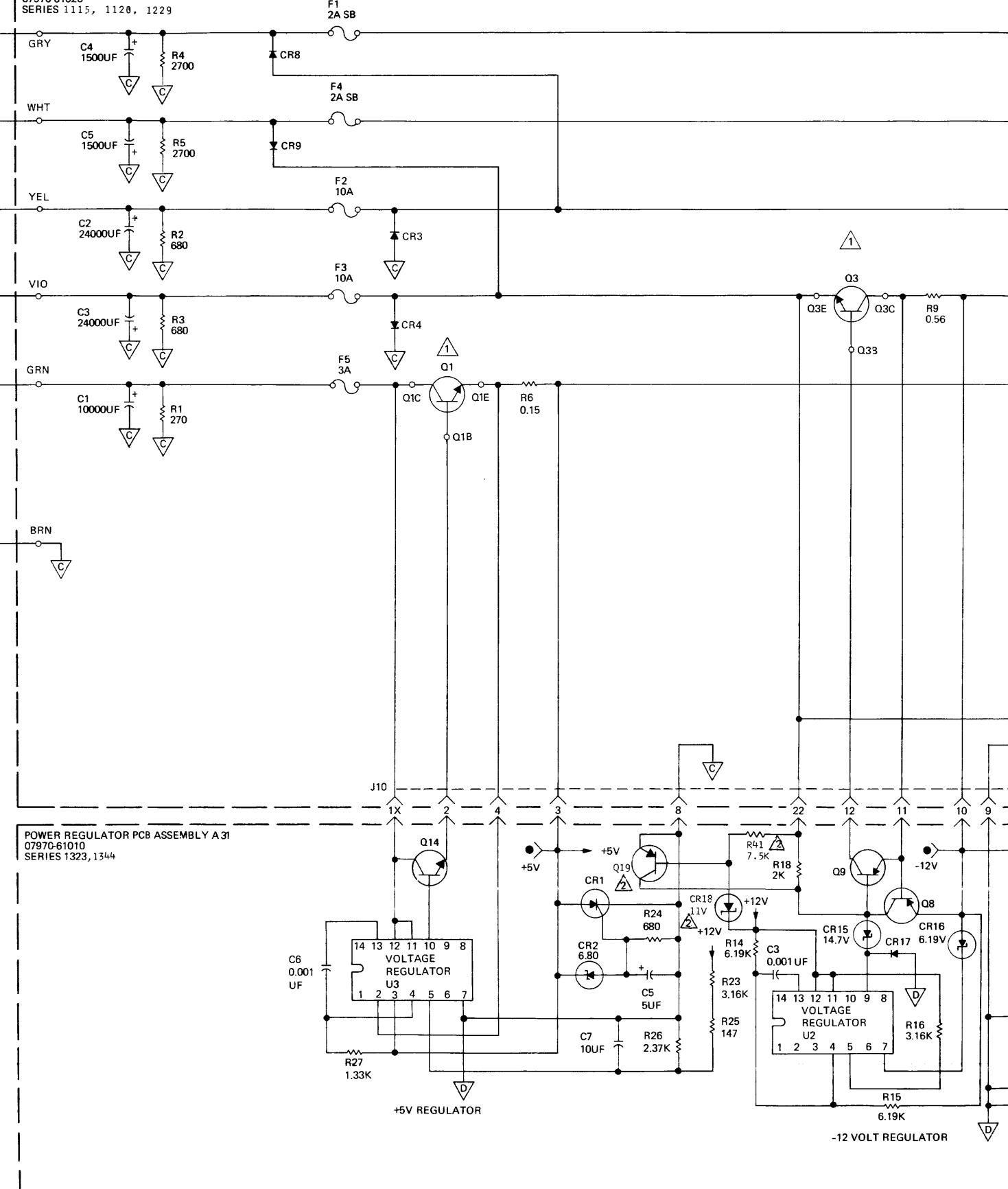


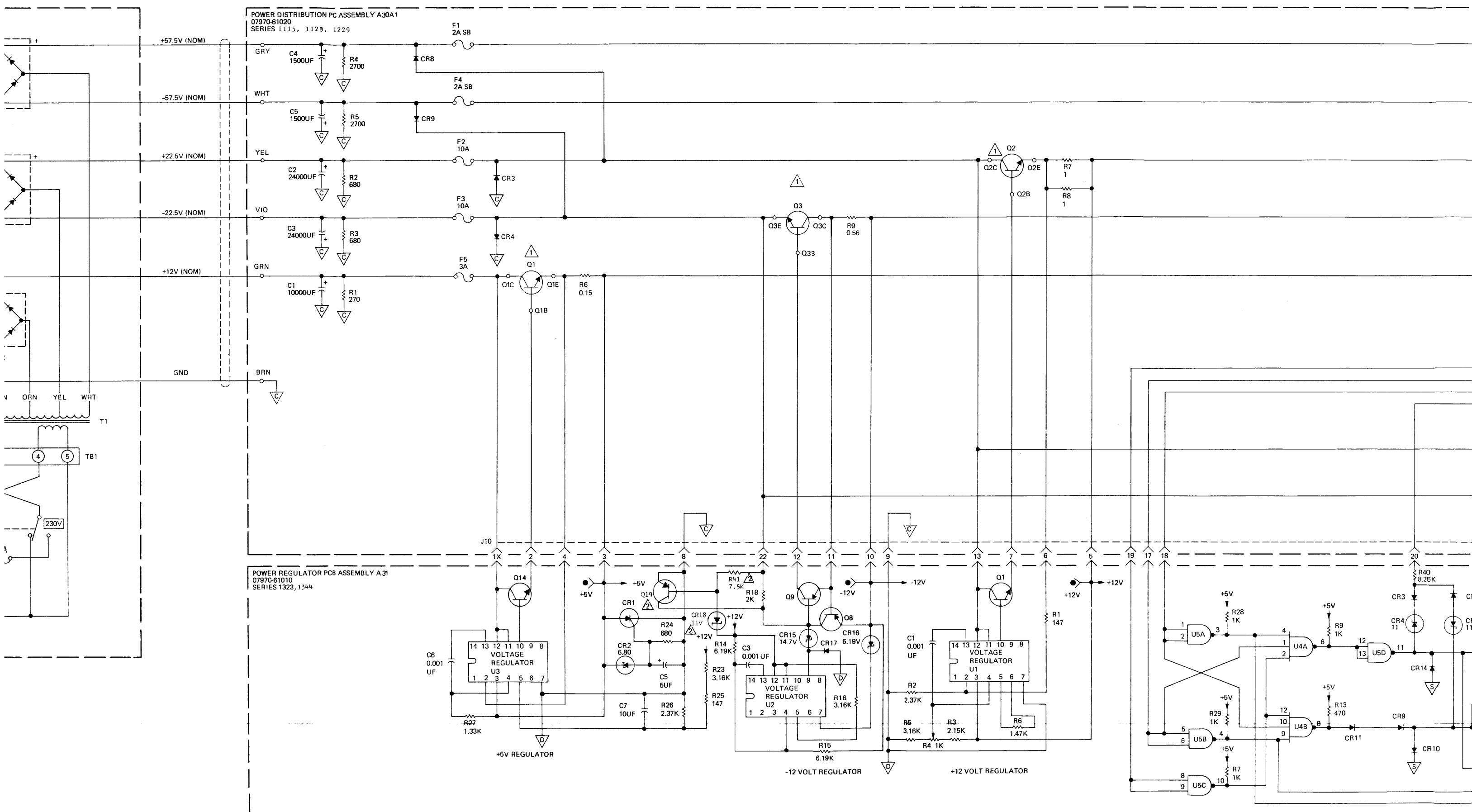
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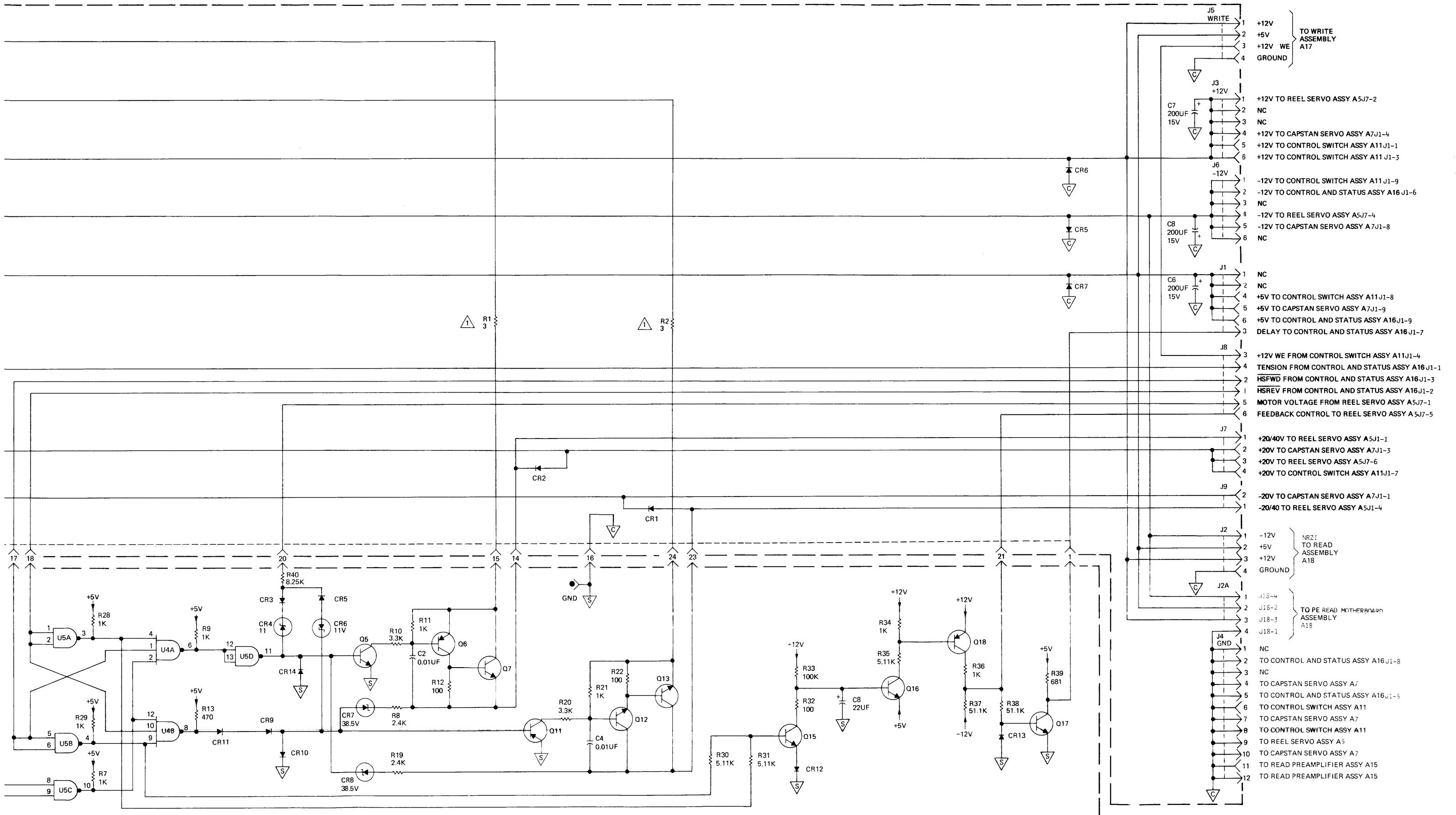
- ⚠ THESE COMPONENTS ARE EXTERNALLY MOUNTED ON HEAT SINKS OR CHASSIS
- ⏚ THESE POINTS ARE COMMON (GROUND)
- ⏚ THESE POINTS ARE COMMON (SIGNAL RETURN)
- ⚠ USED ONLY ON SERIES 1344 OR HIGHER
- ⚠ BOTTOM TWO DIODES ABSENT IN CR3 ON 07970-62351 ASSEMBLIES.

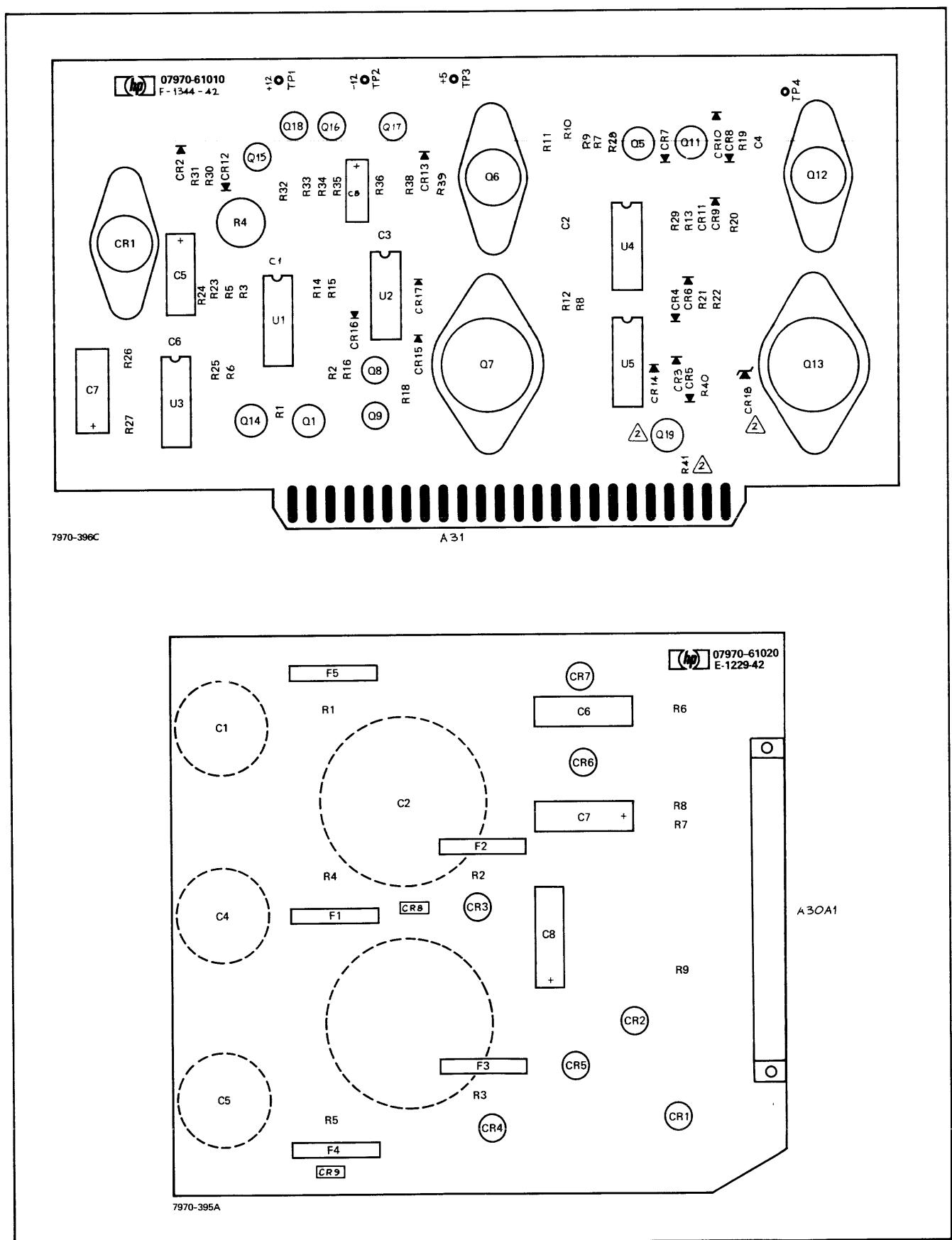
7970-002D

**POWER DISTRIBUTION PC ASSEMBLY A30A1**  
07970-61020  
SERIES 1115, 1120, 1229









POWER REGULATOR PCA PARTS LIST  
07970-61010 (SERIES 1323, 1344)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1, C3, C6	07970-61010 0160-3456	POWER REGULATOR PCA (SERIES 1323)
C2, C4	0160-2055	CAPACITOR, Fxd, 1000pf, Cer.
C5	0180-0172	CAPACITOR, Fxd, .01uf, 100V
C7	0180-0059	CAPACITOR, Fxd, 5uf, -10 + 75%
C8	0180-0228	CAPACITOR, Fxd, 10uf, -10 + 75%
CR1	1884-0088 0340-0180 2360-0195 2420-0001 1902-0048 1901-0025 1902-3171 1902-3311 1901-0040 1902-3202 1902-0049 1854-0039 1854-0022 1853-0052 0340-0180 2360-0195 2420-0001 1854-0063 0340-0458 2360-0197 2420-0001 1853-0036 1853-0027 1853-0080 1854-0072 0340-0180 2360-0195 2420-0001 1854-0215 R1,25 R2,26 R3 R4 R5, R16, R23 R6 R7, R9, R11 R21, R28, R29 R8, R19 R10, R20 R12, R22 R13	THYRISTOR, 2N3228 INSULATOR, Friction SCREW, 6-32, .312 Pan NUT, hex, 6-32 DIODE, Zener, 6.81V DIODE, 100V, 200MA DIODE, Zener, 11V DIODE, Breakdown, 38.3V DIODE, 30V, 50MA DIODE, Zener, 14.7V DIODE, Zener, 6.19V TRANSISTOR, 2N3053, T05 TRANSISTOR, 2N2102, T05 TRANSISTOR, 2N3740, T066 INSULATOR, Friction SCREW, 6-32, .312 Pan NUT, hex, 6-32 TRANSISTOR, 2N3055, T03 INSULATOR, Transistor SCREW, 6-32, .375 Pan NUT, hex, 6-32 TRANSISTOR, 2N3906, PL18 TRANSISTOR, PNP, SI, T05 TRANSISTOR, 2N4888, PL5 TRANSISTOR, 2N3054, T066 INSULATOR, Friction SCREW, 6-32, .312 Pan NUT, hex, 6-32 TRANSISTOR, 2N3904, PL5 RESISTOR, Fxd, 147, 1%, .125W RESISTOR, Fxd, 2.37K, 1%, .125W RESISTOR, Fxd, 2.15K, 1%, .125W RESISTOR, Variable, 1K RESISTOR, Fxd, 1K, 5%, .25W RESISTOR, Fxd, 1.47K, 1%, .125W RESISTOR, Fxd, 1K, 5%, .25W RESISTOR, Fxd, 2.4K, 5%, .25W RESISTOR, Fxd, 3.3K, 5%, .5W RESISTOR, Fxd, 100, 5%, .25W RESISTOR, Fxd, 470, 5%, .25W

R14	7970-61010
R16	F-1344 - 42
R18	07970-61010
R24	E-1229-42
R27	07970-61010
R30	0160-3456
R32	0160-2055
R33	0180-0172
R34	0180-0059
R35	0180-0228
R36	1884-0088
R37	0340-0180
R39	2360-0195
R40	2420-0001
U1	1902-0048
U4	1901-0025
U5	1902-3171
CR18	1902-3311
CR1	1901-0040
CR15	1902-3202
CR16	1902-0049
Q1, Q14	1854-0039
Q5	1854-0022
Q6	1853-0052
CR2	0340-0180
CR3, CR5	2360-0195
CR4, CR6, CR18	2420-0001
CR7, CR8	1902-0048
CR9-14, CR17	1901-0025
CR14	1902-3171
CR3	1902-3311
CR6	1901-0040
CR7	1902-3202
CR8	1902-0049
CR9	1854-0039
CR10	1854-0022
CR11	1853-0052
CR12	0340-0180
CR13	2360-0195
CR15	2420-0001
CR16	1902-0048
CR17	1901-0025
CR18	1902-3171
CR19	1902-3311
CR20	1901-0040
CR21	1902-3202
CR22	1902-0049
CR23	1854-0039
CR24	1854-0022
CR25	1853-0052
CR26	0340-0180
CR27	2360-0195
CR28	2420-0001
CR29	1902-0048
CR30	1901-0025
CR31	1902-3171
CR32	1902-3311
CR33	1901-0040
CR34	1902-3202
CR35	1902-0049
CR36	1854-0039
CR37	1854-0022
CR38	1853-0052
CR39	0340-0180
CR40	2360-0195
CR41	2420-0001
CR42	1902-0048
CR43	1901-0025
CR44	1902-3171
CR45	1902-3311
CR46	1901-0040
CR47	1902-3202
CR48	1902-0049
CR49	1854-0039
CR50	1854-0022
CR51	1853-0052
CR52	0340-0180
CR53	2360-0195
CR54	2420-0001
CR55	1902-0048
CR56	1901-0025
CR57	1902-3171
CR58	1902-3311
CR59	1901-0040
CR60	1902-3202
CR61	1902-0049
CR62	1854-0039
CR63	1854-0022
CR64	1853-0052
CR65	0340-0180
CR66	2360-0195
CR67	2420-0001
CR68	1902-0048
CR69	1901-0025
CR70	1902-3171
CR71	1902-3311
CR72	1901-0040
CR73	1902-3202
CR74	1902-0049
CR75	1854-0039
CR76	1854-0022
CR77	1853-0052
CR78	0340-0180
CR79	2360-0195
CR80	2420-0001
CR81	1902-0048
CR82	1901-0025
CR83	1902-3171
CR84	1902-3311
CR85	1901-0040
CR86	1902-3202
CR87	1902-0049
CR88	1854-0039
CR89	1854-0022
CR90	1853-0052
CR91	0340-0180
CR92	2360-0195
CR93	2420-0001
CR94	1902-0048
CR95	1901-0025
CR96	1902-3171
CR97	1902-3311
CR98	1901-0040
CR99	1902-3202
CR100	1902-0049
CR101	1854-0039
CR102	1854-0022
CR103	1853-0052
CR104	0340-0180
CR105	2360-0195
CR106	2420-0001
CR107	1902-0048
CR108	1901-0025
CR109	1902-3171
CR110	1902-3311
CR111	1901-0040
CR112	1902-3202
CR113	1902-0049
CR114	1854-0039
CR115	1854-0022
CR116	1853-0052
CR117	0340-0180
CR118	2360-0195
CR119	2420-0001
CR120	1902-0048
CR121	1901-0025
CR122	1902-3171
CR123	1902-3311
CR124	1901-0040
CR125	1902-3202
CR126	1902-0049
CR127	1854-0039
CR128	1854-0022
CR129	1853-0052
CR130	0340-0180
CR131	2360-0195
CR132	2420-0001
CR133	1902-0048
CR134	1901-0025
CR135	1902-3171
CR136	1902-3311
CR137	1901-0040
CR138	1902-3202
CR139	1902-0049
CR140	1854-0039
CR141	1854-0022
CR142	1853-0052
CR143	0340-0180
CR144	2360-0195
CR145	2420-0001
CR146	1902-0048
CR147	1901-0025
CR148	1902-3171
CR149	1902-3311
CR150	1901-0040
CR151	1902-3202
CR152	1902-0049
CR153	1854-0039
CR154	1854-0022
CR155	1853-0052
CR156	0340-0180
CR157	2360-0195
CR158	2420-0001
CR159	1902-0048
CR160	1901-0025
CR161	1902-3171
CR162	1902-3311
CR163	1901-0040
CR164	1902-3202
CR165	1902-0049
CR166	1854-0039
CR167	1854-0022
CR168	1853-0052
CR169	0340-0180
CR170	2360-0195
CR171	2420-0001
CR172	1902-0048
CR173	1901-0025
CR174	1902-3171
CR175	1902-3311
CR176	1901-0040
CR177	1902-3202
CR178	1902-0049
CR179	1854-0039
CR180	1854-0022
CR181	1853-0052
CR182	0340-0180
CR183	2360-0195
CR184	2420-0001
CR185	1902-0048
CR186	1901-0025
CR187	1902-3171
CR188	1902-3311

POWER DISTRIBUTION PCA  
07970-61020 (SERIES 1115, 1120, 1229)

DESCRIPTION
ATOR PCA (SERIES 1323) Fxd, 1000pf, Cer. Fxd, .01uf, 100V Fxd, 5uf, -10 + 75% Fxd, 10uf, -10 + 75% Fxd, 22uf, 15 VDC 2N3228 TOR, Friction 6-32, .312 Pan ex, 6-32 er, 6.81V I, 200MA er, 11V ikdown, 38.3V , 50MA er, 14.7V er, 6.19V , 2N3053, T05 , 2N2102, T05 , 2N3740, T066 TOR, Friction 6-32, .312 Pan ex, 6-32 , 2N3055, T03 TOR, Transistor 6-32, .375 Pan ex, 6-32 , 2N3906, PL18 , PNP, SI, T05 , 2N4888, PL5 , 2N3054, T066 TOR, Friction 6-32, .312 Pan ex, 6-32 , 2N3904, PL5 Fxd, 147, 1%, .125W Fxd, 2.37K, 1%, .125W Fxd, 2.15K, 1%, .125W Variable, 1K Fxd, 1K, 5%, .25W Fxd, 1.47K, 1%, .125W Fxd, 1K, 5%, .25W  Fxd, 2.4K, 5%, .25W Fxd, 3.3K, 5%, .5W Fxd, 100, 5%, .25W Fxd, 470, 5%, .25W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R14, R15	0757-0290	RESISTOR, Fxd, 6.19k, 1%, .125W
R16	0757-0279	RESISTOR, Fxd, 3.16K, 1%, .125W
R18	0686-2025	RESISTOR, Fxd, 2K, 5%, .5W
R24	0683-6815	RESISTOR, Fxd, 680, 5%, .25W
R27	0757-0317	RESISTOR, Fxd, 1.33K, 1%, .125W
R30, R31, R35	0757-0438	RESISTOR, Fxd, 5.11K, 1%, .125W
R32	0757-0198	RESISTOR, Fxd, 100, 1%, .5W
R33	0757-0465	RESISTOR, Fxd, 100K, 1%, .125W
R34, R36	0757-0280	RESISTOR, Fxd, 1K, 1%, .125W
R37, R38	0757-0458	RESISTOR, Fxd, 51.1K, 1%, .125W
R39	0757-0419	RESISTOR, Fxd, 681, 1%, .125W
R40	0757-0441	RESISTOR, Fxd, 8.25K, 1%, .125W
R41	0757-0440	RESISTOR, Fxd, 7.5K, 1%, .125W
U1-3	1820-0439	IC, Voltage Regulator
U4	1820-0348	IC, Digital, MC844P
U5	1820-0256	IC, Digital, MC858P

 CR18, Q19 and R41 used only on series 1344 or above.

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	07970-61020 0180-2326 2680-0128 2190-0012	POWER DISTRIBUTION PCA (SERIES 1115) CAPACITOR, 1000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C2, C3	0180-2327 2680-0128 2190-0012	CAPACITOR, 24000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C4, C5	0180-2325 2680-0128 2190-0012	CAPACITOR, 1500uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C6, C8	0180-0104	CAPACITOR, 200uf
CR1, CR2	1901-0630	DIODE, Rectifier, Silicone
CR3-CR7	1901-0415	DIODE, Power 1N4997
CR8, CR9	0340-0164	INSULATOR
F1, F4	1901-0026	DIODE
F2, F3	2110-0303	FUSE, 2A, 250V
F5	2110-0051	FUSE, 10A
	2110-0003	FUSE, 3A
	2110-0257	FUSE, Clip
	7124-2099	LABEL
	0360-1613	LUG, Solder #5
	2680-0099	SCREW, 10-32, .375 Pan
	2740-0003	NUT, Lock
	07970-80110	PCB, Power Supply
R1	0698-3629	RESISTOR, fxd, 270, 5%, 2W
R2, R3	0698-3635	RESISTOR, fxd, 680, 5%, 2W
R4, R5	0764-0043	RESISTOR, fxd, 2.7K, 5%, 2W
R6	0812-0045	RESISTOR, fxd, 0.15, 5%, 3W
R7, R8	0811-1666	RESISTOR, fxd, 1.0, 5%, 2W
*R9	0811-1552	RESISTOR, fxd, 0.56, 5%, 2W
J10	1251-2025	CONNECTOR, PC 2 x 24 156D
	1251-2503	CONNECTOR, (Female Pins) Contact PC
	1251-2504	CONNECTOR, (Male Pins) Contact PC
	0361-0013	RIVET, 123DX, .375
	0361-0137	RIVET, 123DX, .188
*R9	SERIES 1120 0811-1665	RESISTOR, fxd, 0.82, 5%, 2W
*R9	SERIES 1229 0811-1552	RESISTOR, fxd, 0.56, 5%, 2W

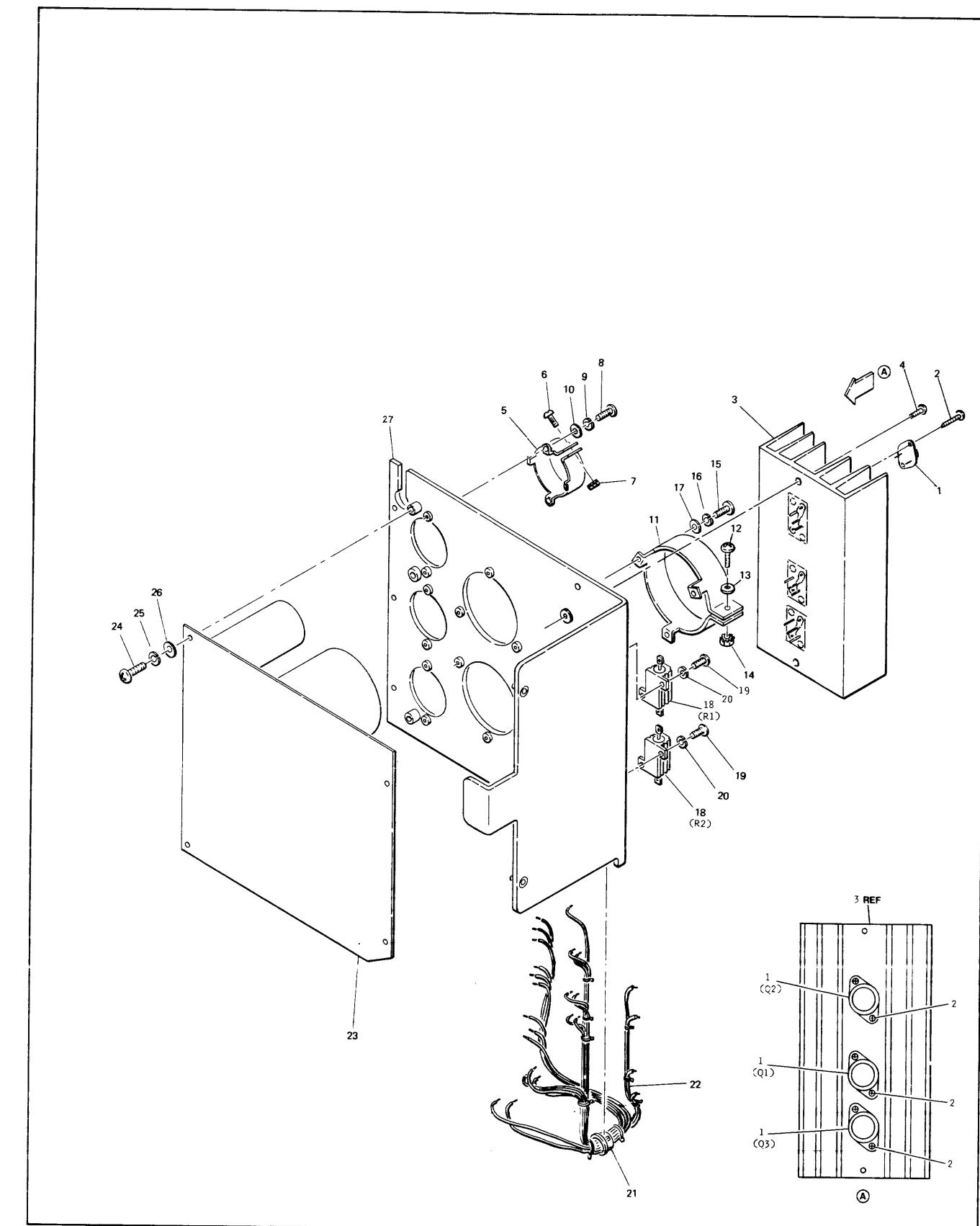
POWER DISTRIBUTION PCA  
07970-61020 (SERIES 1115, 1120, 1229)

DESCRIPTION
ESISTOR, Fxd, 6.19k, 1%, .125W
ESISTOR, Fxd, 3.16K, 1%, .125W
ESISTOR, Fxd, 2K, 5%, .5W
ESISTOR, Fxd, 680,5%, .25W
ESISTOR, Fxd, 1.33K, 1%, .125W
ESISTOR, Fxd, 5.11K, 1%, .125W
ESISTOR, Fxd, 100, 1%, .5W
ESISTOR, Fxd, 100K, 1%, .125W
ESISTOR, Fxd, 1K, 1%, .125W
ESISTOR, Fxd, 51.1K, 1%, .125W
ESISTOR, Fxd, 681, 1%, .125W
ESISTOR, Fxd, 8.25K, 1%, .125W
ESISTOR, Fxd, 7.5K, 1%, .125W
C, Voltage Regulator
C, Digital, MC844P
C, Digital, MC858P
1344 or above.

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	07970-61020 0180-2326 2680-0128 2190-0012	POWER DISTRIBUTION PCA (SERIES 1115) CAPACITOR, 1000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C2, C3	0180-2327 2680-0128 2190-0012	CAPACITOR, 24000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C4, C5	0180-2325 2680-0128 2190-0012	CAPACITOR, 1500uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C6, C8	0180-0104	CAPACITOR, 200uf
CR1, CR2	1901-0630	DIODE, Rectifier, Silicone
CR3-CR7	1901-0415	DIODE, Power 1N4997
	0340-0164	INSULATOR
CR8, CR9	1901-0026	DIODE
F1, F4	2110-0303	FUSE, 2A, 250V
F2, F3	2110-0051	FUSE, 10A
F5	2110-0003 2110-0257 7124-2099 0360-1613 2680-0099 2740-0003 07970-80110	FUSE, 3A FUSE, Clip LABEL LUG, Solder #5 SCREW, 10-32, .375 Pan NUT, Lock PCB, Power Supply
R1	0698-3629	RESISTOR, fxd, 270, 5%, 2W
R2, R3	0698-3635	RESISTOR, fxd, 680, 5%, 2W
R4, R5	0764-0043	RESISTOR, fxd, 2.7K, 5%, 2W
R6	0812-0045	RESISTOR, fxd, 0.15, 5%, 3W
R7, R8	0811-1666	RESISTOR, fxd, 1.0, 5%, 2W
*R9	0811-1552	RESISTOR, fxd, 0.56, 5%, 2W
J10	1251-2025 1251-2503 1251-2504 0361-0013 0361-0137	CONNECTOR, PC 2 x 24 156D CONNECTOR, (Female Pins) Contact PC CONNECTOR, (Male Pins) Contact PC RIVET, 123DX, .375 RIVET, 123DX, .188
*R9	SERIES 1120 0811-1665	RESISTOR, fxd, 0.82, 5%, 2W
*R9	SERIES 1229 0811-1552	RESISTOR, fxd, 0.56, 5%, 2W

POWER DISTRIBUTION ASSEMBLY  
07970-61051

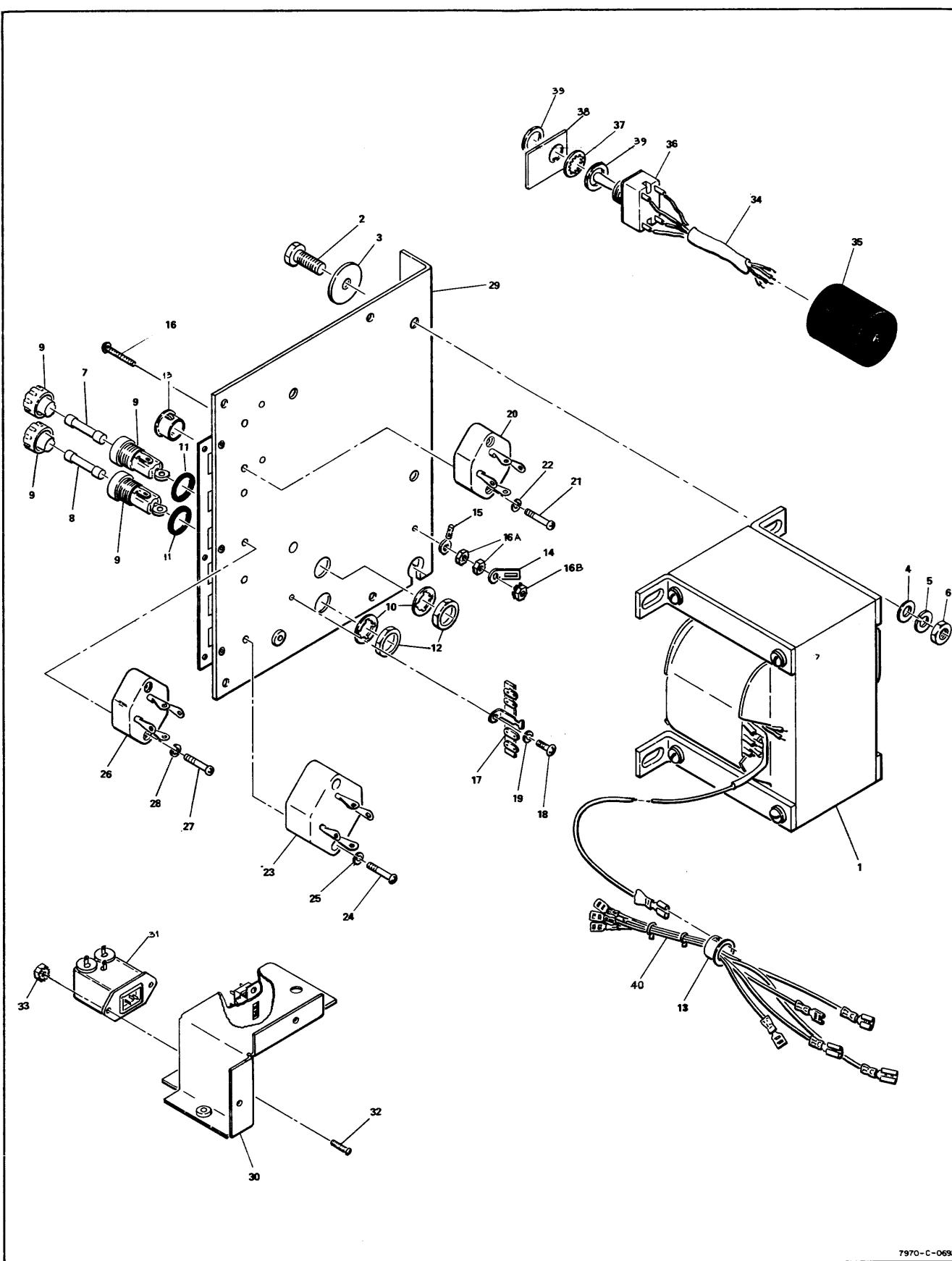
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-61051	POWER DISTRIBUTION ASSEMBLY
1	1854-0063	TRANSISTOR, 2N3055, TO3
2	0624-0062	SCREW, tapping
3	1200-0077	INSULATOR, TRANSISTOR, TO3
4	0340-0177	INSULATOR, BUSHING
5	07970-20400	HEAT DISSIPATOR
6	2200-0143	SCREW, 4-40, .375 pan
7	0160-2149	CLAMP, CAPACITOR
8	2360-0201	SCREW, 6-32, 0.5 in.
9	2420-0001	NUT, hex, 6-32
10	2200-0141	SCREW, 4-40, .312 pan
11	2190-0061	WASHER, lock #4 hel
12	3050-0105	WASHER, #4
13	0180-1970	CLAMP, CAPACITOR
14	2360-0201	SCREW, 6-32, 0.5 in.
15	3050-0066	WASHER, flat, #6, .147D
16	2420-0001	NUT, hex, 6-32
17	2200-0141	SCREW, 4-40, .312 pan
18	2190-0061	WASHER, lock #4 hel
19	3050-0105	WASHER, #4
20	0811-2180	RESISTOR, fxd, 3 ohm, 10%, 25W
21	2200-0143	SCREW, 4-40, .375 pan
22	2190-0061	WASHER, lock, #4, hel
23	0400-0166	BUSHING, Snap, Nylon
24	07970-60651	WIRING HARNESS, (W1)
25	07970-61020	POWER DISTRIBUTION PCA
26	2360-0195	SCREW, 6-32 .312 pan
27	2190-0918	WASHER, lock, #6 hel
	3050-0066	WASHER, #6, .147 flat
	07970-00281	CHASSIS, Power Supply



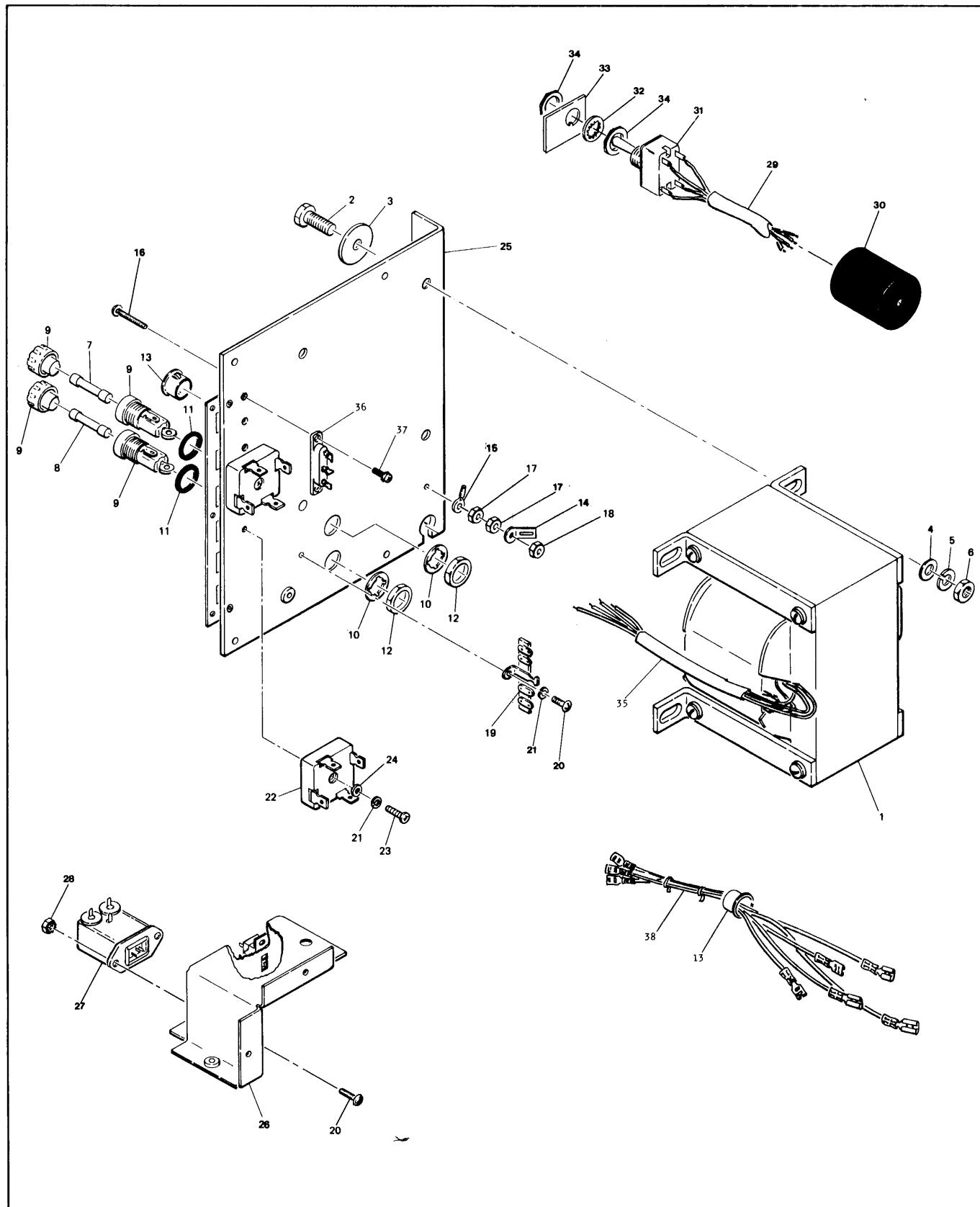
2225-115A

7970 B & Slave "E" Power Supply  
Assemblies A29/30/31

TRANSFORMER ASSEMBLY  
07970-60471 (SERIES 1411)



TRANSFORMER ASSEMBLY 07970-62351 (SERIES 1648)



2225-116A

7970 B & Slave "E" Power Supply  
Assemblies A29/30/31

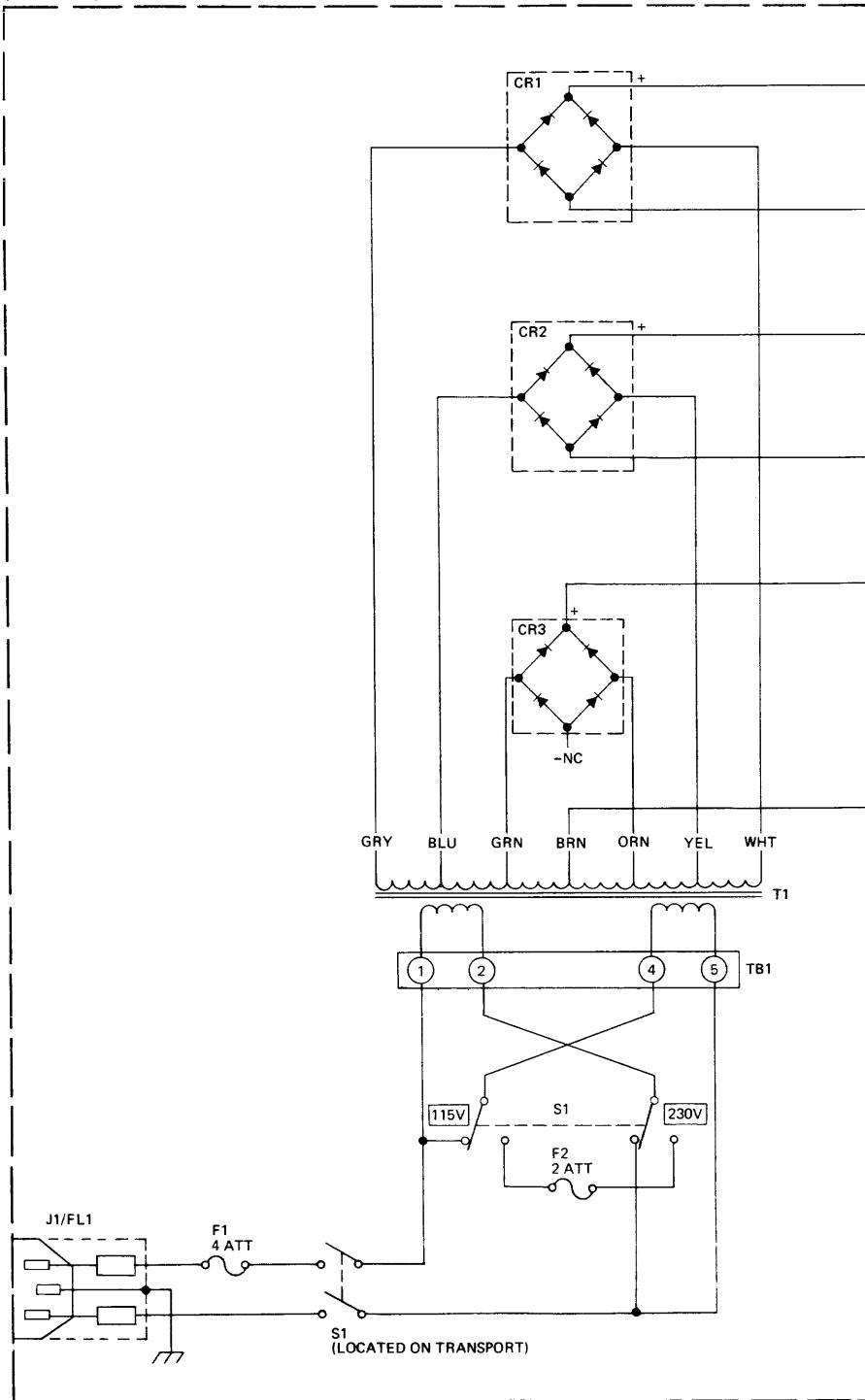
2-20A  
Added 12 November 1976

TRANSFORMER ASSEMBLY  
07970-62351 (SERIES 1648)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62351	TRANSFORMER ASSEMBLY (SERIES 1648)
1	9100-3921	TRANSFORMER, POWER (T1)
2	0570-0108	BOLT, hex, 1/4-20, .75 in.
3	3050-0723	WASHER, flat, .26 in. ID
4	3050-0225	WASHER, flat, .25 in. ID
5	2190-0431	WASHER, lock, .25 in.
6	2950-0004	NUT, hex, 1/4-20
7	2110-0365	FUSE, 4A, 250V, SLO-BLO (F1)
8	2110-0380	FUSE, 2.5A, 250V, SLO-BLO (F2)
9	1400-0084	FUSE HOLDER, Post Type (XF1,XF2)
10	2190-0037	WASHER, lock, .5 Int.
11	0900-0016	O-RING, 15 in. ID
12	2950-0038	NUT, fuse holder, 1/2-24
13	0400-0056	BUSHING, SNAP, NYLON, .375 ID
14	0360-0043	TERMINAL, SOLDER LUG, #5
15	0362-0452	LUG, CRIMP, #6
16	2360-0203	SCREW, 6-32, .625 PAN
17	2420-0002	NUT, HEX, 6-32
18	2420-0001	NUT, HEX, 6-32
19	0360-1590	TERMINAL STRIP, LUG TYPE
20	2200-0141	SCREW, 4-40, .312 PAN
21	2190-0003	WASHER, lock, #4
22	1906-0017	DIODE BRIDGE, RECTIFIER (CR1,CR2)
23	2200-0091	SCREW, 4-40, .562 in.
24	2190-0416	WASHER, #4
25	07970-01171	PANEL, POWER TRANSFORMER
26	07970-60461	BRACKET, ASSEMBLY (INCLUDES S2)
27	9100-0531	FILTER (FL1) AND J1
28	2260-0009	NUT, LOCK, 4-40
29	8120-1624	CABLE, POWER
30	1401-0083	CAP, Protective
31	3101-0646	SWITCH, Toggle, dpst
32	2190-0102	WASHER, Lock
33	7120-4575	PLATE, Indicator
34	2950-0035	NUT, 15/32 - 32
35	0890-0291	SLEEVING, 3/8 in.
36	1906-0039	DIODE BRIDGE, RECTIFIER (CR3)
37	2360-0119	SCREW, 6-32, .438 in.
38	07970-60920	CABLE, TRANSFORMER

7970 B & Slave "E" Power Supply  
Assemblies A29/30/31

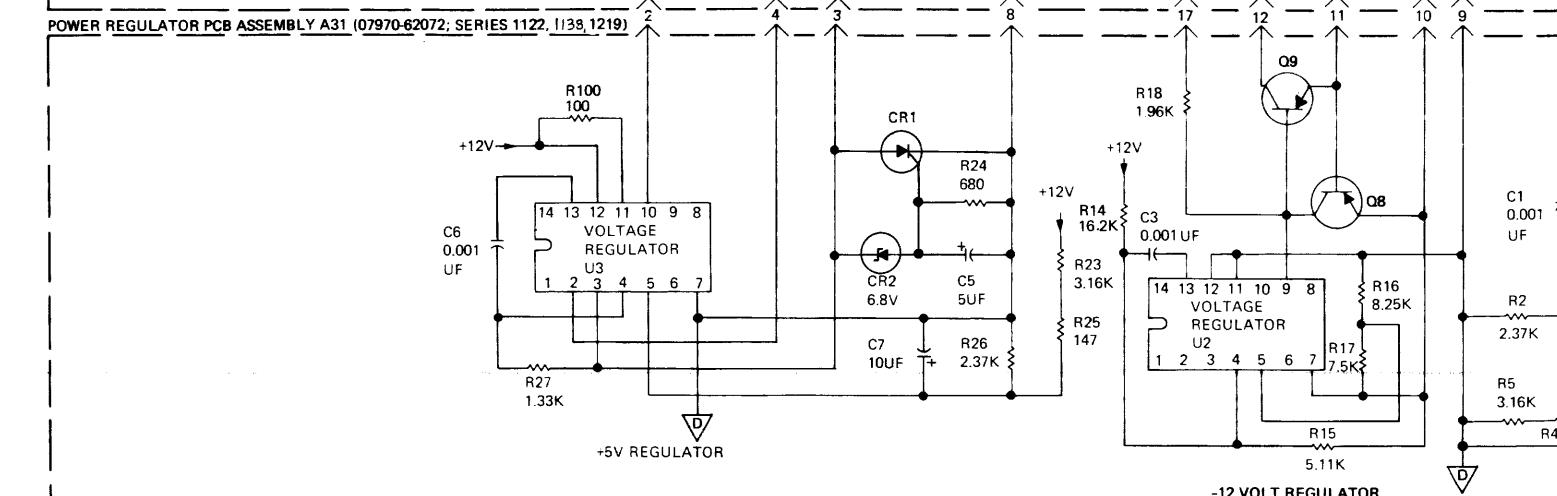
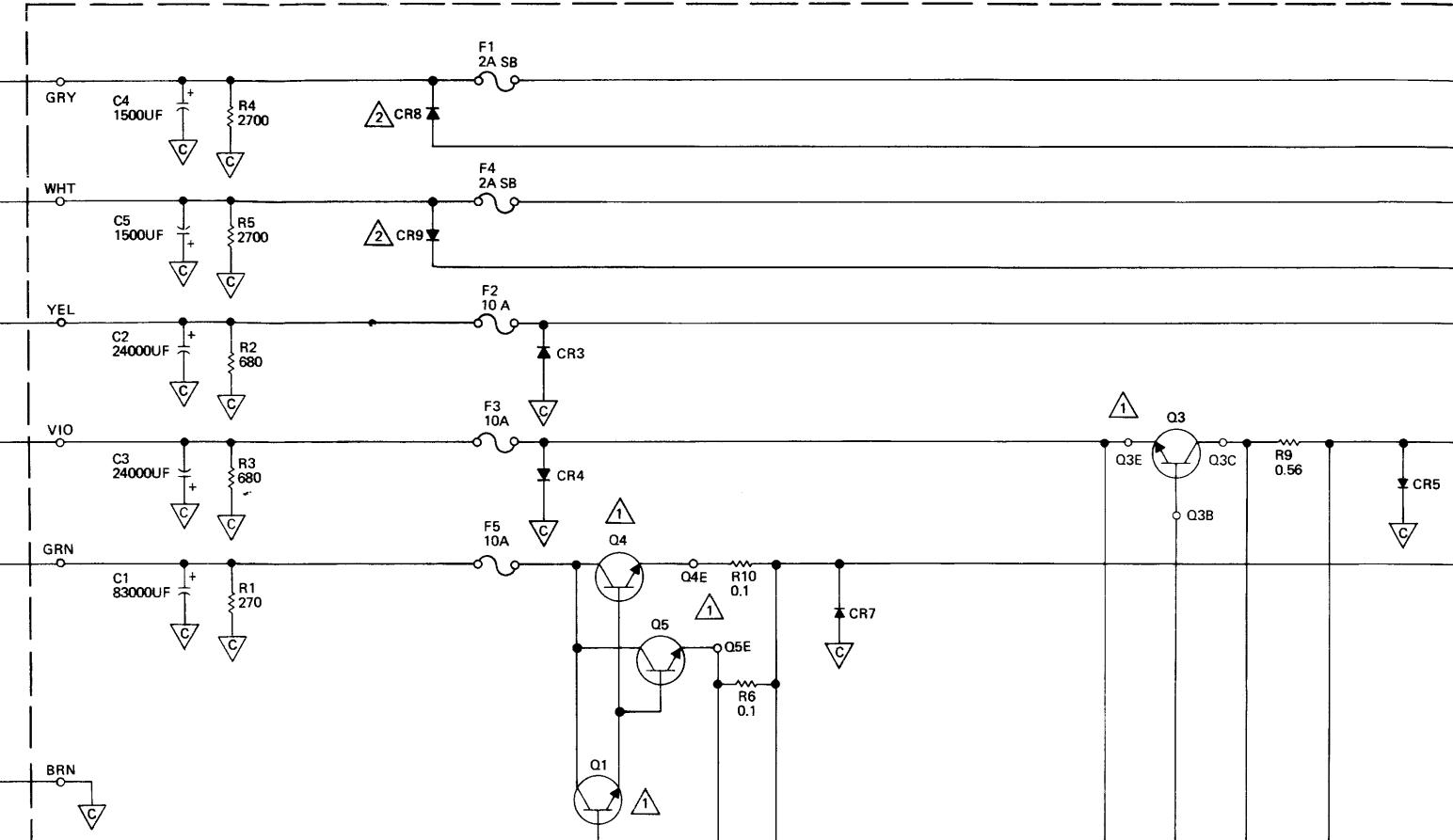
MASTER UNIT TRANSFORMER ASSEMBLY A29  
(07970-62073)



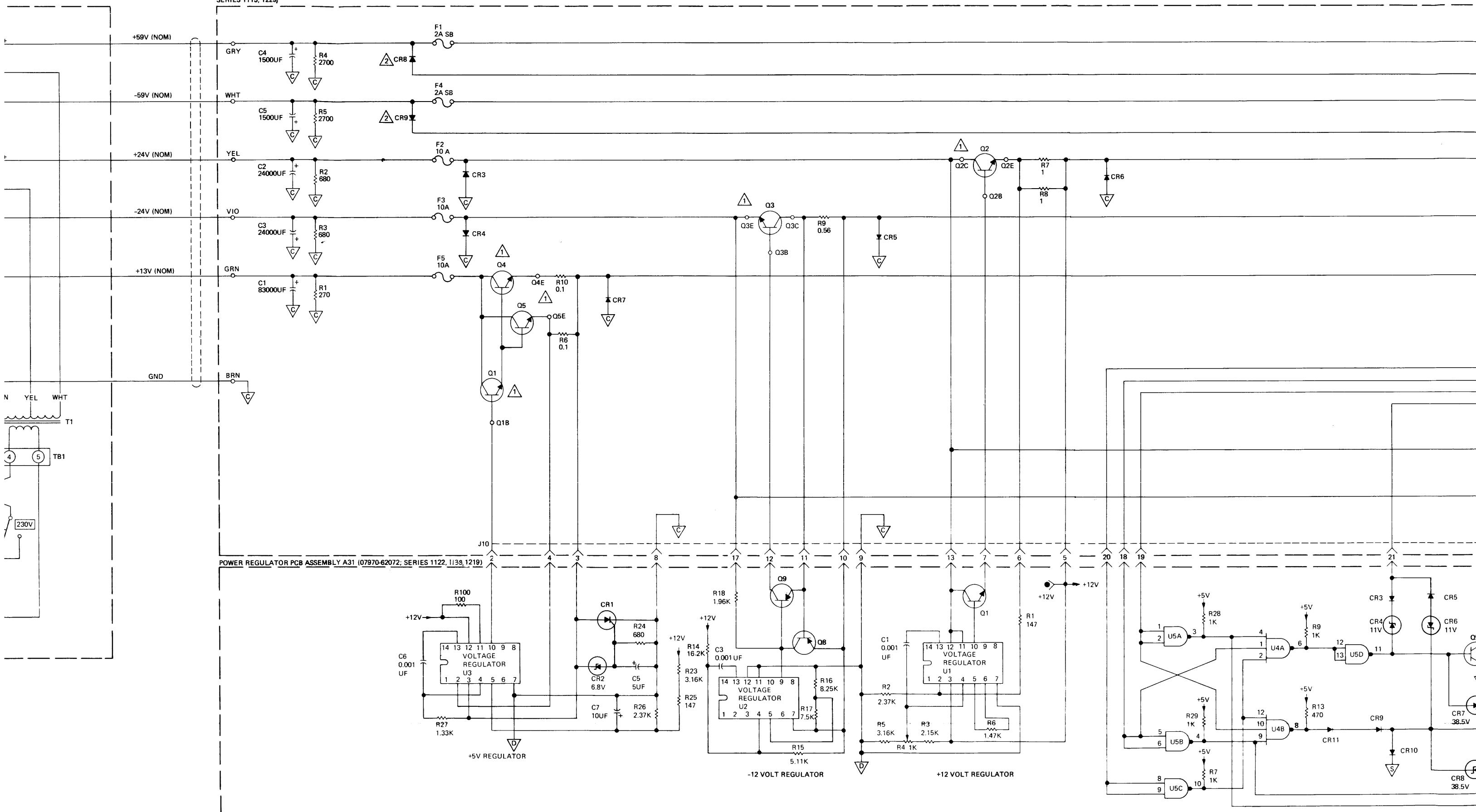
- NOTES:
- (1) THESE COMPONENTS ARE EXTERNALLY MOUNTED ON HEAT SINKS OR CHASSIS.
  - (2) DIODES CR8 AND CR9 FIRST USED ON SERIES 1229.
  - (3) RESISTOR A31R37 IS 21.5K AND A31R38 IS 19.6K ON SERIES 1122 AND 1138 ASSEMBLIES.
  - (C) THESE POINTS ARE COMMON (GROUND)
  - (S) THESE POINTS ARE COMMON (SIGNAL RETURN).

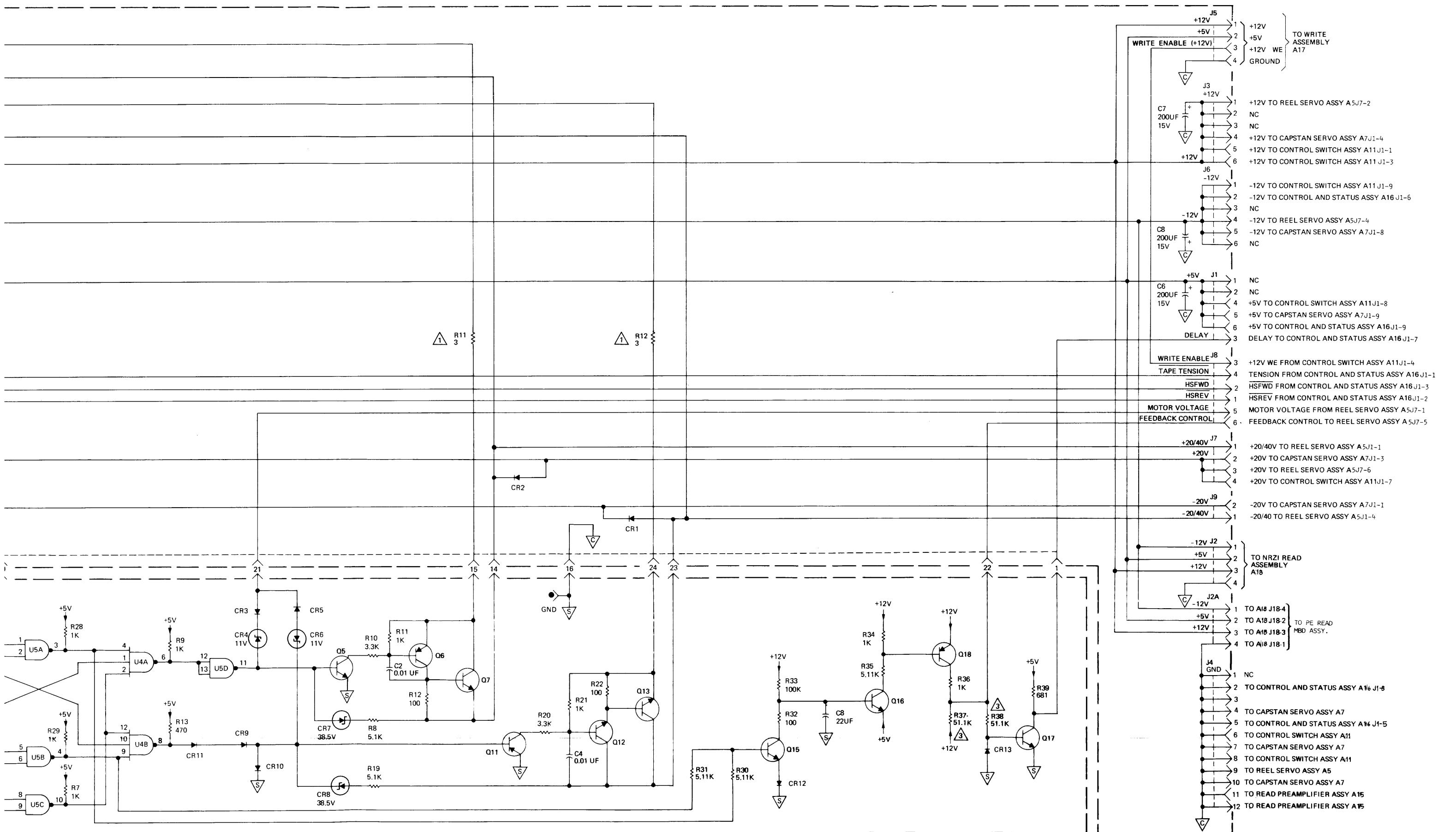
07970-90834 DWG. REV. A

POWER DISTRIBUTION PCB ASSEMBLY A30A1  
(07970-62071; SERIES 1115, 1229)



**POWER DISTRIBUTION PCB ASSEMBLY A30A1  
(07970-62071;  
SERIES 1115, 1229)**



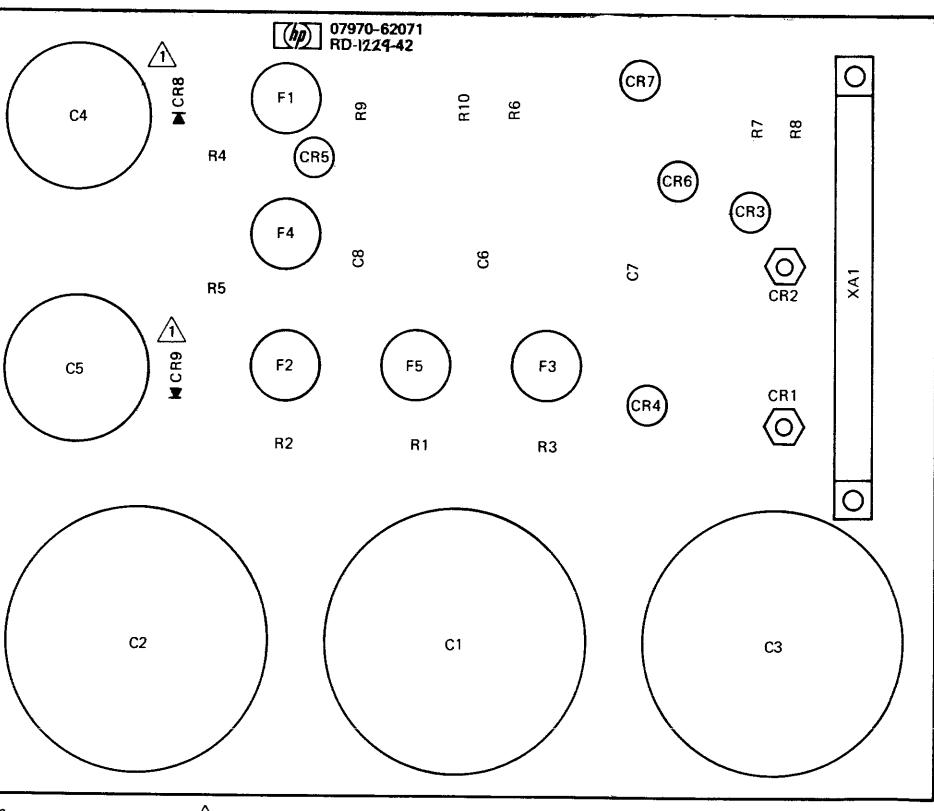
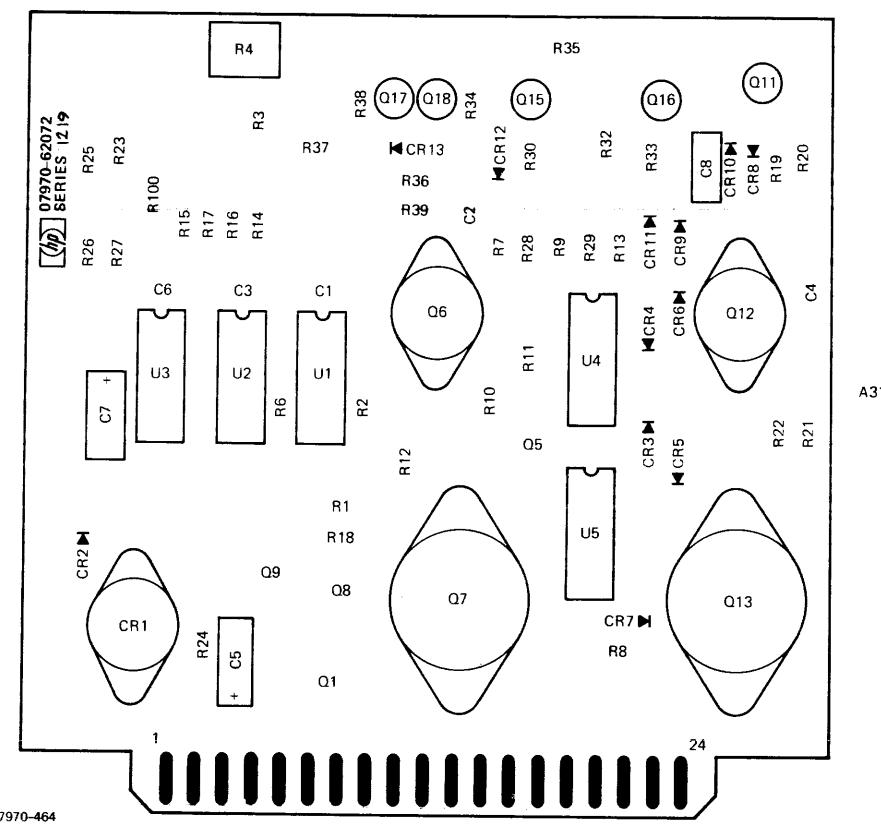


7970E Master Power Supply Assemblies A29/30/31

REF.  
INDIR24  
R27  
R32,  
R33  
R34,  
\*R37  
\*R38  
R39  
U1,  
U4  
U5

\*R37,

PE POWER REGULATOR PCA (SERIES 1122, 1138, 1219)  
07970-62072



7970-466

CR8 AND CR9 NOT USED ON SERIES 1115.

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1, C3, C6	07970-62072	PE POWER REGULATOR PCA (SERIES 1122)
C2, C4	0160-3456	CAPACITOR, fxd, 1000pf, Ceramic
C5	0160-2055	CAPACITOR, fxd, .01uf, 100V
C7	0180-0172	CAPACITOR, fxd, 5uf, -10 + 75%
C8	0180-0059	CAPACITOR, fxd, 10uf, -10 + 75%
CR1	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
	1884-0088	THYRISTOR, 2N3228
	2200-0141	SCREW, 4-40, .312 Pan
	2260-0009	NUT, Lock, 4-40
CR2	1902-0048	DIODE, Zener, 6.81V
CR3, CR5	1901-0025	DIODE, 100V
CR4, CR6	1902-3171	DIODE, Zener, 11V
CR7, CR8	1902-3311	DIODE, Breakdown, 38.3V
CR9-CR13	1901-0040	DIODE, 30V, 50MA
Q1	1854-0039	TRANSISTOR, 2N3053, T05
Q5	1854-0022	TRANSISTOR, 2N2102, T05
Q6	1853-0052	TRANSISTOR, 2N3740, T066
	2200-0141	SCREW, 4-40, .312 Pan
	2260-0009	NUT, Lock, 4-40
Q7, Q13	1854-0063	TRANSISTOR, 2N3055, T03
	2200-0141	SCREW, 4-40, .312 Pan
	2260-0009	NUT, Lock, 4-40
Q8, Q18	1853-0036	TRANSISTOR, 2N3906, PL18
Q9	1853-0027	TRANSISTOR, PNP, SI, T05
Q11	1853-0080	TRANSISTOR, 2N4888, PL5
Q12	1854-0072	TRANSISTOR, 2N3054, T066
	2200-0141	SCREW, 4-40, .312 Pan
	2260-0009	NUT, Lock, 4-40
Q15, Q16, Q17	1854-0215	TRANSISTOR, 2N3904, PL5
R1, 25	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R2, 26	0698-3150	RESISTOR, fxd, 2.37K, 1%, .125W
R3	0698-0084	RESISTOR, fxd, 2.15K, 1%, .125W
R4	2100-1758	RESISTOR, Variable, 1K, 5%
R5, 23	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R6	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
R7, 9, 11, 21	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
28, 29		
R8, R19	0683-5125	RESISTOR, fxd, 5.1K, 5%, .25W
R10, R20	0686-3325	RESISTOR, fxd, 3.3K, 5%, .5W
R12, R22	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R13	0683-4715	RESISTOR, fxd, 470, 5%, .25W
R14	0757-0447	RESISTOR, fxd, 16.2K, 1%, .125W
R15, 30, 31, 35	0757-0438	RESISTOR, fxd, 5.11K, 1%, .125W
R16	0757-0441	RESISTOR, fxd, 8.25K, 1%, .125W
R17	0757-0440	RESISTOR, fxd, 7.5K, 1%, .125W
R18	0698-0083	RESISTOR, fxd, 1.96K, 1%, .125W

POWER DISTRIBUTION PCA PARTS LIST  
07970-62071 (SERIES 1115, 1229)

DESCRIPTION	REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
ULATOR PCA (SERIES 1122) xd, 1000pf, Ceramic xd, .01uf, 100V xd, 5uf, -10 + 75% xd, 10uf, -10 + 75% xd, 22uf, 15VDC N3228 -40, .312 Pan k, 4-40 , 6.81V , 11V down, 38.3V 50MA 2N3053, T05 2N2102, T05 2N3740, T066 -40, .312 Pan k, 4-40 2N3055, T03 -40, .312 Pan k, 4-40 2N3906, PL18 PNP, SI, T05 2N4888, PL5 2N3054, T066 -40, .312 Pan k, 4-40 2N3904, PL5 d, 147, 1%, .125W d, 2.37K, 1%, .125W d, 2.15K, 1%, .125W iriable, 1K, 5% d, 3.16K, 1%, .125W d, 1.47K, 1%, .125W d, 1K, 5%, .25W d, 5.1K, 5%, .25W d, 3.3K, 5%, .5W d, 100, 5%, .25W d, 470, 5%, .25W d, 16.2K, 1%, .125W d, 5.11K, 1%, .125W  d, 8.25K, 1%, .125W d, 7.5K, 1%, .125W d, 1.96K, 1%, .125W			R24 0683-6815 RESISTOR, fxd, 680, 5%, .25W R27 0757-0317 RESISTOR, fxd, 1.33K, 1%, .125W R32, 100 0757-0198 RESISTOR, fxd, 100, 1%, .5W R33 0757-0465 RESISTOR, fxd, 100K, 1%, .125W R34, R36 0757-0280 RESISTOR, fxd, 1K, 1%, .125W *R37 0757-0199 RESISTOR, fxd, 21.5K, 1%, .125W *R38 0698-3157 RESISTOR, fxd, 19.6K, 1%, .125W R39 0757-0419 RESISTOR, fxd, 681, 1%, .125W U1, U2, U3 1820-0439 IC, Voltage Regulator U4 1820-0348 IC, MC844P U5 1820-0256 IC, MC858P  SERIES 1219 0757-0458 RESISTOR, fxd, 51.1K, 1%, .125W

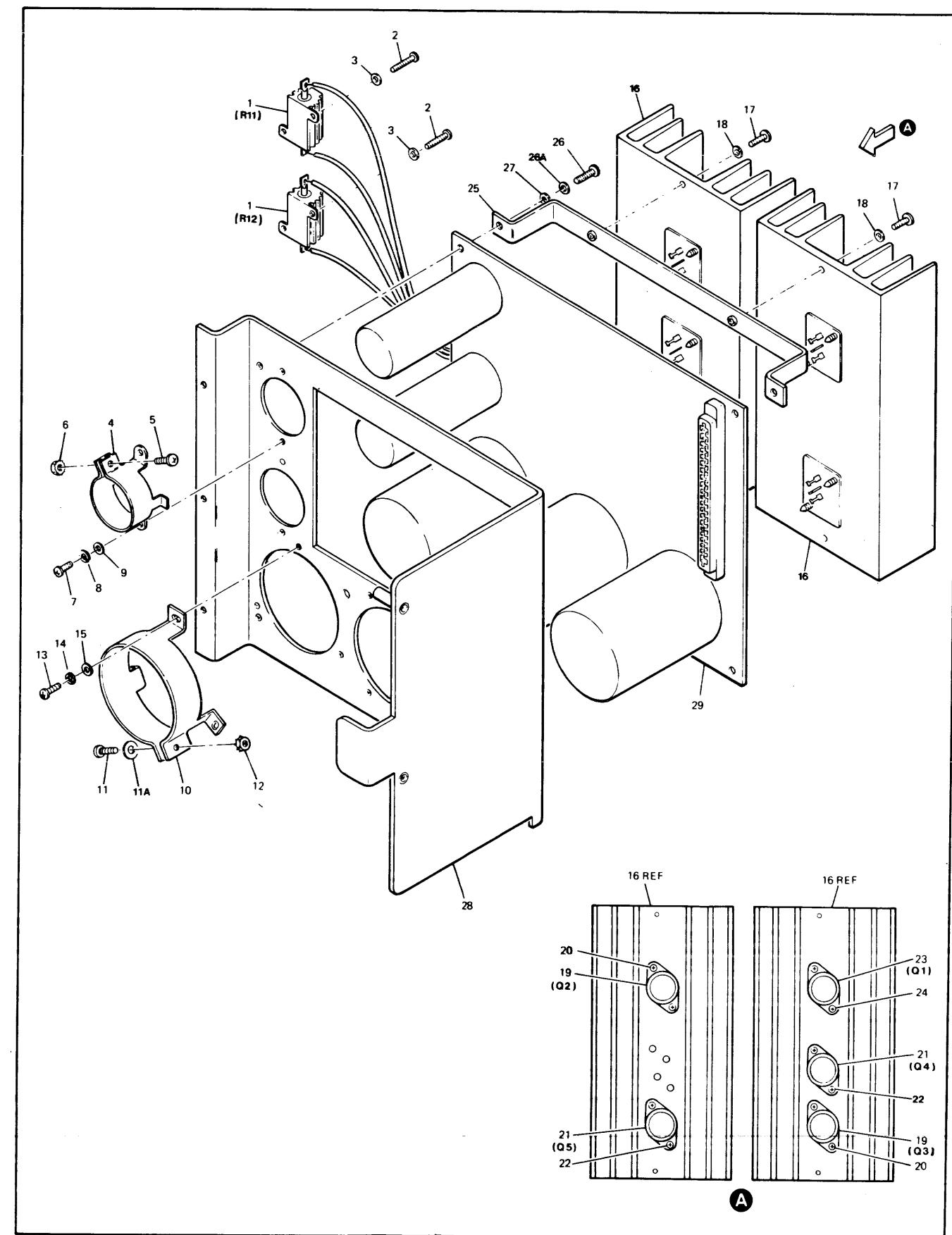
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	07970-62071	POWER DISTRIBUTION PCA (SERIES 1115, 1229)
C2, C3	0180-2426 2680-0099 2190-0012	CAPACITOR, Fxd 83000uf SCREW 10-32, .375 Pan WASHER, Lock, #10
C4, C5	0180-2327 2680-0099 2190-0012	CAPACITOR, Fxd, 24000uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C6, C7, C8	0180-2325 2680-0099 2190-0012	CAPACITOR, Fxd, 1500uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
CR1, CR2	0180-0104 1901-0630 2740-0003	CAPACITOR, Fxd, 200uf DIODE, RECTIFIER, SILICONE. NUT, Lock, 10-32
CR3-CR7	1901-0415 0340-0164	DIODE, POWER INSULATOR, Transistor
*CR8, CR9	1901-0026 F1, F4 F2, F3, F5 XF1-5	DIODE FUSE, 2A, 250V SLO BLO FUSE, 10A, MB FUSE HOLDER, POST TYPE WASHER, Lock NUT, Fuse Holder
R1	0698-3629	RESISTOR, Fxd, 270, 5%, 2W
R2, R3	0698-3635	RESISTOR, Fxd, 680, 5%, 2W
R4, R5	0764-0043	RESISTOR, Fxd, 2.7K, 5%, 2W
R6, R10	0811-2490	RESISTOR, Fxd, 0.1, 3%, 5W
R7, R8	0811-1666	RESISTOR, Fxd, 1, 5%, 2W
R9	0811-1552	RESISTOR, Fxd, .56, 5%, 2W
J5	1251-2025	CONNECTOR, PC 2 x 24 .1560
J1-4, 6-9	1251-2503 1251-2504 0360-1613 2190-0008	CONTACT PC FEMALE PINS CONTACT PC MALE PINS LUG, Solder #5 WASHER, Lock #6
*CR8, CR9	SERIES 1229 1901-0026	DIODE (ADDED ON SERIES 1229)

POWER DISTRIBUTION PCA PARTS LIST  
07970-62071 (SERIES 1115, 1229)

DESCRIPTION	REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
RESISTOR, fxd, 680, 5%, .25W		07970-62071	POWER DISTRIBUTION PCA (SERIES 1115)
RESISTOR, fxd, 1.33K, 1%, .125W	C1	0180-2426 2680-0099 2190-0012	CAPACITOR, Fxd 83000uf SCREW 10-32, .375 Pan WASHER, Lock, #10
RESISTOR, fxd, 100, 1%, .5W	C2, C3	0180-2327 2680-0099 2190-0012	CAPACITOR, Fxd, 24000uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
RESISTOR, fxd, 100K, 1%, .125W	C4, C5	0180-2325 2680-0099 2190-0012	CAPACITOR, Fxd, 1500uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
RESISTOR, fxd, 1K, 1%, .125W	C6, C7, C8	0180-0104	CAPACITOR, Fxd, 200uf
RESISTOR, fxd, 21.5K, 1%, .125W	CR1, CR2	1901-0630	DIODE, RECTIFIER, SILICONE.
RESISTOR, fxd, 19.6K, 1%, .125W	CR3-CR7	2740-0003 1901-0415	NUT, Lock, 10-32 DIODE, POWER
RESISTOR, fxd, 681, 1%, .125W	*CR8, CR9	0340-0164 1901-0026	INSULATOR, Transistor DIODE
C, Voltage Regulator	F1, F4	2110-0303	FUSE, 2A, 250V SLO BLO
C, MC844P	F2, F3, F5	2110-0051	FUSE, 10A, MB
C, MC858P	XF1-5	1400-0084 2190-0068	FUSE HOLDER, POST TYPE WASHER, Lock
RESISTOR, fxd, 51.1K, 1%, .125W	R1	2950-0038 0698-3629	NUT, Fuse Holder RESISTOR, Fxd, 270, 5%, 2W
	R2, R3	0698-3635	RESISTOR, Fxd, 680, 5%, 2W
	R4, R5	0764-0043	RESISTOR, Fxd, 2.7K, 5%, 2W
	R6, R10	0811-2490	RESISTOR, Fxd, 0.1, 3%, 5W
	R7, R8	0811-1666	RESISTOR, Fxd, 1, 5%, 2W
	R9	0811-1552	RESISTOR, Fxd, .56, 5%, 2W
	J5	1251-2025	CONNECTOR, PC 2 x 24 .1560
	J1-4, 6-9	1251-2503	CONTACT PC FEMALE PINS
	J1-4, 6-9	1251-2504	CONTACT PC MALE PINS
		0360-1613	LUG, Solder #5
		2190-0008	WASHER, Lock #6
	*CR8, CR9	SERIES 1229 1901-0026	DIODE (ADDED ON SERIES 1229)

MASTER PE POWER DISTRIBUTION ASSEMBLY  
07970-62113

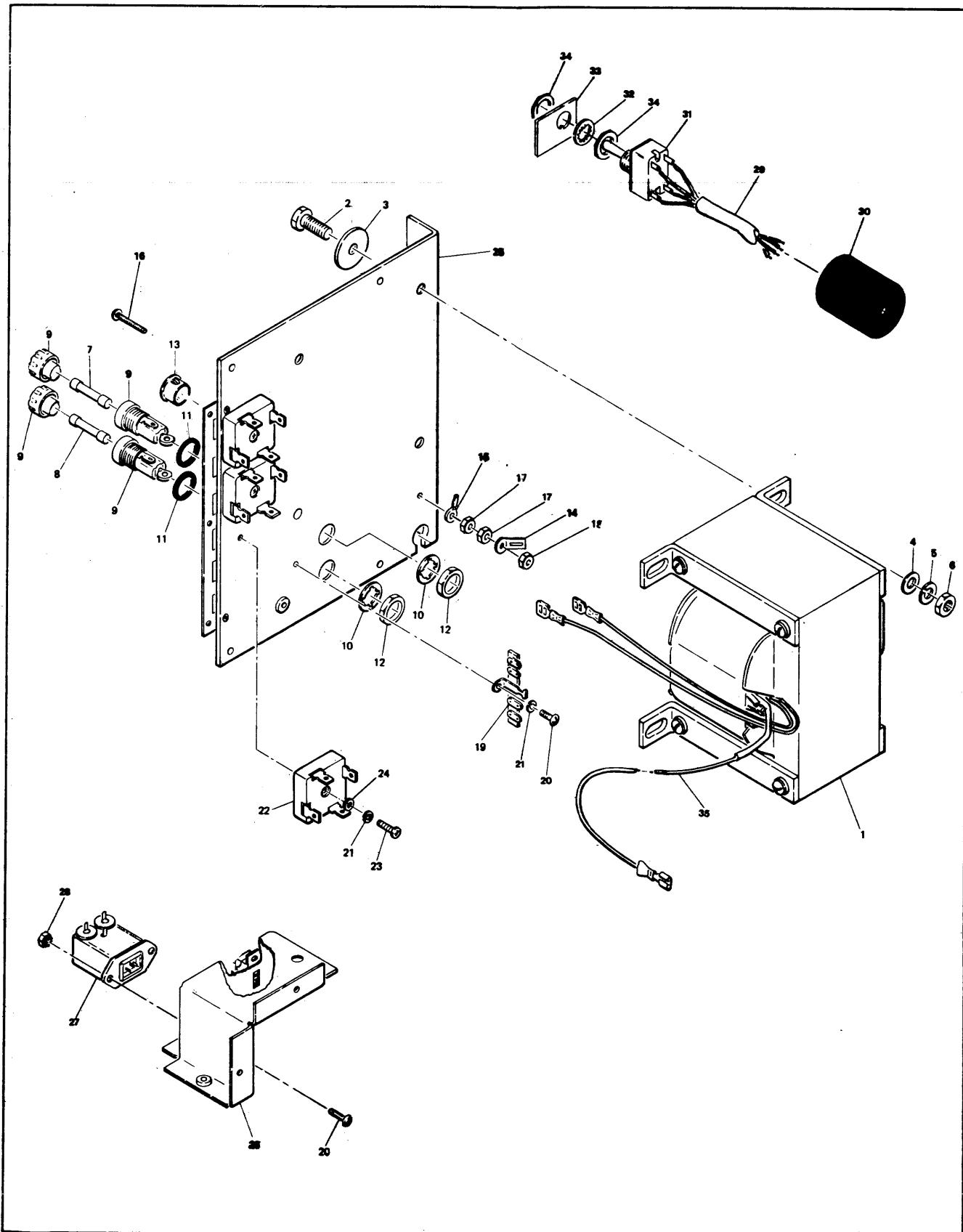
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62113	MASTER PE POWER DISTRIBUTION ASSEMBLY
2	0811-2180	RESISTOR, fxd, 3, 10%, 25W
3	2200-0141	SCREW, 4-40, .312 Pan
4	2190-0003	WASHER, Lock, #4, hel
5	0160-2149	CLAMP, CAPACITOR
6	2360-0201	SCREW, 6-32, .5 in.
7	2420-0001	NUT, 6-32, hex
8	2200-0141	SCREW, 4-40, .312 Pan
9	2190-0061	WASHER, Lock, #4, hel
10	3050-0105	WASHER, #4, Flat
11	0180-1970	CLAMP, CAPACITOR
11A	2360-0201	SCREW, 6-32, .5 in.
12	3050-0066	WASHER, #6, .147D, Flat
13	2420-0001	NUT, 6-32, hex
14	2200-0141	SCREW, 4-40, .312 Pan
15	2190-0061	WASHER, Lock, #4, hel
16	3050-0105	WASHER, #4, Flat
16	07970-20400	HEAT DISSIPATOR
17	2200-0143	SCREW, 4-40, .375 Pan
18	2190-0061	WASHER, Lock, #4, hel
19	1854-0063	TRANSISTOR, 2N3055, T03
20	0624-0062	SCREW, 6-20, Tap
21	1854-0264	TRANSISTOR, 2N3715, T03
22	0624-0062	SCREW, 6-20, Tap
23	1854-0518	TRANSISTOR, 2N5877, T03
24	0624-0062	SCREW, 6-20, Tap
25	07970-01179	BRACKET, POWER SUPPLY
26	2360-0195	SCREW, 6-32, .312 Pan
26A	2190-0918	WASHER, Lock, #6, hel
27	3050-0066	WASHER, #6, .147D, Flat
28	07970-01170	CHASSIS, POWER SUPPLY
29	07970-62071	PCA, PE POWER DISTRIBUTION
	07970-62112	HARNESS, POWER SUPPLY (NOT SHOWN)



2225-114A

7970E Master Power Supply  
Assemblies A29/30/31

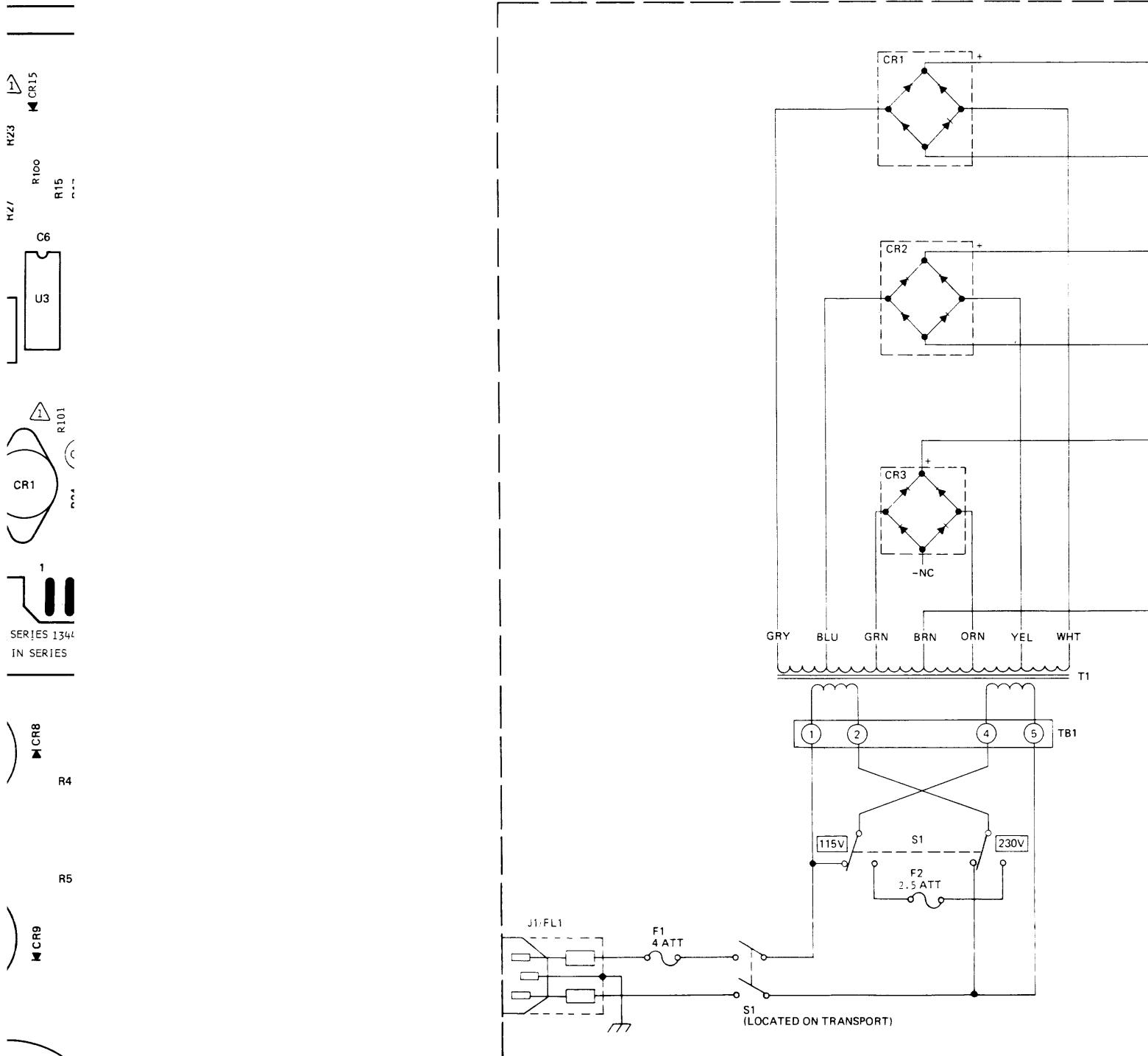
PE TRANSFORMER ASSEMBLY  
07970-62073



REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62073 9100-3330	PE TRANSFORMER ASSEMBLY TRANSFORMER, POWER (T1)
2	0570-0108	BOLT, hex, $\frac{1}{4}$ in.
3	3050-0723	WASHER, Flat, .261D
4	3050-0225	WASHER, Flat $\frac{1}{4}$ in.
5	2190-0431	WASHER, Lock, hel, $\frac{1}{4}$ in.
6	2950-0004	NUT, $\frac{1}{4}$ -20
7	2110-0365	FUSE, 4A, 250V, SLO BLO, (F1)
*8	2110-0303	FUSE, 2A, 250V, SLO BLO, (F2)
9	1400-0084	FUSE HOLDER, POST TYPE, (XF1, XF2)
10	2190-0037	WASHER, Lock, .5 INT
11	0900-0016	O-RING, .5 in. ID
12	2950-0038	NUT, $\frac{1}{2}$ -24
13	0400-0056	BUSHING, SNAP, NYLON
14	0360-0043	TERM, SOLDER LUG #5
15	0362-0321	LUG, CRIMP, #6
16	2360-0203	SCREW, 6-32, .625 Pan
17	2420-0002	NUT, hex, 6-32
18	2420-0001	NUT, hex, 6-32
19	0360-1590	TERMINAL STRIP, LUG TYPE
20	2200-0141	SCREW, 4-40, .312 Pan
21	2190-0003	WASHER, Lock, #4
22	1906-0017	DIODE BRIDGE, RECTIFIER
23	2200-0091	SCREW, 4-40, .562 in.
24	2190-0416	WASHER, #4
25	07970-01171	PANEL, POWER TRANSFORMER
26	07970-60461	BRACKET, ASSEMBLY (INCLUDES S2)
27	9100-0531	FILTER, (FL1) AND J1
28	2260-0009	NUT, Lock, 4-40
29	8120-1624	CABLE, POWER
30	1401-0083	CAP, Protective
31	3101-0646	SWITCH, Toggle dpst
32	2190-0102	WASHER, Lock, 7/16
33	7120-4575	PLATE, Indicator
34	2950-0035	NUT, 15/32-32
35	8500-0059	WIRING HARNESS, POWER TRANSFORMER
	SERIES 1411 2110-0380	COMPOUND, THERMAL
*8		FUSE, 2.5A, 250V, SLO BLO, (F2)

7970E Master Power Supply  
Assemblies A29/30/31

MASTER UNIT TRANSFORMER ASSEMBLY A29  
(07970-62073) SERIES 1411

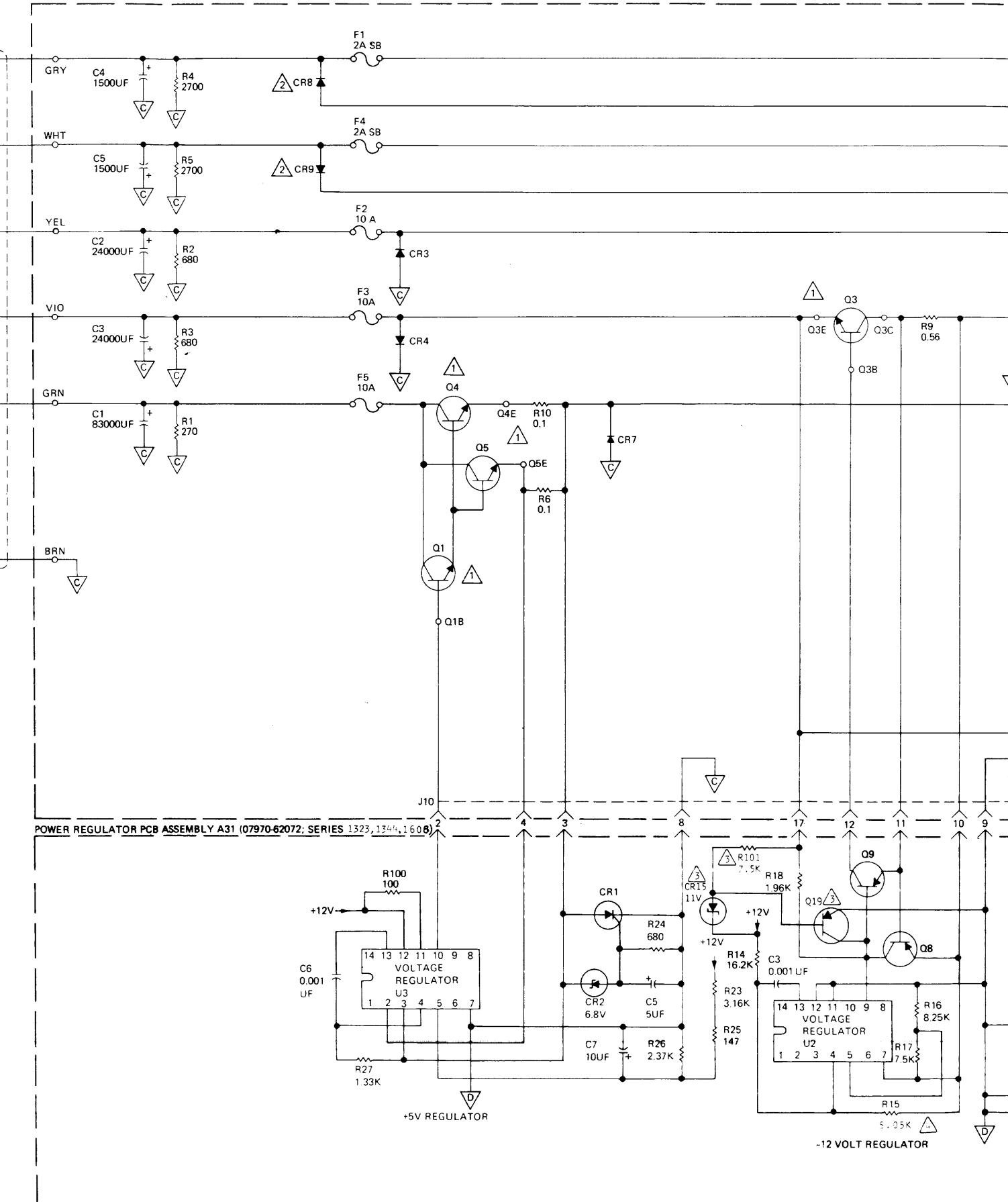


NOTES:

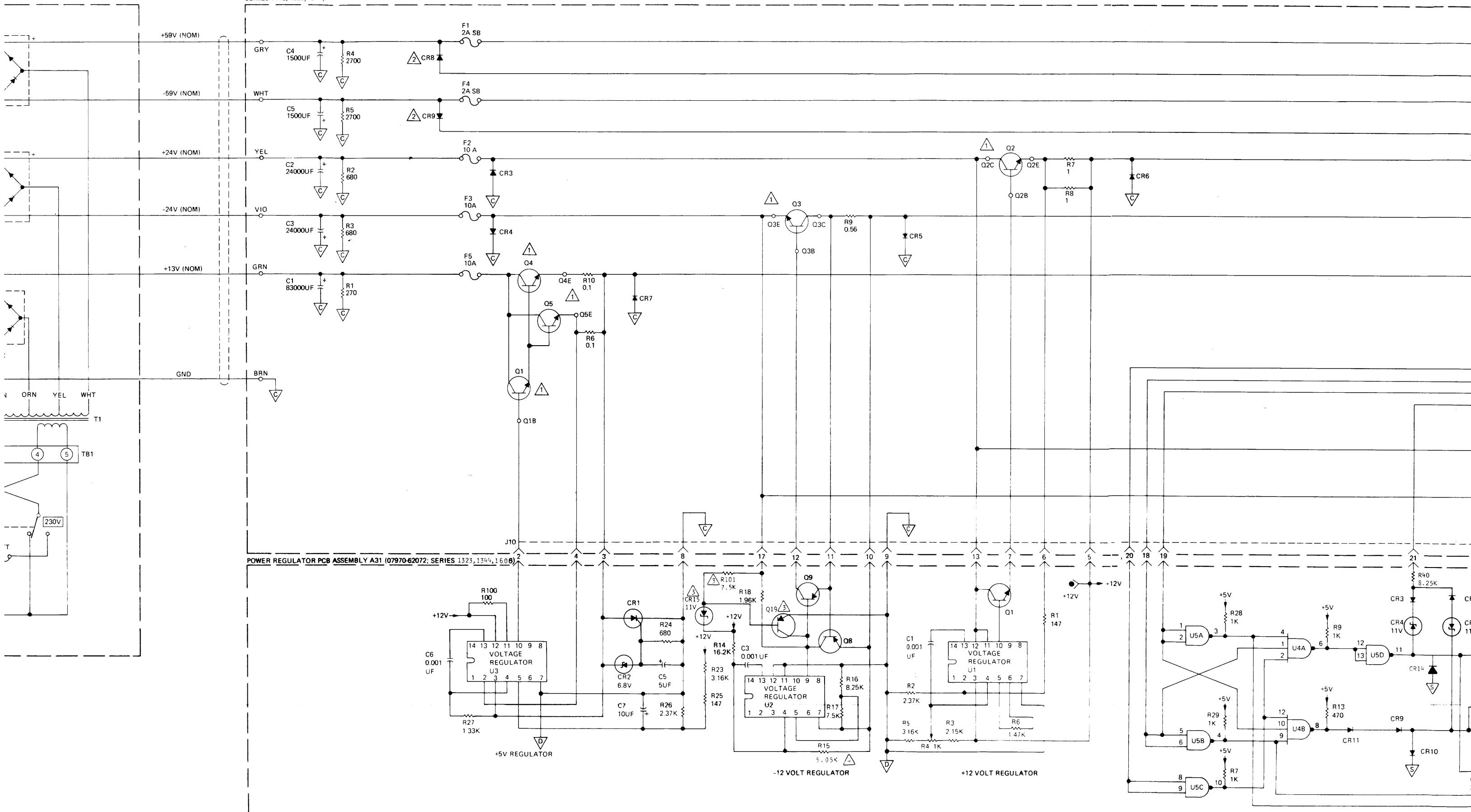
- 1** THESE COMPONENTS ARE EXTERNALLY MOUNTED ON HEAT SINKS OR CHASSIS.
- 2** DIODES CR8 AND CR9 FIRST USED ON SERIES 1229.
- 3** THESE COMPONENTS FIRST USED ON SERIES 1344.
- 4** SERIES 1344 AND BELOW, R15 IS 5.11K.
- 5** THESE POINTS ARE COMMON (GROUND)
- 6** THESE POINTS ARE COMMON (SIGNAL RETURN).

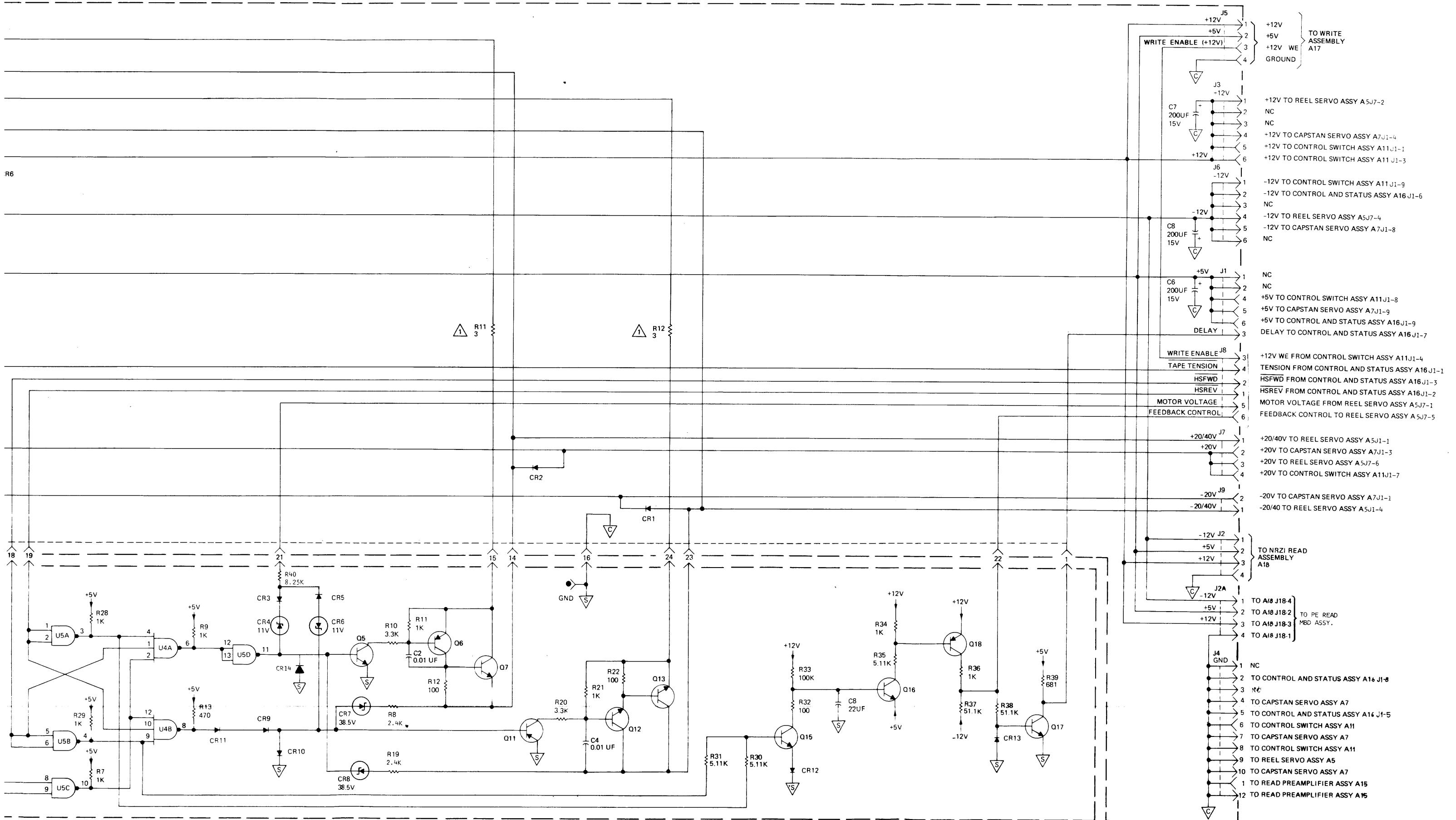
07970-90834 DWG. REV. B

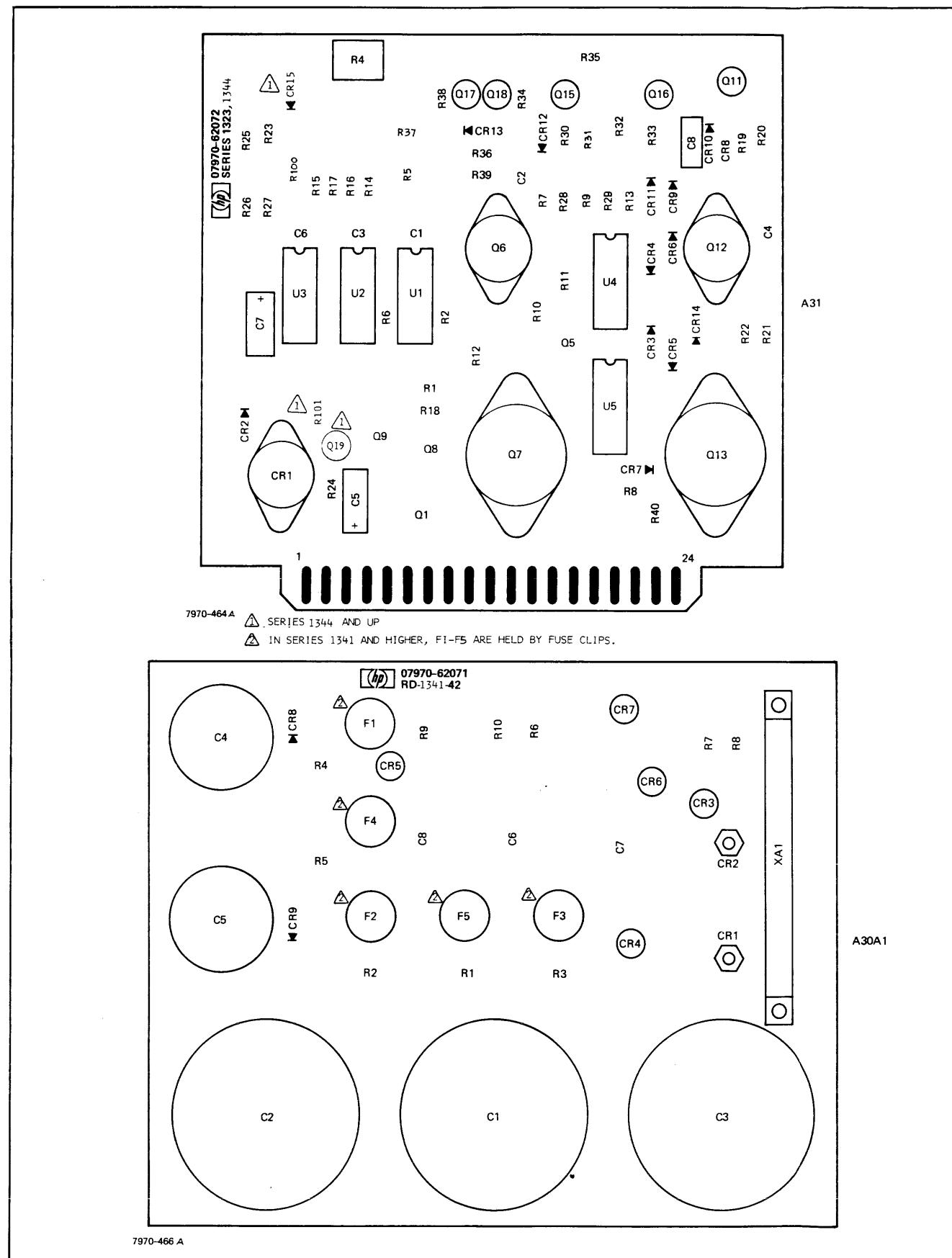
POWER DISTRIBUTION PCB ASSEMBLY A30A1  
(07970-62071;  
SERIES 1115, 1229, 1341)



POWER DISTRIBUTION PCB ASSEMBLY A30A1  
(07970-62071;  
SERIES 1115, 1229, 1341)







PE POWER REGULATOR PCA (SERIES 1323, 1344, 1608)  
07970-62072

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1, C3, C6	07970-62072 0160-3456	PE POWER REGULATOR PCA (SERIES 1323, 1344)
C2, C4	0160-2055	CAPACITOR, fxd, 1000pf, Ceramic
C5	0180-0172	CAPACITOR, fxd, .01uf, 100V
C7	0180-0059	CAPACITOR, fxd, 5uf, - 10 + 75%
C8	0180-0228	CAPACITOR, fxd, 10uf, - 10 + 75%
CR1	1884-0088 2200-0141 2260-0009	CAPACITOR, fxd, 22uf, 15VDC
CR2	1902-0048	THYRISTOR, 2N3228
CR3, CR5	1901-0025	SCREW, 4-40, .312 Pan
CR4, CR6, CR15	1902-3171	NUT, Lock, 4-40
CR7, CR8	1902-3311	DIODE, Zener, 6.81V
CR9-CR14	1901-0040	DIODE, 100V
Q1	1854-0039	DIODE, Zener, 11V
Q5	1854-0022	DIODE, Breakdown, 38.3V
Q6	1853-0052	DIODE, 30V, 50MA
Q7, Q13	2200-0141 2260-0009	TRANSISTOR, 2N3053, T05
Q8, Q18, Q19	1854-0063 2200-0141 2260-0009	TRANSISTOR, 2N2102, T05
Q9	1853-0036	TRANSISTOR, 2N3740, T066
Q11	1853-0027	SCREW, 4-40, .312 Pan
Q12	1853-0080	NUT, Lock, 4-40
Q15-Q17	1854-0072 2200-0141 2260-0009	TRANSISTOR, 2N3055, T03
R1,25	1854-0215	SCREW, 4-40, .312 Pan
R2,26	0698-3438	NUT, Lock, 4-40
R3	0698-3150	TRANSISTOR, 2N3906, PL18
R4	0698-0084	TRANSISTOR, PNP, SI, T05
R5,23	2100-1758	TRANSISTOR, 2N4888, PL5
R6	0757-0279	TRANSISTOR, 2N3054, T066
R7, 9, 11, 21	0757-1094	SCREW, 4-40, .312 Pan
28, 29	0683-1025	NUT, Lock, 4-40
R8, 19	0683-2425	TRANSISTOR, 2N3904, PL5
R10, R20	0686-3325	RESISTOR, fxd, 147, 1%, .125W
R12, R22	0683-1015	RESISTOR, fxd, 2.37K, 1%, .125W
R13	0683-4715	RESISTOR, fxd, 2.15K, 1%, .125W
R14	0757-0447	RESISTOR, Variable, 1K, 5%
*R15, 30, 31	0757-0438	RESISTOR, fxd, 3.16K, 1%, .125W
35		RESISTOR, fxd, 1.47K, 1%, .125W
R16,40	0757-0441	RESISTOR, fxd, 1K, 5%, .25W
R17,101	0757-0440	RESISTOR, fxd, 2.4K, 5%, .25W
R18	0698-0083	RESISTOR, fxd, 3.3K, 5%, .5W
R24	0683-6815	RESISTOR, fxd, 100, 5%, .25W
		RESISTOR, fxd, 470, 5%, .25W
		RESISTOR, fxd, 16.2K, 1%, .125W
		RESISTOR, fxd, 5.11K, 1%, .125W
		RESISTOR, fxd, 8.25K, 1%, .125W
		RESISTOR, fxd, 7.5K, 1%, .125W
		RESISTOR, fxd, 1.96K, 1%, .125W
		RESISTOR, fxd, 680, 5%, .25W

REF.  
IND.

R27  
R32  
R33  
R34  
R37  
R39  
U1,  
U4  
U5

\*R15

1 CR1

POWER DISTRIBUTION PCA  
07970-62071 (SERIES 1341)

DESCRIPTION
POWER DISTRIBUTOR PCA (SERIES 1323, 1344) Resistor, 1000pf, Ceramic Resistor, .01uf, 100V Resistor, 5uf, -10 + 75% Resistor, 10uf, -10 + 75% Resistor, 22uf, 15VDC N3228 -40, .312 Pan k, 4-40 , 6.81V , 11V down, 38.3V 50MA 2N3053, T05 2N2102, T05 2N3740, T066 -40, .312 Pan k, 4-40 2N3055, T03 -40, .312 Pan k, 4-40 2N3906, PL18 PNP, SI, T05 2N4888, PL5 2N3054, T066 -40, .312 Pan k, 4-40 2N3904, PL5 Resistor, 147, 1%, .125W Resistor, 2.37K, 1%, .125W Resistor, 2.15K, 1%, .125W Variable, 1K, 5% Resistor, 3.16K, 1%, .125W Resistor, 1.47K, 1%, .125W Resistor, 1K, 5%, .25W Resistor, 2.4K, 5%, .25W Resistor, 3.3K, 5%, .5W Resistor, 100, 5%, .25W Resistor, 470, 5%, .25W Resistor, 16.2K, 1%, .125W Resistor, 5.11K, 1%, .125W Resistor, 8.25K, 1%, .125W Resistor, 7.5K, 1%, .125W Resistor, 1.96K, 1%, .125W Resistor, 680, 5%, .25W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R27 R32, 100 R33 R34, R36 R37, R38 R39 U1, U2, U3 U4 U5  *R15	0757-0317 0757-0198 0757-0465 0757-0280 0757-0458 0757-0419 1820-0439 1820-0348 1820-0256  Series 1608 0698-7053	RESISTOR, fxd, 1.33K, 1%, .125W RESISTOR, fxd, 100, 1%, .5W RESISTOR, fxd, 100K, 1%, .125W RESISTOR, fxd, 1K, 1%, .125W RESISTOR, fxd, 51.1K, 1%, .125W RESISTOR, fxd, 681, 1%, .125W IC, Voltage Regulator IC, MC844P IC, MC858P  RESISTOR, fxd, 5.05K, .5W, .125W

⚠ CR15, Q19, and R101 first used on series codes 1344.

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	07970-62071 0180-2426 2680-0099 2190-0012	POWER DISTRIBUTION PCA (SERIES 1341) CAPACITOR, fxd, 83000uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C2, C3	0180-2327 2680-0099 2190-0012	CAPACITOR, fxd, 24000 uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C4, C5	0180-2325 2680-0099 2190-0012	CAPACITOR, fxd, 1500uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C6, C7, C8	0180-0104 CR1, CR2	CAPACITOR, fxd, 200uf DIODE, Rectifier, Silicone NUT, Lock, 10-32
CR3-CR7	1901-0630 2740-0003 1901-0415 0340-0164	DIODE, Power INSULATOR, Transistor DIODE
CR8, CR9	1901-0026 F1, 4 F2, F3, F5	DIODE FUSE, 2A, 250V, SLO BLO FUSE, 10A, MB
*XF1-5	2110-0303 2110-0051 2110-0257	CLIP, Fuse Holder
R1	0698-3629	RESISTOR, fxd, 270, 5%, 2W
R2, R3	0698-3635	RESISTOR, fxd, 680, 5%, 2W
R4, R5	0764-0043	RESISTOR, fxd, 2.7K, 5%, 2W
R6, R10	0811-2490	RESISTOR, fxd; 0.1, 3%, 5W
R7, R8	0811-1666	RESISTOR, fxd, 1, 5%, 2W
R9	0811-1552	RESISTOR, fxd, .56, 5%, 2W
J5	1251-2025	CONNECTOR, PC 2x24 .1560
J1-4, 6-9	1251-2503 1251-2504 0360-1613 2190-0008	CONTACT PC Female Pins CONTACT PC Male Pins LUG, Solder #5 WASHER, Lock #6
*XF1-5	SERIES 1341 2110-0257	CLIP, Fuse Holder

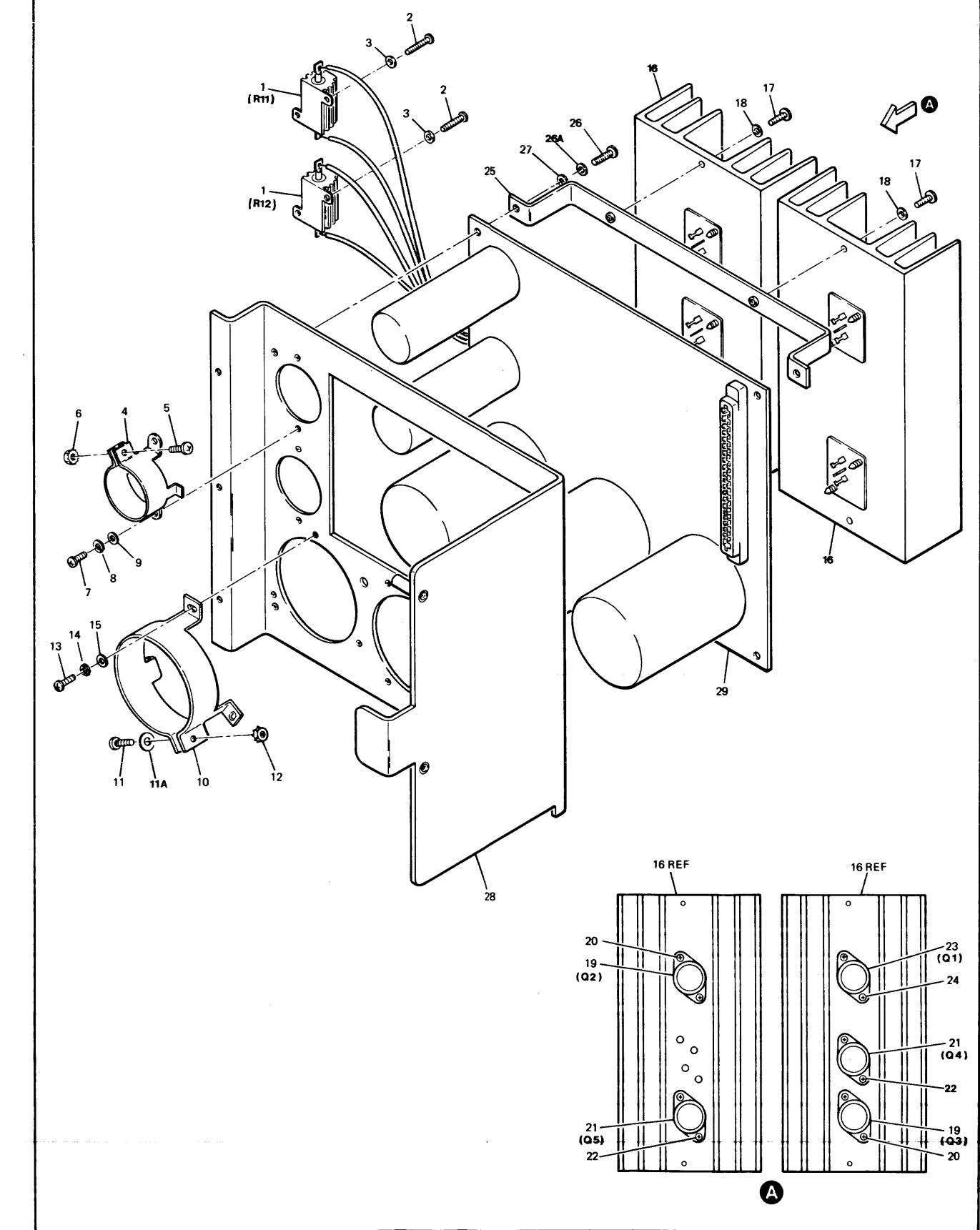
POWER DISTRIBUTION PCA  
07970-62071 (SERIES 1341)

DESCRIPTION
RESISTOR, fxd, 1.33K, 1%, .125W
RESISTOR, fxd, 100, 1%, .5W
RESISTOR, fxd, 100K, 1%, .125W
RESISTOR, fxd, 1K, 1%, .125W
RESISTOR, fxd, 51.1K, 1%, .125W
RESISTOR, fxd, 681, 1%, .125W
C, Voltage Regulator
C, MC844P
C, MC858P
RESISTOR, fxd, 5.05K, .5W, .125W
ries codes 1344.

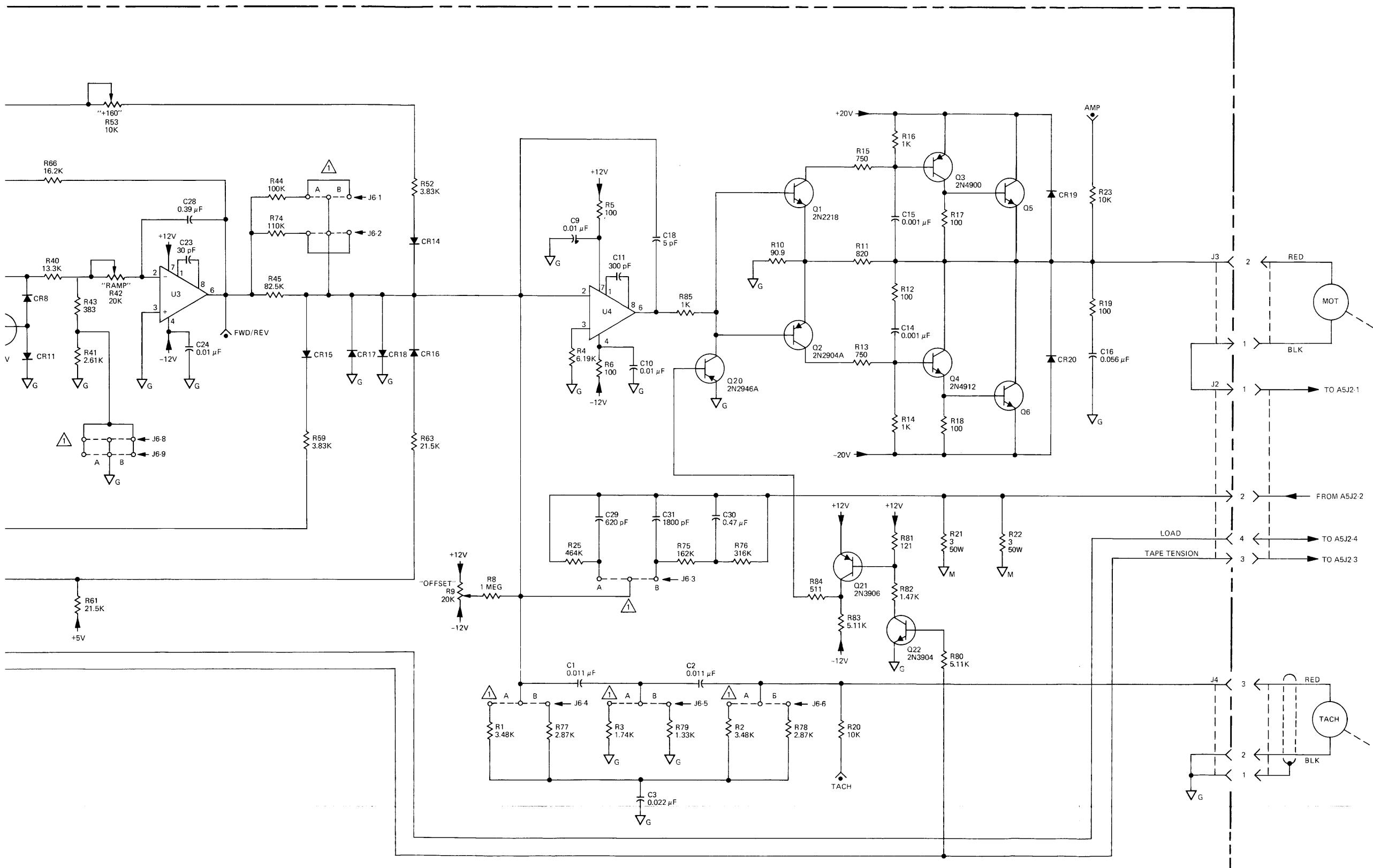
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	07970-62071 0180-2426 2680-0099 2190-0012	POWER DISTRIBUTION PCA (SERIES 1341) CAPACITOR, fxd, 83000uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C2, C3	0180-2327 2680-0099 2190-0012	CAPACITOR, fxd, 24000 uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C4, C5	0180-2325 2680-0099 2190-0012	CAPACITOR, fxd, 1500uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C6, C7, C8	0180-0104	CAPACITOR, fxd, 200uf
CR1, CR2	1901-0630 2740-0003	DIODE, Rectifier, Silicone NUT, Lock, 10-32
CR3-CR7	1901-0415 0340-0164	DIODE, Power INSULATOR, Transistor
CR8, CR9	1901-0026	DIODE
F1, 4	2110-0303	FUSE, 2A, 250V, SLO BLO
F2, F3, F5	2110-0051	FUSE, 10A, MB
*XF1-5	2110-0257	CLIP, Fuse Holder
R1	0698-3629	RESISTOR, fxd, 270, 5%, 2W
R2, R3	0698-3635	RESISTOR, fxd, 680, 5%, 2W
R4, R5	0764-0043	RESISTOR, fxd, 2.7K, 5%, 2W
R6, R10	0811-2490	RESISTOR, fxd; 0.1, 3%, 5W
R7, R8	0811-1666	RESISTOR, fxd, 1, 5%, 2W
R9	0811-1552	RESISTOR, fxd, .56, 5%, 2W
J5	1251-2025	CONNECTOR, PC 2x24 .1560
J1-4, 6-9	1251-2503	CONTACT PC Female Pins
J1-4, 6-9	1251-2504	CONTACT PC Male Pins
	0360-1613	LUG, Solder #5
	2190-0008	WASHER, Lock #6
*XF1-5	SERIES 1341 2110-0257	CLIP, Fuse Holder

MASTER PE POWER DISTRIBUTION ASSEMBLY  
07970-62113

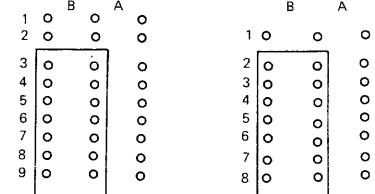
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62113	MASTER PE POWER DISTRIBUTION ASSEMBLY
2	0811-2180	RESISTOR, Fxd, 3, 10% 25W
3	2200-0141	SCREW, 4-40, .312 Pan
4	2190-0003	WASHER, Lock, #4, Hel
5	0160-2149	CLAMP, Capacitor
6	2360-0201	SCREW, 6-32, .5 in.
7	2420-0001	NUT, 6-32, hex
8	2200-0141	SCREW, 4-40, .312 Pan
9	2190-0061	WASHER, Lock, #4, Hel
10	3050-0105	WASHER, #4, Flat
11	0180-1970	CLAMP, Capacitor
11A	2360-0201	SCREW, 6-32, .5 in.
12	3050-0066	WASHER, #6, .147D, Flat
13	2420-0001	NUT, 6-32, hex
14	2200-0141	SCREW, 4-40, .312 Pan
15	2190-0061	WASHER, Lock, #4, Hel
16	3050-0105	WASHER, #4, Flat
17	07970-20400	HEAT DISSIPATOR
18	2200-0143	SCREW, 4-40, .375 Pan
19	2190-0061	WASHER, Lock, #4, Hel
20	1854-0063	TRANSISTOR, 2N3055, T03
21	0624-0062	SCREW, 6-20, Tap
22	1200-0077	INSULATOR, Transistor, T03
23	0340-0177	INSULATOR, Bushing
24	1854-0264	TRANSISTOR, 2N3715, T03
25	0624-0062	SCREW, 6-20, Tap
26	1200-0077	INSULATOR, Transistor, T03
26A	0340-0177	INSULATOR, Bushing
27	1854-0518	TRANSISTOR, 2N5877, T03
28	0624-0062	SCREW, 6-20, Tap
29	1200-0077	INSULATOR, Transistor, T03
	0340-0177	INSULATOR, Bushing
25	07970-01179	BRACKET, POWER SUPPLY
26	2360-0195	SCREW, 6-32, .312 Pan
26A	2190-0918	WASHER, Lock, #6, Hel
27	3050-0066	WASHER, #6, .147D, Flat
28	07970-01170	CHASSIS, POWER SUPPLY
29	07970-62071	PCA, PE POWER DISTRIBUTION
	07970-62112	HARNESS, POWER SUPPLY (NOT SHOWN)



7970E Master Power Supply  
Assemblies A29/30/31

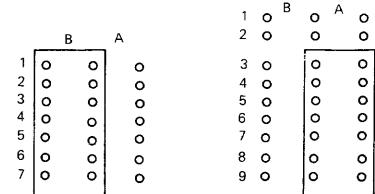


**CONNECTOR J6 IS A 3 x 9 PIN SOCKET FOR A 14 PIN DIP DUMMY PLUG. THE POSITION OF THE 14 PIN DUMMY PLUG IS DETERMINED BY THE CAPSTAN ASSEMBLY AND THE SYNCHRONOUS SPEED OF THE TAPE UNIT.**



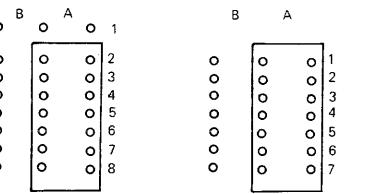
**10 TO 18 IPS POSITION WITH 07970-60141 CAPSTAN ASSEMBLY.**

**18.1 TO 25 IPS POSITION WITH 07970-60141 CAPSTAN ASSEMBLY**



**10 TO 45 IPS POSITION WITH 07970-60141 CAPSTAN ASSEMBLY.**

**18.1 TO 25 IPS POSITION WITH 07970-60140 CAPSTAN ASSEMBLY.**



**25.1 TO 37.5 IPS POSITION WITH 07970-60140 CAPSTAN ASSEMBLY.**

**25.1 TO 37.5 TPS POSITION WITH 07970-60140 CAPSTAN ASSEMBLY.**

**NOTES:**

1. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS.

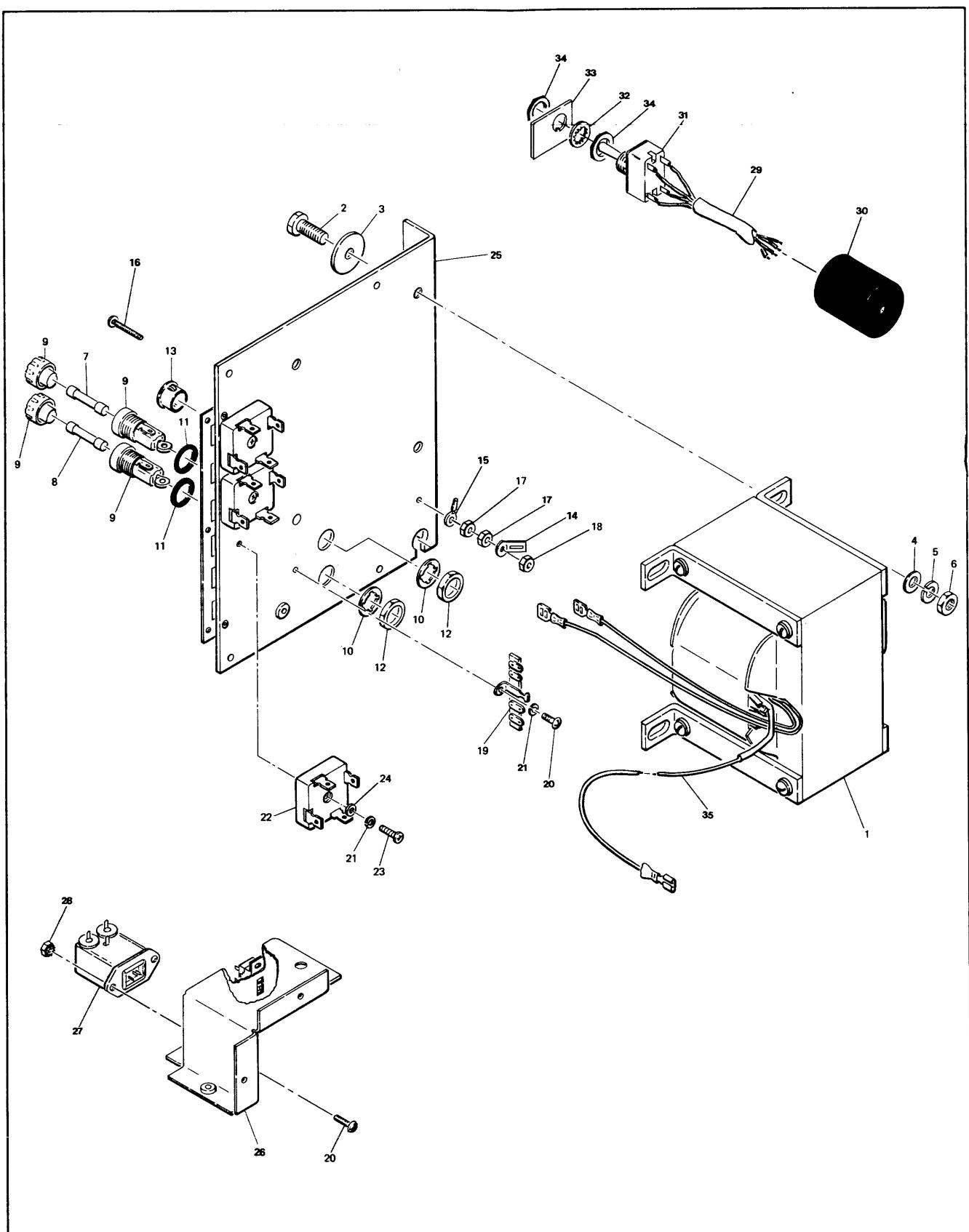
$\nabla_G$  ANALOG RETURN ( $\pm 12V$ )

$\nabla_M$  MOTOR RETURN ( $\pm 20V$ )

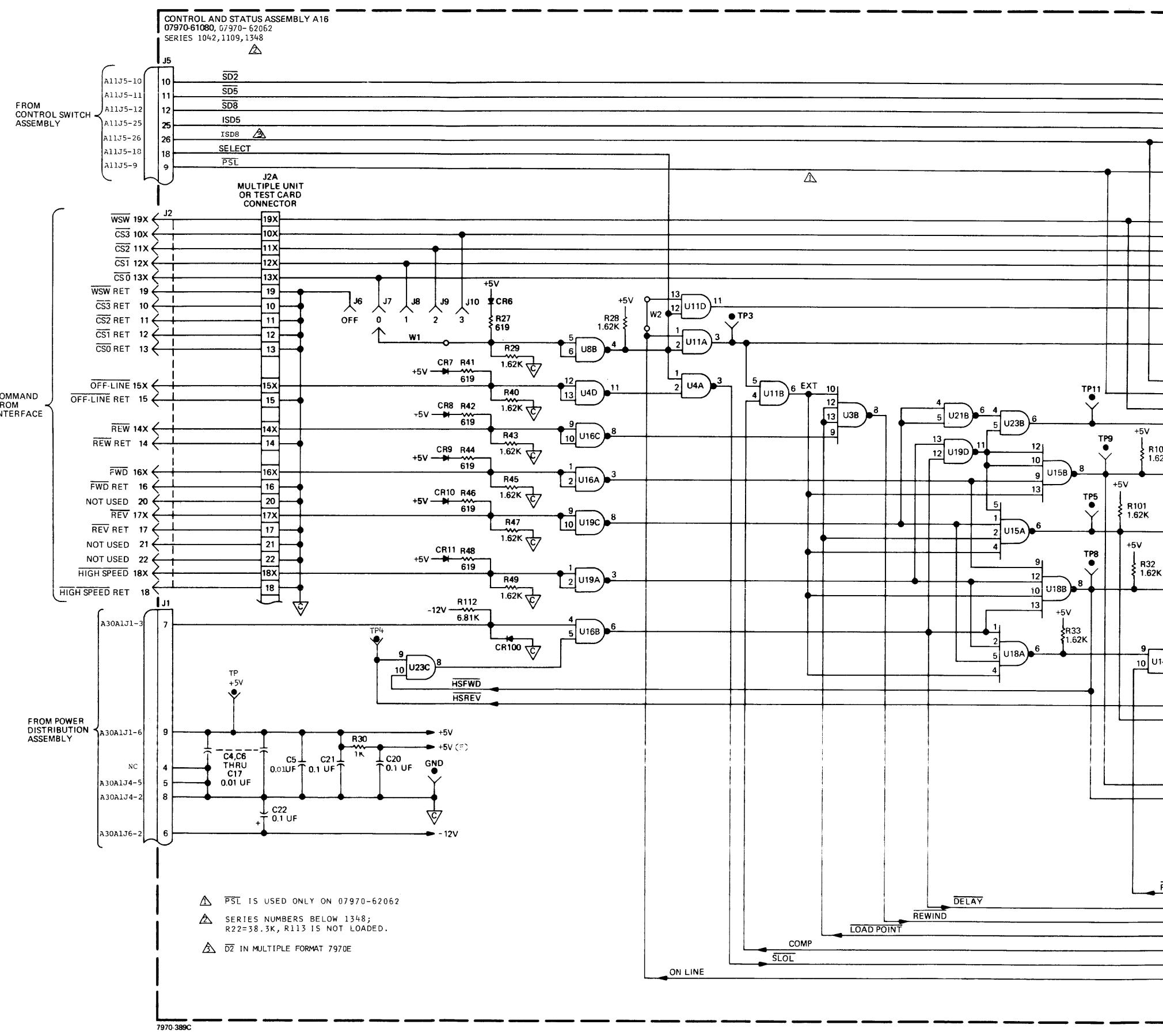
$\nabla_D$  DIGITAL RETURN ( $\pm 5V$ )

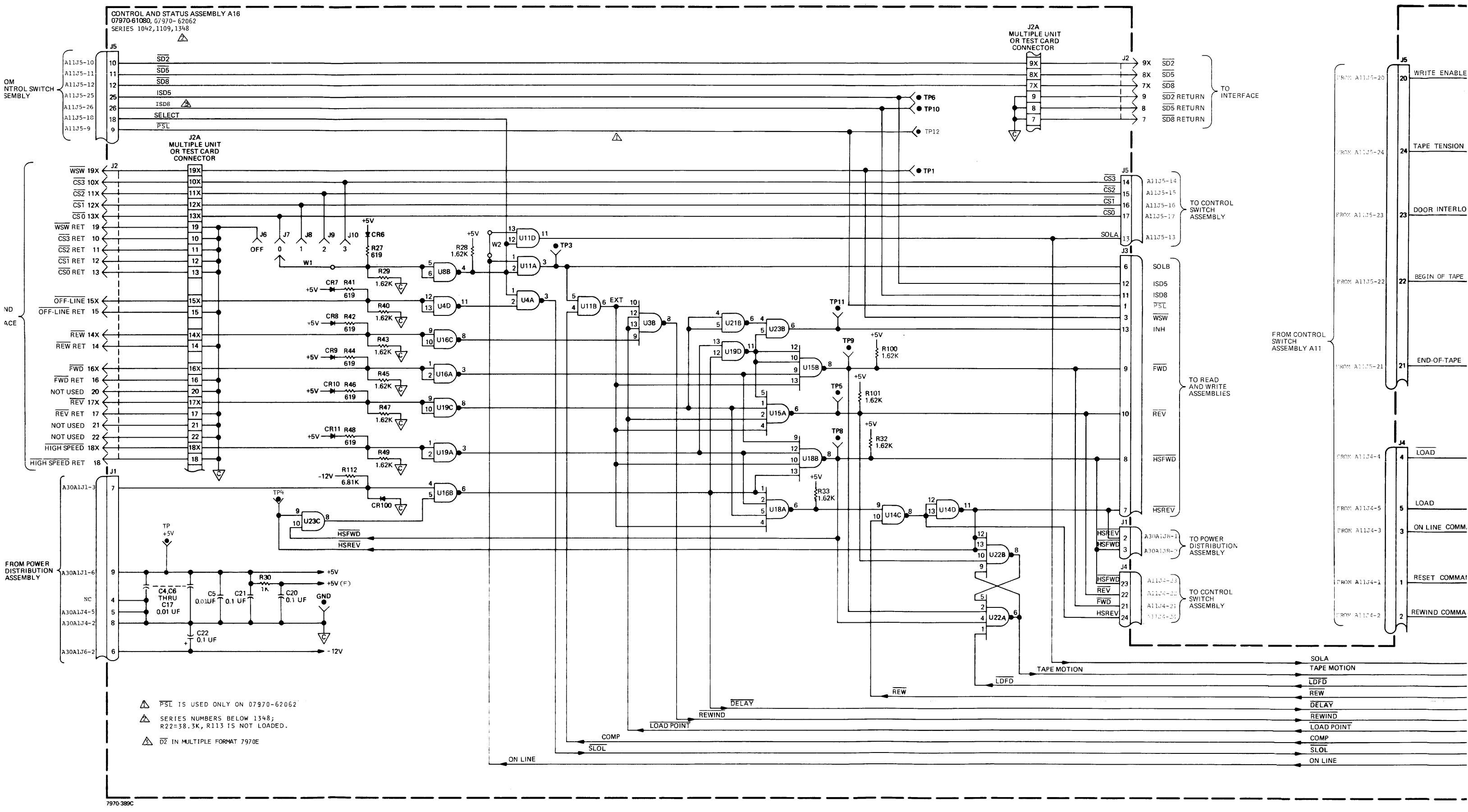
## PE TRANSFORMER ASSEMBLY

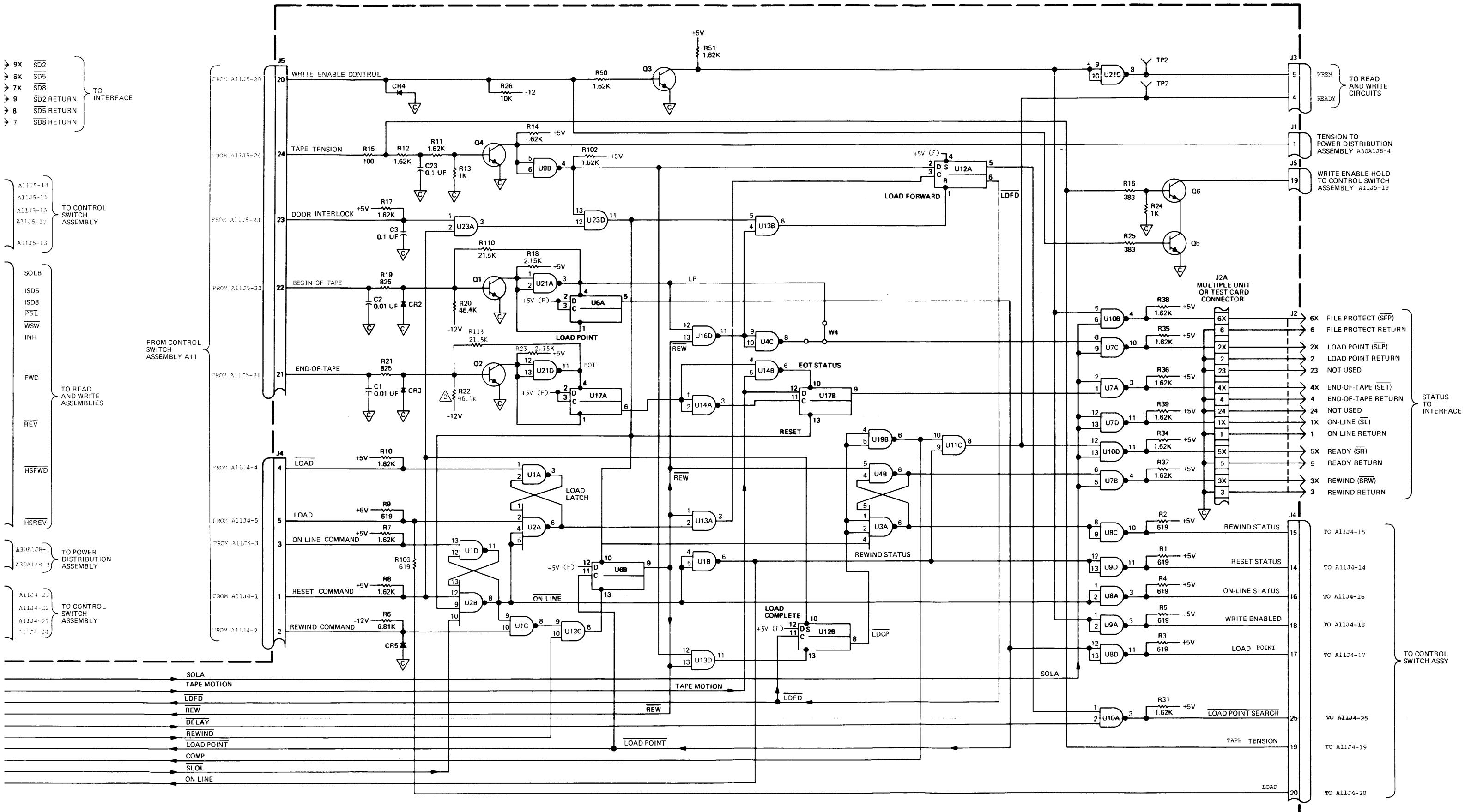
07970-62073



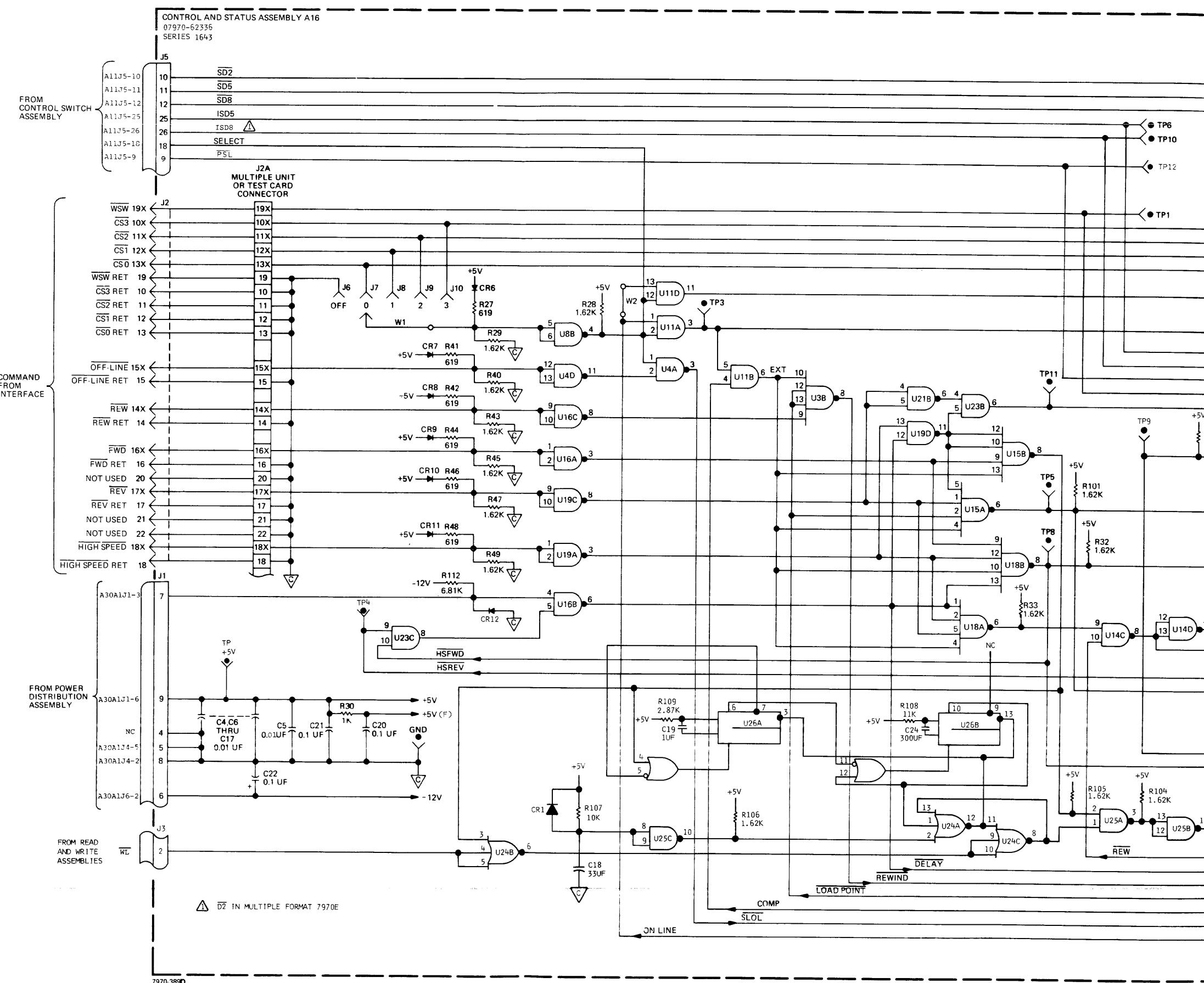
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62073 9100-3330	PE TRANSFORMER ASSEMBLY TRANSFORMER, Power (T1)
2	0570-0108	BOLT, hex, $\frac{1}{2}$ in.
3	3050-0723	WASHER, Flat, .261D
4	3050-0225	WASHER, Flat $\frac{1}{4}$ in.
5	2190-0431	WASHER, Lock, hel, $\frac{1}{4}$ in.
6	2950-0004	NUT, $\frac{1}{4}$ -20
7	2110-0365	FUSE, 4A, 250V, SLO BLO, (F1)
*8	2110-0303	FUSE, 2A, 250V, SLO BLO, (F2)
9	1400-0084	FUSE HOLDER, Post Type, (XF1, XF2)
10	2190-0037	WASHER, Lock, .5 Int.
11	0900-0016	O-RING, .5in. ID
12	2950-0038	NUT, $\frac{1}{2}$ -24
13	0400-0056	BUSHING, Snap, Nylon
14	0360-0043	TERM, Solder Lug #5
15	0362-0321	LUG, Crimp, #6
16	2360-0203	SCREW, 6-32, .625 Pan
17	2420-0002	NUT, hex, 6-32
18	2420-0001	NUT, hex, 6-32
19	0360-1590	TERMINAL STRIP, Lug Type
20	2200-0141	SCREW, 4-40, .312 Pan
21	2190-0003	WASHER, Lock, #4
22	1906-0017	DIODE BRIDGE, Rectifier
23	2200-0091	SCREW, 4-40, .562in.
24	2190-0416	WASHER, #4
25	07970-01171	PANEL, Power Transformer
26	07970-60461	BRACKET, Assembly (Includes S2)
27	9100-0531	FILTER, (FL1) and J1
28	2260-0009	NUT, Lock, 4-40
29	8120-1624	CABLE, Power
30	1401-0083	CAP, Protective
31	3101-0646	SWITCH, Toggle dpst
32	2190-0102	WASHER, Lock, 7/16
33	7120-4575	PLATE, Indicator
34	2950-0035	NUT, 15/32-32
35	8500-0059	WIRING HARNESS, Power Transformer
		COMPOUND, Thermal
*8	SERIES 1411 and up 2110-0380	FUSE, 2.5A, 250V, SLO BLO, (F2)

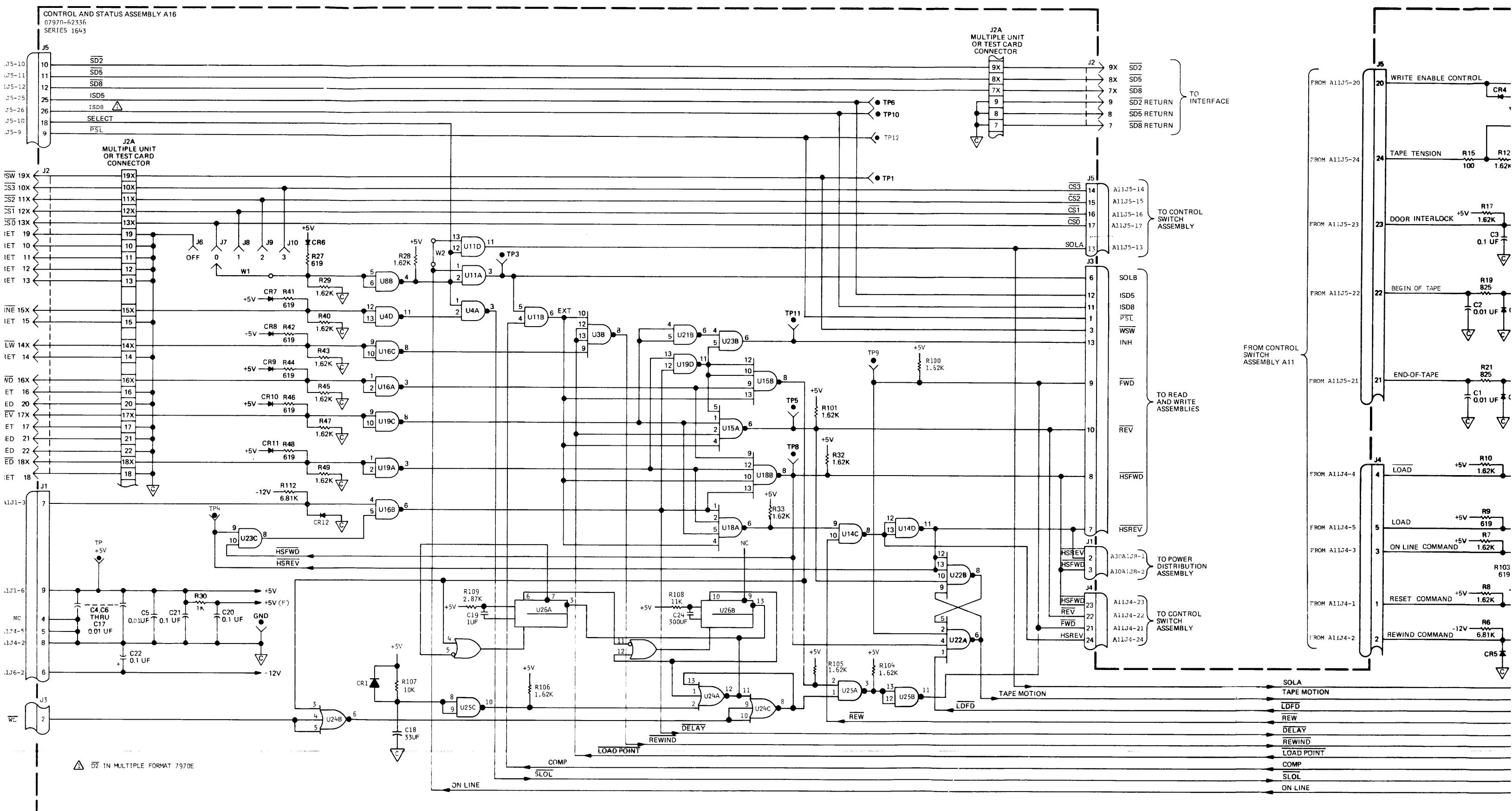


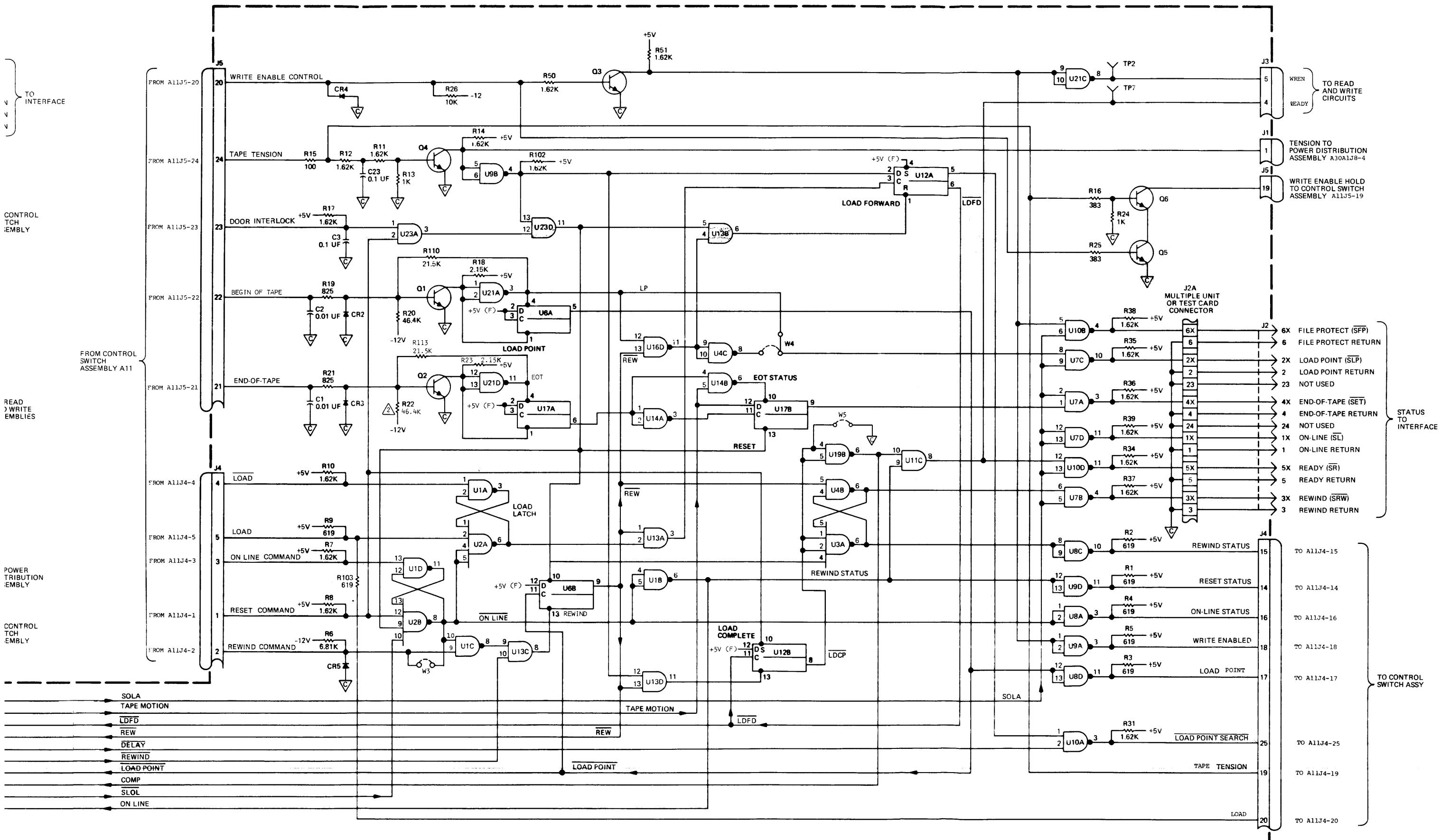




Control & Status PC Assembly A16

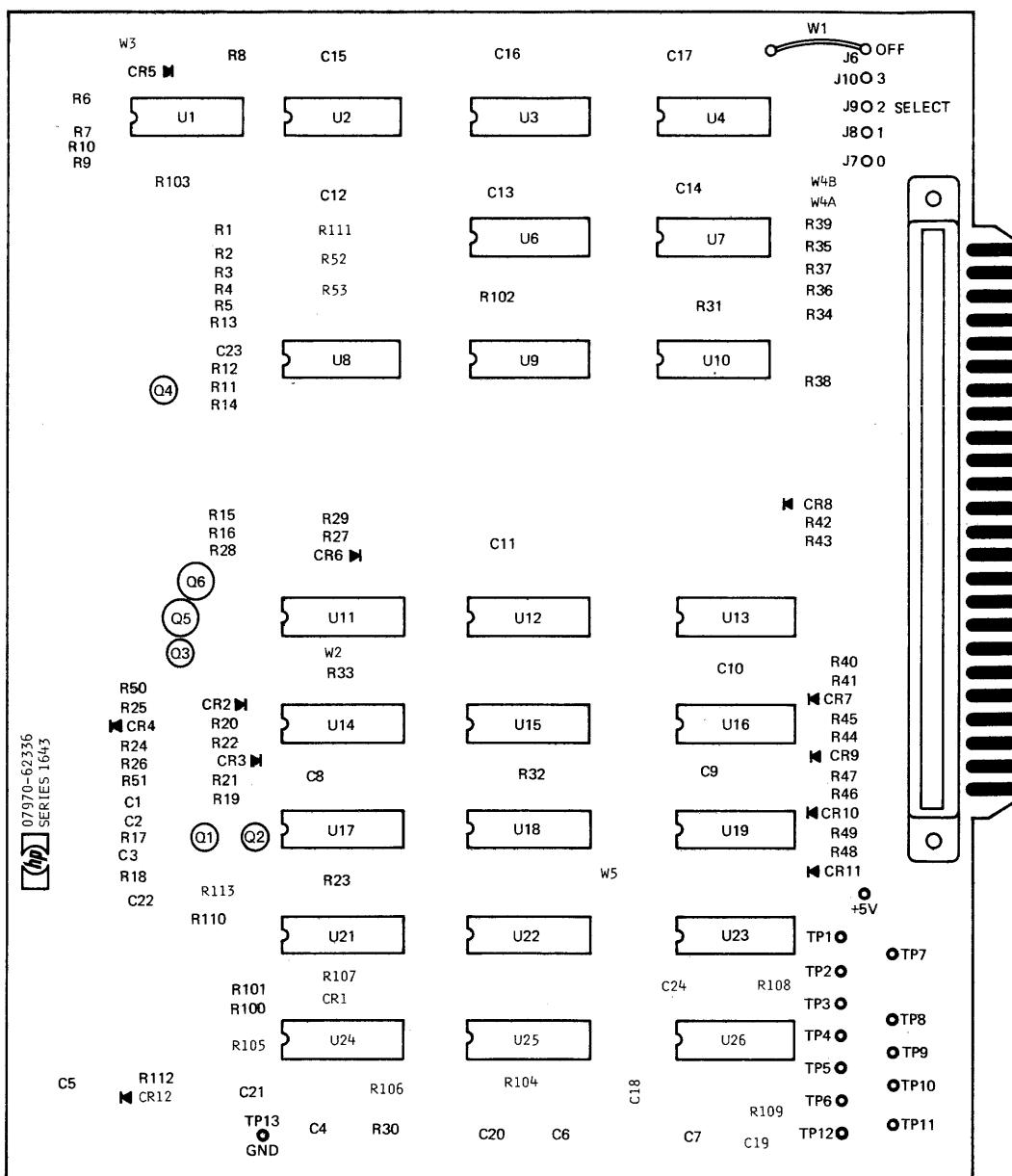






Control & Status PC Assembly A16

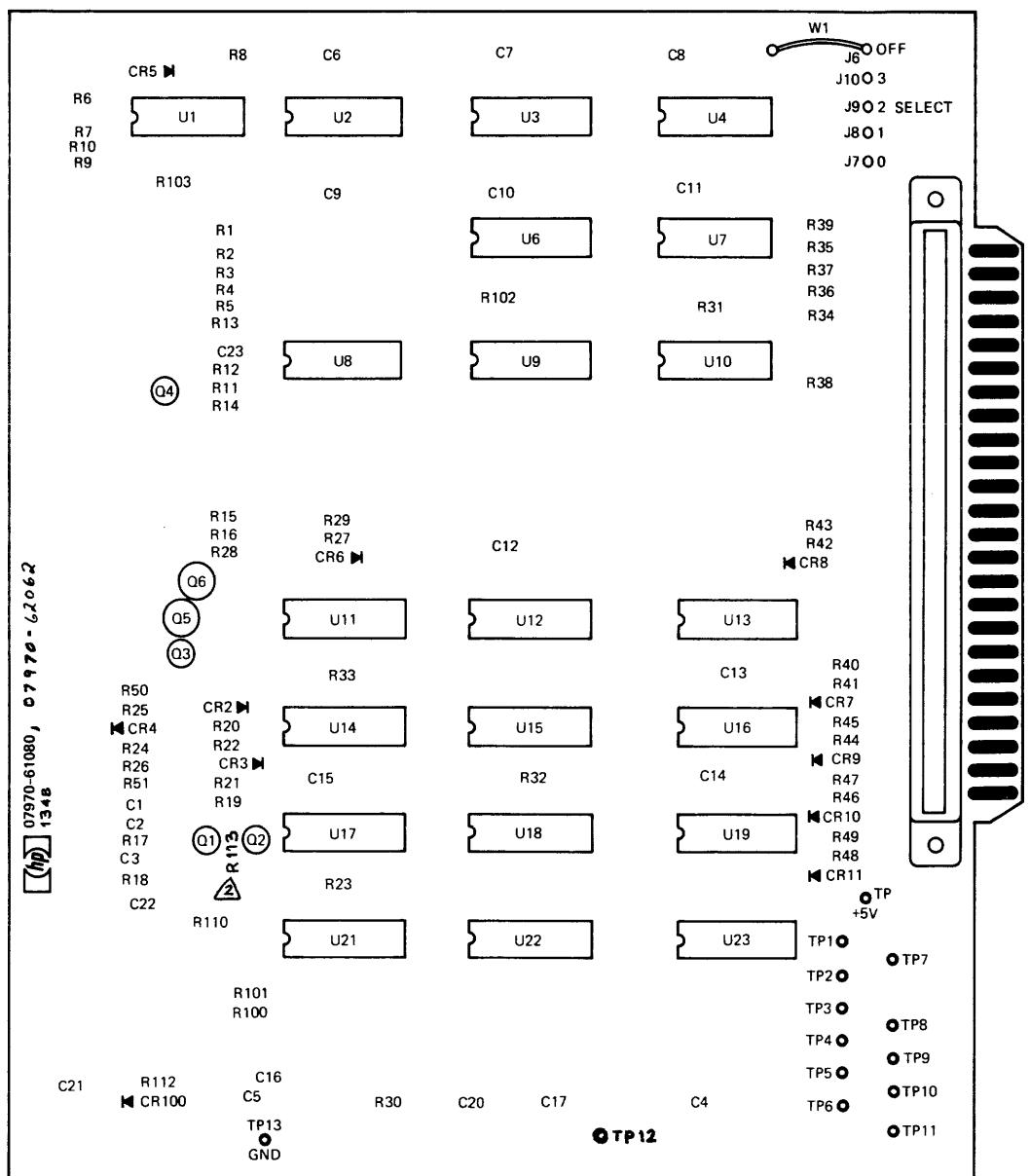
CONTROL AND STATUS PCA PARTS LIST  
07970-62336 (Series 1643)



REF. DES.	HP PART NO.	DESCRIPTION
	07970-62336	CONTROL AND STATUS PCA (Series 1643)
C1,2,4,6-17	0160-2055	CAPACITOR, fxd, .01uf, 100V
C3,5,20-23	0150-0121	CAPACITOR, fxd, .1uf, 10%
C18	0180-0229	CAPACITOR, fxd, 33uf, + 10%, 10VDC, TA
C19	0160-0127	CAPACITOR, fxd, 1uf, + 20%, 25VDC, CER
C24	0160-2207	CAPACITOR, fxd, 300 pf, + 5%, 300VDC
CR1-12	1901-0040	DIODE, 30V, 50MA
Q1-4	1854-0215	TRANSISTOR, 2N3904, PL5
Q5,6	1854-0045	TRANSISTOR, NPN, SI, TO18
R1-5,9	0340-0190	INSULATOR, Transistor
27,41,42,44, 46,48,103	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R6,112	0757-0439	RESISTOR, fxd, 6.81K, 1%, .125W
R7,8,10-12	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
14,17,28,29, 31-40,43,45, 47,49-51,100- 102,104-106		
R13,24,30	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R15	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R16,25	0698-3446	RESISTOR, fxd, 383K, 1%, .125W
R18,23	0698-0084	RESISTOR, fxd, 2.15K, 1%, .125W
R19,21	0757-0421	RESISTOR, fxd, 825, 1%, .125W
R20,22	0698-3162	RESISTOR, fxd, 46.4K, 1%, .125W
R26,107	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R108	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R109	0698-3151	RESISTOR, fxd, 2.87K, 1%, .125W
R110,113	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
U1,4,14, 16,19,21	1820-0054	IC, DIGITAL, 7400
U2,3,22	1820-0069	IC, DIGITAL, 7420
U6,12,17	1820-0077	IC, DIGITAL, 7474
U7-10,25	1820-0256	IC, MC858P
U11,13,23	1820-0141	IC, DIGITAL, MC3001
U15,18	1820-0348	IC, MC844P
U24	1820-0782	IC, DIGITAL, 7427
U26	1820-0515	IC, DIGITAL, F9602
TP1-TP10	1251-1115	KEY, Connector, PC
TP11	1251-2025	CONNECTOR, PC 2 x 24
TP12	1251-2361	CONNECTOR, PC, Wrap
TP13	1251-2503	CONNECTOR, Contact, PC Female
GND	1251-2504	CONNECTOR, Contact, PC Male
	07970-62286	CABLE, JUMPER

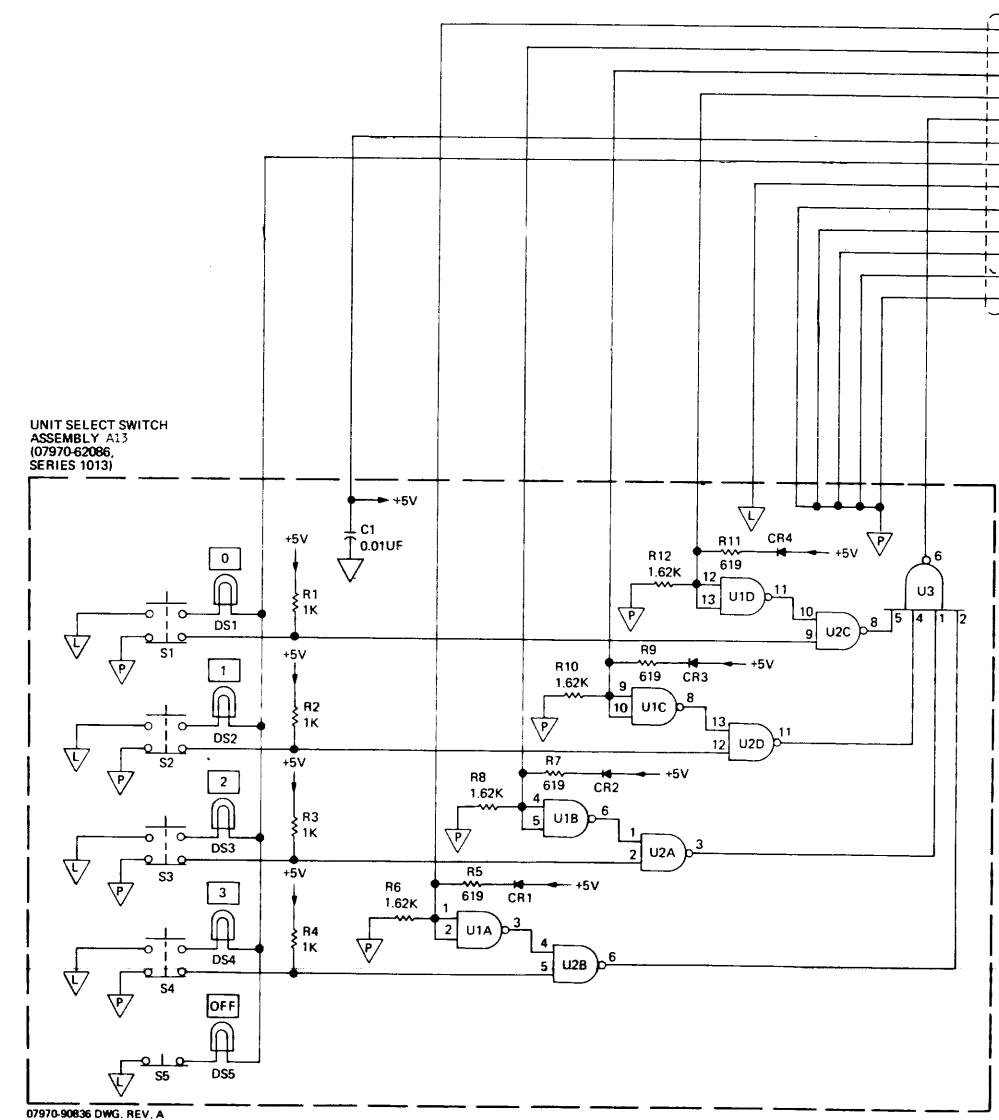
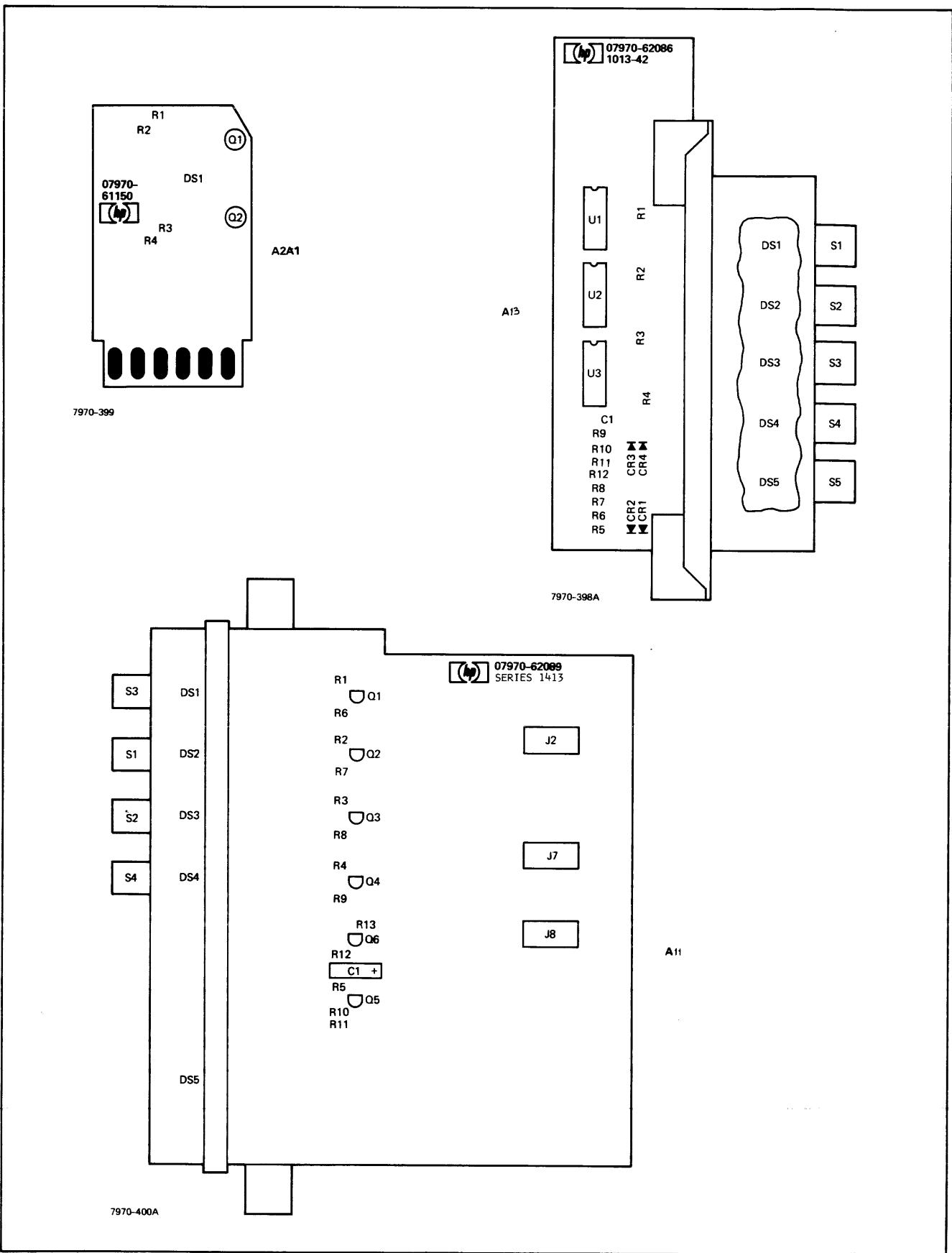
DESCRIPTION
ROL AND STATUS PCA (Series 1643)
CITOR, fxd, .01uf, 100V
CITOR, fxd, .1uf, 10%
CITOR, fxd, 33uf, $\pm$ 10%, 10VDC, TA
CITOR, fxd, luf, $\pm$ 20%, 25VDC, CER
CITOR, fxd, 300 pf, $\pm$ 5%, 300VDC
E, 30V, 50mA
SISTOR, 2N3904, PL5
SISTOR, NPN, SI, TO18
NSULATOR, Transistor
STOR, fxd, 619, 1%, .125W
STOR, fxd, 6.81K, 1%, .125W
STOR, fxd, 1.62K, 1%, .125W
STOR, fxd, 1K, 1%, .125W
STOR, fxd, 100, 1%, .125W
STOR, fxd, 383K, 1%, .125W
STOR, fxd, 2.15K, 1%, .125W
STOR, fxd, 825, 1%, .125W
STOR, fxd, 46.4K, 1%, .125W
STOR, fxd, 10K, 1%, .125W
STOR, fxd, 11K, 1%, .125W
STOR, fxd, 2.87K, 1%, .125W
STOR, fxd, 21.5K, 1%, .125W
DIGITAL, 7400
DIGITAL, 7420
DIGITAL, 7474
MC858P
DIGITAL, MC3001
MC844P
DIGITAL, 7427
DIGITAL, F9602
Connector, PC
ECTOR, PC 2 x 24
ECTOR, PC, Wrap
ECTOR, Contact, PC Female
ECTOR, Contact, PC Male
E, JUMPER

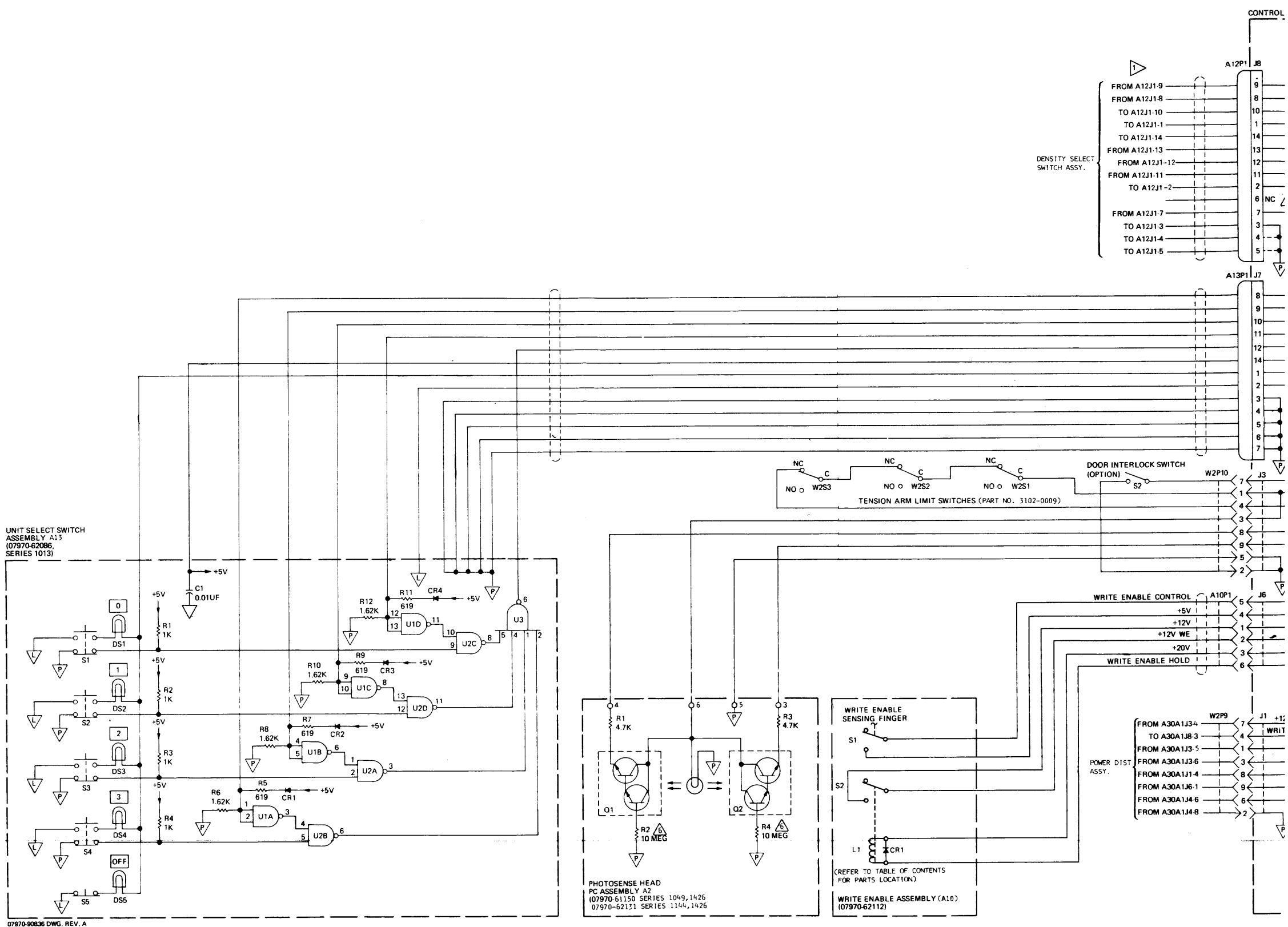
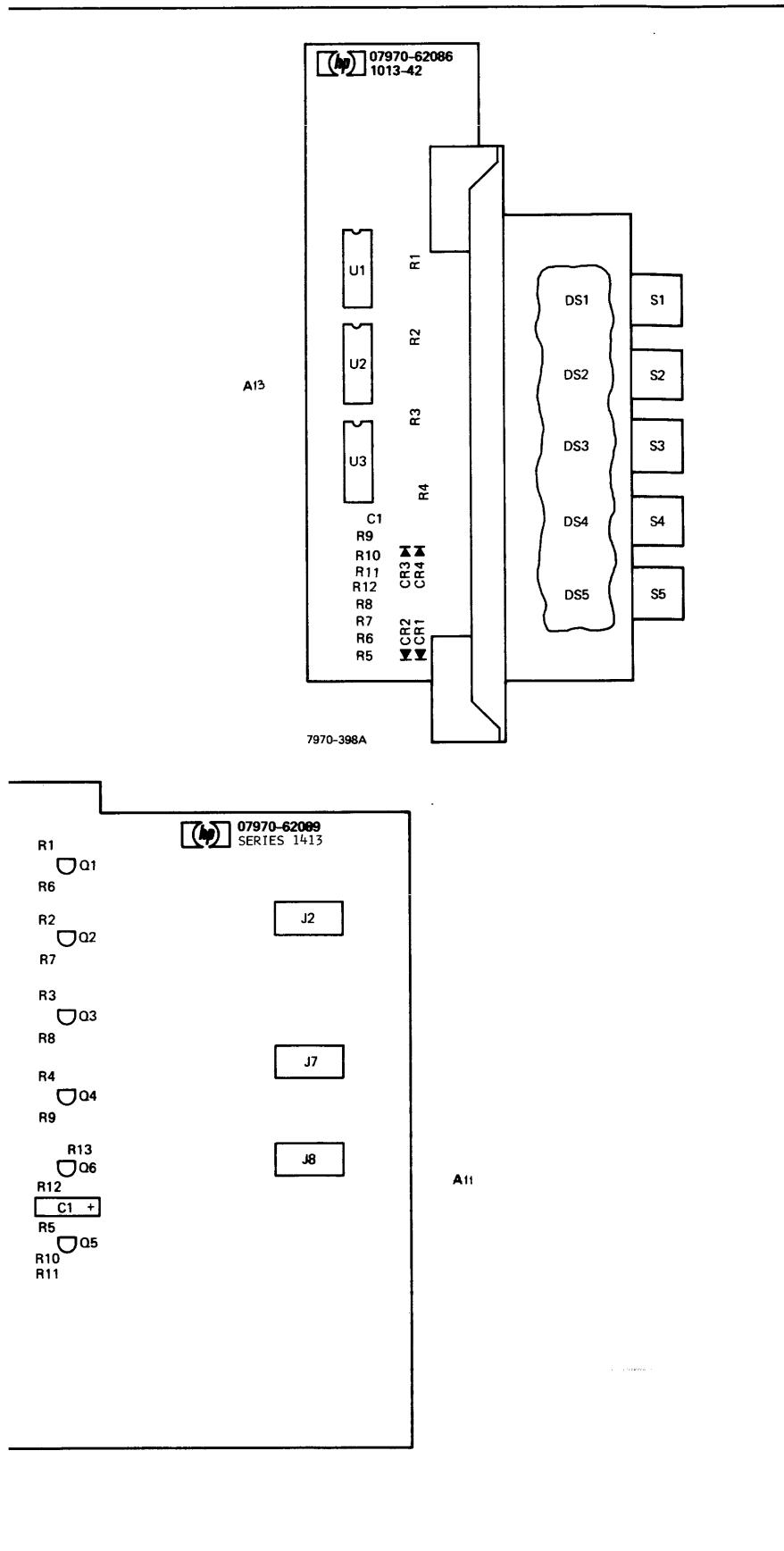
CONTROL AND STATUS PCA PARTS LIST  
07970-61080 (Series 1042, 1109, 1348)  
07970-62062 (Series 1042, 1109, 1348)

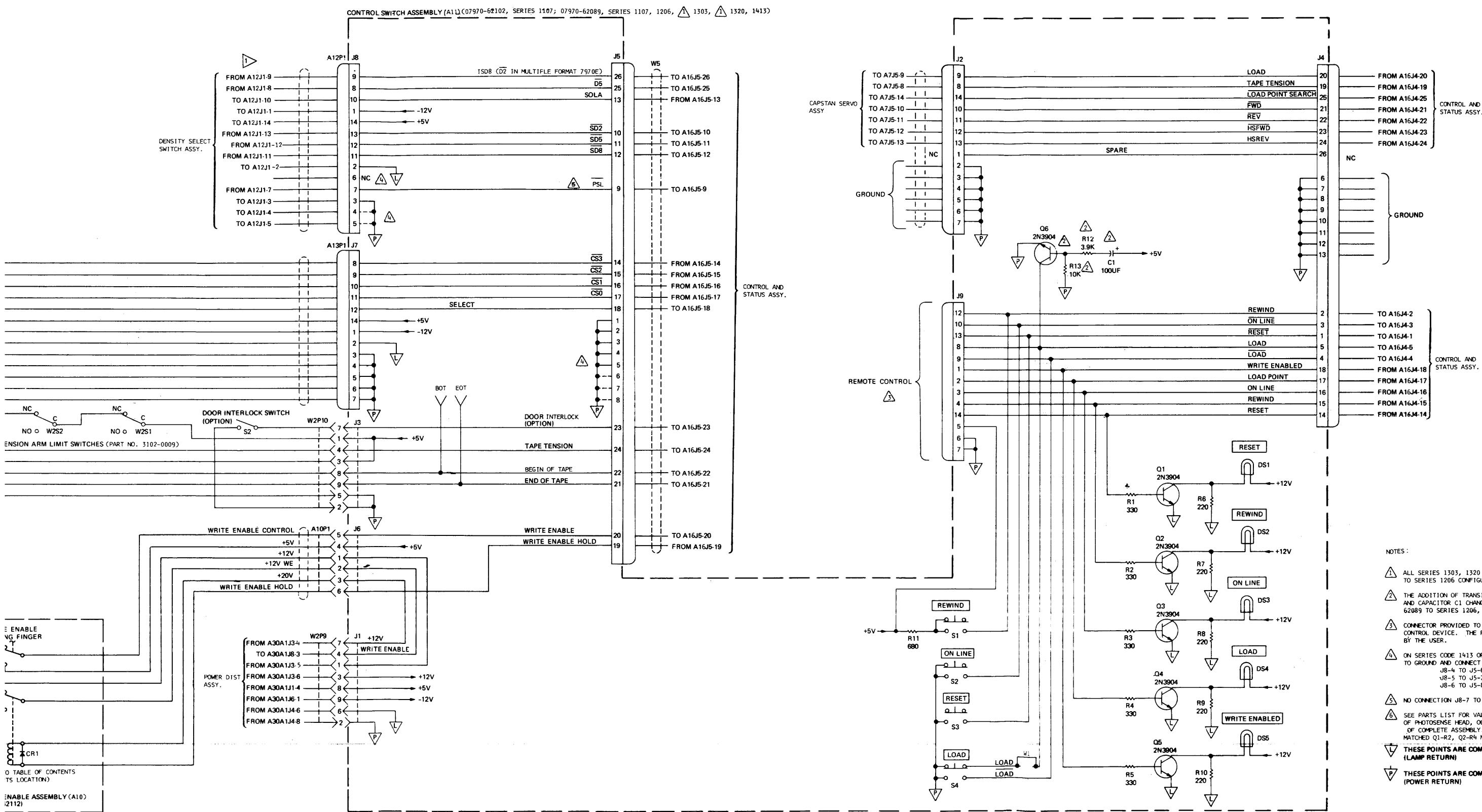


REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-61080	CONTROL & STATUS PCA (1042, 1109)
*C1,2,4-16	0160-2055	CAPACITOR, fxd, .01uf, 100V
*C3,17,20-23	0150-0121	CAPACITOR, fxd, .1uf, 10%
CR2-11,100	1901-0040	DIODE, 30V, 50MA
Q1-4	1854-0215	TRANSISTOR, 2N3904, PL5
Q5,6	1854-0045	TRANSISTOR, NPN Silicone TO18
R1-5,9,27,41,42 44,46,48,103	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R6,112	0757-0439	RESISTOR, fxd, 6.81K, 1%, .125W
R7,8,10,11,12,14 17,28,29,31,40,43, 45,47,49,51,100-102	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R13,24,30	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R15	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R16,25	0698-3446	RESISTOR, fxd, 383, 1%, .125W
R18,23	0698-0084	RESISTOR, fxd, 2.15K, 1%, .125W
R19,21	0757-0421	RESISTOR, fxd, 825, 1%, .125W
R20	0698-3162	RESISTOR, fxd, 46.6K, 1%, .125W
*R22	0698-3161	RESISTOR, fxd, 38.3K, 1%, .125W
R26	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
*R110,113	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
U1,4,14,16,19,21	1820-0054	IC, DIGITAL, 7400
U2,3,22	1820-0069	IC, DIGITAL, 7420
U6,12,17	1820-0077	IC, DIGITAL, FF, 7474
U7-10	1820-0256	IC, MC858P
U11,13,23	1820-0141	IC, DIGITAL, MC3001
U15,18	1820-0348	IC, MC844P
	1251-2025	CONNECTOR, PC 2X24
	1251-2503	CONNECTOR, Contact, PC Female
	1251-2504	CONNECTOR, Contact, PC Male
	1251-1115	KEY, Connector, PC
	07970-62286	CABLE JUMPER
	07970-62062	CONTROL & STATUS PCA (Series 1042,1109)
*C5	0150-0121	CAPACITOR, fxd, 1uf
*C17	0160-2055	CAPACITOR, fxd, .01uf
	07970-61080/62062	Series 1348
*R22	0698-3162	RESISTOR, fxd, 46.4K
*R113	0757-0199	RESISTOR, fxd, 21.5K, 1%, Added to Bd.

DESCRIPTION
OL & STATUS PCA (1042, 1109)
ITOR, fxd, .01uf, 100V
ITOR, fxd, .1uf, 10%
, 30V, 50MA
ISTOR, 2N3904, PL5
ISTOR, NPN Silicone T018
TOR, fxd, 619, 1%, .125W
TOR, fxd, 6.81K, 1%, .125W
TOR, fxd, 1.62K, 1%, .125W
TOR, fxd, 1K, 1%, .125W
TOR, fxd, 100, 1%, .125W
TOR, fxd, 383, 1%, .125W
TOR, fxd, 2.15K, 1%, .125W
TOR, fxd, 825, 1%, .125W
TOR, fxd, 46.6K, 1%, .125W
TOR, fxd, 38.3K, 1%, .125W
TOR, fxd, 10K, 1%, .125W
TOR, fxd, 21.5K, 1%, .125W
IGITAL, 7400
IGITAL, 7420
IGITAL, FF, 7474
C858P
IGITAL, MC3001
C844P
CTOR, PC 2X24
CTOR, Contact, PC Female
CTOR, Contact, PC Male
Connector, PC
JUMPER
OL & STATUS PCA (Series 1042,1109)
ITOR, fxd, 1uf
ITOR, fxd, .01uf
s 1348
TOR, fxd, 46.4K
TOR, fxd, 21.5K, 1%, Added to Bd.







Control Switch Assembly A11, Photosense Head Assembly A2,  
and Unit Select Switch Assembly A13

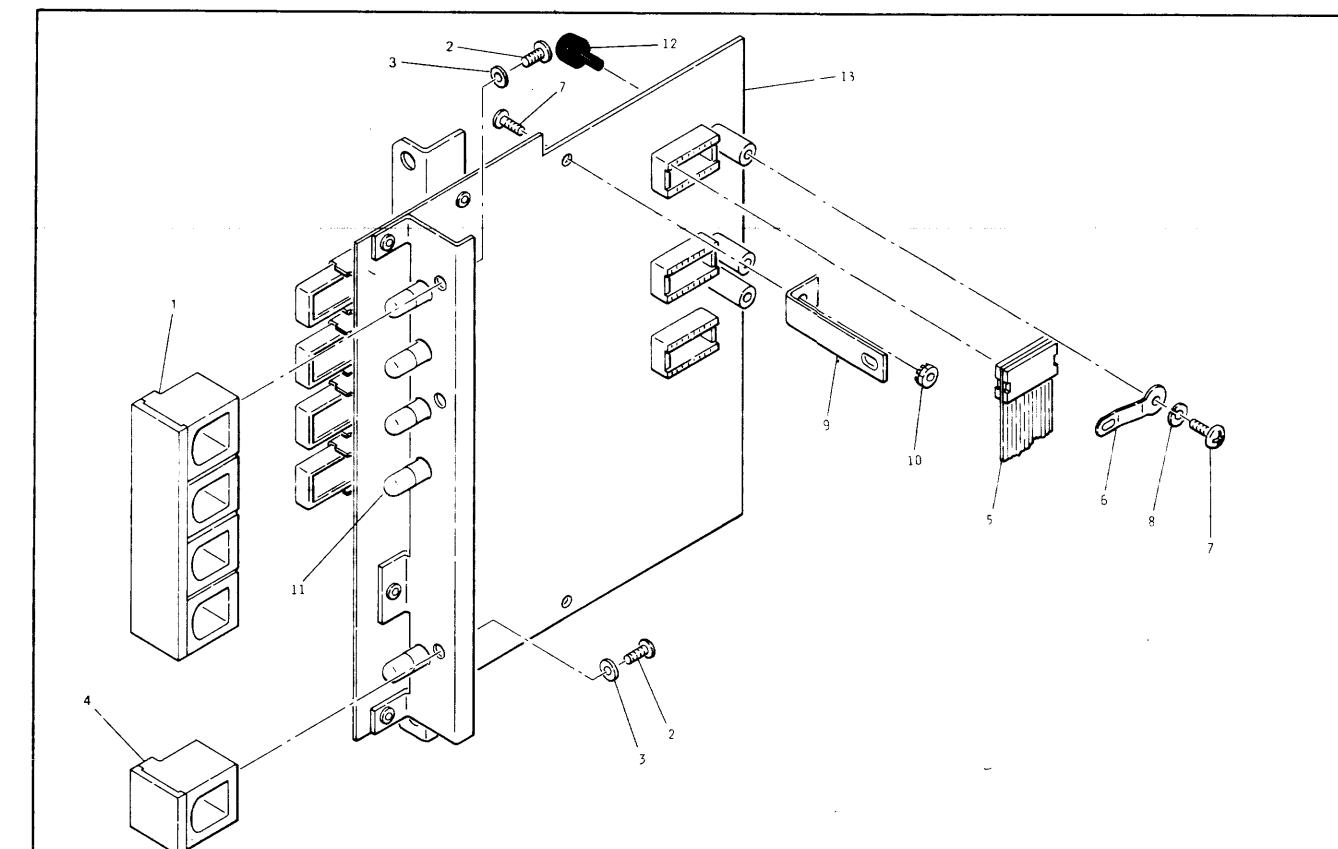
## CONTROL SWITCH PCA

07970-62089 (Series 1107, 1206, 1413)

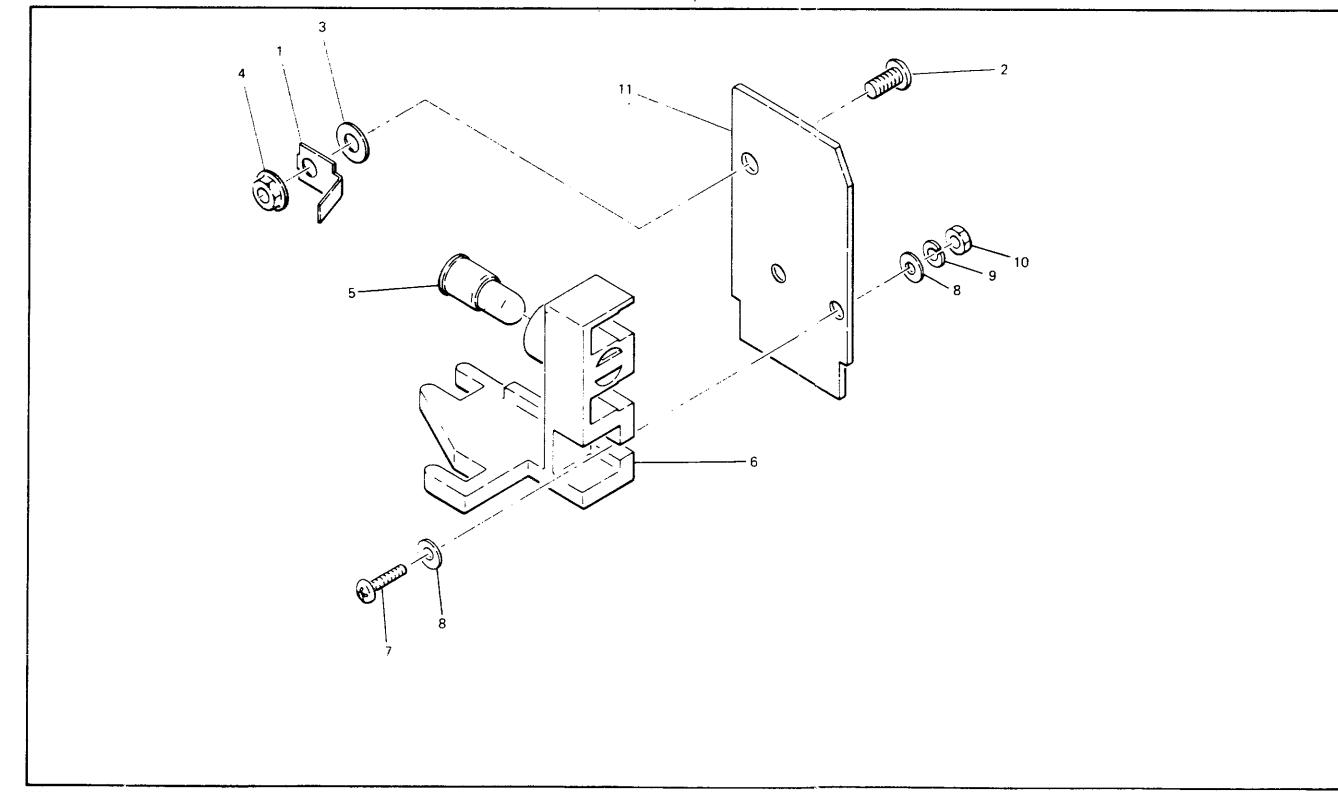
07970-62102 (Series 1107)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62089 07970-62102	CONTROL SWITCH (Series 1107) CONTROL SWITCH (Series 1107)
*C1		
DS1-5	2140-0209	LAMP, 382, 14V
*Q1-6	1854-0215	TRANSISTOR, 2N3904, PL5
R1-5	0683-3315	RESISTOR, fxd, 330, 5%, .25W
R6-10	0686-2215	RESISTOR, fxd, 220, 5%, .5W
R11	0683-6815	RESISTOR, fxd, 680, 5%, .25W
*R12, 13		RESISTOR, fxd
S1-4	3101-0846	SWITCH, Pushbutton
SJ2, 7, 8	1200-0426	IC, SOCKET
SJ4, 5	1251-2361	CONTACT, PC MALE
1	07970-60340	LENS BLOCK ASSY
2	0624-0077	SCREW, Tapping, 4-40
3	2190-0416	WASHER, Flat, #3
4	07970-60960	LENS BLOCK, Write Enable
	0624-0077	SCREW, Tapping, 4-40
	2190-0416	WASHER, Flat, #4
5	07970-62026	CABLE, CAPSTAN
6	07970-00620	CLAMP
7	2360-0115	SCREW, 6-32X, .312L
8	2190-0400	WASHER, Flat
9	07970-00310	BRACKET, ANGLE
10	2360-0115	SCREW, 6-32X, .312L
11	2420-0001	NUT, HEX, 6-32
12	2140-0209	LAMP, 382
13	0403-0088	BUMPER, RUBBER, 6-32 Shank
	07970-80080	CONTROL SWITCH, PCB
	Series 1206	07970-62089
*C1	0180-0061	CAPACITOR, 100uf, -10+75%
*Q6	1854-0215	2N3904
*R12	0683-3925	3900, 5%, .25W
*R13	0683-1035	10K, 5%, .25W
	Series 1413	07970-62089 NO PARTS CHANGE, Schematic Only

} Added to  
Board



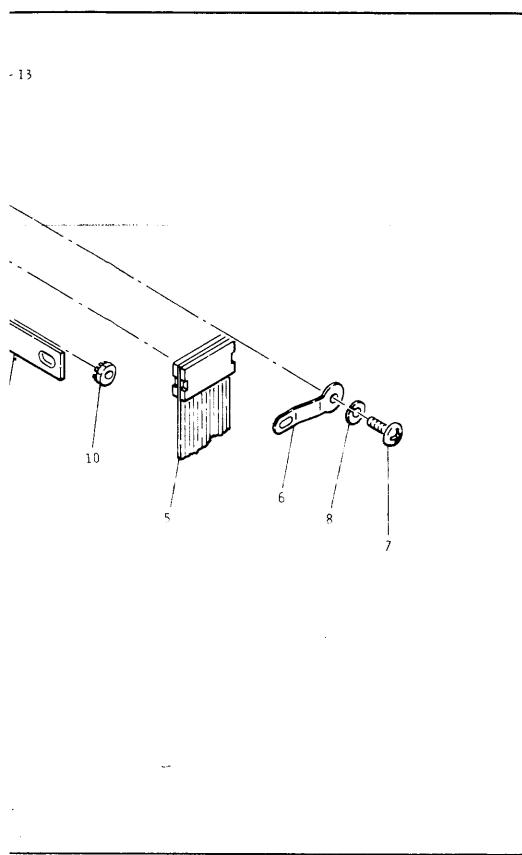
2225-105A Control Switch Assembly A11



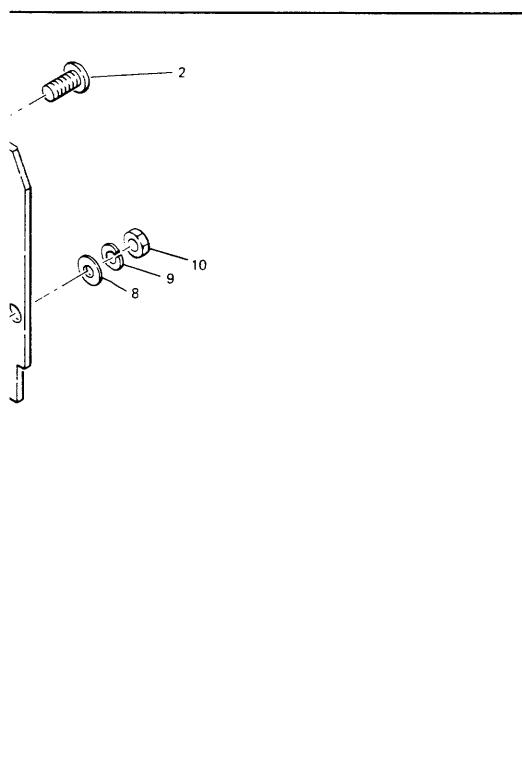
2225-106

Photosense Head Assembly A2

PHOTONSENSE HEAD PCA PARTS LIST  
 07970-61150 (Series 1049, 1426)  
 07970-62131 (Series 1144, 1426)

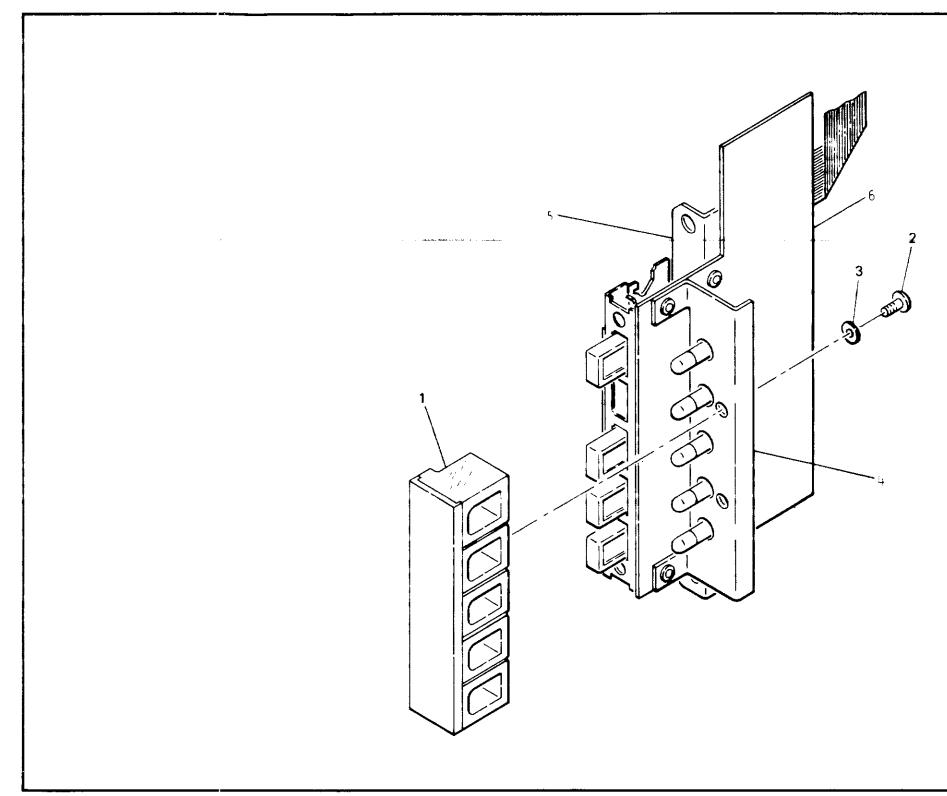


A11



y A2

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-61150	PHOTONSENSE HEAD PCA, (Series 1049)
DS1	2140-0203	LAMP, 8428, 5V
Q1, Q2	1990-0087	PHOTOTRANSISTOR, Silicon
	0340-0726	INSULATOR, Transistor
*R1, 3	0698-5999	RESISTOR, fxd, 4.7K, 5%, .125W
*R2, 4	0698-7027	RESISTOR, fxd, 10M, 10%, .125W
1	07970-00010	LAMP CONTACT
2	2200-0139	SCREW, 4-40, .25 Pan
3	3050-0105	WASHER, #4
4	2260-0009	NUT, LOCK, 4-40
5	2140-0203	LAMP
6	0050-1647	CASTING, PHOTONSENSE Aluminum
7	0520-0129	SCREW, 2-56, .312
8	2190-0417	WASHER, Flat
9	2190-0045	WASHER, Lock
10	0610-0001	NUT, Hex, 2-56
11	07970-82042	PHOTONSENSE HEAD PCB
	07970-61150	(Series 1426)
*R2, 4	0698-7187	RESISTOR, fxd, 2M, 5%, .125W
	07970-62131	(Series 1144)
*R1, 3	0757-0940	RESISTOR, fxd, 4.7K, 2%, .125W
*R2, 4	0698-8157	RESISTOR, fxd, 9.1M, 1%, .125W
	07970-62131	(Series 1426)
*R2, 4	0698-8156	RESISTOR, 2.2M, 1%, .125W



2225-109A

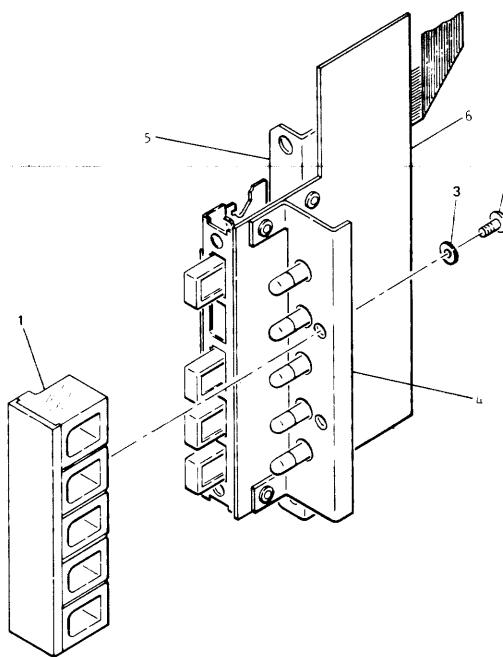
Unit Select Switch Assembly A13

UNIT SELECT SWITCH ASSY PARTS LIST  
 07970-62086 (Series 1013)

REF. DES. / INDEX NO.	HP PART NO.	DESCRIP
	07970-62086	UNIT SELECT SWIT
C1	0160-0161	CAPACITOR, fxd,
CR1-4	1901-0040	DIODE, 30V, 50 M
DS1-5	2140-0209	LAMP, 382, 14V
R1-4	0757-0280	RESISTOR, fxd, 1
R5, 7, 9, 11	0757-0418	RESISTOR, fxd, 6
R6, 8, 10, 12	0757-0428	RESISTOR, fxd, 1
U1, 2	1820-0054	IC, DIGITAL, 740
U3	1820-0348	IC, MC844P
1	07970-60360	LENS BLOCK, Unit
2	0624-0077	SCREW, Tapp
3	2190-0416	WASHER, Fla
4	07970-00540	BRACKET, LENS
5	07970-00550	BRACKET, MOUNTIN
6	07970-80100	UNIT SELECT PCB

Control Switch Assembly A11, Photosense He  
 and Unit Select Switch Assembly A13

DESCRIPTION
PHOTONSENSE HEAD PCA, (Series 1049)
LAMP, 8428, 5V
PHOTOTRANZISTOR, Silicon
INSULATOR, Transistor
RESISTOR, fxd, 4.7K, 5%, .125W
RESISTOR, fxd, 10M, 10%, .125W
LAMP CONTACT
SCREW, 4-40, .25 Pan
WASHER, #4
NUT, LOCK, 4-40
LAMP
CASTING, PHOTONSENSE Aluminum
SCREW, 2-56, .312
WASHER, Flat
WASHER, Lock
NUT, Hex, 2-56
PHOTONSENSE HEAD PCB
(Series 1426)
RESISTOR, fxd, 2M, 5%, .125W
(Series 1144)
RESISTOR, fxd, 4.7K, 2%, .125W
RESISTOR, fxd, 9.1M, 1%, .125W
(Series 1426)
RESISTOR, 2.2M, 1%, .125W

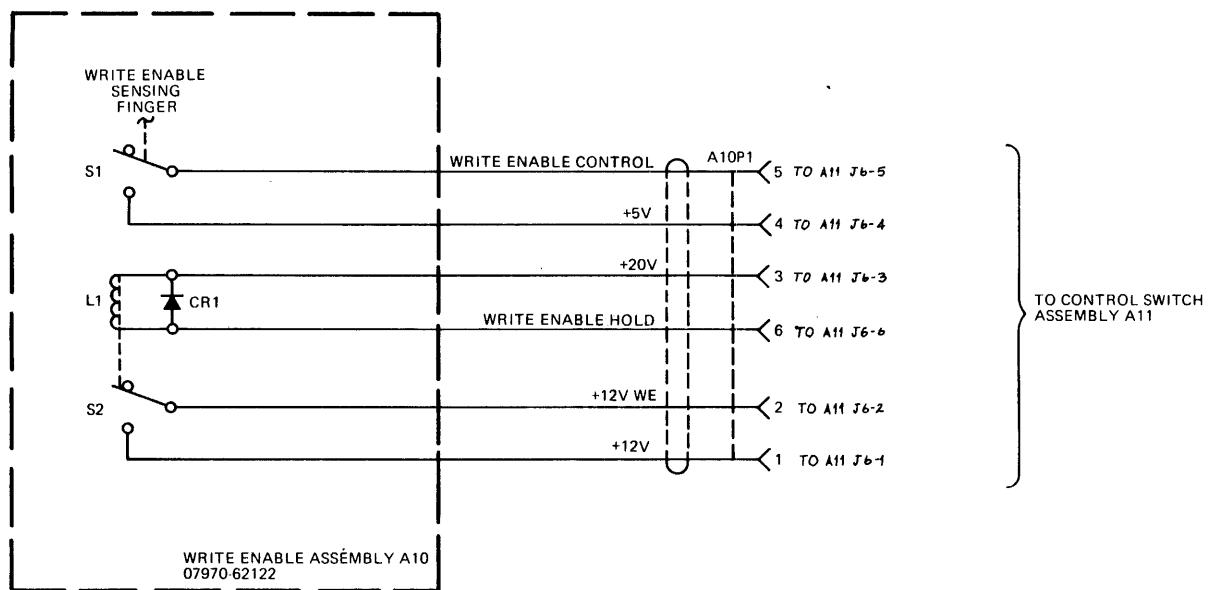


2225-109A      Unit Select Switch Assembly A13

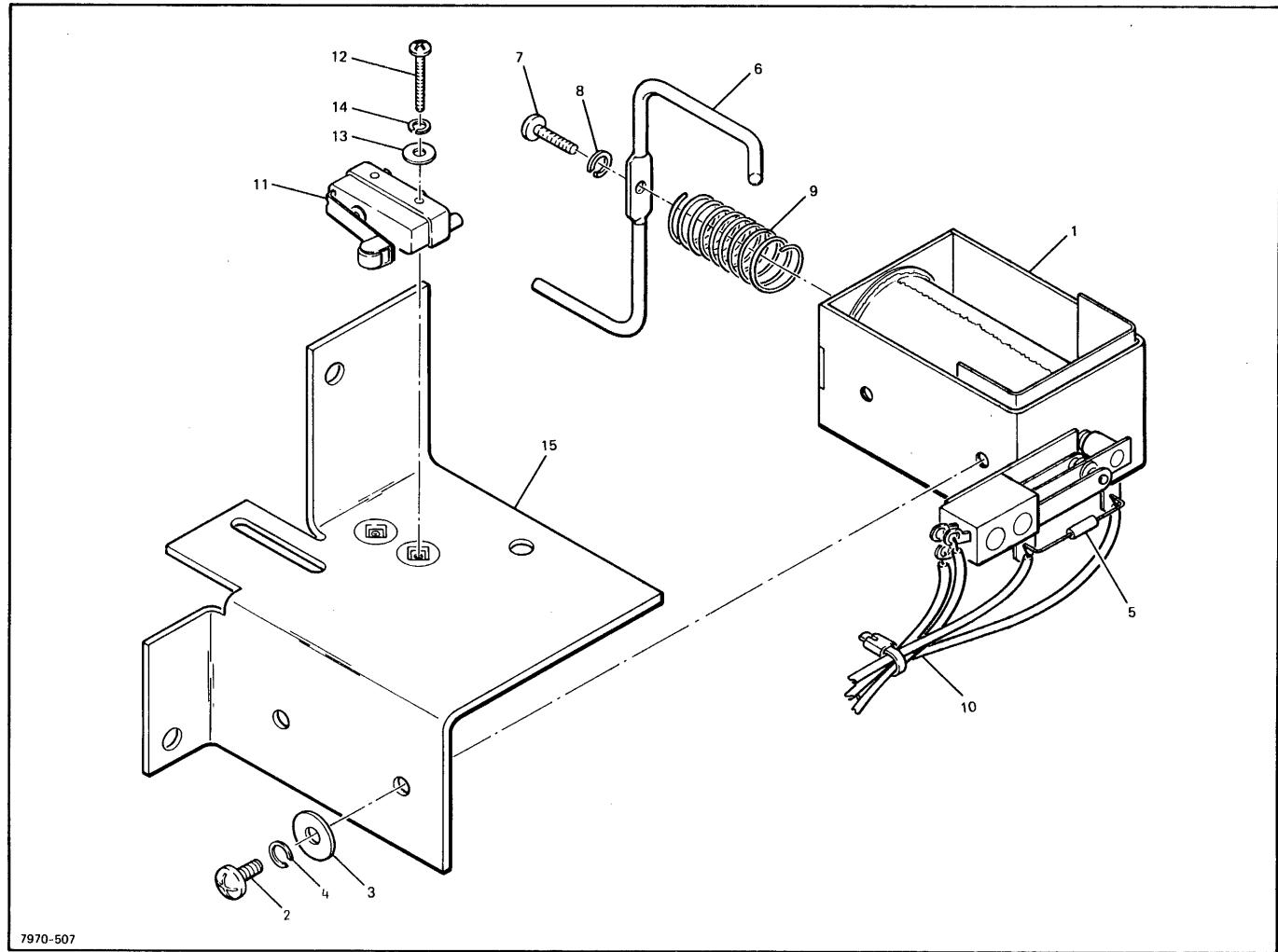
UNIT SELECT SWITCH ASSY PARTS LIST  
07970-62086 (Series 1013)

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62086	UNIT SELECT SWITCH (Series 1013)
C1	0160-0161	CAPACITOR, fxd, .01uf, 10%
CR1-4	1901-0040	DIODE, 30V, 50 MA
DS1-5	2140-0209	LAMP, 382, 14V
R1-4	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R5,7,9,11	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R6,8,10,12	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
U1,2	1820-0054	IC, DIGITAL, 7400
U3	1820-0348	IC, MC844P
1	07970-60360	LENS BLOCK, Unit Select
2	0624-0077	SCREW, Tapping 4-40
3	2190-0416	WASHER, Flat, #4
4	07970-00540	BRACKET, LENS
5	07970-00550	BRACKET, MOUNTING
6	07970-80100	UNIT SELECT PCB

Control Switch Assembly A11, Photosense Head Assembly A2,  
and Unit Select Switch Assembly A13



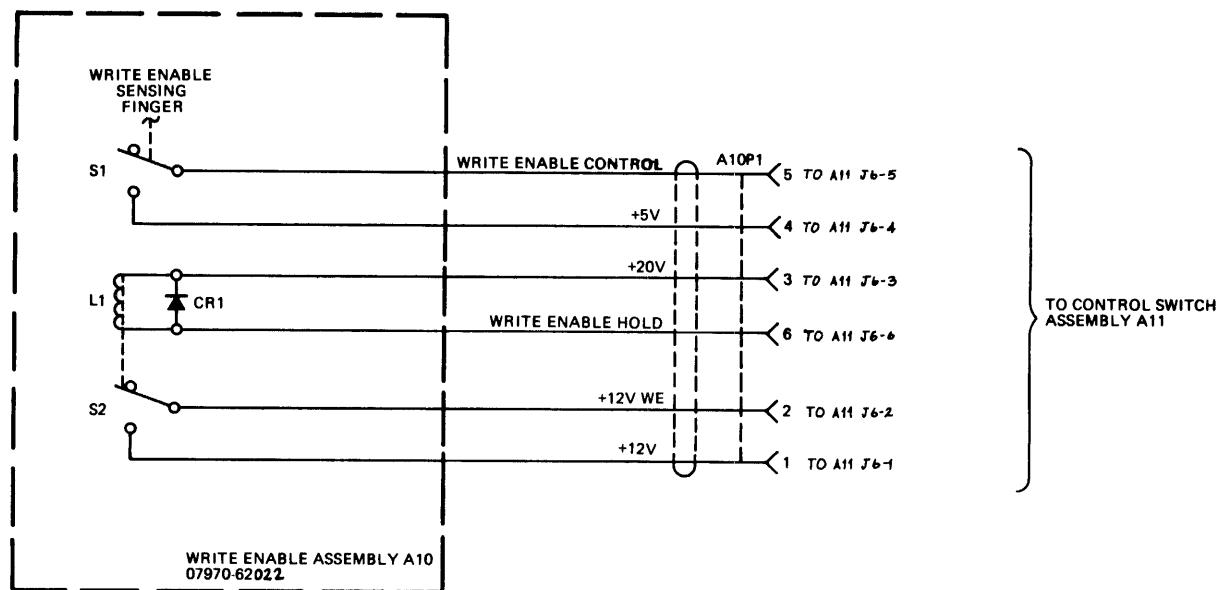
7970-525



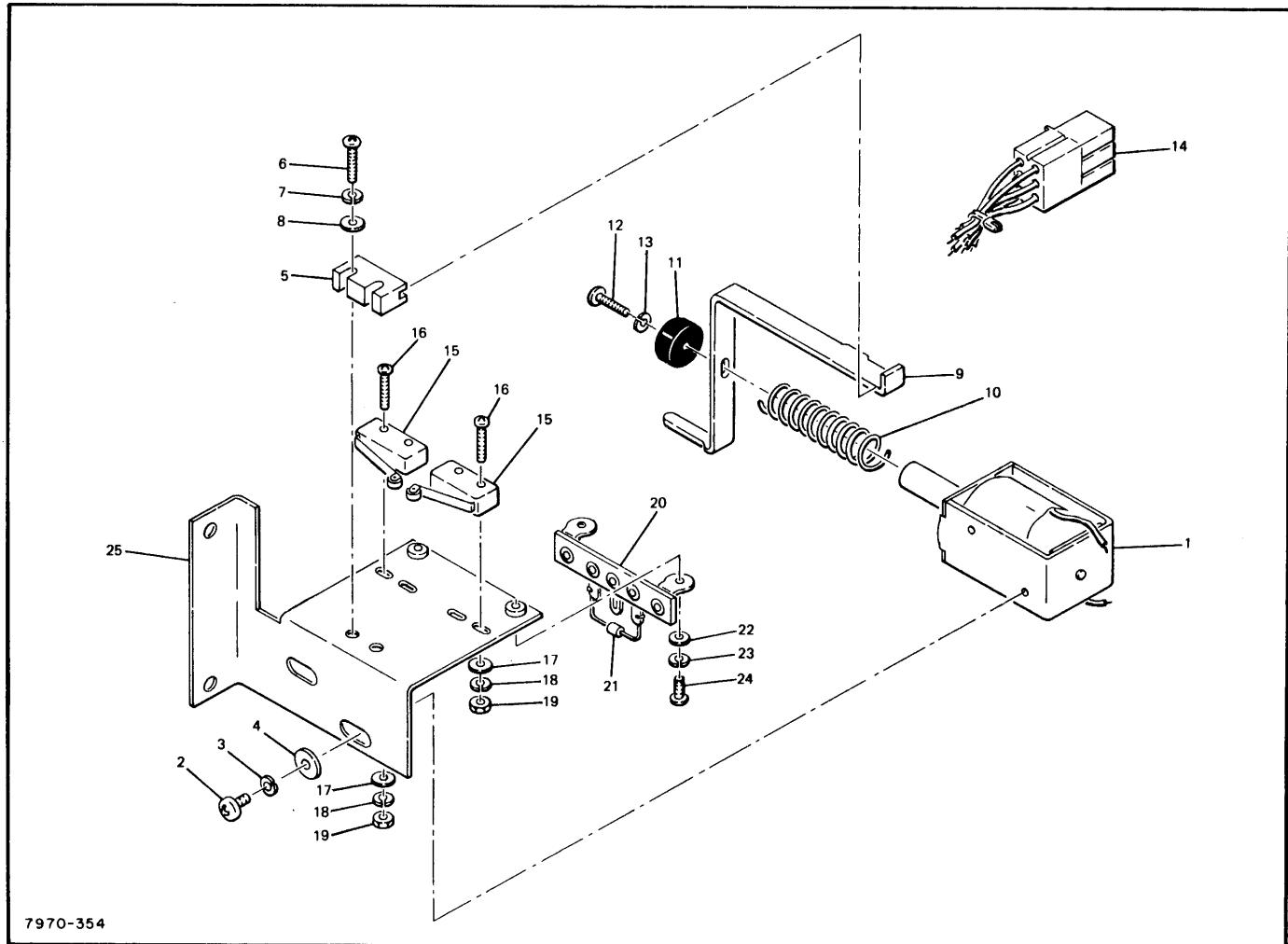
Write Enable Assembly A10

WRITE ENABLE ASSEMBLY PARTS LIST  
07970-62122

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62122	WRITE ENABLE ASSEMBLY
1	0491-0062	SOLENOID, 24 VDC, (L1)
2	2360-0193	SCREW, 6-32, .25 Pan
3	3050-0066	WASHER, Flat, #6
4	2190-0003	WASHER, Lock, #4
5	1901-0039	DIODE, 50V, 30MA (CR1)
6	1460-1472	ACTUATOR, Write Enable
7	2200-0141	SCREW, 4-40, .312 in.
8	2190-0061	WASHER, Lock, Hel, #4
9	1460-1288	SPRING, Compression
10	07970-62123	CABLE ASSEMBLY, (W1)
11	3102-0009	SWITCH, Sensitive (S2)
12	0520-0131	SCREW, 2-5X, .437 in.
13	2190-0417	WASHER, Flat, #2
14	2190-0428	WASHER, Lock, Hel, #2
15	07970-01187	BRACKET, Write Enable



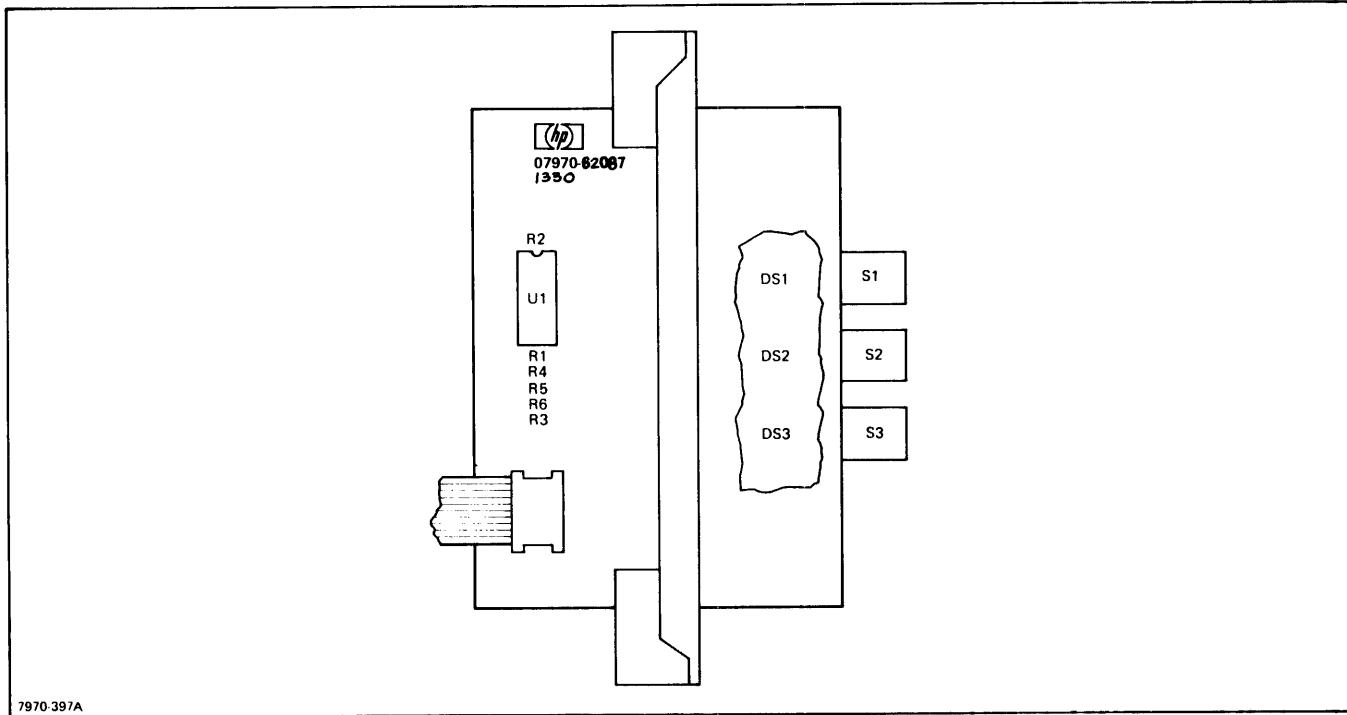
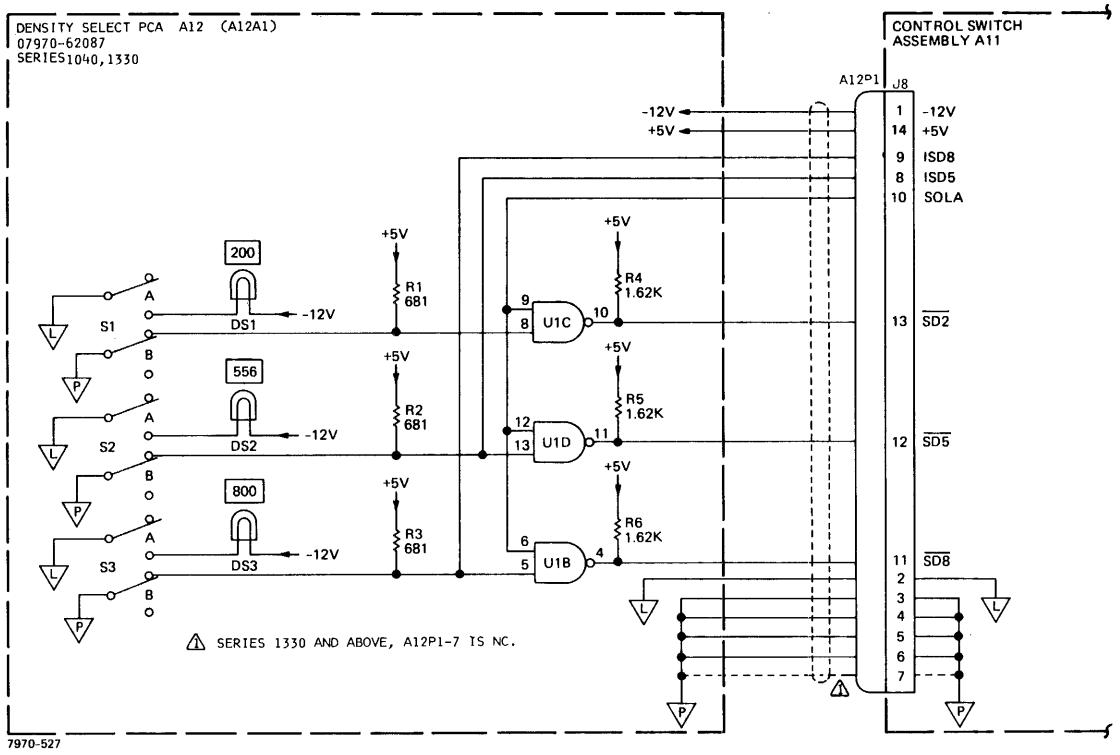
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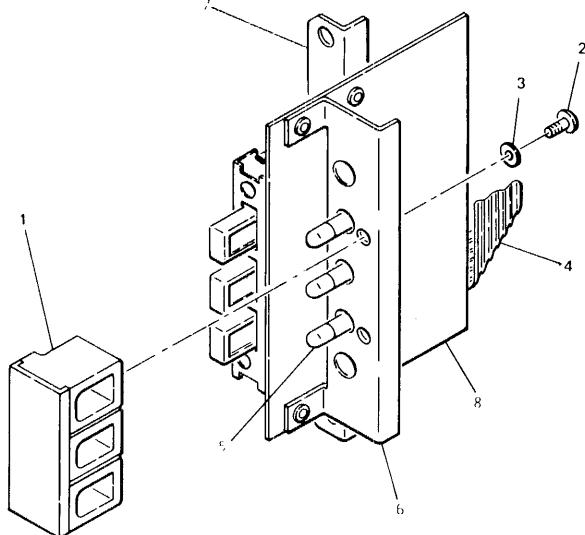
Write Enable Assembly A10

WRITE ENABLE ASSEMBLY PARTS LIST  
07970-62022

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62022	WRITE ENABLE ASEMBLY
1	0491-0058	SOLENOID, 24 VDC (L1)
2	2360-0193	SCREW, 6-32, .25 in.
3	2190-0085	WASHER, Lock, Hel, #6
4	3050-0066	WASHER, Flat, #6
5	07970-40201	GUIDE, Write Enable
6	2200-0147	SCREW, 4-40, .5 in.
7	2190-0003	WASHER, Lock, Hel, #4
8	2190-0416	WASHER, Flat, #4
9	07970-00674	ACTUATOR, Write Enable
10	1460-1239	SPRING, Compression
11	0403-0091	BUMPER, Rubber
12	2200-0145	SCREW, 4-40, .312 in.
13	2190-0003	WASHER, Lock, Hel, #4
14	07970-60641	CABLE, Write Enable (W1)
15	3102-0009	SWITCH, Sensitive (S1,2)
16	0520-0133	SCREW, 2-56, .5 in.
17	2190-0417	WASHER, Flat, #2
18	2190-0428	WASHER, Lock, Hel, #2
19	0610-0001	NUT, Hex, 2-56
20	0360-1290	STRIP, Terminal (TB1)
21	1901-0026	DIODE, SI, 200 PIV
22	2190-0416	WASHER, Flat, #4
23	2190-0003	WASHER, Lock, Hel, #4
24	2200-0139	SCREW, 4-40, .25 in.
25	07970-00675	BRACKET, Write Enable



Density Select Switch Assembly A12

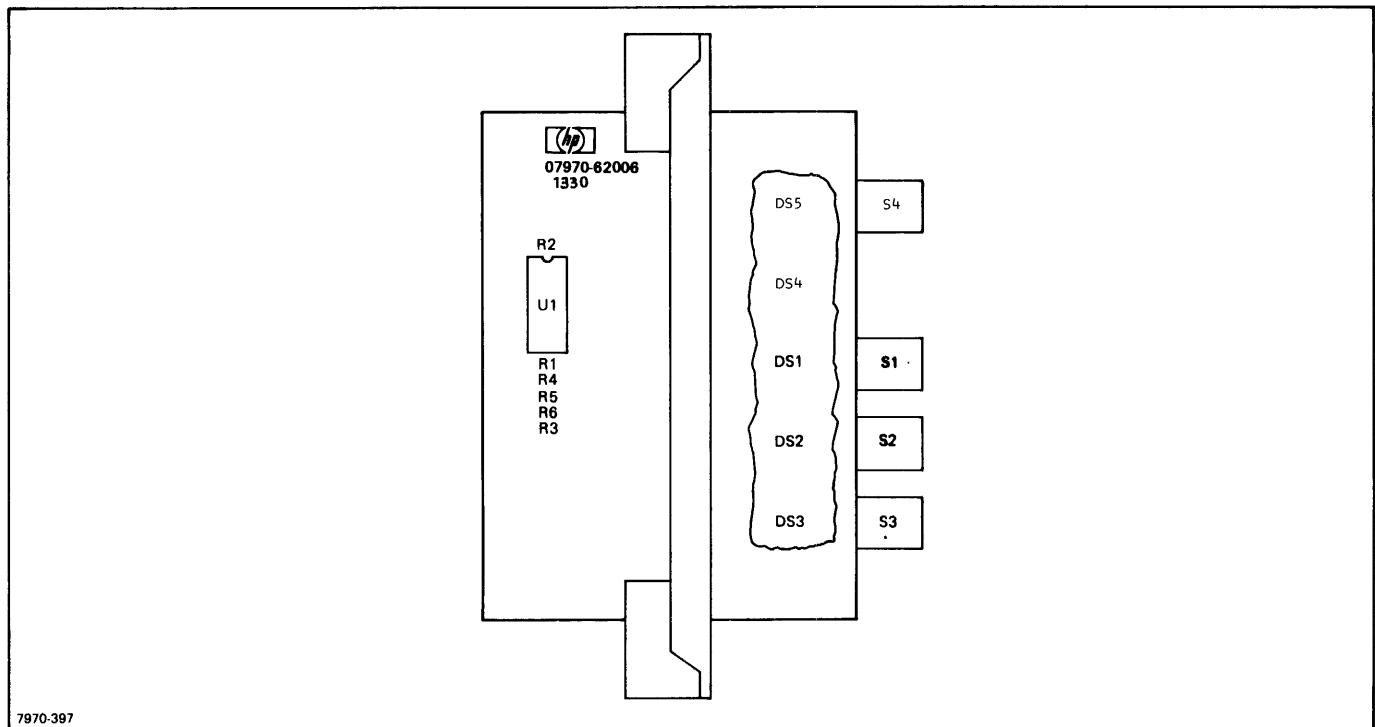
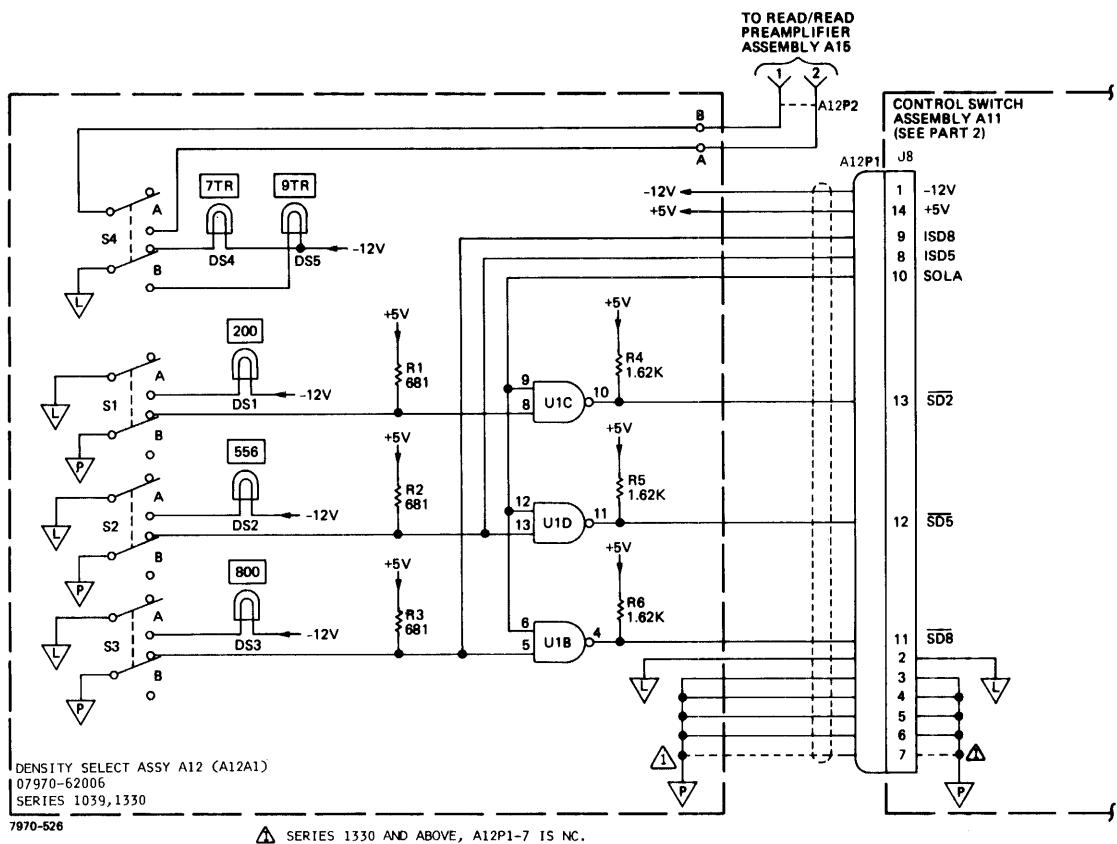


7970-A-077A

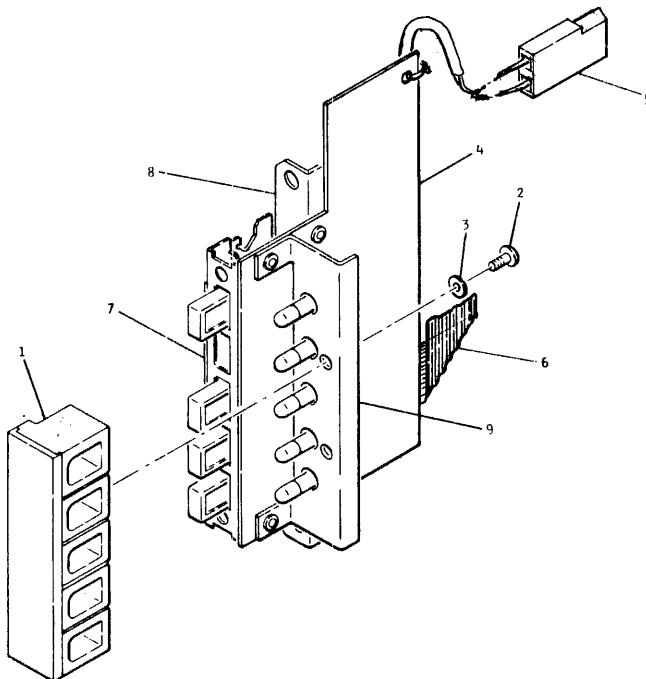
DENSITY SELECT SWITCH ASSEMBLY PARTS LIST  
07970-62087 (Series 1040, 1330)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62087	DENSITY SELECT SWITCH(Series 1040,1330)
DS1,2,3	2140-0209	LAMP, 382, 14V
R1-3	0757-0419	RESISTOR, fxd, 681, 1%, .125W
R4-6	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
S1-3	3101-0847	SWITCH, Pushbutton, DPDT
U1	1820-0256	IC, MC858P
1	07970-60350	LENS, ASSEMBLY
2	0624-0077	SCREW, Tapping, 4-40
3	2190-0400	WASHER, Flat, #4
4	07970-60620	CABLE, Density Select
5	2140-0209	LAMP, 14V
6	07970-00540	BRACKET, Lens
7	07970-00550	BRACKET, Mounting
8	07970-80090	DENSITY SELECT PCB

Density Select Switch Assembly A12



Read/Read Density Select Switch Assembly A12



7970-A-0988

#### READ READ DENSITY SELECT SWITCH PCA PARTS LIST

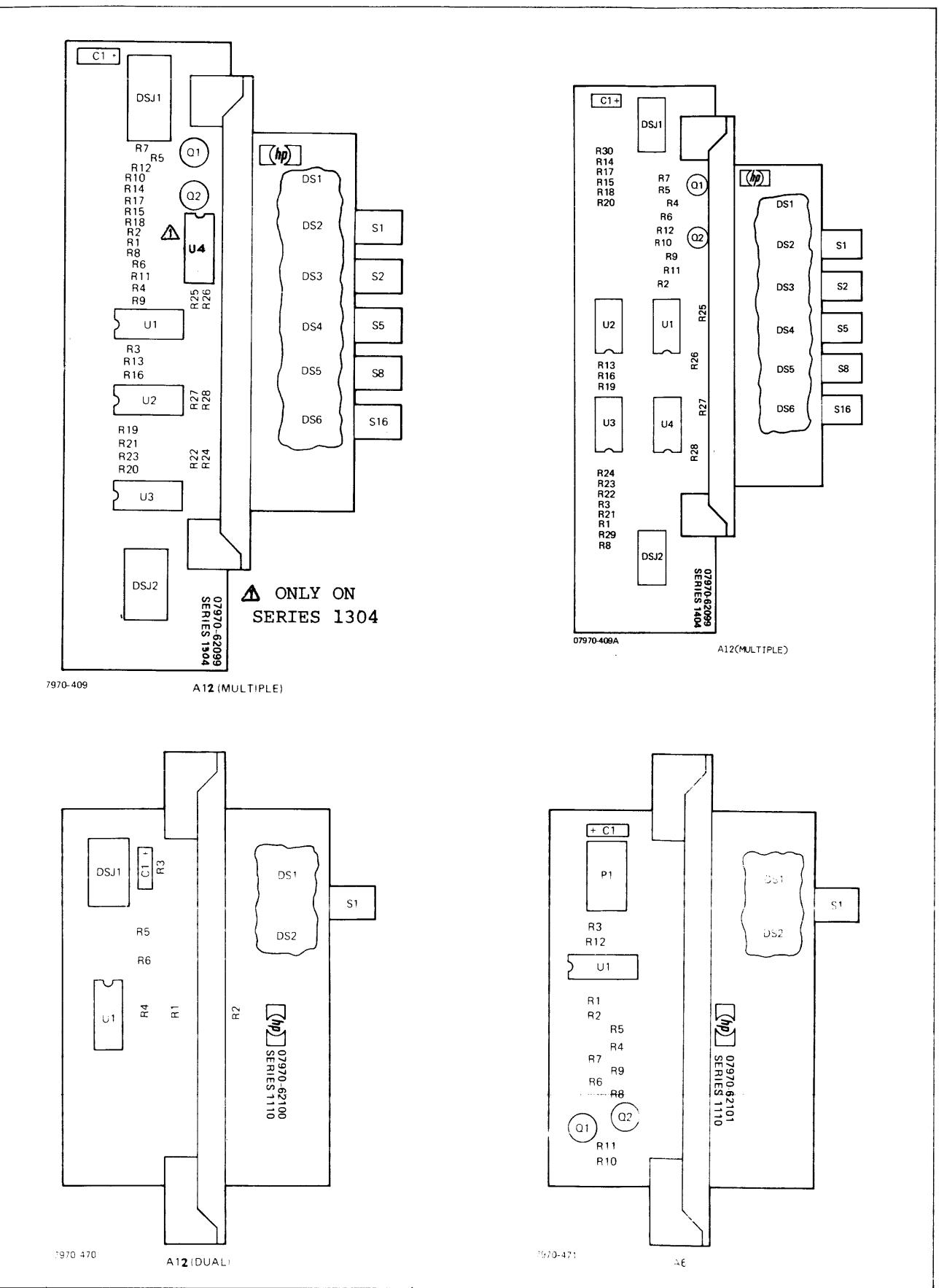
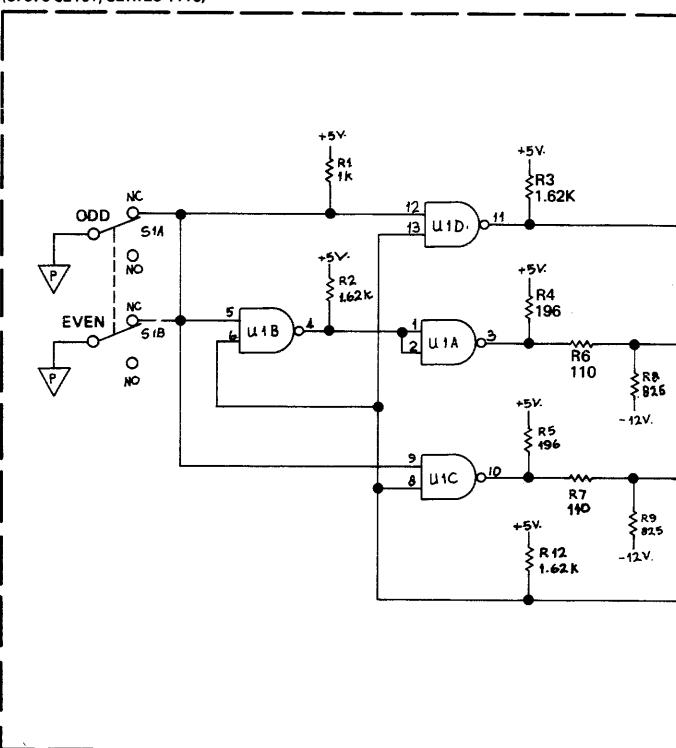
07970-62006 (Series 1039, 1330)

07970-62088 (Series 1039, 1330)

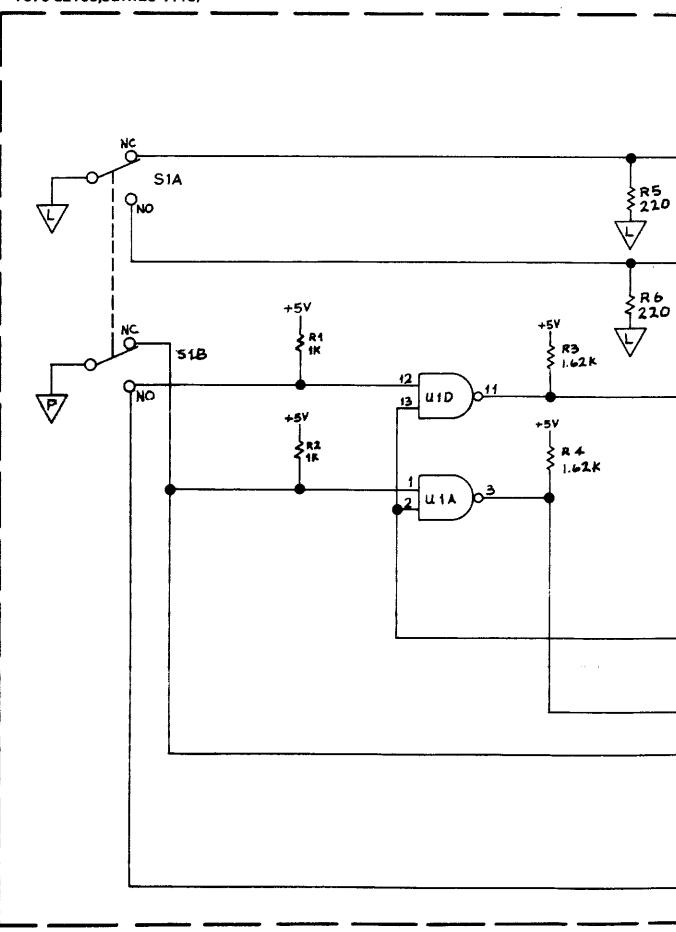
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62006	READ/READ DENSITY SELECT PCA (Series 1039, 1330)
DS1-5	2140-0209	LAMP, 382, 14V
R1,2,3,	0757-0419	RESISTOR, fxd, 681, 1%, .125W
R4,5,6	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
S1-4	3101-1535	SWITCH, Pushbutton
U1	1820-0256	IC, MC858P
1	07970-62007	LENS BLOCK ASSY, Density Select Switch
2	0624-0077	SCREW, Tapping 4-40
3	2190-0416	WASHER, Flat, #4
4	07970-62006	DENSITY SELECT, PCA
5	1251-2505	CONNECTOR, 2 Pin
6	07970-60620	CABLE ASSEMBLY, Density Select Switch
7	3101-1535	SWITCH ASSEMBLY, (S1-S4) (Not field replaceable)
8	07970-00550	BRACKET, Mounting
9	07970-00540	BRACKET, Lens
⚠ 07970-62088 is the same unit as 07970-62006 with added LENS BLOCK ASSEMBLY, part number 07970-62007.		

Read/Read Density Select Switch Assembly A12

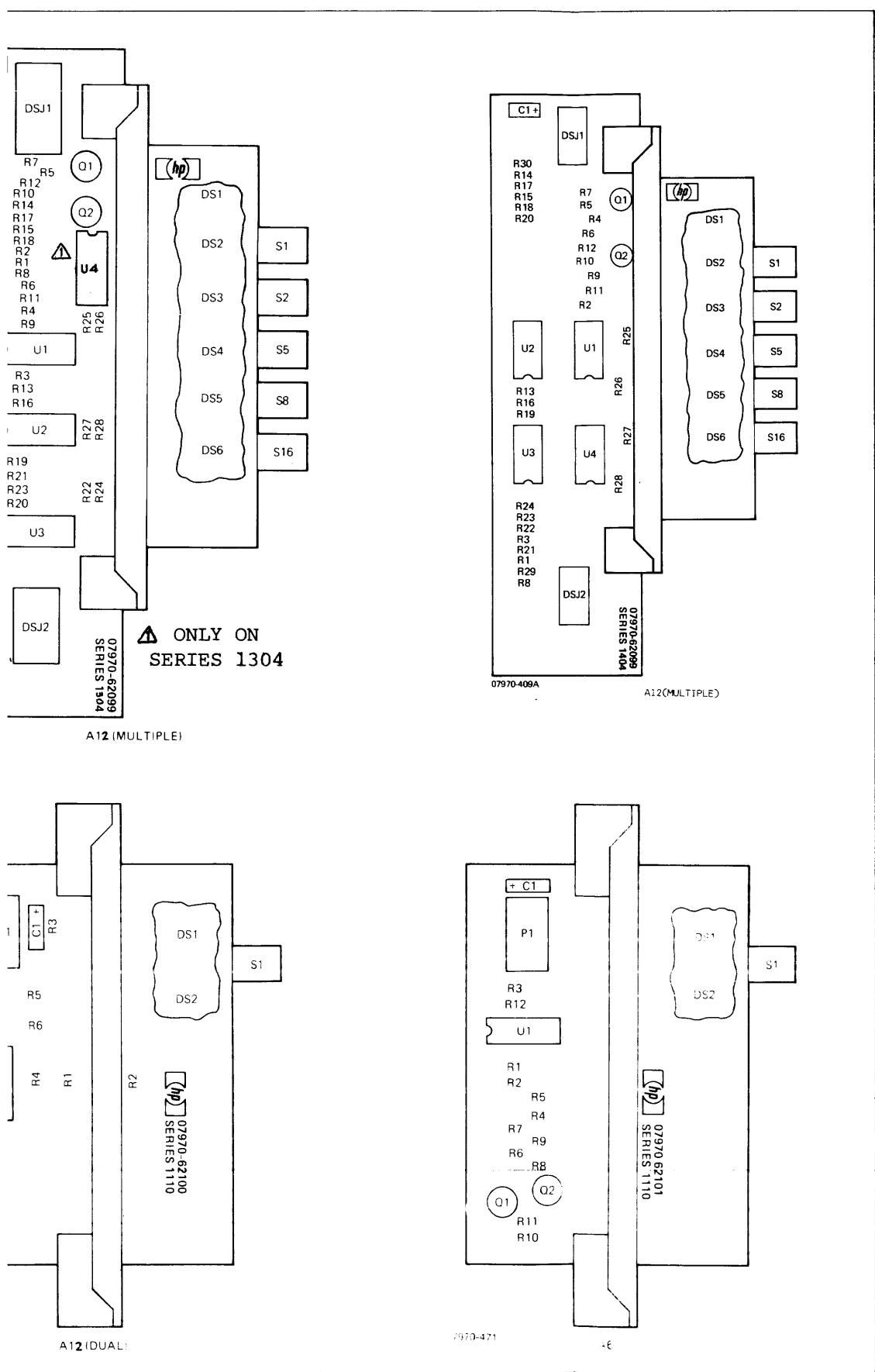
PARTY SELECT SWITCH ASSEMBLY A6  
(07970-62101, SERIES 1110)



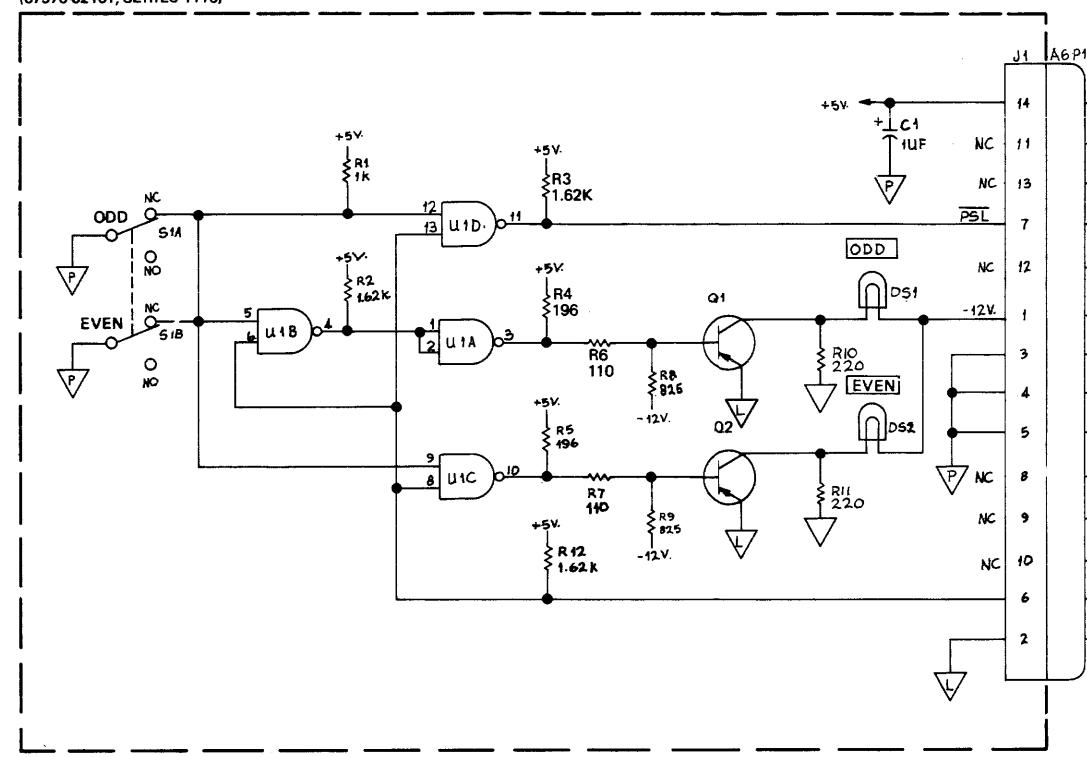
DUAL DENSITY SELECT SWITCH ASSEMBLY A12  
(07970-62100, SERIES 1110)



07970-90837 REV.A

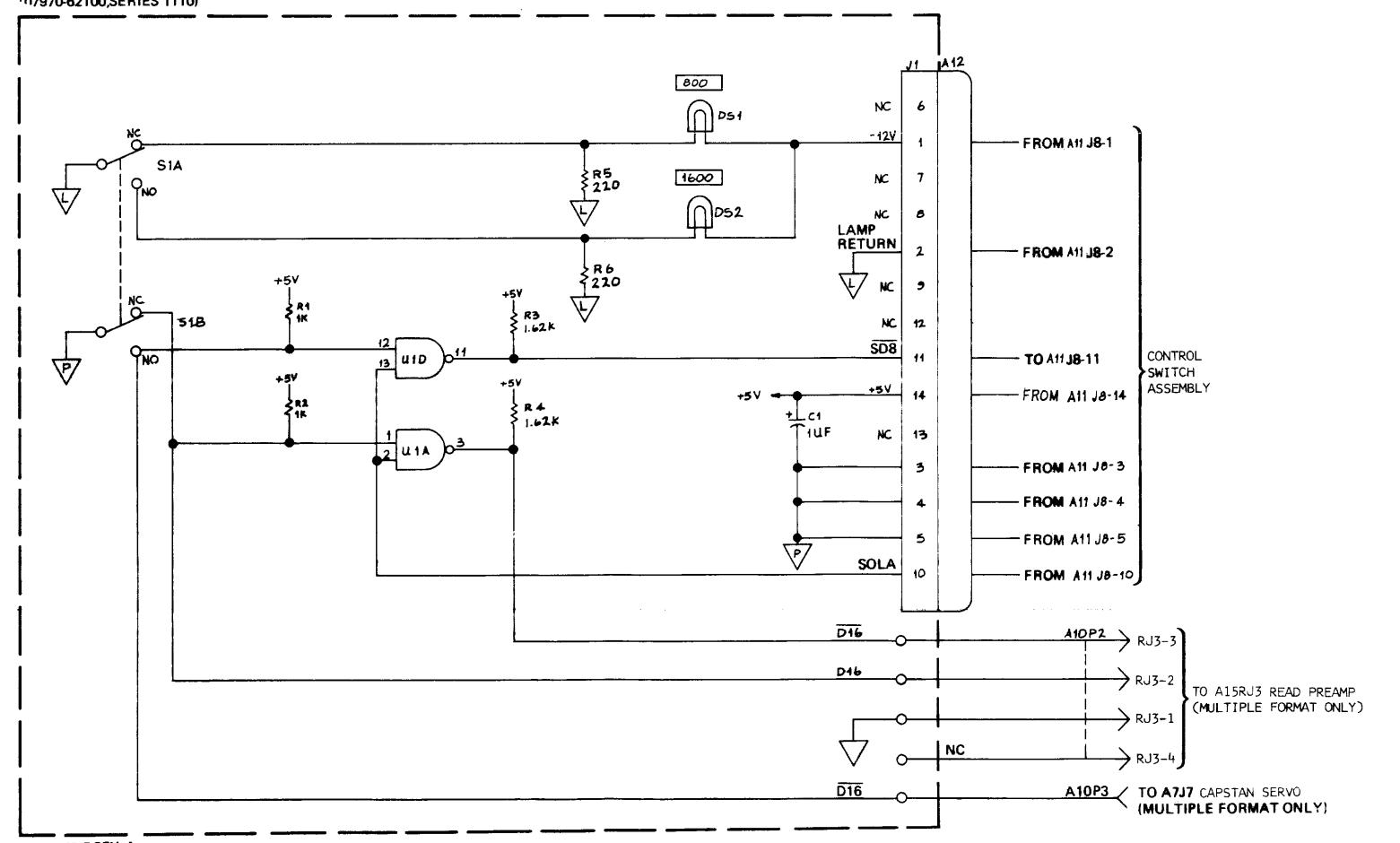


PARTY SELECT SWITCH ASSEMBLY A6  
(07970-62101, SERIES 1110)

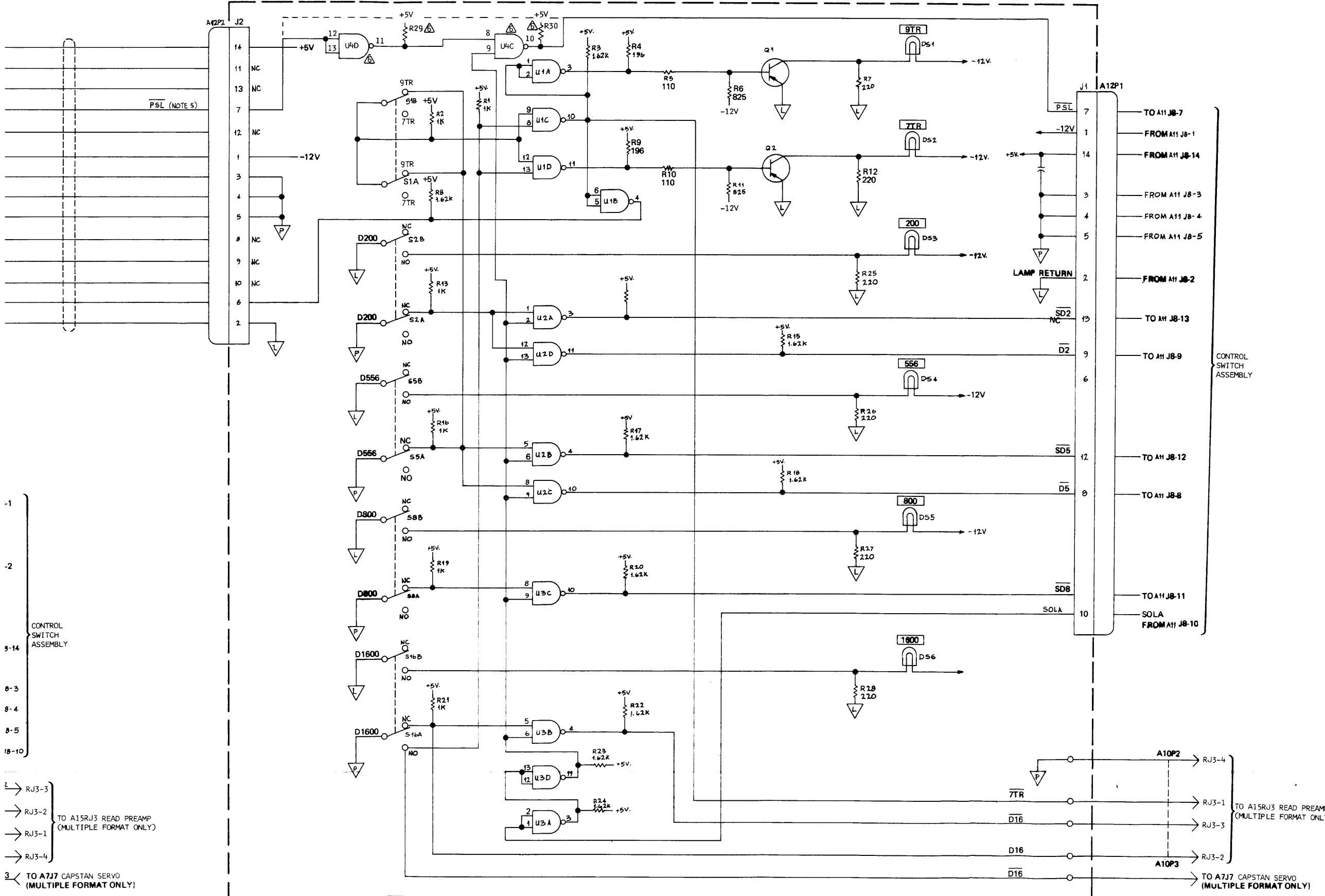


MULTIPLE DENSITY SELECT SWITCH 4  
(07970-62089, SERIES 1124, 1304, 1404)

DUAL DENSITY SELECT SWITCH ASSEMBLY A12  
(07970-62100, SERIES 1110)

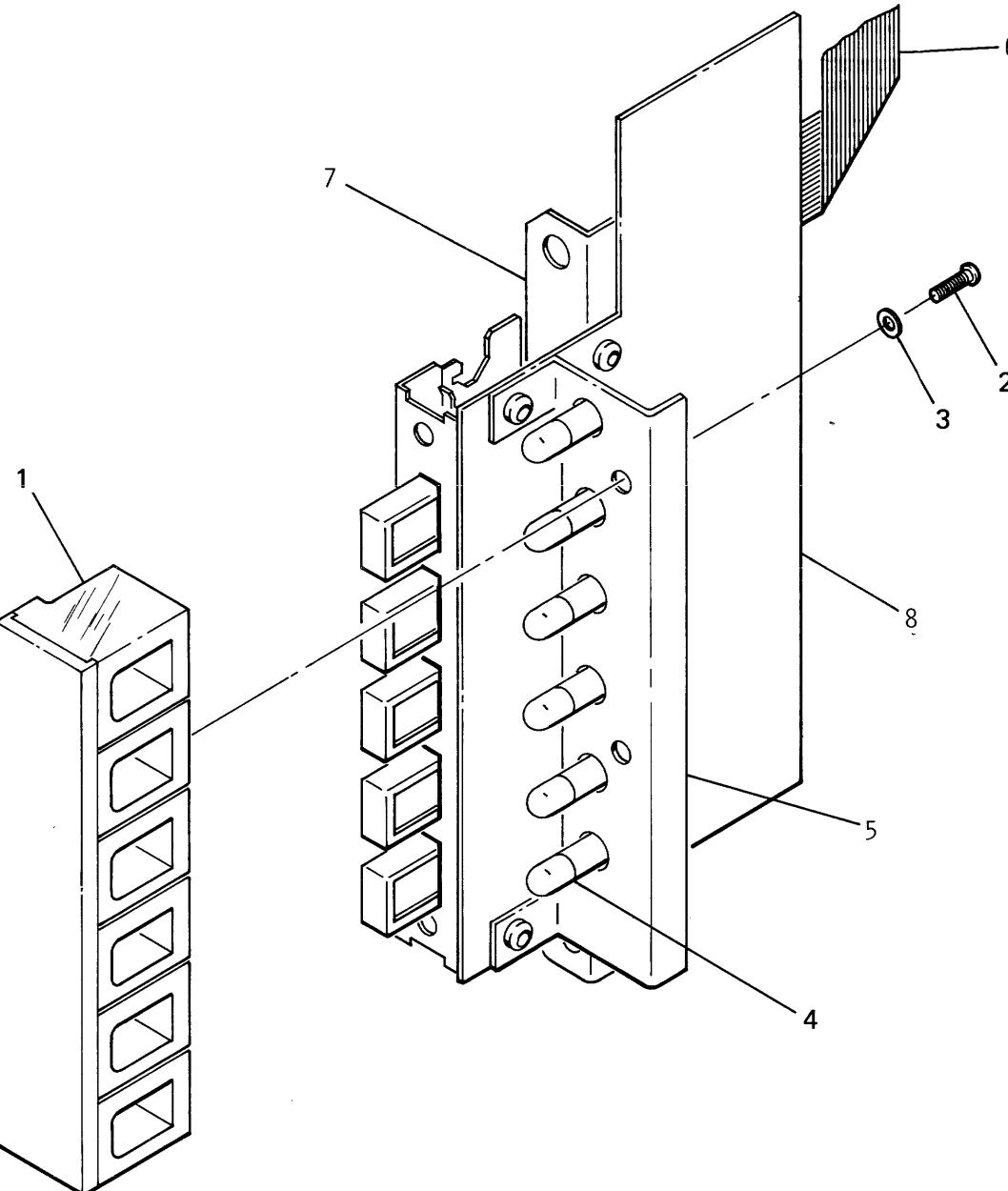


MULTIPLE DENSITY SELECT SWITCH ASSEMBLY A12  
(07970-62089, SERIES 1124, 1304, 1404)



Density Select Switch Assemblies A12,  
and Parity Select Switch Assembly A6





2225-125

Multiple Density Select Switch Assembly A12

DENSITY SELECT PCA PARTS LIST  
07970-62099 (Series 1124, 1304, 1404)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62099	DENSITY SELECT PCA (Series 1124)
C1	0180-0291	CAPACITOR, fxd, 1uf, 35VDC
DS1-6	2140-0209	LAMP, 382, 14V
Q1,2	1853-0016	TRANSISTOR, 2N3638, TO92
	0340-0164	INSULATOR, Transistor
R1,2,3,13,16,19,21	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R3,8,14,15,17,	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
18,20, 22-24, *(29,30)		
R4,9	0757-1060	RESISTOR, fxd, 196, 1%, .5W
R5,10	0757-0402	RESISTOR, fxd, 110, 1%, .125W
R6,11	0757-0818	RESISTOR, fxd, 825, 1%, .5W
R7,12,25-28	0686-2215	RESISTOR, fxd, 220, 5%, .5W
S1,2,5,8,16	3101-1647	SWITCH, PUSHBUTTON
*U1-4	1820-0256	IC, MC858P
1	07970-62264	LENS ASSEMBLY, DENSITY SELECT
2	0624-0077	SCREW, Tapping, 4-40
3	2190-0400	WASHER, Flat
4	2140-0209	LAMP, 14V
5	07970-01183	BRACKET, LENS
6	07970-62081	CABLE, DENSITY SELECT
7	07970-01177	BRACKET, MOUNTING
8	07970-82025	DENSITY SELECT PCB
*R29, R30	Series 1304	RESISTOR, fxd, 1K, Added to Board
*U4	0757-0428	IC, Digital MC858P Added to Board
	1820-0256	
		Series 1404
		PARTS LAYOUT AND ART WORK CHANGE ONLY

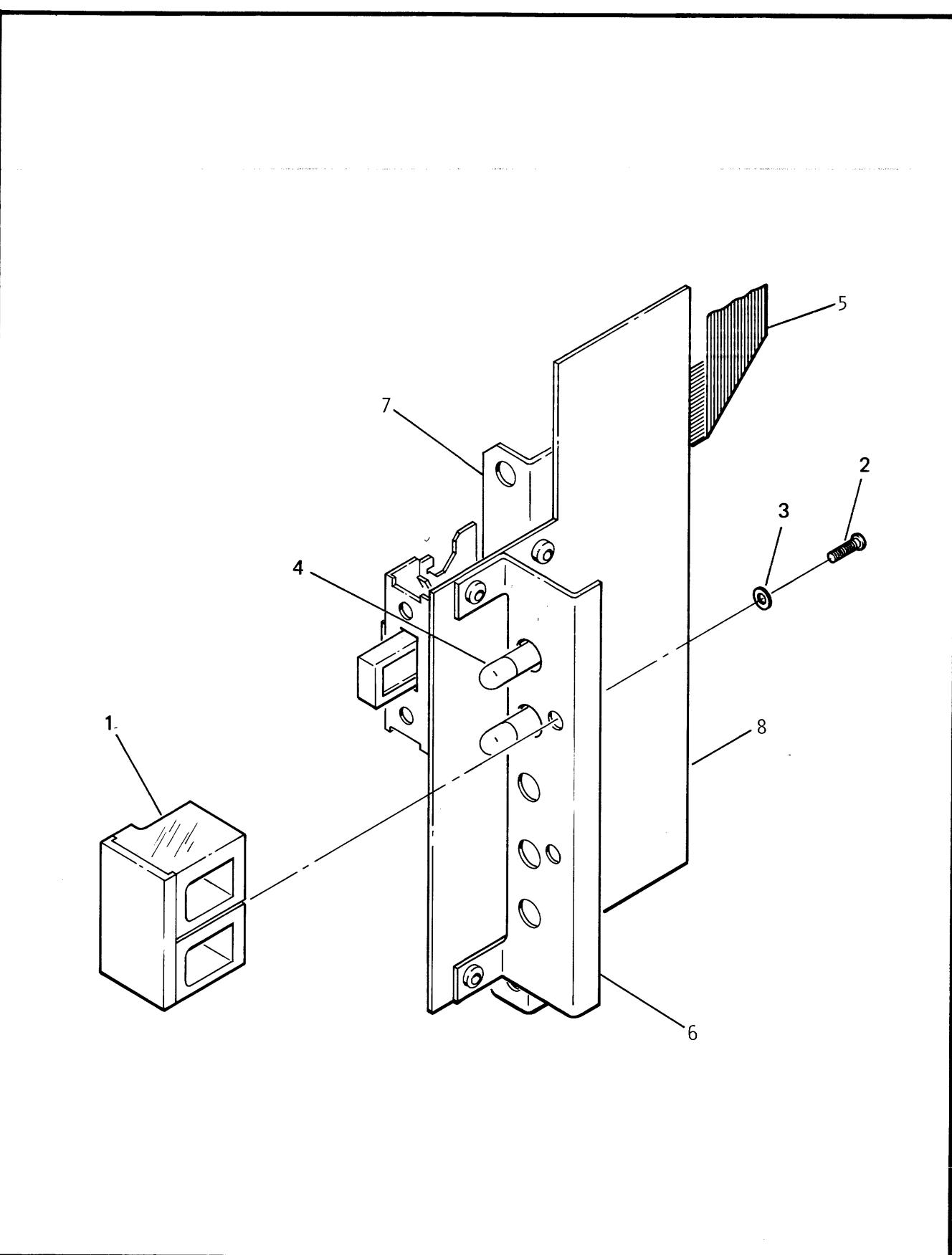
2225-123  
2225-124

DUAL DENSITY SWITCH PCA PARTS LIST  
07970-62100 (Series 1110)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	0180-0291	CAPACITOR, fxd, 1uf, 35VDC
DS1,2	2140-0209	LAMP, 382, 14V
R1,2	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R3,4	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R5,6	0686-2215	RESISTOR, fxd, 220, 5%, .5W
S1	3101-1630	SWITCH, Pushbutton
U1	1820-0256	IC, MC858P
1	07970-62261	LENS ASSEMBLY
2	0624-0077	SCREW, Tapping, 4-40
3	2190-0400	WASHER, Flat, #4
4	2140-0209	LAMP, 14V
5	07970-62081	CABLE, Density Select
6	07970-00540	BRACKET, Lens
7	07970-00550	BRACKET, Mounting
8	07970-82030	DUAL DENSITY SELECT PCB

PARITY SELECT SWITCH ASSEMBLY PARTS LIST  
07970-62101 (Series 1110)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	0180-0291	CAPACITOR, fxd, 1uf, 35VDC
DS1,2	2140-0209	LAMP, 382, 14V
Q1,2	1853-0016	TRANSISTOR, 2N3638, T092
	0340-0164	INSULATOR, Transistor
R1	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R2,3,12	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R4,5	0757-1060	RESISTOR, fxd, 196, 1%, .5W
R6,7	0757-0402	RESISTOR, fxd, 110, 1%, .125W
R8,9	0757-0818	RESISTOR, fxd, 825, 1%, .5W
R10,11	0686-2215	RESISTOR, fxd, 220, 5%, .5W
S1	3101-1630	SWITCH
U1	1820-0256	IC, MC858P
1	07970-62262	LENS ASSEMBLY, PARITY SELECT
2	0624-0077	SCREW, Tapping, 4-40
3	2190-0400	WASHER, Flat, #4
4	2140-0209	LAMP, 14V
5	07970-62080	CABLE, Parity
6	07970-00540	BRACKET, LENS
7	07970-00550	BRACKET, Mounting
8	07970-82026	PARITY SELECT PCB

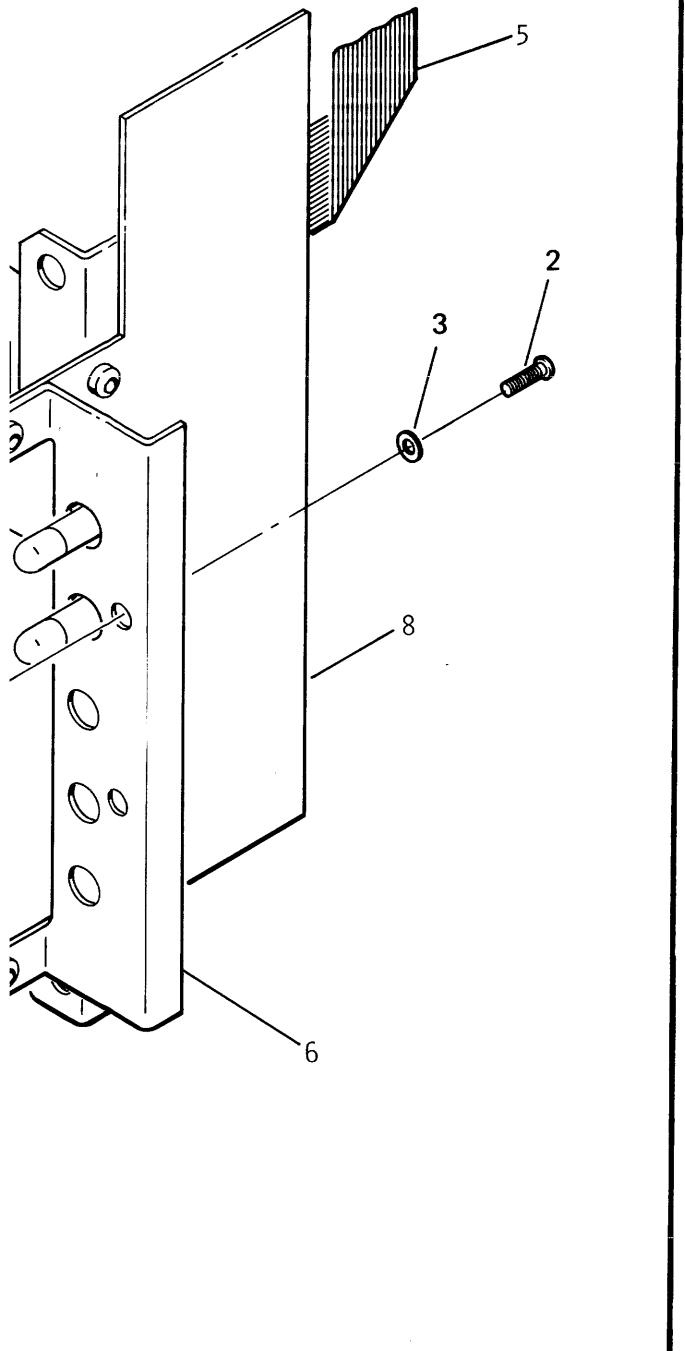


2225-123  
2225-124

Select Switch Assemblies A12 and A6

Density Select Switch Assemblies A12,  
and Parity Select Switch Assembly A6

DUAL DENSITY SWITCH PCA PARTS LIST  
07970-62100 (Series 1110)

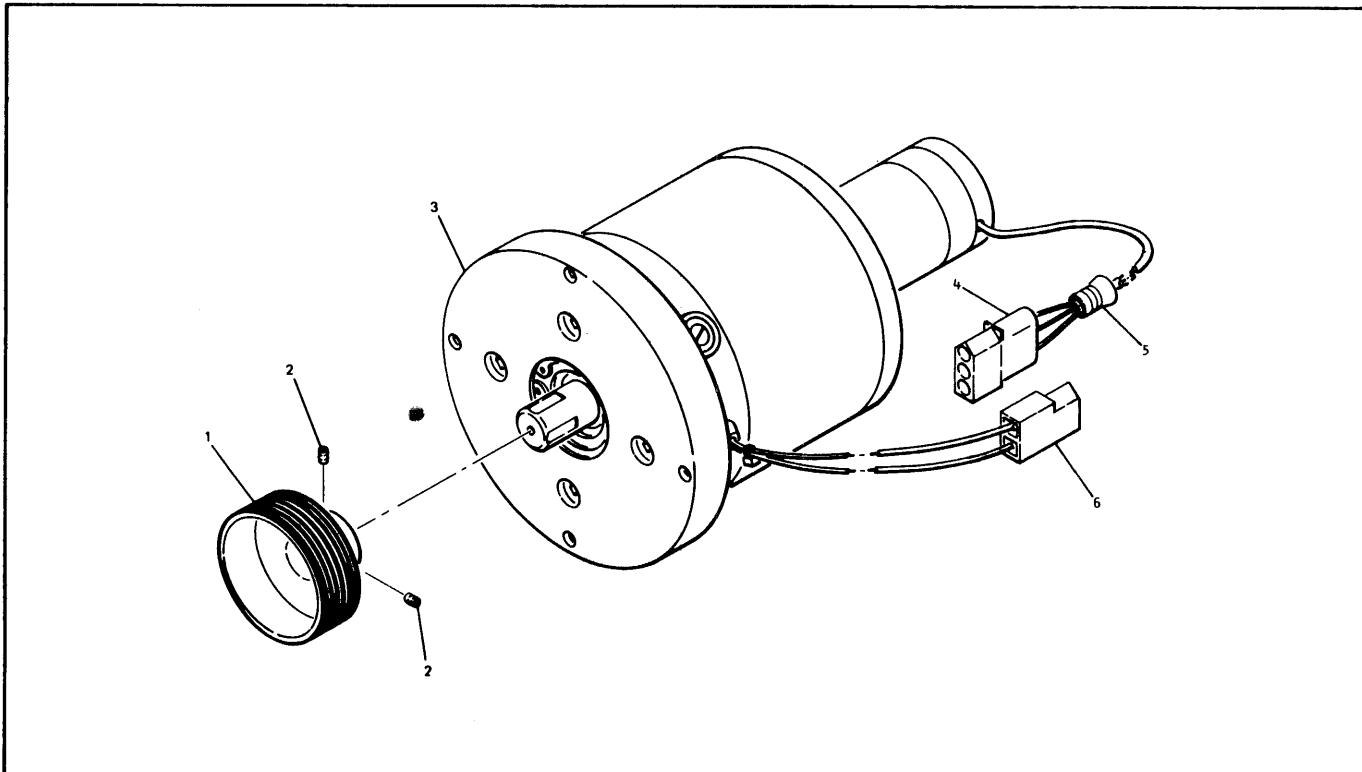


PARITY SELECT SWITCH ASSEMBLY PARTS LIST  
07970-62101 (Series 1110)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	0180-0291	CAPACITOR, fxd, 1uf, 35VDC
DS1,2	2140-0209	LAMP, 382, 14V
R1,2	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R3,4	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R5,6	0686-2215	RESISTOR, fxd, 220, 5%, .5W
S1	3101-1630	SWITCH, Pushbutton
U1	1820-0256	IC, MC858P
1	07970-62261	LENS ASSEMBLY
2	0624-0077	SCREW, Tapping, 4-40
3	2190-0400	WASHER, Flat, #4
4	2140-0209	LAMP, 14V
5	07970-62081	CABLE, Density Select
6	07970-00540	BRACKET, Lens
7	07970-00550	BRACKET, Mounting
8	07970-82030	DUAL DENSITY SELECT PCB

Density Select Switch Assemblies A12,  
and Parity Select Switch Assembly A6

semblies A12 and A6

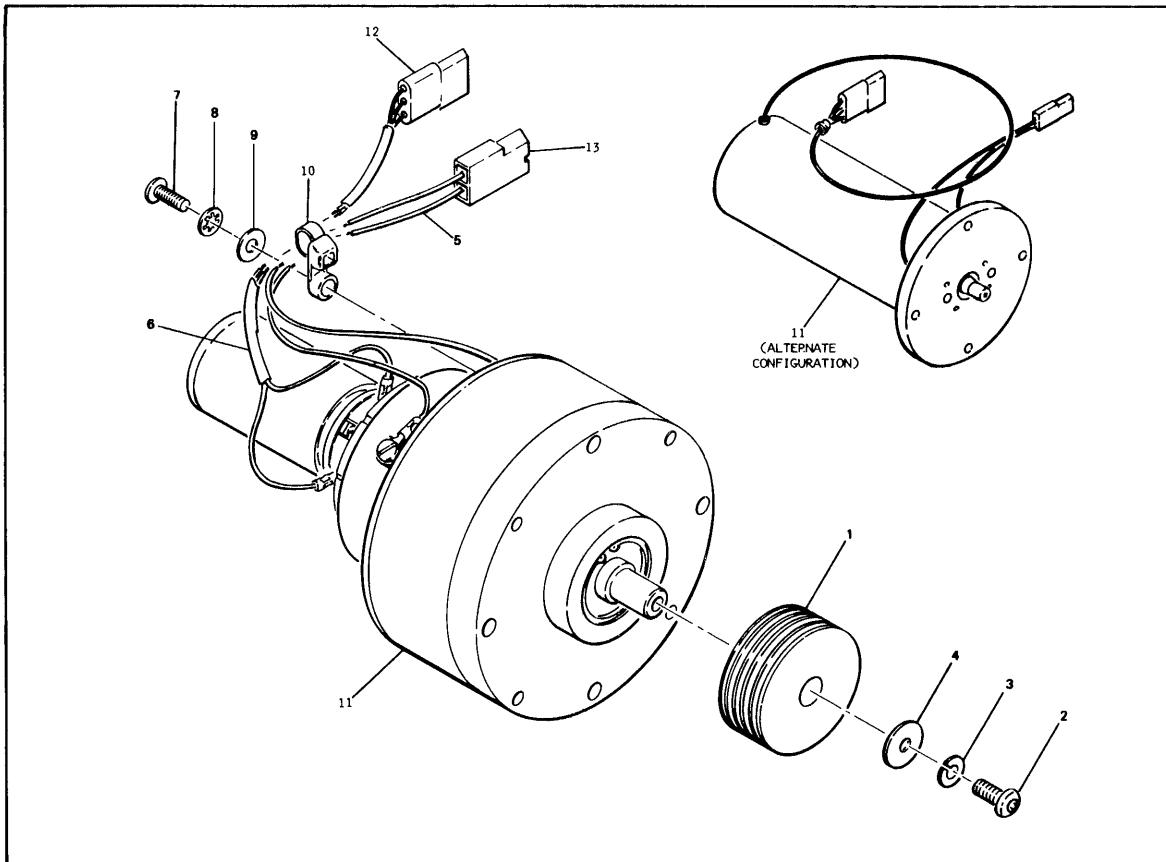


2226-110

**CAPSTAN MOTOR ASSEMBLY PARTS LIST  
07970-60140**

REF. DES./	HP PART NO.	DESCRIPTION
	07970-60140	CAPSTAN MOTOR ASSEMBLY (10-37.5 ips)
1	07970-20390	CAPSTAN
2	3030-0007	SETSCREW, 4-40, .125 in.
3	3140-0705	MOTOR, Tachometer
4	1251-2508	CONNECTOR, 3 Pin
	1251-2599	CONTACT, Male
	1251-2600	CONTACT, Female
5	0362-0018	CABLE SLEEVE
6	1251-2505	CONNECTOR, 2 Pin
	1251-2599	CONTACT, Male
	1251-2600	CONTACT, Female



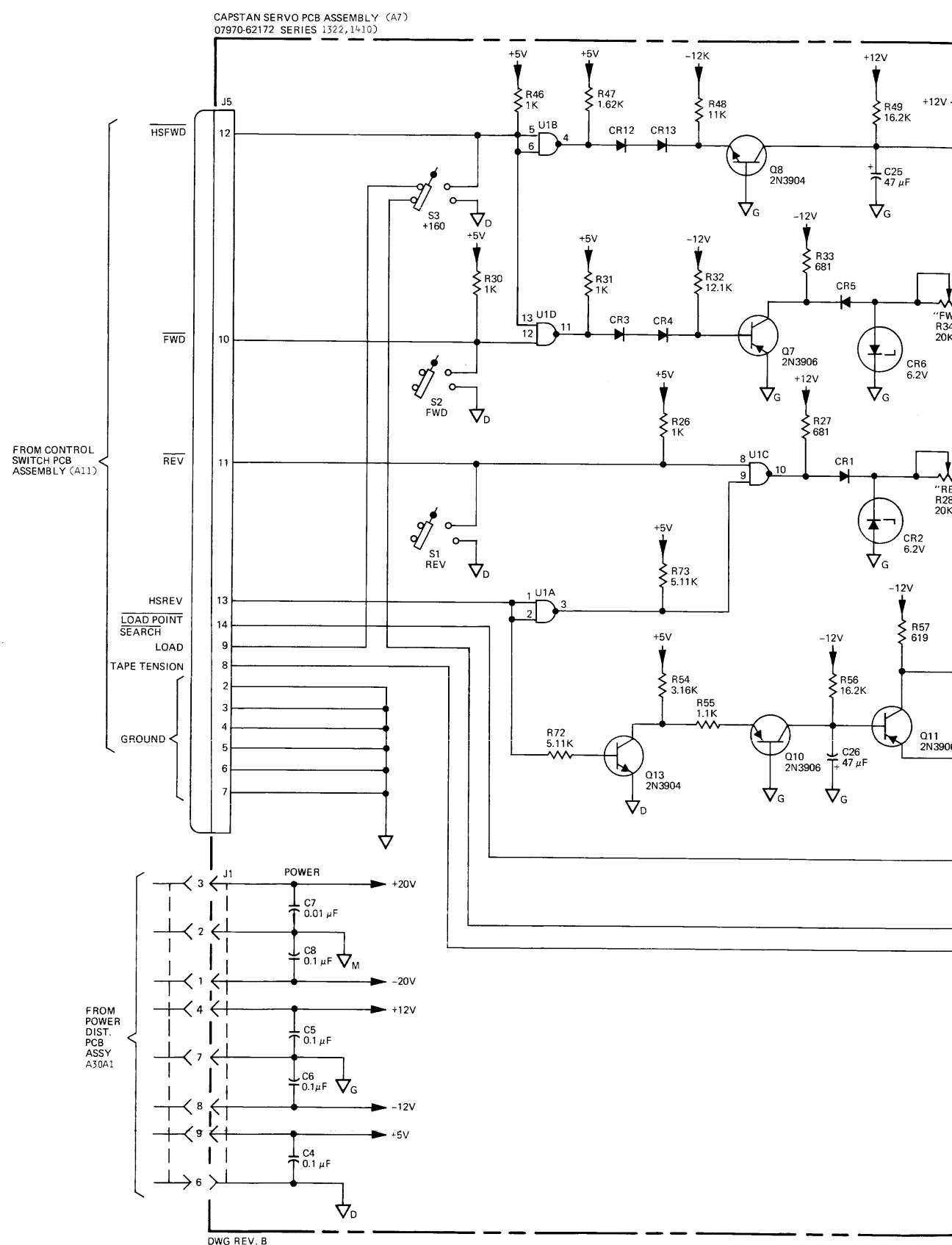
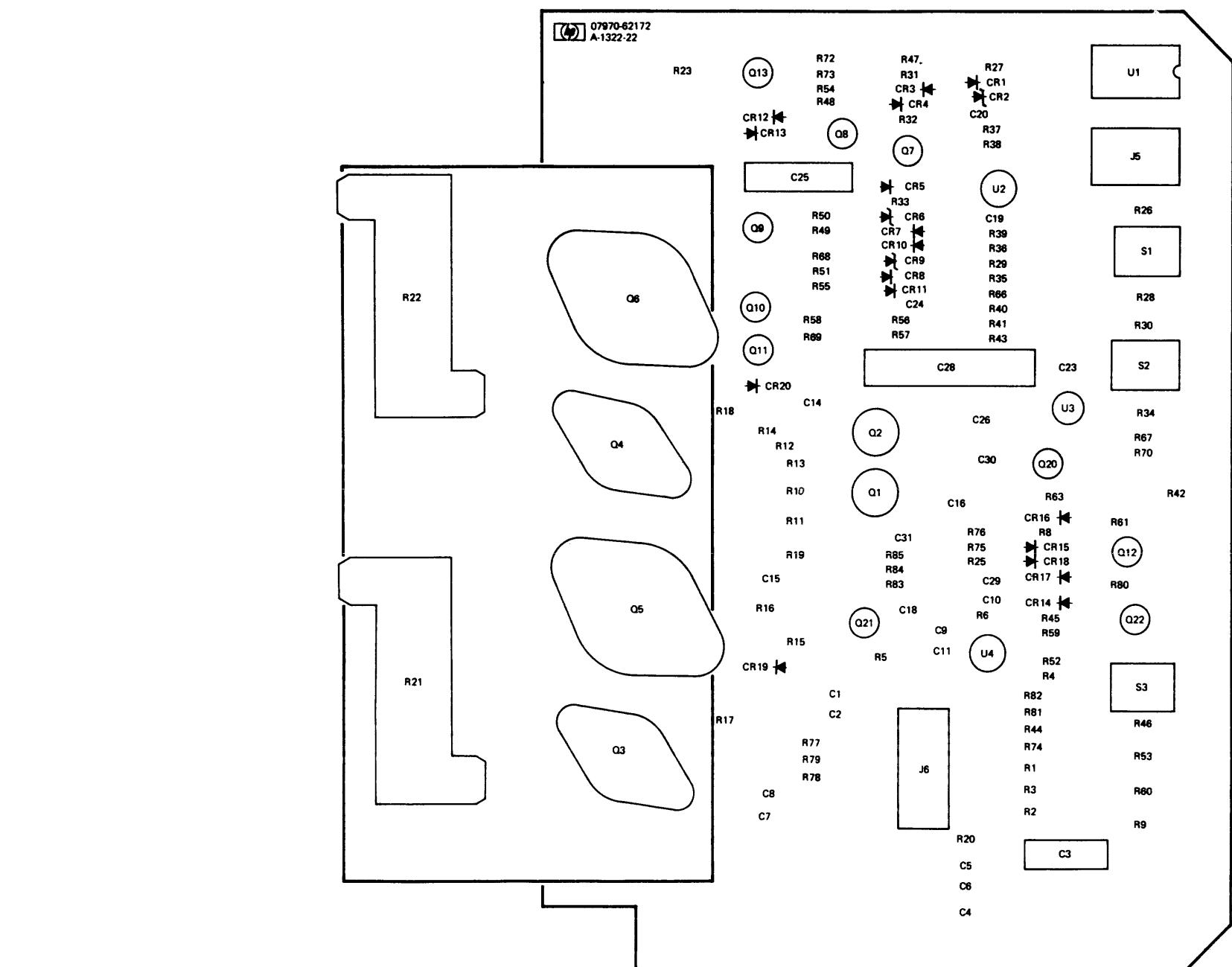


2225-111A

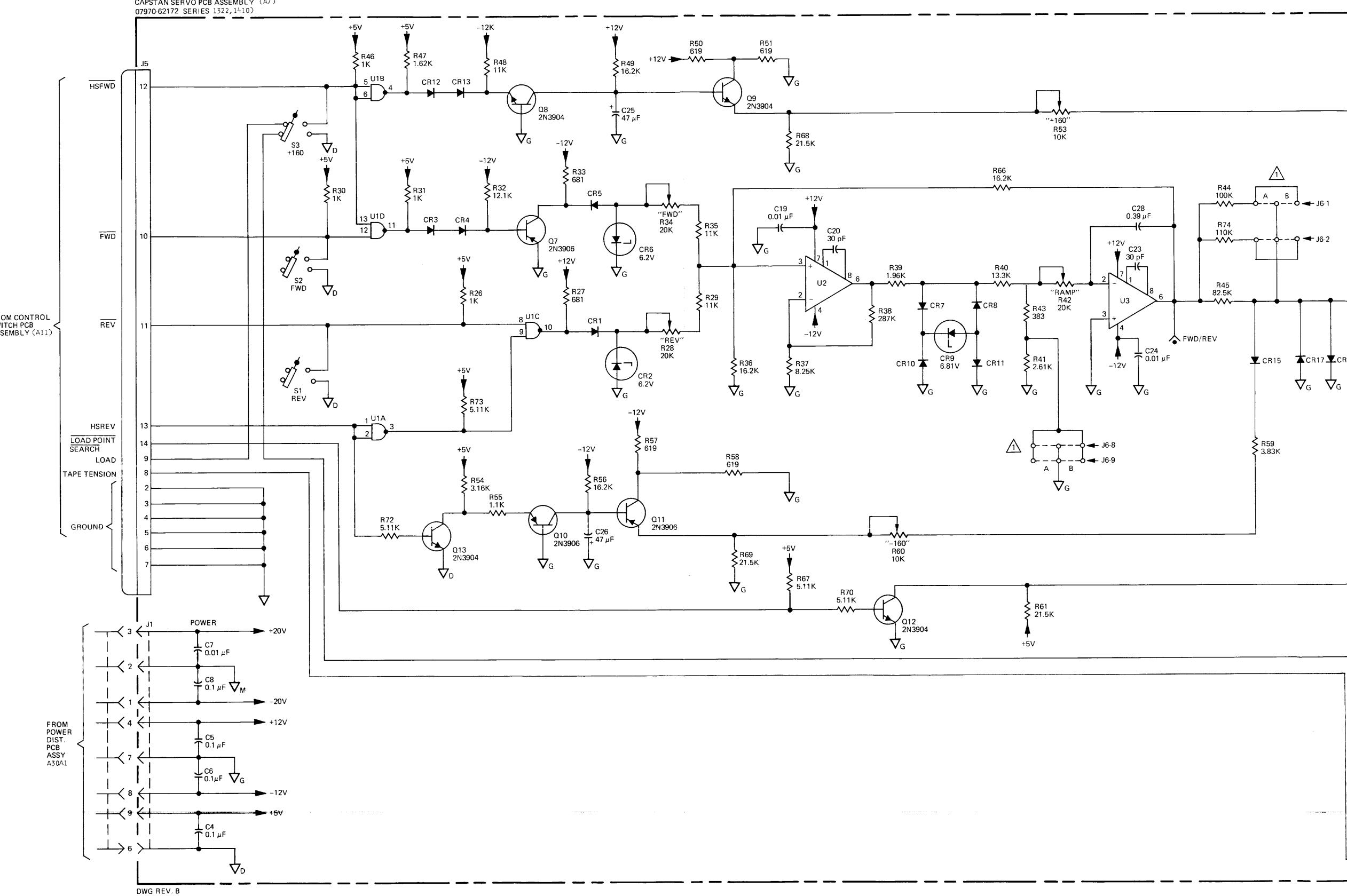
CAPSTAN MOTOR ASSEMBLY PARTS LIST  
07970-60141

REF. DES./	HP PART NO.	DESCRIPTION
	07970-60141	CAPSTAN MOTOR ASSEMBLY (10-45 ips)
1	07970-20391	CAPSTAN
2	3030-0425	SCREW, 10-32, .5 in.
3	2190-0483	WASHER, Lock, Hel, #10
4	3050-0055	WASHER, Flat, #6
5	07970-62160	LEAD ASSEMBLY, Capstan Motor
6	07970-62161	CABLE ASSEMBLY, Capstan Motor
7	2360-0205	SCREW, 6-32, .75 in.
8	2190-0918	WASHER, Lock, Hel, #6
9	3050-0066	WASHER, Flat, #6
10	1400-0440	CLAMP, Cable
11	3140-0748	MOTOR, Tachometer
12	1251-2508	CONNECTOR, 3 Pin
	1251-2599	CONTACT, Male
	1251-2600	CONTACT, Female
13	1251-2505	CONNECTOR, 2 Pin
	1251-2599	CONTACT, Male
	1251-2600	CONTACT, Female

Capstan Motor Assembly MGL



CAPSTAN SERVO PCB ASSEMBLY (A7)  
07970-62172 SERIES 1322, 1410



SINGLE SPEED CAPSTAN SERVO PCA PARTS LIST  
07970-62172 (Series 1322, 1410)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62172	CAPSTAN SERVO PCA (Series 1322)
C1,2	0160-2151	CAPACITOR, fxd, .011uf, 5%
C3	0160-2414	CAPACITOR, fxd, .022uf, 5%
C4-8	0150-0121	CAPACITOR, fxd, .1uf, 10%
C9,10,19,24	0160-2055	CAPACITOR, fxd, .01uf, 100V
C11	0160-2207	CAPACITOR, fxd, 300pf, 5%
C14,15	0160-0153	CAPACITOR, fxd, .001uf, 10%
C16	0160-0165	CAPACITOR, fxd, .056uf, 10%
C18	0160-2250	CAPACITOR, fxd, 5.1pf, 5%
C20,23	0160-2199	CAPACITOR, fxd, 30pf, 5%
C25,26	0180-0097	CAPACITOR, fxd, 47uf, 35VDC
C28	0160-3387	CAPACITOR, fxd, .39uf, 10%
C29	0160-3536	CAPACITOR, fxd, 620pf, 5%
C30	0160-0174	CAPACITOR, fxd, .47uf, -20+80%
C31	0160-2224	CAPACITOR, fxd, 1800pf, 5%
CR1,3-5,7,8,10-18	1901-0040	DIODE, 30V, 50MA
CR2,6	1902-0033	DIODE, Zener, 6.2V
CR9	1902-0048	DIODE, Zener, 6.81V
CR19,20	1901-0026	DIODE, Power Rectifier, 200V
J5	1200-0426	SOCKET, IC
J6	07970-62120	DUMMY PLUG ASSEMBLY
Q1	1854-0053	TRANSISTOR, 2N2218, T05
	0340-0164	INSULATOR, Transistor
Q2	1853-0012	TRANSISTOR, 2N2904A, T05
	0340-0164	INSULATOR, Transistor
Q3	1853-0323	TRANSISTOR, 2N4900, T066
	0340-0180	INSULATOR, Friction
	2200-0147	SCREW, 4-40, .5 Pan
	2260-0009	NUT, Lock, 4-40
Q4	1854-0399	TRANSISTOR, 2N4912
	0340-0180	INSULATOR, Friction
	2200-0147	SCREW, 4-40, .5 Pan
	2260-0009	NUT, Lock, 4-40
*Q5,6	1854-0576	TRANSISTOR, 2N6258, T03
	1200-0077	INSULATOR, Transistor
	2200-0147	SCREW, 4-40, .5 Pan
	2260-0009	NUT, Lock, 4-40
Q7,10,11,21	1853-0036	TRANSISTOR, 2N3906, PL18
Q8,9,12,13,22	1854-0215	TRANSISTOR, 2N3904, PL5
Q20	1853-0322	TRANSISTOR, 2N2946A, T046
R1,2	0698-3152	RESISTOR, fxd, 3.48K, 1%, .125W
R3	0698-3202	RESISTOR, fxd, 1.74K, 1%, .125W
R4	0757-0290	RESISTOR, fxd, 6.19K, 1%, .125W
R5,6	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R8	0683-1055	RESISTOR, fxd, 1M, 5%, .25W
R9,28,34	2100-1972	RESISTOR, Variable, 20K, 10%
R10	0757-0797	RESISTOR, fxd, 90.9, 1%, .5W

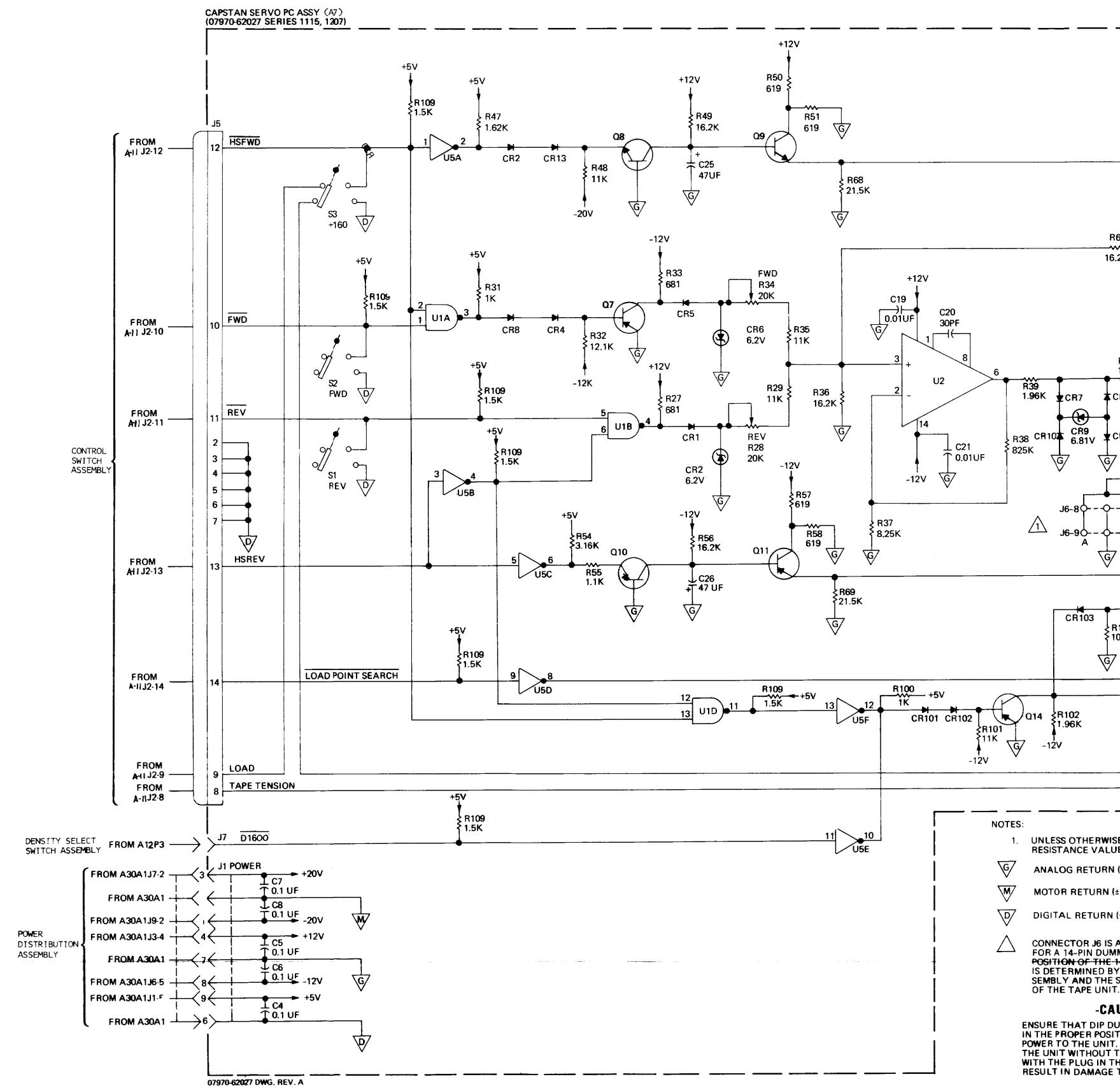
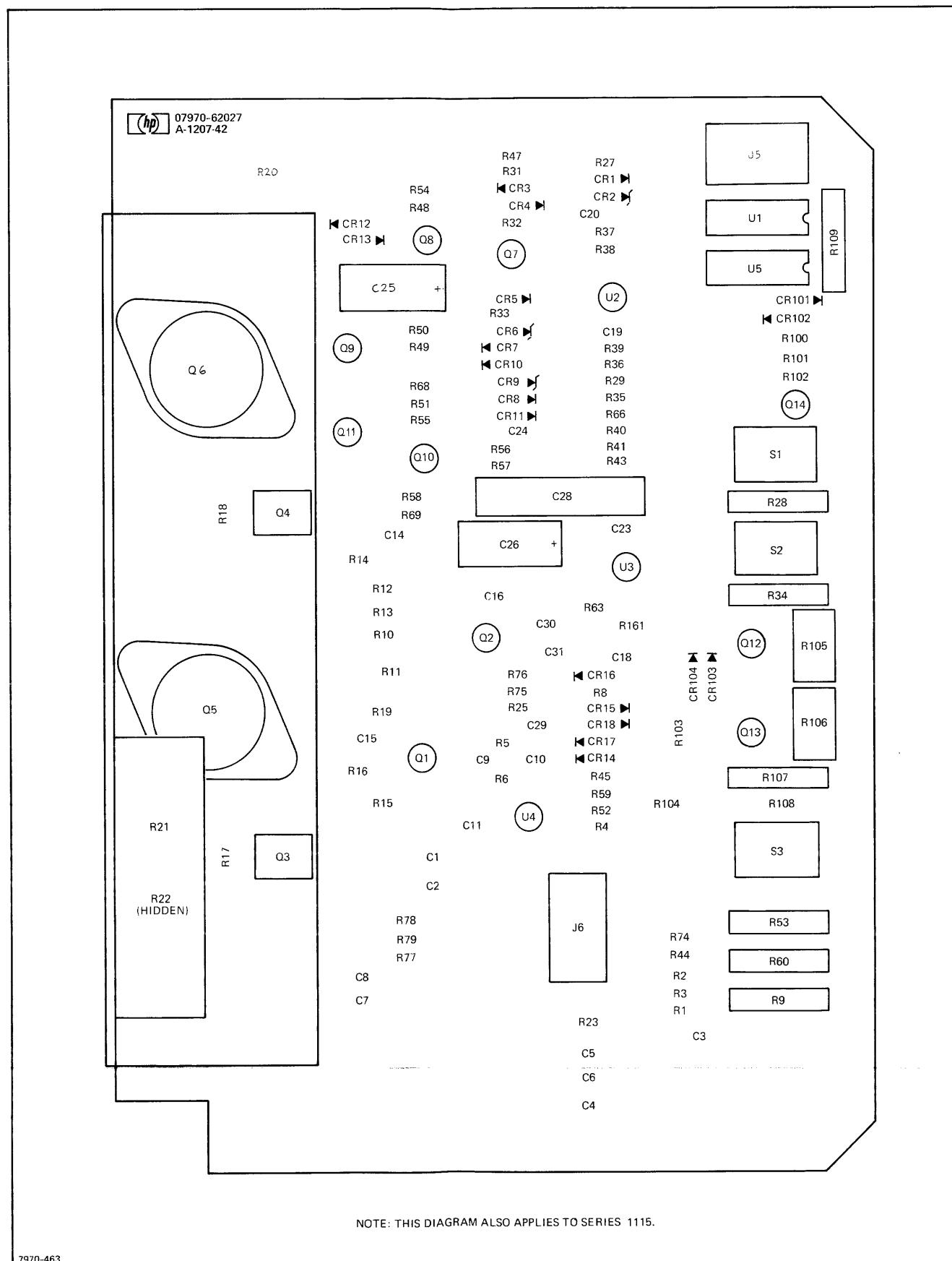
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R11	0698-3637	RESISTOR, fxd, 820, 5%, 2W
R12	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R13,15	0761-0058	RESISTOR, fxd, 750, 5%, 1W
R14,16	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R17,18	0698-3113	RESISTOR, fxd, 100, 5%, .125W (fusible)
R19	0757-0198	RESISTOR, fxd, 100, 1%, .5W
R20,23	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R21,22	0811-2966	RESISTOR, fxd, 3, 1%, 50W
R25	0698-3260	RESISTOR, fxd, 464K, 1%, .125W
R26,30,31,46,85	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R27,33	0757-0419	RESISTOR, fxd, 681, 1%, .125W
R29,35,48	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R32	0757-0444	RESISTOR, fxd, 12.1K, 1%, .125W
R36,49,56,66	0757-0447	RESISTOR, fxd, 16.2K, 1%, .125W
R37	0757-0441	RESISTOR, fxd, 8.25K, 1%, .125W
R38	0698-3456	RESISTOR, fxd, 287K, 1%, .125W
R39	0698-0083	RESISTOR, fxd, 1.96K, 1%, .125W
R40	0757-0289	RESISTOR, fxd, 13.3K, 1%, .125W
R41	0698-0085	RESISTOR, fxd, 2.61K, 1%, .125W
R42	2100-1762	RESISTOR, Variable, 20K, 5%
R43	0698-3446	RESISTOR, fxd, 383, 1%, .125W
R44	0757-0465	RESISTOR, fxd, 100K, 1%, .125W
R45	0757-0463	RESISTOR, fxd, 82.5K, 1%, .125W
R47	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R50,51,57,58	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R52,59	0698-3153	RESISTOR, fxd, 3.83K, 1%, .125W
R53,60	2100-2850	RESISTOR, Variable, 10K, 10%
R54	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R55	0757-0424	RESISTOR, fxd, 1.1K, 1%, .125W
R61,63,68,69	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R67,70,72,73,80,83	0757-0438	RESISTOR, fxd, 5.11K, 1%, .125W
R74	0757-0466	RESISTOR, fxd, 110K, 1%, .125W
R75	0757-0470	RESISTOR, fxd, 162K, 1%, .125W
R76	0698-3457	RESISTOR, fxd, 316K, 1%, .125W
R77,78	0698-3151	RESISTOR, fxd, 2.87K, 1%, .125W
R79	0757-0317	RESISTOR, fxd, 1.33K, 1%, .125W
R81	0757-0403	RESISTOR, fxd, 121, 1%, .125W
R82	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
R84	0757-0416	RESISTOR, fxd, 511, 1%, .125W
S1-3	3101-1213	SWITCH, Toggle, DPST
U1	1820-0256	IC, MC858P
U2-4	1820-0223	IC, LM301AH
	0340-0456	INSULATOR, IC Pad
	0380-0311	SPACER, #6, .5 in.
	2360-0193	SCREW, 6-32, .25 Pan
	2190-0006	WASHER, Lock, Hel, #6
	07970-00620	CLAMP, Connector
	07970-20850	BRACKET, Capstan
	2200-0145	SCREW, 4-40, .438 Pan
	2260-0009	NUT, Lock, 4-40

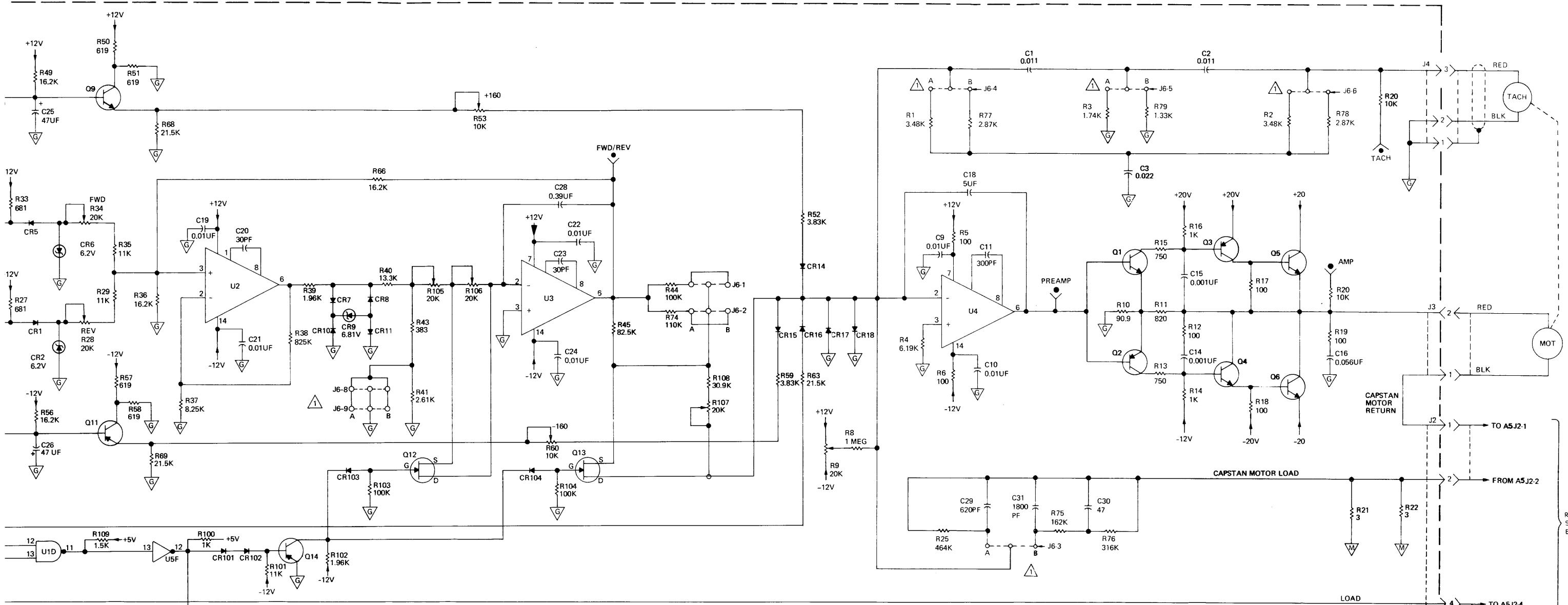
REF  
IND

\*Q5,6

DESCRIPTION
R, fxd, 820, 5%, .2W
R, fxd, 100, 1%, .125W
R, fxd, 750, 5%, 1W
R, fxd, 1K, 5%, .25W
R, fxd, 100, 5%, .125W (fusible)
R, fxd, 100, 1%, .5W
R, fxd, 10K, 5%, .25W
R, fxd, 3, 1%, 50W
R, fxd, 464K, 1%, .125W
R, fxd, 1K, 1%, .125W
R, fxd, 681, 1%, .125W
R, fxd, 11K, 1%, .125W
R, fxd, 12.1K, 1%, .125W
R, fxd, 16.2K, 1%, .125W
R, fxd, 8.25K, 1%, .125W
R, fxd, 287K, 1%, .125W
R, fxd, 1.96K, 1%, .125W
R, fxd, 13.3K, 1%, .125W
R, fxd, 2.61K, 1%, .125W
R, Variable, 20K, 5%
R, fxd, 383, 1%, .125W
R, fxd, 100K, 1%, .125W
R, fxd, 82.5K, 1%, .125W
R, fxd, 1.62K, 1%, .125W
R, fxd, 619, 1%, .125W
R, fxd, 3.83K, 1%, .125W
R, Variable, 10K, 10%
R, fxd, 3.16K, 1%, .125W
R, fxd, 1.1K, 1%, .125W
R, fxd, 21.5K, 1%, .125W
R, fxd, 5.11K, 1%, .125W
R, fxd, 110K, 1%, .125W
R, fxd, 162K, 1%, .125W
R, fxd, 316K, 1%, .125W
R, fxd, 2.87K, 1%, .125W
R, fxd, 1.33K, 1%, .125W
R, fxd, 121, 1%, .125W
R, fxd, 1.47K, 1%, .125W
R, fxd, 511, 1%, .125W
Toggle, DPST
58P
01AH
SULATOR, IC Pad
#6, .5 in.
REW, 6-32, .25 Pan
SHER, Lock, Hel, #6
AMP, Connector
, Capstan
REW, 4-40, .438 Pan
T, Lock, 4-40

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
*Q5,6	1251-2503 1251-2504  SERIES 1410 1854-0490	CONNECTOR, Contact, Female CONNECTOR, Contact, Male  TRANSISTOR, 2N3773, TO3





**NOTES:**

1. UNLESS OTHERWISE SPECIFIED ALL RESISTANCE VALUES ARE IN OHMS.

△ ANALOG RETURN ( $\pm 12V$ )

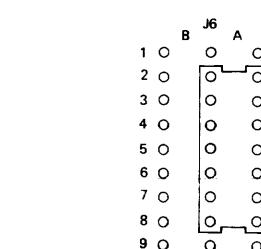
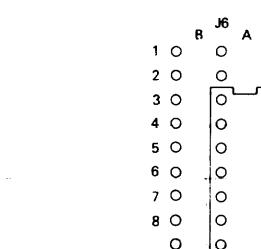
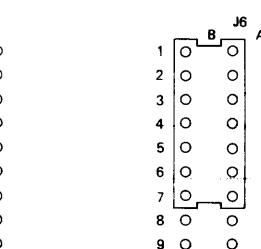
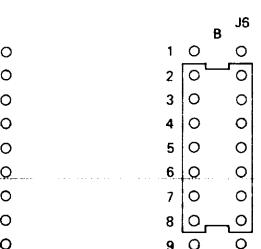
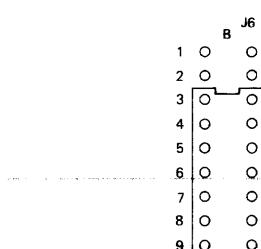
▽ MOTOR RETURN ( $\pm 20V$ )

▷ DIGITAL RETURN (+5V)

⚠ CONNECTOR J6 IS A 3 x 9 PIN SOCKET FOR A 14-PIN DUMMY PLUG. THE POSITION OF THE 14-PIN DUMMY PLUG IS DETERMINED BY THE CAPSTAN ASSEMBLY AND THE SYNCHRONOUS SPEED OF THE TAPE UNIT.

**-CAUTION-**

ENSURE THAT DIP DUMMY PLUG IS INSTALLED IN THE PROPER POSITION PRIOR TO APPLYING POWER TO THE UNIT. ATTEMPTING TO OPERATE THE UNIT WITHOUT THE PLUG INSTALLED OR WITH THE PLUG IN THE WRONG POSITION MAY RESULT IN DAMAGE TO THE UNIT.



⚠ 10 TO 18 IPS POSITION  
WITH 07970-60141  
CAPSTAN MOTOR  
ASSEMBLY MG1

⚠ 18.1 TO 25 IPS POSITION  
WITH 07970-60141  
CAPSTAN MOTOR  
ASSEMBLY MG1

⚠ 25.1 TO 45 IPS POSITION  
WITH 07970-60140  
CAPSTAN MOTOR  
ASSEMBLY MG1

⚠ 10 TO 18 IPS POSITION  
WITH 07970-60140  
CAPSTAN MOTOR  
ASSEMBLY MG1

⚠ 18.1 TO 25 IPS POSITION  
WITH 07970-60140  
CAPSTAN MOTOR  
ASSEMBLY MG1

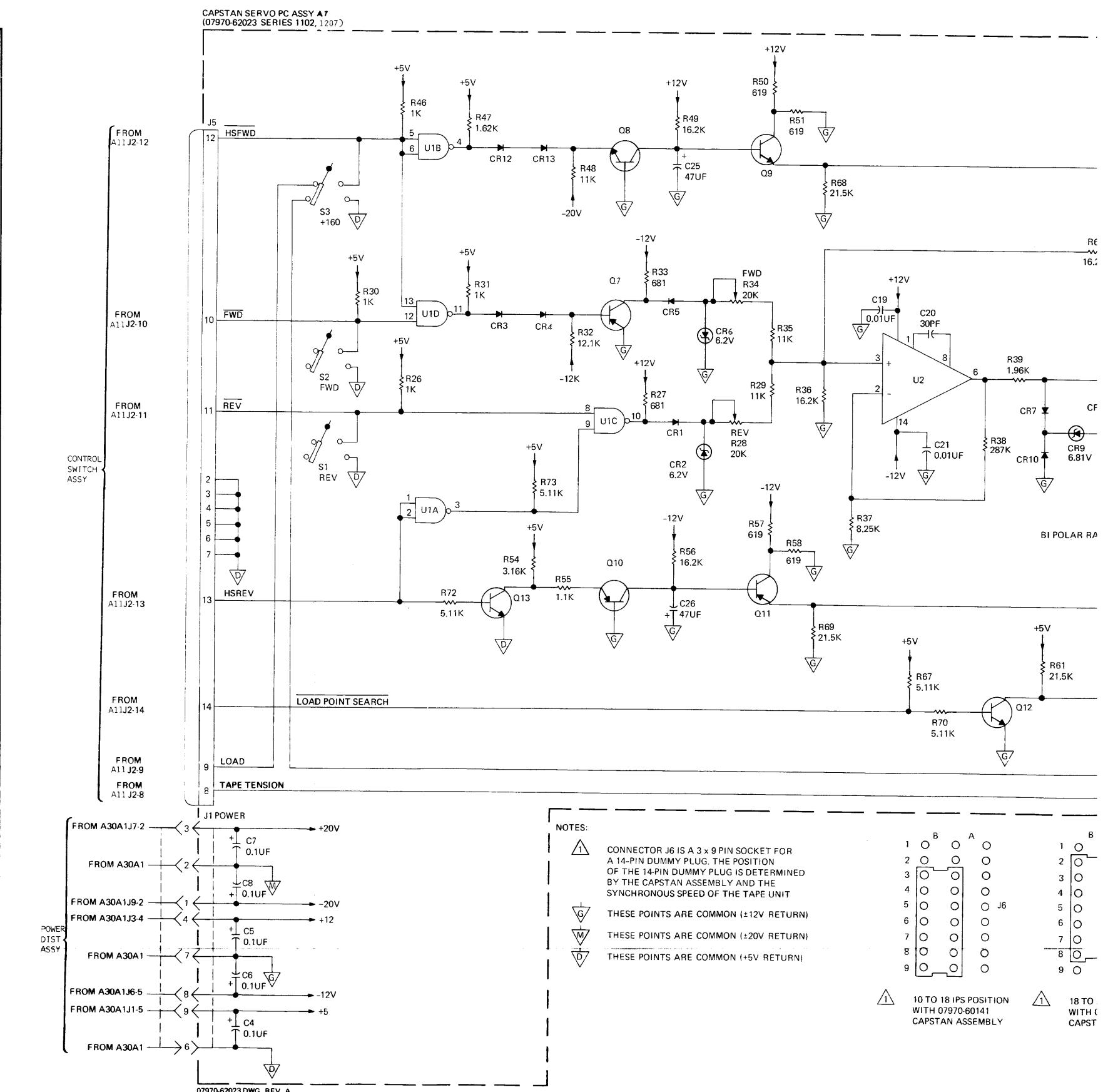
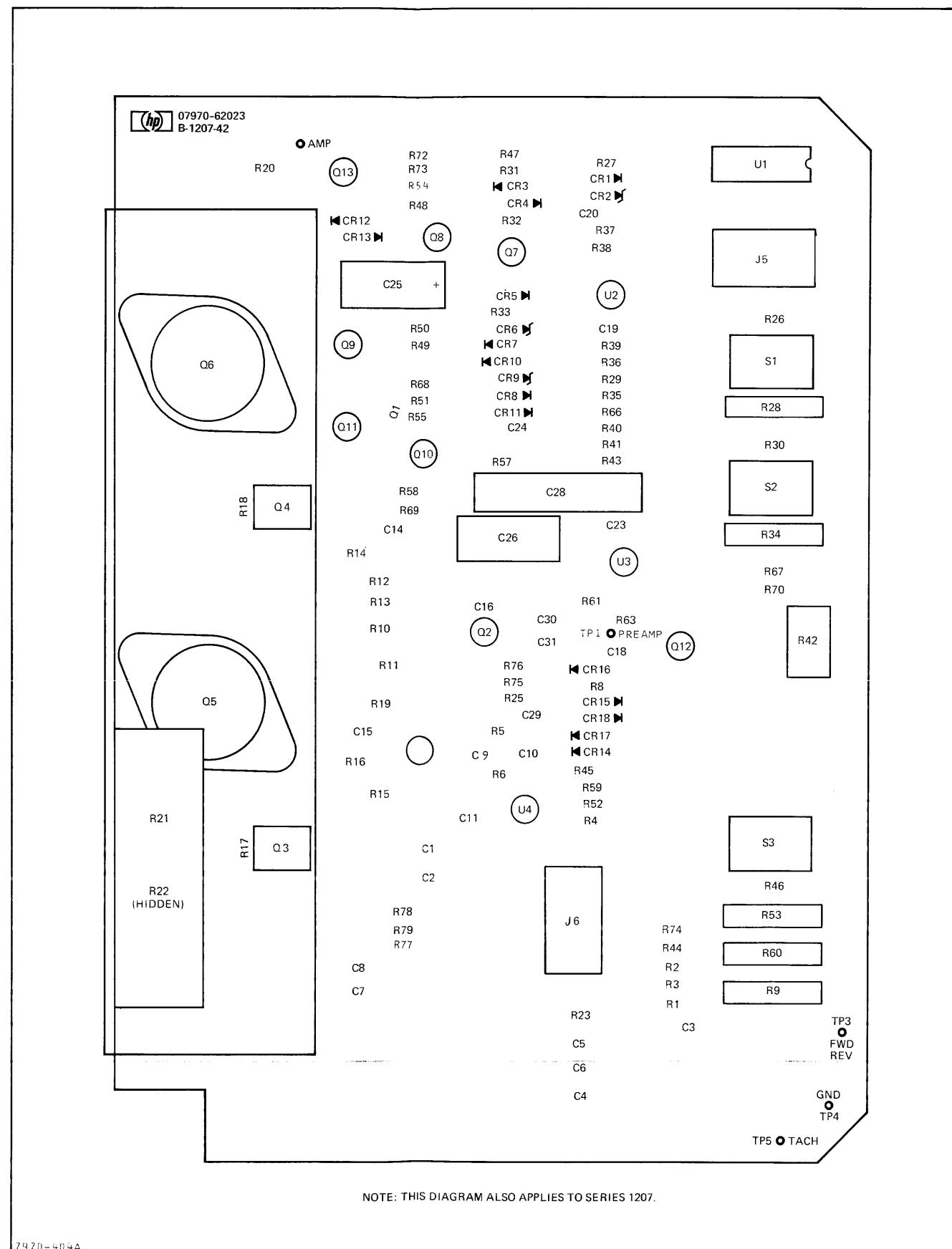
⚠ 25.1 TO 37.5 IPS POSITION  
WITH 07970-60140  
CAPSTAN MOTOR  
ASSEMBLY MG1

DUAL SPEED CAPSTAN SERVO PCA PARTS LIST  
07970-62027 (Series 1115, 1207)

REF. DES./	HP PART NO.	DESCRIPTION
	07970-62027	DUAL SPEED CAPSTAN SERVO PCA (Series 1115)
C1,2	0160-2151	CAPACITOR, fxd, .011uf, 5%
C3	0160-2414	CAPACITOR, fxd, .022uf, 5%
C4-8	0150-0121	CAPACITOR, fxd, .1uf, 10%
C9,10,19,24	0160-2055	CAPACITOR, fxd, .01uf, 100V
C11	0160-2207	CAPACITOR, fxd, 300pf, 5%
C14,15	0160-0153	CAPACITOR, fxd, .001uf, 10%
C16	0160-0165	CAPACITOR, fxd, .056uf, 10%
C18	0160-2250	CAPACITOR, fxd, 5.1pf, 5%
C20,23	0160-2199	CAPACITOR, fxd, 30pf, 5%
C25,26	0180-0097	CAPACITOR, fxd, 47uf, 35VDC
C28	0160-3387	CAPACITOR, fxd, .39uf, 10%
C29	0160-3536	CAPACITOR, fxd, 620pf, 5%
C30	0160-0174	CAPACITOR, fxd, .47uf, -20+80%
C31	0160-2224	CAPACITOR, fxd, 1800pf, 5%
CR1,3-5,7,8,10-18, 101-104	1901-0040	DIODE, 30V, 50MA
CR2,6	1902-0033	DIODE, Zener, 6.2V
CR9	1902-0048	DIODE, Zener, 6.81V
J5	1200-0426	SOCKET, IC
J6	07970-62025	PLUG ASSY, Dummy
Q1	1854-0053	TRANSISTOR, 2N2218, TO5
	0340-0164	INSULATOR, Transistor
Q2	1853-0012	TRANSISTOR, 2N2904A, TO5
	0340-0164	INSULATOR, Transistor
Q3	1853-0204	TRANSISTOR, 2N4920, X58
	2190-0800	WASHER, Mica, #6
	3050-0300	WASHER, Nylon, #4
	2200-0091	SCREW, 4-40, .562 in.
	2260-0009	NUT, Lock, 4-40
Q4	1854-0347	TRANSISTOR, 2N4923
	2190-0800	WASHER, Mica, #6
	3050-0300	WASHER, Nylon, #4
	2200-0091	SCREW, 4-40, .562 in.
	2260-0009	NUT, Lock, 4-40
	1854-0264	TRANSISTOR, 2N3715, TO3
	1200-0077	INSULATOR, Transistor
	2200-0147	SCREW, 4-40, .5 Pan
	2260-0009	NUT, Lock, 4-40
Q5,6 1	1853-0036	TRANSISTOR, 2N3906, PL18
	1854-0215	TRANSISTOR, 2N3904, PL5
	1855-0062	TRANSISTOR, FET, PL18
R1,2	0698-3152	RESISTOR, fxd, 3.48K, 1%, .125W
R3	0698-3202	RESISTOR, fxd, 1.74K, 1%, .125W
R4	0757-0290	RESISTOR, fxd, 6.19K, 1%, .125W
R5,6	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R8	0683-1055	RESISTOR, fxd, 1M, 5%, .25W

REF. DES./	HP PART NO.	DESCRIPTION
R9,28,34,107	2100-1972	RESISTOR, Variable, 20K, 10%
R10	0757-0797	RESISTOR, fxd, 90.9, 1%, .5W
R11	0698-3637	RESISTOR, fxd, 820, 5%, 2W
R12	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R13,15	0761-0058	RESISTOR, fxd, 750, 5%, 1W
R14,16	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R17,18	0698-3113	RESISTOR, fxd, 100, 5%, .125W
R19	0757-0198	RESISTOR, fxd, 100, 1%, .125W
R20,23	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R21,22	0811-2966	RESISTOR, fxd, 3, 1%, 50W
R25	0698-3260	RESISTOR, fxd, 464K, 1%, .125W
R27,33	0757-0419	RESISTOR, fxd, 681, 1%, .125W
R29,32,35,48,101	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R31,100	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R36,49,56,66	0757-0447	RESISTOR, fxd, 16.2K, 1%, .125W
R37	0757-0441	RESISTOR, fxd, 8.25K, 1%, .125W
R38	0698-3456	RESISTOR, fxd, 287K, 1%, .125W
R39,102	0698-0083	RESISTOR, fxd, 1.96K, 1%, .125W
R40	0757-0289	RESISTOR, fxd, 13.3K, 1%, .125W
R41	0698-0085	RESISTOR, fxd, 2.61K, 1%, .125W
R43	0698-3446	RESISTOR, fxd, 383, 1%, .125W
R44,103,104	0757-0465	RESISTOR, fxd, 100K, 1%, .125W
R45	0757-0463	RESISTOR, fxd, 82.5K, 1%, .125W
R47	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R50,51,57,58	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R52,59	0698-3153	RESISTOR, fxd, 3.83K, 1%, .125W
R53,60	2100-2850	RESISTOR, Variable, 10K, 10%
R54	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R55	0757-0424	RESISTOR, fxd, 1.1K, 1%, .125W
R61,63,68,69	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R74	0757-0466	RESISTOR, fxd, 110K, 1%, .125W
R75	0757-0470	RESISTOR, fxd, 162K, 1%, .125W
R76	0698-3457	RESISTOR, fxd, 316K, 1%, .125W
R77,78	0698-3151	RESISTOR, fxd, 2.87K, 1%, .125W
R79	0757-0317	RESISTOR, fxd, 1.33K, 1%, .125W
R105,106	2100-1762	RESISTOR, Variable, 20K, 5%
R108	0698-4491	RESISTOR, fxd, 30.9K, 1%, .125W
R109	1810-0020	RESISTOR, Network, 1.5K, 5%, .15W
S1-3	3101-1213	SWITCH, Toggle, DPST
U1	1820-0256	IC, MC858P
U2-4	1820-0223	IC, LM301AH
	0340-0456	INSULATOR, IC Pad
U5	1820-0175	IC, SN7405, Inverter
	0380-0311	SPACER, #6, .5 in.
	2360-0195	SCREW, 6-32, .312 Pan
	2190-0008	WASHER, Lock, #6
	07970-00620	CLAMP, Connector
	07970-00291	BRACKET, Capstan
	2200-0143	SCREW, 4-40, .375 Pan
	2260-0009	NUT, Lock, 4-40
	1251-2503	CONNECTOR, Contact, Female
	1251-2504	CONNECTOR, Contact, Male

1 Added on series 1207





## SINGLE SPEED CAPSTAN SERVO PCA PARTS LIST

07970-62023 (Series 1102, 1207)

REF. DES./	HP PART NO.	DESCRIPTION
	07970-62023	CAPSTAN SERVO PCA (Series 1102)
C1,2	0160-2151	CAPACITOR, fxd, .011uf
C3	0160-2414	CAPACITOR, fxd, .022uf
C4-8	0150-0121	CAPACITOR, fxd, .1uf, 50V
C9,10,19,24	0160-2055	CAPACITOR, fxd, .01uf
C11	0160-2207	CAPACITOR, fxd, 300pf
C14,15	0160-0153	CAPACITOR, fxd, .001uf
C16	0160-0165	CAPACITOR, fxd, .056uf
C18	0160-2250	CAPACITOR, fxd, 5.1pf
C20,23	0160-2199	CAPACITOR, fxd, 30pf
C25,26	0180-0097	CAPACITOR, fxd, 47uf, 35V
C28	0160-3387	CAPACITOR, fxd, .39uf, 80V
C29	0160-3536	CAPACITOR, fxd, 620pf, 5%
C30	0160-0174	CAPACITOR, fxd, .47uf
C31	0160-2224	CAPACITOR, fxd, 1800pf
CR1,3-5,7,8,10-18	1901-0040	DIODE, 30V, 50MA
CR2,6	1902-0033	DIODE, 1N823, 180V, 200MA
CR9	1902-0048	DIODE, Breakdown, 6.81V
J5	1200-0426	SOCKET, IC
J6	07970-62025	PLUG ASSEMBLY, Dummy
Q1	1854-0053	TRANSISTOR, 2N2218
	0340-0164	INSULATOR, Transistor
Q2	1853-0012	TRANSISTOR, 2N2904A
	0340-0164	INSULATOR, Transistor
Q3	1853-0204	TRANSISTOR, 2N4920
Q4	1854-0347	TRANSISTOR, 2N4923
Q5,6	1854-0264	TRANSISTOR, 2N3715
1	1200-0077	INSULATOR, Transistor
	2200-0147	SCREW, 4-40, .5 Pan
	2260-0009	NUT, Lock, 4-40
Q7,10,11	1853-0036	TRANSISTOR, 2N3906
Q8,9,12,13	1854-0215	TRANSISTOR, 2N3904
R1,2	0698-3152	RESISTOR, fxd, 3.48K, 1%, .125W
R3	0698-3202	RESISTOR, fxd, 1.74K, 1%, .125W
R4	0757-0290	RESISTOR, fxd, 6.19K, 1%, .125W
R5,6	0683-1015	RESISTOR, fxd, 100, .25W
R8	0683-1055	RESISTOR, fxd, 1M, .25W
R9,28,34	2100-1972	RESISTOR, Variable, 20K, 10%
R10	0757-0797	RESISTOR, fxd, 90.9, .5W
R11	0698-3637	RESISTOR, fxd, 820, 5%, 2W
R12	0757-0401	RESISTOR, fxd, 100, .125W
R13,15	0761-0058	RESISTOR, fxd, 750, 5%, 1W
R14,16	0683-1025	RESISTOR, fxd, 1K, .25W
R17,18	0698-3113	RESISTOR, fxd, 100, .125W
R19	0757-0198	RESISTOR, fxd, 100, .5W
R20,23	0683-1035	RESISTOR, fxd, 10K, .25W
R21,22	0811-2966	RESISTOR, fxd, 3, 1%
R25	0698-3260	RESISTOR, fxd, 464K, 1%, .125W

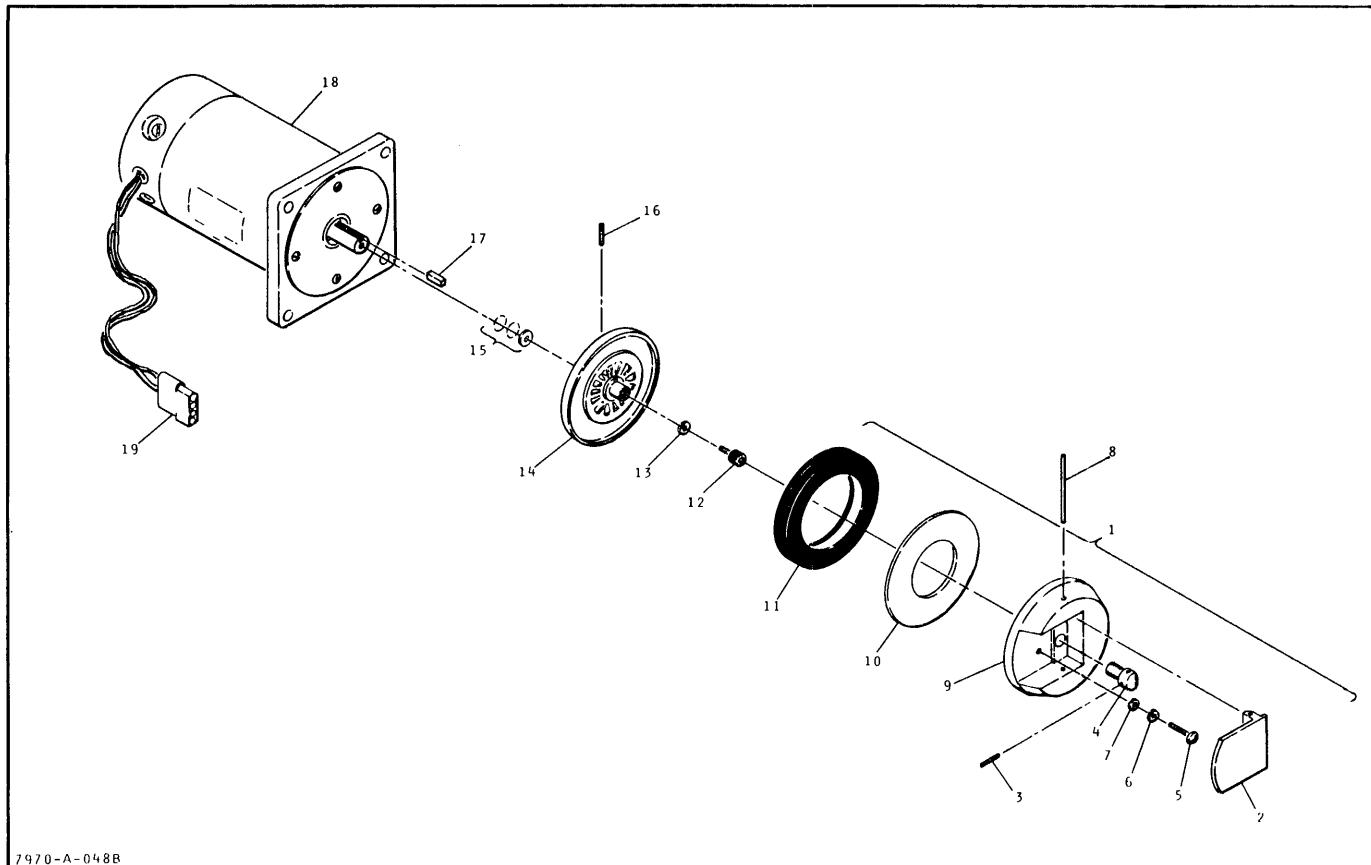
REF. DES./	HP PART NO.	DESCRIPTION
R26,30,31,46	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R27,33	0757-0419	RESISTOR, fxd, 681, 1%, .125W
R29,35,48	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R32	0757-0444	RESISTOR, fxd, 12.1K, 1%, .125W
R36,49,56,66	0757-0447	RESISTOR, fxd, 16.2K, 1%, .125W
R37	0757-0441	RESISTOR, fxd, 8.25K, 1%, .125W
R38	0698-3456	RESISTOR, fxd, 287K, 1%, .125W
R39	0698-0083	RESISTOR, fxd, 1.96K, 1%, .125W
R40	0757-0289	RESISTOR, fxd, 13.3K, 1%, .125W
R41	0698-0085	RESISTOR, fxd, 2.61K, 1%, .125W
R42	2100-1762	RESISTOR, Variable, 20K, 5%
R43	0698-3446	RESISTOR, fxd, 383, 1%, .125W
R44	0757-0465	RESISTOR, fxd, 100K, 1%, .125W
R45	0757-0463	RESISTOR, fxd, 82.5K, 1%, .125W
R47	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R50,51,57,58	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R52,59	0698-3153	RESISTOR, fxd, 3.83K, 1%, .125W
R53,60	2100-2850	RESISTOR, Variable, 10K
R54	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R55	0757-0424	RESISTOR, fxd, 1.1K, 1%, .125W
R61,63	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R67,70,72,73	0757-0438	RESISTOR, fxd, 5.11K, 1%, .125W
R74	0757-0466	RESISTOR, fxd, 110K, 1%, .125W
R75	0757-0470	RESISTOR, fxd, 162K, 1%, .125W
R76	0698-3457	RESISTOR, fxd, 316K, 1%, .125W
R77,78	0698-3151	RESISTOR, fxd, 2.87K, 1%, .125W
R79	0757-0317	RESISTOR, fxd, 1.33K, 1%, .125W
S1-3	3101-1213	SWITCH, Toggle, DPST
U1	1820-0256	IC, MC858P
U2-4	1820-0223	IC, LM301AH
	0340-0456	INSULATOR, IC, Pad
	0380-0311	SPACER, #6, .5 in.
	2360-0193	SCREW, 6-32, .25 Pan
	2190-0006	WASHER, Lock, Hel, #6
	07970-00620	CLAMP, Connector
	07970-62025	BRACKET, Capstan
	2200-0145	SCREW, 4-40, .438 Pan
	2260-0009	NUT, Lock, 4-40
	1251-2503	CONNECTOR, Contact, Female
	1251-2504	CONNECTOR, Contact, Male

1 Added on series 1207.

ON

K, 1%, .125W  
81, 1%, .125W  
1K, 1%, .125W  
2.1K, 1%, .125W  
6.2K, 1%, .125W  
.25K, 1%, .125W  
.87K, 1%, .125W  
.96K, 1%, .125W  
3.3K, 1%, .125W  
.61K, 1%, .125W  
le, 20K, 5%  
83, 1%, .125W  
00K, 1%, .125W  
2.5K, 1%, .125W  
.62K, 1%, .125W  
19, 1%, .125W  
.83K, 1%, .125W  
le, 10K  
.16K, 1%, .125W  
.1K, 1%, .125W  
.1.5K, 1%, .125W  
.11K, 1%, .125W  
.10K, 1%, .125W  
.62K, 1%, .125W  
.16K, 1%, .125W  
.87K, 1%, .125W  
.33K, 1%, .125W  
DPST

IC, Pad  
n.  
, .25 Pan  
k, Hel, #6  
ector  
1  
, .438 Pan  
4-40  
ict, Female  
ict, Male



7970-A-048B

Reel Motor Assembly B1-B2  
(07970-60170 and 07970-60171)

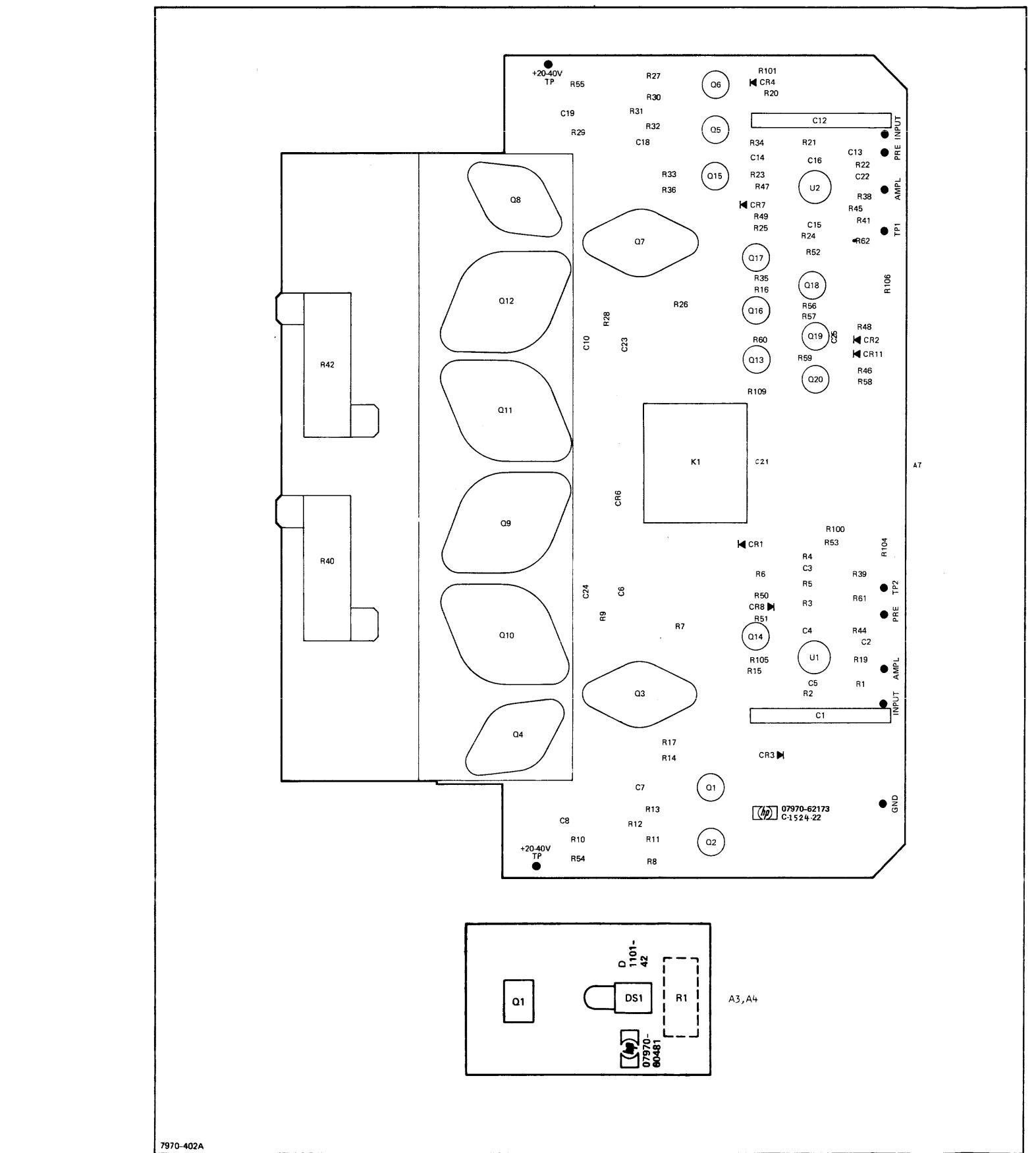
Reel Motor Assembly B1-B2

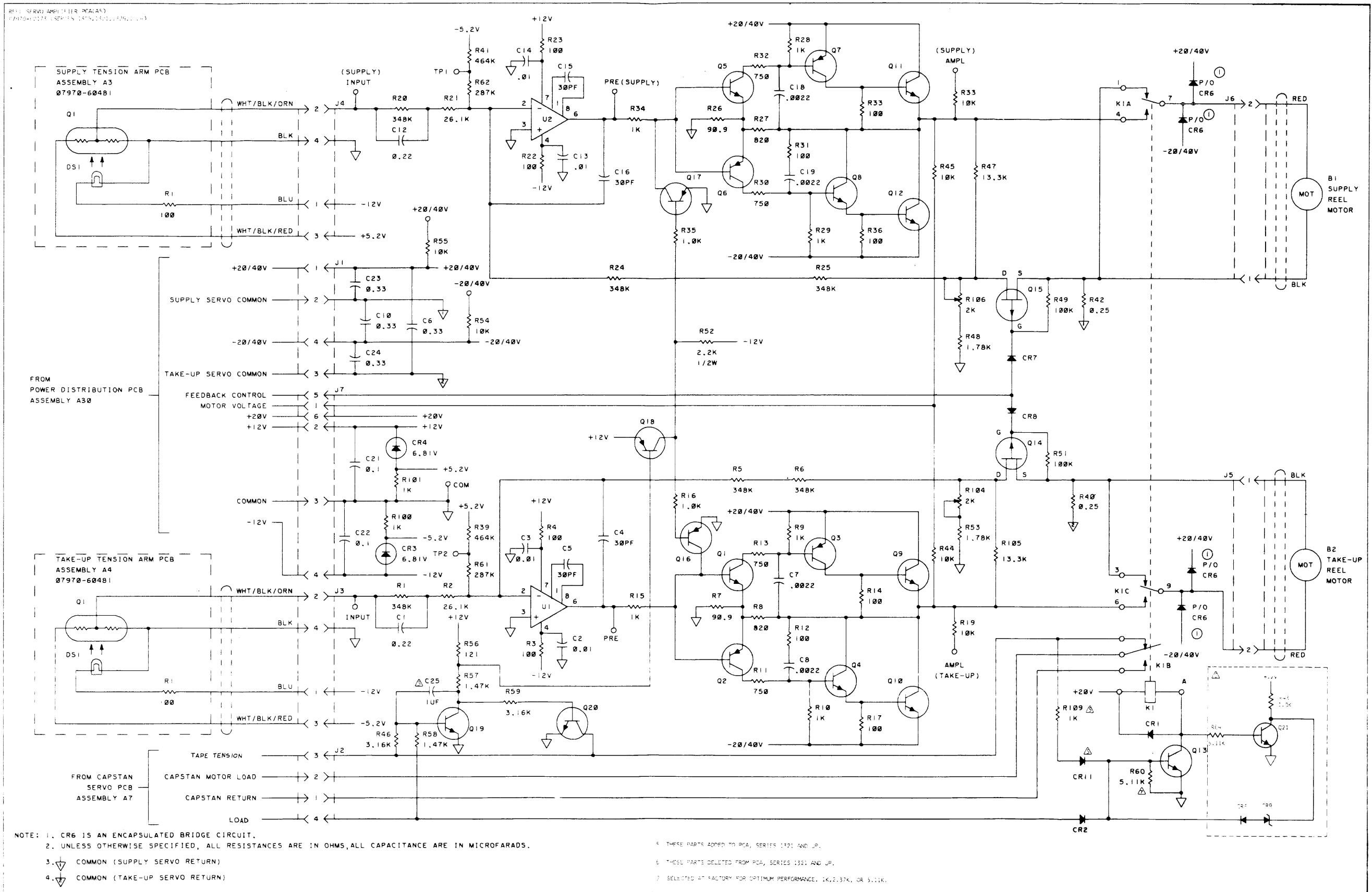
## REEL MOTOR ASSEMBLY PARTS LIST

07970-60170

07970-60171

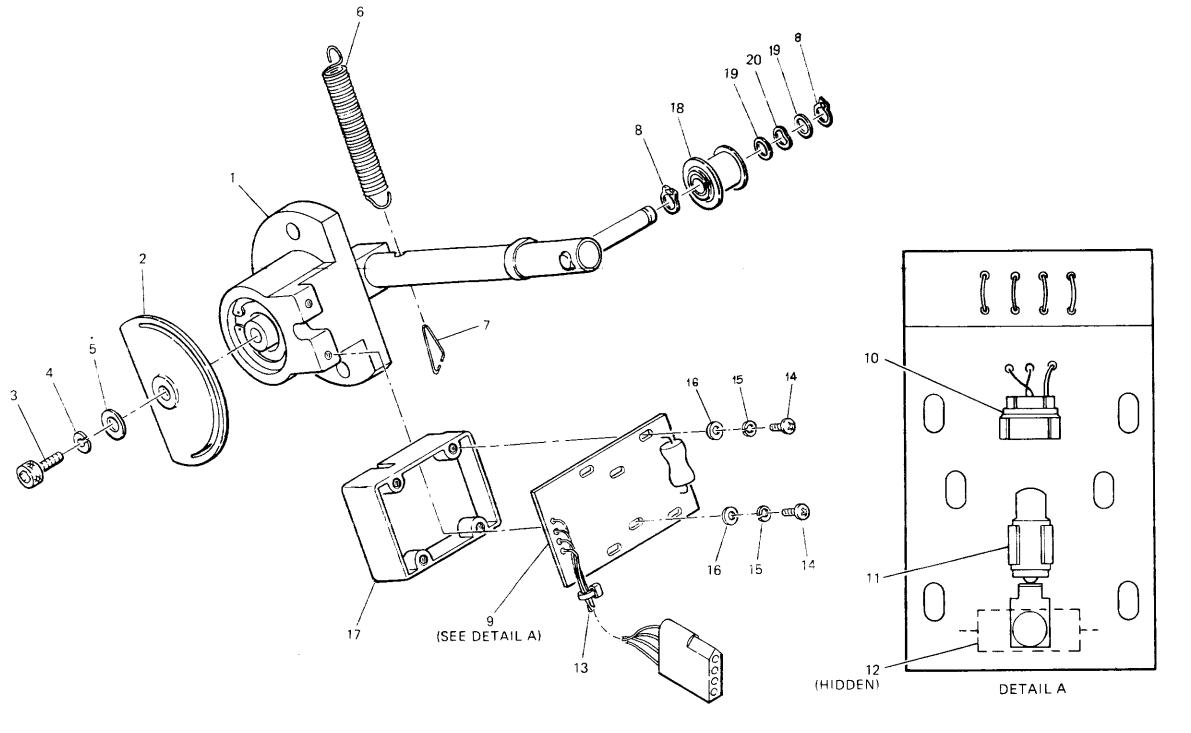
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60170	REEL MOTOR ASSEMBLY
1	07970-61040	REEL HOLDDOWN ASSEMBLY
2	07970-40090	HANDLE, HOLD DOWN
3	3030-0196	SCREW, SET, 4-40
4	07970-20700	STUD, HOLD DOWN
5	2200-0153	SCREW, 4-40X, .875
6	2190-0034	WASHER, Lock, #10
7	2190-0416	WASHER, Flat, #4
8	07970-20440	PIN, HOLD DOWN
9	07970-40070	BODY, HOLD DOWN
10	3050-0729	WASHER, 1.750
11	07970-40080	RING, REEL RETAINING
12	3030-0039	SCREW, 10-32 , .625L
13	2190-0034	WASHER, Lock, #10
14	07970-20420	TURNTABLE, REEL
15	07975 - 44	SHIM, .002 in. width
	07975 - 43	SHIM, .005 in. width
	07975 - 40	SHIM, .010 in. width
	07975 - 41	SHIM, .032 in. width
16	3030-0010	SCREW, SET, 10-32
17	07970-20140	KEY, 5/8 Long
*18	07970-62267	MOTOR, REEL, Subassembly
19	1251-2514	CONNECTOR, Molex, 4 pin
*18	07970-60171	MOTOR, Reel, Subassembly
	07970-62266	





REEL SERVO PCA PARTS LIST  
07970-62173 (Series 1305, 1321, 1329, 1524)

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62173	REEL SERVO ASSY (SERIES 1305)
C1, 12	0160-0380	CAPACITOR, fxd, .22uf, 10%
C2, 3, 13, 14	0160-2055	CAPACITOR, fxd, .01uf, 100V
C4, 5, 15, 16	0160-2199	CAPACITOR, fxd, 30pf, 5%
C6, 10, 23, 24	0160-2128	CAPACITOR, fxd, .33uf, 20%
C7, 8, 18, 19	0160-0154	CAPACITOR, fxd, .0022uf, 10%
C21, 22	0150-0121	CAPACITOR, fxd, .1uf, 10%
*C25	1901-0040	CAPACITOR
*CR1, 2, 5, 7, 8, 11	1902-0048	DIODE, 30V, 50ma
CR3, 4	1901-0364	DIODE, Zener, 6.81V
CR6	1902-3139	DIODE, BRIDGE RECTIFIER
*CR9	0490-0891	DIODE, ZENER, 8.25V
K1	0490-0890	RELAY, 3PDT, 24VDC
	1460-1182	SOCKET, RELAY
Q1, 5	1854-0022	SPRING, HOLD DOWN
Q2, 6	1853-0080	TRANSISTOR, 2N2101 TO5
*Q3, 7,	1853-0328	TRANSISTOR, 2N4888 PL5
*Q4, 8	1854-0282	TRANSISTOR, 2N6211
*Q9-12	1854-0577	TRANSISTOR, 2N3583
*Q13, 19, 20, 21	1854-0215	TRANSISTOR, 2N6259
Q14, 15	1855-0056	TRANSISTOR, 2N3904 PL5
Q16, 17	1853-0322	TRANSISTOR, 2N4342 TO18
Q18	1853-0036	TRANSISTOR, 2N2946A TO46
	0340-0177	TRANSISTOR, 2N3906 PL18
	2200-0147	INSULATOR, BUSHING
	2260-0001	SCREW, 4-40, .5 Pan
	2260-0009	NUT, HEX, 4-40
	0698-3458	NUT, Lock, 4-40
R1, 5, 6, 20,	0698-3159	RESISTOR, fxd, 348K, 1%, .125W
24, 25	0683-1015	
R2, 21	0757-0797	RESISTOR, fxd, 26.1K, 1%, .125W
R3, 4, 22, 23	0698-3637	RESISTOR, fxd, 100, 5%, .25W
R7, 26	0683-1025	RESISTOR, fxd, 90.9, 1%, .5W
R8, 27	0761-0058	RESISTOR, fxd, 820, 5%, 2W
*R9, 10, 15, 28, 29,	0757-0401	RESISTOR, fxd, 1K, 5%, .25W
34, 43, 100, 101, 109	0698-3113	RESISTOR, fxd, 750, 5%, 1W
R11, 13, 30, 32	0698-3113	RESISTOR, fxd, 100, 1%, .125W
R12, 31	0757-0280	RESISTOR, fxd, 100, 5%, .125W
R14, 17, 33, 36	0683-1035	RESISTOR, fxd, 1K, 1%, .125W
R16, 35	0698-3260	RESISTOR, fxd, 10K, 5%, .25W
R19, 38, 54, 55	0811-2048	RESISTOR, fxd, 464K, 1%, .125W
R39, 41	0686-1035	RESISTOR, fxd, .25, 1%, 25W
R40, 42	0757-0279	RESISTOR, fxd, 10K, 5%, .5W
R44, 45	0757-0289	RESISTOR, fxd, 3.16K, 1%, .125W
R46, 59	0757-0278	RESISTOR, fxd, 13.3K, 1%, .125W
R47, 105		RESISTOR, 1.78K, 1%, .125W
R48, 53		



## TENSION ARM ASSEMBLY PARTS LIST

07970-60181

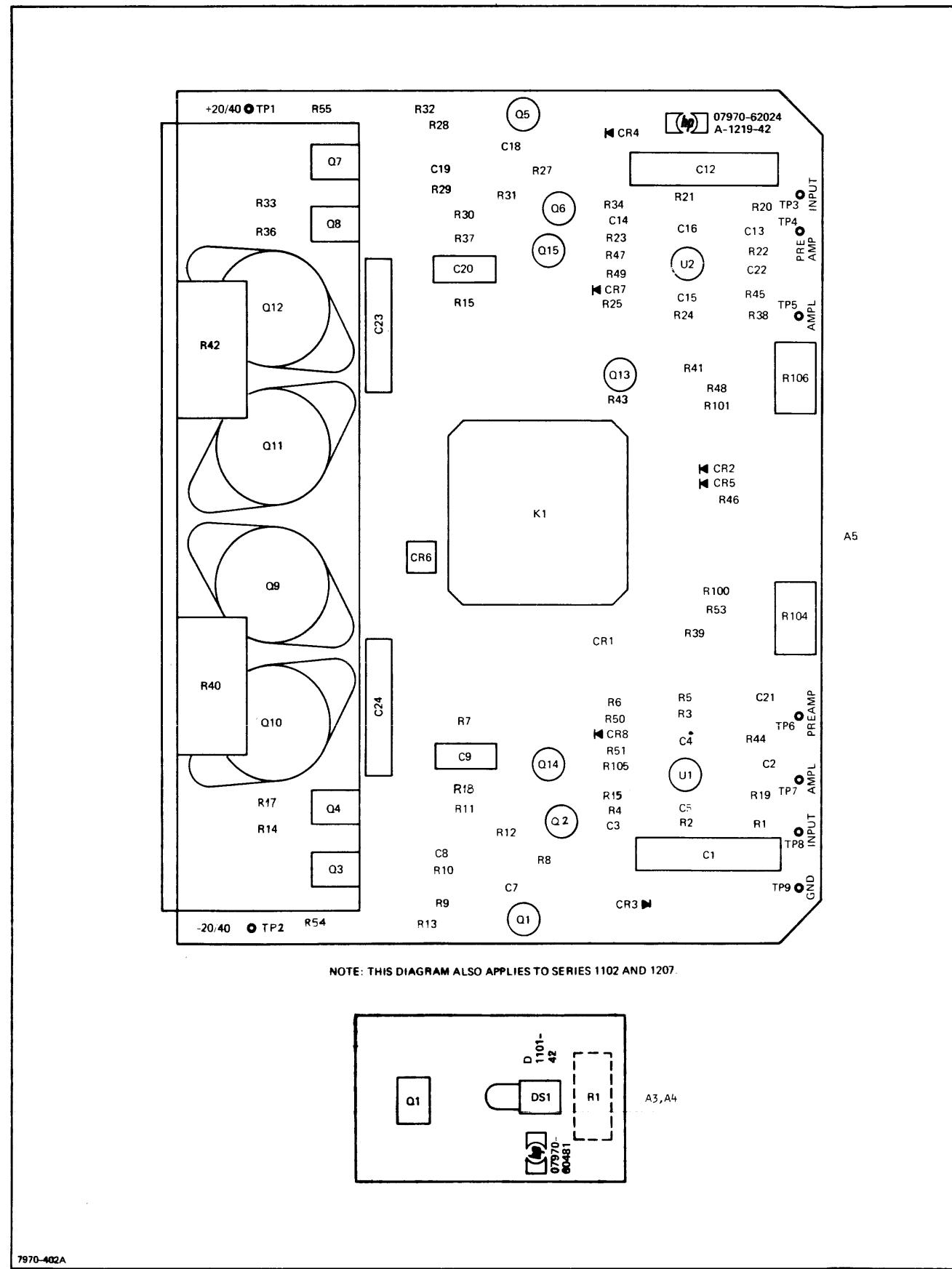
REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60181	TENSION ARM ASSEMBLY
1	07970-20190	HOUSING, Bearing
2	07970-00380	SHADE, Photocell
3	3030-0038	SCREW, 10-32, .5 in.
4	2190-0034	WASHER, Lock, #10
5	2190-0420	WASHER, Flat #10
6	1460-1181	SPRING, Extension
7	1460-1250	SPRING, Torsion
8	0510-0238	RING, Retaining
9	07970-60481	PCA, Tension Arm
10	1990-0307	PHOTOCOCONDUCTOR, dual (Q1)
11	2140-0351	LAMP, 6V, #328, (DS1)
12	0698-3620	RESISTOR, fxd, 100, 5%, 2W, (R1)
13	07970-60870	CABLE, Tension Arm
14	2200-0141	SCREW, 4-40, .312 Pan
15	2190-0003	WASHER, Lock, #4
16	3050-0105	WASHER, Flat, #4
17	07970-40203	HOOD, Tension Arm
18	07970-60130	GUIDE, Tape
19	3050-0032	WASHER, Flat, .010 thick
20	3050-0253	WASHER, Spring, #10

REEL SERVO PCA PARTS LIST  
07970-62173 (Series 1305, 1321, 1329, 1524)

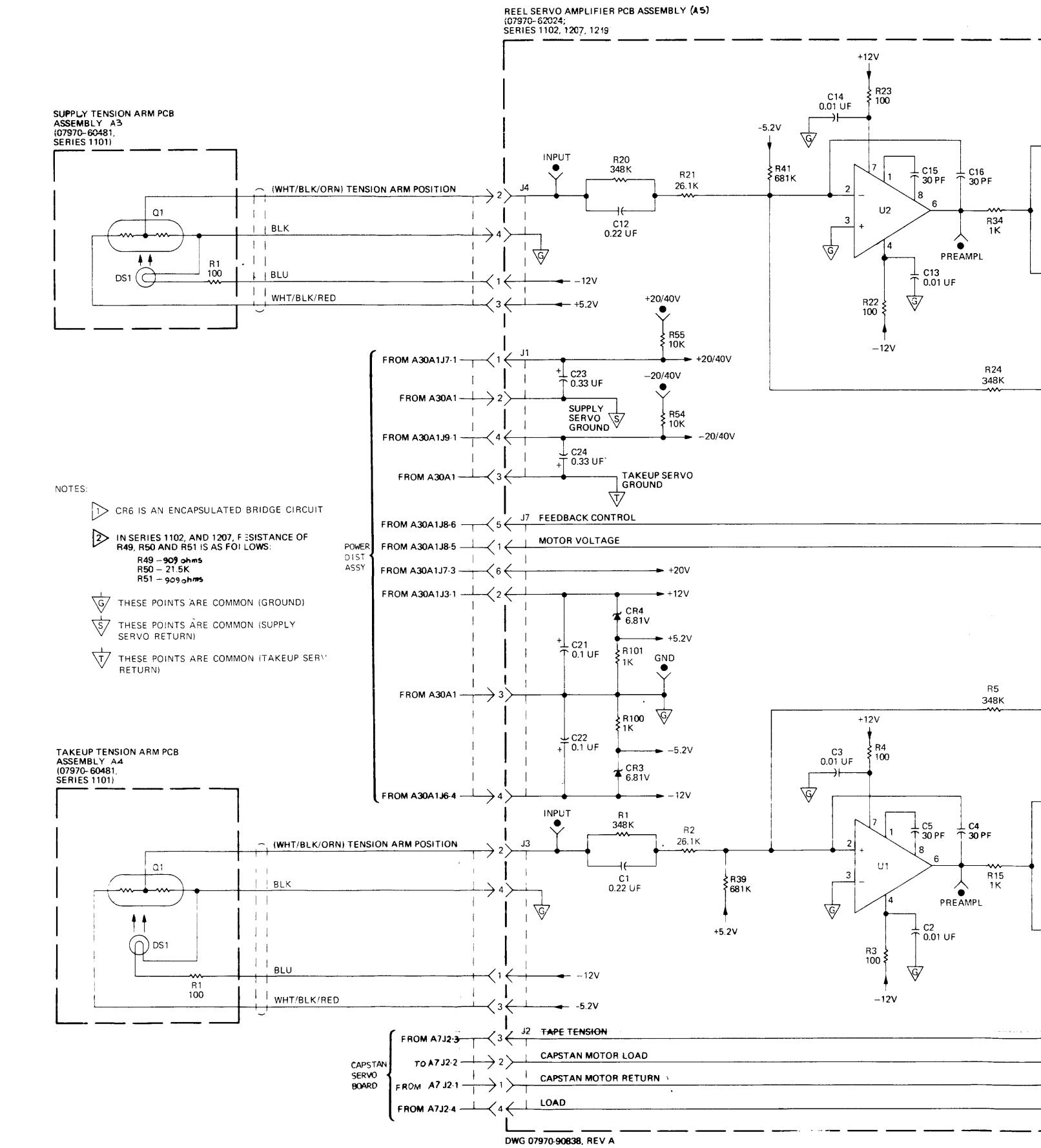
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1, 12	0160-0380	CAPACITOR, fxd, .22uf, 10%
C2,3,13,14	0160-2055	CAPACITOR, fxd, .01uf, 100V
C4,5,15,16	0160-2199	CAPACITOR, fxd, 30pf, 5%
C6,10,23,24	0160-2128	CAPACITOR, fxd, .33uf, 20%
C7,8,18,19	0160-0154	CAPACITOR, fxd, .0022uf, 10%
C21,22	0150-0121	CAPACITOR, fxd, .1uf, 10%
*C25		CAPACITOR
*CR1,2,5,7,8,11	1901-0040	DIODE, 30V, 50ma
CR3,4	1902-0048	DIODE, Zener, 6.81V
CR6	1901-0364	DIODE, BRIDGE RECTIFIER
*CR9	1902-3139	DIODE, ZENER, 8.25V
K1	0490-0891	RELAY, 3PDT, 24VDC
	0490-0890	SOCKET, RELAY
Q1,5	1460-1182	SPRING, HOLD DOWN
Q2,6	1854-0022	TRANSISTOR, 2N2101 T05
*Q3,7,	1853-0080	TRANSISTOR, 2N4888 PL5
*Q4,8	1853-0328	TRANSISTOR, 2N6211
*Q9-12	1854-0282	TRANSISTOR, 2N3583
*Q13,19,20,21	1854-0577	TRANSISTOR, 2N6259
Q14,15	1854-0215	TRANSISTOR, 2N3904 PL5
Q16,17	1855-0056	TRANSISTOR, 2N4342 T018
Q18	1853-0322	TRANSISTOR, 2N2946A T046
	1853-0036	TRANSISTOR, 2N3906 PL18
	0340-0177	INSULATOR, BUSHING
	2200-0147	SCREW, 4-40, .5 Pan
R1,5,6,20,	2260-0001	NUT, HEX, 4-40
24,25	2260-0009	NUT, Lock, 4-40
R2,21	0698-3458	RESISTOR, fxd, 348K, 1%, .125W
R3,4,22,23	0698-3159	RESISTOR, fxd, 26.1K, 1%, .125W
R7,26	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R8,27	0757-0797	RESISTOR, fxd, 90.9, 1%, .5W
*R9,10,15,28,29,	0698-3637	RESISTOR, fxd, 820, 5%, 2W
34,43,100,101,109	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R11,13,30,32	0761-0058	RESISTOR, fxd, 750, 5%, 1W
R12,31	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R14,17,33,36	0698-3113	RESISTOR, fxd, 100, 5%, .125W
R16,35	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R19,38,54,55	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R39,41	0698-3260	RESISTOR, fxd, 464K, 1%, .125W
R40,42	0811-2048	RESISTOR, fxd, .25, 1%, 25W
R44,45	0686-1035	RESISTOR, fxd, 10K, 5%, .5W
R46,59	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R47,105	0757-0289	RESISTOR, fxd, 13.3K, 1%, .125W
R48,53	0757-0278	RESISTOR, 1.78K, 1%, .125W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R49,51	0757-0465	RESISTOR, fxd, 100K, 1%, .125W
R50	0757-0458	RESISTOR, fxd, 51.1K, 1%, .125W
R52	0686-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R56	0757-0403	RESISTOR, fxd, 121, 1%, .125W
R57,58	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
*R60,64	0757-0438	RESISTOR, fxd, 5.11K, 1%, .125W
R61,62	0698-3456	RESISTOR, fxd, 287K, 1%, .125W
R104,106	2100-1759	RESISTOR, Variable, 2K, 5%, 1W
U1,2	1820-0223	IC, LM301AH
	07970-20849	BRACKET, REEL SERVO
	1205-0085	HEAT DISSIPATOR (Q3,Q7)
		Series 1321
C25	0160-0127	CAPACITOR, 1.0uf (Added to PCA)
CR11	1901-0040	DIODE (Added to PCA)
CR5	1901-0040	DIODE (Deleted from PCA)
CR9	1902-3139	DIODE (Deleted from PCA)
Q9-12	1854-0490	TRANSISTORS, 2N3773 (New Part No.)
R43	0683-1025	RESISTOR (Deleted from PCA)
R64	0757-0438	RESISTOR (Deleted from PCA)
R109	0683-1025	RESISTOR (Added to PCA)
		Series 1329
Q3,7	1853-0323	TRANSISTORS, 2N4900 (New Part No.)
Q4,8	1854-0399	TRANSISTORS, 2N4912 (New Part No.)
		Series 1524
R60	0757-0938	RESISTOR, 5.11K } Selected at factory
R60	0757-0280	RESISTOR, 1K } for optimum
R60	0698-3150	RESISTOR, 2.37K } performance, 1K or 2.37K or 5.11K

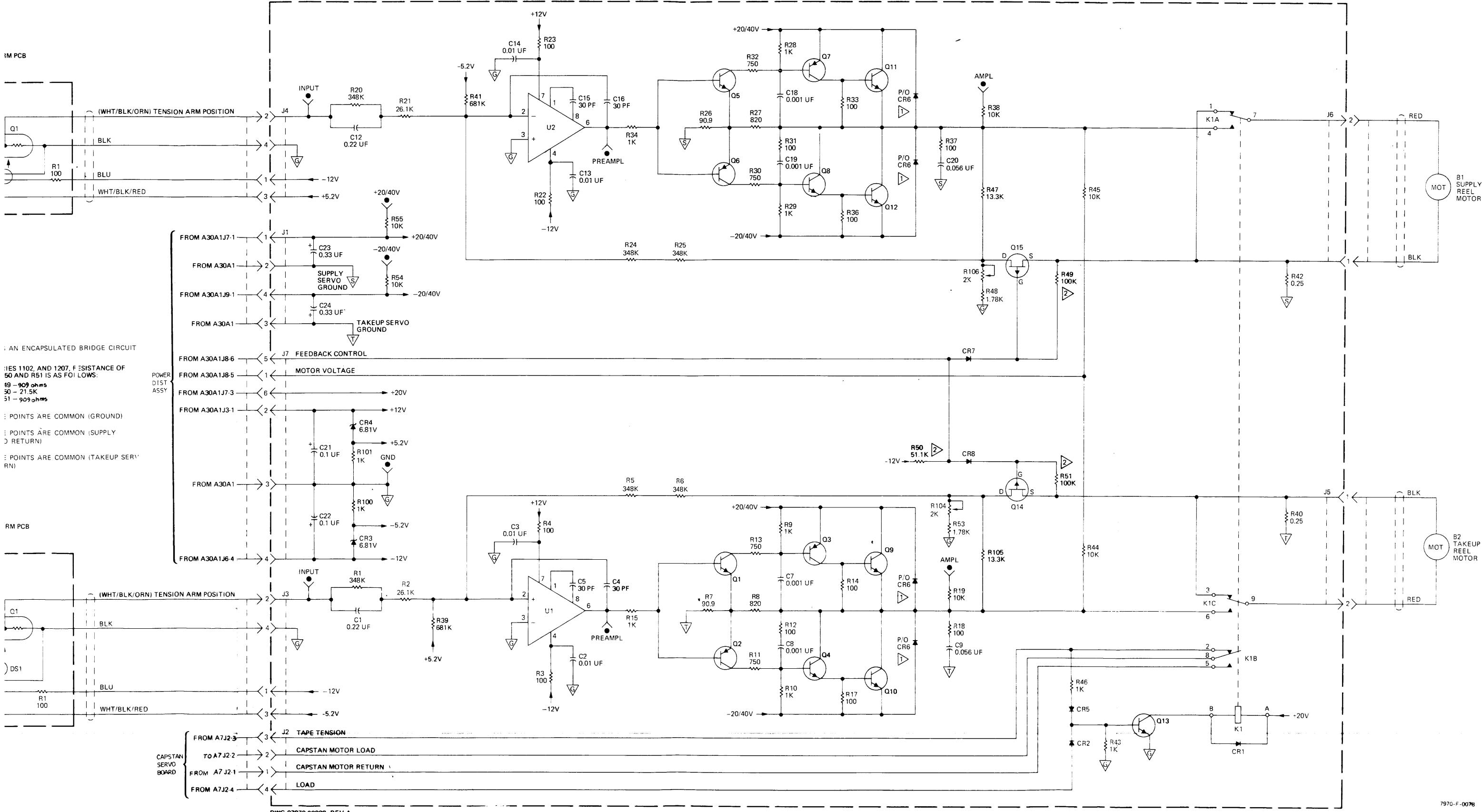
Tension Arm Assembly A3/A4 and  
Reel Servo PC Assembly A5



7970-402A



REEL SERVO AMPLIFIER PCB ASSEMBLY (A5)  
(07970 62024  
SERIES 1102, 1207, 1219



DWG 07970-90838, REV A

7970-F-0078

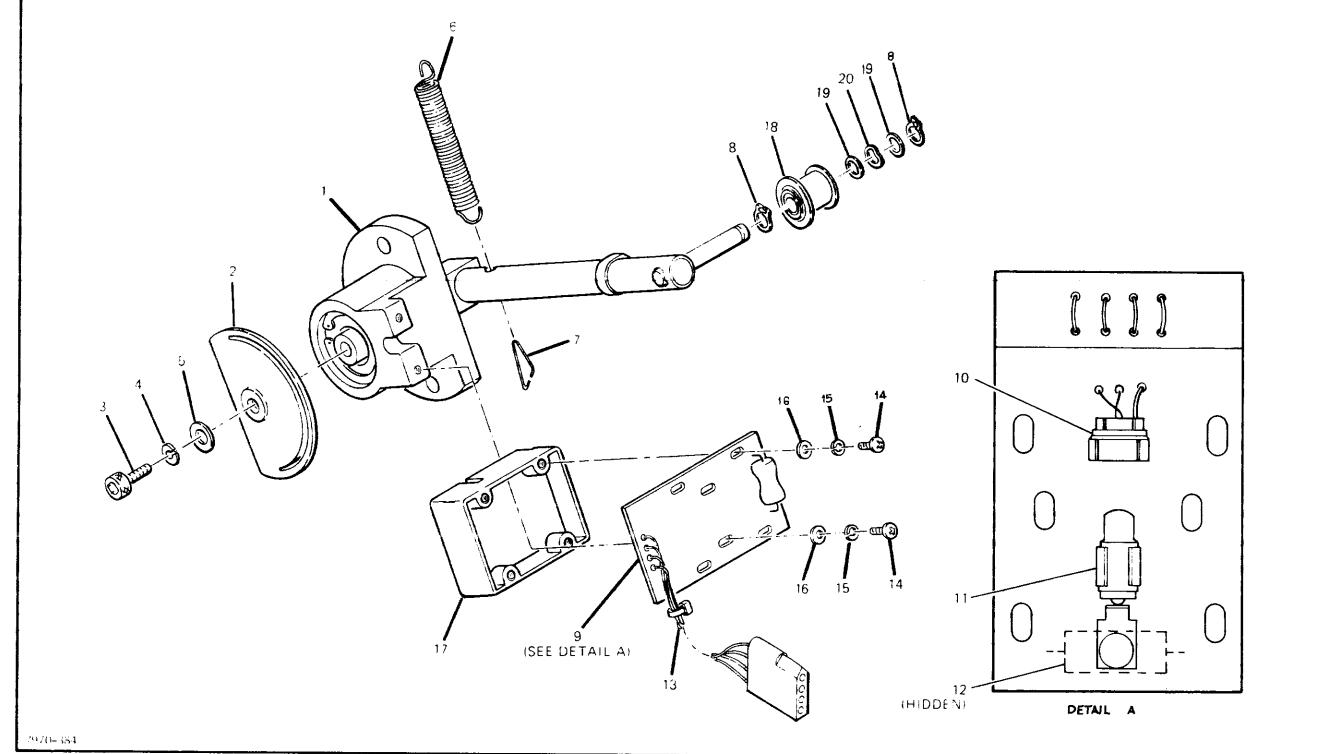
Tension Arm Assembly A3/A4 and  
Reel Servo PC Assembly A5

R104, 106  
U1, 2\*R49, 51  
\*R50

1 Added o

REEL SERVO PCA PARTS LIST  
07970-62024 (Series 1102, 1207, 1219)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62024	REEL SERVO PCA (Series 1102)
C1, 12	0160-0380	CAPACITOR, fxd, .22uf, 10%
C2, 3, 13, 14	0160-2055	CAPACITOR, fxd, .01uf, -20 + 80%
C4, 5, 15, 16	0160-2199	CAPACITOR, fxd, 30pf, 5%
C7, 8, 18, 19	0160-0153	CAPACITOR, fxd, .001uf, 10%
C9, 20	0160-0165	CAPACITOR, fxd, .056uf, 10%
C21, 22	0150-0121	CAPACITOR, fxd, .1uf, 50V
C23, 24	0160-2128	CAPACITOR, fxd, .33uf, 200V
CR1, 2, 5, 7, 8	1901-0040	DIODE, 30V, 50MA
CR3, 4,	1902-0048	DIODE, Breakdown, 6.81V
CR6	1901-0364	DIODE, Bridge Rect
K1	0490-0891	RELAY, 10, Amp
	0490-0890	SOCKET, Relay
	1460-1182	SPRING, Holddown
Q1, 5	1854-0022	TRANSISTOR, NPN, SI, T039
Q2, 6	1853-0080	TRANSISTOR, 2N4888
Q3, 7	1853-0204	TRANSISTOR, 2N4920
Q4, 8	1854-0347	TRANSISTOR, 2N4923
Q9-12	1854-0490	TRANSISTOR, Power, NPN, T03
	1200-0077	INSULATOR, Transistor
	2200-0147	SCREW, 4-40, .5 Pan
	2260-0009	NUT, Lock, 4-40
Q13	1854-0215	TRANSISTOR, 2N3904
Q14, 15	1855-0052	TRANSISTOR, FET, T092
R1, 5, 6, 20, 24, 25	0698-3458	RESISTOR, fxd, 348K, 1%, .125W
R2, 21	0698-3159	RESISTOR, fxd, 26.1K, 1%, .125W
R3, 4, 22, 23	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R7, 26	0757-0797	RESISTOR, fxd, 90.9, 1%, .5W
R8, 27	0698-3637	RESISTOR, fxd, 820, 5%, 2W
R9, 10, 15, 28, 29, 34, 43, 46, 100, 101	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R11, 13, 30, 32	0761-0058	RESISTOR, fxd, 750, 5%, 1W
R12, 31	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R14, 17, 33, 36	0698-3113	RESISTOR, fxd, 100, 5%, .125W
R18, 37	0757-0198	RESISTOR, fxd, 100, 1%, .5W
R19, 38	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R39, 41	0757-0869	RESISTOR, fxd, 681K, 1%, .5W
R40, 42	0811-2048	RESISTOR, fxd, 0.25, 1%, 25W
R44, 45	0686-1035	RESISTOR, fxd, 10K, 5%, .5W
R47, 105	0757-0289	RESISTOR, fxd, 13.3K, 1%, .125W
R48, 53	0757-0278	RESISTOR, fxd, 1.78K, 1%, .125W
*R49, 51	0757-0422	RESISTOR, fxd, 909, 1%, .125W
*R50	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W

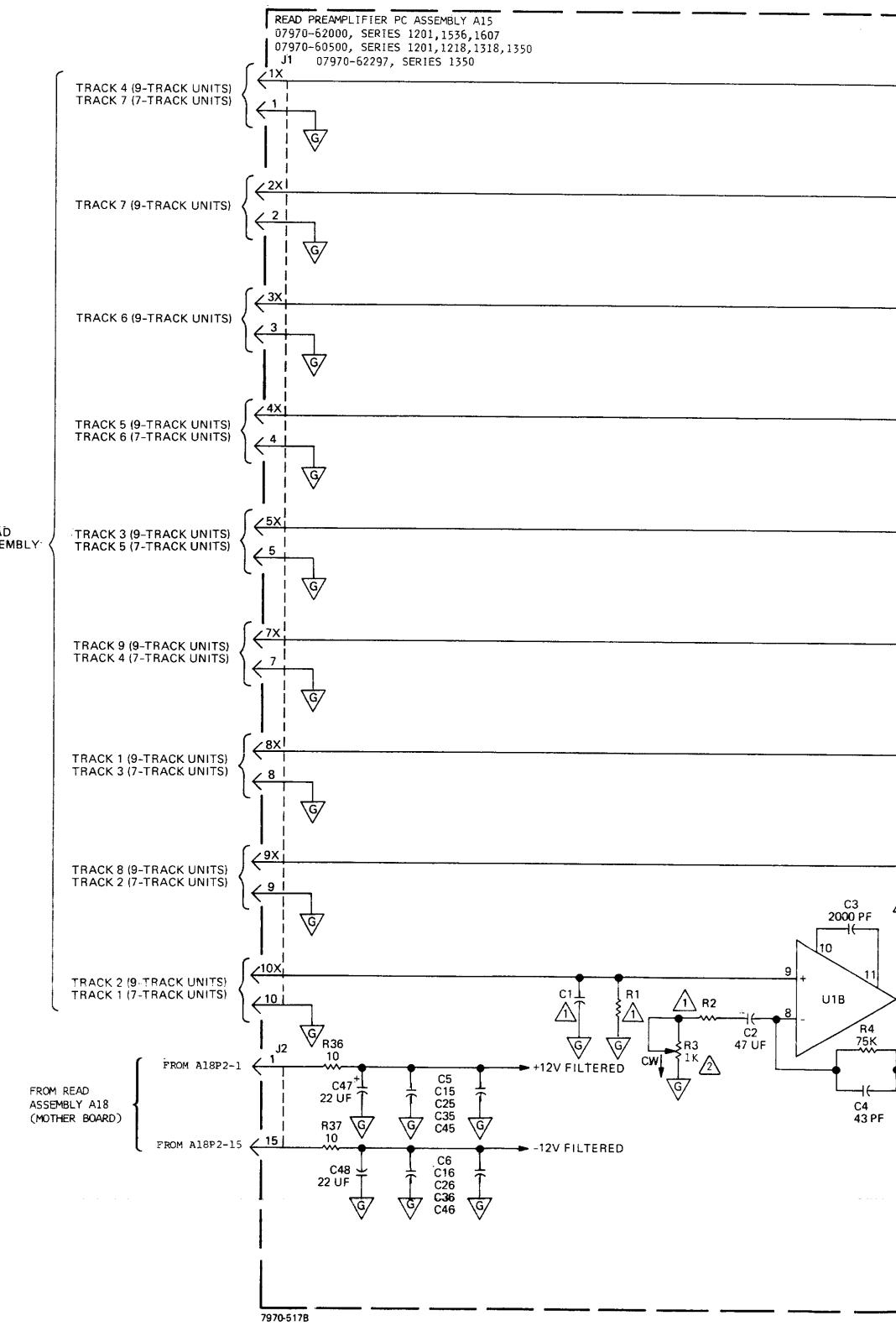
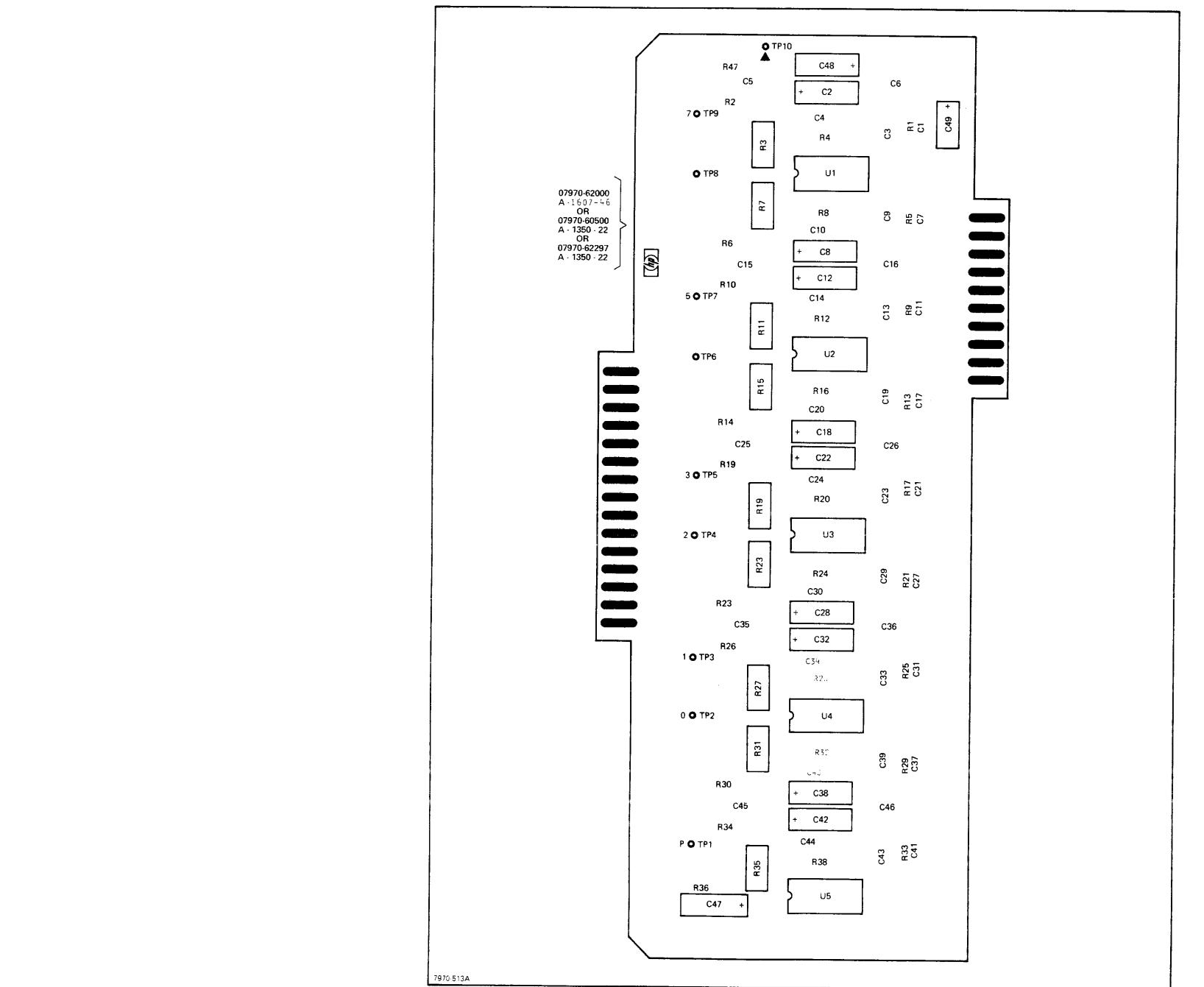


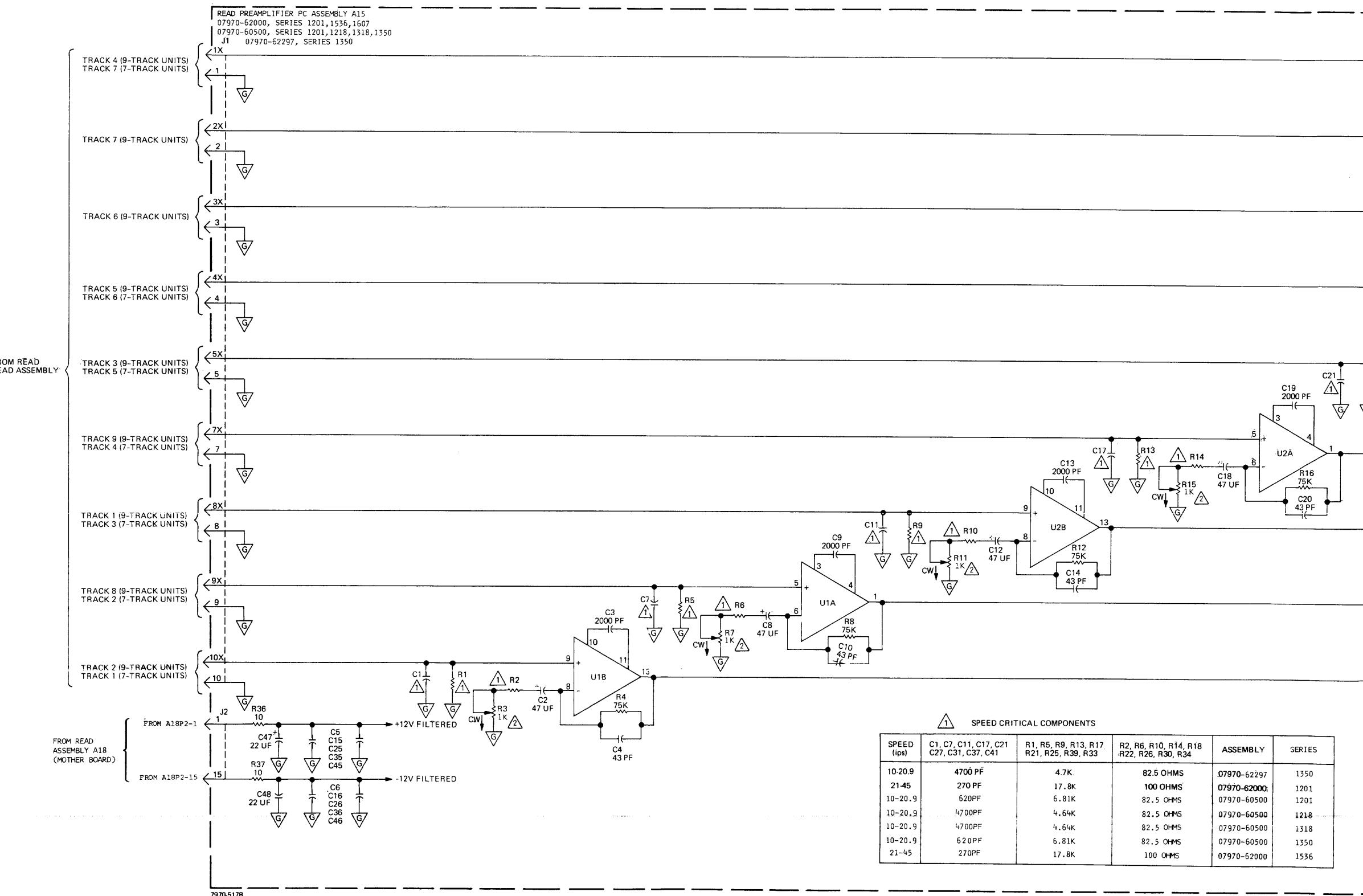
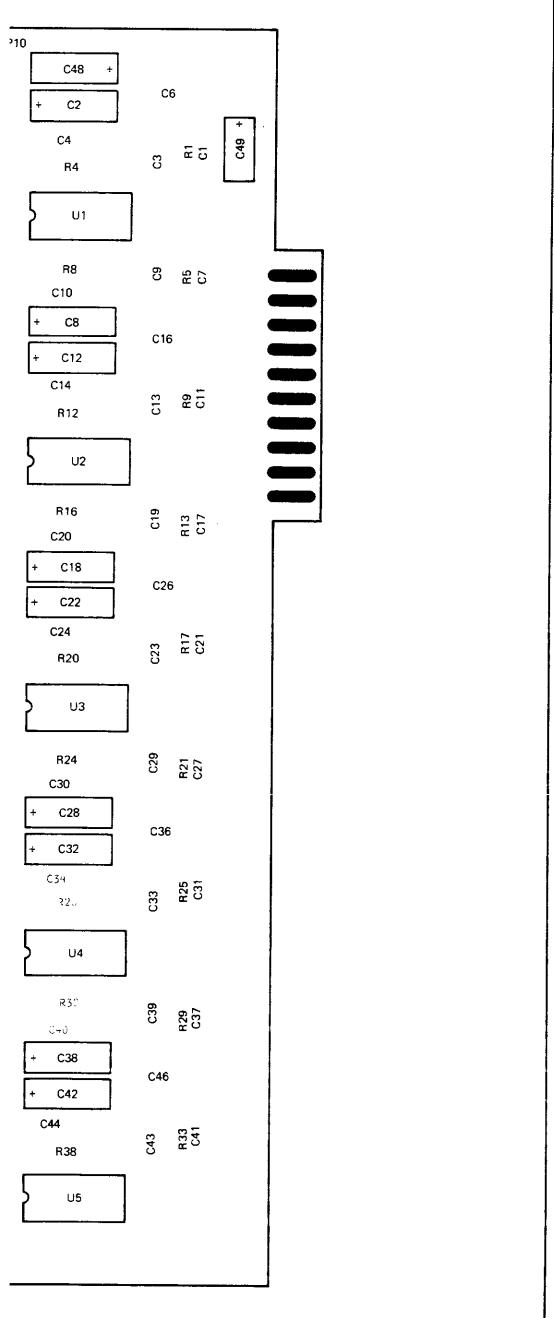
TENSION ARM ASSEMBLY PARTS LIST  
07970-60181

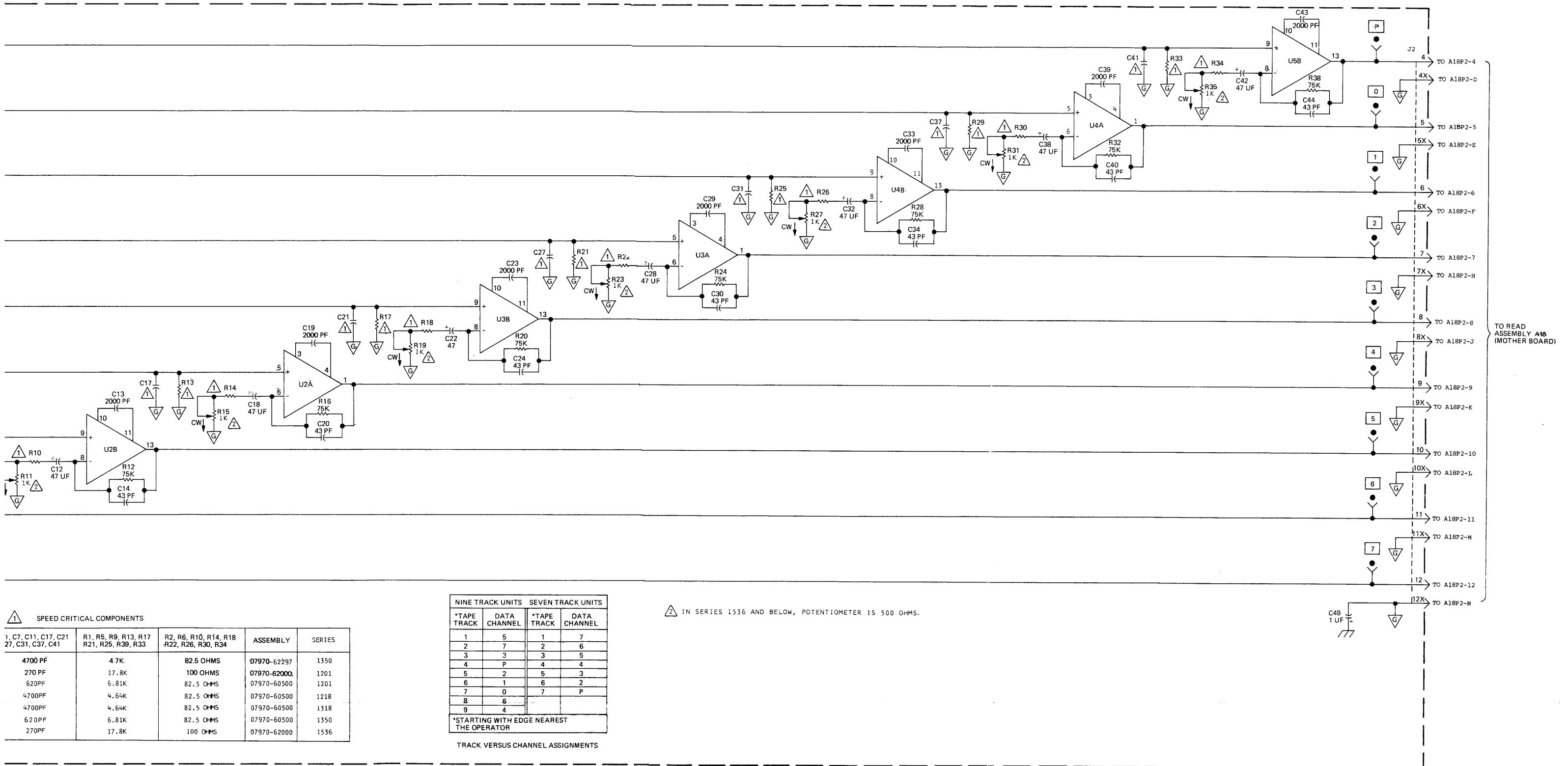
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60181	TENSION ARM ASSEMBLY
1	07970-20190	HOUSING, Bearing
2	07970-00380	SHADE, Photocell
3	3030-0038	SCREW, 10-32, .5 in.
4	2190-0034	WASHER, Lock, #10
5	2190-0420	WASHER, Flat #10
6	1460-1181	SPRING, Extension
7	1460-1250	SPRING, Torsion
8	0510-0238	RING, Retaining
9	07970-60481	PCA, Tension Arm
10	1990-0307	PHOTOCONDUCTOR, dual (Q1)
11	2140-0351	LAMP, 6V, #328, (DS1)
12	0698-3620	RESISTOR, fxd, 100, 5%, 2W, (R1)
13	07970-60870	CABLE, Tension Arm
14	2200-0141	SCREW, 4-40, .312 Pan
15	2190-0003	WASHER, Lock, #4
16	3050-0105	WASHER, Flat, #4
17	07970-40203	HOOD, Tension Arm
18	07970-60130	GUIDE, Tape
19	3050-0032	WASHER, Flat, .010 thick
20	3050-0253	WASHER, Spring, #10

HP PART NO.	DESCRIPTION
07970-62024	REEL SERVO PCA (Series 1102)
0160-0380	CAPACITOR, fxd, .22uf, 10%
0160-2055	CAPACITOR, fxd, .01uf, -20 + 80%
0160-2199	CAPACITOR, fxd, 30pf, 5%
0160-0153	CAPACITOR, fxd, .001uf, 10%
0160-0165	CAPACITOR, fxd, .056uf, 10%
0150-0121	CAPACITOR, fxd, .1uf, 50V
0160-2128	CAPACITOR, fxd, .33uf, 200V
1901-0040	DIODE, 30V, 50MA
1902-0048	DIODE, Breakdown, 6.81V
1901-0364	DIODE, Bridge Rect
0490-0891	RELAY, 10, Amp
0490-0890	SOCKET, Relay
1460-1182	SPRING, Holddown
1854-0022	TRANSISTOR, NPN, SI, T039
1853-0080	TRANSISTOR, 2N4888
1853-0204	TRANSISTOR, 2N4920
1854-0347	TRANSISTOR, 2N4923
1854-0490	TRANSISTOR, Power, NPN, T03
1200-0077	INSULATOR, Transistor
2200-0147	SCREW, 4-40, .5 Pan
2260-0009	NUT, Lock, 4-40
1854-0215	TRANSISTOR, 2N3904
1855-0052	TRANSISTOR, FET, T092
0698-3458	RESISTOR, fxd, 348K, 1%, .125W
0698-3159	RESISTOR, fxd, 26.1K, 1%, .125W
0683-1015	RESISTOR, fxd, 100, 5%, .25W
0757-0797	RESISTOR, fxd, 90.9, 1%, .5W
0698-3637	RESISTOR, fxd, 820, 5%, 2W
0683-1025	RESISTOR, fxd, 1K, 5%, .25W
0761-0058	RESISTOR, fxd, 750, 5%, 1W
0757-0401	RESISTOR, fxd, 100, 1%, .125W
0698-3113	RESISTOR, fxd, 100, 5%, .125W
0757-0198	RESISTOR, fxd, 100, 1%, .5W
0683-1035	RESISTOR, fxd, 10K, 5%, .25W
0757-0869	RESISTOR, fxd, 681K, 1%, .5W
0811-2048	RESISTOR, fxd, 0.25, 1%, 25W
0686-1035	RESISTOR, fxd, 10K, 5%, .5W
0757-0289	RESISTOR, fxd, 13.3K, 1%, .125W
0757-0278	RESISTOR, fxd, 1.78K, 1%, .125W
0757-0422	RESISTOR, fxd, 909, 1%, .125W
0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R104,106 U1,2	2100-1759 1820-0223 0340-0465 1251-2503 1251-2504 07970-00271  *R49,51 *R50	RESISTOR, Variable, 2K, 5%, 1W IC, LM301AH INSULATOR, IC, Pad CONNECTOR, Contact, Female CONNECTOR, Contact, Male BRACKET, Reel Servo  Series 1219 0757-0465 0757-0458
		RESISTOR, fxd, 100K, 1%, .125W RESISTOR, fxd, 51.1K, 1%, .125W
		△ Added on series 1207







Read Preamplifier PC Assembly A15

## READ PREAMPLIFIER PCA PARTS LIST

07970-62000 (SERIES 1201, 1536, 1607)  
 07970-60500 (SERIES 1201, 1213, 1318, 1350)  
 07970-62297 (SERIES 1350)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62000	READ PREAMPLIFIER PCA (SERIES 1201)
*C1,7,11,17,21, 27,31,37,41	0140-0210	CAPACITOR, fxd, 270pf, 5%
C2,8,12,18,22, 28,32,38,42	0180-1704	CAPACITOR, fxd, 47uf, 10%
C3,9,13,19,23, 29,33,39,43	0160-2225	CAPACITOR, fxd, 2000pf, 5%
C4,10,14,20, 24,30,34,40,44	0160-2200	CAPACITOR, fxd, 43pf, 5%
C5,6,15,16,25, 26,35,36,45,46	0160-2055	CAPACITOR, fxd, .01uf, 100V
C47,48	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
C49	0180-0291	CAPACITOR, fxd, 1uf, 35VDC
*R1,5,9,13,17 21,25,29,33	0698-3136	RESISTOR, fxd, 17.8K, 1%, .125W
*R2,6,10,14,18 22,26,30,34	0757-0401	RESISTOR, fxd, 100, 1%, .125W
*R3,7,11,15,19 23,27,31,35	2100-3251	RESISTOR, Variable, 500, .5W
R4,8,12,16,20 24,28,32,38	0757-0462	RESISTOR, fxd, 75K, 1%, .125W
R36, 37	0757-0346	RESISTOR, fxd, 10, 1%, .125W
*U1-5	1826-0044 07970-00430 2360-0115 3050-0228	IC, Linear, Ceramic Case BRACKET, Read Preamp SCREW, 6-32, .312 in. WASHER, Flat, .312
	07970-60500	(SERIES 1201)
*C1,7,11,17,21 27,31,37,41	0160-0363	CAPACITOR, fxd, 620pf, 5%
*R1,5,9,13,17, 21,25,29,33	0757-0439	RESISTOR, fxd, 6.81K, 1%, .125W
	07970-60500	(SERIES 1218)
*C1,7,11,17,21 27,31,37,41	0160-0157	CAPACITOR, fxd, 4700pf, 10%
*R1,5,9,13,17 21,25,29,33	0698-3155	RESISTOR, fxd, 4.64K, 1%, .125W
*R2,6,10,14,18 22,26,30,34	0757-0399	RESISTOR, fxd, 82.5, 1%, .125W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
*C1,7,11,17,21, 27,31,37,41	07970-60500 0160-0911	(SERIES 1318) CAPACITOR, fxd, 4700pf, 10%
*R1,5,9,13,17, 21,25,29,33	0698-3155	RESISTOR, fxd, 4.64K, 1%, .125W
*R2,6,10,14,18 22,26,30,34	0757-0399	RESISTOR, fxd, 82.5, 1%, .125W
	07970-60500 0160-0363	(SERIES 1350) CAPACITOR, fxd, 620pf, 5%
	0757-0439	RESISTOR, fxd, 6.81K, 1%, .125W
	0757-0399	RESISTOR, fxd, 82.5, 1%, .125W
	07970-62297 0160-0911	(SERIES 1350) CAPACITOR, fxd, .0047uf, 10%
	0698-3155	RESISTOR, fxd, 4.64K, 1%, .125W
	0757-0399	RESISTOR, fxd, 82.5, 1%, .125W
	07970-62000 1826-0318	(SERIES 1536) IC, Linear, Plastic Case
	07970-62000 2100-3352	(SERIES 1607) RESISTOR, Variable, 1K, 10%
	1826-0318	IC, Linear, Plastic Case

ION

0pf, 10%

1K, 1%, .125W

, 1%, .125W

0pf, 5%

1K, 1%, .125W

, 1%, .125W

47uf, 10%

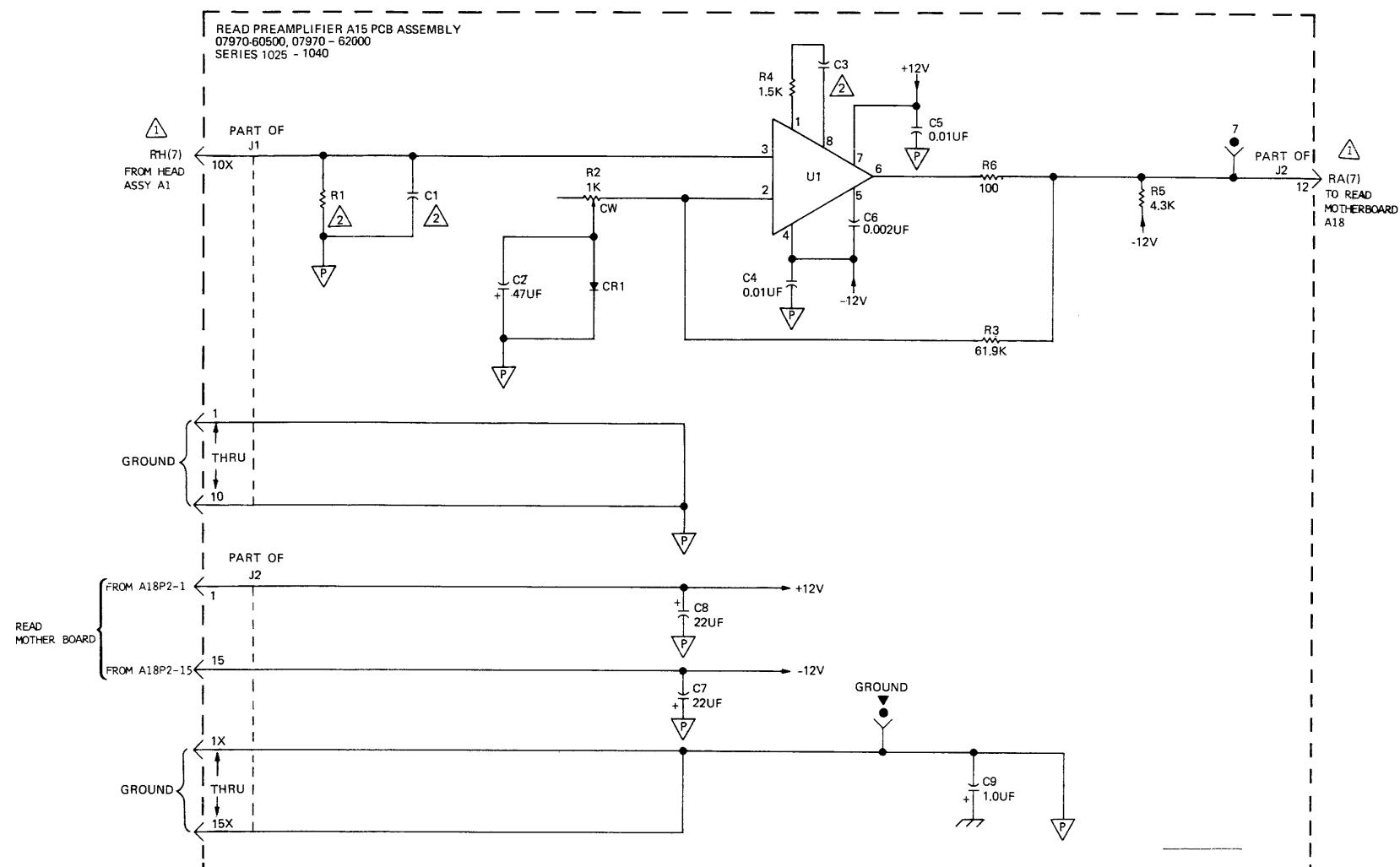
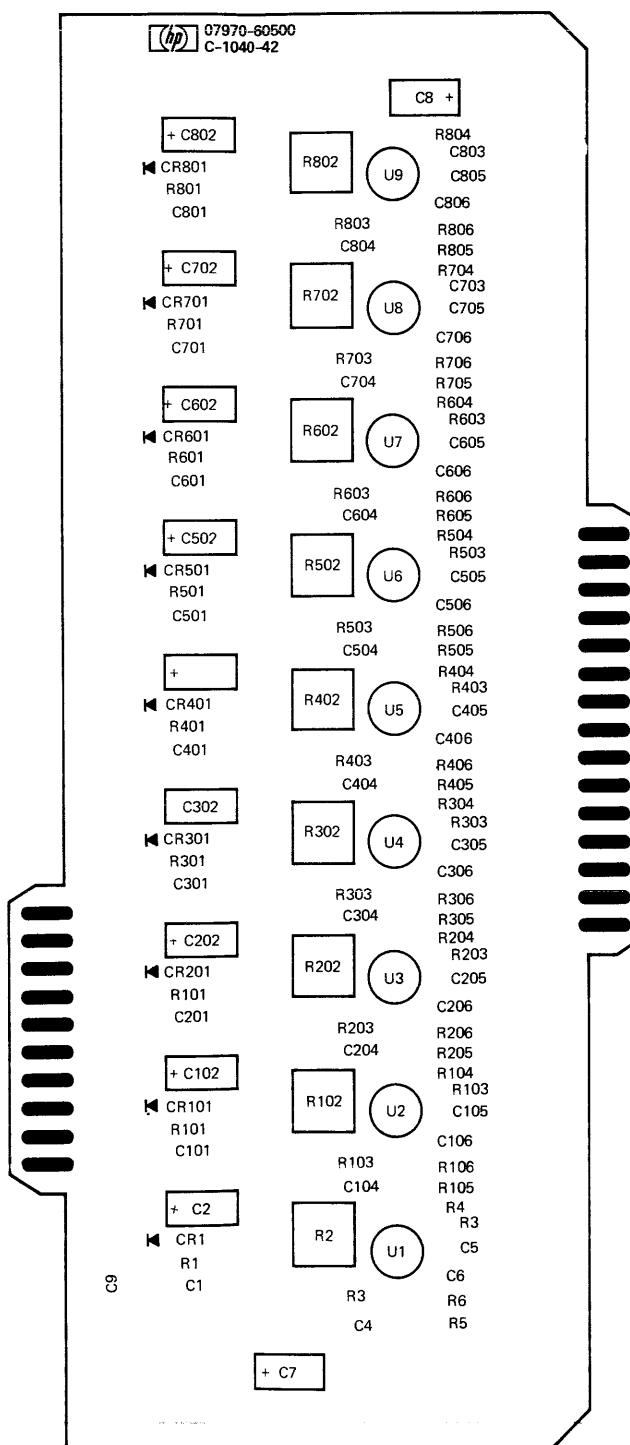
4K, 1%, .125W

, 1%, .125W

Case

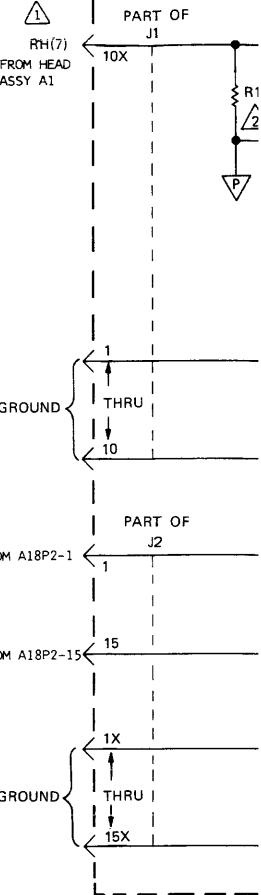
, 1K, 10%

Case

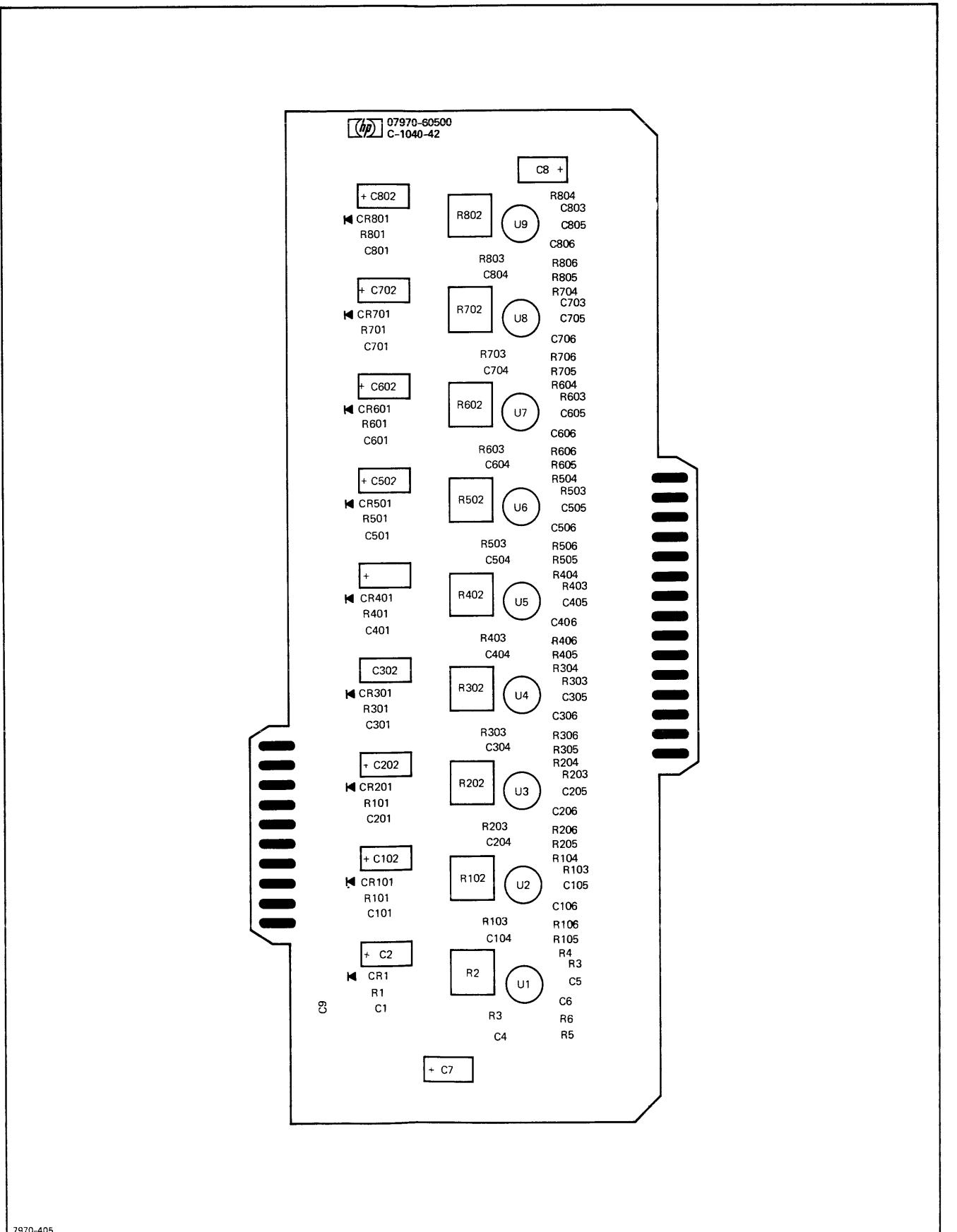


**1:** NINE IDENTICAL PREAMPLIFIER CIRCUITS COMprise THIS PCB ASSEMBLY. ONE SUCH CIRCUIT AND COMMON POWER AND GROUNDING CIRCUITS ARE SHOWN. FOR SIGNAL AND REFERENCE DESIGNATIONS OF ALL NINE PREAMPLIFIER CIRCUITS, SEE TABLE I.

Read Preamplifier PC Assembly A15



CONNECTOR J1	
SIGNAL	PIN
RH(7)	10X
RH(6)	9X
RH(5)	8X
RH(4)	7X
RH(3)	5X
RH(2)	4X
RH(1)	3X
RH(0)	2X
RH(P)	1X

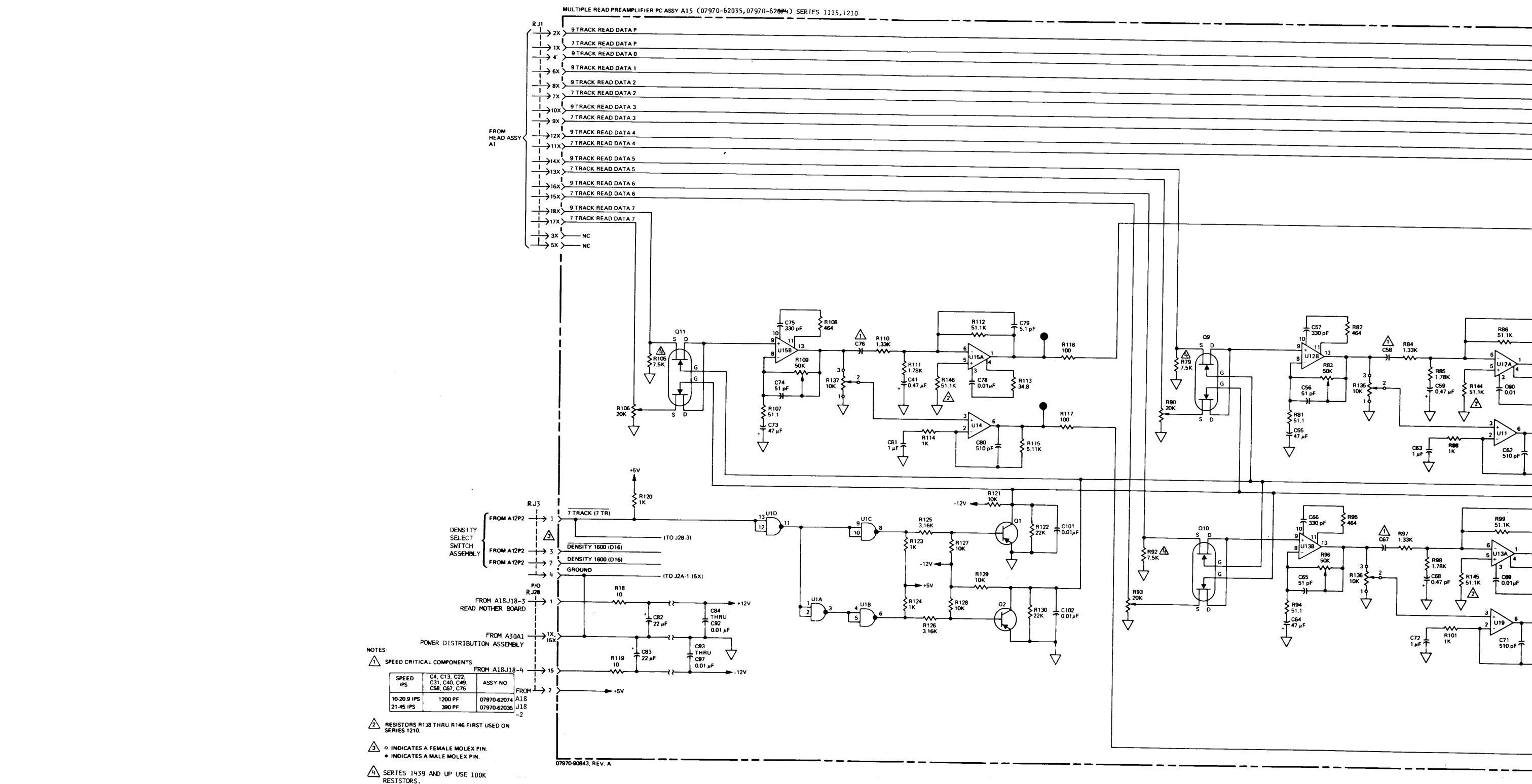


READ PREAMPLIFIER PCA PARTS LIST  
 07970-60500 (SERIES 1040)  
 07970-62000 (SERIES 1025)

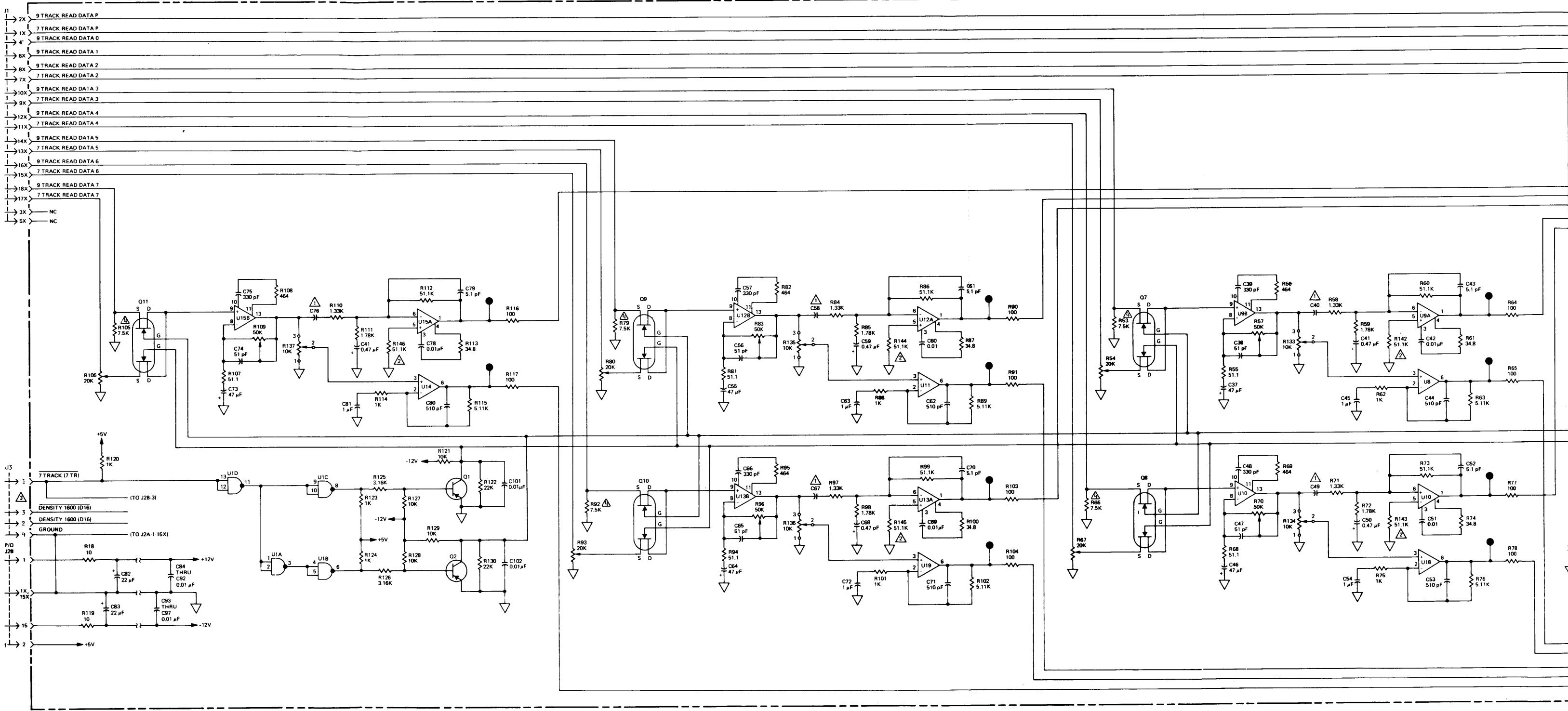
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60500	READ PREAMPLIFIER PCA (SERIES 1040)
*C1,101,201,301, 401,501,601,701, 801	0160-2213	CAPACITOR, fxd, 620pf, 300VDC
C2,102,202,302, 402,502,602,702, 802	0180-1704	CAPACITOR, fxd, 47uf, 6VDC
*C3,103,203,303, 403,503,603,703 803	0140-0208	CAPACITOR, fxd, 680pf, 300VDC
C4,5,104,105,204 205,304,305,404, 405,504,505,604, 605,704,705,804, 805	0160-2055	CAPACITOR, fxd, 10uf, 30VDC
C6,106,206,306 406,506,606,706, 806	0160-3449	CAPACITOR, fxd, 2000pf, 250VDC
C7,8	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
C9	0180-0291	CAPACITOR, fxd, 1uf, 35VDC
CR1,101,201,301 401,501,601,701, 801	1901-0040	DIODE, 30V, 50MA
*R1,101,201,301, 401,501,601,701 801	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R2,102,202,302 402,502,602,702, 802	2100-1758	RESISTOR, Variable, 1K, 5%, 1W
R3,103,203,303, 403,503,603,703 803	0757-0460	RESISTOR, fxd, 61.9K, 1%, .125W
R4,104,204,304 404,504,604,704, 804	0683-1525	RESISTOR, fxd, 1.5K, 5%, .25W
R5,105,205,305, 405,505,605,705, 805	0683-4325	RESISTOR, fxd, 43K, 5%, .25W
R6,106,206,306, 406,506,606,706, 806	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
U1-9	07970-80050 0340-0456 07970-00430 2360-0195 2190-0085 3050-0228	IC, pretested Insulator, IC pad BRACKET, read preamplifier SCREW 6-32, .312 in. WASHER, Lock, #6, Hel WASHER, Flat, #6

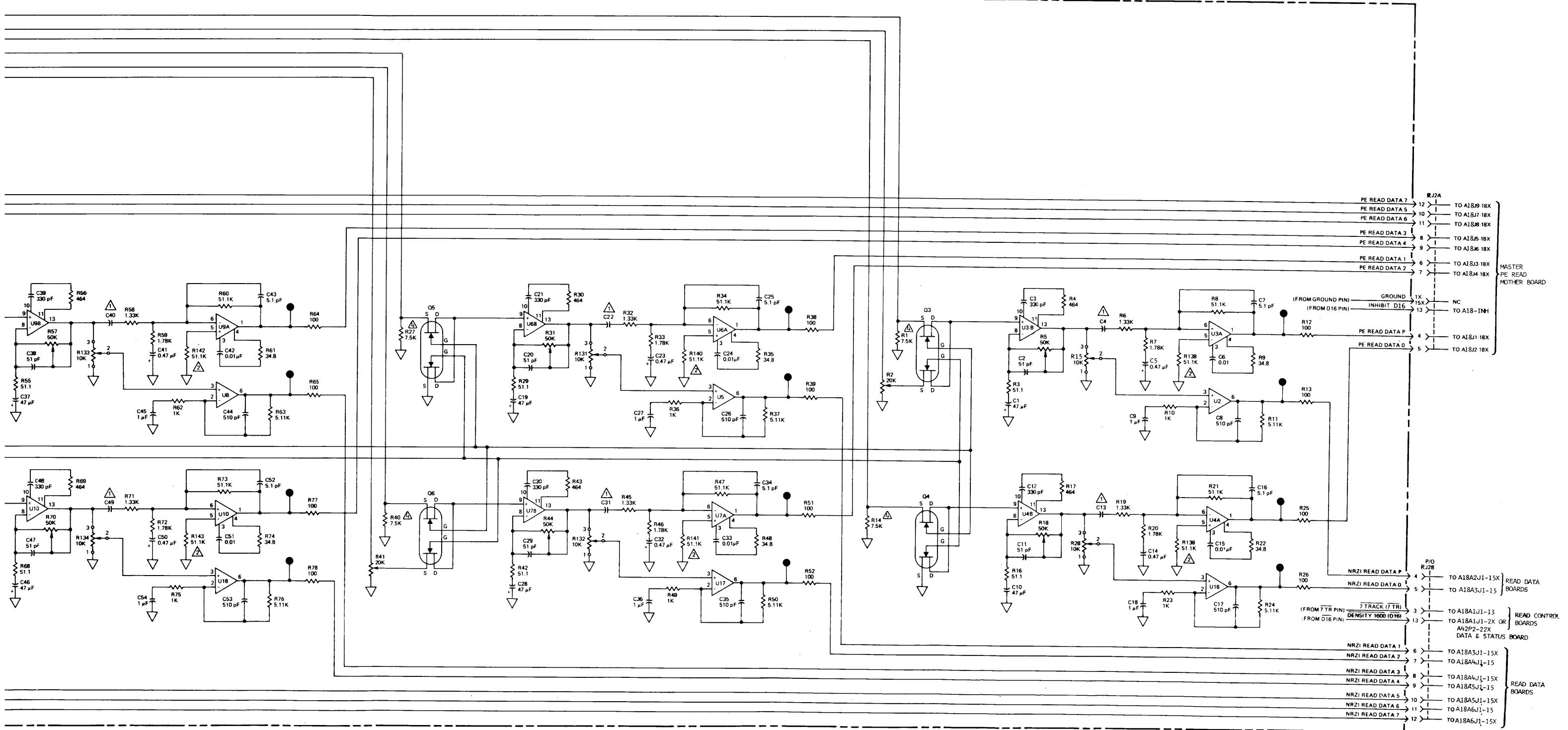
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
*C1,101,201,301 401,501,601,701, 801	07970-62000 0140-0210	(SERIES 1025) CAPACITOR, fxd, 270pf, 300VDC
*C3,103,203,303, 403,503,603,703 803	0160-2208	CAPACITOR, fxd, 330pf, 300VDC
*R1,101,201,301 401,501,601,701, 801	0698-3136	RESISTOR, fxd, 17.8K, 1%, .125W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
*C1,101,201,301 401,501,601,701, 801	07970-62000 0140-0210	(SERIES 1025) CAPACITOR, fxd, 270pf, 300VDC
*C3,103,203,303, 403,503,603,703 803	0160-2208	CAPACITOR, fxd, 330pf, 300VDC
*R1,101,201,301 401,501,601,701, 801	0698-3136	RESISTOR, fxd, 17.8K, 1%, .125W

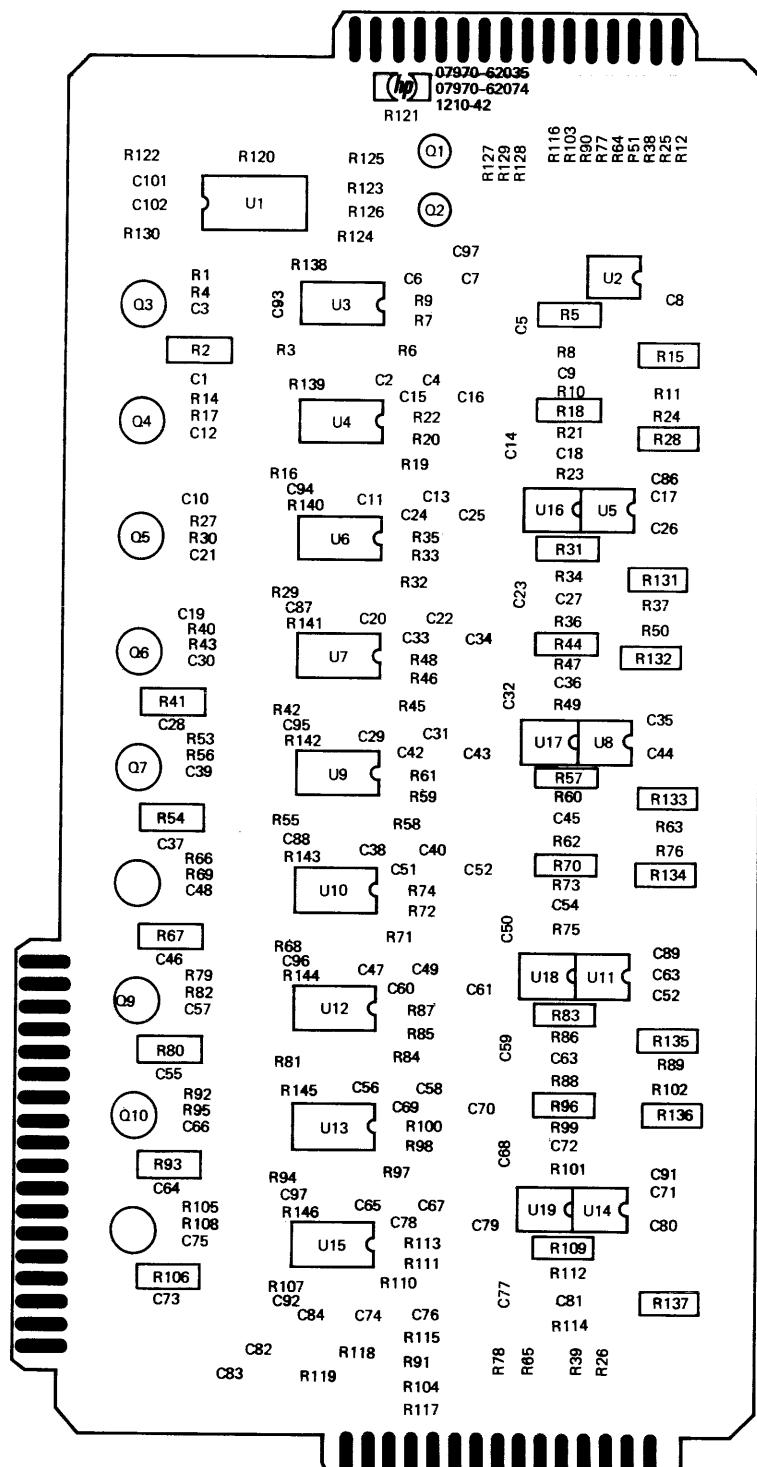


MULTIPLE READ PREAMPLIFIER PC ASSY A15 (07970-62035, 07970-62074) SERIES 1115,1210





MULTIPLE READ PREAMPLIFIER PCA PARTS LIST  
 07970-62035 (SERIES 1115, 1210, 1439)  
 07970-62074 (SERIES 1115, 1210)



7970-342A

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62035	MULTIPLE READ PREAMPLIFIER PCA (SERIES 1115)
C1,10,19,28,37, 46,55,64,73	0180-1704	CAPACITOR, fxd, 47uf, 10%
C2,11,20,29,38, 47,56,65,74	0160-2201	CAPACITOR, fxd, 51pf, 5%
C3,12,21,30,39, 48,57,66,75	0160-2208	CAPACITOR, fxd, 330pf, 5%
1 C4,13,22,31,40, 49,58,67,76	0140-0200	CAPACITOR, fxd, 390pf, 300V
C5,14,23,32,41, 50,59,68,77	0180-0376	CAPACITOR, fxd, .47uf, 10%
C6,15,24,33,42, 51,60,69,78,84-97, 101,102	0160-2055	CAPACITOR, fxd, .01uf, 100V
C7,16,25,34,43 52,61,70,79	0160-2250	CAPACITOR, fxd, 5.1pf, 5%
C8,17,26,35,44, 53,62,71,80	0160-3534	CAPACITOR, fxd, 510pf, 5%
C9,18,27,36,45, 54,63,72,81	0180-0291	CAPACITOR, fxd, 1uf, 35VDC
C82,83	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
Q1,2	1853-0036	TRANSISTOR, 2N3906, PL18
Q3-11	1855-0370	TRANSISTOR, FET, TO71
*R1,14,27,40,53, 66,79,92,105	0757-0440	RESISTOR, fxd, 7.5K, 1%, .125W
R2,41,54,67,80, 93,106	2100-1972	RESISTOR, Variable, 20K, 10%
R3,16,29,42,55, 68,81,94,107	0757-0394	RESISTOR, fxd, 51.1, 1%, .125W
R4,17,30,43,56, 69,82,95,108	0698-0082	RESISTOR, fxd, 464, 1%, .125W
R5,18,31,44,57, 70,83,96,109	2100-2707	RESISTOR, Variable, 50K, 10%
R6,19,32,45,58, 71,84,97,110	0757-0317	RESISTOR, fxd, 1.33K, 1%
R7,20,33,46,59 72,85,98,111	0757-0278	RESISTOR, fxd, 1.78K, 1%, .125W
*R8,21,34,47,60, 73,86,99,112, (138-146)	0757-0458	RESISTOR, fxd, 51.1K, 1%, .125W
R9,22,35,48,61, 74,87,100,113	0698-3434	RESISTOR, fxd, 34.8, 1%, .125W
R10,23,36,49,62 75,88,101,114,120, 123,124	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R11,24,37,50,63, 76,89,102,115	0757-0438	RESISTOR, fxd, 5.11K, 1%, .125W

REF.  
INDEX

R12,13,2  
39,51,52  
78,90,91  
116,117  
R15,28,1  
R118,119  
R121,127  
R122,130  
R125,126  
U1  
U2,5,8,1  
16-19  
U3,4,6,7  
12,13,15

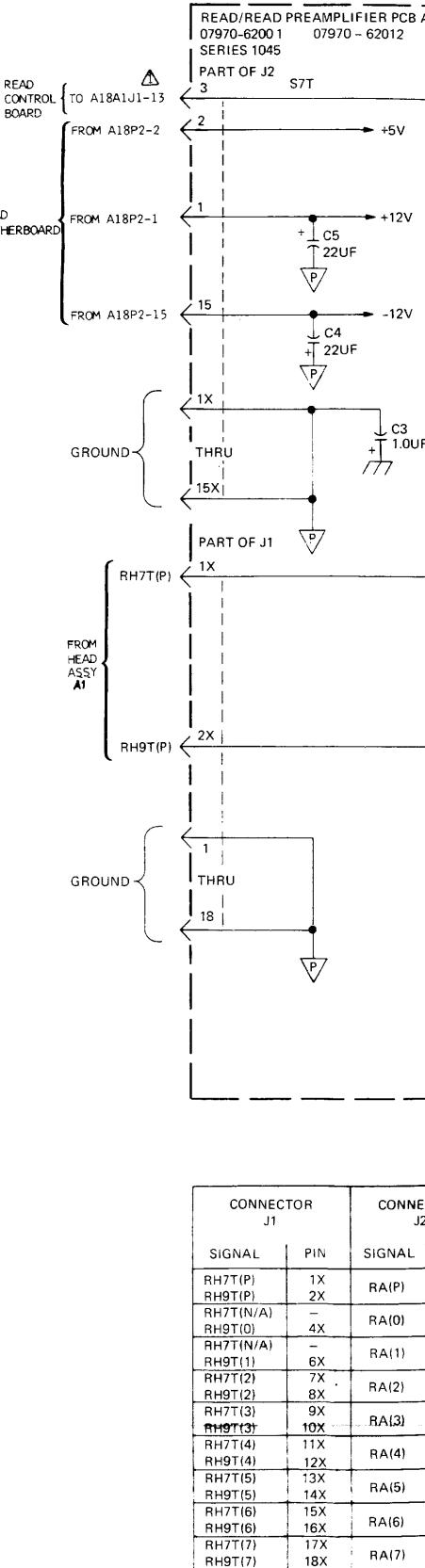
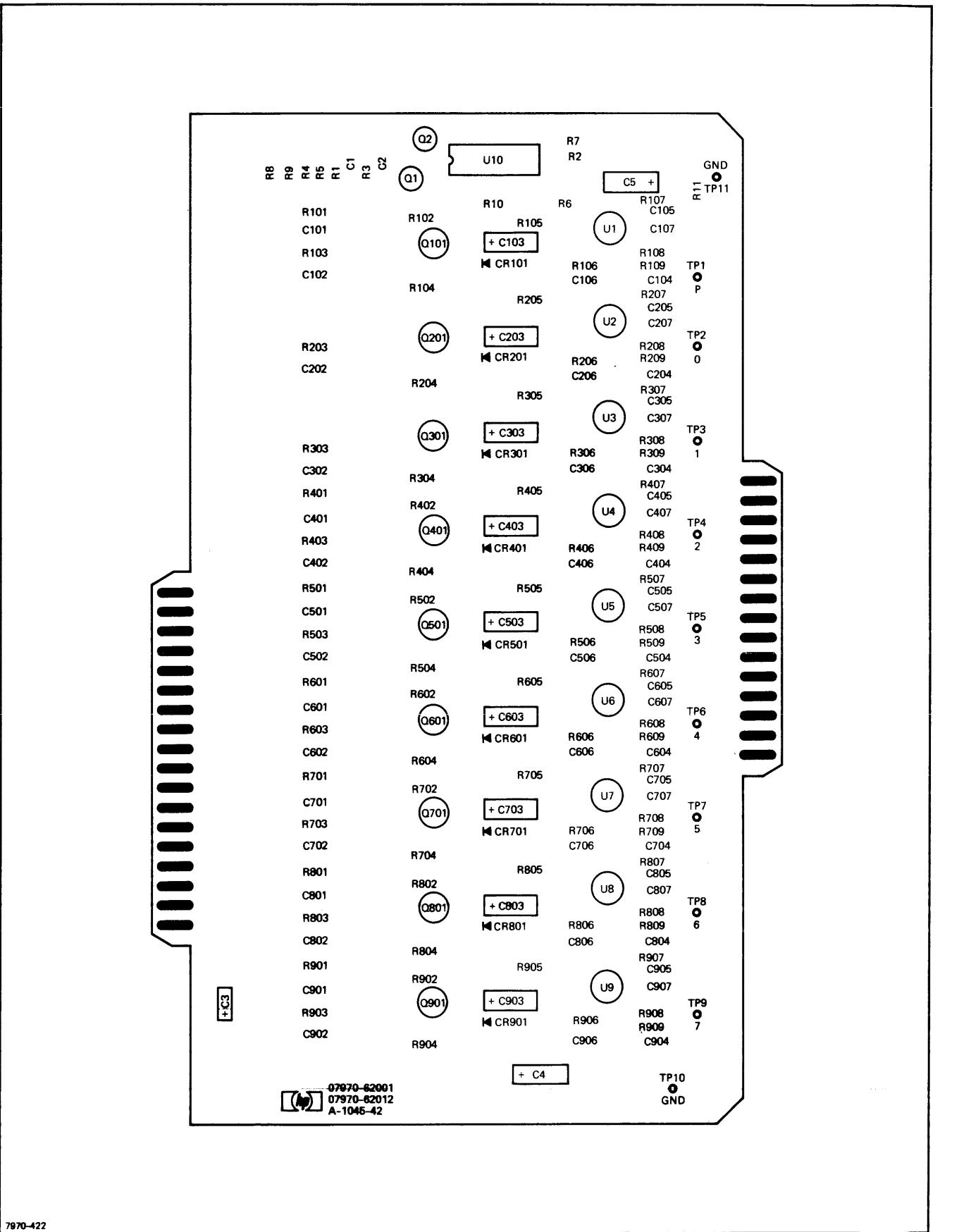
\*R138-146  
\*R138-146  
\*R1,14,27  
66,79,92

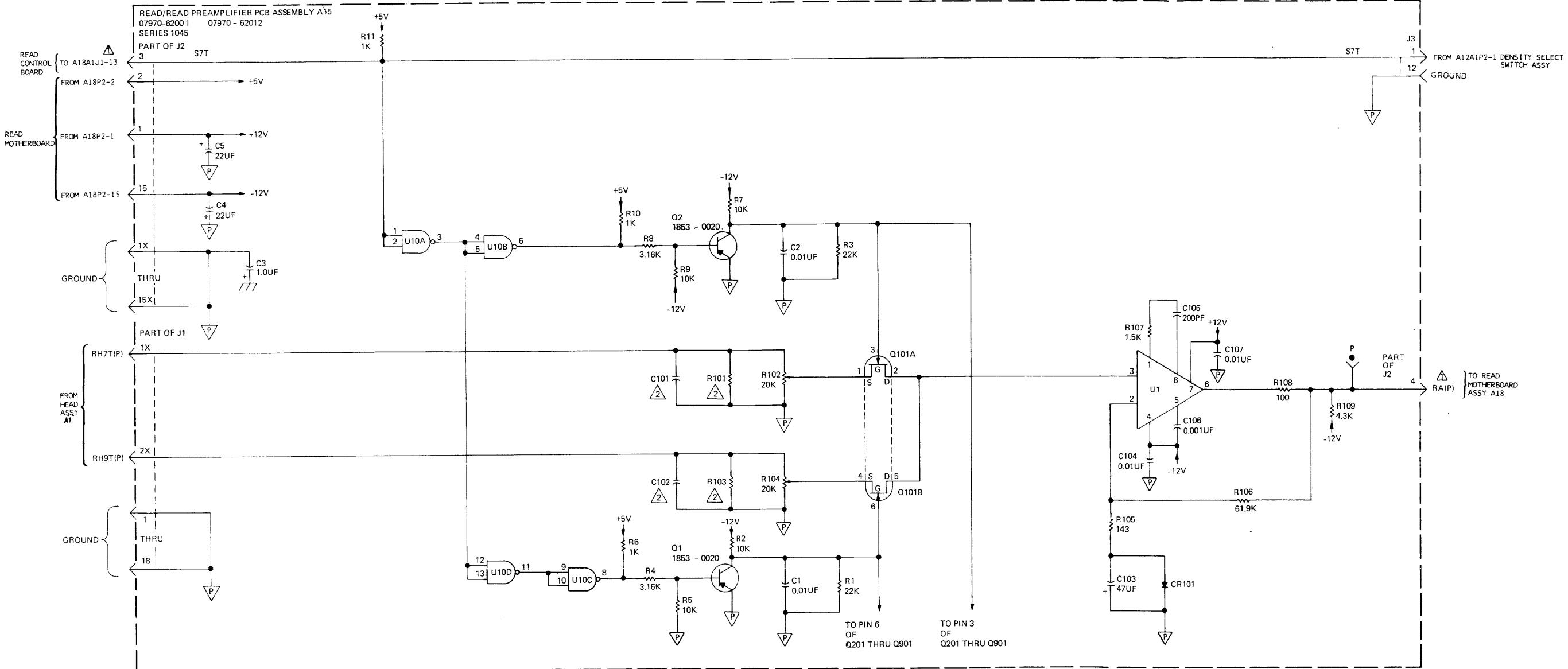
1 07970-

SCRIPTION  
 REAMPLIFIER PCA (SERIES 1115)  
 47uf, 10%  
 51pf, 5%  
 330pf, 5%  
 390pf, 300V  
 .47uf, 10%  
 .01uf, 100V  
 5.1pf, 5%  
 510pf, 5%  
 1uf, 35VDC  
 22uf, 15VDC  
 906, PL18  
 , T071  
 7.5K, 1%, .125W  
 1le, 20K, 10%  
 51.1, 1%, .125W  
 464, 1%, .125W  
 1le, 50K, 10%  
 1.33K, 1%  
 1.78K, 1%, .125W  
 51.1K, 1%, .125W  
 34.8, 1%, .125W  
 .K, 1%, .125W  
 .11K, 1%, .125W

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
R12,13,25,26,38, 39,51,52,64,65,77, 78,90,91,103,104, 116,117	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R15,28,131-137	2100-2850	RESISTOR, Variable, 10K, 10%
R118,119	0683-1005	RESISTOR, fxd, 10, 5%, .25W
R121,127-129	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R122,130	0683-2235	RESISTOR, fxd, 22K, 5%, .25W
R125,126	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
U1	1820-0054	IC DIGITAL 7400
U2,5,8,11,14, 16-19	1826-0068	IC DIGITAL
U3,4,6,7,9,10, 12,13,15	1826-0044	IC Operational Amp
	07970-01169	BRACKET, R.R.R. Preamp
	2360-0115	SCREW, 6-32X
	3050-0228	WASHER, FLAT
	4330-0145	INSULATOR
*R138-146	SERIES 1210 0757-0458	(07970-62035 & 07970-62074) RESISTOR, 51.1K (Added)
*R138-146	07970-62035	(SERIES 1439)
*R1,14,27,40,53, 66,79,92,105	0757-0458 0757-0465	RESISTOR, 51.1K RESISTOR, 100K, 1%

1 07970-62074 PCA's use 1200pf part no. 0160-2220





TABLE

CONNECTOR J1		CONNECTOR J2		TEST POINT IDENT	REF DESIG SERIES (DEVICE AND COMMON CIRCUITS EXCEPTED)	REF DESIG (DEVICE ONLY)	REMARKS
SIGNAL	PIN	SIGNAL	PIN				
RH7T(P) RH9T(P)	1X 2X	RA(P)	4	P	100	U1	
RH7T(N/A) RH9T(0)	— 4X	RA(0)	5	0	200	U2	C201, R201, R202 OMITTED
RH7T(N/A) RH9T(1)	— 6X	RA(1)	6	1	300	U3	C301, R301, R302 OMITTED
RH7T(2) RH9T(2)	7X 8X	RA(2)	7	2	400	U4	
RH7T(3) RH9T(3)	9X 10X	RA(3)	8	3	500	U5	
RH7T(4) RH9T(4)	11X 12X	RA(4)	9	4	600	U6	
RH7T(5) RH9T(5)	13X 14X	RA(5)	10	5	700	U7	
RH7T(6) RH9T(6)	15X 16X	RA(6)	11	6	800	U8	
RH7T(7) RH9T(7)	17X 18X	RA(7)	12	7	900	U9	

**THIS PCB ASSEMBLY INCLUDES NINE IDENTICAL CIRCUITS. ONE SUCH CIRCUIT AND COMMON GATING, POWER, AND GROUNDING CIRCUITS ARE SHOWN. SHOULD AN INPUT SIGNAL BE NOT APPLICABLE(N/A), THE NORMALLY ASSOCIATED ADJUSTMENT NETWORK IS OMITTED AND THE SOURCE CONNECTION (PIN 1) OF THE ASSOCIATED FET RETURNED TO POWER GROUND. FOR SIGNAL AND REFERENCE DESIGNATIONS OF ALL NINE IDENTICAL CIRCUITS, SEE TABLE**

SPEED	R101 R103	C101 C102	ASSEMBLY
10 ~ 20.9	6.8K	620PF	07970 - 62001
21 ~ 45	17.8K	270PF	07970 - 62012

## READ/READ PREAMPLIFIER PCA PARTS LIST

07970-62001 (SERIES 1045)

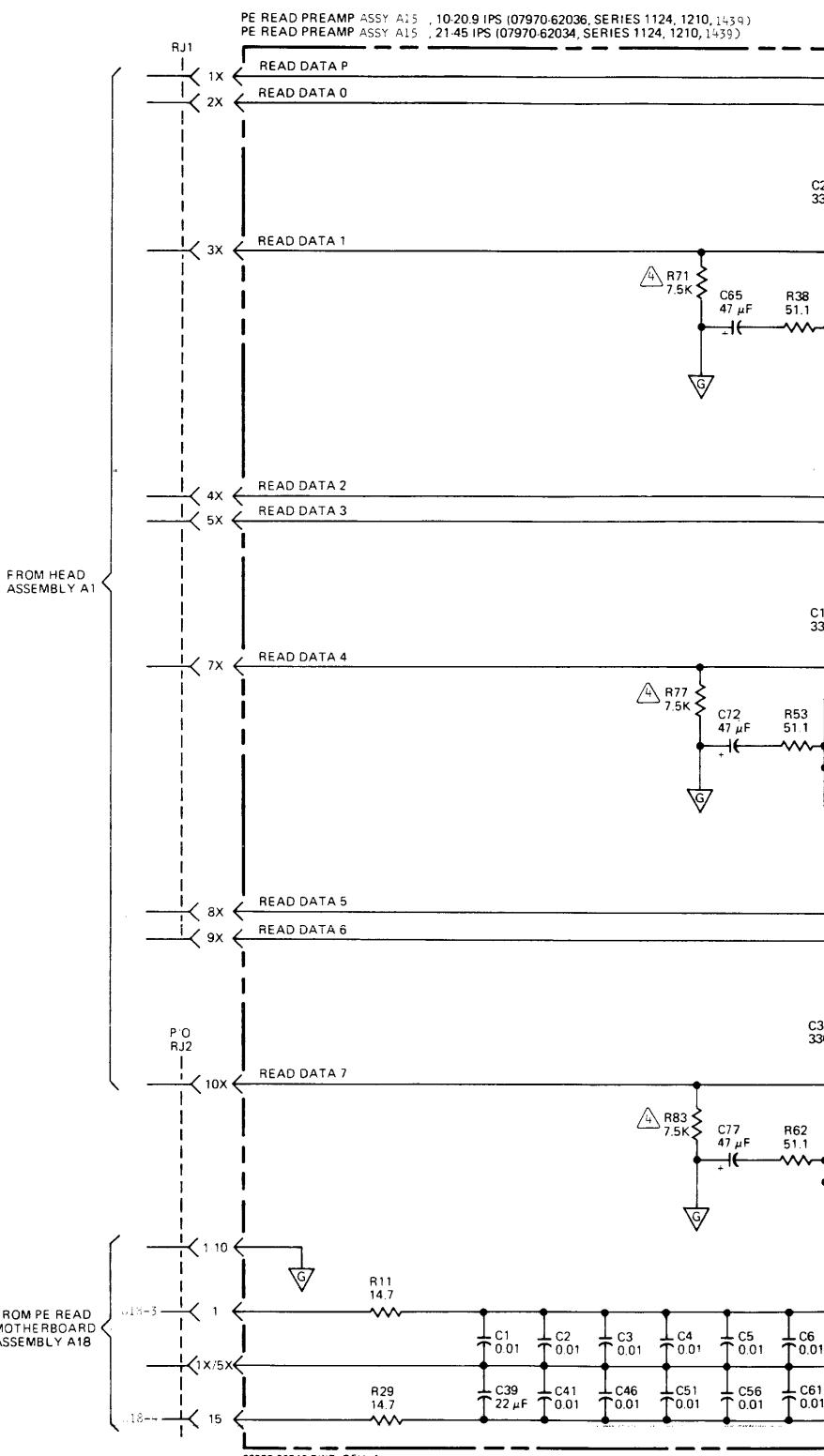
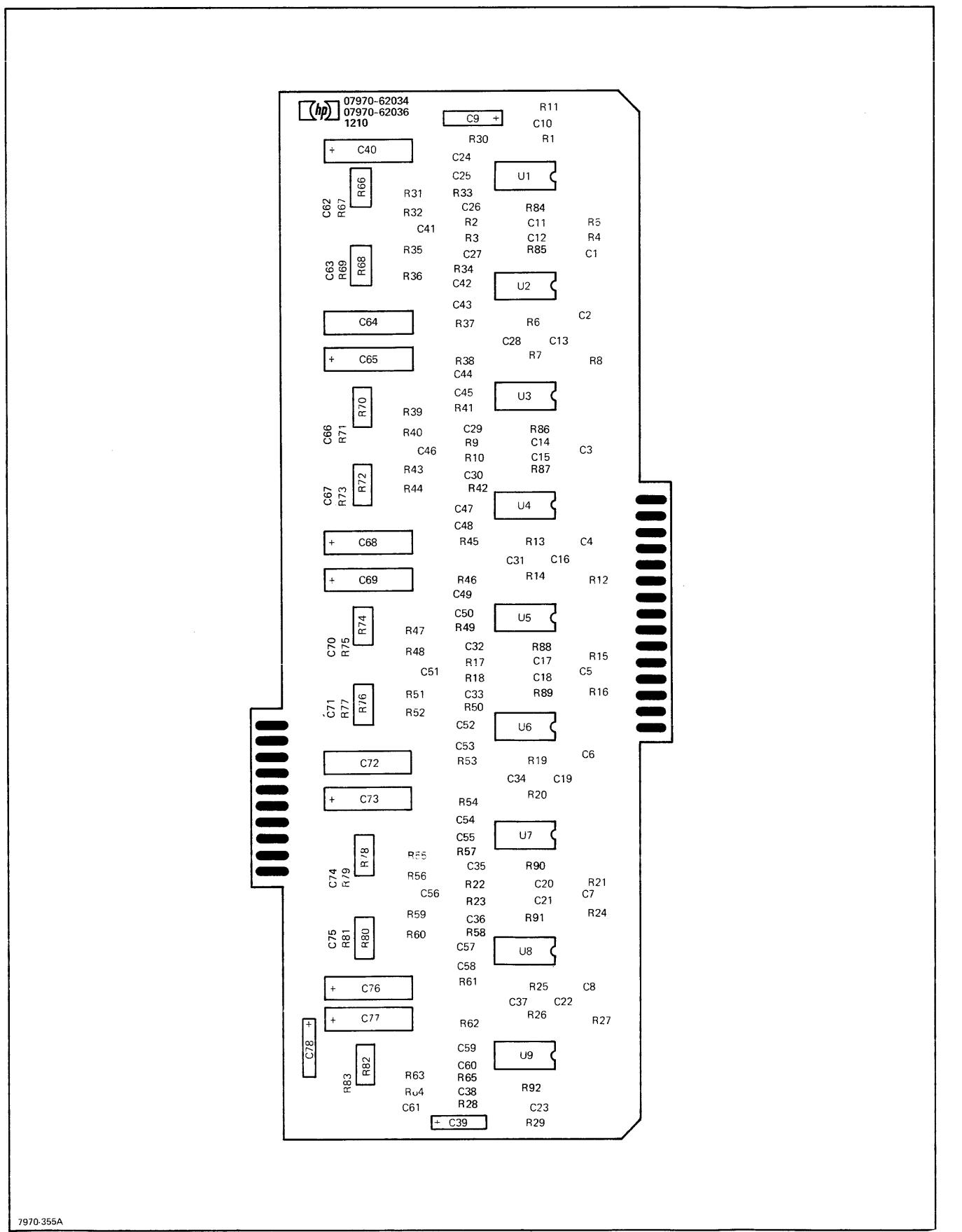
07970-62012 (SERIES 1045)

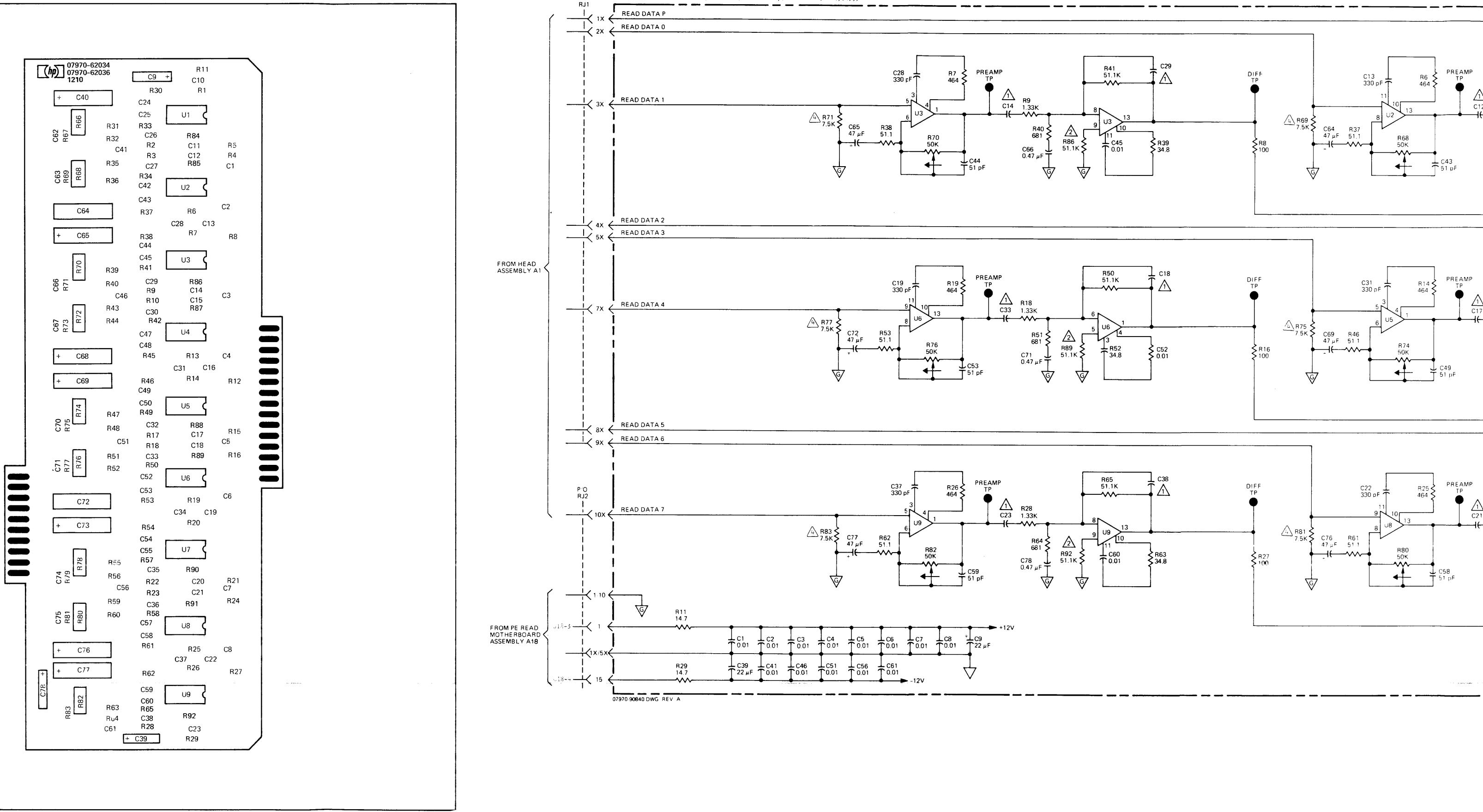
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62001	READ/READ PREAMPLIFIER PCA (SERIES 1045)
C1,2,104,107, 204,207,304,307, 404,407,504,507, 604,607,704,707, 804,807,904,907	0160-2055	CAPACITOR, fxd, .01uf, 100V
C3	0180-0291	CAPACITOR, fxd, 1uf, 35VDC
C4,5	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
*C101,102,202,302, 401,402,501,502, 601,602,701,702, 801,802,901,902	0160-2213	CAPACITOR, fxd, 620pf, 5%
C103,203,303,403, 503,603,703,803, 903	0180-1704	CAPACITOR, fxd, 47uf, 10%
C105,205,305,405 505,605,705,805, 905	0140-0198	CAPACITOR, fxd, 200pf, 5%
C106,206,306,406, 506,606,706,806, 906	0160-3456	CAPACITOR, fxd, 1000pf Ceramic
CR101,201,301,401, 501,601,701,801, 901	1901-0040	DIODE, 30V, 50ma
Q1,Q2	1853-0020	TRANSISTOR, PNP, Silicon PL18
Q101,201,301,401, 501,601,701,801, 901	1855-0370	TRANSISTOR, FET 2, T071
R1,3	0683-2235	RESISTOR, fxd, 22K, 5%, .25W
R2,7	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R4,8	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R5,9	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R6,10	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R11	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
*R101,103,203,303, 401,403,501,503, 601,603,701,703, 801,803,901,903	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R102,104,204,304, 402,404,502,504, 602,604,702,704, 802,804,902,904	2100-1972	RESISTOR, fxd, Variable, 20K, 10%
R105,205,305,405, 505,605,705,805, 905	0698-4412	RESISTOR, fxd, 143, 1%, .125W

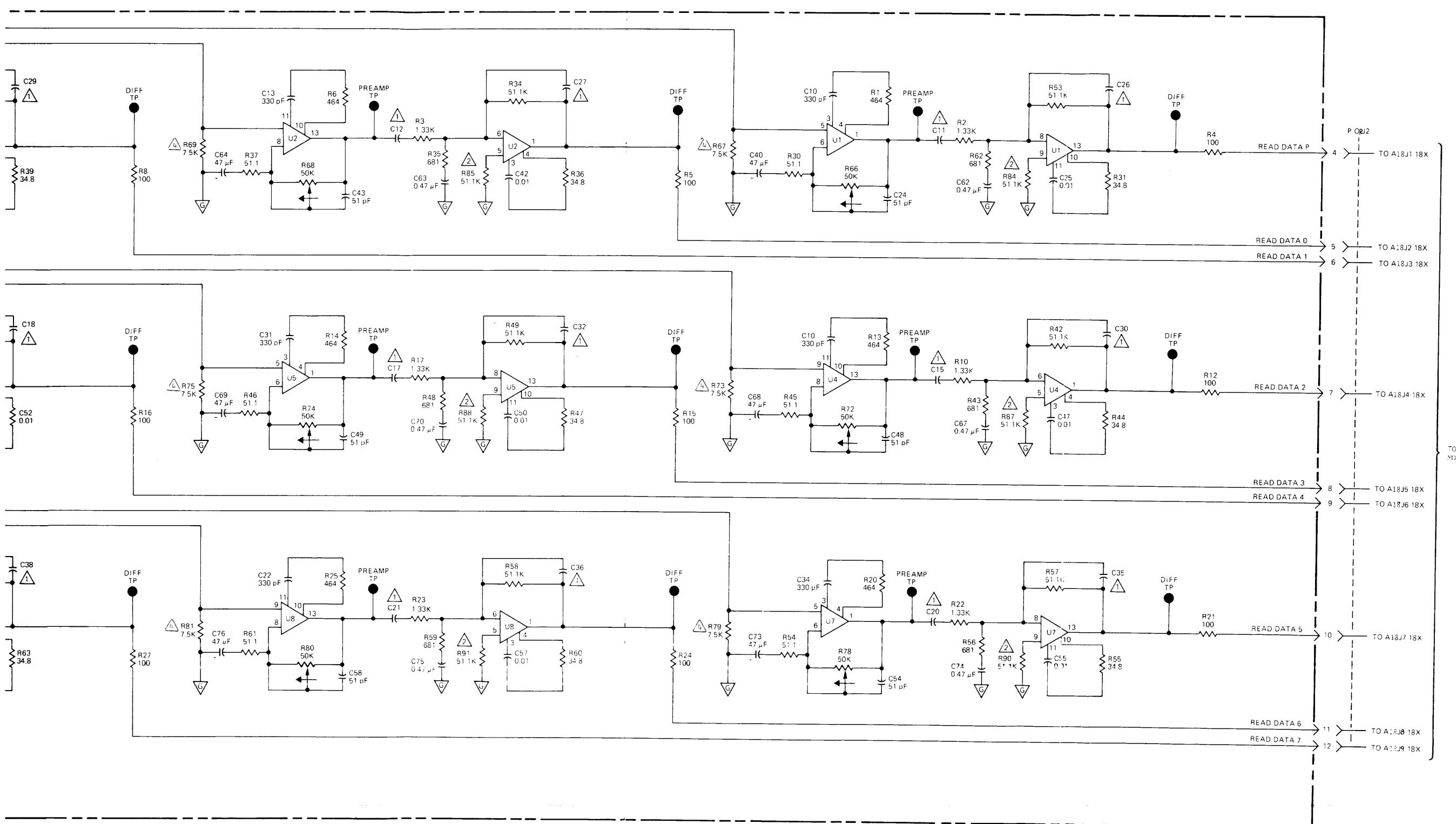
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R106,206,306,406 506,606,706,806 906	0757-0460	RESISTOR, fxd, 61.9K, 1%, .125W
R107,207,307,407 507,607,707,807, 907	0683-1525	RESISTOR, fxd, 1.5K, 5%, .25W
R108,208,308,408 508,608,708,808, 908	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R109,209,309,409 509,609,709,809, 909	0683-4325	RESISTOR, fxd, 4.3K, 5%, .25W
U1-9	07970-80050	IC, pretested
U10	1820-0349 0340-0456 07970-00672 2360-0115 3050-0228	IC, MC849P Insulator, IC Pad BRACKET, R.R., Preamp SCREW, 6x32 WASHER
*R101,103	07970-62012 0698-3136	(SERIES 1045) RESISTOR, 17.8K
*C101,102	0140-0210	CAPACITOR, 270pf

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R106,206,306,406 506,606,706,806 906	0757-0460	RESISTOR, fxd, 61.9K, 1%, .125W
R107,207,307,407 507,607,707,807, 907	0683-1525	RESISTOR, fxd, 1.5K, 5%, .25W
R108,208,308,408 508,608,708,808, 908	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R109,209,309,409 509,609,709,809, 909	0683-4325	RESISTOR, fxd, 4.3K, 5%, .25W
U1-9	07970-80050	IC, pretested
U10	1820-0349	IC, MC849P
	0340-0456	Insulator, IC Pad
	07970-00672	BRACKET, R.R., Preamp
	2360-0115	SCREW, 6x32
	3050-0228	WASHER
*R101,103 *C101,102	07970-62012 0698-3136 0140-0210	(SERIES 1045) RESISTOR, 17.8K CAPACITOR, 270pf

Read Read Preamplifier PC Assembly A15







NOTES  
**1** THE FOLLOWING COMPONENTS ARE SPEED CRITICAL

SPEED IPS	ASSEMBLY PART NO	CAPACITORS C11, 12, 14, 15, 17, 18, 20, 21, 23	CAPACITORS C26, 30, 32, 33, 35, 36, 38
10 20.9	07970 62036	1200 PF	68 PF
11 45	07970 62034	390 PF	51 PF

**2** RESISTORS R84 THROUGH R92 (51.1K) FIRST USED ON SERIES 1210 ASSEMBLIES

**3** DENOTES POWER SUPPLY COMMON (GROUND)

**4** SERIES 1430 AND UP USE 10K RESISTORS.

PE READ PREAMPLIFIER PCA PARTS LIST  
 07970-62034 (SERIES 1124,1210,1439)  
 07970-62036 (SERIES 1124,1210,1439)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1-8,25,41,42, 45-47,50-52, 55-57,60,61	07970-62034 0160-2055	PE READ PREAMPLIFIER PCA (SERIES 1124) CAPACITOR, fxd, .01uf, 100V
C9,39	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
C10,13,16,19, 22,28,31,34,37	0160-2208	CAPACITOR, fxd, 330pf, 5%
1 C11,12,14,15, 17,18,20,21,23	0140-0200	CAPACITOR, fxd, 390pf, 300V
C24,43,44,48,49, 53,54,58,59	0160-2201	CAPACITOR, fxd, 51pf, 5%
2 C26,27,29,30, 32,33,35,36,38	0160-2250	CAPACITOR, fxd, 5.1pf, 5%
C40,64,65,68,69, 72,73,76,77	0180-1704	CAPACITOR, fxd, 47uf, 10%
C62,63,66,67,70, 71,74,75,78	0180-0376	CAPACITOR, fxd, .47uf, 10%
R1,6,7,13,14,19, 20,25,26	0698-0082	RESISTOR, fxd, 464, 1%, .125
R2,3,9,10,17,18, 22,23,28	0757-0317	RESISTOR, fxd, 1.33K, 1%, .125W
R4,5,8,12,15,16, 21,24,27	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R11,29	0698-3428	RESISTOR, fxd, 14.7, 1%, .125W
R30,37,38,45,46, 53,54,61,62	0757-0394	RESISTOR, fxd, 51.1, 1%, .125W
R31,36,39,44,47, 52,55,60,63	0698-3434	RESISTOR, fxd, 34.8, 1%, .125W
R32,35,40,43,48, 51,56,59,64	0757-0419	RESISTOR, fxd, 681, 1%, .125W
*R33,34,41,42,49, 50,57,58,65,84-92	0757-0458	RESISTOR, fxd, 51.1K, 1%, .125W
R66,68,70,72,74, 76,78,80,82	2100-0942	RESISTOR, fxd, Variable, 50K, 20%
*R67,69,71,73,75, 77,79,81,83	0757-0440	RESISTOR, fxd, 7.5K, 1%, .125W
U1-9	1826-0044 07970-01180 2360-0115 3050-0228 4330-0145	TRANSISTOR, preamp BRACKET, mounting SCREW, 6-32 WASHER, flat INSULATOR, bead
*R33,34,41,42, 49,50,57,58,65, 84-92	SERIES 1210 0757-0458	(07970-62034 & 07970-62036 PCA's) RESISTOR, 51.1K, Added to board

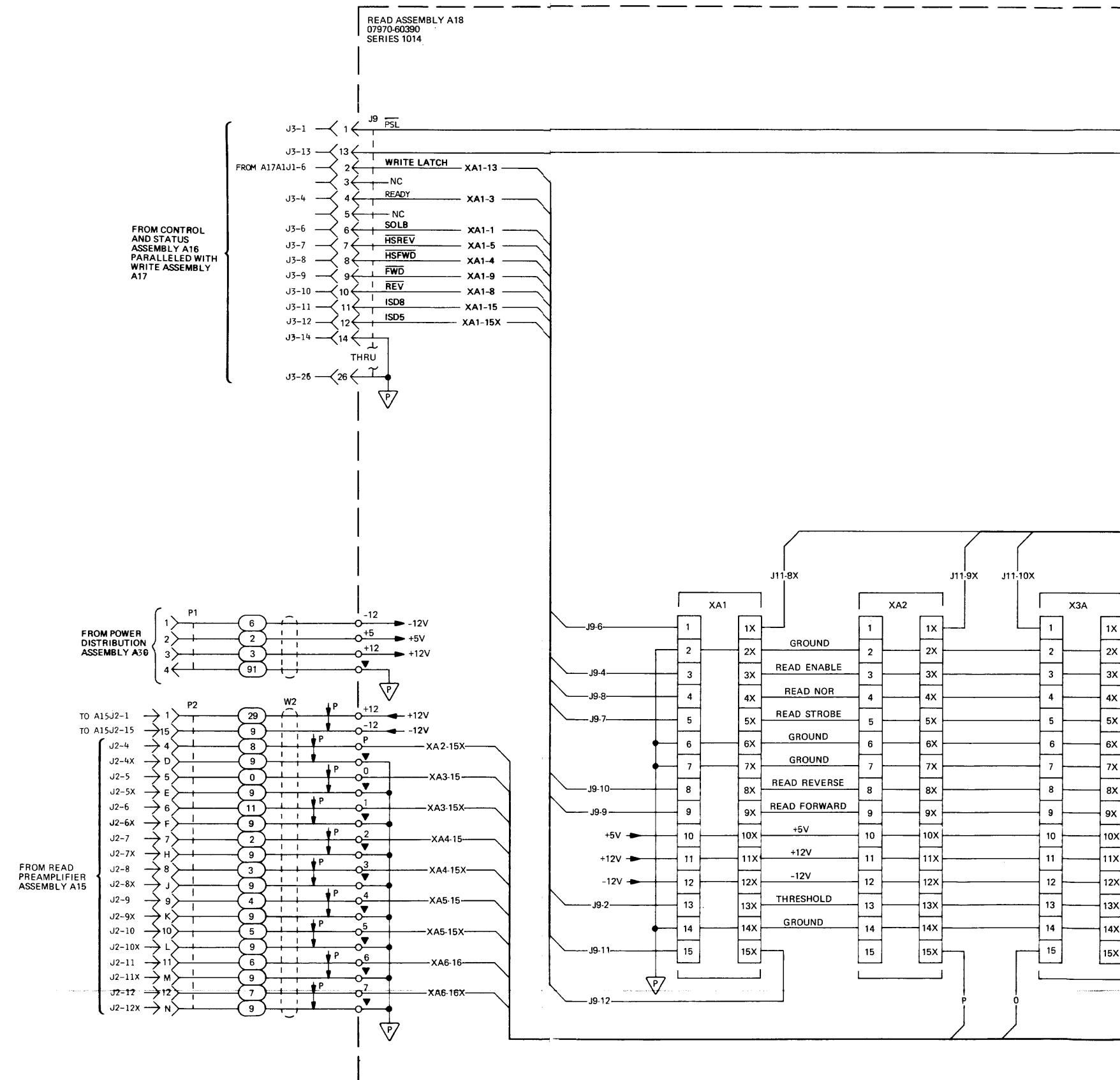
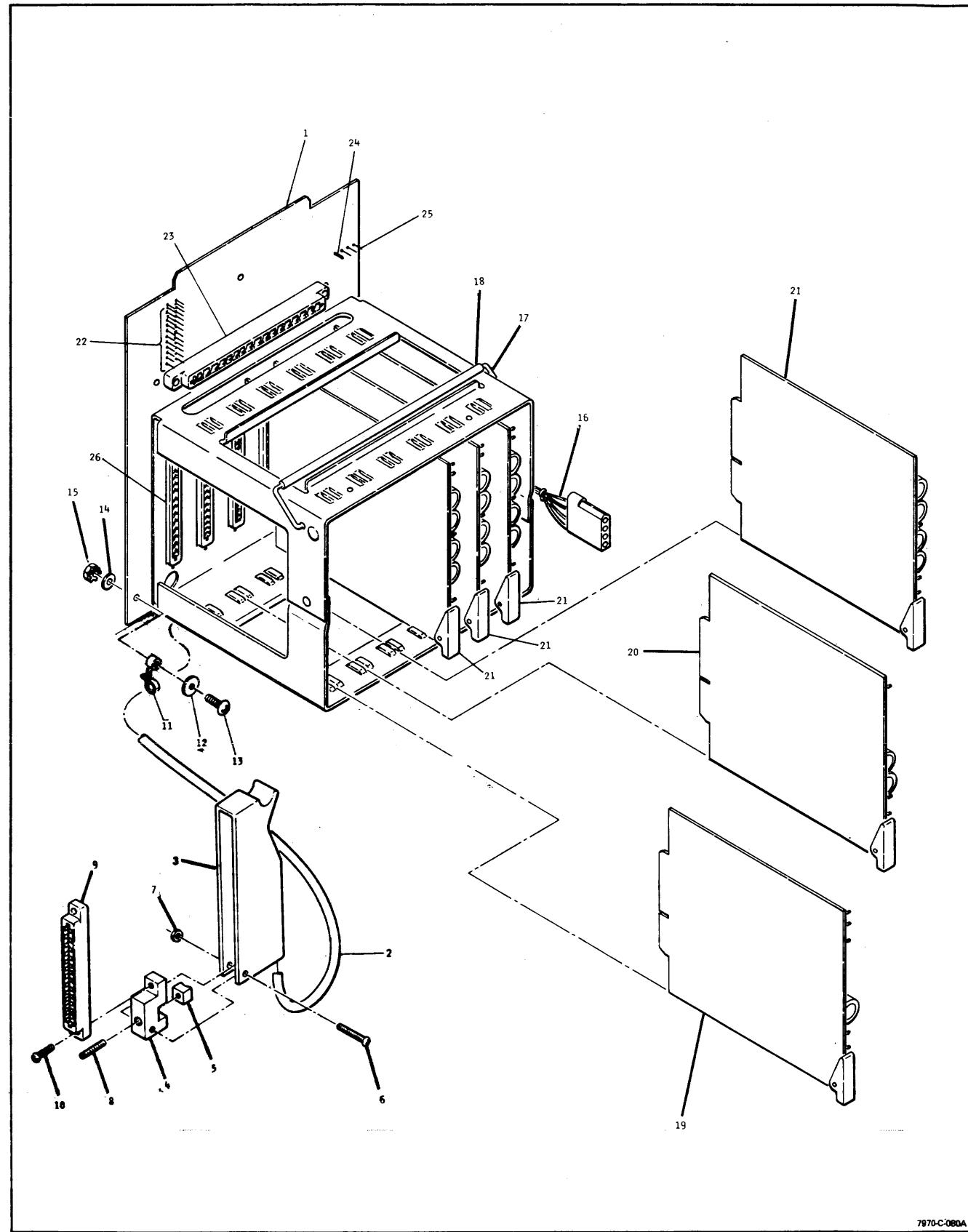
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
*R33,34,41,42, 49,50,57,58,65, 84-92	SERIES 1439 0757-0458	(07970-62034 & 07970-62036 PCA's) RESISTOR, 51.1K
*R67,69,71,73, 75,77,79,81,83	0757-0465	RESISTOR, 100K

1 07970-62036 PCA's use 1200pf part no. 0160-2220

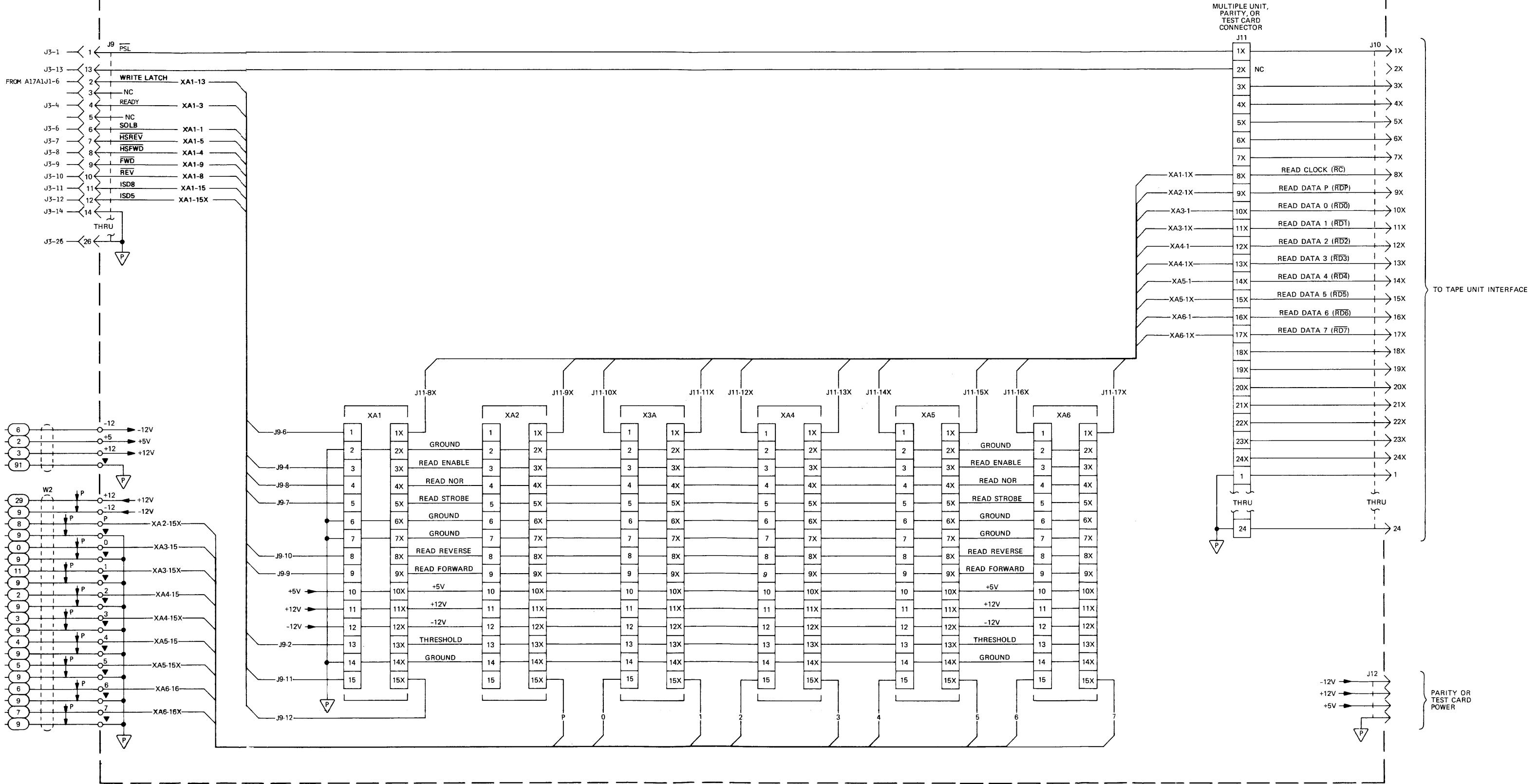
2 07970-62036 PCA's use 68pf, part no. 0140-0192

N

-62036 PCA's)



READ ASSEMBLY A18  
07970-60390  
SERIES 1014



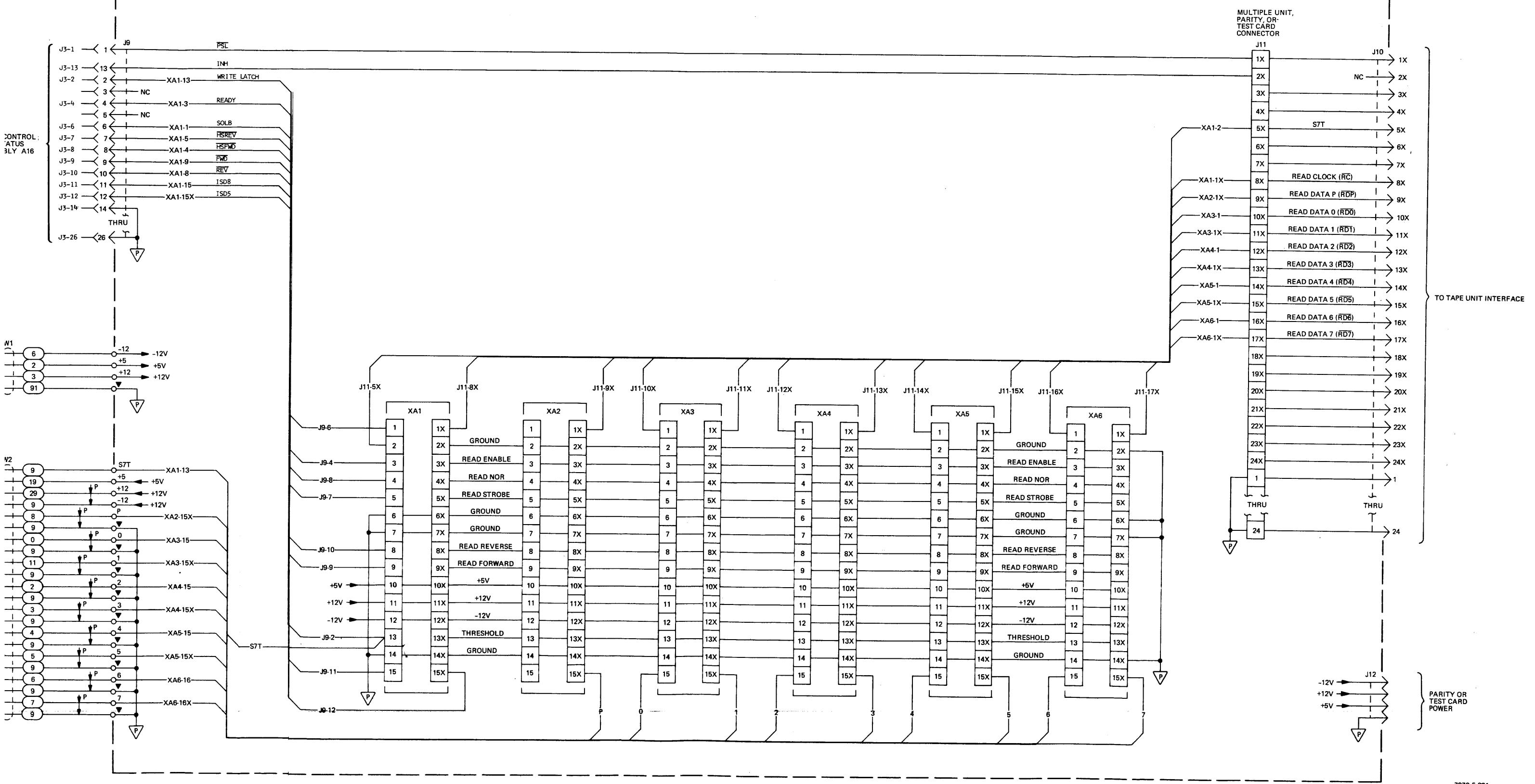
Read Motherboard Assembly A18

READ PCA MOTHERBOARD PARTS LIST  
07970-60390 (Series 1014)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-60390	READ MOTHERBOARD ASSY. (Series 1014)
2	07970-60860	CABLE, READ MOTHERBOARD
3	5040-6086	HOOD, Connector
4	5040-6072	BLOCK, Connector Mounting
5	5040-6003	CLAMP, Cable
6	2200-0091	SCREW, poz, 4-40x, .562L
7	2260-0002	NUT, Hex, 4-40
8	3030-0143	SCREW, Set, 6-32, .5 in.
9	1251-0159	CONNECTOR, PC 2x15
10	0624-0098	SCREW, Tapping, 4-40
11	1400-0440	CLAMP, Cable
12	3050-0066	WASHER, Flat, #6
13	2360-0201	SCREW, 6-32, .5 in.
14	3050-0066	WASHER, Flat, #6
15	2420-0001	NUT, Hex, 6-32
16	07970-60430	CABLE ASSEMBLY, Read Power
17	1460-0573	SPRING, Retaining, PC Board
18	1400-0249	TIE, Cable, Spiral
19		READ CONTROL PC ASSY
20		READ DATA PC ASSY Single Channel
21		READ DATA PC ASSY Dual Channel
22	1251-2361	CONTACT, Male 26 pin
23	1251-2025	CONNECTOR, PC 24 pin
24	1251-2503	CONNECTOR, PC Female pin
25	1251-2504	CONNECTOR, PC Male pins
26	1251-1886	CONNECTOR, PC 15 pin
	1251-1115	KEY, Connector PC

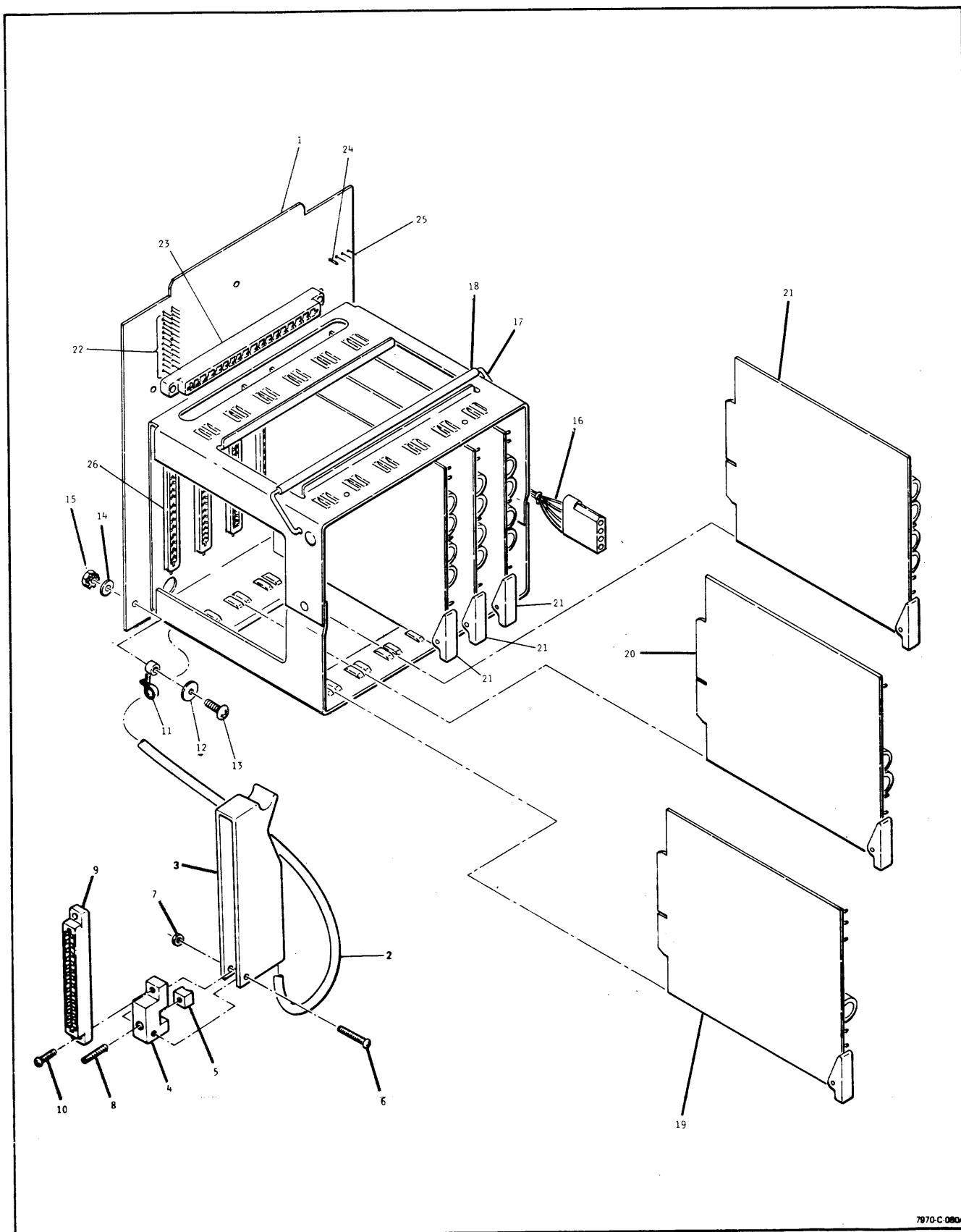
**Read Motherboard Assembly A18**

READ/READ ASSEMBLY A18  
07970-62003 SERIES 1039

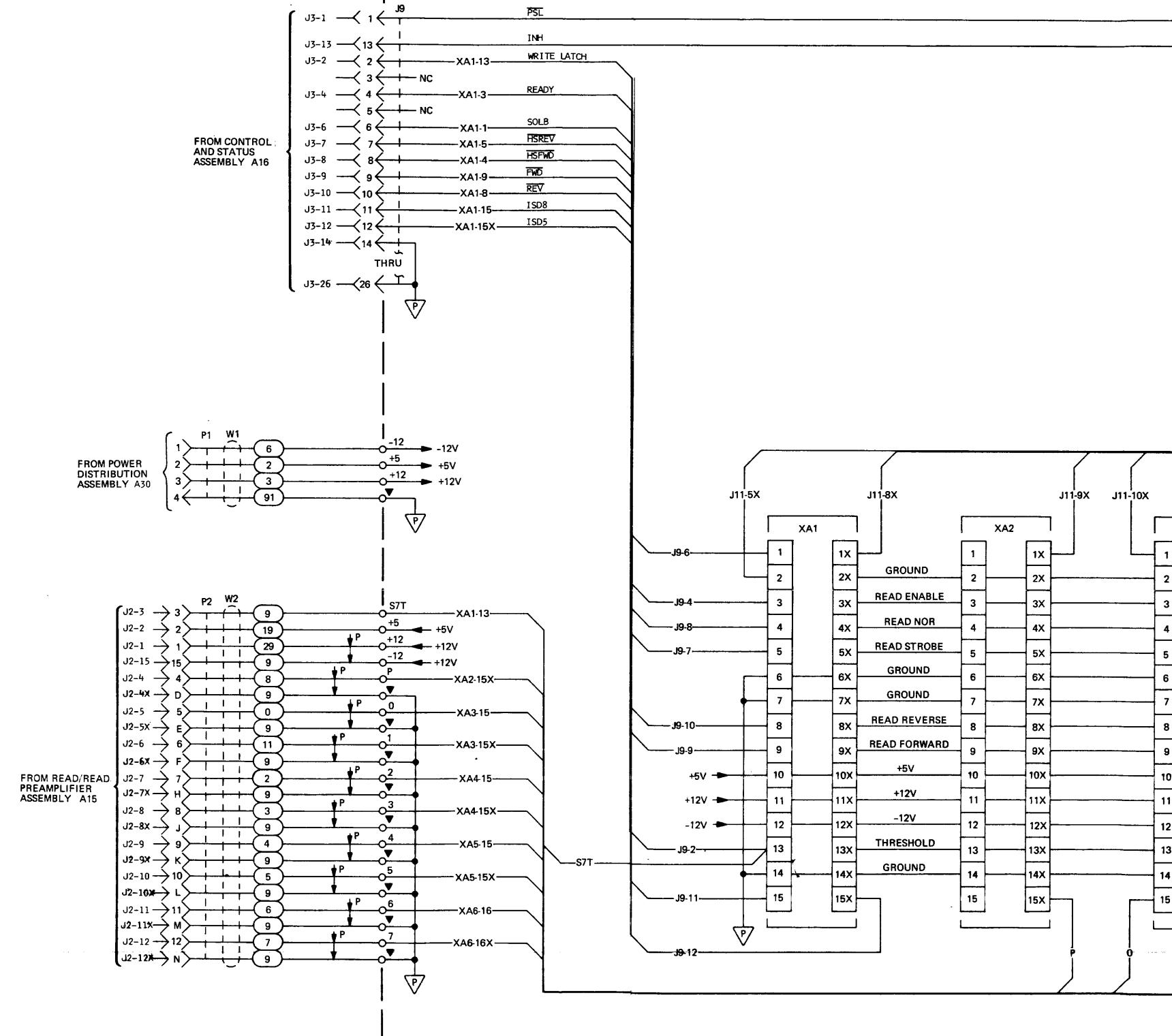


7970-F-021

Read/Read Motherboard Assembly A18



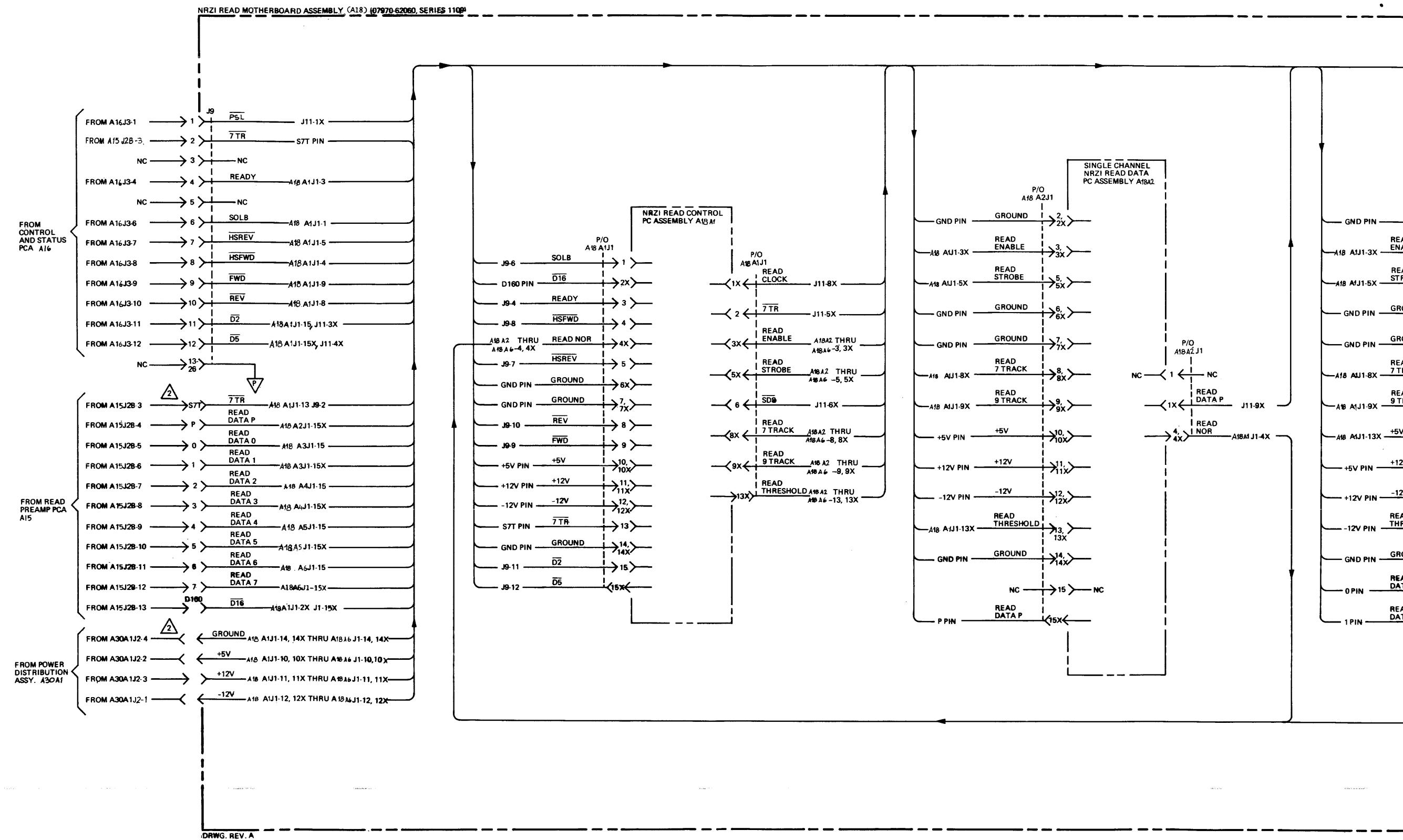
READ/READ ASSEMBLY A18  
07970-26003 SERIES 1039

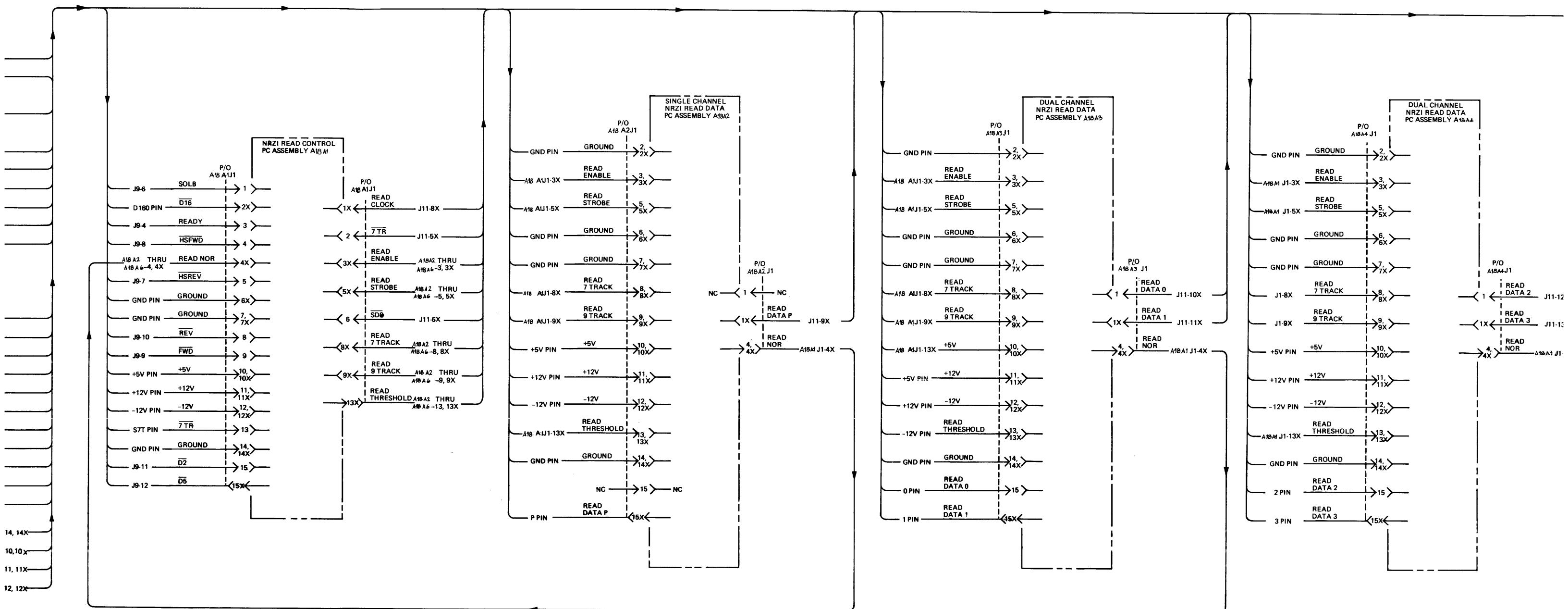


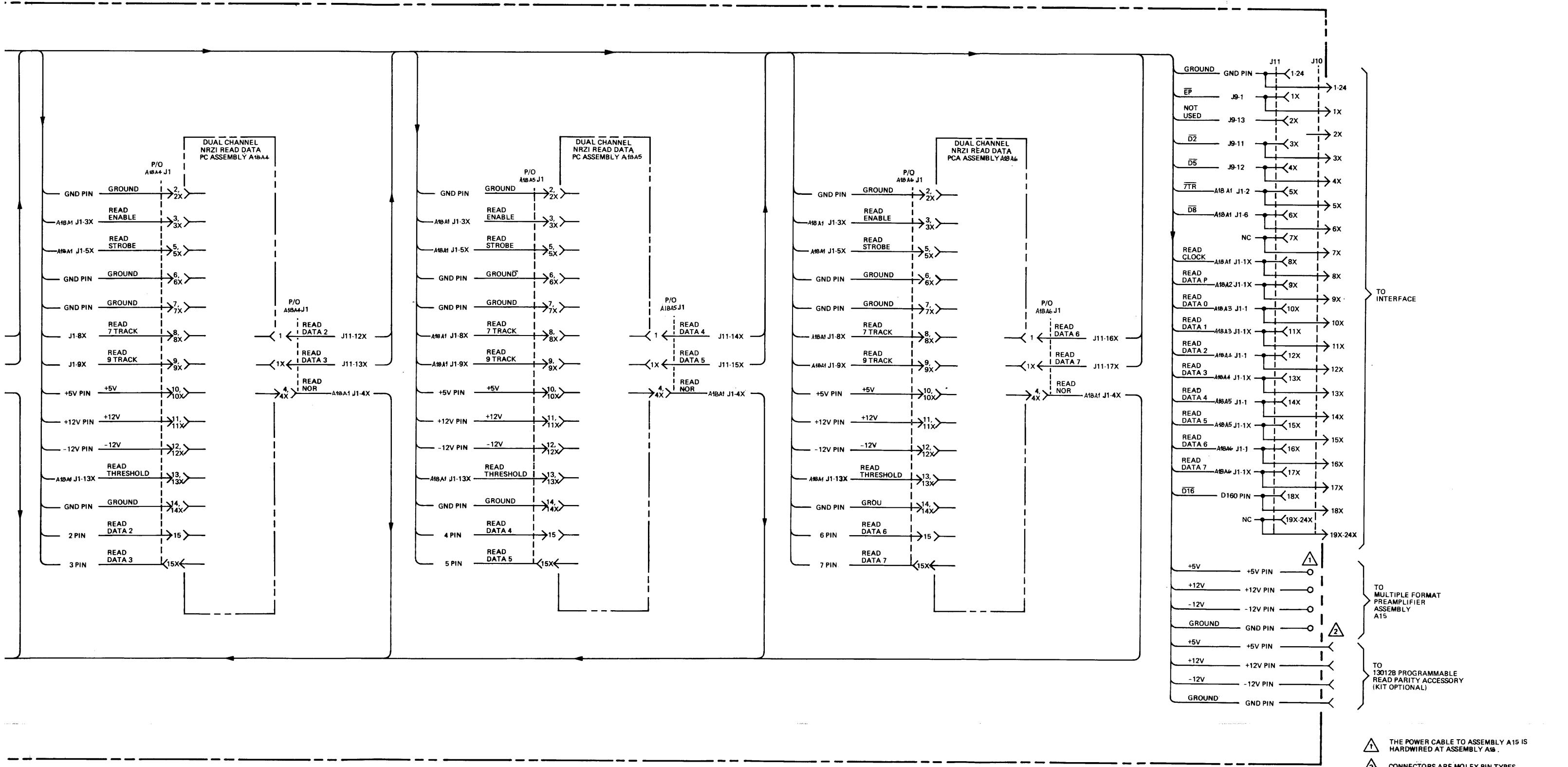
READ/READ PCA MOTHERBOARD PARTS LIST  
07970-62003 (Series 1039)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62003	READ/READ MOTHERBOARD ASSY (Series 1039)
2	07970-62009	CABLE, Read Motherboard
3	5040-6086	HOOD, Connector
4	5040-6072	BLOCK, Connector Mounting
5	5040-6003	CLAMP, Cable
6	2200-0091	SCREW, Pozi, 4-40X, .562 in.
7	2260-0002	NUT, Hex, 4-40
8	3030-0143	SCREW, Set, 6-32, .5 in.
9	1251-0159	CONNECTOR, PC 2x15
10	0624-0098	SCREW, Tapping, 4-40
11	1400-0440	CLAMP, Cable
12	3050-0066	WASHER, Flat, #6
13	2360-0201	SCREW, 6-32, .5 in.
14	3050-0066	WASHER, Flat, #6
15	2420-0001	NUT, Hex, 6-32
16	07970-60430	CABLE ASSEMBLY, read power
17	1460-0573	SPRING, Retaining, PC Board
18	1400-0249	TIE, Cable, Spiral
19		READ/READ CONTROL PCA
20		READ DATA PCA, Single Channel
21		READ DATA PCA, Dual Channel
22	1251-2361	CONNECTOR, Male, 26 pin
23	1251-2025	CONNECTOR, PC, 24 pin
24	1251-2503	CONNECTOR, PC, Female Pin
25	1251-2504	CONNECTOR, PC, Male Pins
26	1251-1886	CONNECTOR, PC, 2x15
	1251-1115	KEY, PC, Connector

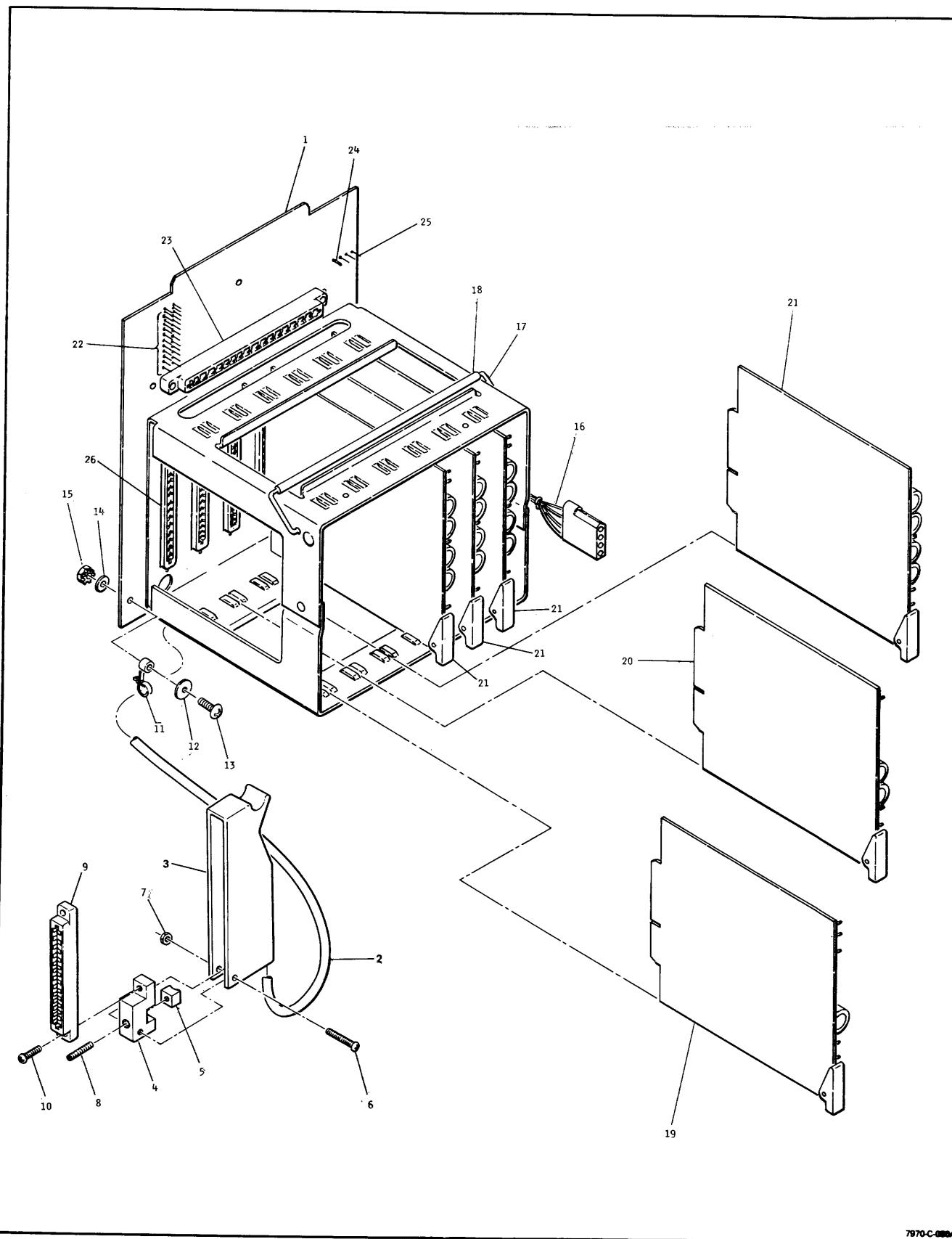








NRZI Read Motherboard Assembly A18



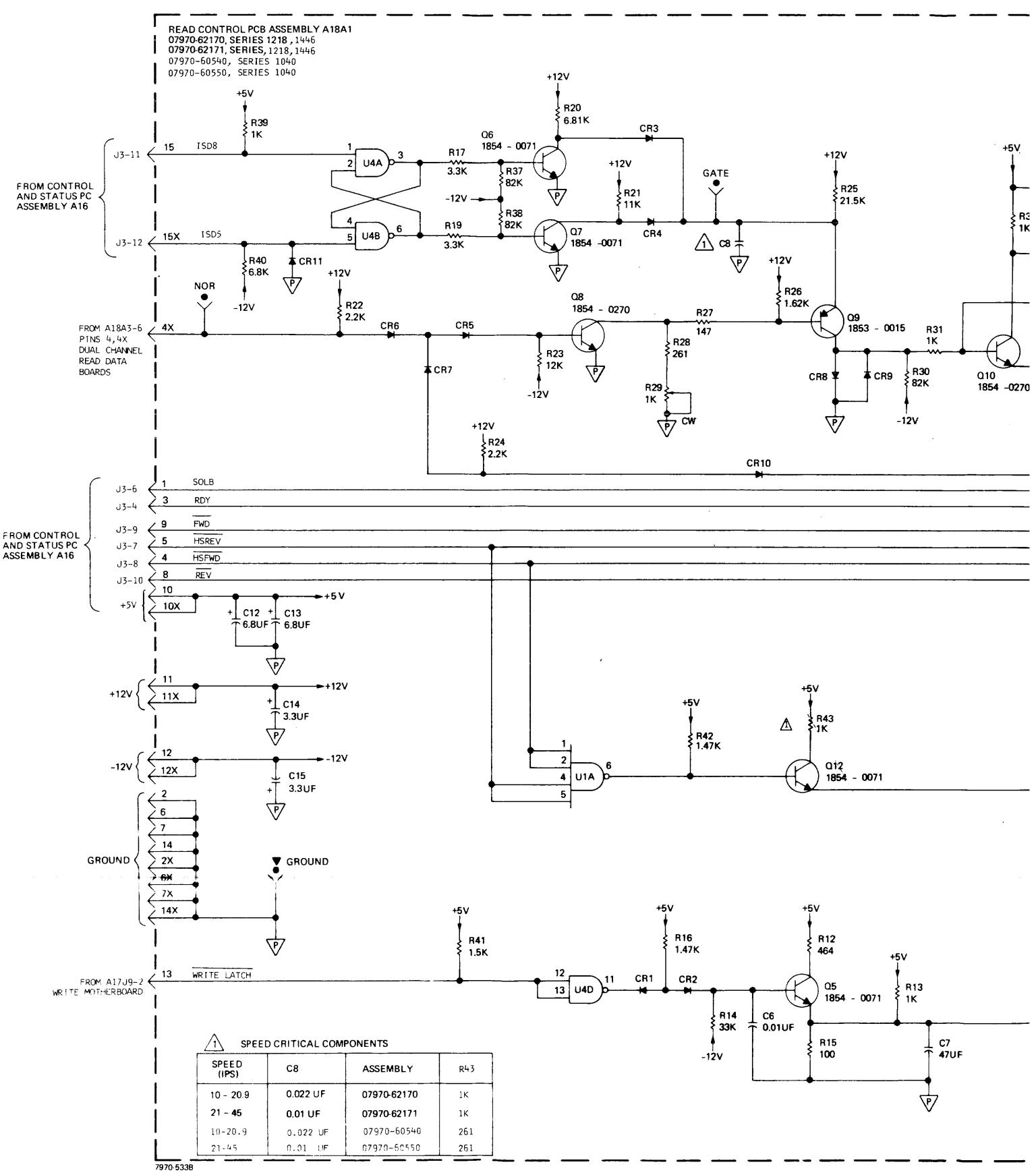
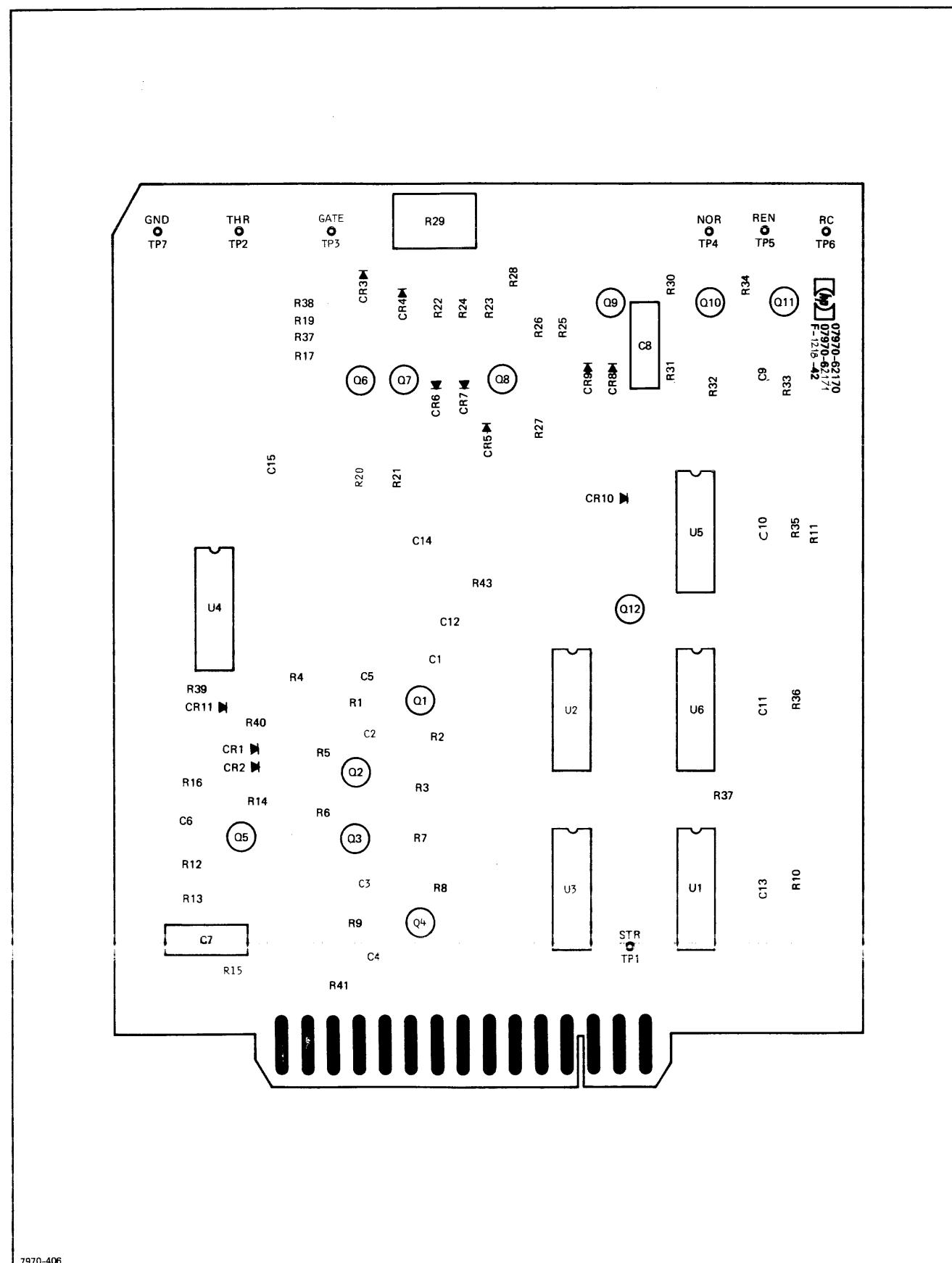
NRZI READ PCA (MOTHERBOARD) PARTS LIST  
07970-62060 (Series 1109)

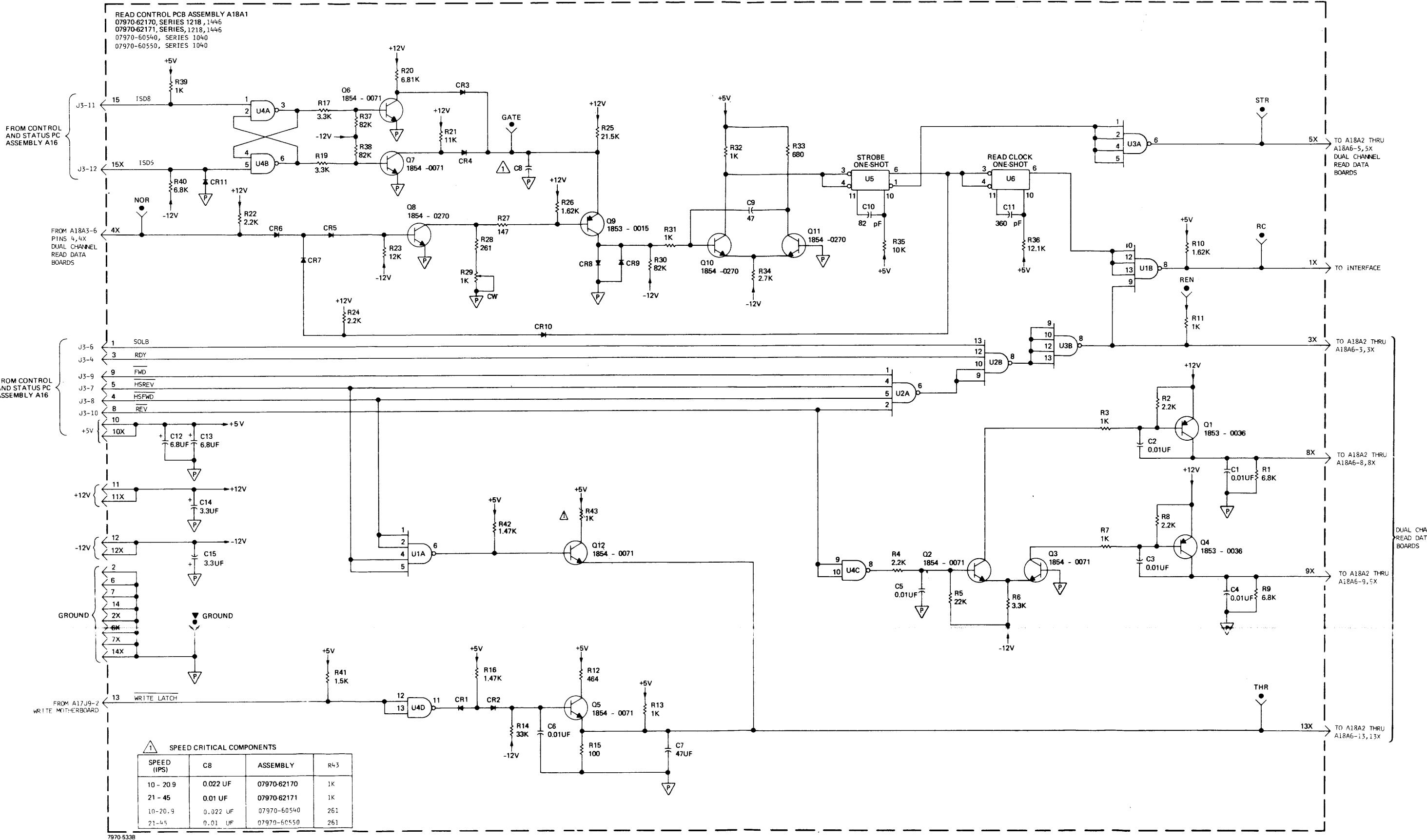
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62060	READ MOTHERBOARD ASSY
2	07970-62077	CABLE, READ MOTHER BOARD
3	5040-6086	HOOD, Connector
4	5040-6072	BLOCK, Connector Mounting
5	5040-6003	CLAMP, Cable
6	2200-0091	SCREW, 4-40, .562 in.
7	2260-0002	NUT, Hex, 4-40
8	3030-0143	SCREW, Set, 6-32, .5 in.
9	1251-0159	CONNECTOR, PC 2x15
10	0624-0098	SCREW, Tapping, 4-40
11	1400-0440	CLAMP, Cable
12	3050-0066	WASHER, Flat, #6
13	2360-0201	SCREW, 6-32, .5 in.
14	3050-0066	WASHER, Flat, #6
15	2420-0001	NUT, Hex, 6-32
16	07970-60430	CABLE ASSEMBLY, Read Power
17	1460-0573	SPRING, Retaining, PC Board
18	1400-0249	TIE, Cable, spiral
19		READ/READ CONTROL PCA
20		READ DATA PCA, Single Channel
21		READ DATA PCA, Dual Channel
22	1251-2361	CONTACT, PC, Male 26 pin
23	1251-2025	CONNECTOR, PC, 2x24
24	1251-2503	CONNECTOR, Contact PC, Female
25	1251-2504	CONNECTOR, Contact PC, Male
26	1251-1886	CONNECTOR, PC, 2x15
	1251-1115	KEY, Connector PC

DESCRIPTION

BOARD ASSY  
MOTHER BOARD  
Connector  
Connector Mounting  
able  
-40, .562 in.  
, 4-40  
et, 6-32, .5 in.  
r, PC 2x15  
apping, 4-40

Flat, #6  
-32, .5 in.  
Flat, #6  
, 6-32  
LY, Read Power  
ining, PC Board  
e, spiral  
ITROL PCA  
, Single Channel  
, Dual Channel  
ale 26 pin  
, 2x24  
ontact PC, Female  
ontact PC, Male  
, 2x15  
r PC





Read Control PC Assembly A18A1

## READ CONTROL PCA PARTS LIST

07970-60540 (Series 1040)  
 07970-60550 (Series 1040)  
 07970-62170 (Series 1218,1446)  
 07970-62171 (Series 1218,1446)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1-6	07970-62170	READ CONTROL PCA (Series 1218)
C7	0160-2055	CAPACITOR, fxd, .01uf, 100V
C8	0180-1704	CAPACITOR, fxd, 47uf, 10%
C9	0160-0162	CAPACITOR, fxd, .022uf, 10%
C10	0160-2307	CAPACITOR, fxd, 47pf, 300V
C11	0140-0193	CAPACITOR, fxd, 82pf, 5%
C12,13	0160-2209	CAPACITOR, fxd, 360pf, 5%
C14,15	0180-1701	CAPACITOR, fxd, 6.8uf, 20%
CR1-11	0180-0210	CAPACITOR, fxd, 3.3uf, 15VDC
Q1-4	1901-0040	DIODE, 30V, 50MA
Q2,3,5-7,12	1853-0036	TRANSISTOR, 2N3906, PL18
*Q8,10,11	1854-0071	TRANSISTOR, SI, T018
Q9	1854-0270	TRANSISTOR, NPN, SI, 2N4265
R1,9,40	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R2,4,8,22,24	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R3,7,11,31,32,39	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R5	0683-2235	RESISTOR, fxd, 22K, 5%, .25W
R6,17,19	0683-3325	RESISTOR, fxd, 3.3K, 5%, .25W
R10,26	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R12	0698-0082	RESISTOR, fxd, 464, 1%, .125W
R13,43	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R14	0683-3335	RESISTOR, fxd, 33K, 5%, .25W
R15	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R16,42	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
R20	0757-0439	RESISTOR, fxd, 6.81K, 1%, .125W
R21	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R23	0683-1235	RESISTOR, fxd, 12K, 5%, .25W
R25	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R27	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R28	0698-3132	RESISTOR, fxd, 261, 1%, .125W
R29	2100-1758	RESISTOR, Variable, 1K, 5%
R30,37,38	0683-8235	RESISTOR, fxd, 82K, 5%, .25W
R33	0683-6815	RESISTOR, fxd, 680, 5%, .25W
R34	0683-2725	RESISTOR, fxd, 2.7K, 5%, .25W
R35	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R36	0757-0444	RESISTOR, fxd, 12.1K, 1%, .125W
R41	0683-1525	RESISTOR, fxd, 1.5K, 5%, .25W
U1	1820-0348	IC, MC844P
U2	1820-0069	IC, DIGITAL, Gate 7420
U3	1820-0376	IC, SN74H40N

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
U4 U5,6	1820-0349 1820-0088 5040-6001 1480-0116	IC, MC849P IC, MC851P EXTRACTOR, PC PIN, Grooved, .062 in.
*Q8,10,11	Series 1446 1854-0215	07970-62170 and 07970-62171 PCA's TRANSISTOR, 2N3904, PL5

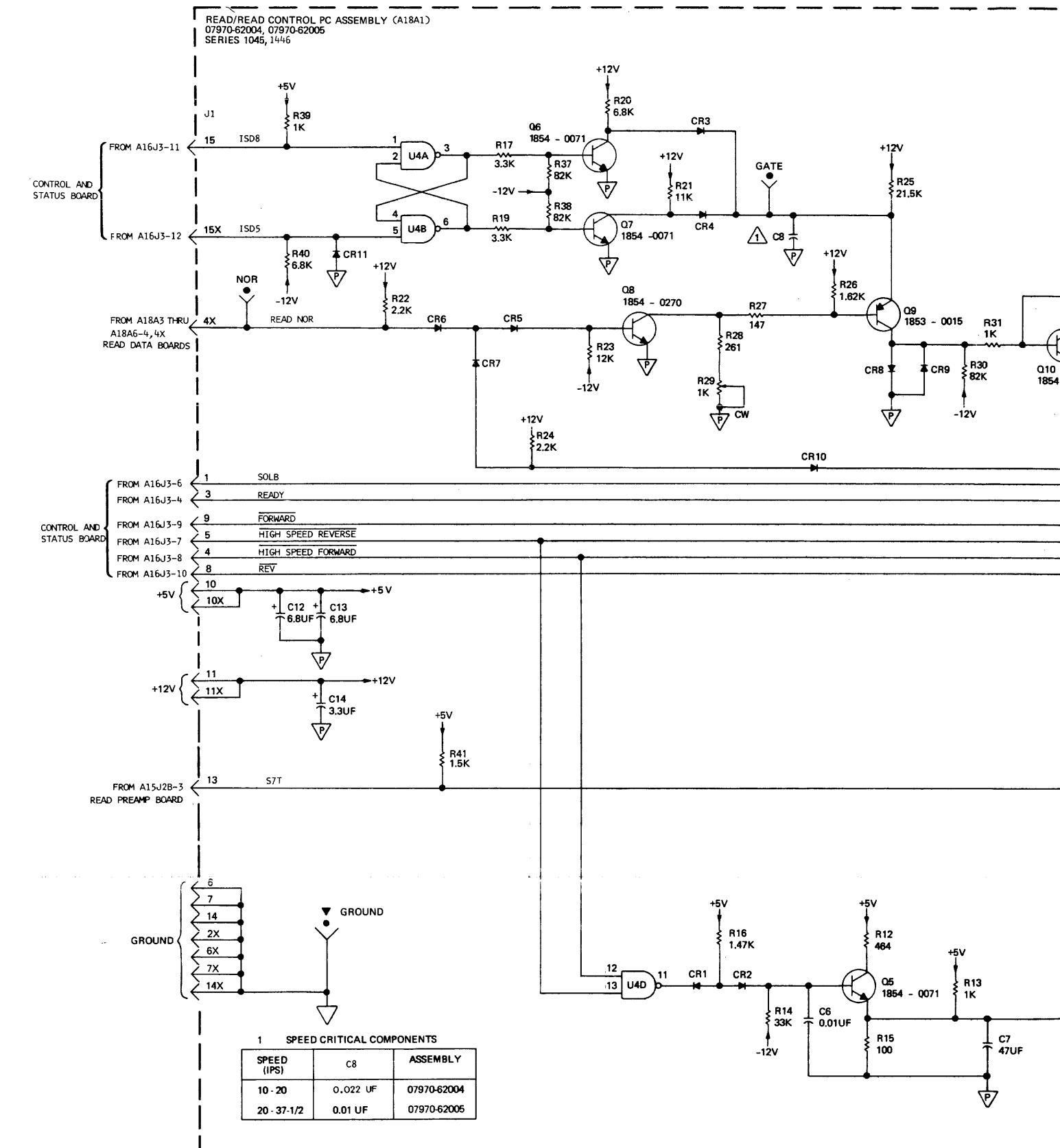
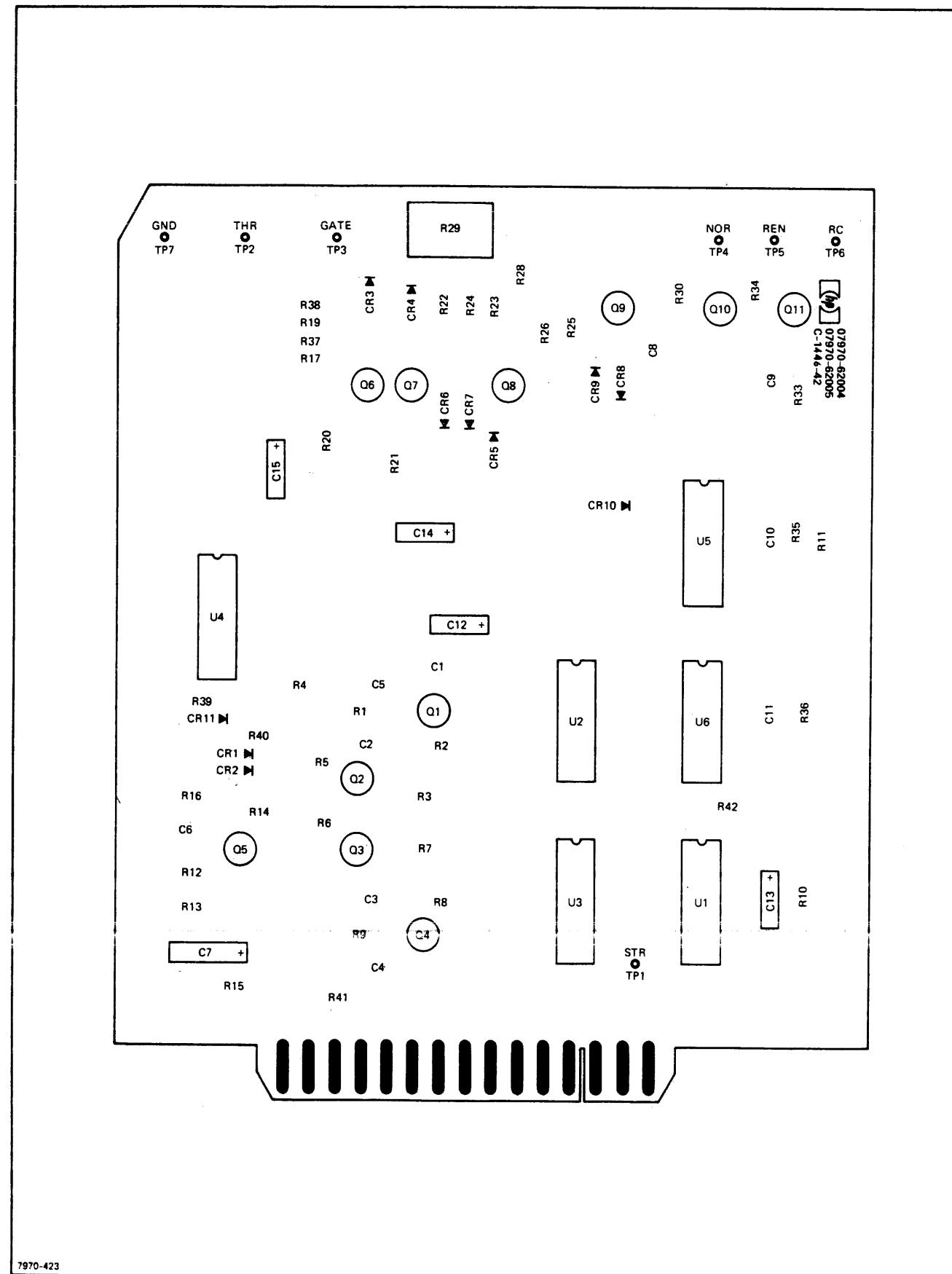
⚠ On 07970-62171 and 07970-60550 PCA's use .01uf, part number 0160-0161

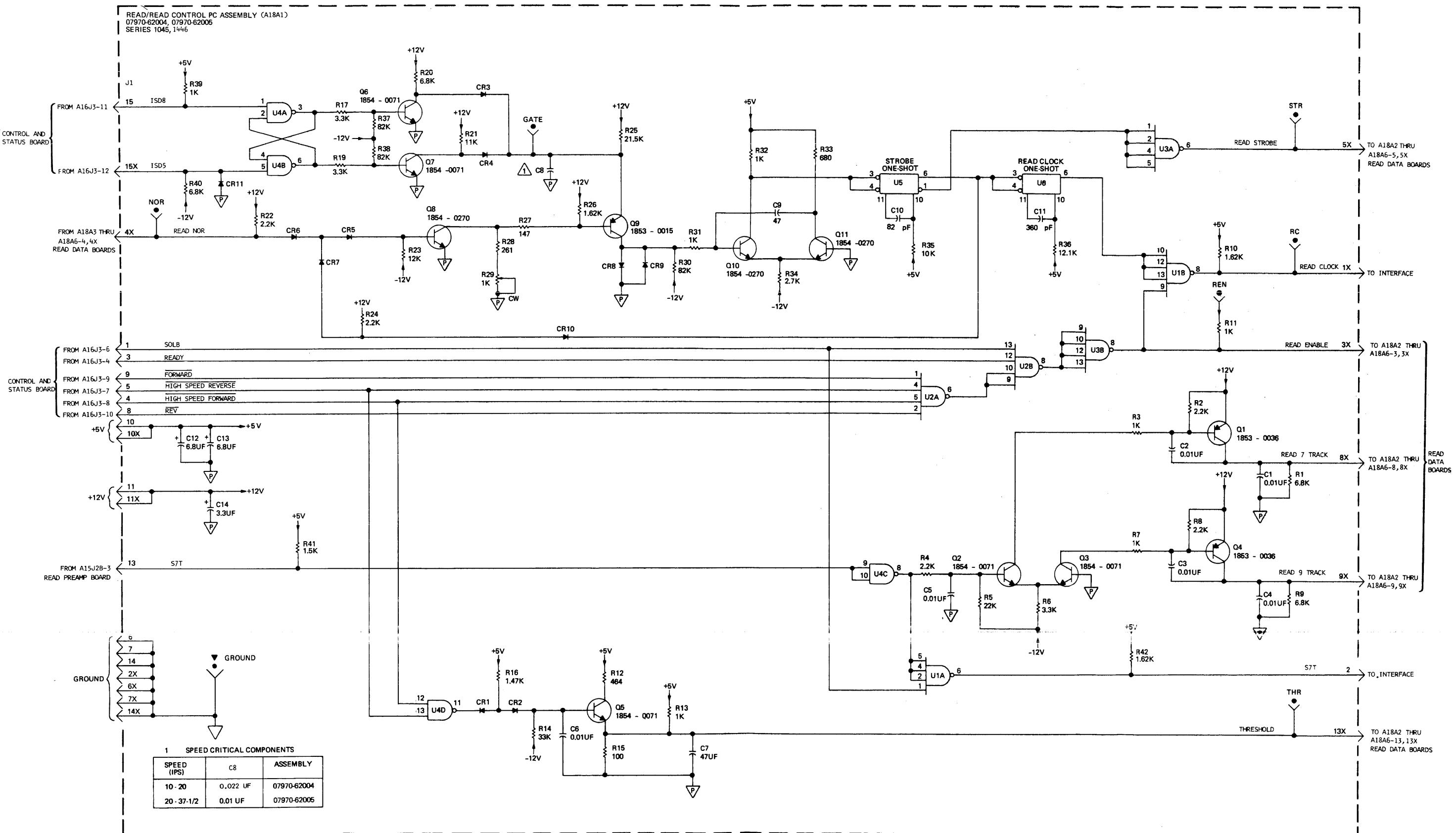
⚠ On 07970-60540 and 07970-60550 PCA's R43 is 261 ohm, part number 0698-3132

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
U4 U5, 6	1820-0349 1820-0088 5040-6001 1480-0116	IC, MC849P IC, MC851P EXTRACTOR, PC PIN, Grooved, .062 in.
Series 1446		07970-62170 and 07970-62171 PCA's
*Q8,10,11	1854-0215	TRANSISTOR, 2N3904, PL5

1 On 07970-62171 and 07970-60550 PCA's use .01uf, part number 0160-0161

2 On 07970-60540 and 07970-60550 PCA's R43 is 261 ohm, part number 0698-3132





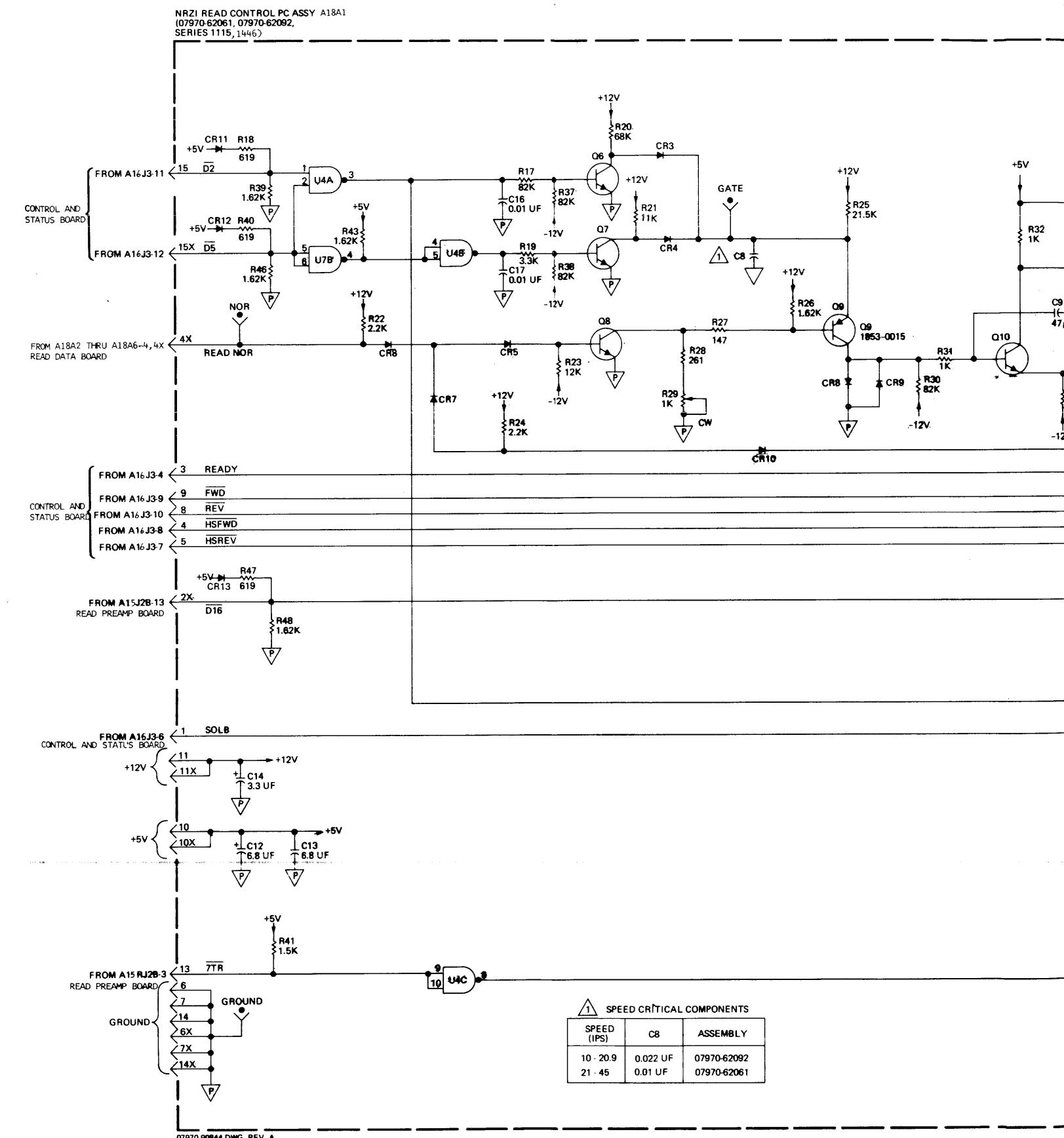
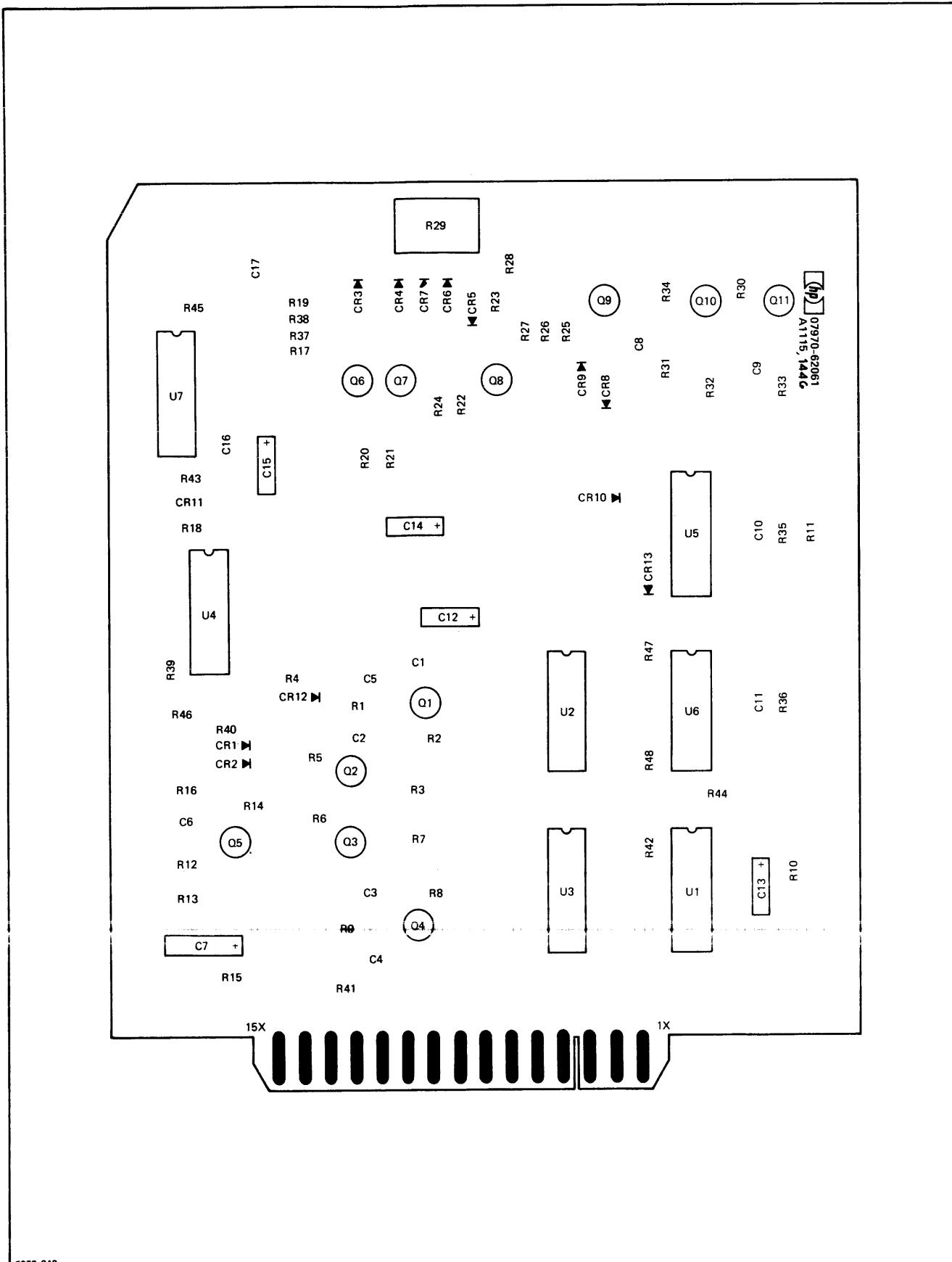
Read/Read Control PC Assembly A18A1

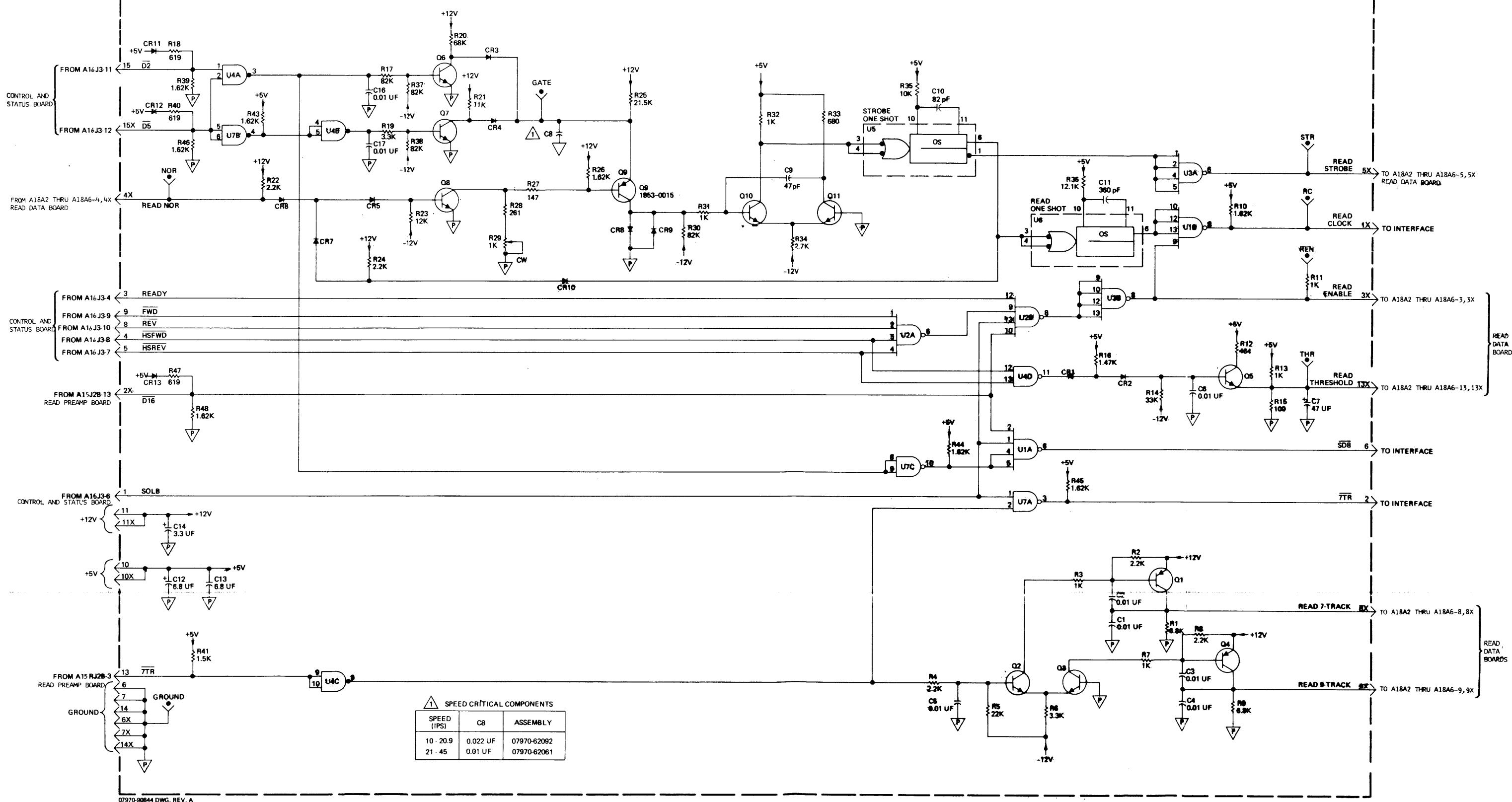
READ/READ CONTROL PCA PARTS LIST  
 07970-62004 (Series 1045, 1446)  
 07970-62005 (Series 1045, 1446)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1-6	07970-62004	READ/READ CONTROL PCA (Series 1045)
C7	0160-2055	CAPACITOR, fxd, .01uf, 100V
C8	0180-1704	CAPACITOR, fxd, 47uf, 10%
C9	0160-0162	CAPACITOR, fxd, .022uf, 10%
C10	0160-2307	CAPACITOR, fxd, 47pf, 300V
C11	0140-0193	CAPACITOR, fxd, 82pf, 5%
C12,13	0160-2209	CAPACITOR, fxd, 360pf, 5%
C14,15	0180-1701	CAPACITOR, fxd, 6.8uf, 20%
C14,15	0180-0210	CAPACITOR, fxd, 3.3uf, 15VDC
CR1-11	1901-0040	DIODE, 30V, 50MA
Q1-4	1853-0036	TRANSISTOR, 2N3906, PL18
Q2,3,5-7	1854-0071	TRANSISTOR, SI, TO18
*Q8,10,11	1854-0270	TRANSISTOR, NPN, SI, 2N4265
Q9	1853-0015	TRANSISTOR, 2N3640, PL18
R1,9,40	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R2,4,8,22,24	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R3,7,11,31,32,39	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R5	0683-2235	RESISTOR, fxd, 22K, 5%, .25W
R6,17,19	0683-3325	RESISTOR, fxd, 3.3K, 5%, .25W
R10,26,42	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R12,28	0698-3132	RESISTOR, fxd, 261, 1%, .125W
R13	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R14	0683-3335	RESISTOR, fxd, 33K, 5%, .25W
R15	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R16	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
R20	0757-0439	RESISTOR, fxd, 6.81K, 1%, .125W
R21	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R23	0683-1235	RESISTOR, fxd, 12K, 5%, .25W
R25	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R27	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R29	2100-1758	RESISTOR, Variable, 1K, 5%
R30,37,38	0683-8235	RESISTOR, fxd, 82K, 5%, .25W
R33	0683-6815	RESISTOR, fxd, 680, 5%, .25W
R34	0683-2725	RESISTOR, fxd, 2.7K, 5%, .25W
R35	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R36	0757-0444	RESISTOR, fxd, 12.1K, 1%, .125W
R41	0683-1525	RESISTOR, fxd, 1.5K, 5%, .25W
U1	1820-0348	IC, MC844P
U2	1820-0069	IC, Digital, Gate, 7420
U3	1820-0376	IC, SN74H40N
U4	1820-0349	IC, MC849P
U5,6	1820-0088	IC, MC851P
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved, .062 in.
*Q8,10,11	Series 1446 1854-0215	07970-62004 & 07970-62005 PCA's TRANSISTOR, 2N3904, PL5

 On 07970-62005 PCA's use .01uf, part number 0160-0162

Read/Read Control PC Assembly A18A1





NRZI READ CONTROL PCA PARTS LIST  
 07970-62061 (Series 1115, 1446)  
 07970-62092 (Series 1115, 1446)

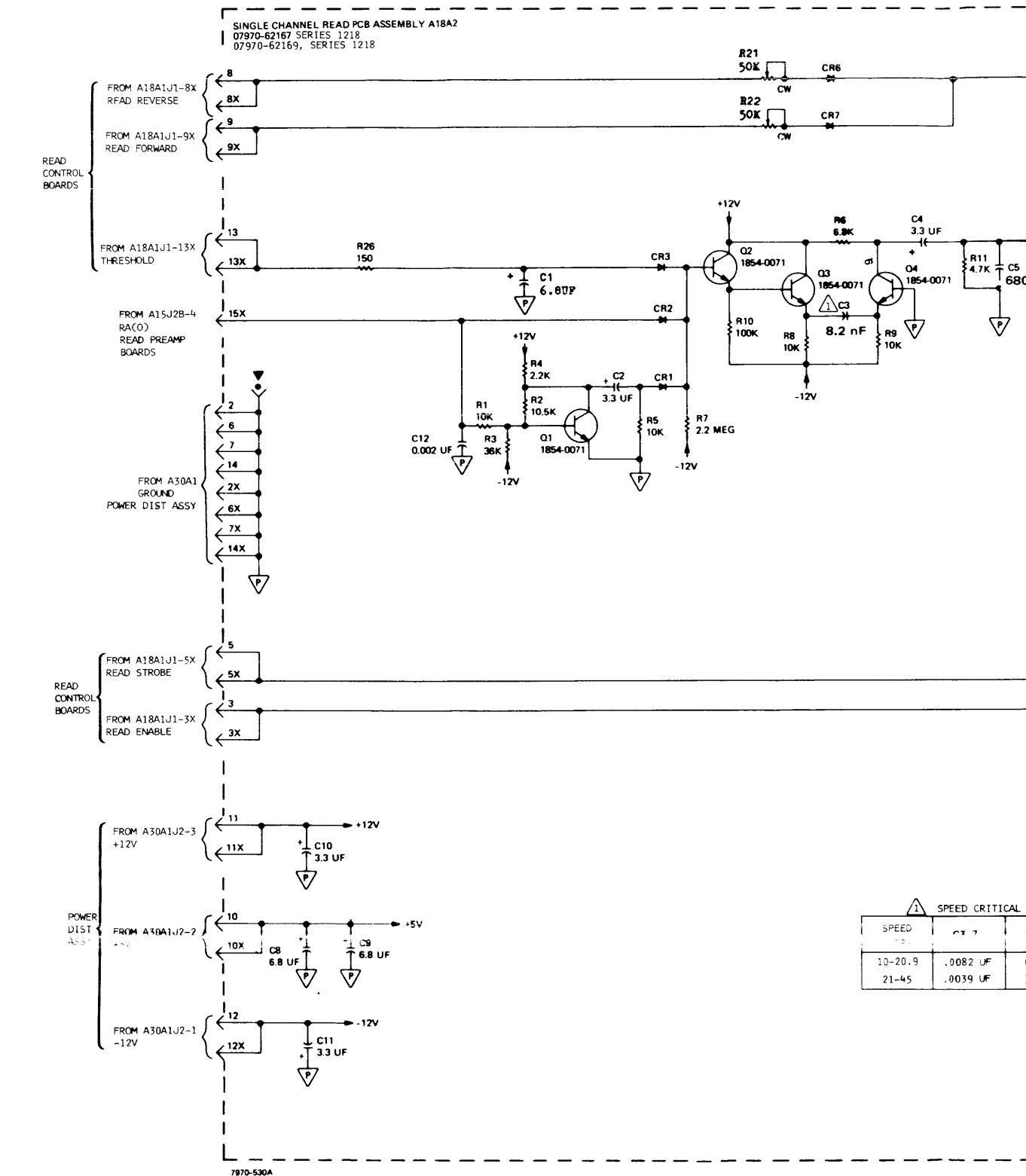
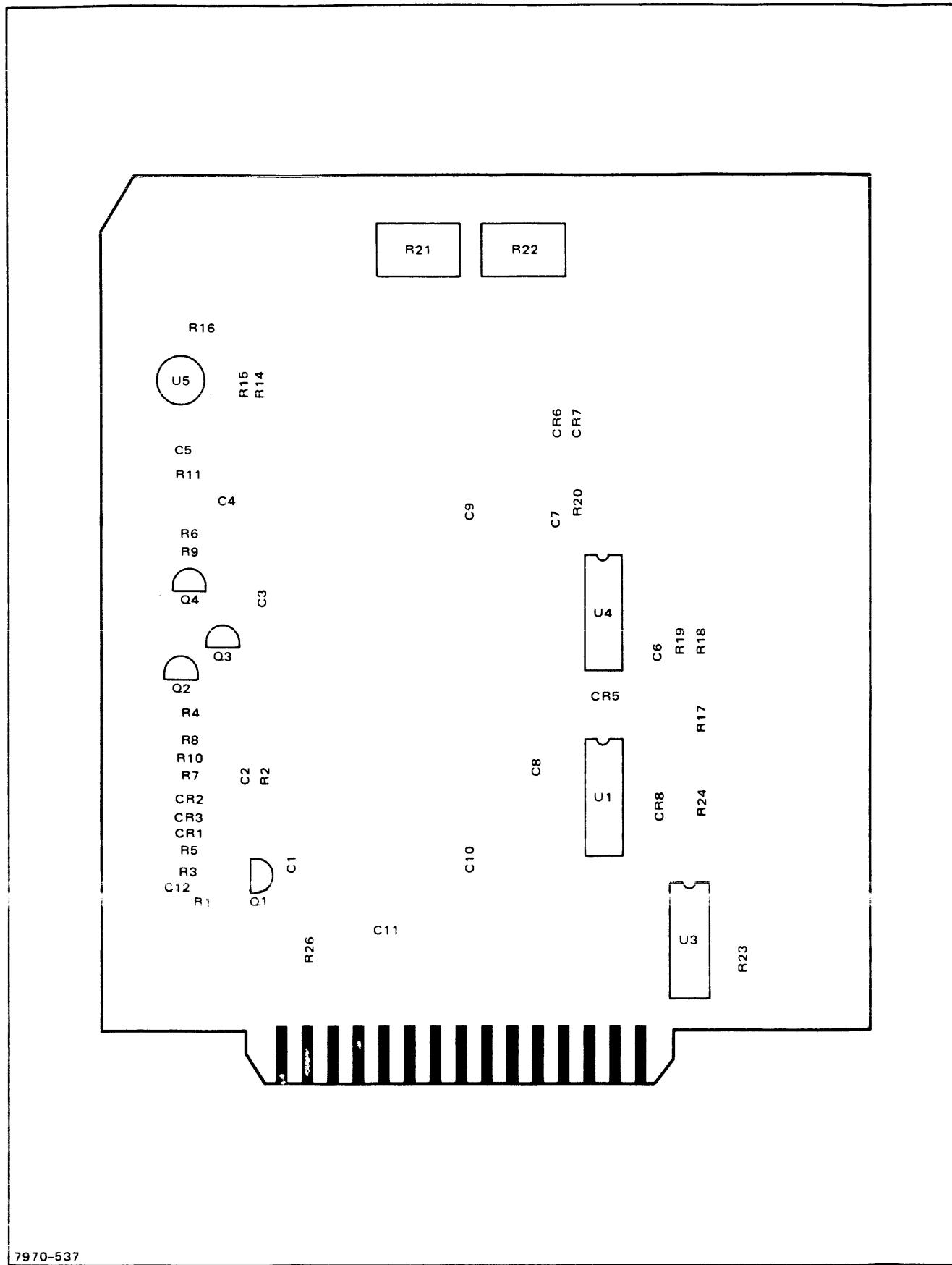
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62092	NRZI READ CONTROL PCA (Series 1115)
C1-6,16,17	0160-2055	CAPACITOR, fxd, .01uf, 100V
C7	0180-1704	CAPACITOR, fxd, 47uf, 10%
C8	0160-0162	CAPACITOR, fxd, .022uf, 10%
C9	0160-2307	CAPACITOR, fxd, 47pf, 300V
C10	0140-0193	CAPACITOR, fxd, 82pf, 5%
C11	0160-2209	CAPACITOR, fxd, 360pf, 5%
C12,13	0180-1701	CAPACITOR, fxd, 6.8uf, 20%
C14,15	0180-0210	CAPACITOR, fxd, 3.3uf, 15VDC
CR1-13	1901-0040	DIODE, 30V, 50MA
Q1,4	1853-0036	TRANSISTOR, 2N3906, PL18
Q2,3,5-7	1854-0071	TRANSISTOR, SI, TO18
*Q8,10,11	1854-0270	TRANSISTOR, 2N4265, PL5
Q9	1853-0015	TRANSISTOR, 2N3640, PL18
R1,9	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R2,4,8,22,24	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R3,7,11,31,32	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R5	0683-2325	RESISTOR, fxd, 22K, 5%, .25W
R6,17,19	0683-3325	RESISTOR, fxd, 3.3K, 5%, .25W
R10,26,39	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
42-46,48		
R12,28	0698-3132	RESISTOR, fxd, 261, 1%, .125W
R13	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R14	0683-3335	RESISTOR, fxd, 33K, 5%, .25W
R15	0757-0401	RESISTOR, fxd, 100, 1%, .125W
R16	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
R18,40,47	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R20	0757-0439	RESISTOR, fxd, 6.81K, 1%, .125W
R21	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R23	0683-1235	RESISTOR, fxd, 12K, 5%, .25W
R25	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R27	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R29	2100-1758	RESISTOR, Variable, 1K, 5%
R30,37,38	0683-8235	RESISTOR, fxd, 82K, 5%, .25W
R33	0683-6815	RESISTOR, fxd, 680, 5%, .25W
R34	0683-2725	RESISTOR, fxd, 2.7K, 5%, .25W
R35	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R36	0757-0444	RESISTOR, fxd, 12.1K, 1%, .125W
R41	0683-1525	RESISTOR, fxd, 1.5K, 5%, .25W
U1	1820-0348	IC, MC844P
U2	1820-0069	IC, Digital, Gate, 7420
U3	1820-0376	IC, SN74H40N
U4	1820-0349	IC, MC849P
U5,6	1820-0088	IC, MC851P
U7	1820-0256	IC, MC858P
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved, .062 in.

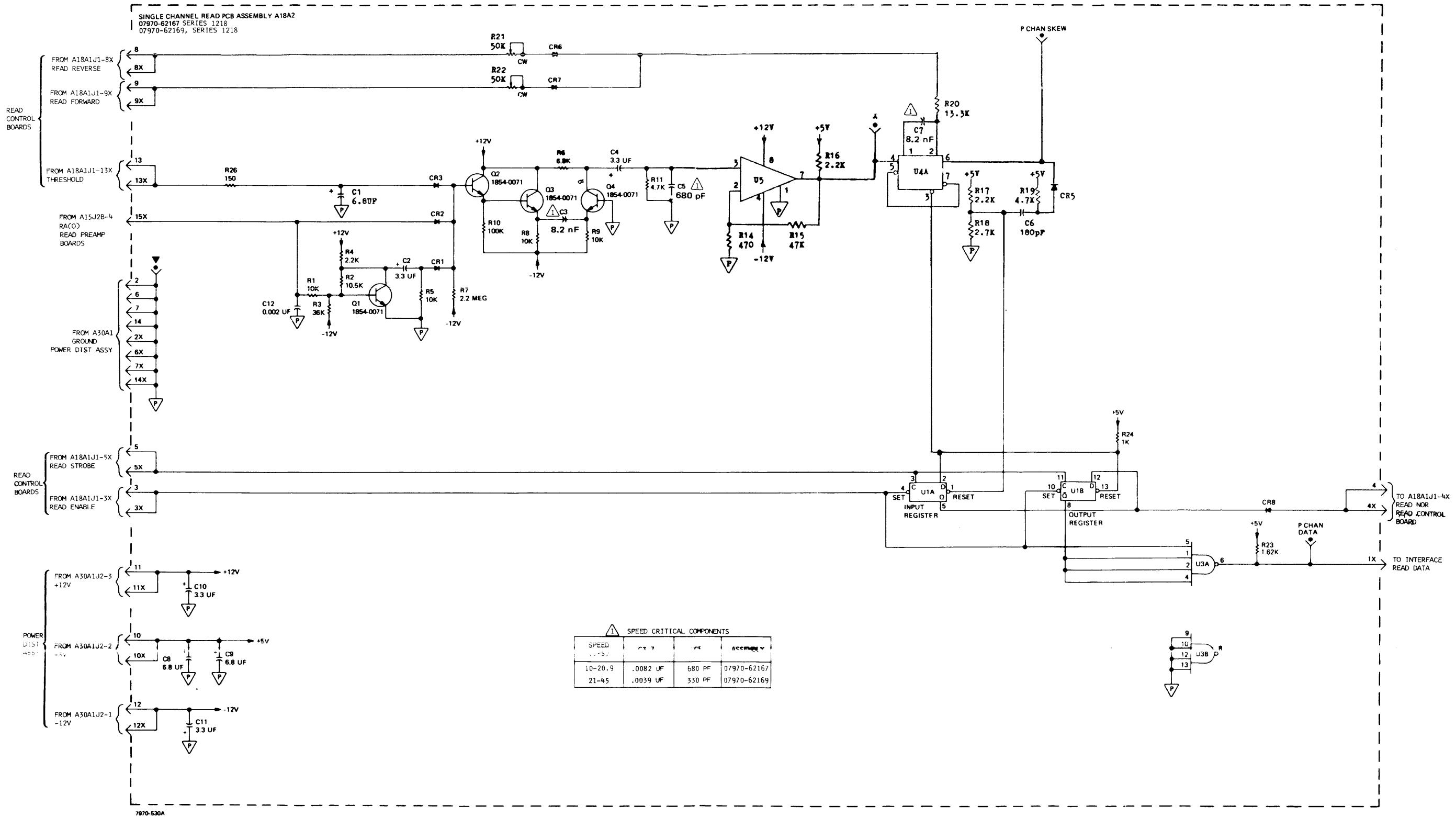
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
*Q8,10,11	Series 1446 1854-0215	07970-62061 & 07970-62092 PCA's TRANSISTOR, 2N3904, PL5

⚠ 07970-62061 PCA's use .01uf, part number 0160-0161

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
*Q8,10,11	Series 1446 1854-0215	07970-62061 & 07970-62092 PCA's TRANSISTOR, 2N3904, PL5

1 07970-62061 PCA's use .01uf, part number 0160-0161



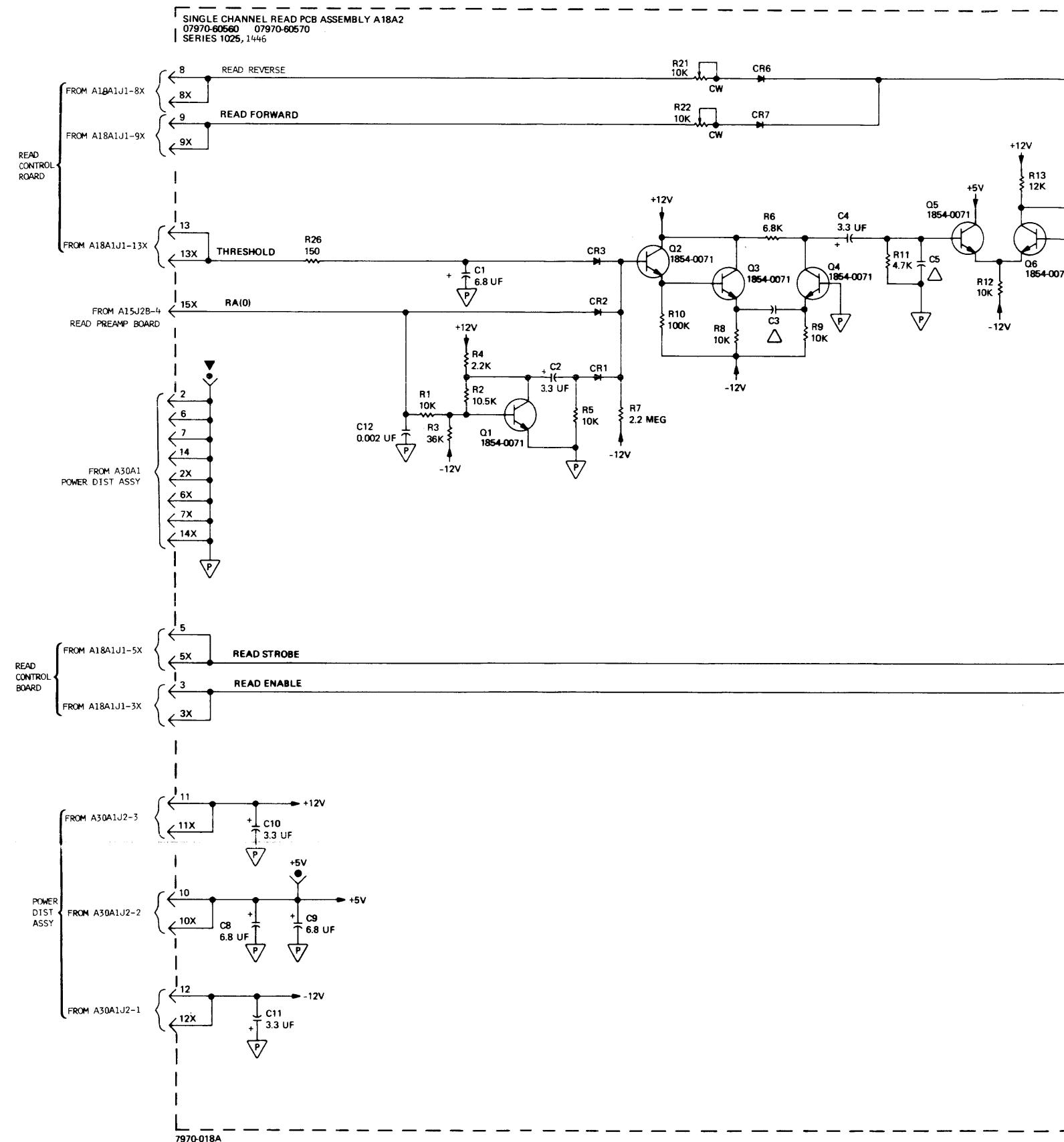
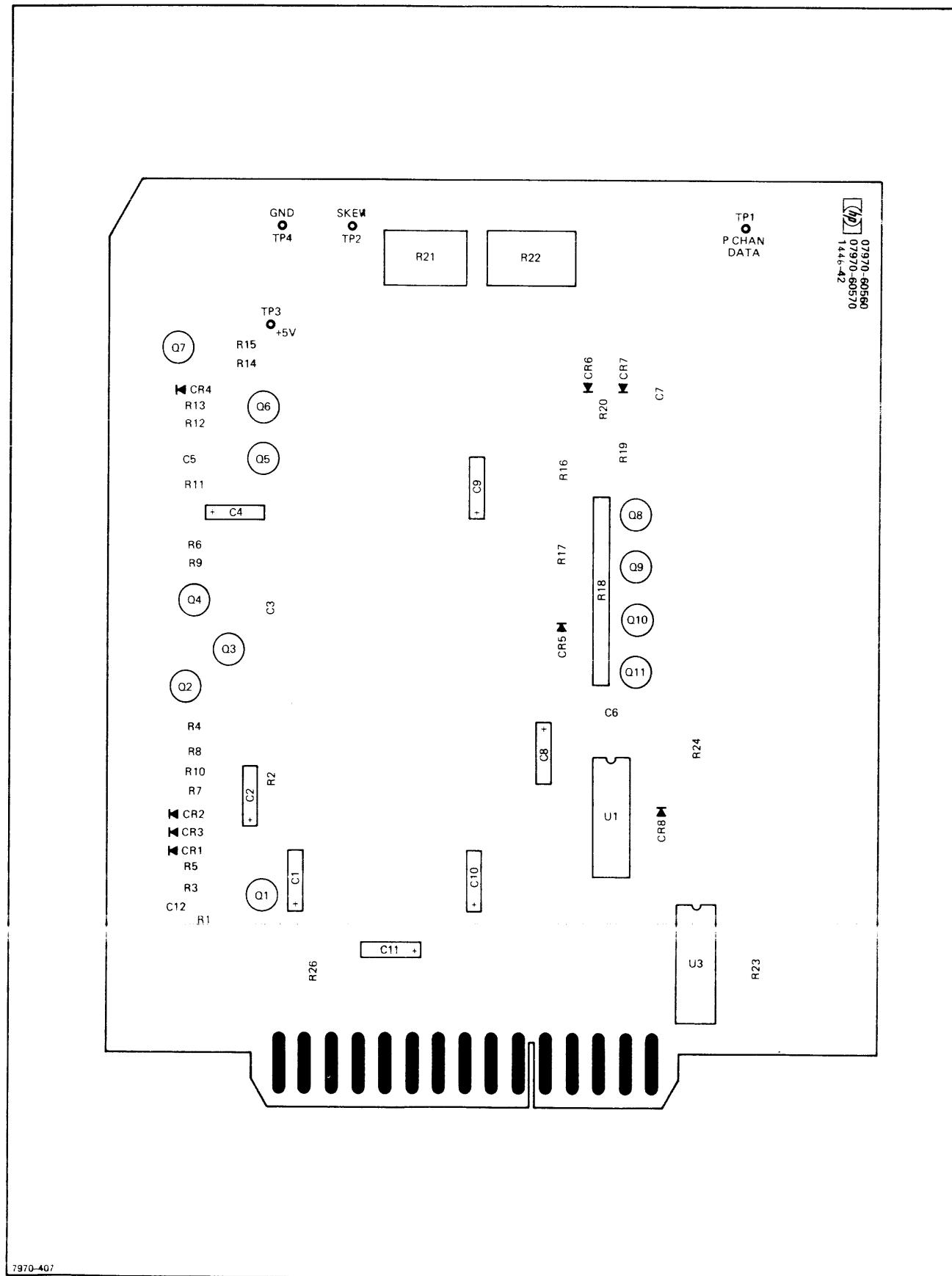


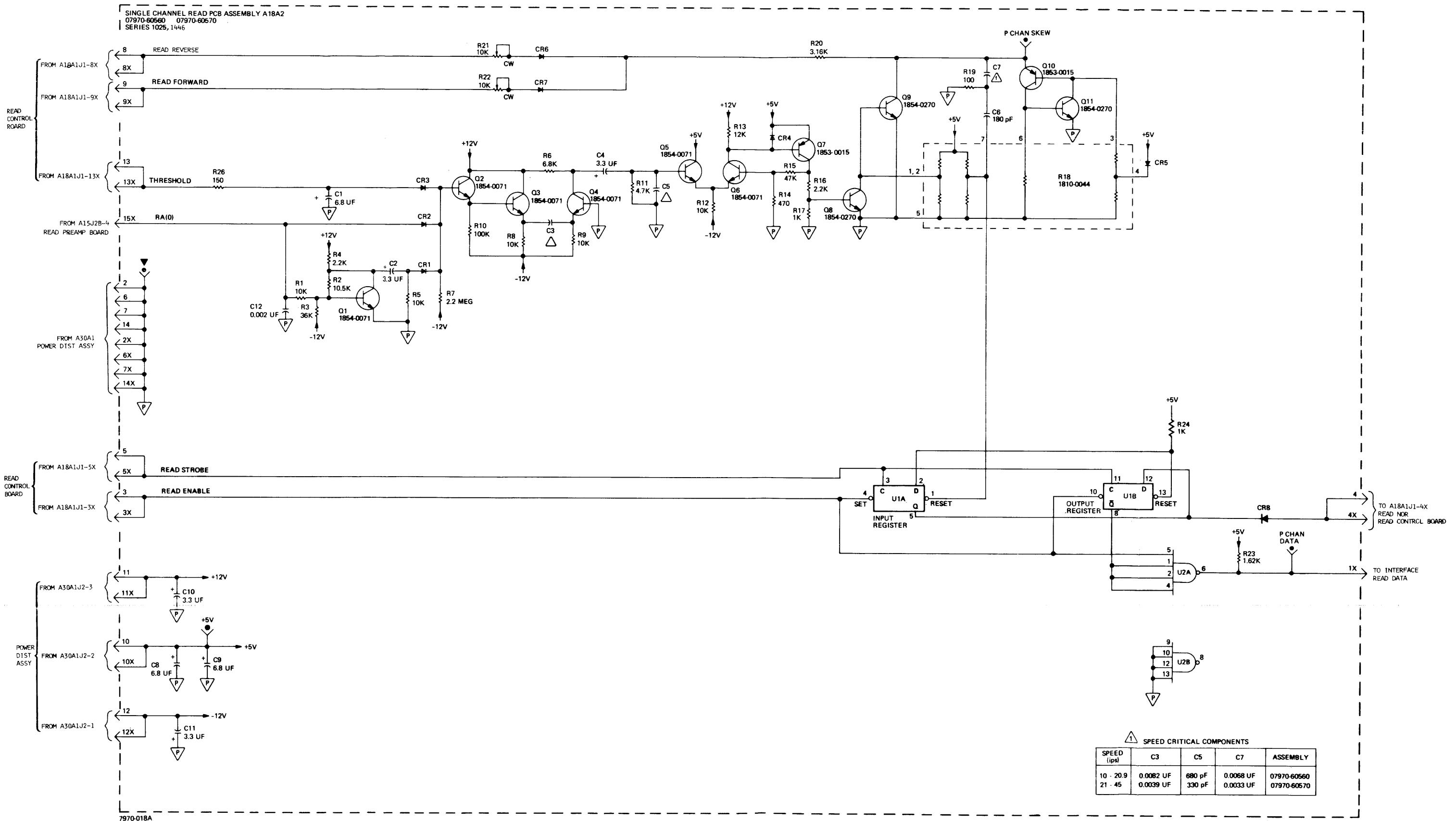
Single Channel Read Data PC Assembly A18A2

SINGLE CHANNEL READ PCA PARTS LIST  
 07970-62167 (Series 1218, 1639)  
 07970-62169 (Series 1218, 1639)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62167	SINGLE CHANNEL READ PCA (Series 1218)
C1,8,9	0180-1701	CAPACITOR, fxd, 6.8uf, 20%
C2,4,10,11	0180-0210	CAPACITOR, fxd, 3.3uf, 15VDC
 C3,7	0160-0160	CAPACITOR, fxd, .0082uf, 10%
C5	0160-3573	CAPACITOR, fxd, 680pf, 10%
C6	0140-0197	CAPACITOR, fxd, 180pf, 5%
C12	0160-3457	CAPACITOR, fxd, 2000pf, 10%
CR1-3	1901-0450	DIODE, 50V, 100ma
CR5-8	1901-0040	DIODE, 30V, 50ma
Q1-4	1854-0071	TRANSISTOR, Silicone, T018
R1	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R2	0698-4477	RESISTOR, fxd, 10.5K, 1%, .125W
R3	0683-3635	RESISTOR, fxd, 36K, 5%, .25W
R4,16,17	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R5,8,9	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R6	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R7	0683-2255	RESISTOR, fxd, 2.2M, 5%, .25W
R10	0683-1045	RESISTOR, fxd, 100K, 5%, .25W
R11,19	0683-4725	RESISTOR, fxd, 4.7K, 5%, .25W
R14	0683-4715	RESISTOR, fxd, 470, 5%, .25W
R15	0683-4735	RESISTOR, fxd, 47K, 5%, .25W
R18	0683-2725	RESISTOR, fxd, 2700, 5%, .25W
R20	0757-0289	RESISTOR, fxd, 13.3K, 1%, .125W
* R21,22	2100-1923	RESISTOR, Variable, 50K, 5%
R23	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R24	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R26	0683-1515	RESISTOR, fxd, 150, 5%, .25W
U1	1820-0077	IC, DIGITAL, FF 7474
U3	1820-0348	IC, MC844P
U4	1820-0515	IC, DIGITAL 9602
U5	1826-0065	IC, LINEAR
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved, .062
	Series 1639	07970-62167 and 07970-62169 PCA's
*R21,22	2100-3758	RESISTOR, Variable, 50K, 5%
 07970-62169 use following part numbers		
C3,7	0160-0156	.0039uf
C5	0160-3572	330pf

Single Channel Read Data PC Assembly A18A2





Single Channel Read Data PC Assembly A18A2

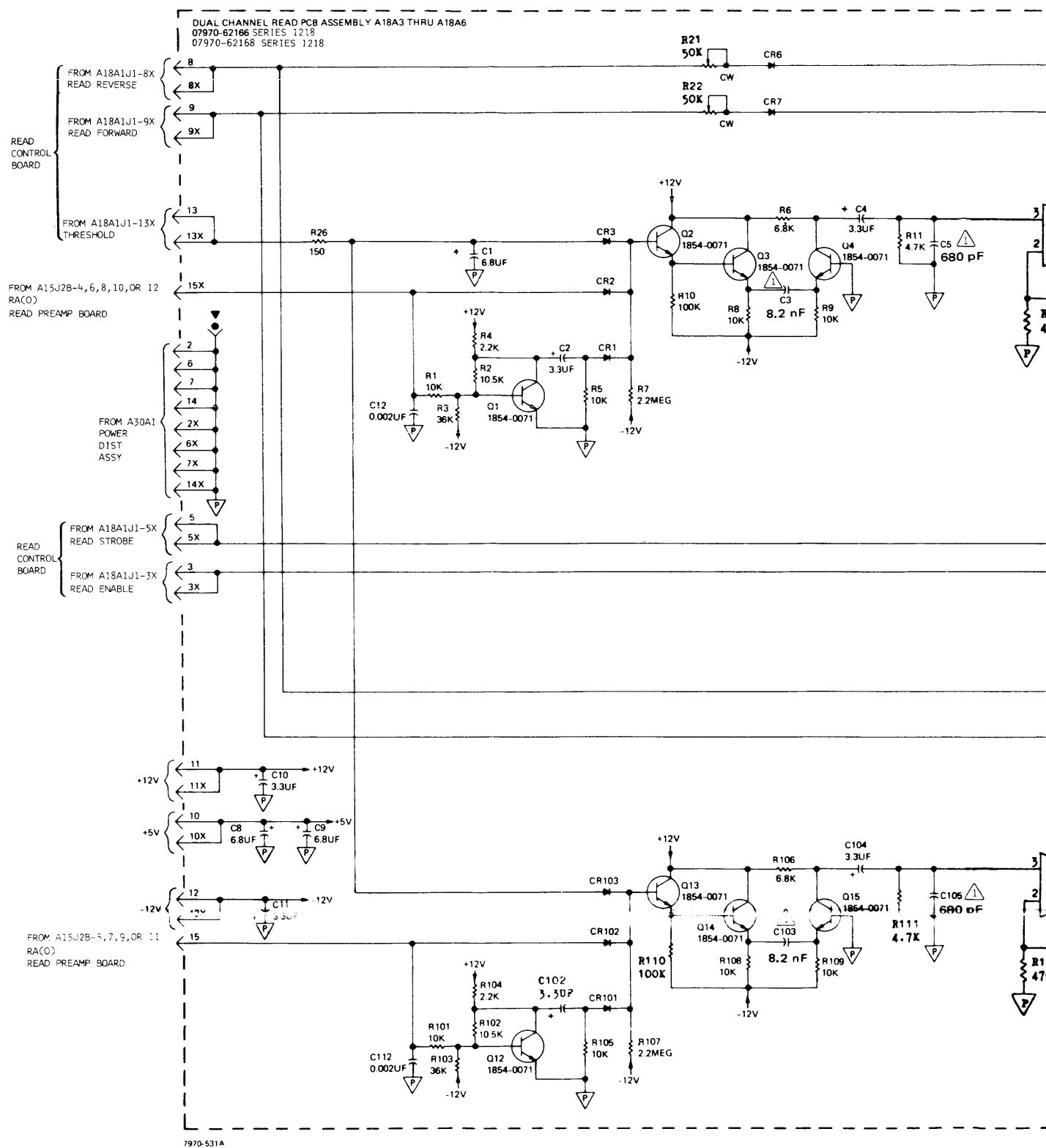
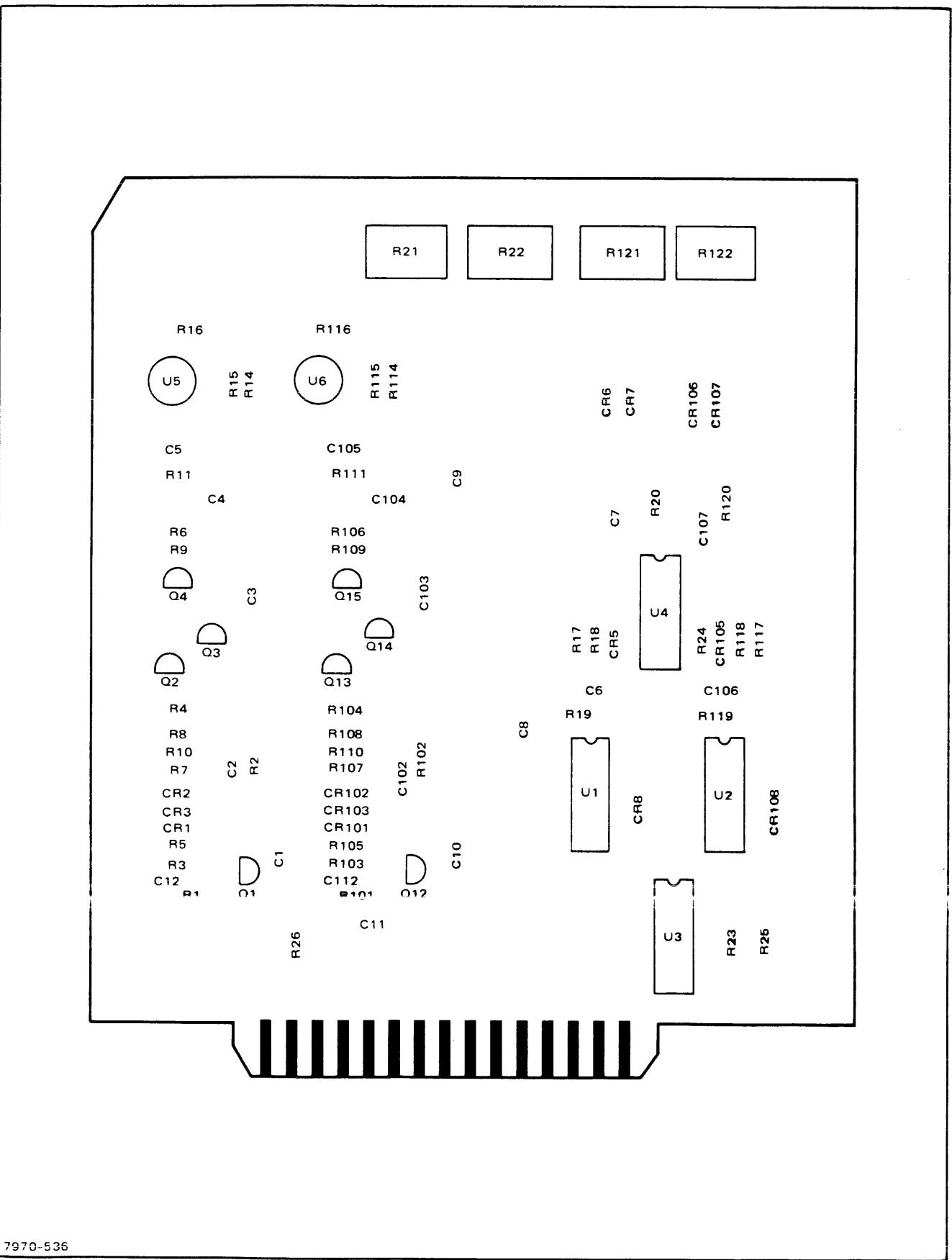
SINGLE CHANNEL READ PCA PARTS LIST  
 07970-60560 (Series 1025, 1446)  
 07970-60570 (Series 1025, 1446)

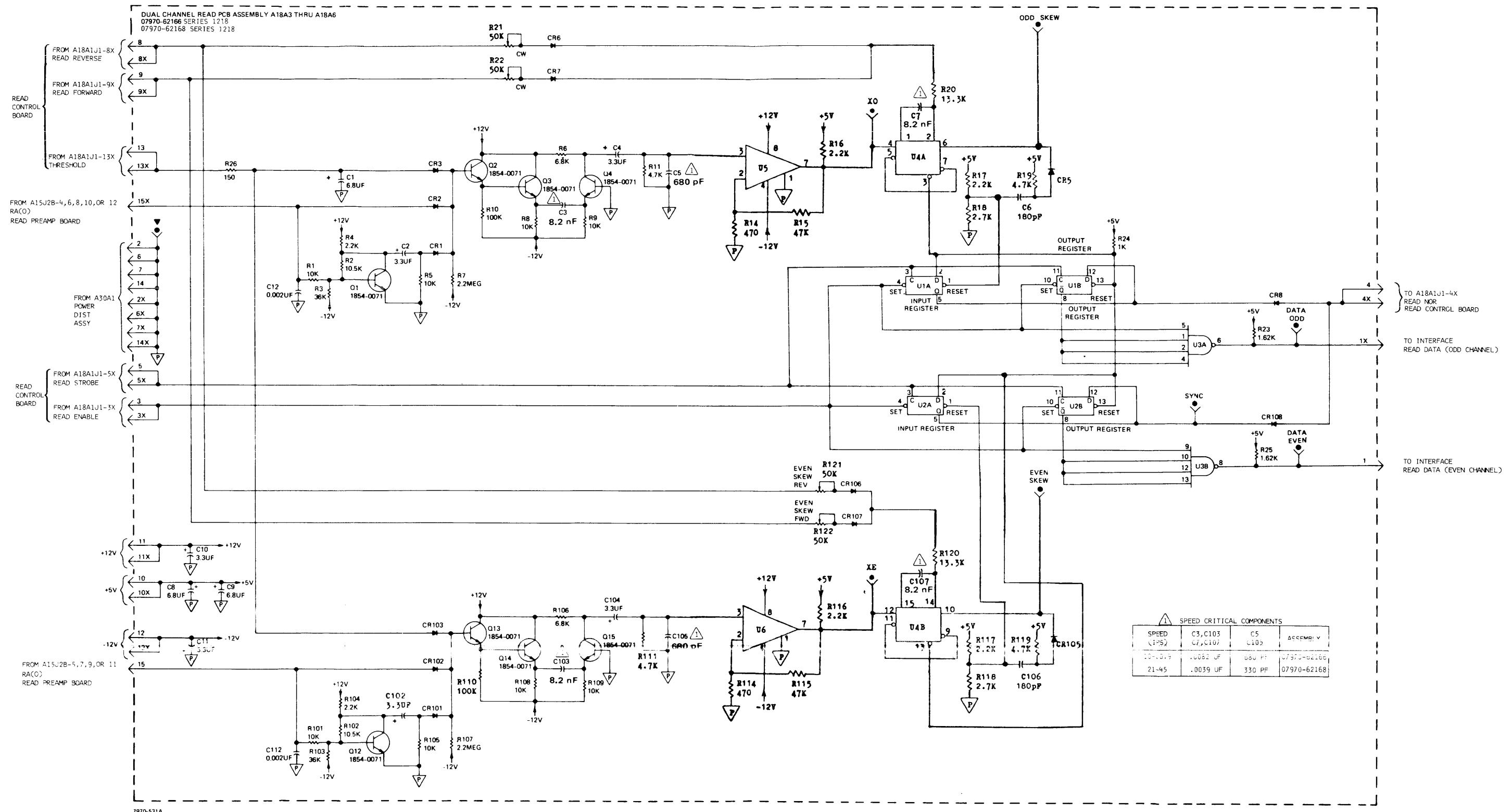
REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60560	SINGLE CHANNEL READ PCA (Series 1025)
C1,8,9	0180-1701	CAPACITOR, fxd, 6.8uf, 20%
C2,4,10,11	0180-0210	CAPACITOR, fxd, 3.3uf, 15VDC
△ C3	0160-0160	CAPACITOR, fxd, .0082uf, 10%
△ C5	0160-3573	CAPACITOR, fxd, 680pf, 10%
△ C6	0140-0197	CAPACITOR, fxd, 180pf, 5%
△ C7	0160-0159	CAPACITOR, fxd, .068uf, Mylar
C12	0160-3457	CAPACITOR, fxd, 2000pf, 10%
CR1-3	1901-0450	DIODE, 50V, 100ma
CR4-8	1901-0040	DIODE, 30V, 50ma
Q1-6	1854-0071	TRANSISTOR, Silicon, TO18
Q7,10	1853-0015	TRANSISTOR, 2N3640, PL18
*Q8,9,11	1854-0270	TRANSISTOR, 2N4265, PL5
R1	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R2	0698-4477	RESISTOR, fxd, 10.5K, 1%, .125W
R3	0683-3635	RESISTOR, fxd, 36K, 5%, .25W
R4,16	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R5,8,9,12	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R6	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R7	0683-2255	RESISTOR, fxd, 2.2M, 5%, .25W
R10	0683-1045	RESISTOR, fxd, 100K, 5%, .25W
R11	0683-4725	RESISTOR, fxd, 4.7K, 5%, .25W
R13	0683-1235	RESISTOR, fxd, 12K, 5%, .25W
R14	0683-4715	RESISTOR, fxd, 470, 5%, .25W
R15	0683-4735	RESISTOR, fxd, 47K, 5%, .25W
R17,24	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R18	1810-0044	RESISTOR, fxd, Network, (7 Resistors)
R19	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R20	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R21,22	2100-1761	RESISTOR, Variable, 10K
R23	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R26	0683-1515	RESISTOR, fxd, 150, 5%, .25W
U1	1820-0077	IC, DIGITAL FF 7474
U3	1820-0348	IC, MC844P
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved, .062 in.
	Series 1446	07970-60560 & 07970-60570 PCA's (These transistors are interchangeable)
*Q8,9,11	1854-0215	TRANSISTOR, 2N3904

△ 07970-60570 uses the following part numbers

C3	0160-0156	.0039uf
C5	0160-3572	330pf
C7	0160-0155	.0033pf

Single Channel Read Data PC Assembly A18A2





Dual Channel Read Data PC Assembly  
 A18A3 thru A18A6

## DUAL CHANNEL READ DATA PCA PARTS LIST

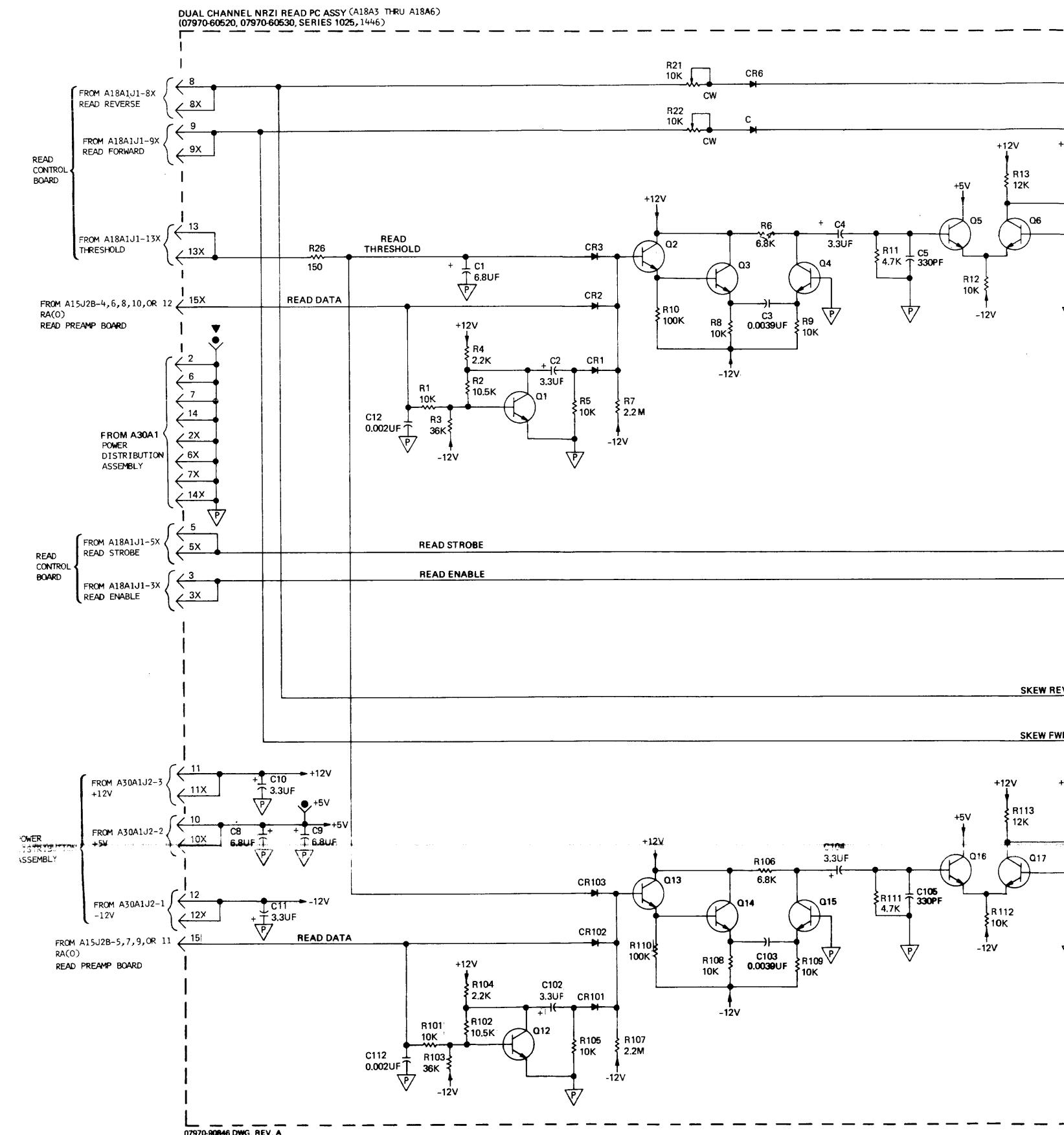
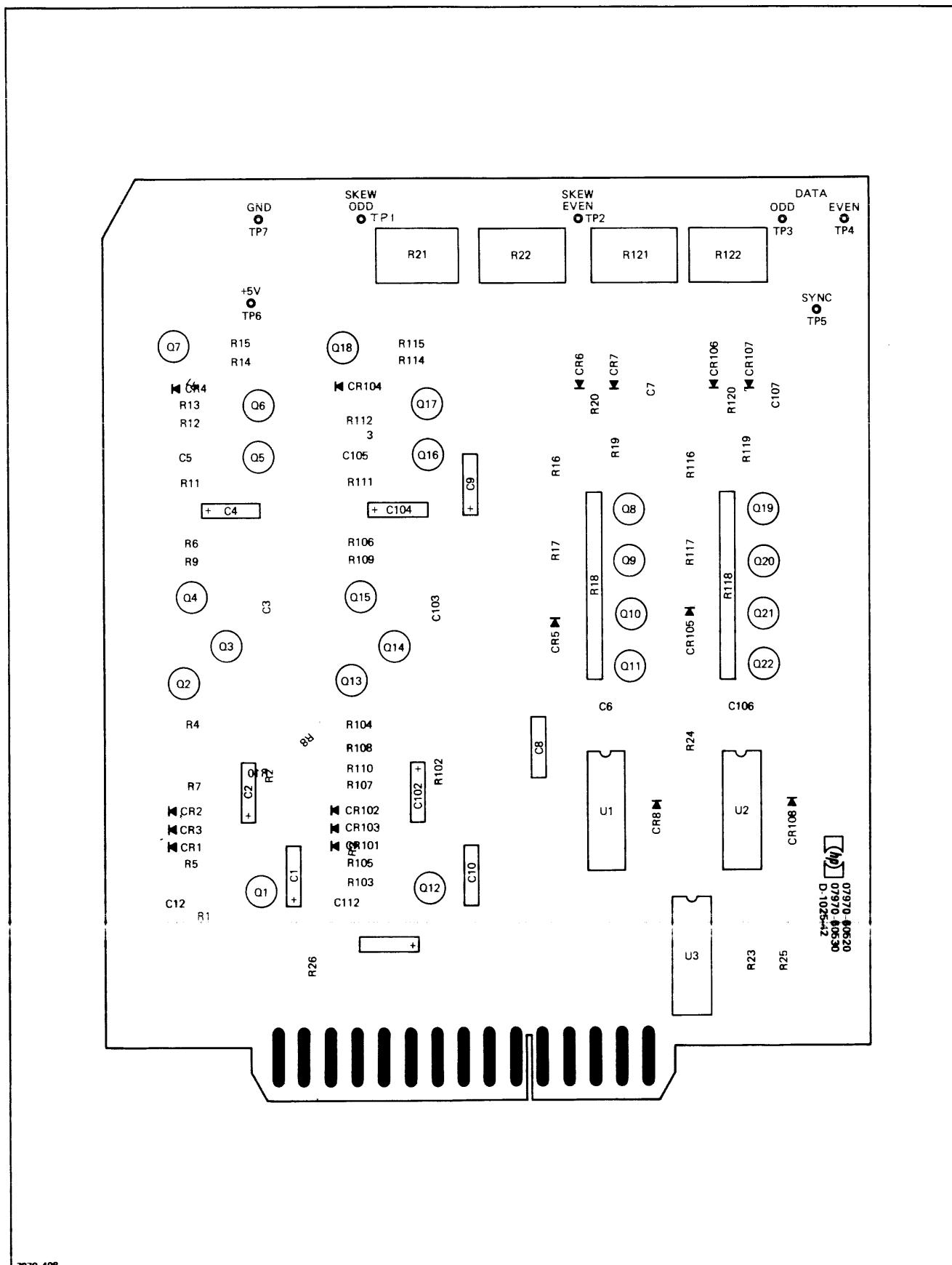
07970-62166 (Series 1218, 1639)

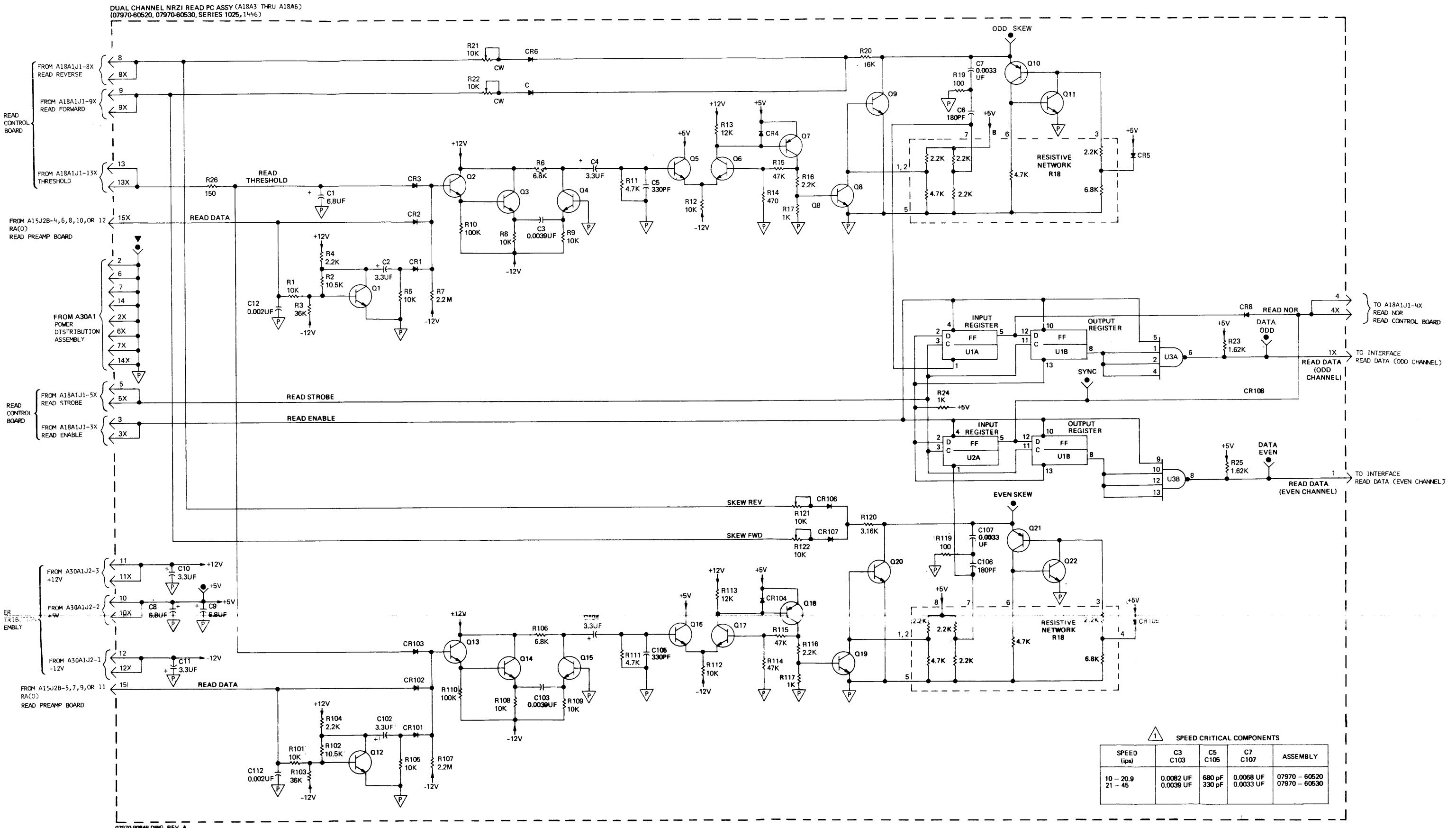
07970-62168 (Series 1218, 1639)

REF. DES./	HP PART NO.	DESCRIPTION
	07970-62166	DUAL CHANNEL READ DATA PCA (Series 1218)
C1,8,9	0180-1701	CAPACITOR, fxd, 6.8uf, 20%
C2,4,10,11,102,104	0180-0210	CAPACITOR, fxd, 3.3uf, 15VDC
△ C3,7, 103,107	0160-0160	CAPACITOR, fxd, .0082uf, 10%
△ C5,105	0160-3573	CAPACITOR, fxd, 680pf, 10%
C6,106	0140-0197	CAPACITOR, fxd, 180pf, 5%
C12,112	0160-3457	CAPACITOR, fxd, 2000pf, 10%
CR1-3, 101-103	1901-0450	DIODE, 50V, 100MA
CR5-8,105-108	1901-0040	DIODE, 30V, 50MA
Q1-4,12-15	1854-0071	TRANSISTOR, SI, T018
R1,101	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R2,102	0698-4477	RESISTOR, fxd, 10.5K, 1%, .125W
R3,103	0683-3635	RESISTOR, fxd, 36K, 5%, .25W
R4,16,17,104, 116,117	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R5,8,9,105,108,109	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R6,106	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R7,107	0683-2255	RESISTOR, fxd, 2.2M, 5%, .25W
R10,110	0683-1045	RESISTOR, fxd, 100K, 5%, .25W
R11,19,111,119	0683-4725	RESISTOR, fxd, 4.7K, 5%, .25W
R14,114	0683-4715	RESISTOR, fxd, 470, 5%, .25W
R15,115	0683-4735	RESISTOR, fxd, 47K, 5%, .25W
R18,118	0683-2725	RESISTOR, fxd, 2.7K, 5%, .25W
R20,120	0757-0289	RESISTOR, fxd, 13.3K, 1%, .125W
*R21,22,121,122	2100-1923	RESISTOR, Variable, 50K, 5%
R23,25	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R24	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R26	0683-1515	RESISTOR, fxd, 150, 5%, .25W
U1,2	1820-0077	IC, DIGITAL, 7474
U3	1820-0348	IC, MC844P
U4	1820-0515	IC, DIGITAL, 9602
U5,6	1826-0065 5040-6001 1480-0116	IC, LM311N EXTRACTOR, PC PIN, Grooved, .062 in.
*R21,22,121,122	Series 1639 2100-3758	07970-62167 and 07970-62169 PCA's RESISTOR, Variable, 50K, 5%

△ On PCA 07970-62168 C3,7,103,107 are .0039uf, part number 0160-0156  
and C5,105 are 330pf, part number 0160-3572

**Dual Channel Read Data PC Assembly  
A18A3 thru A18A6**





07970-90846 DWG. REV. A

Dual Channel Read Data PC Assembly  
 A18A3 thru A18A6

DUAL CHANNEL READ DATA PCA PARTS LIST  
 07970-60520 (Series 1025, 1446)  
 07970-60530 (Series 1025, 1446)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60520	DUAL CHANNEL READ DATA PCA (Series 1025)
C1,8,9	0180-1701	CAPACITOR, fxd, 6.8uf, 20%
C2,4,10,11,102,104	0180-0210	CAPACITOR, fxd, 3.3uf, 15VDC
△ C3,103	0160-0160	CAPACITOR, fxd, .0082uf, 10%
△ C5,105	0160-3573	CAPACITOR, fxd, 680pf, 10%
C6,106	0140-0197	CAPACITOR, fxd, 180pf, 5%
△ C7,107	0160-0159	CAPACITOR, fxd, .0068uf, Mylar
C12,112	0160-3457	CAPACITOR, fxd, 2000pf, 10%
CR1-3,101-103	1901-0450	DIODE, 50V, 100MA
CR4-8,104-108	1901-0040	DIODE, 30V, 50MA
Q1-6,12-17	1854-0071	TRANSISTOR, SI, TO18
Q7,10,18,21	1853-0015	TRANSISTOR, 2N3640, PL18
*Q8,9,11,19,20,22	1854-0270	TRANSISTOR, 2N4265
R1,101	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R2,102	0698-4477	RESISTOR, fxd, 10.5K, 1%, .125W
R3,103	0683-3635	RESISTOR, fxd, 36K, 5%, .25W
R4,16,104,116	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R5,8,9,12,105,108, 109,112	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R6,106	0683-6825	RESISTOR, fxd, 6.8K, 5%, .25W
R7,107	0683-2255	RESISTOR, fxd, 2.2M, 5%, .25W
R10,110	0683-1045	RESISTOR, fxd, 100K, 5%, .25W
R11,111	0683-4725	RESISTOR, fxd, 4.7K, 5%, .25W
R13,113	0683-1235	RESISTOR, fxd, 12K, 5%, .25W
R14,114	0683-4715	RESISTOR, fxd, 470, 5%, .25W
R15,115	0683-4735	RESISTOR, fxd, 47K, 5%, .25W
R17,24,117	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R18,118	1810-0044	RESISTOR, fxd, Network
R19,119	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R20,120	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R21,22,121,122	2100-1761	RESISTOR, Variable, 10K, 5%
R23,25	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R26	0683-1515	RESISTOR, fxd, 150, 5%, .25W
U1,2	1820-0077	IC, Digital, 7474
U3	1820-0348	IC, MC844P
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved, .062 in.
*Q8,9,11,19,20,22	Series 1446 1854-0215	07970-60520 & 07970-60530 PCA's TRANSISTOR, 2N3904, PL5

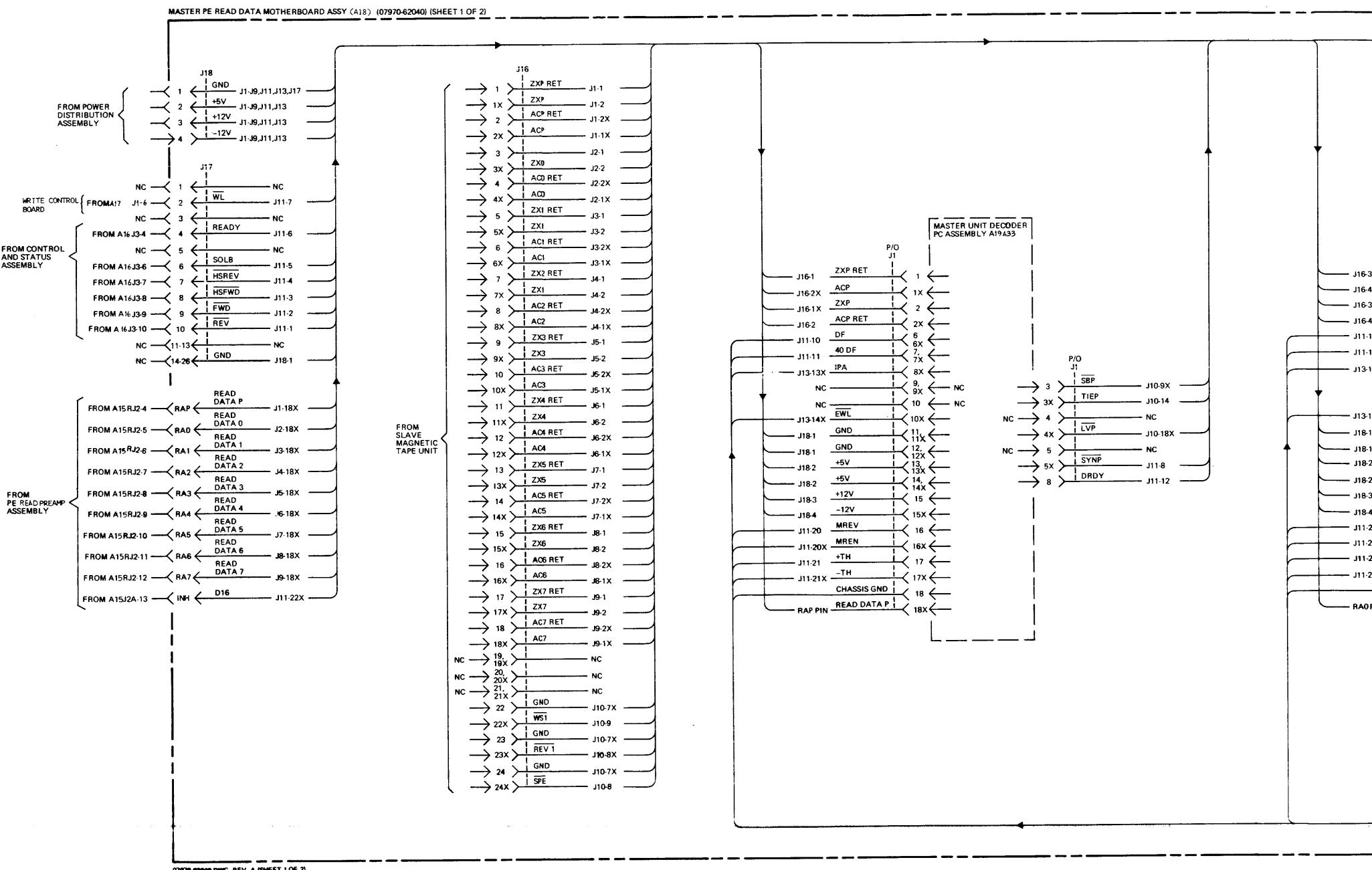
△ On 07970-60530 PCA's use the following components:

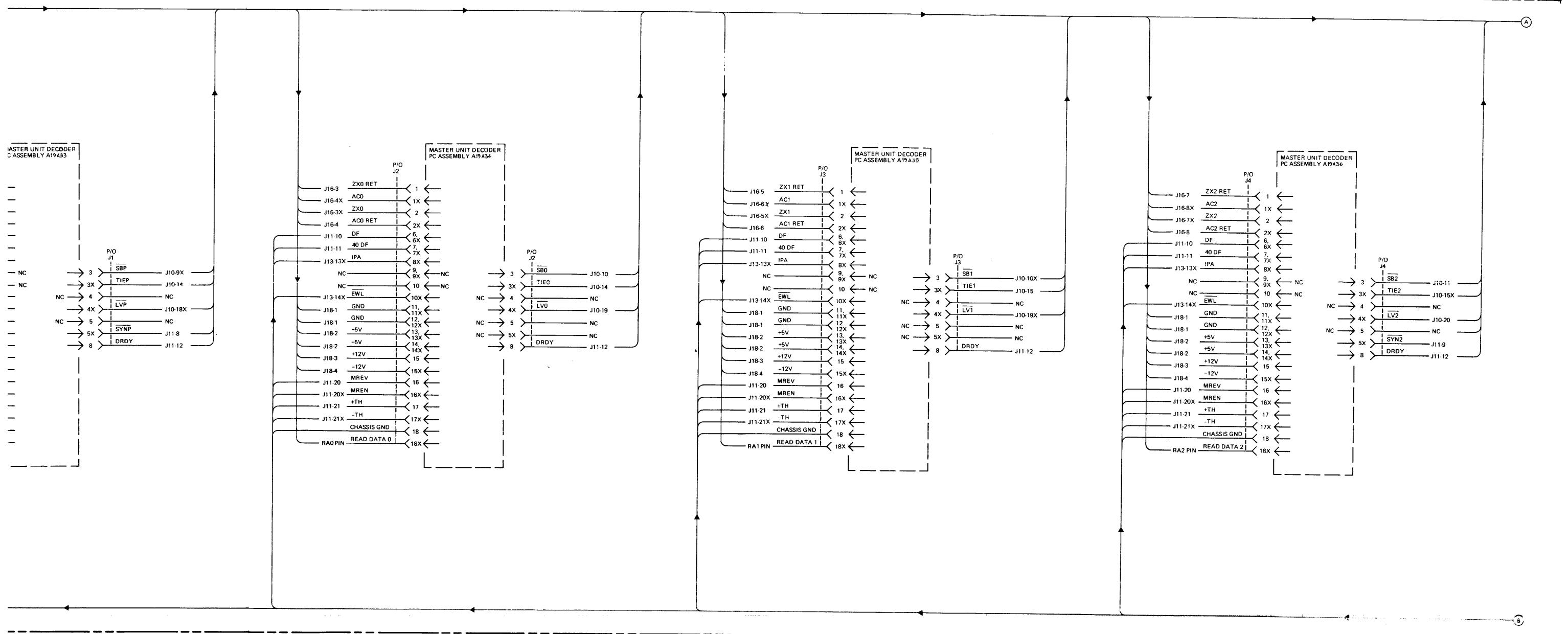
C3, 103 are .0039uf, part no. 0160-0156

C5, 105 are 330pf, part no. 0160-3572

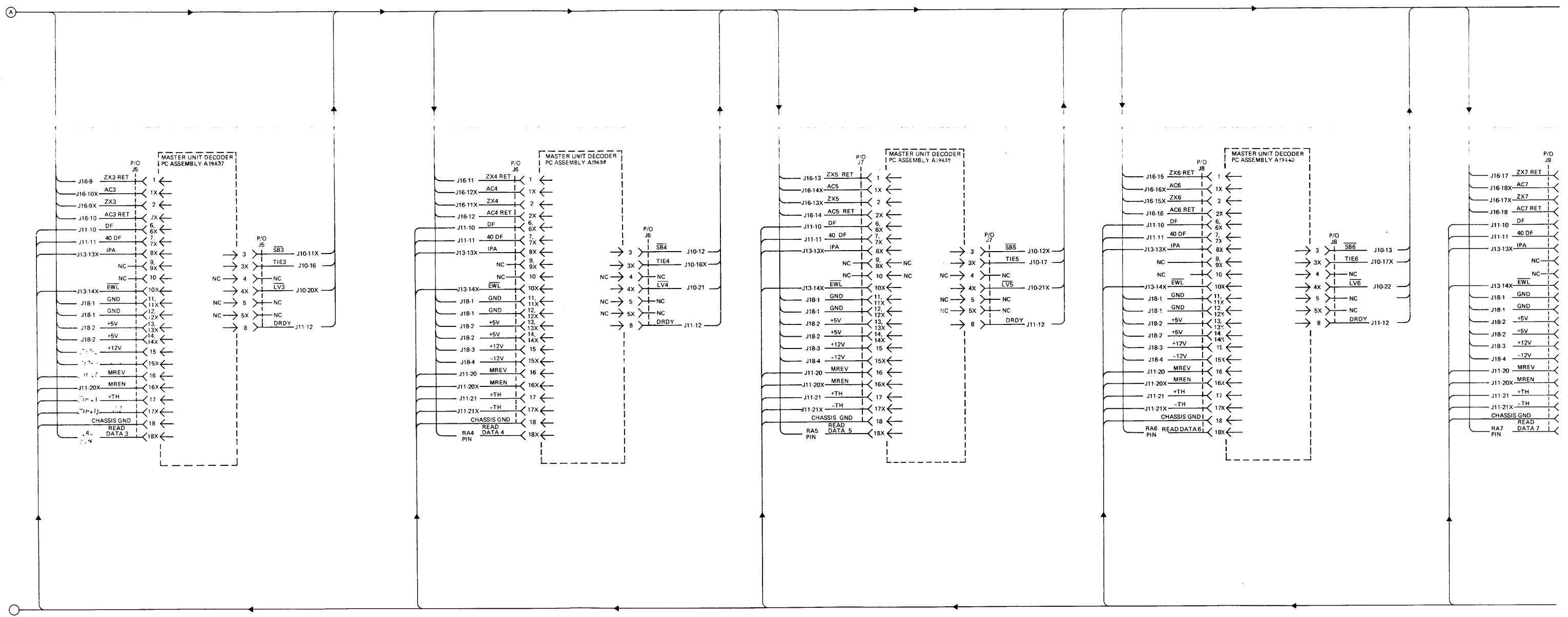
C7, 107 are .0033uf, part no. 0160-0155

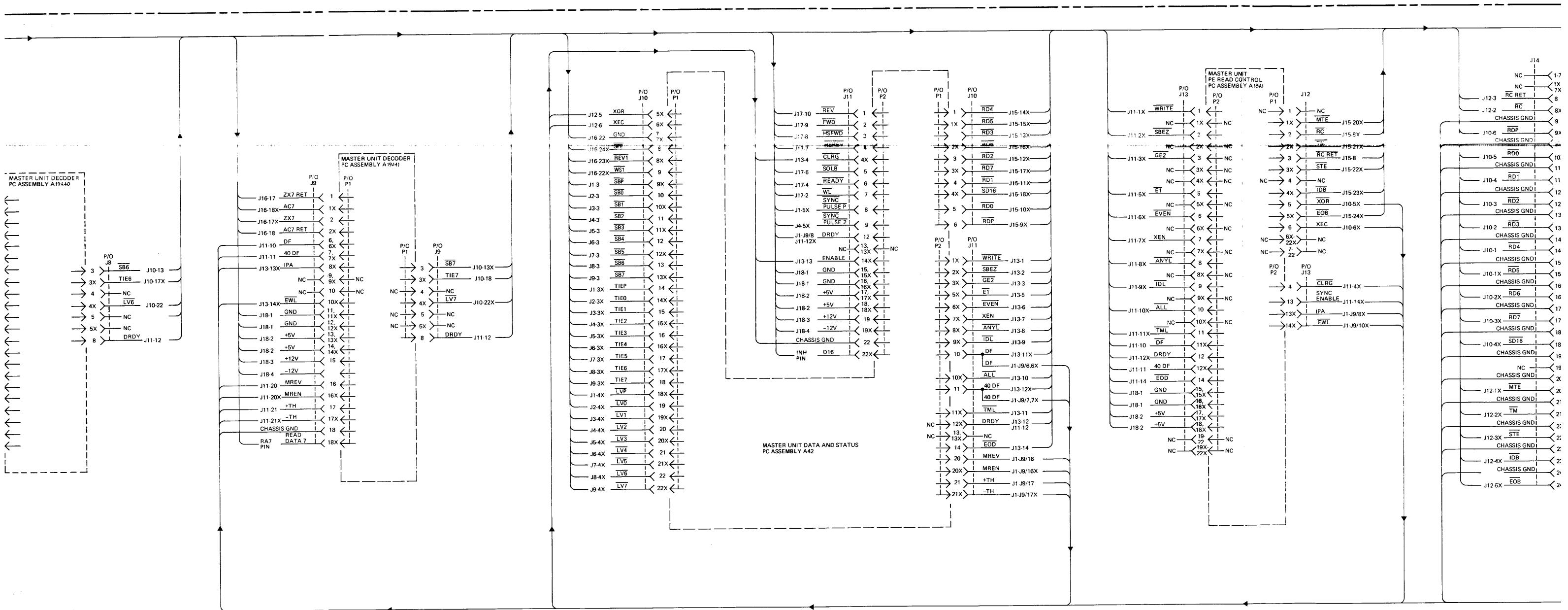
Dual Channel Read Data PC Assembly  
A18A3 thru A18A6



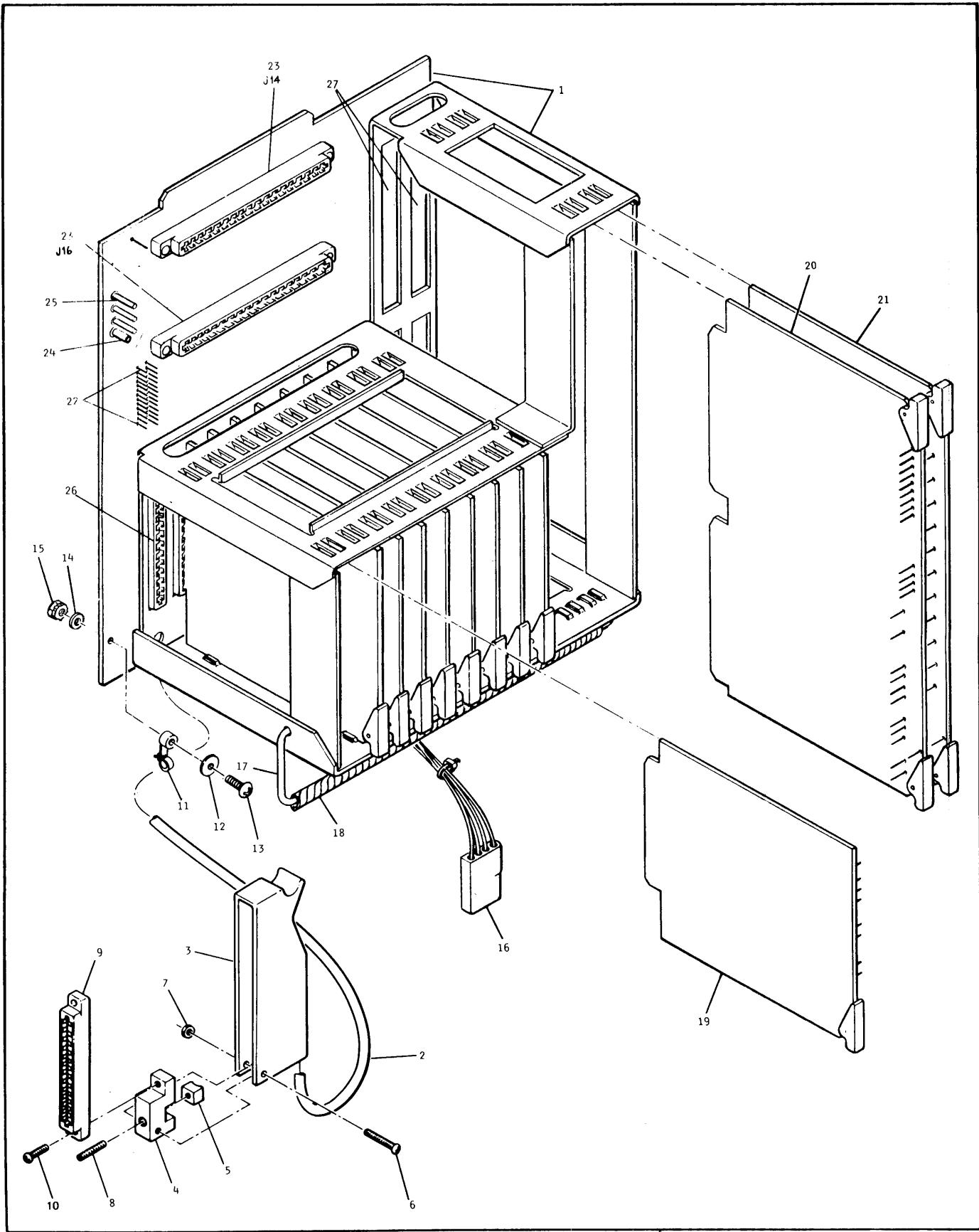


Master PE Read Motherboard Assembly A32  
Sheet 1 of 2





Master PE Motherboard Assembly A32  
Sheet 2 of 2

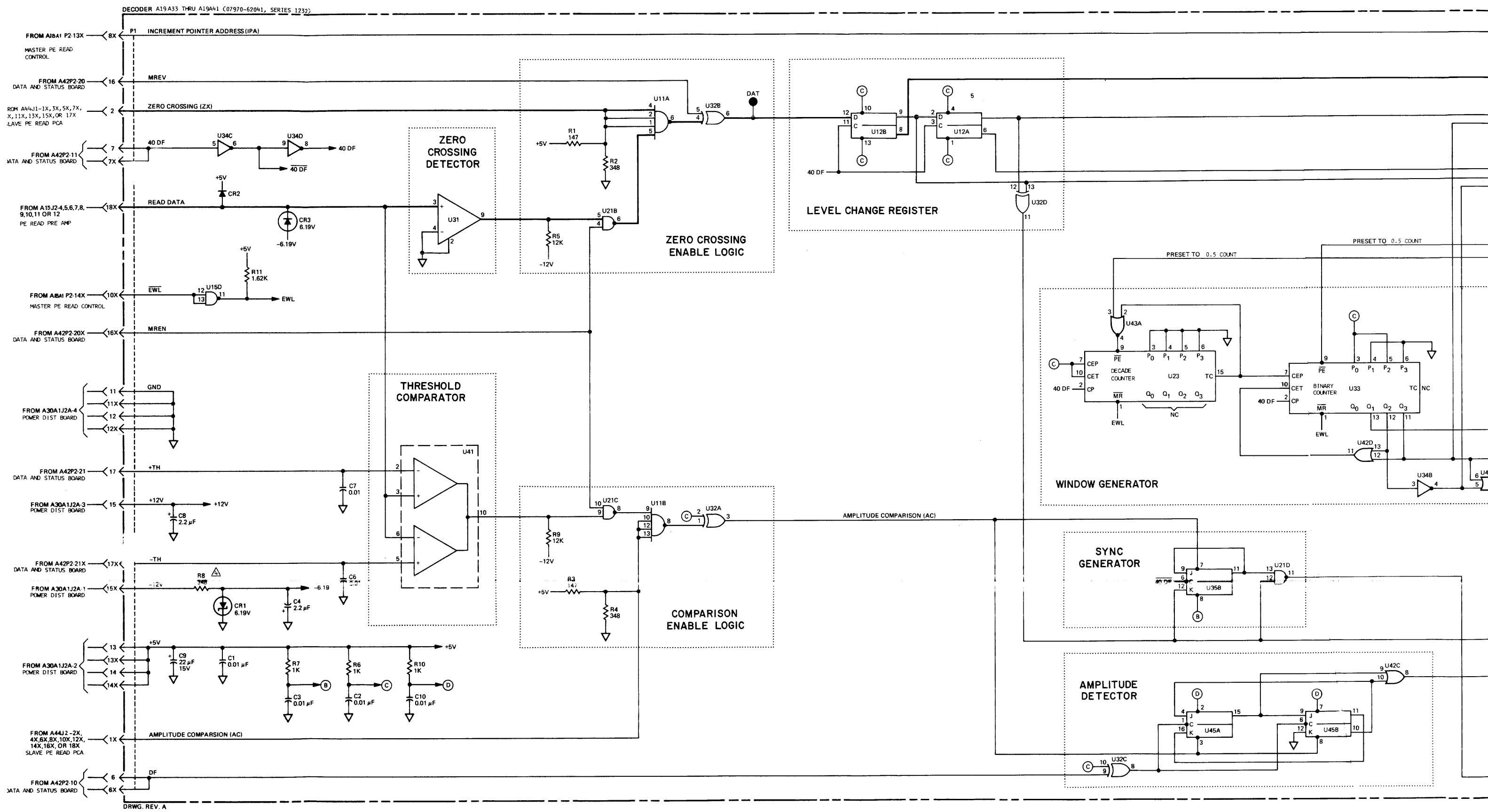


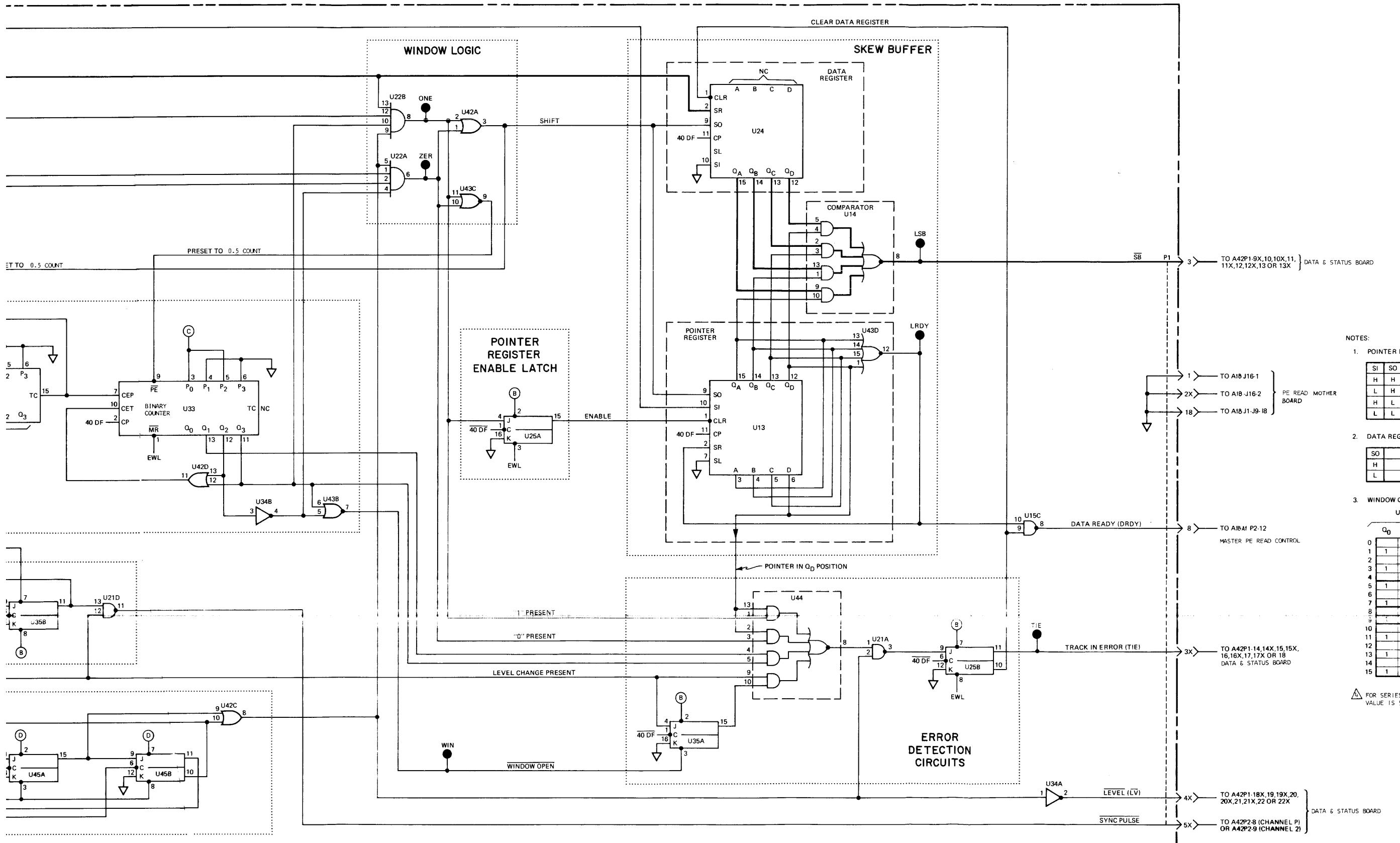
2225-113A

Master PE Read Motherboard Assembly A32

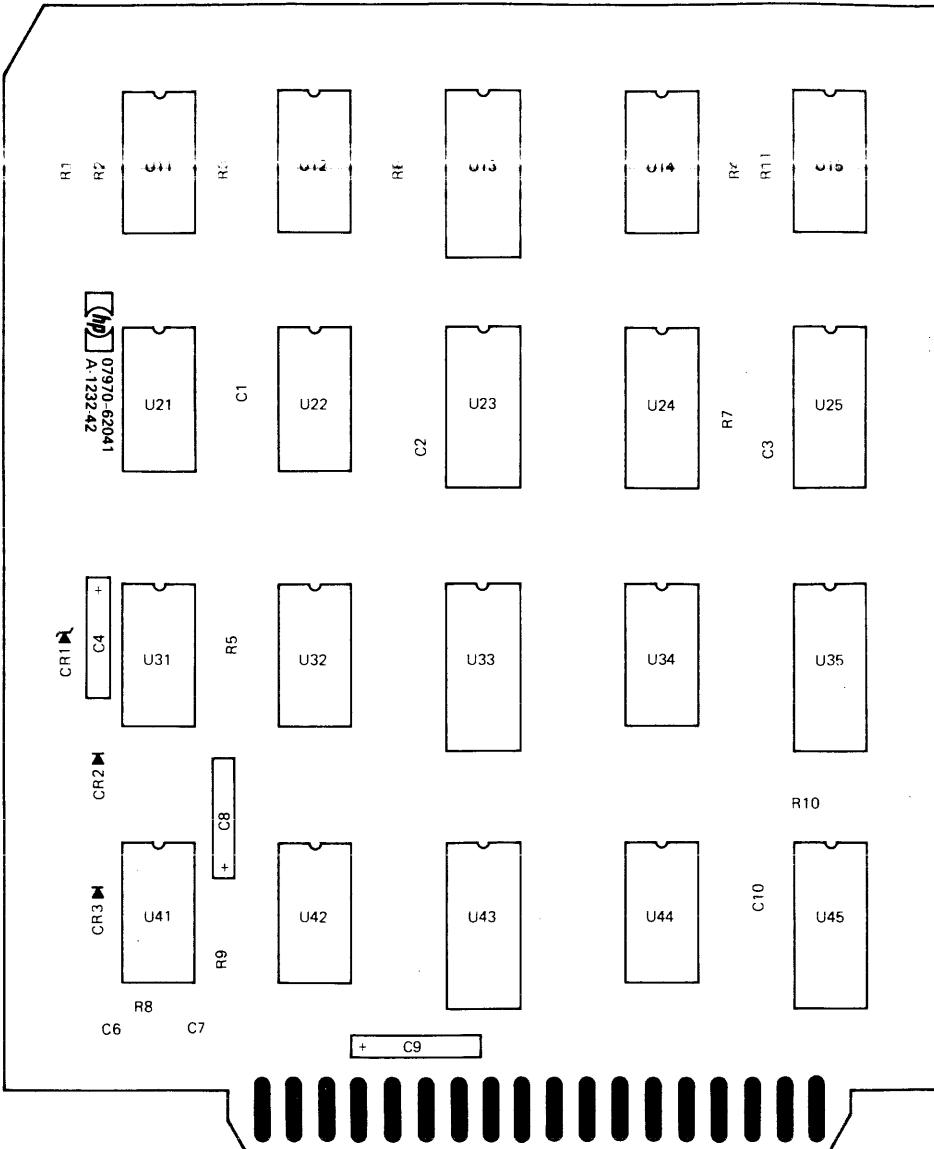
PE READ MOTHERBOARD PARTS LIST  
07970-62040 (Series 1125)

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-62040	PE READ MOTHERBOARD ASSY (Series 1125)
2	07970-62077	CABLE, Read Slave/Master
3	5040-6086	HOOD, Connector
4	5040-6072	BLOCK, Connector, Mounting
5	5040-6003	CLAMP, Cable
6	2200-0091	SCREW, 4-40, .562 in.
7	2260-0002	NUT, Hex, 4-40
8	3030-0143	SCREW, Set, 6-32, .5 in.
9	1251-0159	CONNECTOR
10	0624-0098	SCREW, Tapping, 4-40
11	1400-0440	CLAMP, Cable
12	3050-0066	WASHER, Flat, #6
13	2360-0201	SCREW, 6-32x, .5 in.
14	3050-0066	WASHER, Flat, #6
15	2420-0001	NUT, Hex, 6-32
16	07970-62098	CABLE ASSEMBLY, Read Power, PE
17	07970-01178	SPRING, Retaining, PC Board
18	1400-0249	TIE, Cable, spiral
19		DECODER PCA
20		DATA AND STATUS PCA
21		MASTER PE READ CONTROL PCA
22	1251-2361	CONTACT, Male, 26 pin (J17)
23	1251-2025	CONNECTOR, PC 2x24
24	1251-2503	CONNECTOR, PC, Female
25	1251-2504	CONNECTOR, PC, Male
26	1251-2134	CONNECTOR, PC 2x18
27	1251-1887	CONNECTOR, PC 2x22
	1251-1115	KEY, PC Connector



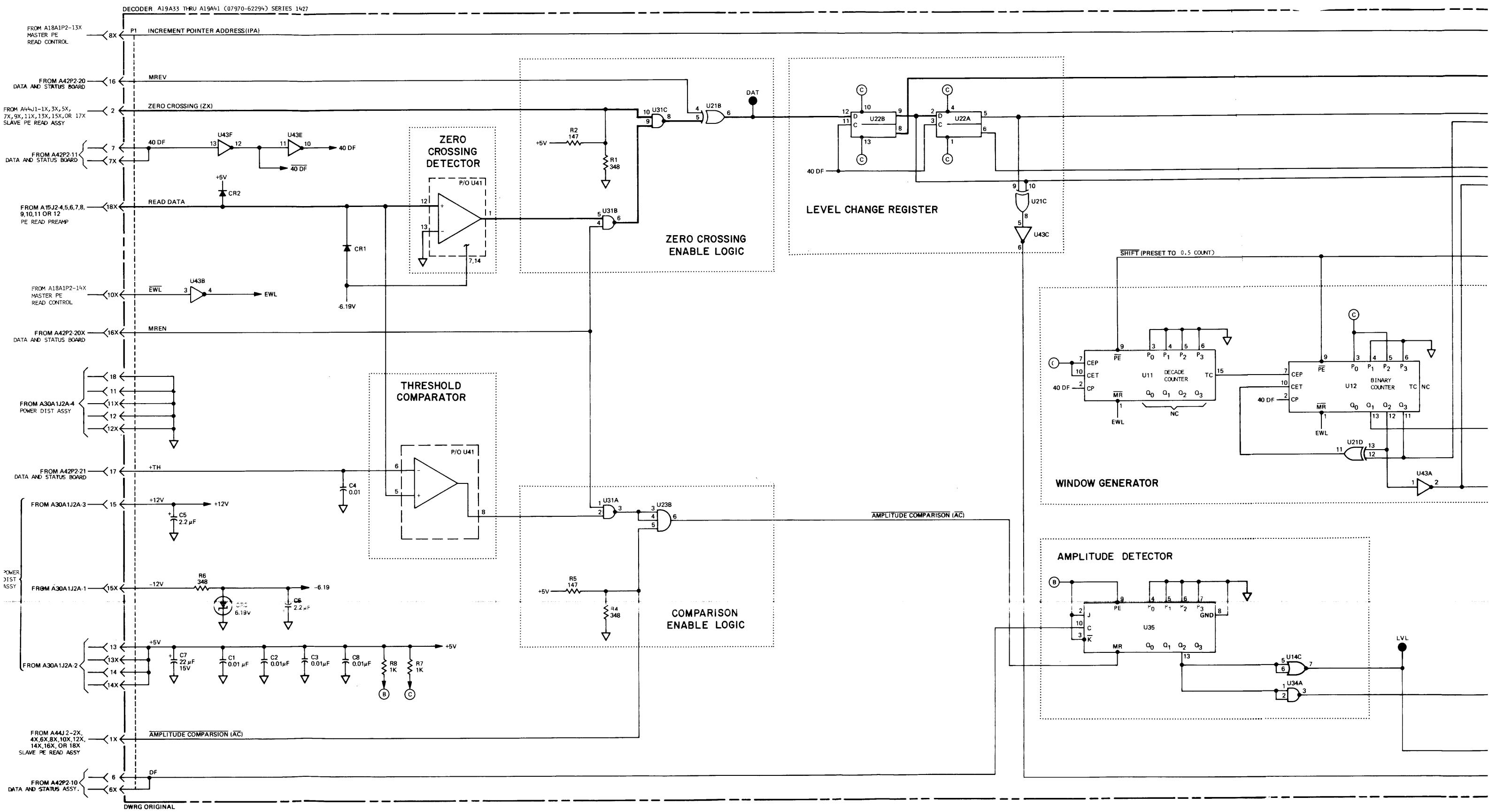


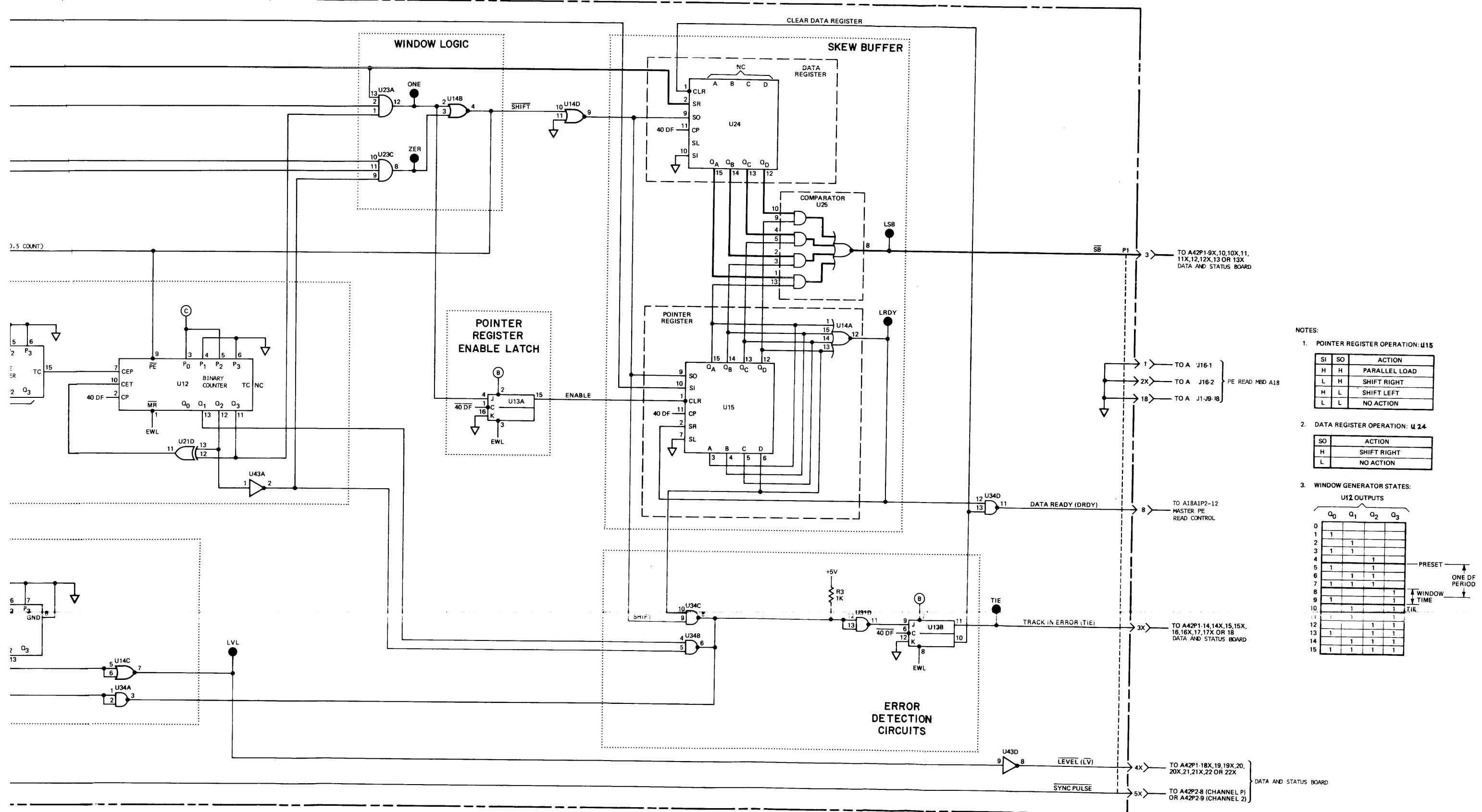
DECODER PCA PARTS LIST  
07970-62041 (Series 1232)



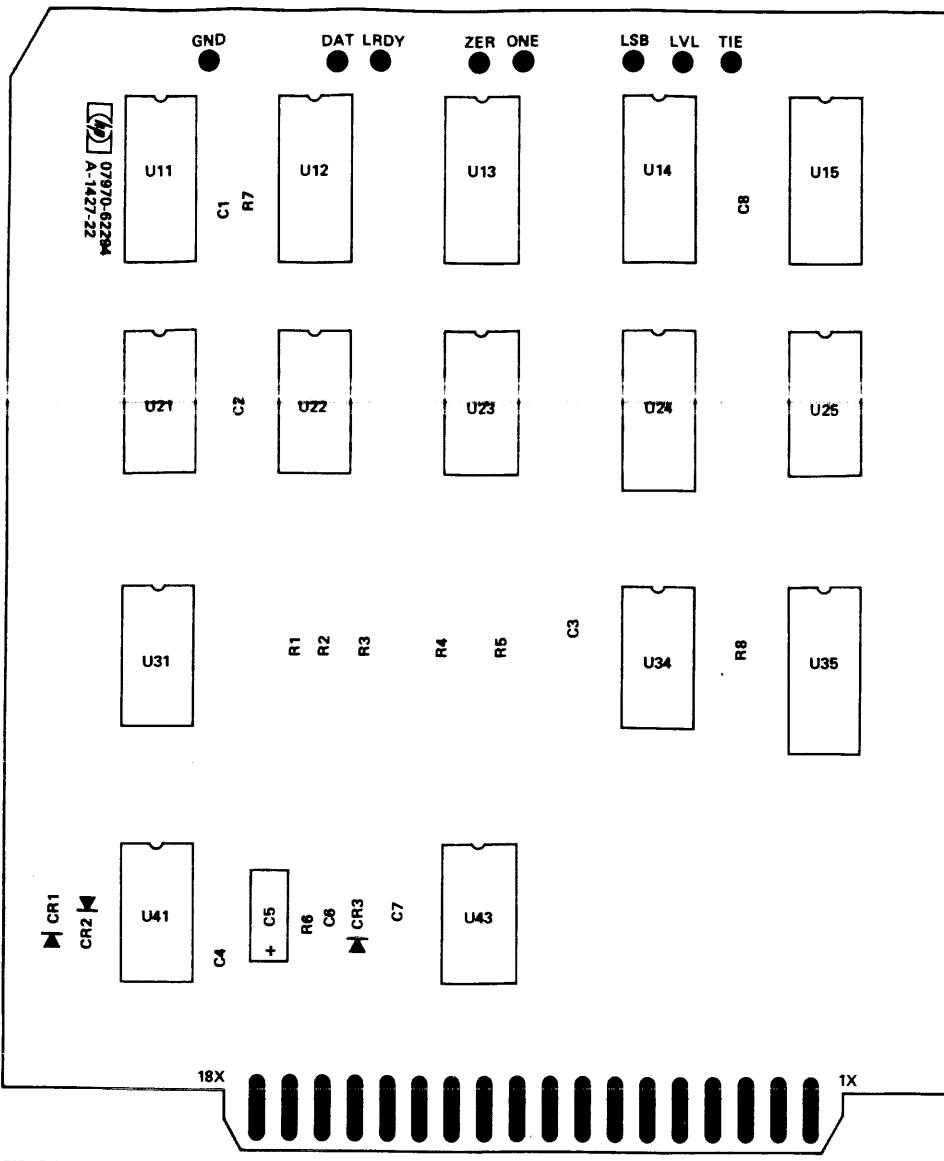
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62041	DECODER PCA (Series 1232)
C1-3,6,7,10	0160-2055	CAPACITOR, fxd, .01uf, 100V
C4,8	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
C9	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
CR1	1902-0049	DIODE, Zener, 6.19V
CR2,3	1902-0040	DIODE, 30V, 50ma
R1,3	0698-3438	RESISTOR, fxd, 147, 1%, .125W
*R2,4,8	0698-3445	RESISTOR, fxd, 348, 1%, .125W
R5,9	0683-1235	RESISTOR, fxd, 12K, 5%, .25W
R6,7,10	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R11	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
U11	1820-0537	IC, DIGITAL, 7413
U12	1820-0072	IC, DIGITAL, FF 7474
U13,24	1820-0743	IC, SN74194N
U14,44	1820-0074	IC, DIGITAL, 7454
U15	1820-0269	IC, SN7403N
U21	1820-0054	IC, DIGITAL, 7400
U22	1820-0374	IC, SN74H21N
U23	1820-0705	IC, U7B931059X
U25,35,45	1820-0076	IC, DIGITAL, FF 7476
U31	1820-0398	IC, U6A7710393
U32	1820-0282	IC, DIGITAL, 7486
U33	1820-0231	IC, U6B931659X
U34	1820-0424	IC, SN74H04N
U41	1826-0055	IC, LINEAR
U42	1820-0205	IC, MC3003P
U43	1820-0745	IC, U6B901559X
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved
Below Series 1232		
0757-0417		562 OHMS

DESCRIPTION
'CA (Series 1232)
C, fxd, .01uf, 100V
C, fxd, 2.2uf, 10%
C, fxd, 22uf, 15VDC
Diode, 6.19V
IV, 50ma
fxd, 147, 1%, .125W
fxd, 348, 1%, .125W
fxd, 12K, 5%, .25W
fxd, 1K, 1%, .125W
fxd, 1.62K, 1%, .125W
AL, 7413
AL, FF 7474
94N
AL, 7454
3N
AL, 7400
21N
1059X
AL, FF 7476
10393
AL, 7486
1659X
04N
R
3P
1559X
, PC
Grooved





DECODER PCA PARTS LIST  
07970-62294 (Series 1427)



7970-542A

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62294	DECODER PCA (Series 1427)
C1,2,3,4,8	0160-2055	CAPACITOR, fxd, .01uf, 100V
C5,6	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
C7	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
CR1,2	1901-0040	DIODE, 30V, 50MA
CR3	1902-0049	DIODE, Zener, 6.19V
R1,4,6	0698-3445	RESISTOR, fxd, 348, 1%, .125W
R2,5	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R3,7,8	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
U11	1820-0669	IC, U7B93L1059X
U12	1820-0778	IC, U7B93L1659X
U13	1820-0076	IC, DIGITAL, FF 7476
U14	1820-0745	IC, U6B901559X
U15,24	1820-0743	IC, SN74194N
U21	1820-0282	IC, DIGITAL, 7486
U22	1820-0077	IC, DIGITAL, FF 7474
U23	1820-1066	IC, U9A741159X
U25	1820-0074	IC, DIGITAL 7454
U31	1820-0054	IC, DIGITAL 7400
U34	1820-0269	IC, SN7403N
U35	1820-0659	IC, U7B93L0059X
U41	1826-0051	IC, MC1414 LINEAR
U43	1820-0174 5040-6001 1480-0116	IC, DIGITAL 7404 EXTRACTOR PIN, Grooved

SCRIPTION

A (Series 1427)

fxd, .01uf, 100V

fxd, 2.2uf, 10%

fxd, 22uf, 15VDC

, 50MA

er, 6.19V

fxd, 348, 1%, .125W

fxd, 147, 1%, .125W

fxd, 1K, 1%, .125W

.1059X

.1659X

L, FF 7476

.559X

.4N

L, 7486

L, FF 7474

.159X

L 7454

L 7400

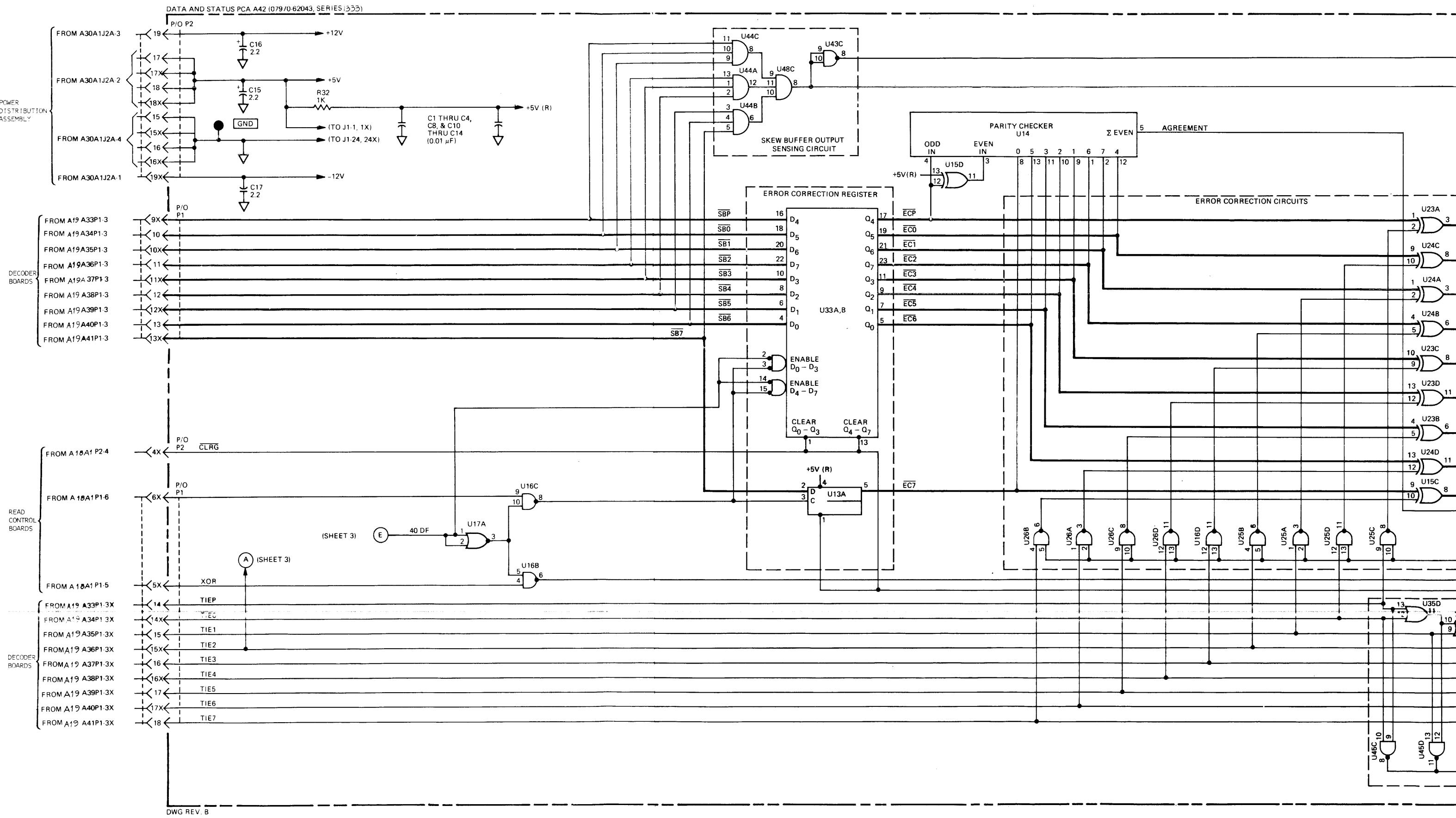
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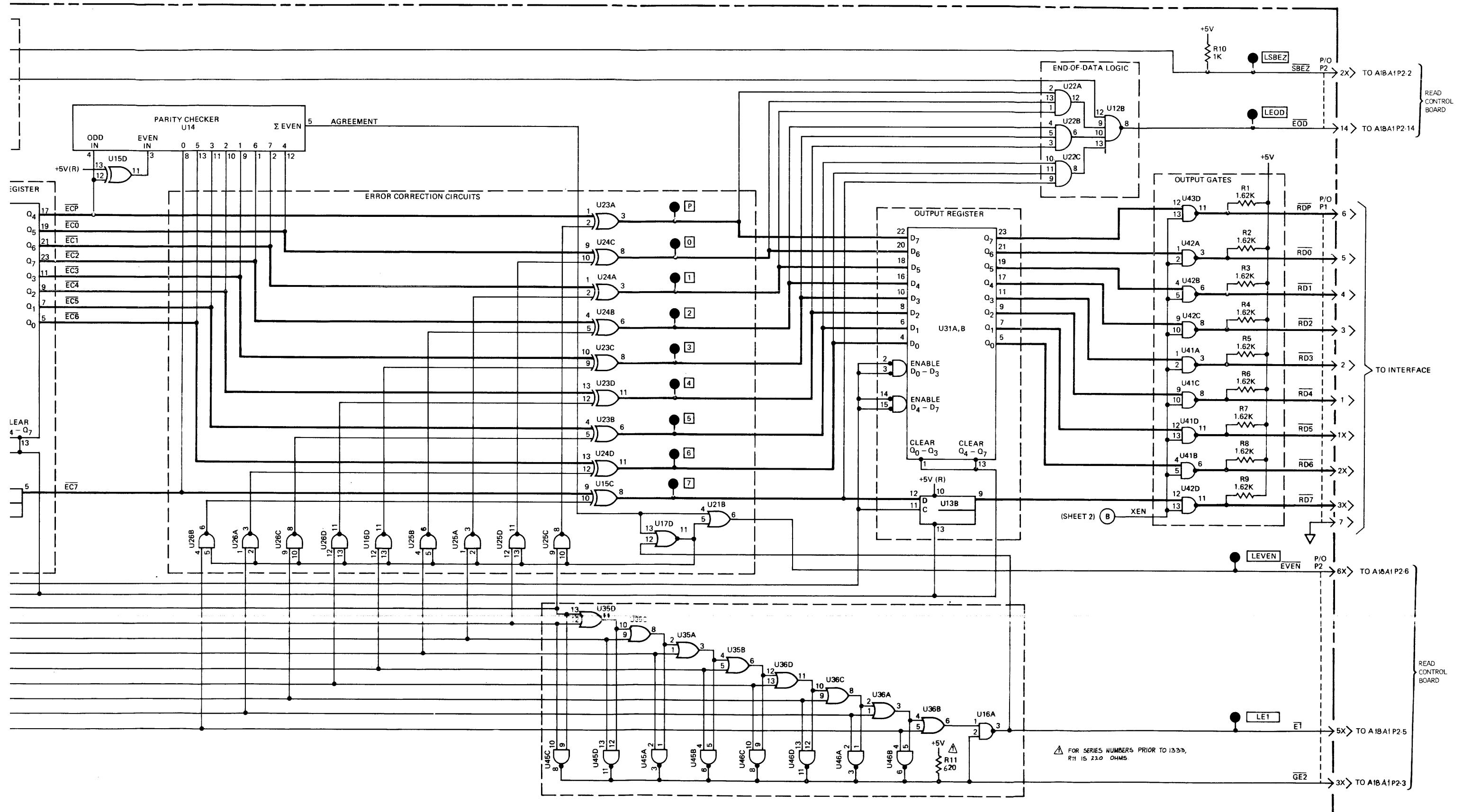
.0059X

LINEAR

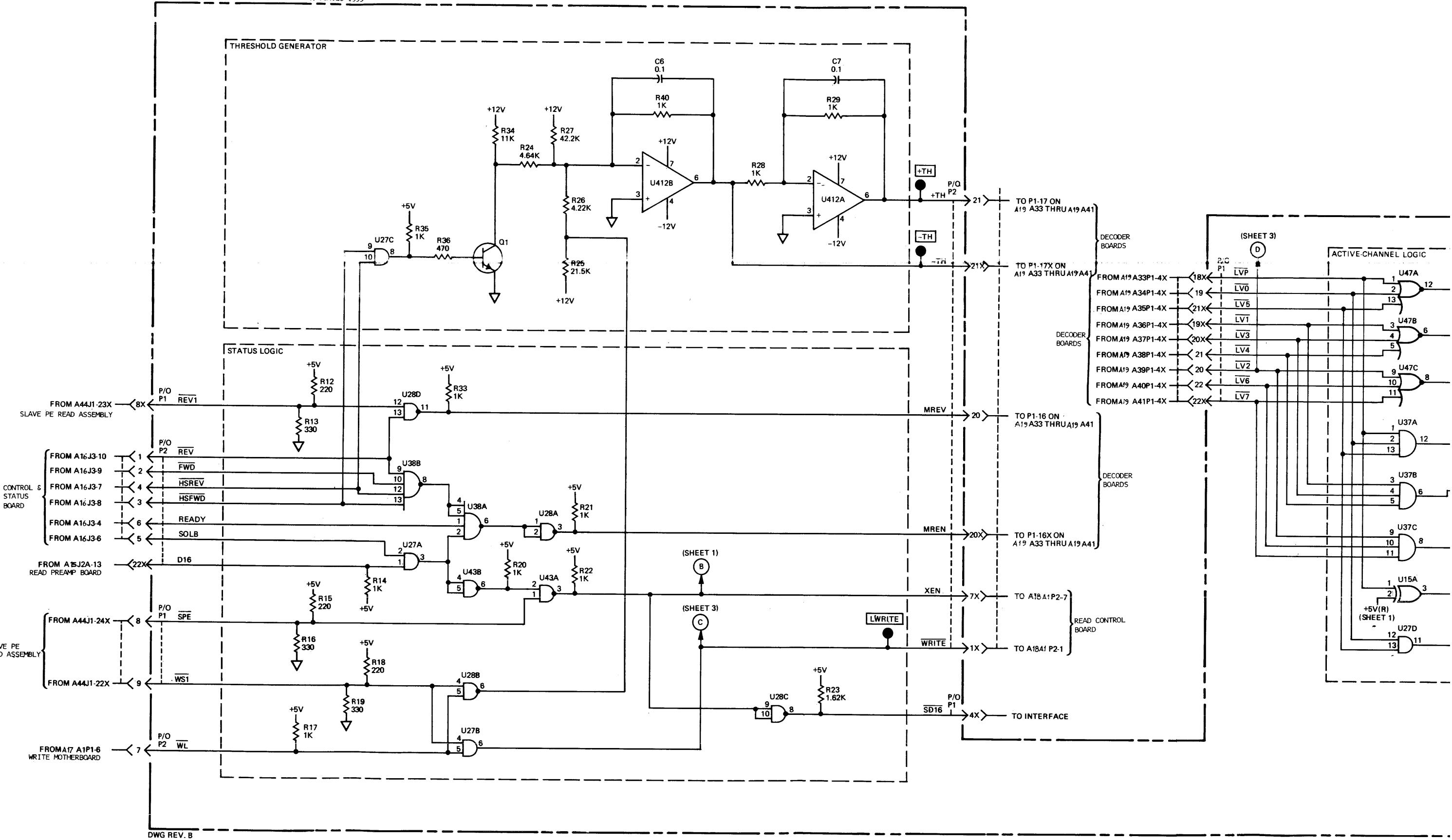
L 7404

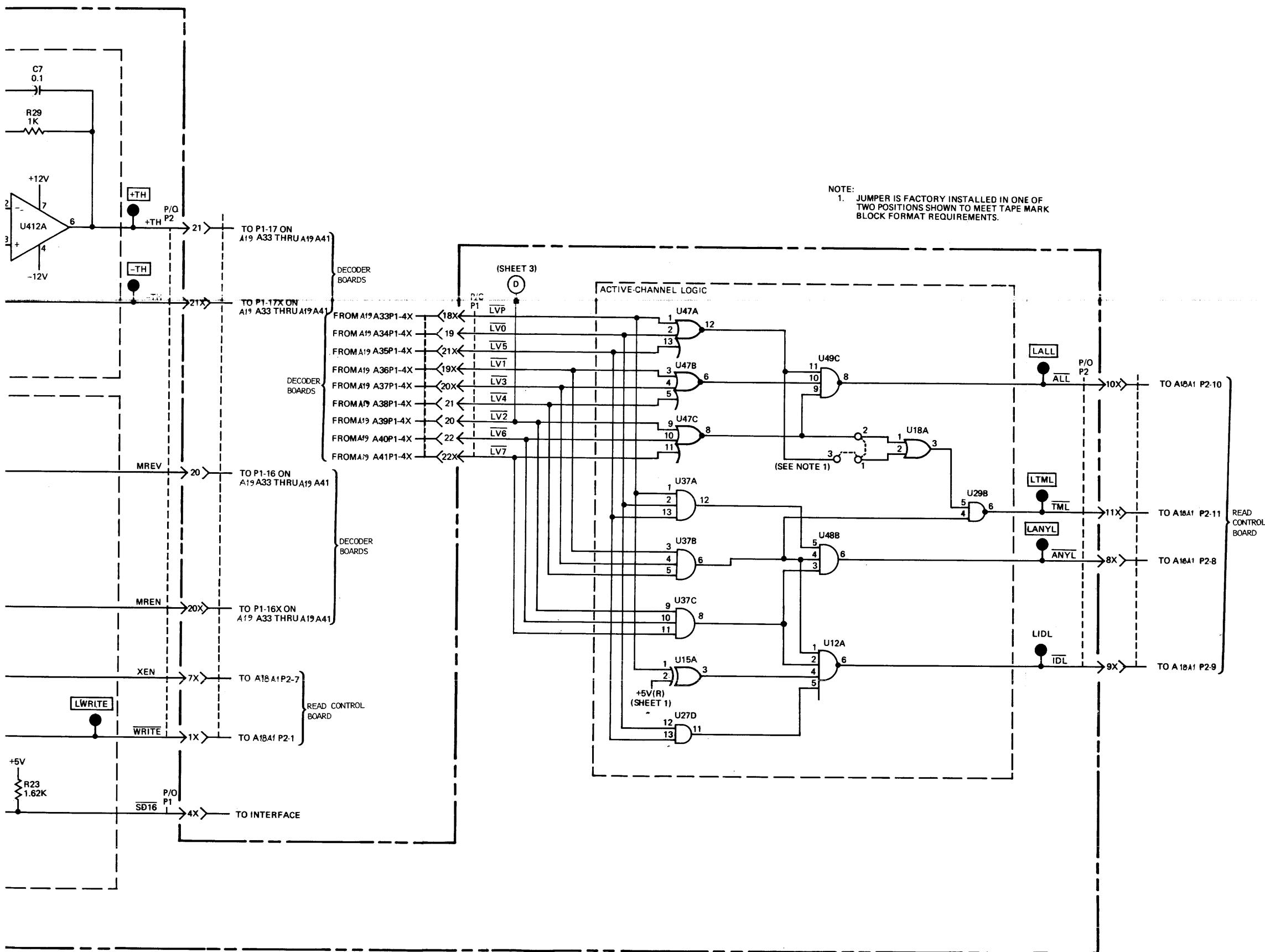
rooved



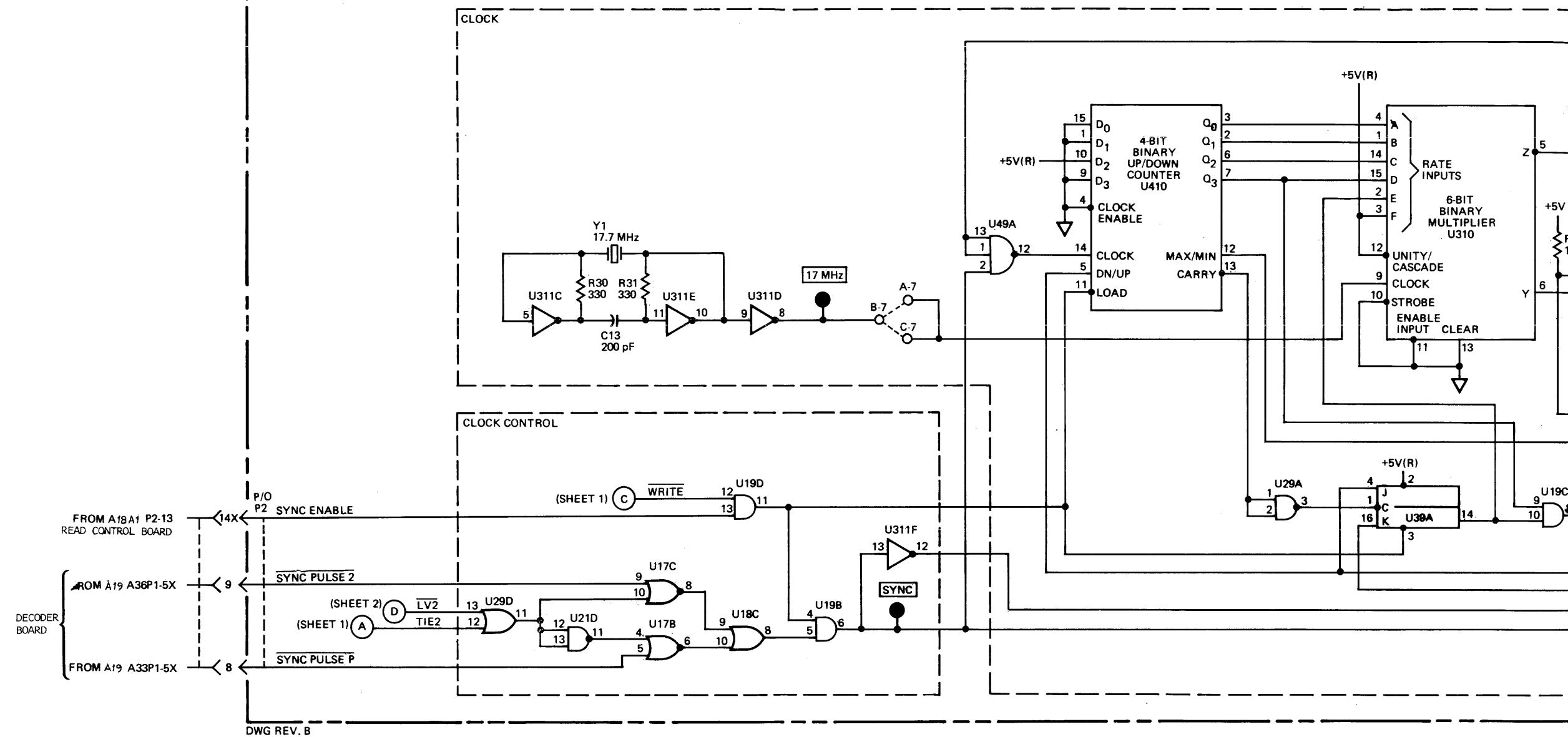


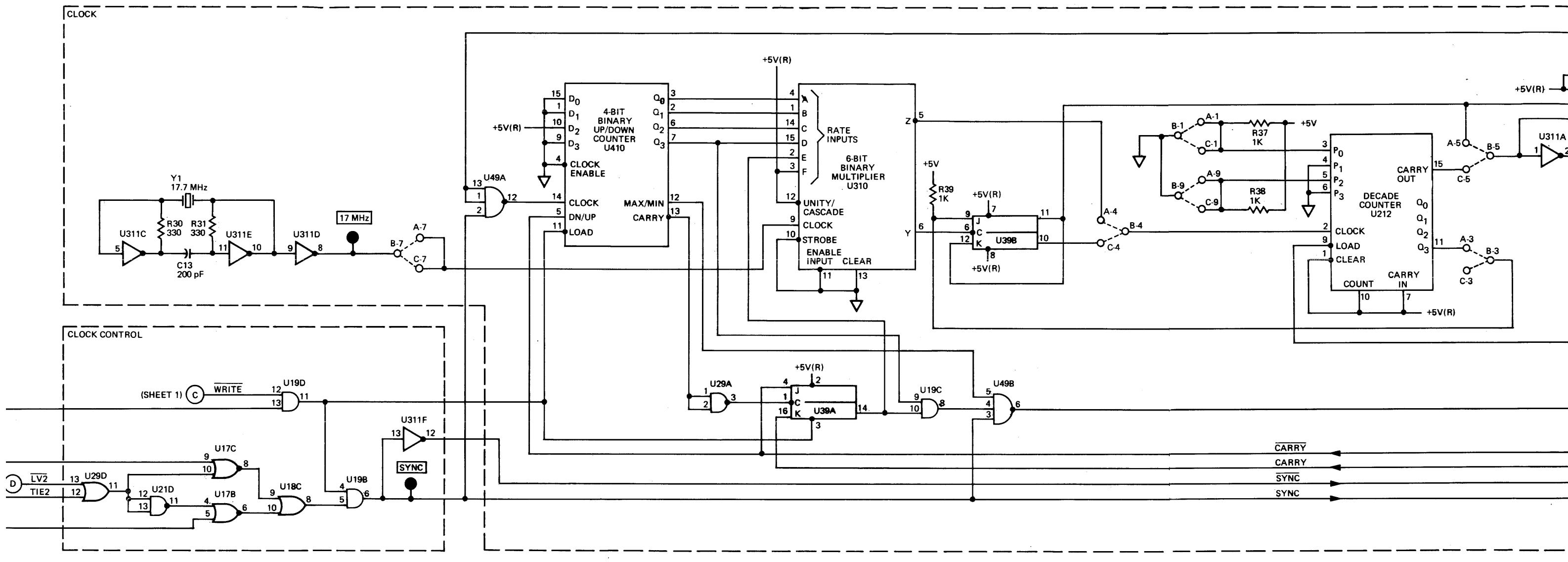
Data and Status PC Assembly A42  
Sheet 1 of 3





Data and Status PC Assembly A42  
Sheet 2 of 3





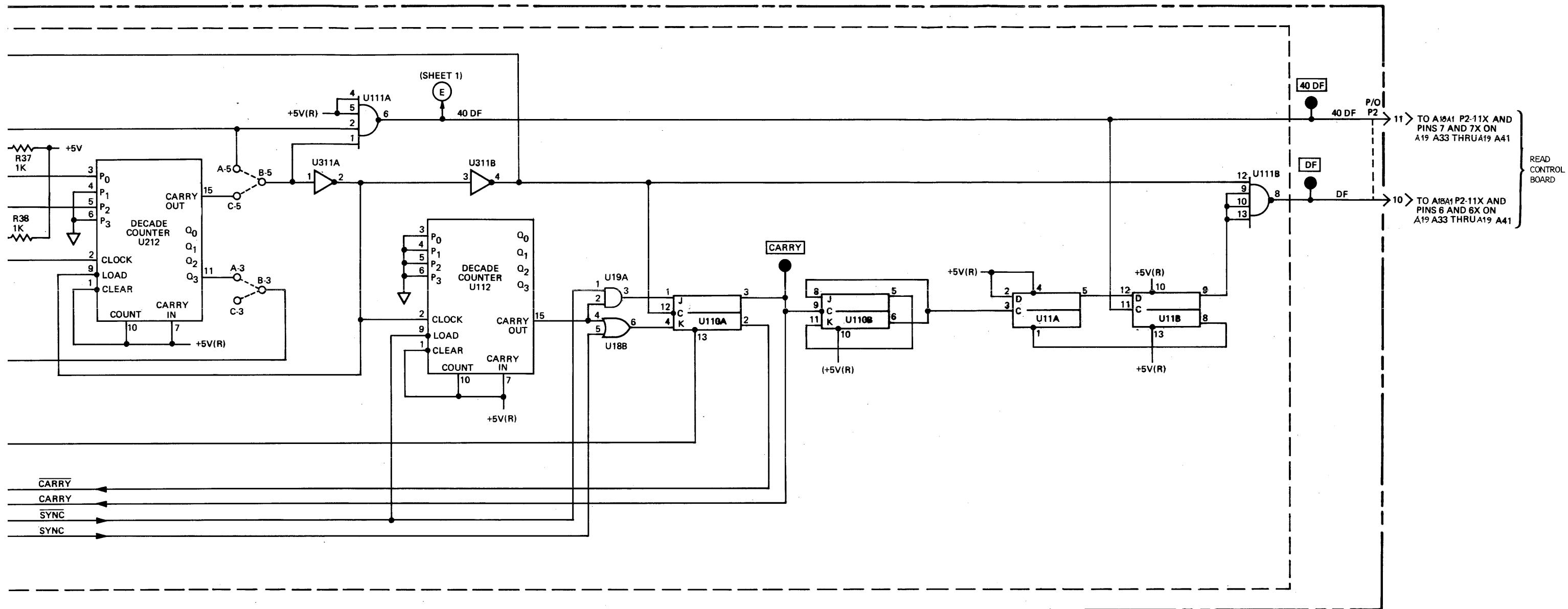
A	B	C
1	o	o
2	o	o
3	o	o
4	o	o
5	o	o
6	o	o
-7	o	o
8	o	o
9	o	o

12.5 IPS

o	o	o
o	o	o
o	o	o
o	o	o
o	o	o

18.74 IPS

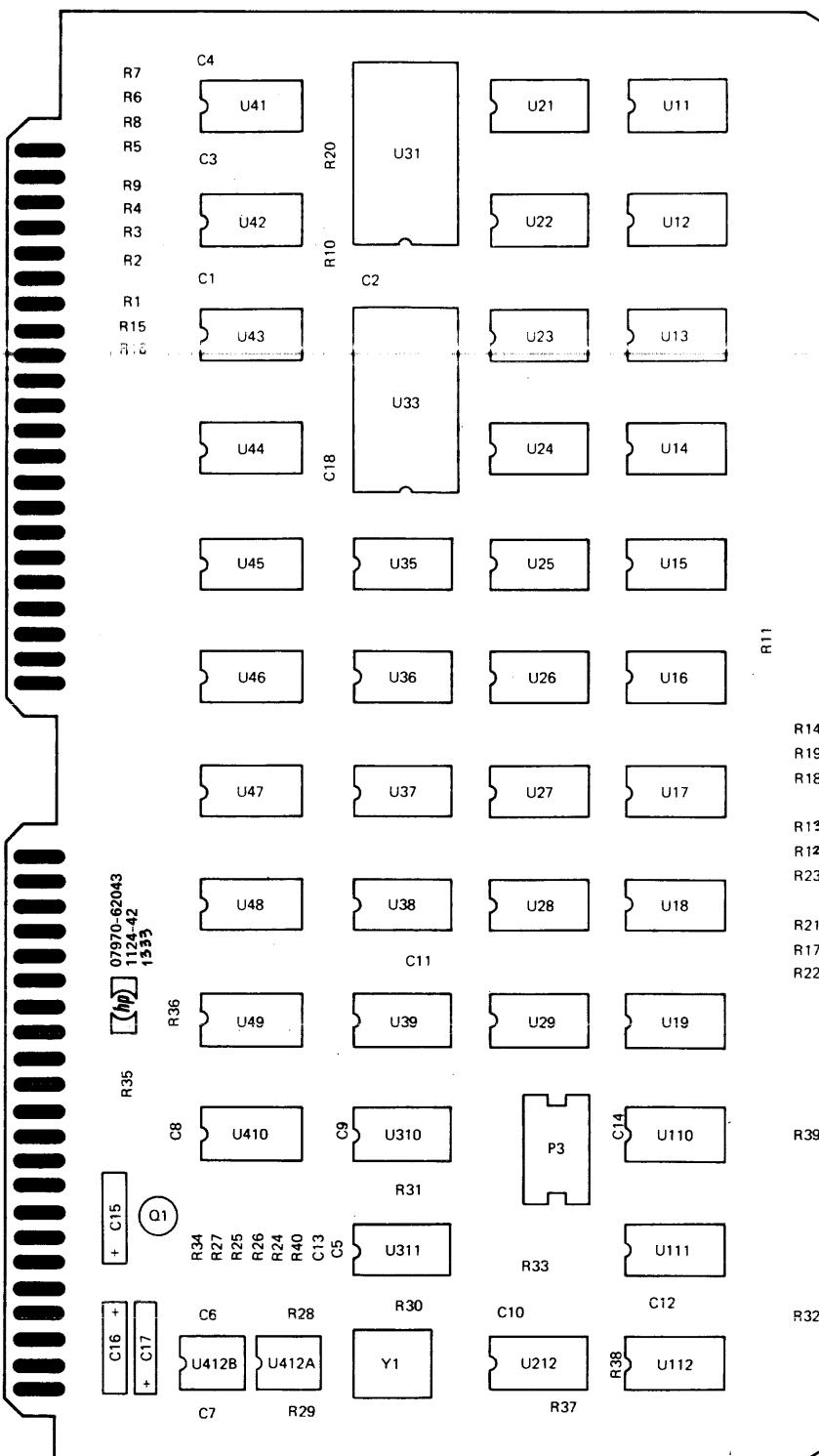


The diagram illustrates six different pin configurations for a 12-pin connector, labeled A through F. Each configuration is shown as a vertical column of 12 circular pins. A rectangular box highlights a subset of pins in each configuration:

- A:** The top 8 pins.
- B:** The bottom 8 pins.
- C:** The middle 8 pins.
- D:** The top 4 pins.
- E:** The bottom 4 pins.
- F:** The middle 4 pins.

NOTE

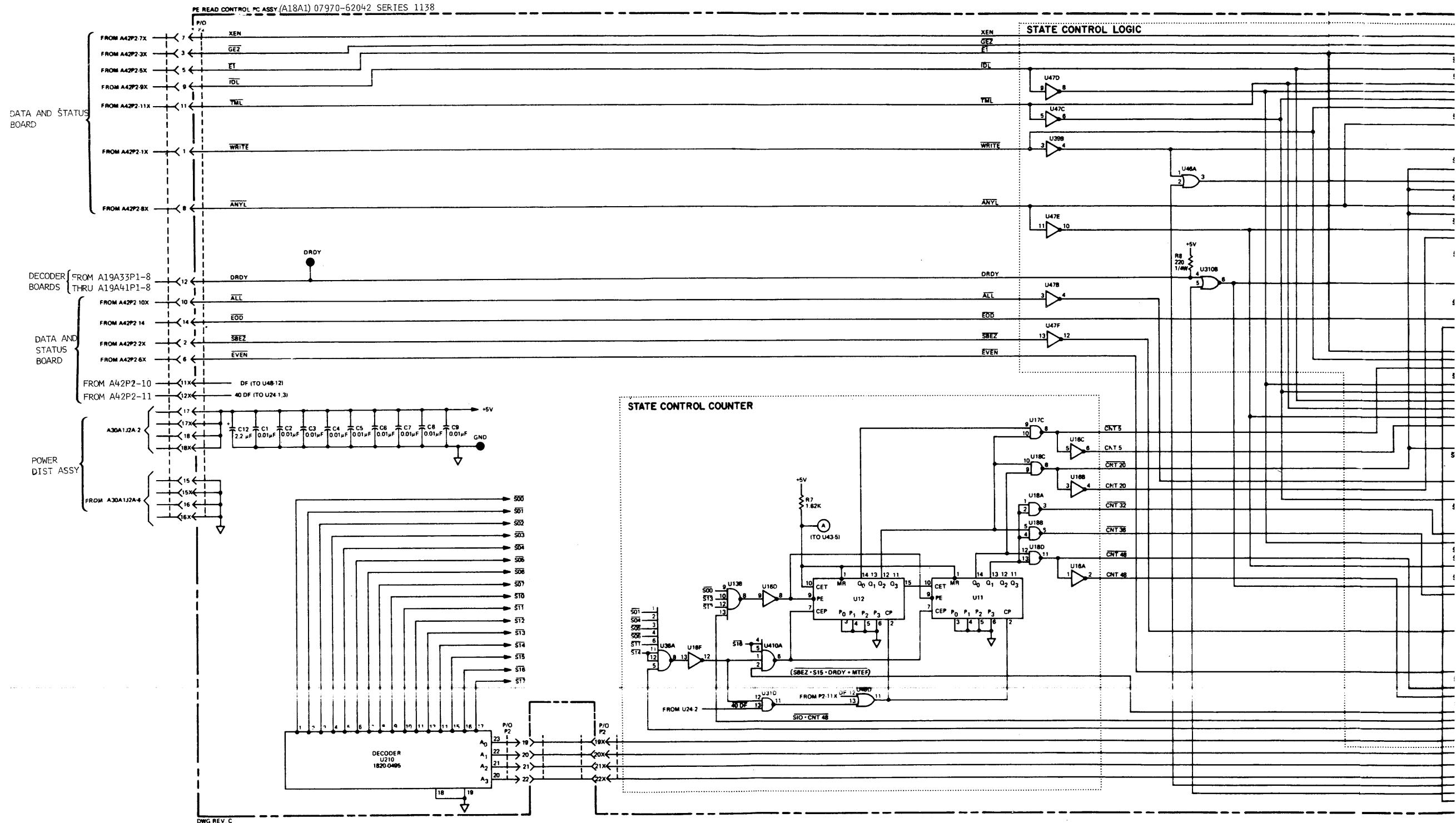
- NOTES:  
1. POSITION OF PLUG, AS SHOWN ON LEFT, DEPENDS ON  
TAPE SPEED. PLUG IS FACTORY INSTALLED.

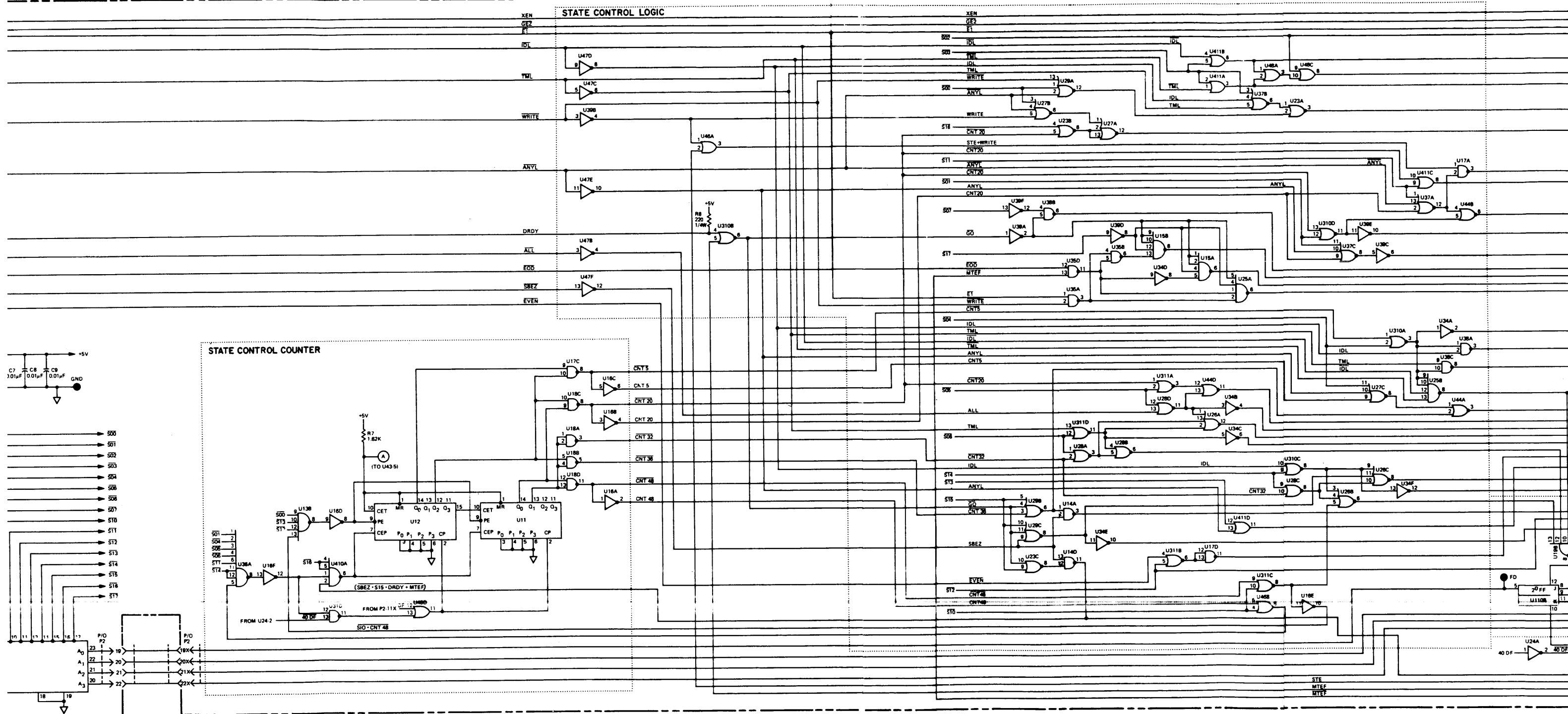


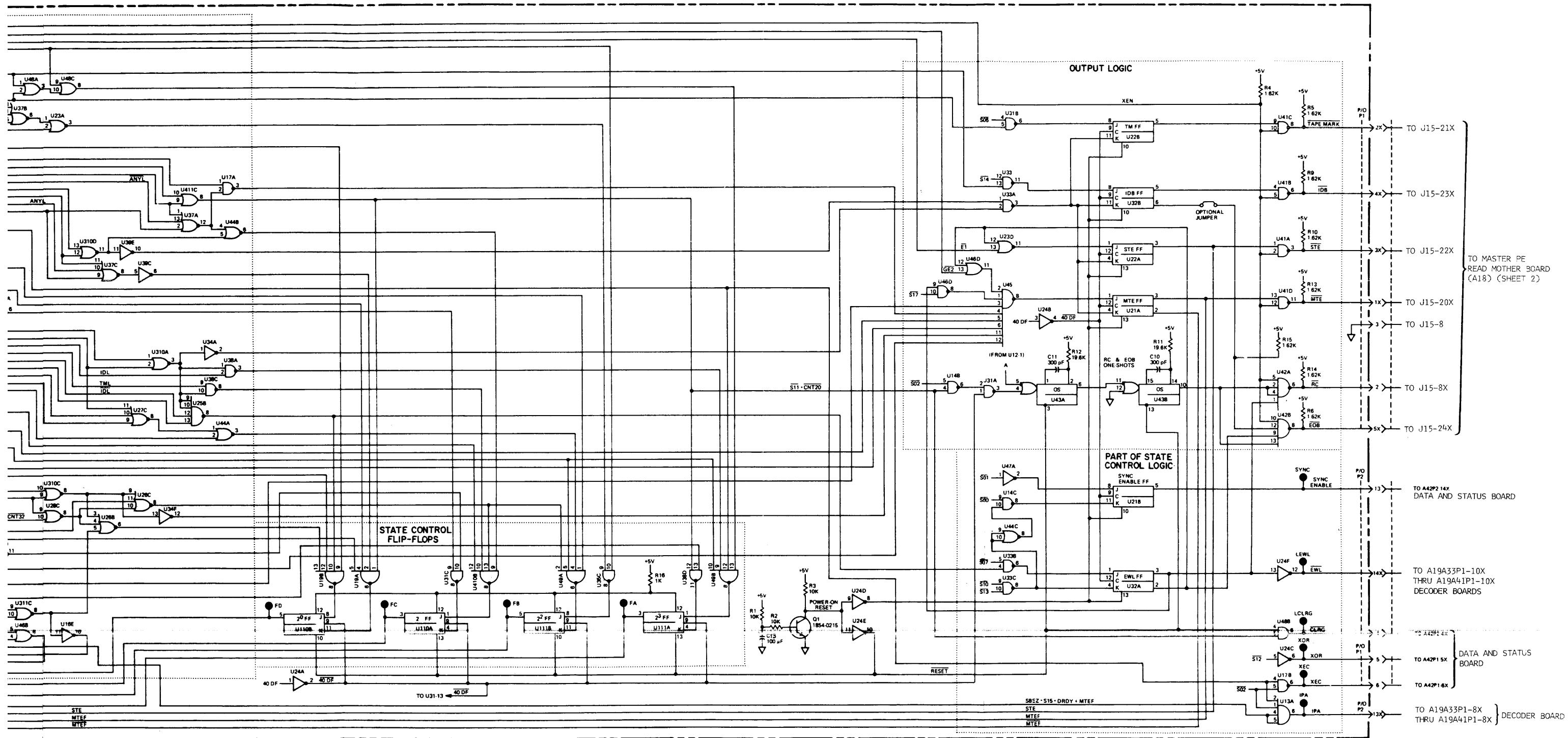
DATA AND STATUS PCA PARTS LIST  
07970-62043 (Series 1124, 1333)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62043	DATA & STATUS PCA (Series 1124)
C1-5,8-12,14,18	0160-2055	CAPACITOR, fxd, .01uf, 100V
C6,7	0150-0121	CAPACITOR, fxd, .1uf, 10%
C13	0140-0198	CAPACITOR, fxd, 200pf, 5%
C15,17	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
Q1	1854-0215	TRANSISTOR, 2N3904 PL5
R1-9,23	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R10,14,17,20-22, 32,33,35,37-39	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
*R11	0683-2215	RESISTOR, fxd, 220, 5%, .25W
R12,15,18	0683-2215	RESISTOR, fxd, 220, 5%, .25W
R13,16,19,30,31	0683-3315	RESISTOR, fxd, 330, 5%, .25W
R24	0698-3155	RESISTOR, fxd, 4.64K, 1%, .125W
R25	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R26	0698-3154	RESISTOR, fxd, 4.22K, 1%, .125W
R27	0698-3450	RESISTOR, fxd, 42.2K, 1%, .125W
R28,29,40	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R34	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R36	0683-4715	RESISTOR, fxd, 470, 5%, .25W
U11,13	1820-0077	IC, DIGITAL FF 7474
U12,38	1820-0069	IC, DIGITAL 7420
U14	1820-0435	IC, SN74180N
U15,23,24	1820-0282	IC, DIGITAL 7486
U16,25,26,29	1820-0054	IC, DIGITAL 7400
U17	1820-0239	IC, MC3002P
U18,21,35,36	1820-0205	IC, MC3003P
U19,27	1820-0141	IC, DIGITAL MC3001
U22,37,44,48	1820-0372	IC, DIGITAL SN74H11
U28,41,42,43	1820-0621	IC, SN7438N
U31,33	1820-0742	IC, U6930859X
U39	1820-0752	IC, SN74H76N
U45,46	1820-0269	IC, SN7403N
U47	1820-0637	IC, N8875A
U49	1820-0068	IC, DIGITAL 7410
U110	1820-0281	IC, DIGITAL FF 74107
U111	1820-0376	IC, SN74H40N
U112,212	1820-0705	IC, U7B931059X
U310	1820-0744	IC, SN7497N
U410	1820-0545	IC, DIGITAL 74191
U412A,B	1820-0493	IC, LM307N
Y1	0410-0444	CRYSTAL, 17.7231 MHz
	0460-1100	TAPE, Electrical
	5040-6001	EXTRACTOR
	1480-0116	PIN, Ground
	Series 1333	
*R11	0683-6215	RESISTOR, fxd, 620, 5%, .25W

DESCRIPTION
TUS PCA (Series 1124)
fxd, .01uf, 100V
fxd, .1uf, 10%
fxd, 200pf, 5%
fxd, 2.2uf, 10%
, 2N3904 PL5
fxd, 1.62K, 1%, .125W
fxd, 1K, 5%, .25W
fxd, 220, 5%, .25W
fxd, 220, 5%, .25W
fxd, 330, 5%, .25W
fxd, 4.64K, 1%, .125W
fxd, 21.5K, 1%, .125W
fxd, 4.22K, 1%, .125W
fxd, 42.2K, 1%, .125W
fxd, 1K, 1%, .125W
fxd, 11K, 1%, .125W
fxd, 470, 5%, .25W
L FF 7474
L 7420
ON
L 7486
L 7400
P
P
L MC3001
L SN74H11
N
59X
6N
N
L 7410
L FF 74107
ON
59X
N
L 74191
7.7231 MHz
Electrical
Sound
fxd, 620, 5%, .25W



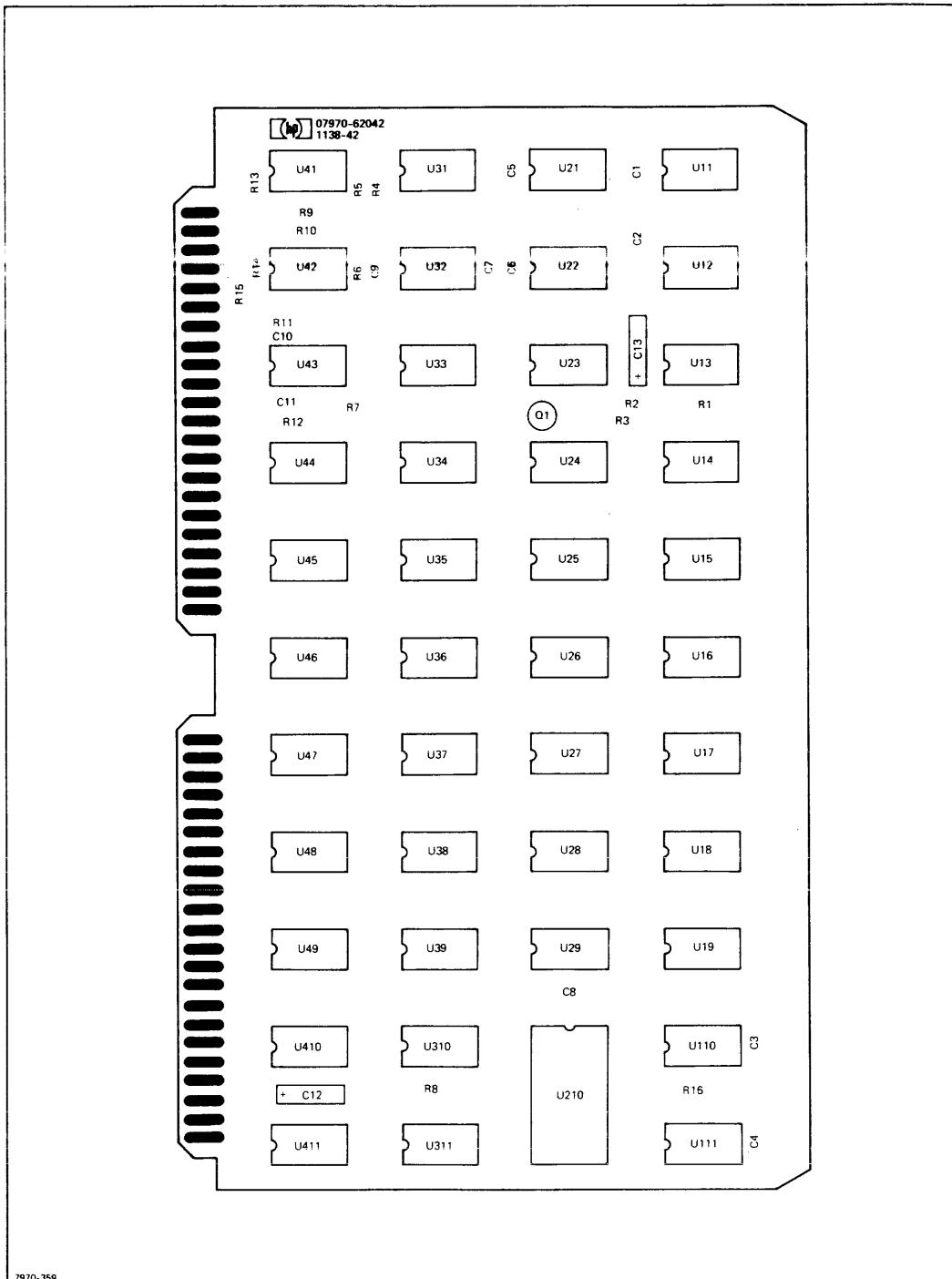




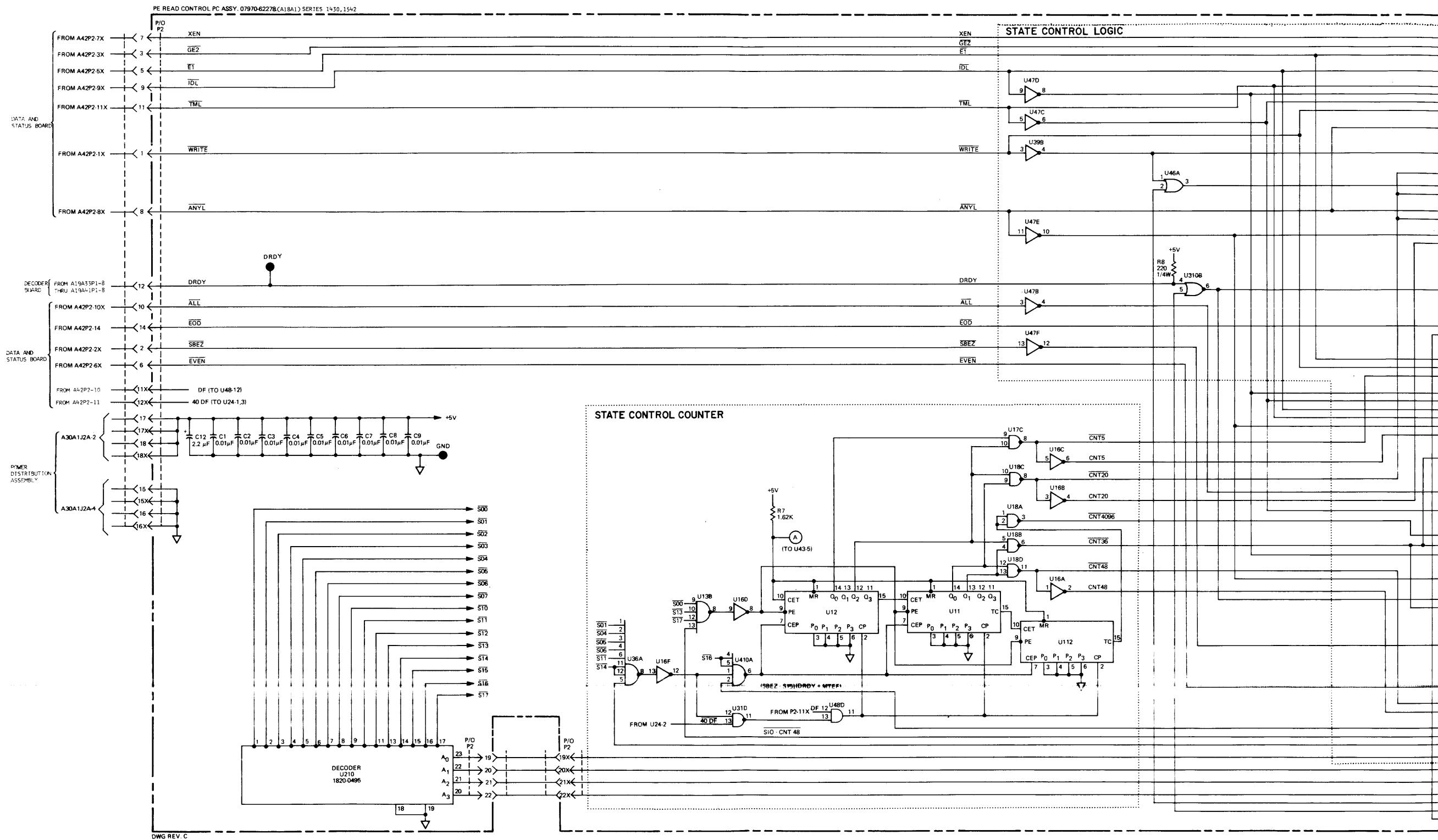
Master PE Read Control PC Assembly A18A1

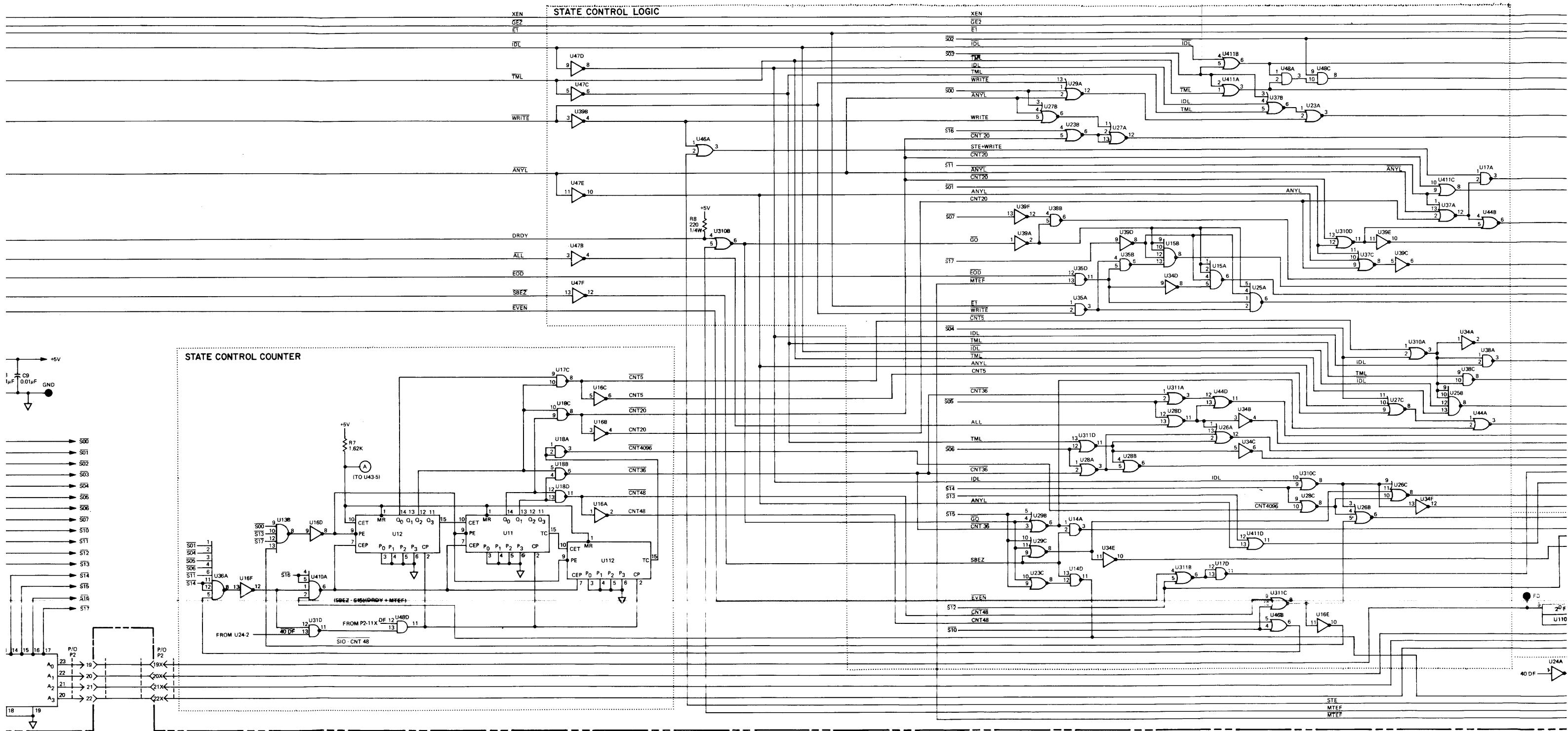
MASTER PE READ CONTROL PCA PARTS LIST  
07970-62042 (Series 1138)

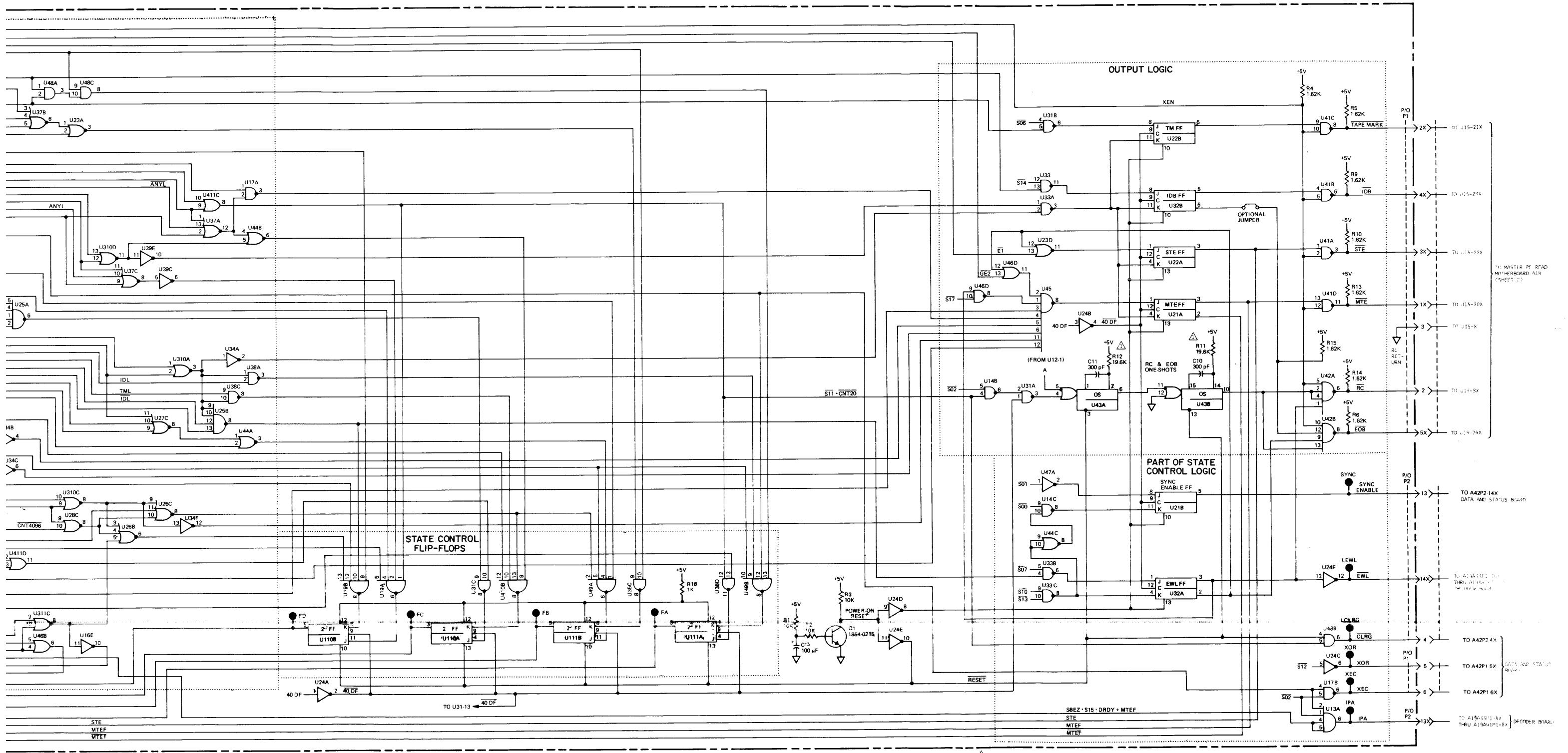
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62042	MASTER PE READ CONTROL PCA (Series 1138)
C1-9	0160-2055	CAPACITOR, fxd, 0.01uf, 100V
C10,11	0160-2207	CAPACITOR, fxd, 300pf, 5%
C12	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
C13	0180-2207	CAPACITOR, fxd, 100uf, 10%
Q1	1854-0215	TRANSISTOR, 2N3904, PL5
R1-3	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R4-7,9,10,13-15	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R8	0683-2215	RESISTOR, fxd, 220, 5%, .25W
R11,12	0698-3157	RESISTOR, fxd, 19.6K, 1%, .125W
R16	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
U11,12	1820-0231	IC, U6B931659X
U13,15,19,25,49, 410	1820-0069	IC, Digital, 7420
U14,17,18,31,33, 35,38	1820-0054	IC, Digital, 7400
U16,34,39,47	1820-0174	IC, Digital, 7404
U21,22,32	1820-0281	IC, Digital, 74107
U23,28,44,310,311	1820-0239	IC, MC3002P
U24	1820-0424	IC, SN74H04N
U26,27,29,37	1820-0637	IC, N8875A
U36,45	1820-0070	IC, SN7430N
U41	1820-0621	IC, SN7438N
U42	1820-0348	IC, MC844P
U43	1820-0515	IC, Digital, 9602
U46,411	1820-0205	IC, MC3003P
U48	1820-0141	IC, Digital, MC3001
U110,111	1820-0631	IC, SN74H108N
U210	1820-0495	IC, SN74154N
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved



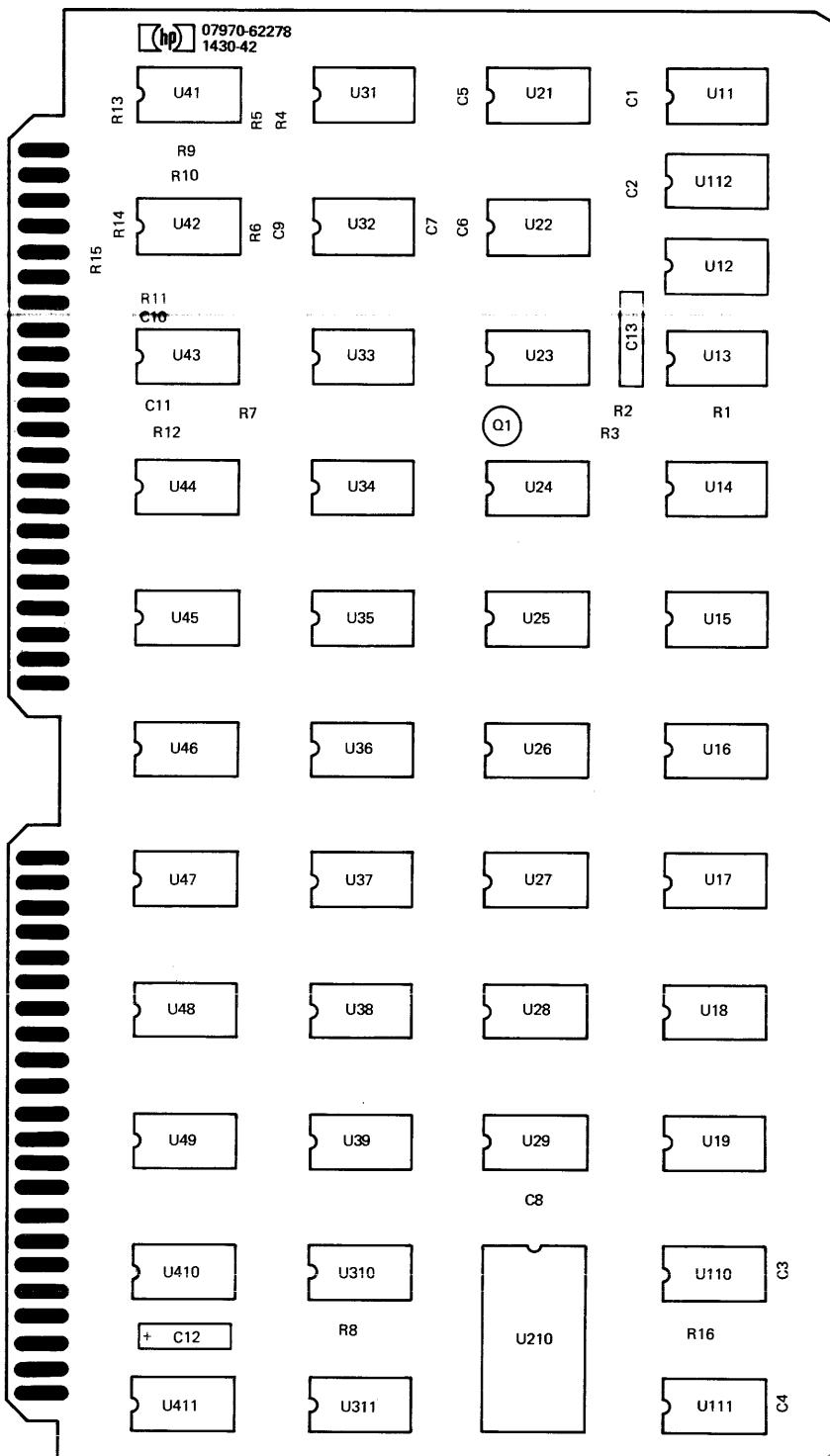






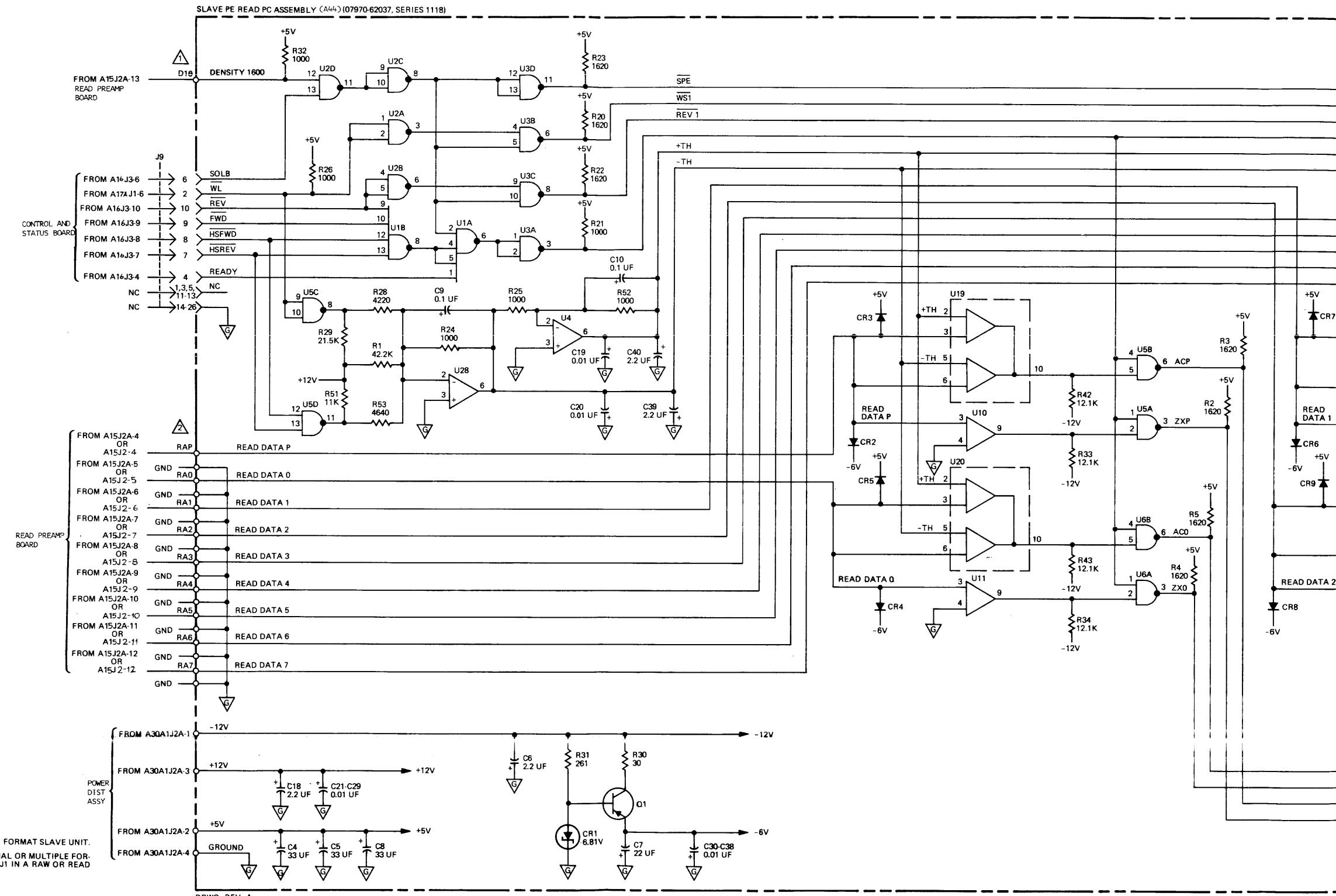


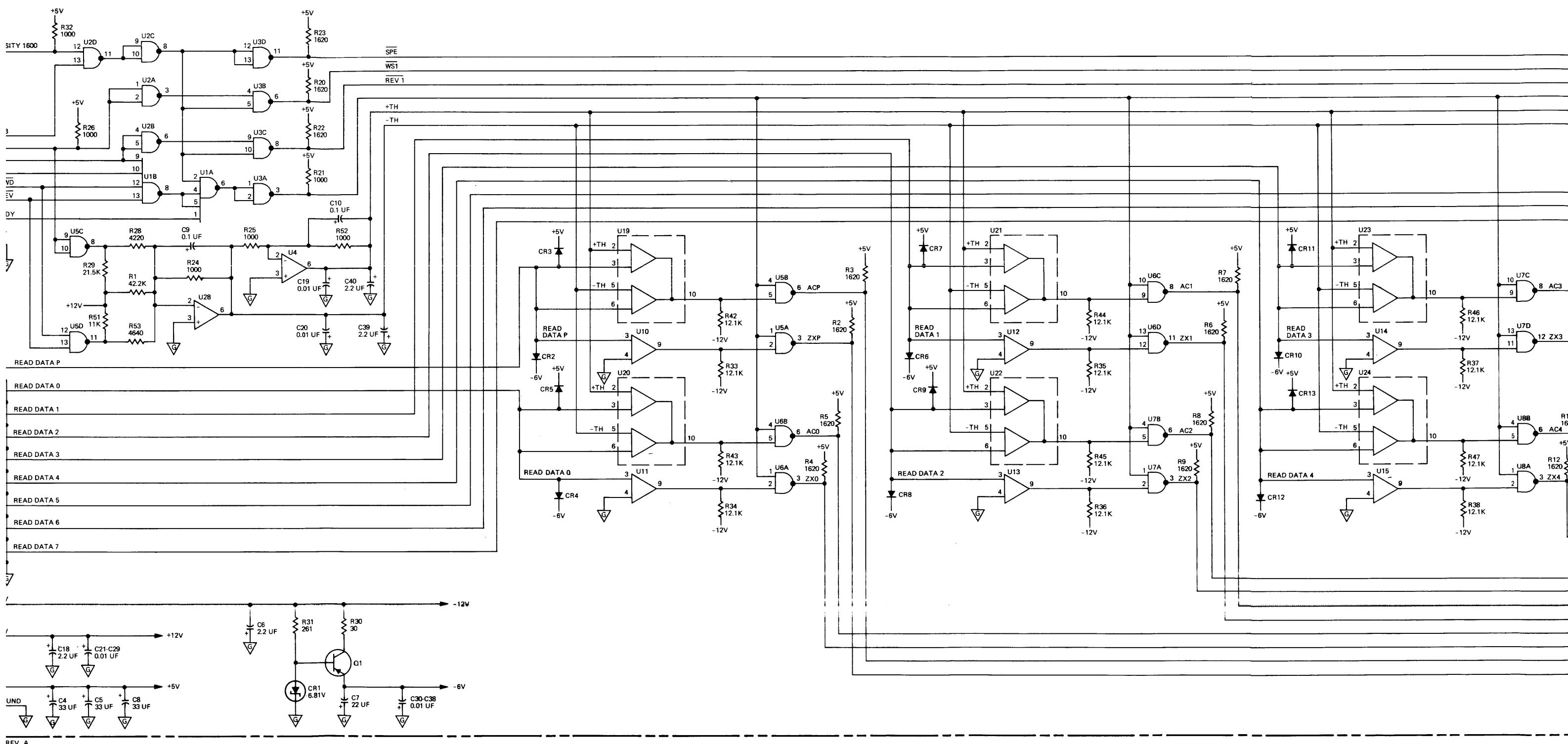
MASTER PE READ CONTROL PCA PARTS LIST  
07970-62278 (Series 1430, 1542)

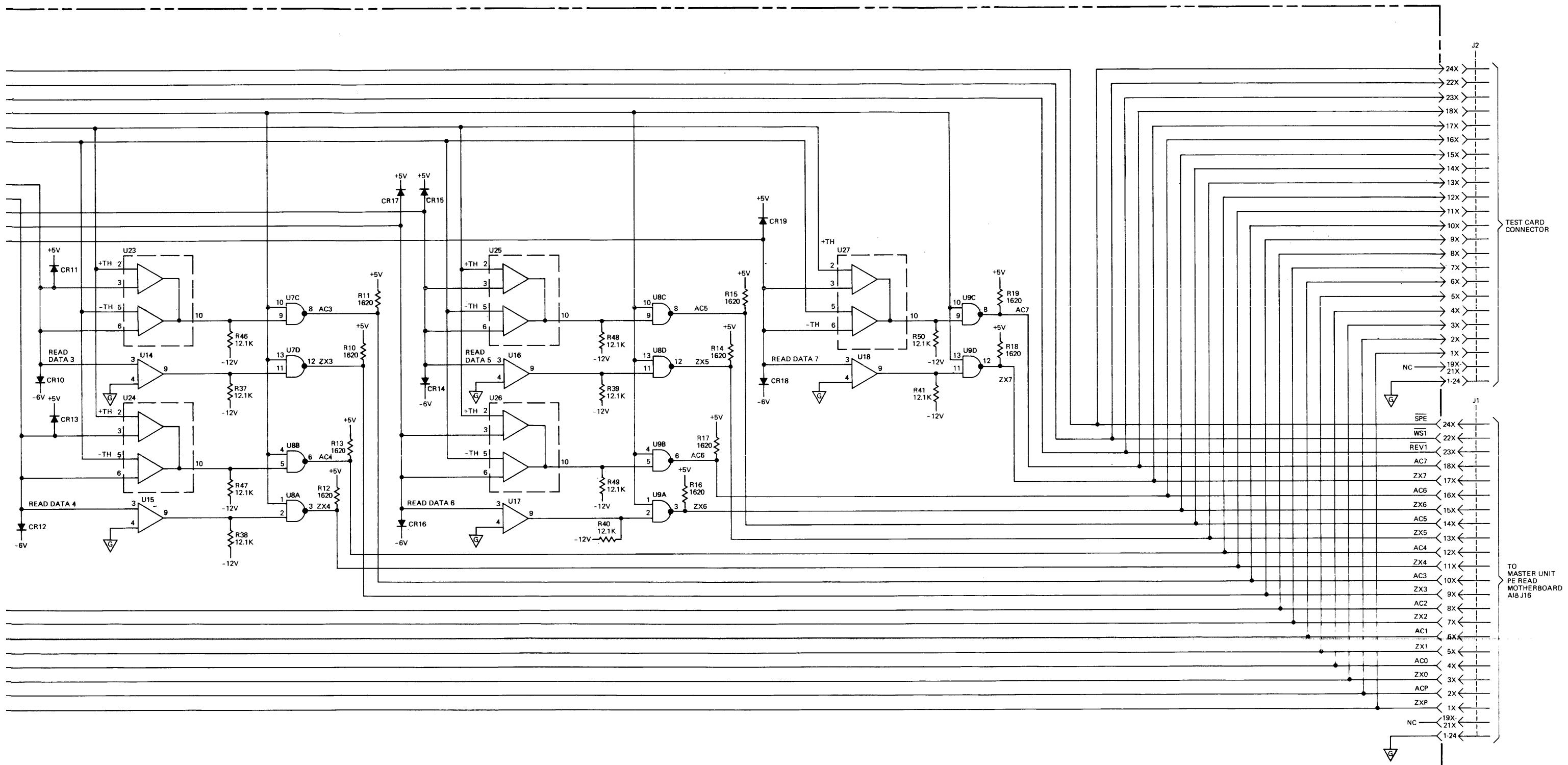


REF. DES/ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62278	MASTER PE READ CONTROL (Series 1430)
C1-9	0160-2055	CAPACITOR, fxd, 0.01uf, 100V
C10,11	0160-2207	CAPACITOR, fxd, 300pf, 5%
C12	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
C13	0180-2207	CAPACITOR, fxd, 100uf, 10%
Q1	1854-0215	TRANSISTOR, 2N3904 PL5
R1-3	0757-0442	RESISTOR, fxd, 10K, 1%, .125W
R4-7,9,10,13-15	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R8	0683-2215	RESISTOR, fxd, 220, 5%, .25W
*R11,12	0698-3157	RESISTOR, fxd, 19.6K, 1%, .125W
R16	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
U11,12,112	1820-0231	IC, U6B931659X
U13,15,19,25, 49,410	1820-0069	IC, DIGITAL 7420
U14,17,18,31, 33,35,38	1820-0054	IC, DIGITAL 7400
U16,34,39,47	1820-0174	IC, DIGITAL 7404
U21,22,32	1820-0281	IC, DIGITAL 74107
U23,28,44, 310,311	1820-0239	IC, MC3002P
U24	1820-0424	IC, SN74H04N
U26,27,29,37	1820-0637	IC, N8875A
U36,45	1820-0070	IC, SN7430N
U41	1820-0621	IC, SN7438N
U42	1820-0348	IC, MC844P
U43	1820-0515	IC, Digital, 9602
U46,411	1820-0205	IC, MC3003P
U48	1820-0141	IC, Digital, MC3001P
U110,111	1820-0631	IC, SN74H108N
U210	1820-0495	IC, SN74154N
	5040-6001	EXTRACTOR, PC
	1480-0116	Pin, Grooved
	Series 1542	
*R11,12	0698-3158	RESISTOR, fxd, 23.7K, 1%, .125W

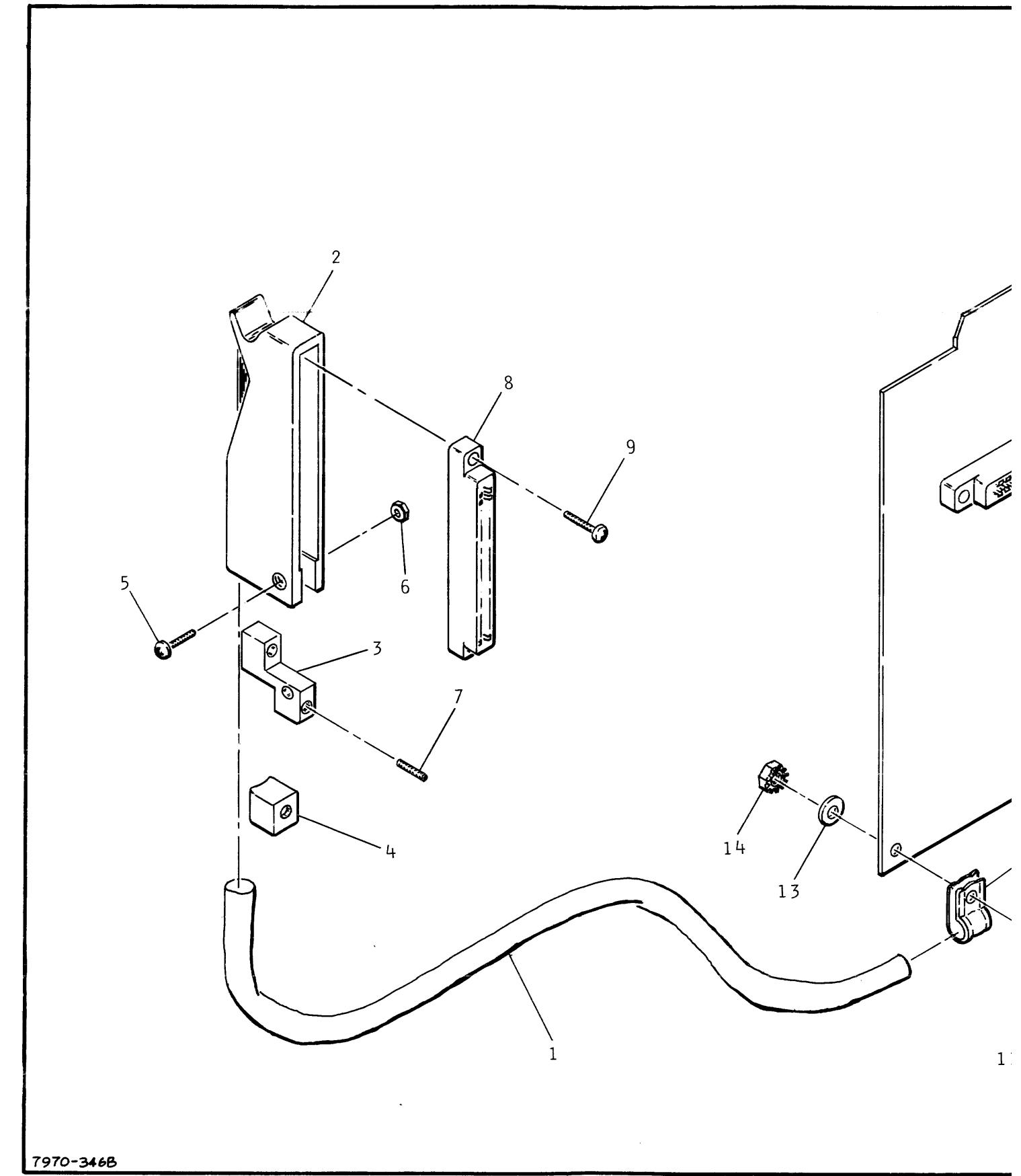
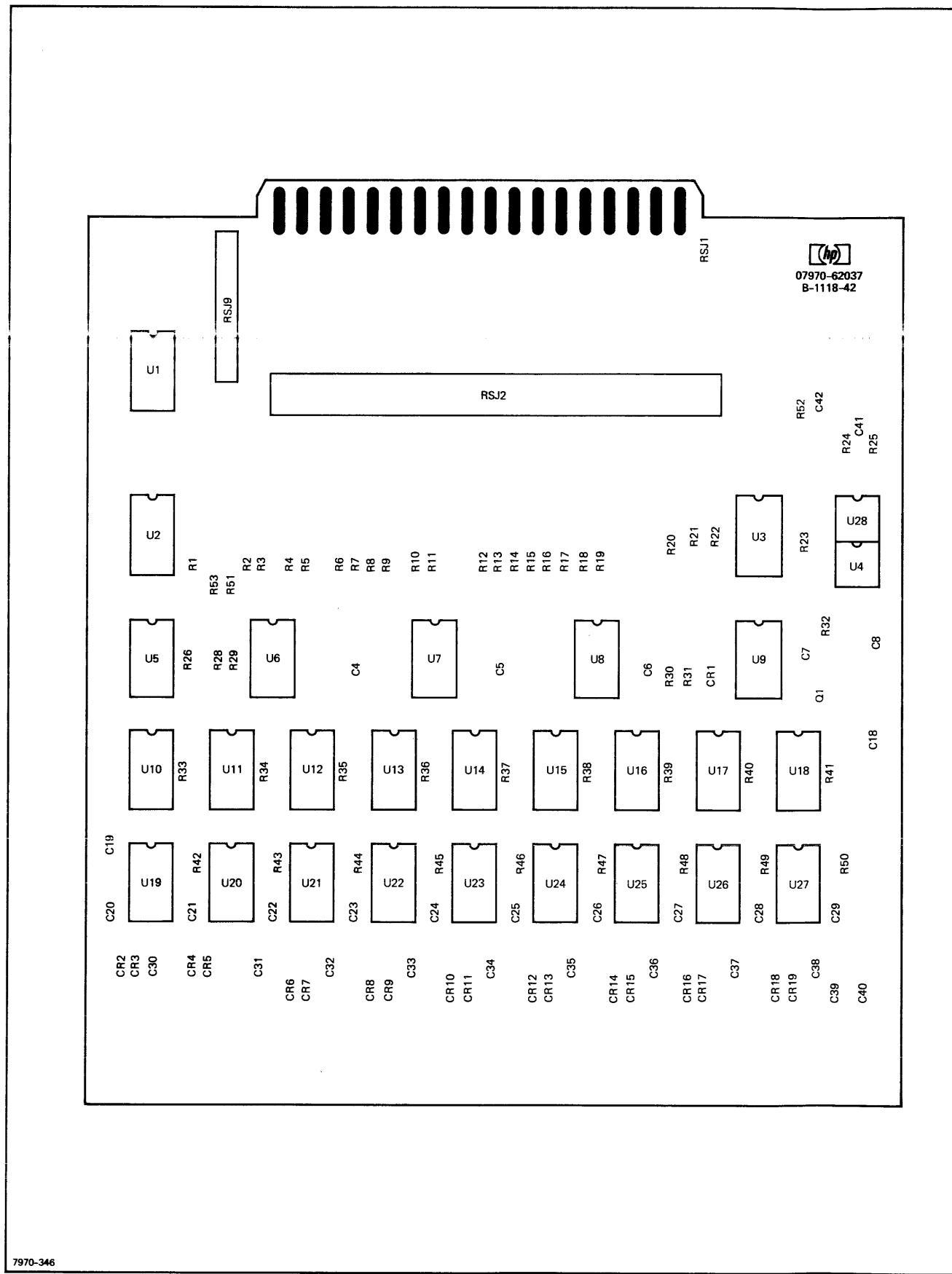
DESCRIPTION
PE READ CONTROL (Series 1430)
C, fxd, 0.01uf, 100V
C, fxd, 300pf, 5%
C, fxd, 2.2uf, 10%
C, fxd, 100uf, 10%
IOT, 2N3904 PL5
R, fxd, 10K, 1%, .125W
R, fxd, 1.62K, 1%, .125W
R, fxd, 220, 5%, .25W
R, fxd, 19.6K, 1%, .125W
R, fxd, 1K, 1%, .125W
31659X
TAL 7420
TAL 7400
TAL 7404
TAL 74107
J02P
H04N
'5A
'30N
'38N
'4P
tal, 9602
J03P
.tal, MC3001P
H108N
'154N
R, PC
Grooved
, fxd, 23.7K, 1%, .125W



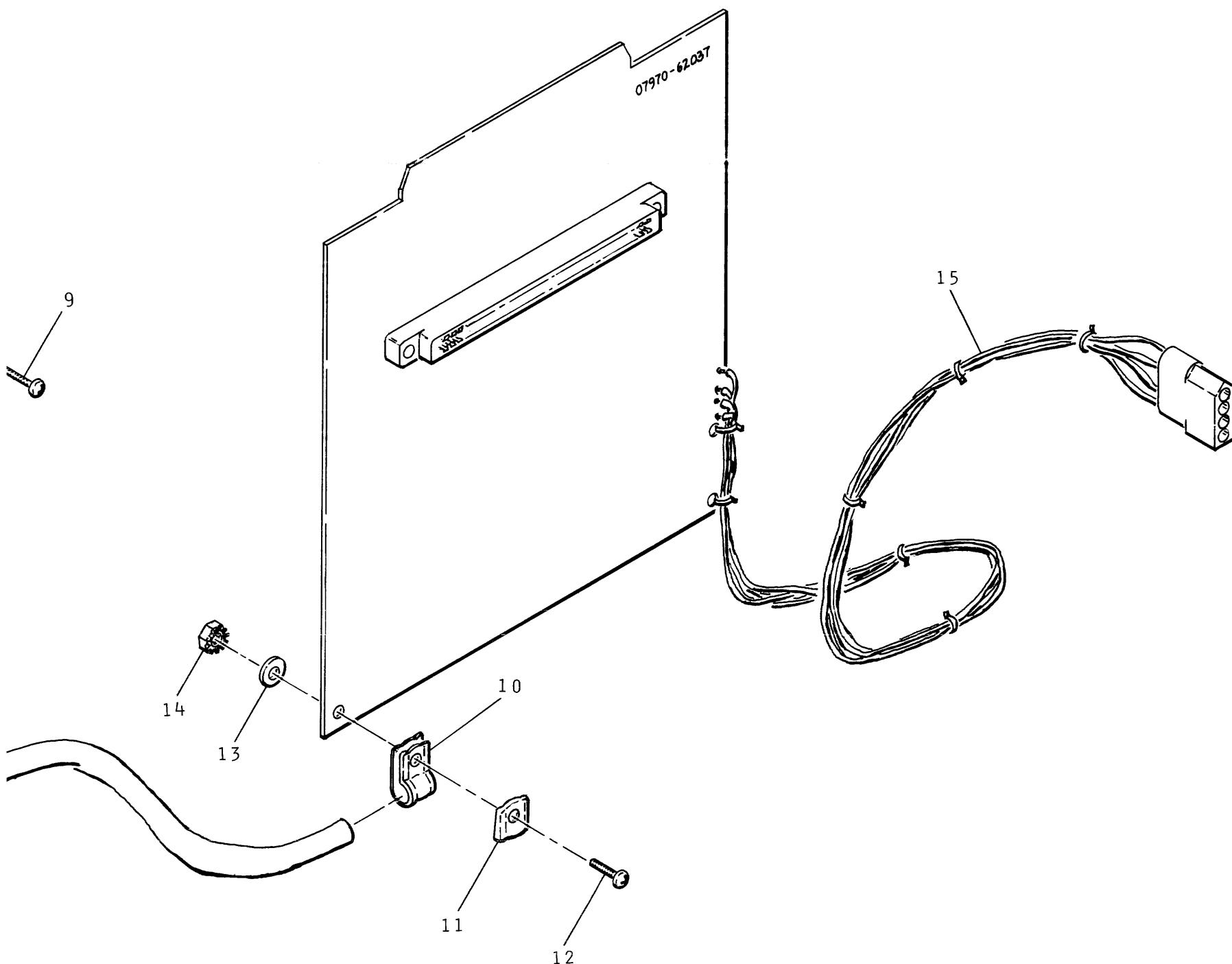




Slave PE Read PC Assembly A44



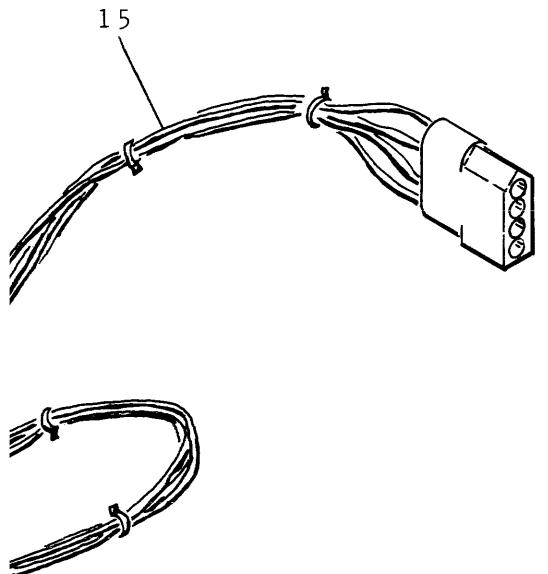
SLAVE PE READ PCA PARTS LIST  
07970-62037 (Series 1118)

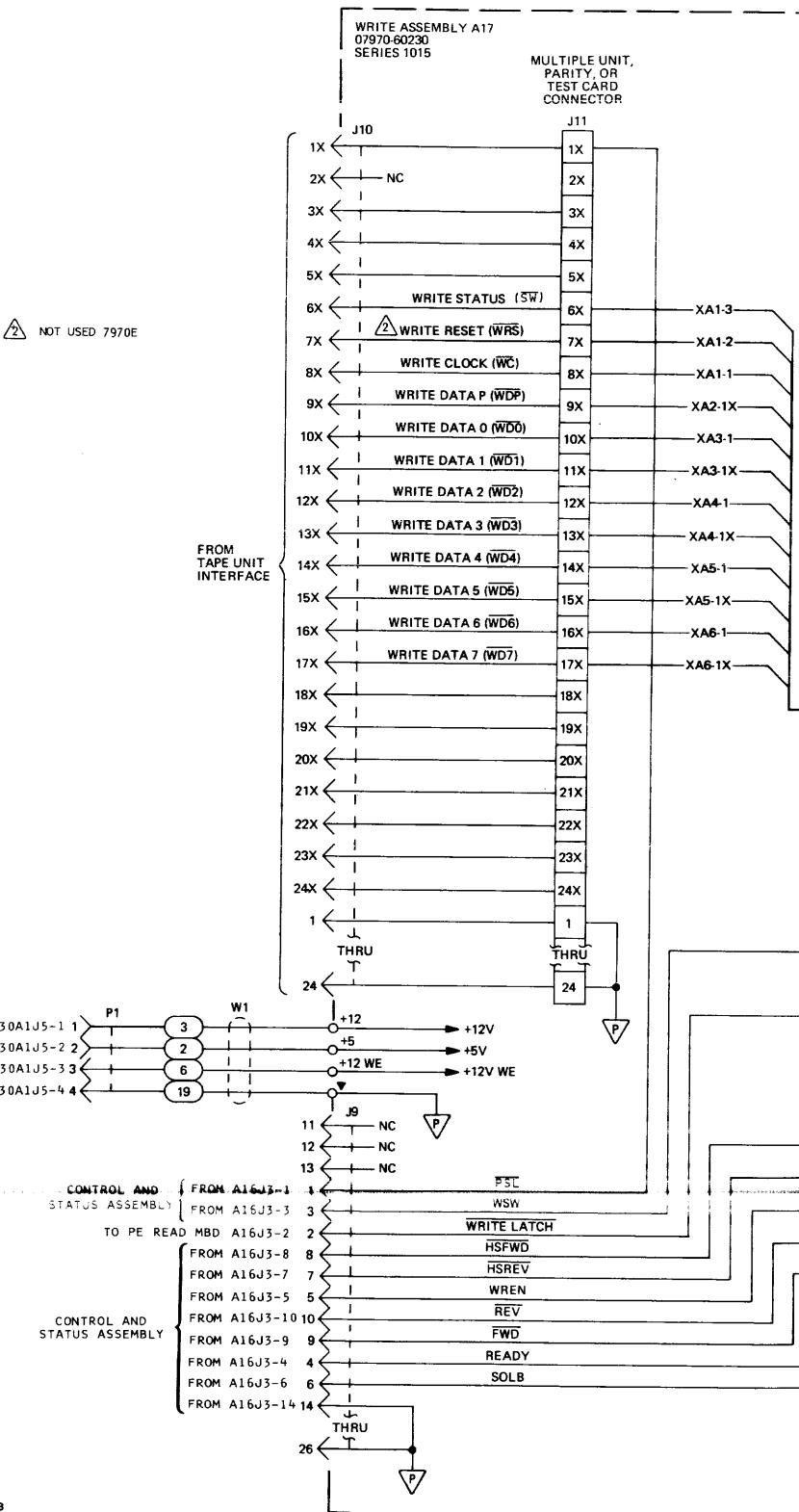
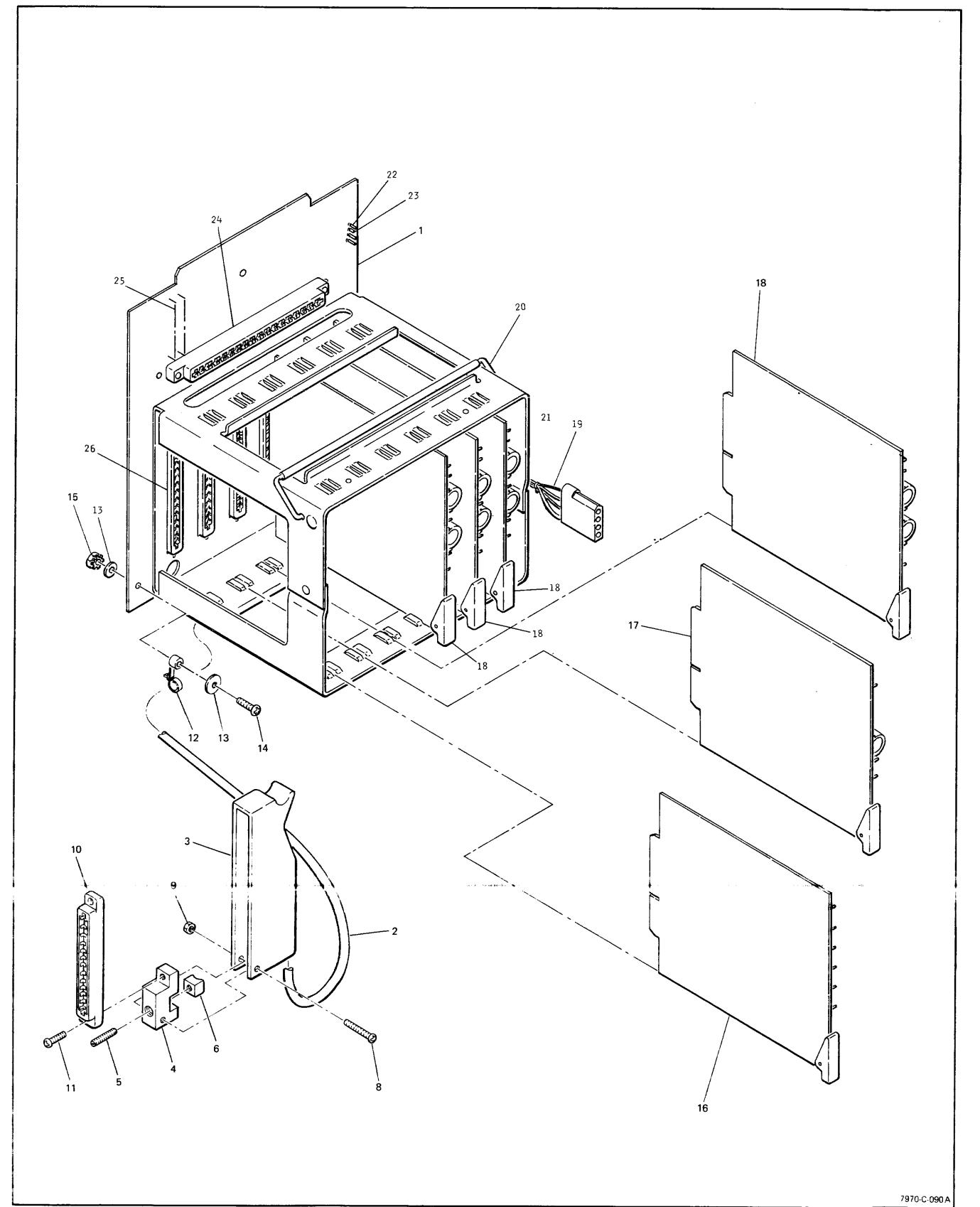


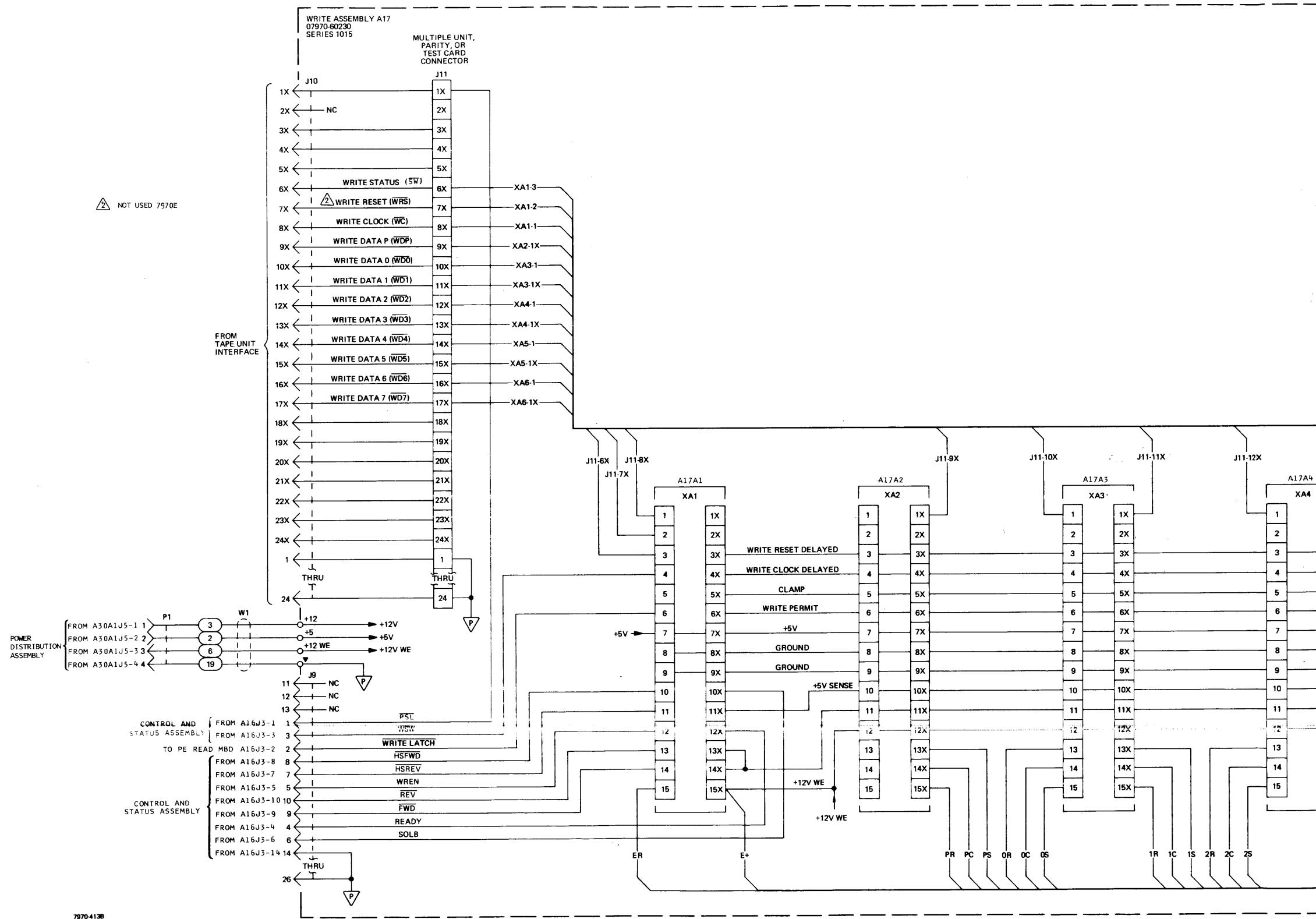
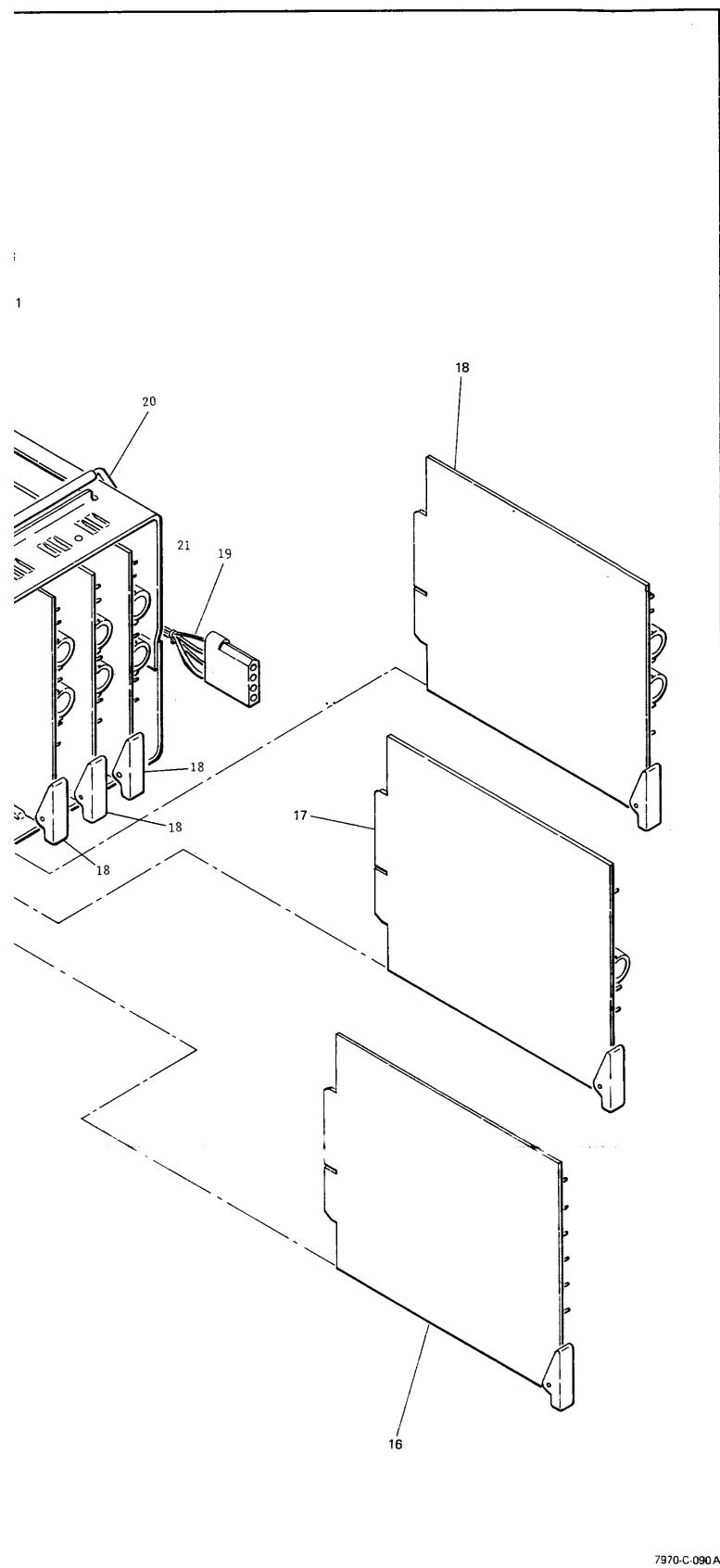
REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62037	SLAVE PE READ PCA (Series 1118)
C4,5,8	0180-0229	CAPACITOR, fxd, 33uf, 10VDC
C6,18,39,40	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
C7	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
C19-38	0160-2055	CAPACITOR, fxd, .01uf, 100V
C41,42	0150-0121	CAPACITOR, fxd, 0.1uf, 10%
CR1	1902-0048	DIODE, Zener, 6.81v
CR2-19	1901-0040	DIODE, 50MA, 30V
Q1	1853-0001	TRANSISTOR, PNP, Silicone T05
	0340-0164	Insulator, Transistor
R1	0698-3450	RESISTOR, fxd, 42.2K, 1%, .125W
R2-20,22,23	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R21,26,32	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R24,25,52	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R28	0698-3154	RESISTOR, fxd, 4.22K, 1%, .125W
R29	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R30	0811-2192	RESISTOR, fxd, 30, 5%
R31	0698-3132	RESISTOR, fxd, 261, 1%, .125W
R33-50	0757-0444	RESISTOR, fxd, 12.1K, 1%, .125W
R51	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R53	0698-3155	RESISTOR, fxd, 4.64K, 1%, .125W
RSJ2	1251-2025	CONNECTOR, PC 2x24
RSJ9	1251-2361	CONTACT PC Male
U1	1820-0069	IC, DIGITAL 7420
U2	1820-0054	IC, DIGITAL 7400
U3,5-9	1820-0621	IC, SN7438N
U4,28	1820-0493	IC, LM307N
U10-18	1820-0398	IC, U6A7710393
U19-27	1826-0055	IC, Linear
INDEX NO.		
1	07970-62077	CABLE, Slave/Master
2	5040-6086	Hood, Connector
3	5040-6072	Block, Connentor, Mounting
4	5040-6003	Clamp, Cable
5	2200-0091	Screw, 4-40, .562 in.
6	2260-0002	Nut, Hex, 4-40
7	3030-0143	Screw, Set, 6-32, .5 in.
8	1251-0159	Connector, PC 2x15, .156
9	0624-0098	Screw, Tapping 4-40
10	1400-0187	CLAMP, Cable, 0.250 in.
11	3050-0227	Washer, Flat
12	2360-0201	Screw, 6-32, .5 in.
13	2190-0034	Washer, Lock, #10
14	2420-0001	Nut, Hex, 6-32
15	07970-62098	CABLE, Power

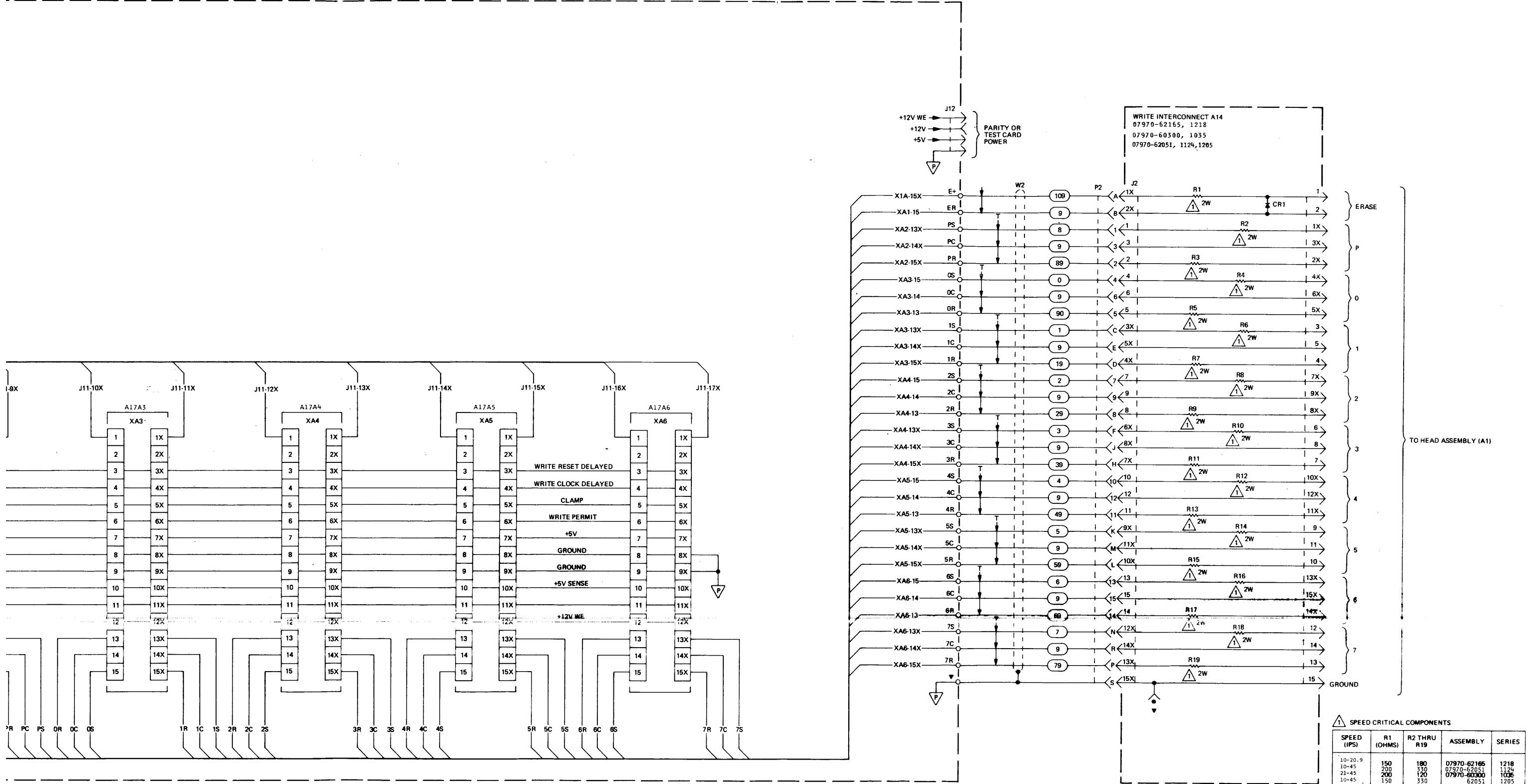
SLAVE PE READ PCA PARTS LIST  
07970-62037 (Series 1118)

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62037	SLAVE PE READ PCA (Series 1118)
C4,5,8	0180-0229	CAPACITOR, fxd, 33uf, 10VDC
C6,18,39,40	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
C7	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
C19-38	0160-2055	CAPACITOR, fxd, .01uf, 100V
C41,42	0150-0121	CAPACITOR, fxd, 0.1uf, 10%
CR1	1902-0048	DIODE, Zener, 6.81v
CR2-19	1901-0040	DIODE, 50MA, 30V
Q1	1853-0001	TRANSISTOR, PNP, Silicone T05
	0340-0164	Insulator, Transistor
R1	0698-3450	RESISTOR, fxd, 42.2K, 1%, .125W
R2-20,22,23	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R21,26,32	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R24,25,52	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R28	0698-3154	RESISTOR, fxd, 4.22K, 1%, .125W
R29	0757-0199	RESISTOR, fxd, 21.5K, 1%, .125W
R30	0811-2192	RESISTOR, fxd, 30, 5%
R31	0698-3132	RESISTOR, fxd, 261, 1%, .125W
R33-50	0757-0444	RESISTOR, fxd, 12.1K, 1%, .125W
R51	0757-0443	RESISTOR, fxd, 11K, 1%, .125W
R53	0698-3155	RESISTOR, fxd, 4.64K, 1%, .125W
RSJ2	1251-2025	CONNECTOR, PC 2x24
RSJ9	1251-2361	CONTACT PC Male
U1	1820-0069	IC, DIGITAL 7420
U2	1820-0054	IC, DIGITAL 7400
U3,5-9	1820-0621	IC, SN7438N
U4,28	1820-0493	IC, LM307N
U10-18	1820-0398	IC, U6A7710393
U19-27	1826-0055	IC, Linear
INDEX NO.		
1	07970-62077	CABLE, Slave/Master
2	5040-6086	Hood, Connector
3	5040-6072	Block, Connentor, Mounting
4	5040-6003	Clamp, Cable
5	2200-0091	Screw, 4-40, .562 in.
6	2260-0002	Nut, Hex, 4-40
7	3030-0143	Screw, Set, 6-32, .5 in.
8	1251-0159	Connector, PC 2x15, .156
9	0624-0098	Screw, Tapping 4-40
10	1400-0187	CLAMP, Cable, 0.250 in.
11	3050-0227	Washer, Flat
12	2360-0201	Screw, 6-32, .5 in.
13	2190-0034	Washer, Lock, #10
14	2420-0001	Nut, Hex, 6-32
15	07970-62098	CABLE, Power





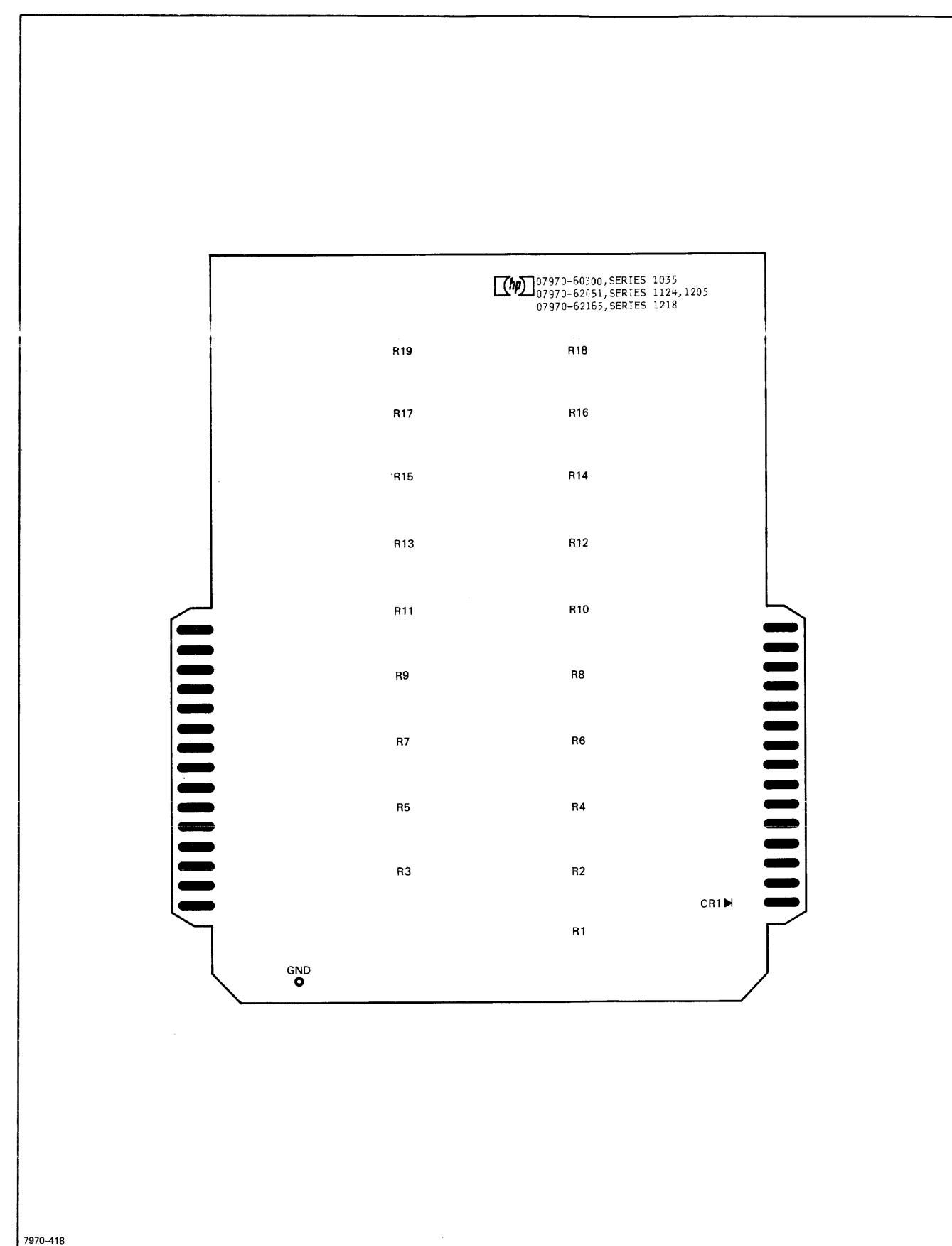




Write Interconnect PC Assembly A14  
and Write Motherboard Assembly A17

WRITE MOTHERBOARD ASSEMBLY PARTS LIST  
07970-60230 (Series 1015)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-60230	WRITE MOTHERBOARD ASSEMBLY (Series 1015)
2	8120-0689	CABLE, Write Motherboard
3	5040-6086	HOOD, Connector
4	5040-6072	CONNECTOR, Mounting Block
5	3030-0143	SCREW, Set, 6-32, .5 in.
6	5040-6003	CLAMP, Cable
7	2190-0061	WASHER, Lock, #4, Hel
8	2200-0091	SCREW, 4-40, .562 in.
9	2260-0002	NUT, 4-40
10	1251-0159	CONNECTOR, PC, 2x15
11	0624-0098	SCREW, Tap, 4-40
12	1400-0440	CLAMP, Cable
13	3050-0066	WASHER, Flat, #6
14	2360-0201	SCREW, 6-32, .5 in.
15	2420-0001	NUT, Hex, 6-32
16		WRITE CONTROL PC ASSY
17		WRITE DATA PC ASSY, Single Channel
18		WRITE DATA PC ASSY, Dual Channel
19	07970-60410	CABLE ASSEMBLY, Write, power
20	1460-0573	SPRING, Retaining, PC Board
21	1400-0795	TIE, Cable, Spiral
22	1251-2504	CONNECTOR, Contact, Male
23	1251-2503	CONNECTOR, Contact, Female
24	1251-2025	CONNECTOR, PC, 24 Pin
25	1251-2361	CONTACT, Male, 26 Pin
26	1251-1886	CONNECTOR, PC, 15 Pin
	1251-1115	KEY, PC Connector

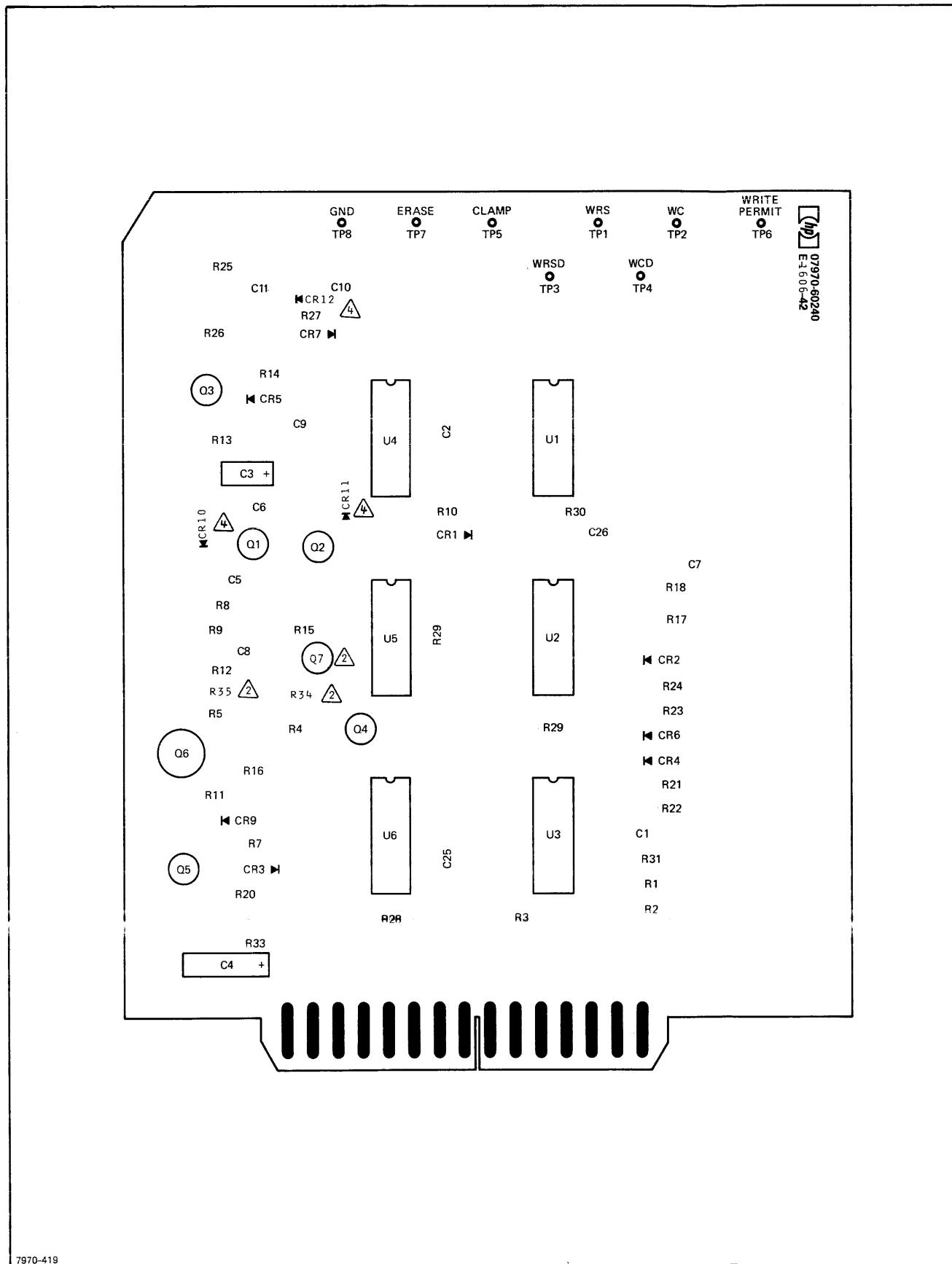


WRITE INTERCONNECT PCA PARTS LIST  
 07970-60300 (Series 1035)  
 07970-62051 (Series 1124,1205)  
 07970-62165 (Series 1218)

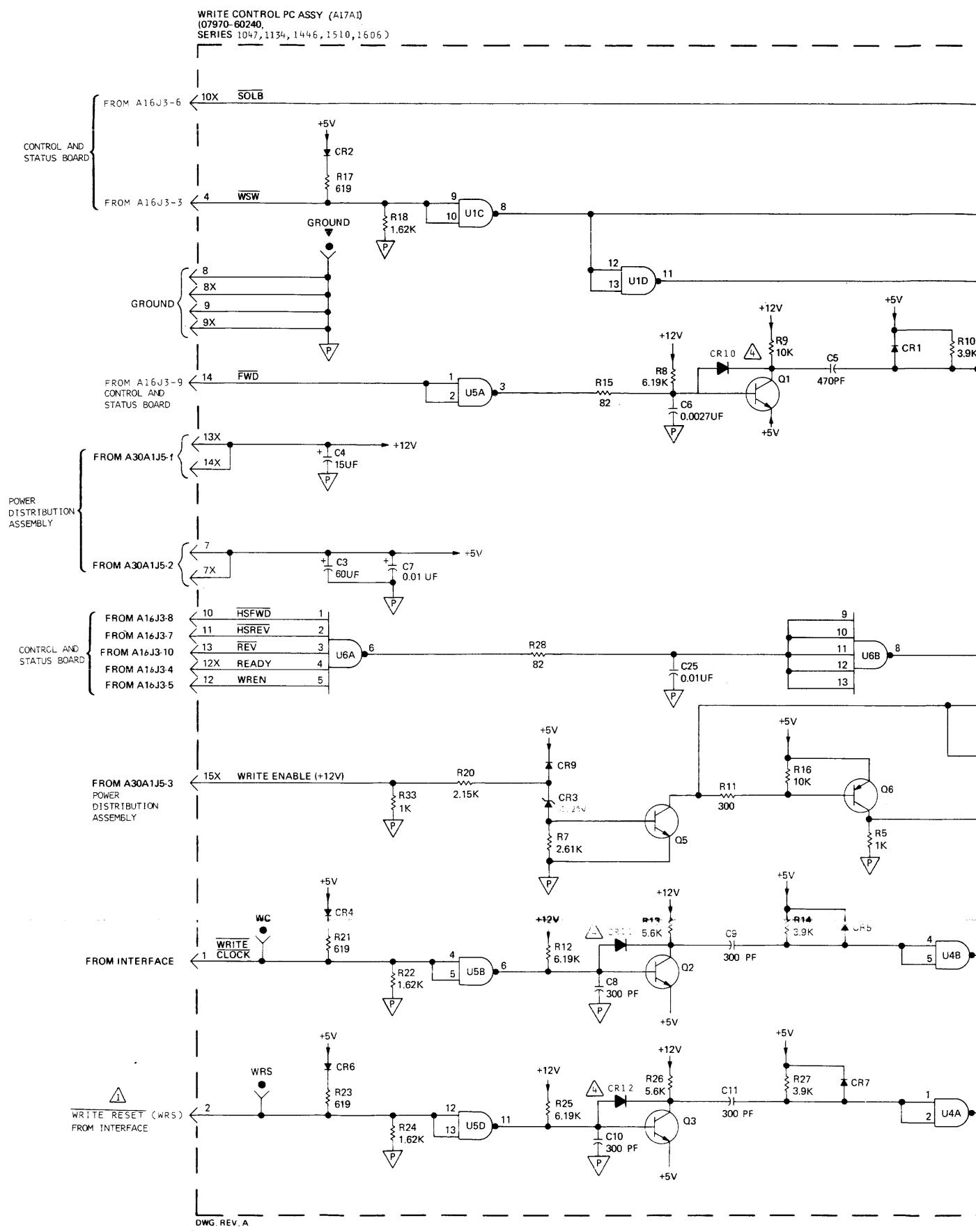
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
CR1	07970-60300	WRITE INTERCONNECT PCA (Series 1035)
*R1	1901-0025	DIODE, 100V
*R2-19	0698-3627	RESISTOR, fxd, 200, 5%, 2W
	0698-3622	RESISTOR, fxd, 120, 5%, 2W
	07970-00440	BRACKET, Write Interconnect
	2360-0197	SCREW, 6-32, .375 Pan
	2190-0918	WASHER, Lock, #6, Hel
	3050-0228	WASHER, Flat, .312
*R1	07970-62051	(Series 1124)
*R2-19	0698-3627	RESISTOR, fxd, 200, 5%, 2W
	0698-3631	RESISTOR, fxd, 330, 5%, 2W
*R1	07970-62051	(Series 1205)
*R2-19	0698-3624	RESISTOR, fxd, 150, 5%, 2W
	0698-3631	RESISTOR, fxd, 330, 5%, 2W
*R1	07970-62165	(Series 1218)
*R2-19	0698-3624	RESISTOR, fxd, 150, 5%, 2W
	0698-3626	RESISTOR, fxd, 180, 5%, 2W

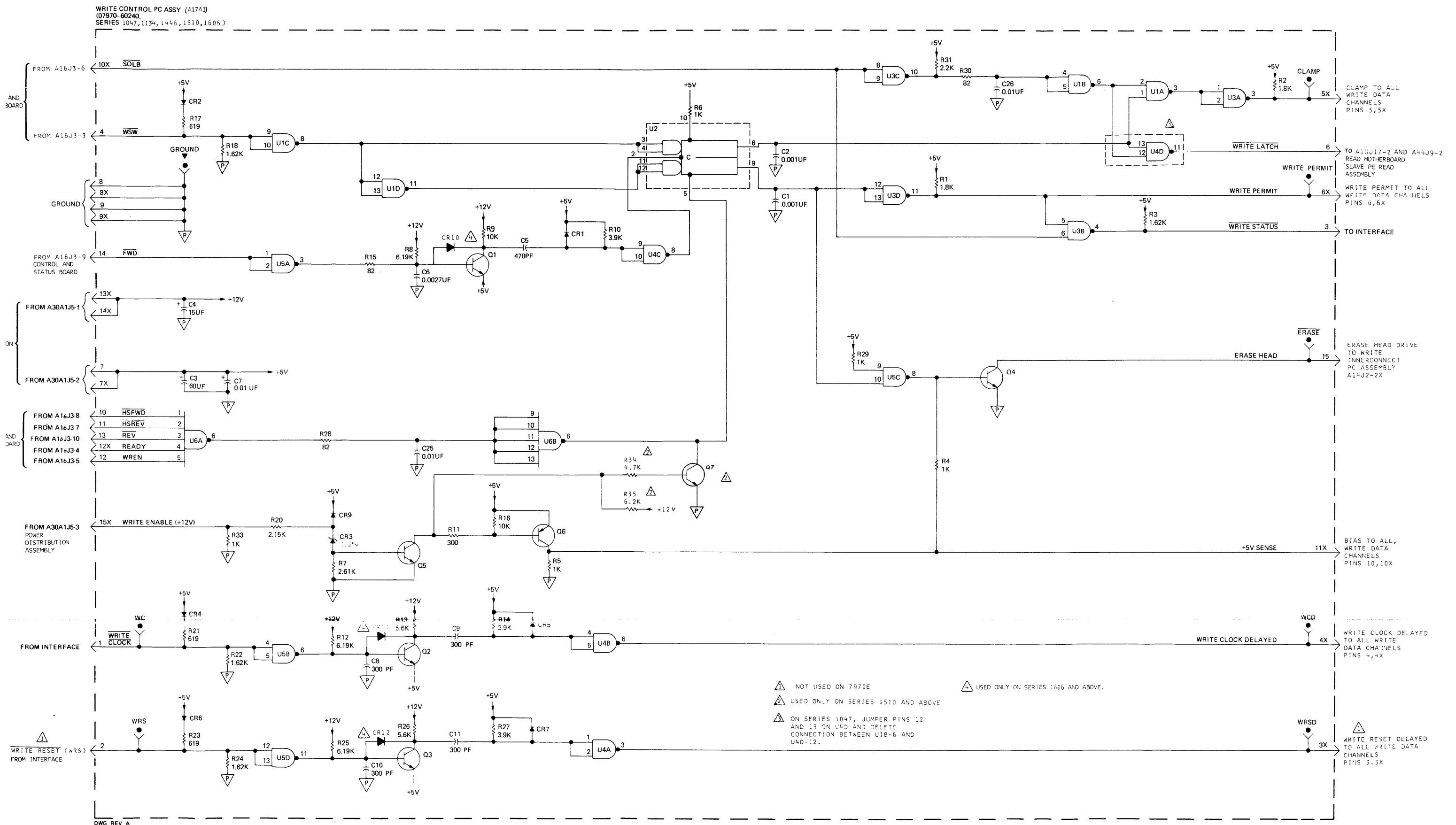
CR1▶

Write Interconnect PC Assembly A1  
 and Write Motherboard Assembly A1



WRITE CONTROL PC ASSY (A17A1)  
(07970-60240,  
SERIES 1047, 1134, 1446, 1510, 1606)





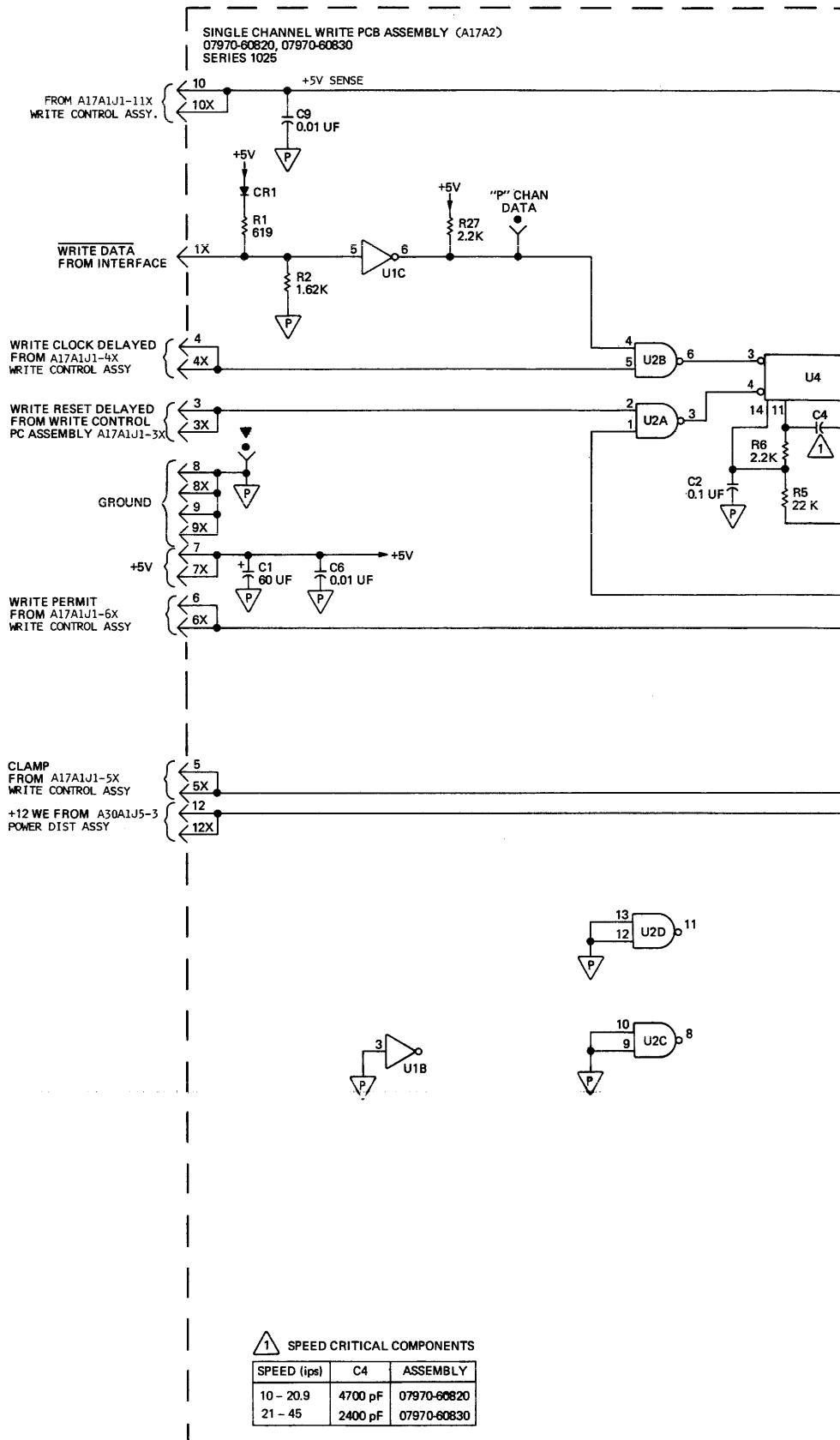
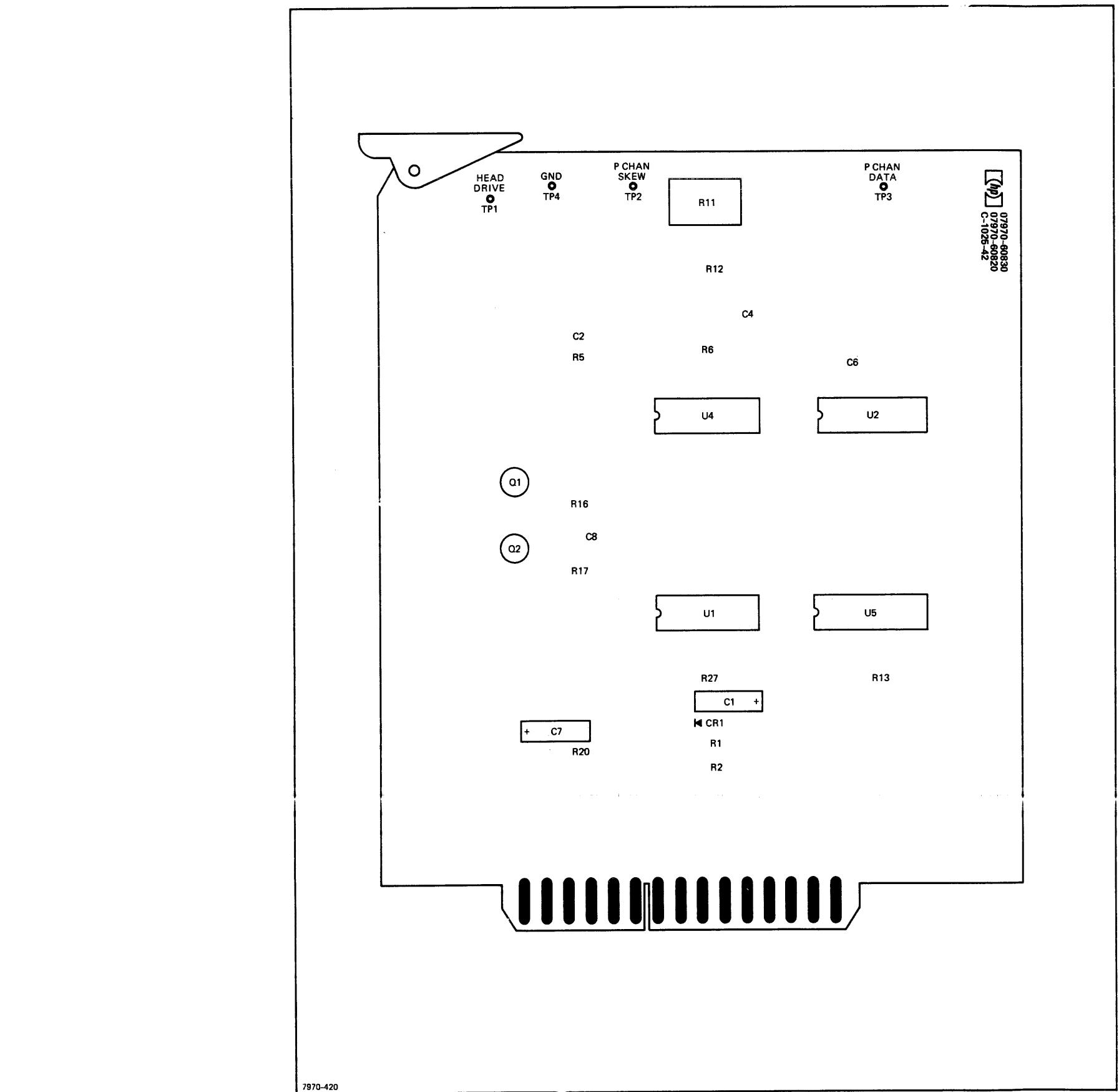
## WRITE CONTROL PCA PARTS LIST

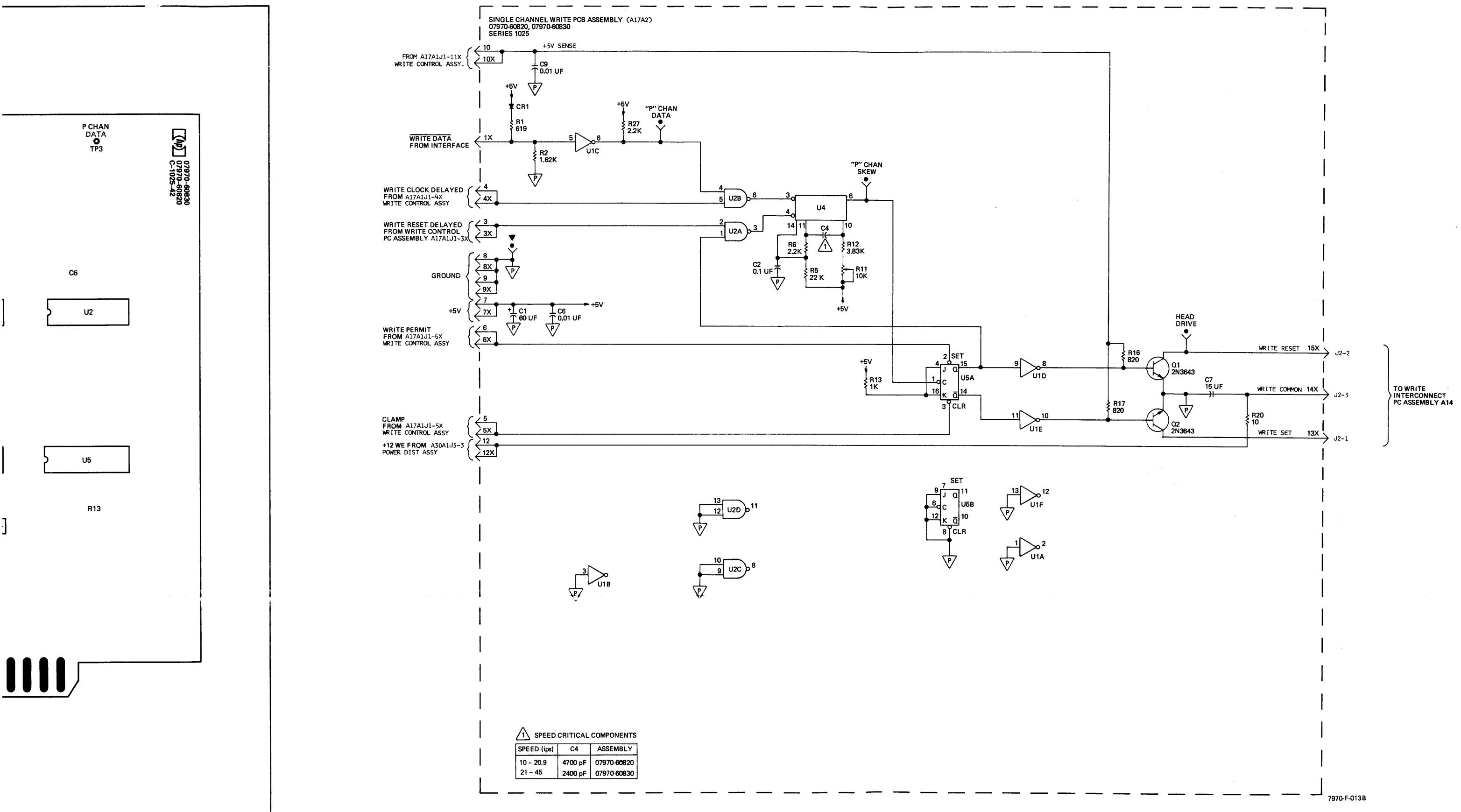
07970-60240 (Series 1047, 1134, 1446, 1510, 1606)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60240	WRITE CONTROL PCA (Series 1134)
C1,2	0160-0153	CAPACITOR, fxd, .001uf, 10%
C3	0180-0106	CAPACITOR, fxd, 60uf, 20%
C4	0180-1746	CAPACITOR, fxd, 15uf, 10%
C5	0160-2210	CAPACITOR, fxd 470pf, 5%
C6	0160-0300	CAPACITOR, fxd, .0027uf, 200V
C7	0160-2055	CAPACITOR, fxd, .01uf, 100V
C8-11	0160-2207	CAPACITOR, fxd, 300pf, 5%
C25,26	0160-0161	CAPACITOR, fxd, .01uf, 10%
CR1,5,7	1910-0016	DIODE, 1N292, 60V
CR2,4,6,9	1901-0040	DIODE, 30V, 50ma
CR3	1902-1261	DIODE, Zener
*CR10,11,12	1901-0539	DIODE, Schottky
*Q1,2,3,5,7	1854-0270	TRANSISTOR, 2N4265 PL5
Q4	1854-0246	TRANSISTOR, 2N3643 PL5
Q6	1853-0016	TRANSISTOR, 2N3638 T092
R1,2	0683-1825	RESISTOR, fxd, 1800, 5%, .25W
R3,18,22,24	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R4,5,6,29,33	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R7	0698-0085	RESISTOR, fxd, 2.61K, 1%, .125W
R8,12,25	0757-0290	RESISTOR, fxd, 6.19K, 1%, .125W
R9,16	0683-1035	RESISTOR, fxd, 10K, 5%, .25W
R10,14,27	0683-3925	RESISTOR, fxd, 3900, 5%, .25W
R11	0683-3015	RESISTOR, fxd, 300, 5%, .25W
R13,26	0683-5625	RESISTOR, fxd, 5600, 5%, .25W
R15,28,30	0683-8205	RESISTOR, fxd, 82, 5%, .25W
R17,21,23	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R20	0698-0084	RESISTOR, fxd, 2.15K, 1%, .125W
R31	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
*R34	0683-4725	RESISTOR, fxd, 4.7K, 5%, .25W
*R35	0683-6225	RESISTOR, fxd, 6.2K, 5%, .25W
U1,4	1820-0054	IC, DIGITAL 7400
U2	1820-0095	IC, MC848P
U3	1820-0256	IC, MC858P
U5	1820-0269	IC, SN7403N
U6	1820-0441	IC, MC1801P
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved
	Series 1134 NO PARTS CHANGE	
	Series 1446 1854-0215	TRANSISTOR, 2N3904
*Q1-3,5,7		

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
*Q1-3,5,7	Series 1510 1854-0215 0683-4725 0683-6225	TRANSISTOR, 2N3904, Added to PCA RESISTOR, fxd, 4.7K, 5%, .25W RESISTOR, fxd, 6.2K, 5%, .25W
*R34	Series 1606 1901-0539 1854-0215 0683-4725 0683-6225	CR10-12 added to PCA DIODE, Schottky TRANSISTOR, 2N3904, RESISTOR, fxd, 4.7K, 5%, .25W RESISTOR, fxd, 6.2K, 5%, .25W
*R35		

F. DES./ DEX NO.	HP PART NO.	DESCRIPTION
-3,5,7 4 5	Series 1510 1854-0215 0683-4725 0683-6225	TRANSISTOR, 2N3904, Added to PCA RESISTOR, fxd, 4.7K, 5%, .25W RESISTOR, fxd, 6.2K, 5%, .25W
10-12 -3,5,7 4 5	Series 1606 1901-0539 1854-0215 0683-4725 0683-6225	CR10-12 added to PCA DIODE, Schottky TRANSISTOR, 2N3904, RESISTOR, fxd, 4.7K, 5%, .25W RESISTOR, fxd, 6.2K, 5%, .25W





Single Channel Write Data PC Assembly A17A2

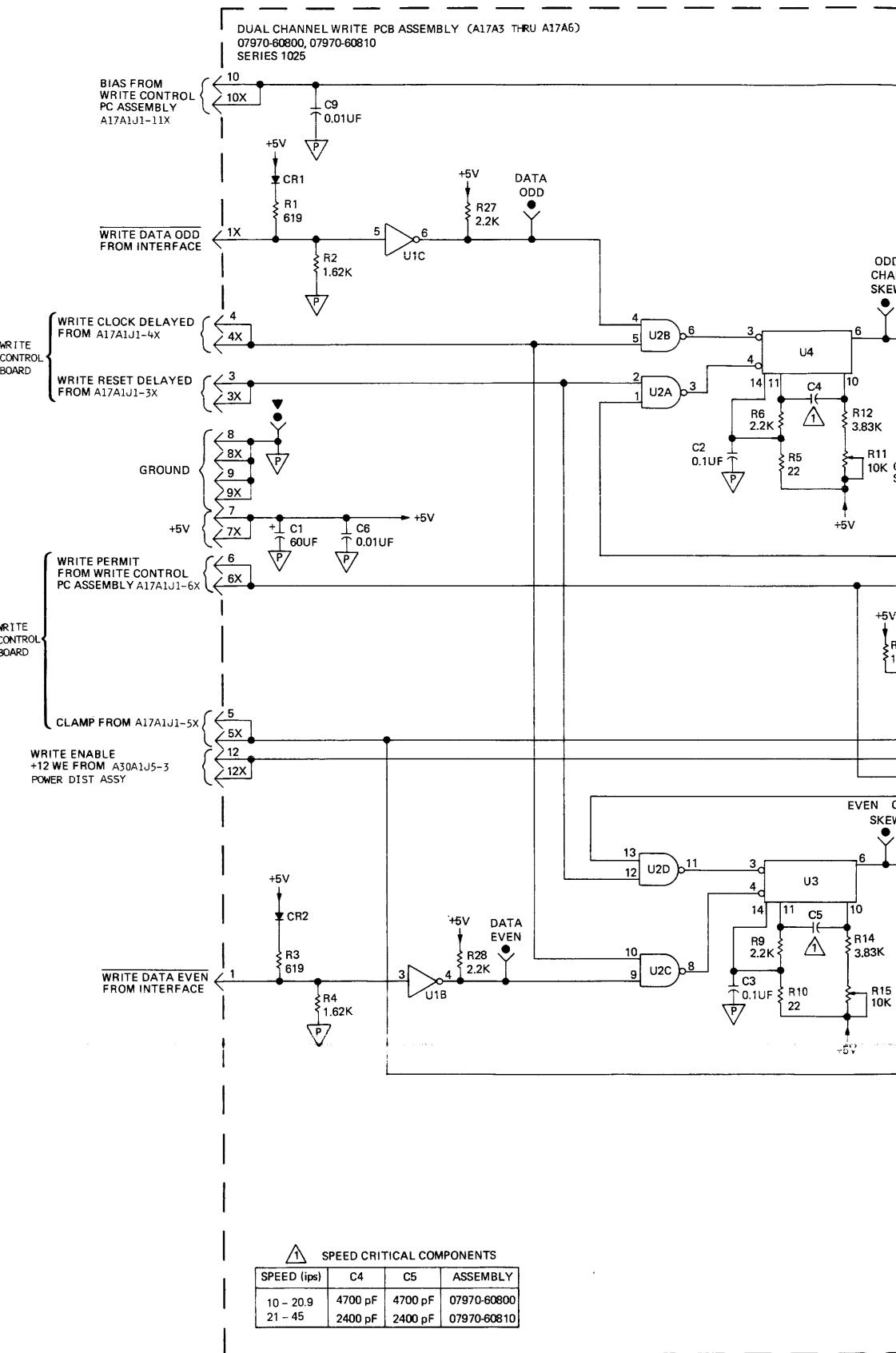
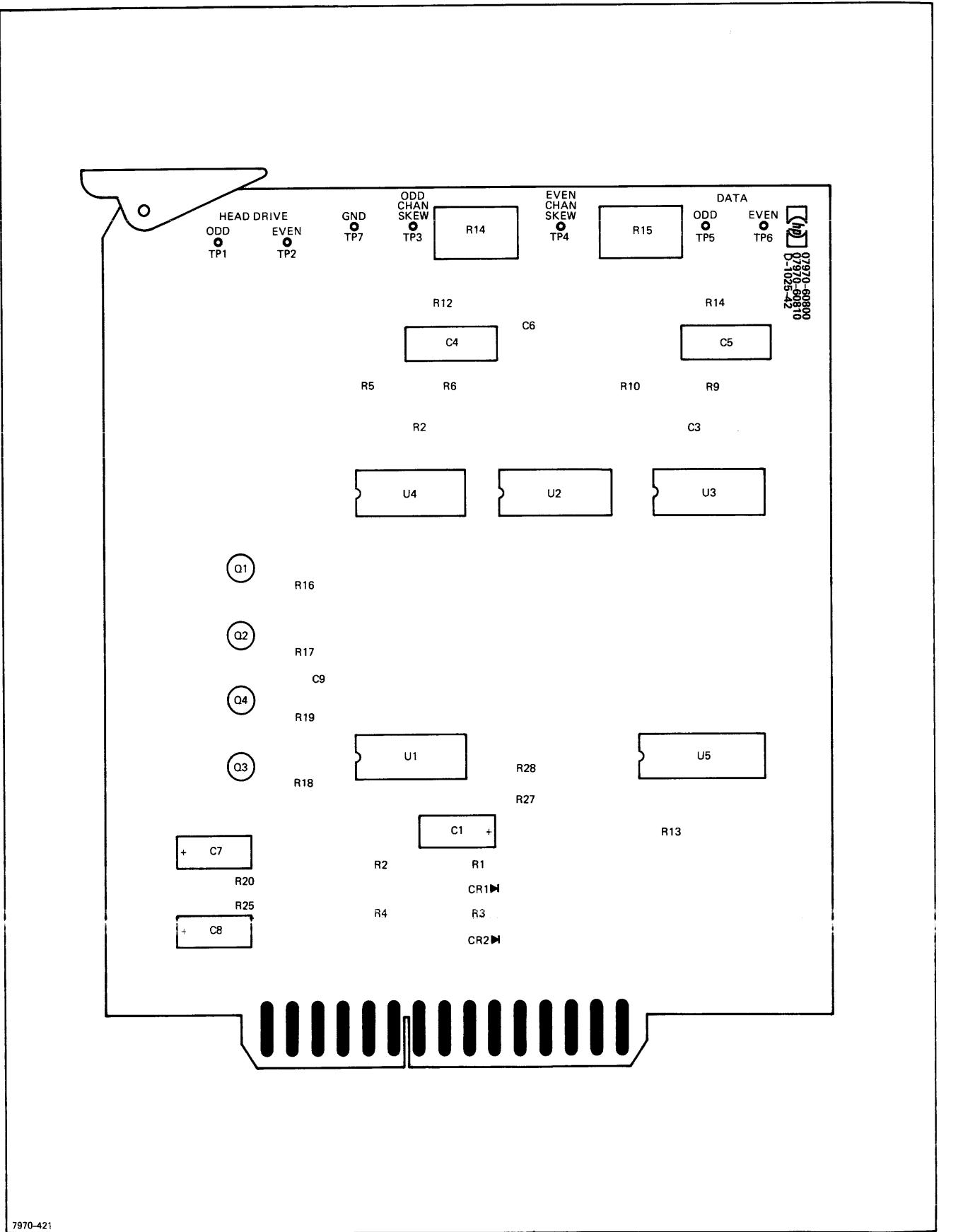
SINGLE CHANNEL WRITE DATA PCA PARTS LIST  
 07970-60820 (Series 1025)  
 07970-60830 (Series 1025)

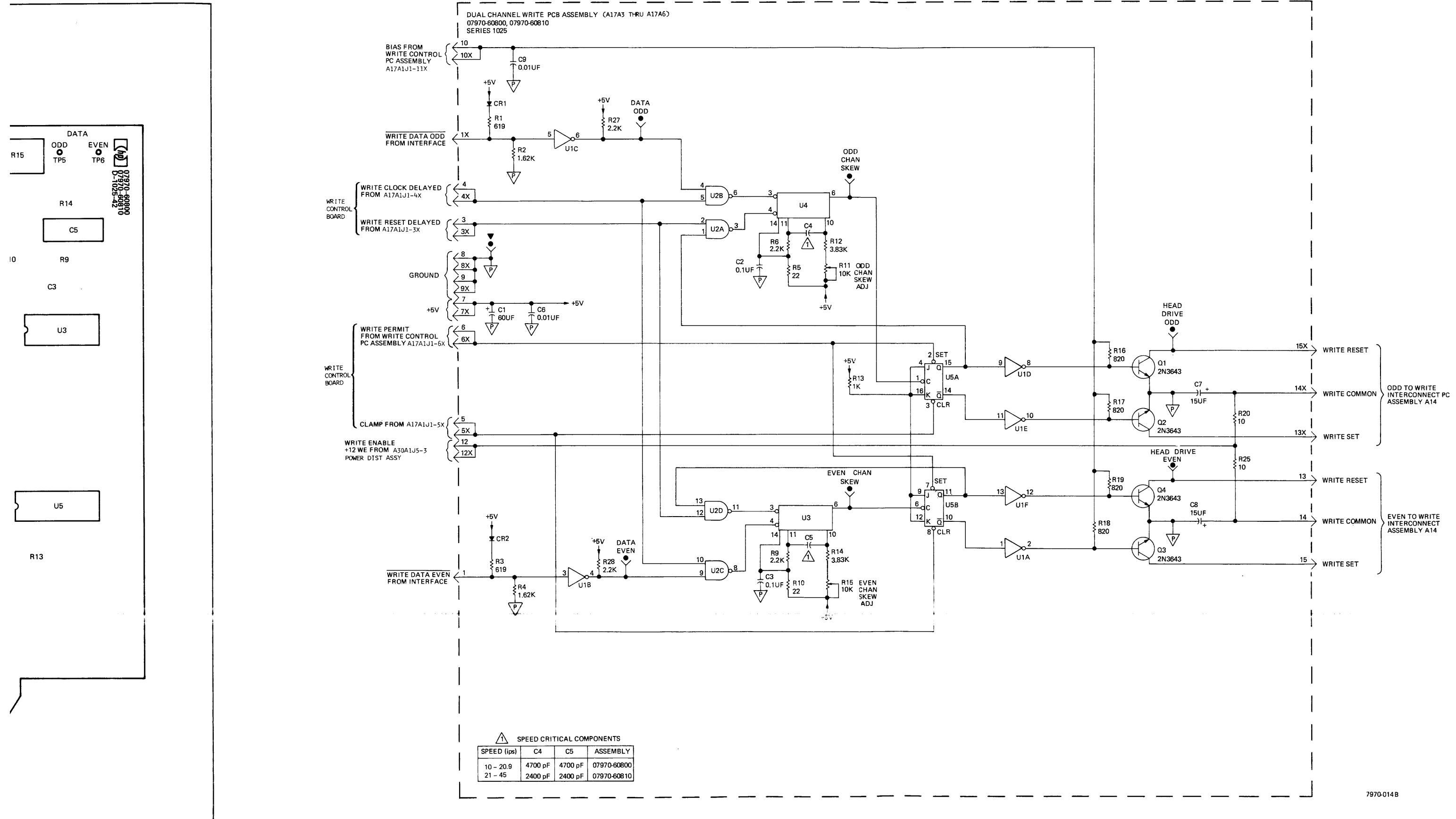
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60820	SINGLE CHANNEL WRITE DATA PCA (Series 1025)
C1	0180-0106	CAPACITOR, fxd, 60uf, 20%
C2	0150-0121	CAPACITOR, fxd, .1uf, 10%
<sup>1</sup> C4	0160-2373	CAPACITOR, fxd, 4700pf, 2%
C6, 9	0160-2055	CAPACITOR, fxd, .01uf, 100V
C7	0180-1746	CAPACITOR, fxd, 15uf, 10%
CR1	1901-0040	DIODE, 30V, 50MA
Q1, 2	1854-0246	TRANSISTOR, 2N3643, PL5
R1	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R2	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R5	0683-2205	RESISTOR, fxd, 22, 5%, .25W
R6, 27	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R11	2100-1761	RESISTOR, Variable, 10K, 5%
R12	0698-3153	RESISTOR, 3.83K, 1%, .125W
R13	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R16, 17	0683-8215	RESISTOR, fxd, 820, 5%, .25W
R20	0683-1005	RESISTOR, fxd, 10, 5%, .25W
U1	1820-0479	IC, MC835P
U2	1820-0094	IC, MC846P
U4	1820-0088	IC, MC851P
U5	1820-0076	IC, Digital 7476
	5040-6001	EXTRACTOR PC
	1480-0116	PIN, Grooved, .062 in.

<sup>1</sup> 07970-60830 PCA's use 2400pf,  
 part number 0160-2227

.025)

Single Channel Write Data PC Assembly A17A2





## DUAL CHANNEL WRITE PCA PARTS LIST

07970-60800 (Series 1025)

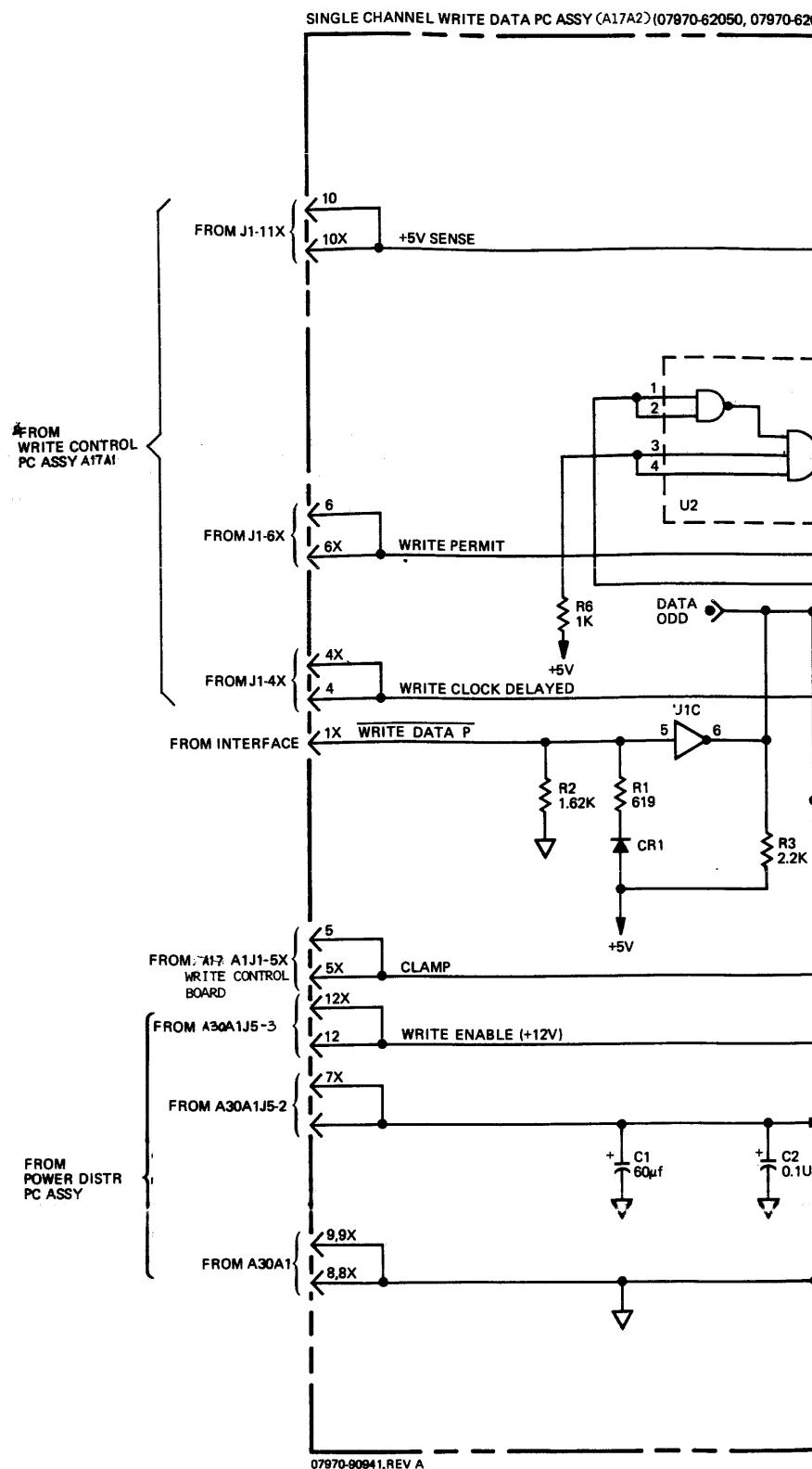
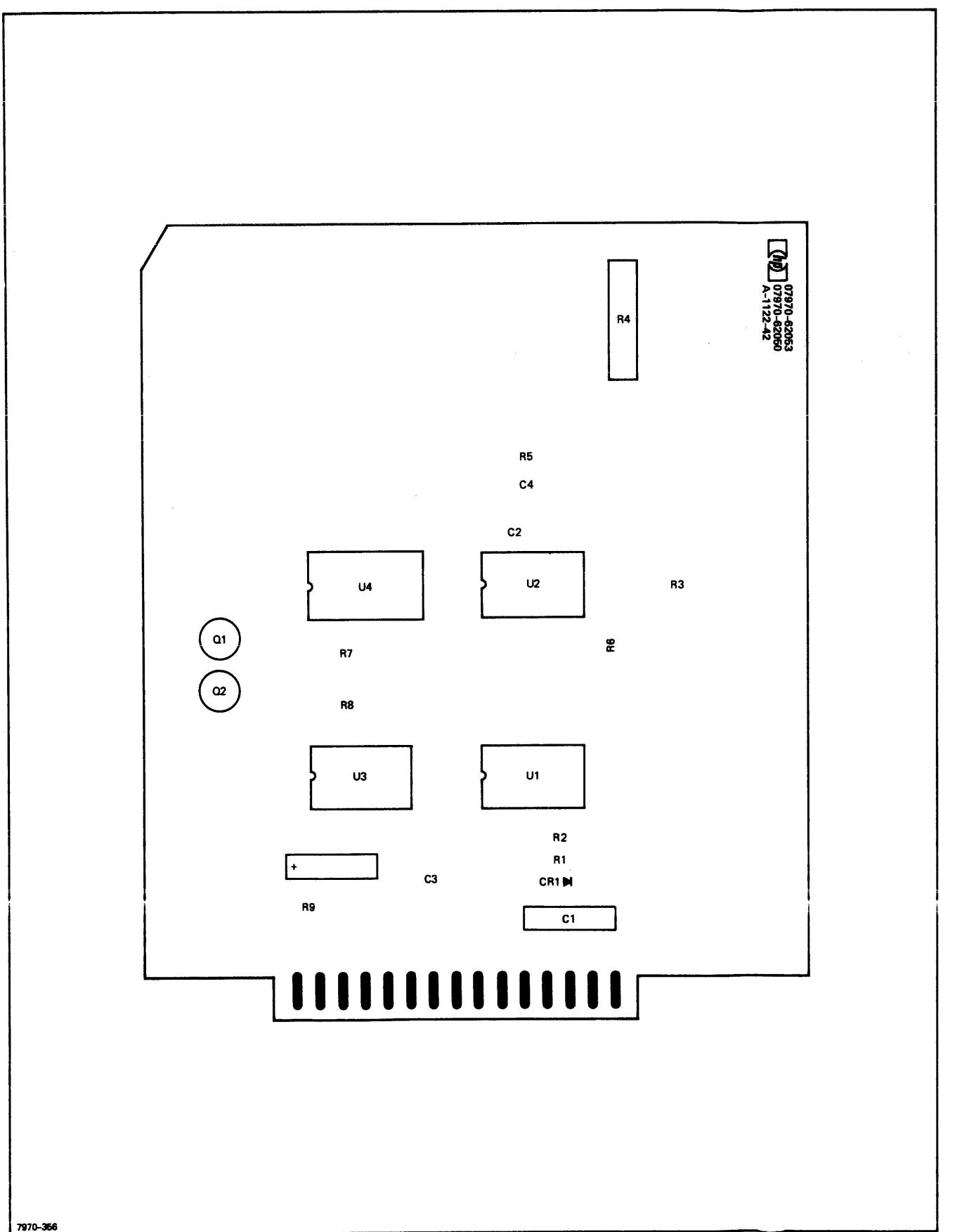
07970-60810 (Series 1025)

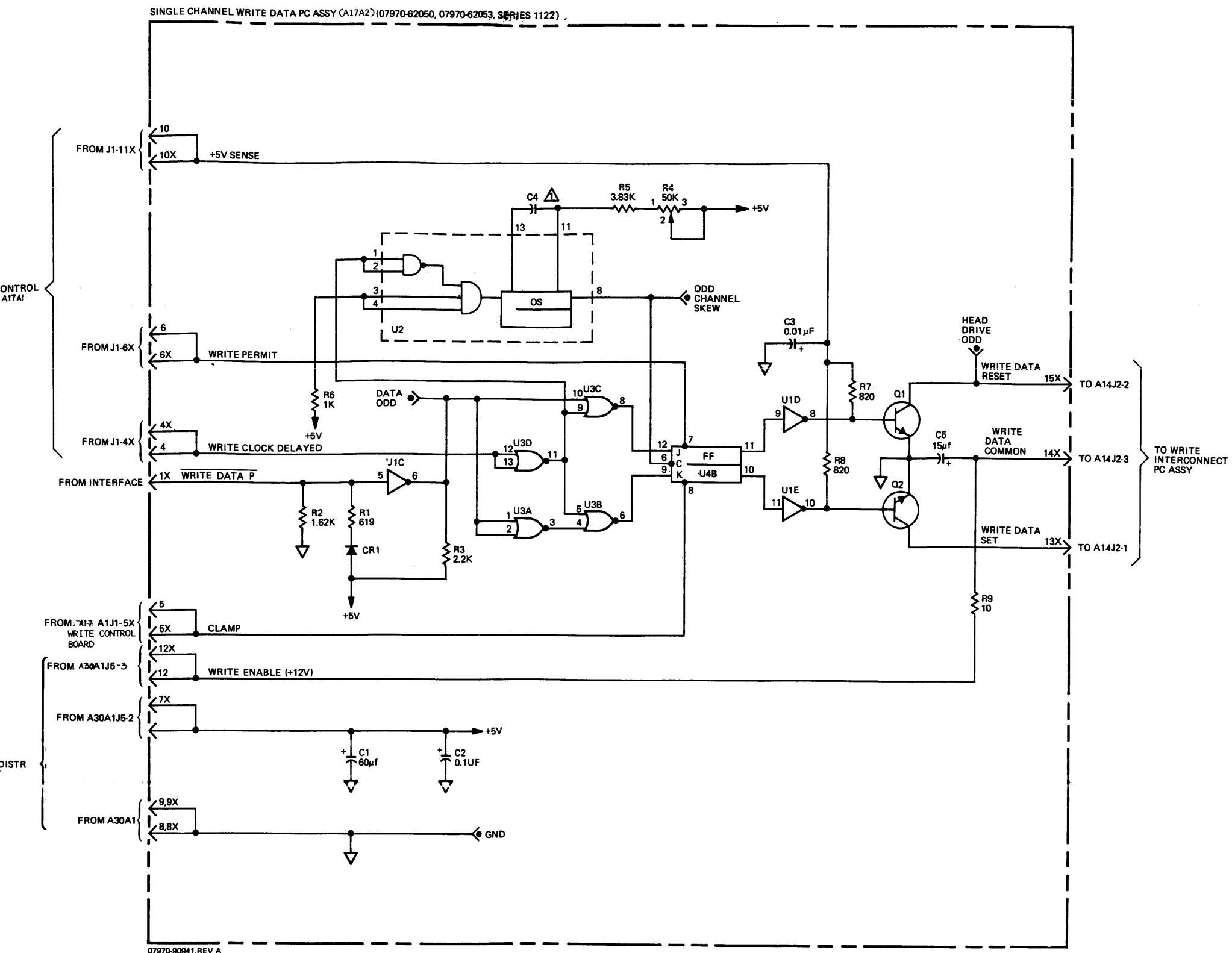
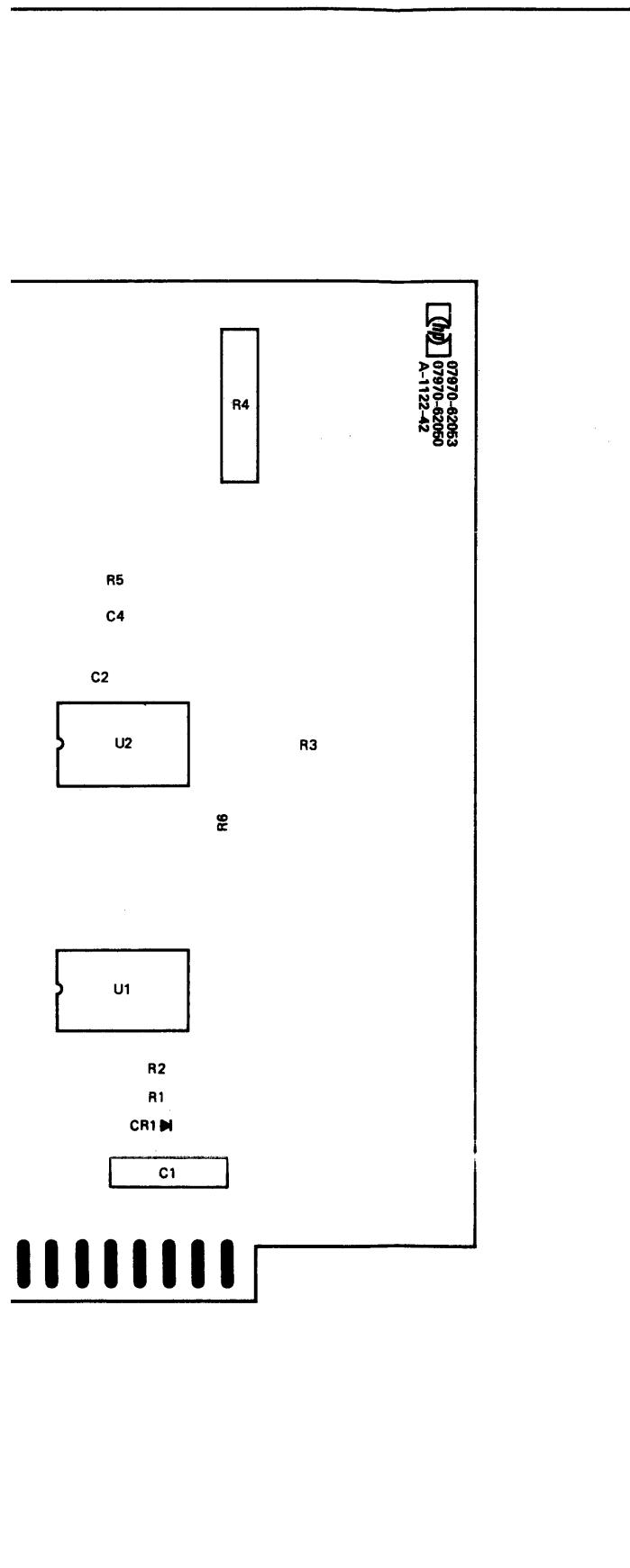
REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-60800	DUAL CHANNEL WRITE DATA PCA (Series 1025)
C1	0180-0106	CAPACITOR, fxd, 60uf
C2,3	0150-0121	CAPACITOR, fxd, 0.1uf
1 C4,5	0160-2373	CAPACITOR, fxd, 4700pf
C6,9	0160-2055	CAPACITOR, fxd, 0.01uf
C7,8	0180-1746	CAPACITOR, fxd, 15uf
CR1,2	1901-0040	DIODE, 30V, 50 MA
Q1-4	1854-0246	TRANSISTOR, 2N3643, PLS
R1,3	0757-0418	RESISTOR, fxd, 619, .125W
R2,4	0757-0428	RESISTOR, fxd, 1.62K, .125W
R5,10	0683-2205	RESISTOR, fxd, 22, .25W
R6,9,27,28	0683-2225	RESISTOR, fxd, 2.2K, .25W
R11,15	2100-1761	RESISTOR, fxd, 10K
R12,14	0698-3153	RESISTOR, fxd, 3.83K, .125W
R13	0683-1025	RESISTOR, fxd, 1K, .25W
R16-19	0683-8215	RESISTOR, fxd, 820, .25W
R20,25	0683-1005	RESISTOR, fxd, 10, .25W
U1	1820-0479	IC, MC835P
U2	1820-0094	IC, MC846P
U3,4	1820-0088	IC, MC851P
U5	1820-0076	IC, DIGITAL FF 7476
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved, .062 in.

1 On 07970-60810 PCA's C4,5 are 2400pf, part number 0160-2227.

025)

Dual Channel Write Data PC Assembly  
A17A3 thru A17A6





PE Single Channel Write Data PC Assembly  
A17A2

## PE SINGLE CHANNEL WRITE DATA PCA PARTS LIST

07970-62050 (Series 1122)

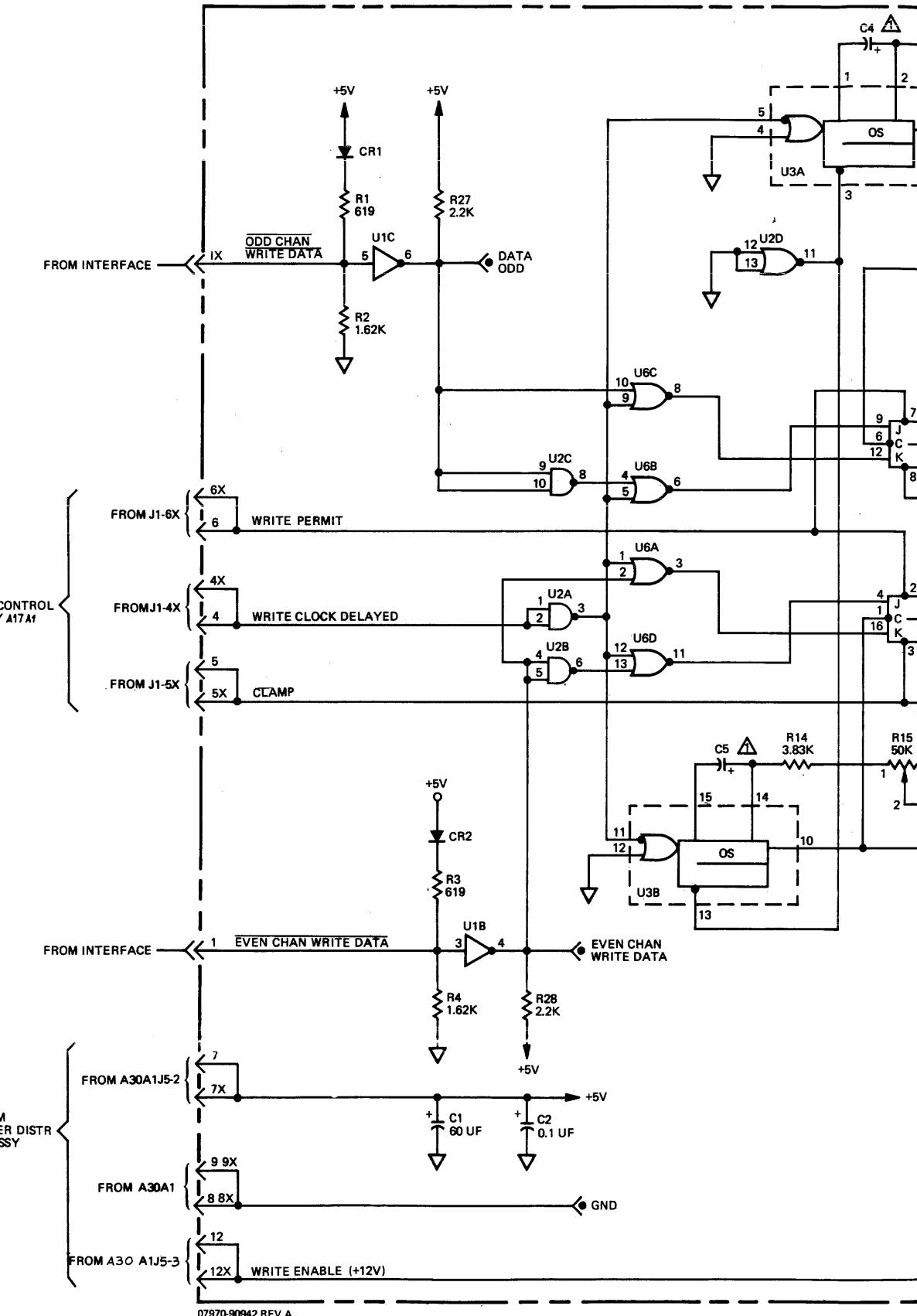
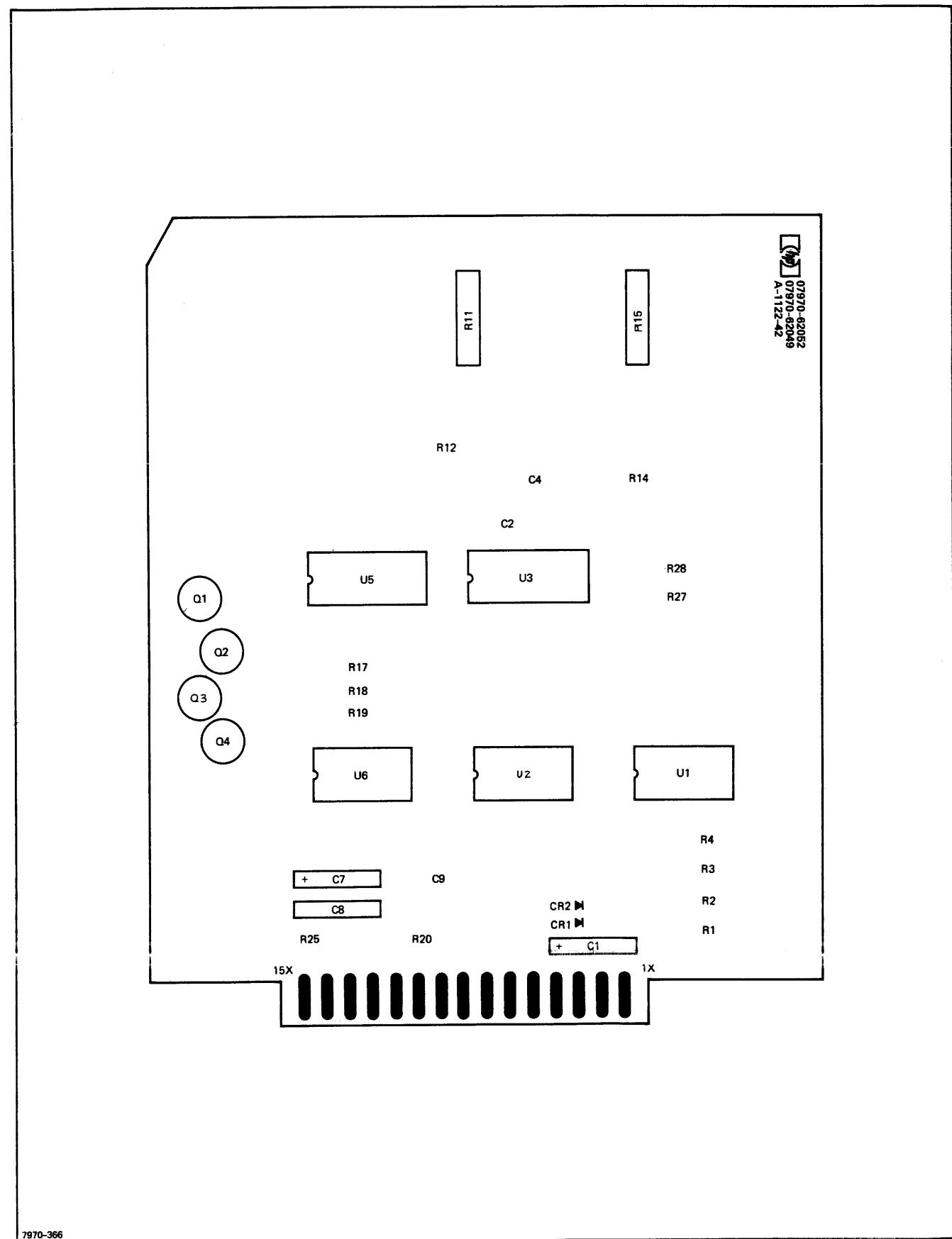
07970-62053 (Series 1122)

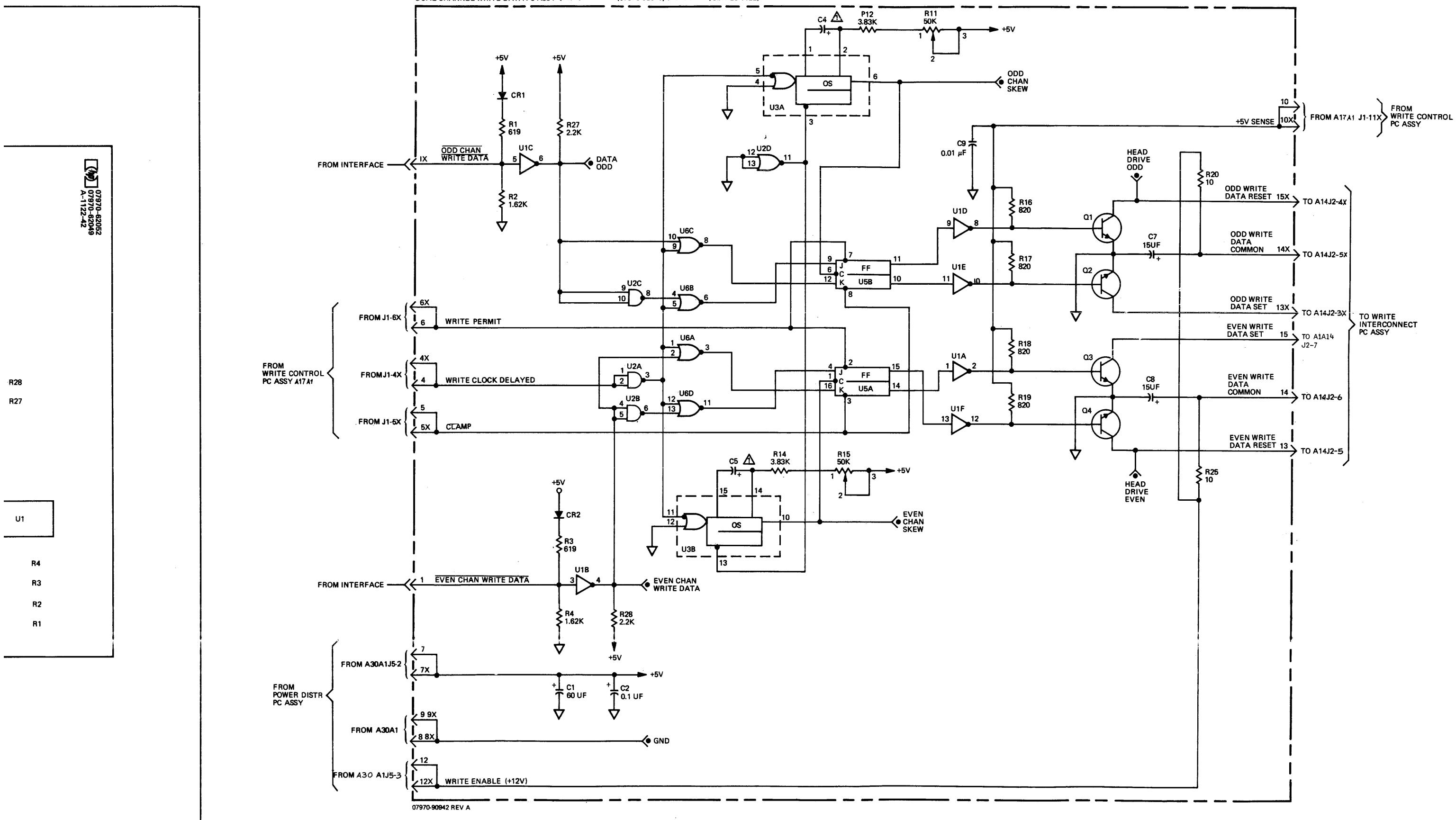
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62050	PE SINGLE CHANNEL WRITE DATA PCA (Series 1122)
C1	0180-0106	CAPACITOR, fxd, 60uf, 20%
C2	0150-0121	CAPACITOR, fxd, .1uf, 10%
C3	0160-2055	CAPACITOR, fxd, .01uf, 100V
1 C4	0160-3539	CAPACITOR, fxd, 820pf, 5%
C5	0180-1746	CAPACITOR, fxd, 15uf, 10%
CR1	1901-0040	DIODE, 30V, 50MA
Q1,2	1854-0246	TRANSISTOR, 2N3643, PL5
R1	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R2	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R3	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R4	2100-2707	RESISTOR, Variable, 50K, 10%
R5	0698-3153	RESISTOR, fxd, 3.83K, 1%, .125W
R6	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
R7,8	0683-8215	RESISTOR, fxd, 820, 5%, .25W
R9	0683-1005	RESISTOR, fxd, 10, 5%, .25W
U1	1820-0175	IC, Inverter, SN7405
U2	1820-0207	IC, MC8601P
U3	1820-0239	IC, MC3002P
U4	1820-0076 5040-6001 1480-0116	IC, Digital, 7476 EXTRACTOR, PC PIN, Grooved, .062 in.

1 07970-62053 PCA's use 1600pf,  
part no. 0160-2223

es  
)

PE Single Channel Write Data PC Assembly  
A17A2





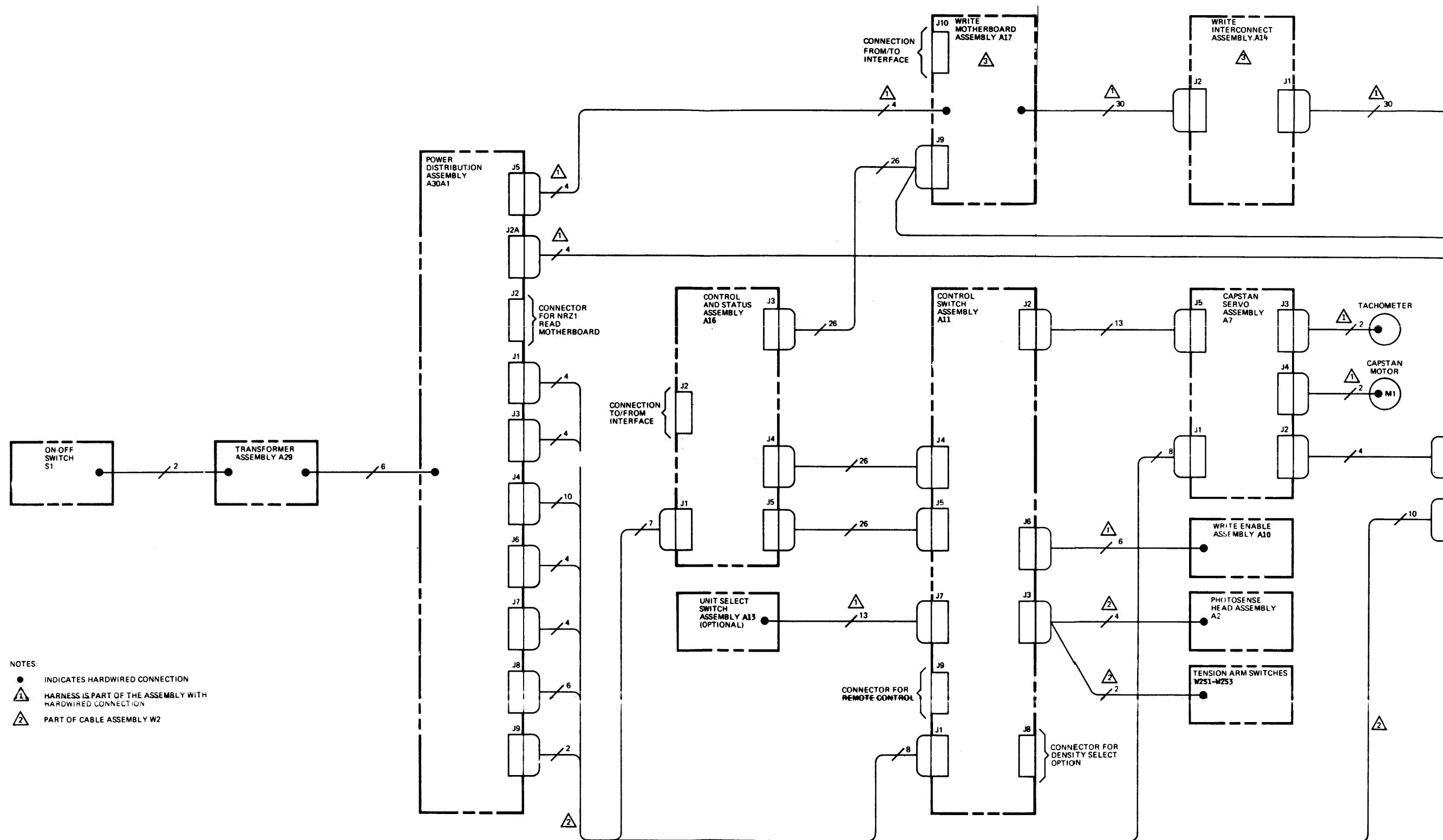
PE Dual Channel Write Data PC Assembly  
A17A3 thru A17A6

PE DUAL CHANNEL WRITE PCA PARTS LIST  
 07970-62049 (Series 1122)  
 07970-62052 (Series 1122)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62049	PE WRITE PCA (Series 1122)
C1	0180-0106	CAPACITOR, fxd, 60uf, 20%
C2	0150-0121	CAPACITOR, fxd, .1uf, 10%
1 C4,5	0160-3539	CAPACITOR, fxd, 820pf, 5%
C7,8	0180-1746	CAPACITOR, fxd, 15uf, 10%
C9	0160-2055	CAPACITOR, fxd, .01uf, 10%
CR1-2	1901-0040	DIODE, 30V, 50MA
Q1-4	1854-0246	TRANSISTOR, 2N3643, PL5
R1,3	0757-0418	RESISTOR, fxd, 619, 1%, .125W
R2,4	0757-0428	RESISTOR, fxd, 1.62K, 1%, .125W
R11,15	2100-2707	RESISTOR, Variable
R12,14	0698-3153	RESISTOR, fxd, 3.83K, 1%, .125W
R16,17,18,19	0683-8215	RESISTOR, fxd, 820, 5%, .25W
R20,25	0683-1005	RESISTOR, fxd, 10, 5%, .25W
R27,28	0683-2225	RESISTOR, fxd, 2.2K, 5%, .25W
U1	1820-0175	IC, INVERTER SN7405
U2	1820-0054	IC, DIGITAL 7400
U3	1820-0515	IC, DIGITAL 9602
U5	1820-0076	IC, DIGITAL FF 7476
U6	1820-0239	IC, MC3002P
	5040-6001	EXTRACTOR, PC
	1480-0116	PIN, Grooved, .062 in.

1 07970-62052 PCA use 1600pf,  
 part number 0160-2223

PE Dual Channel Write Data PC Assembly  
A17A3 thru A17A6



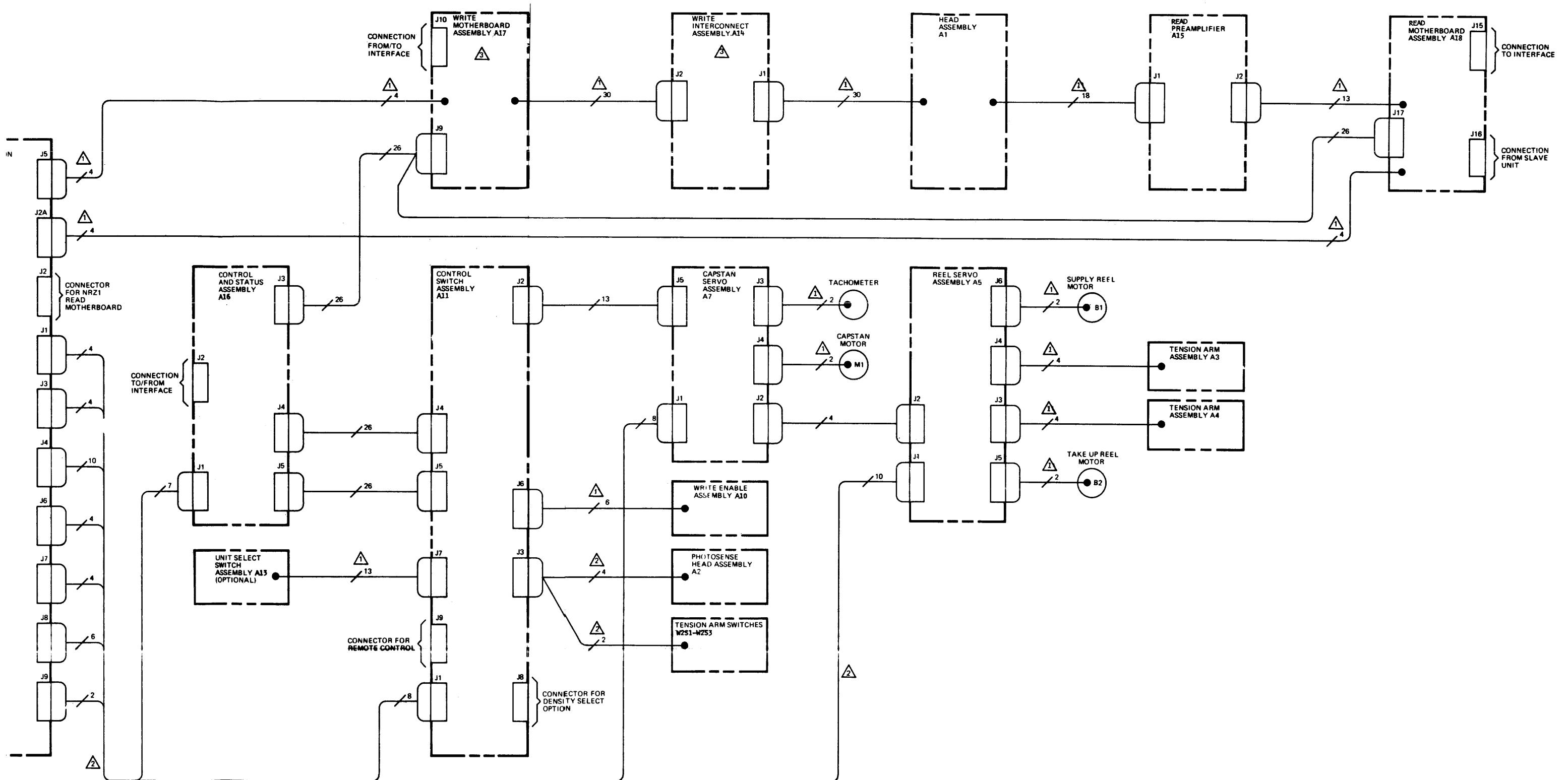


Figure 2-5. 7970B Read-After-Write  
Tape Units, Cabling Diagram

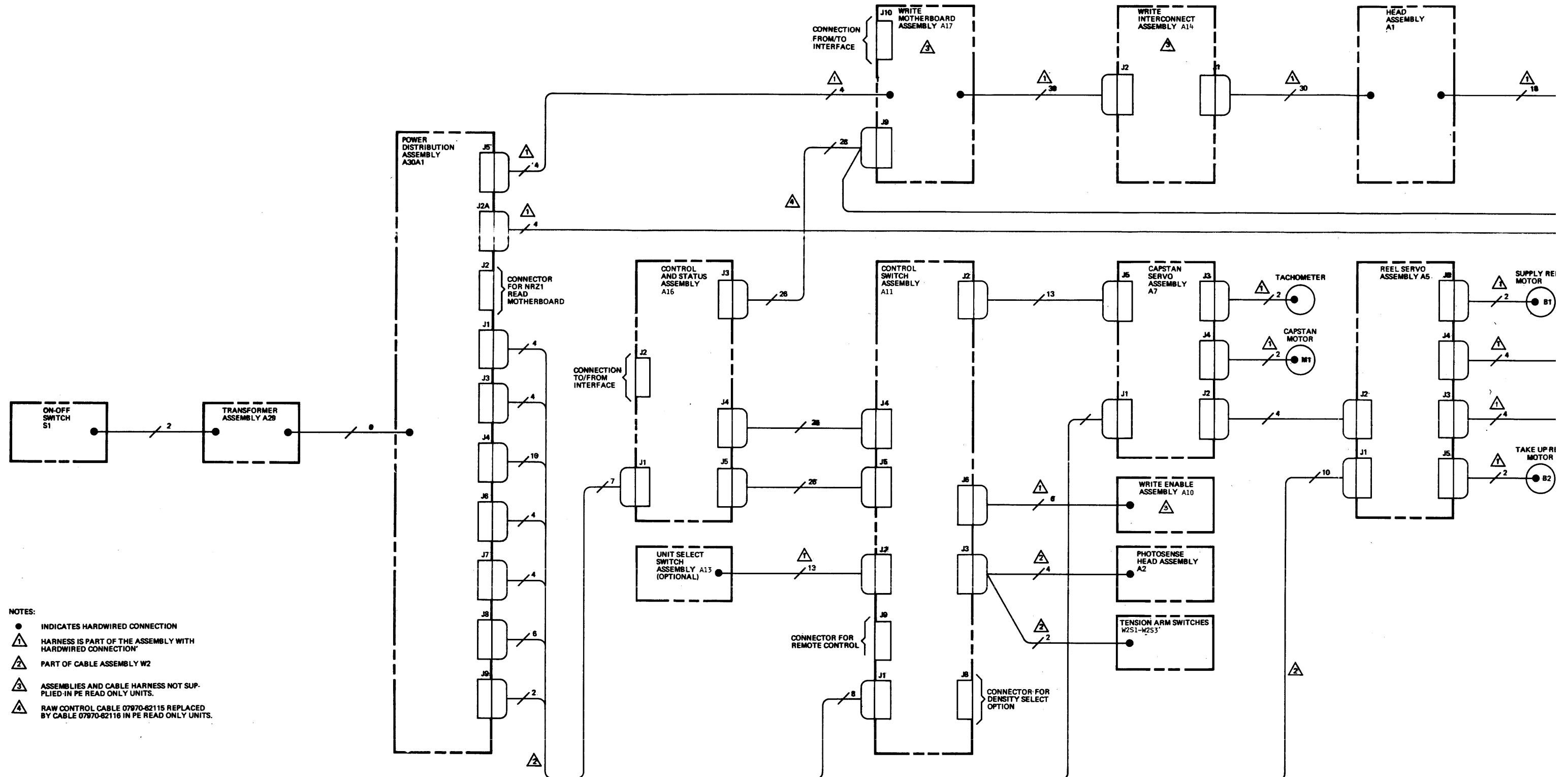


Figure 2-6. 7970E Re Read-Only Tape Units

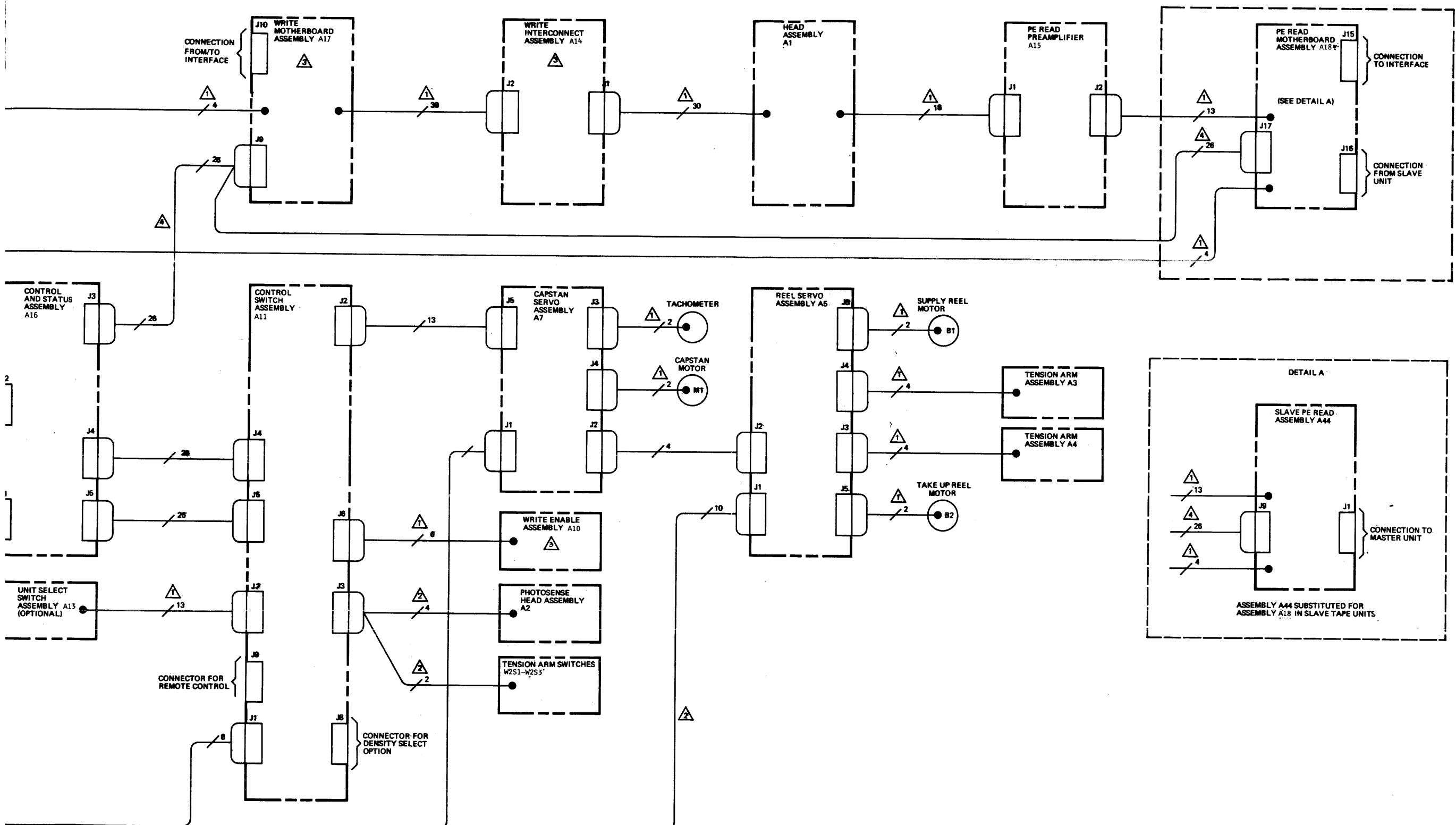
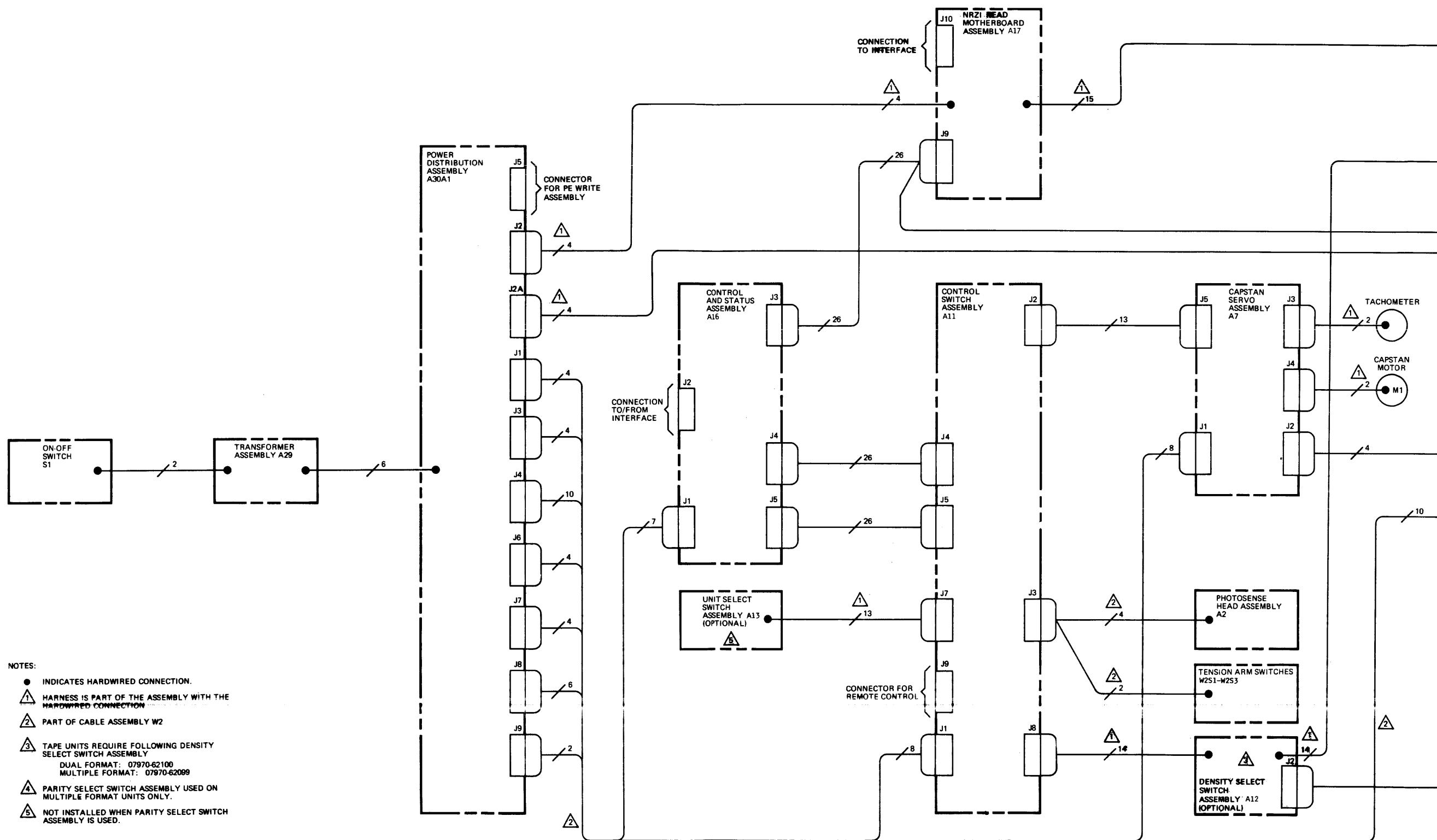


Figure 2-6. 7970E Read-After-Write and Read-Only Tape Units, Cabling Diagram



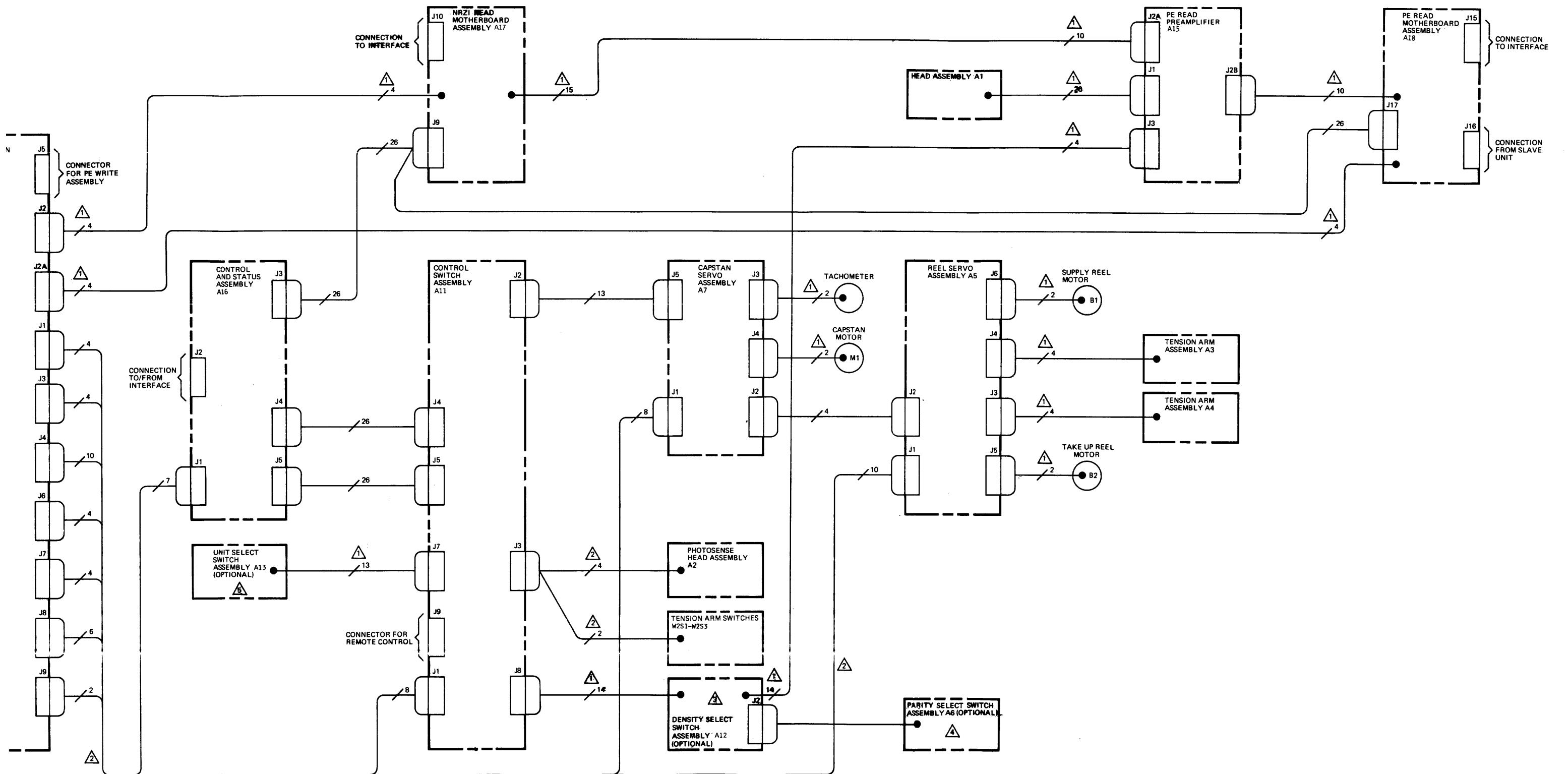


Figure 2-7. 7970E Master Dual and Multiple Format Tape Units, Cabling Diagram

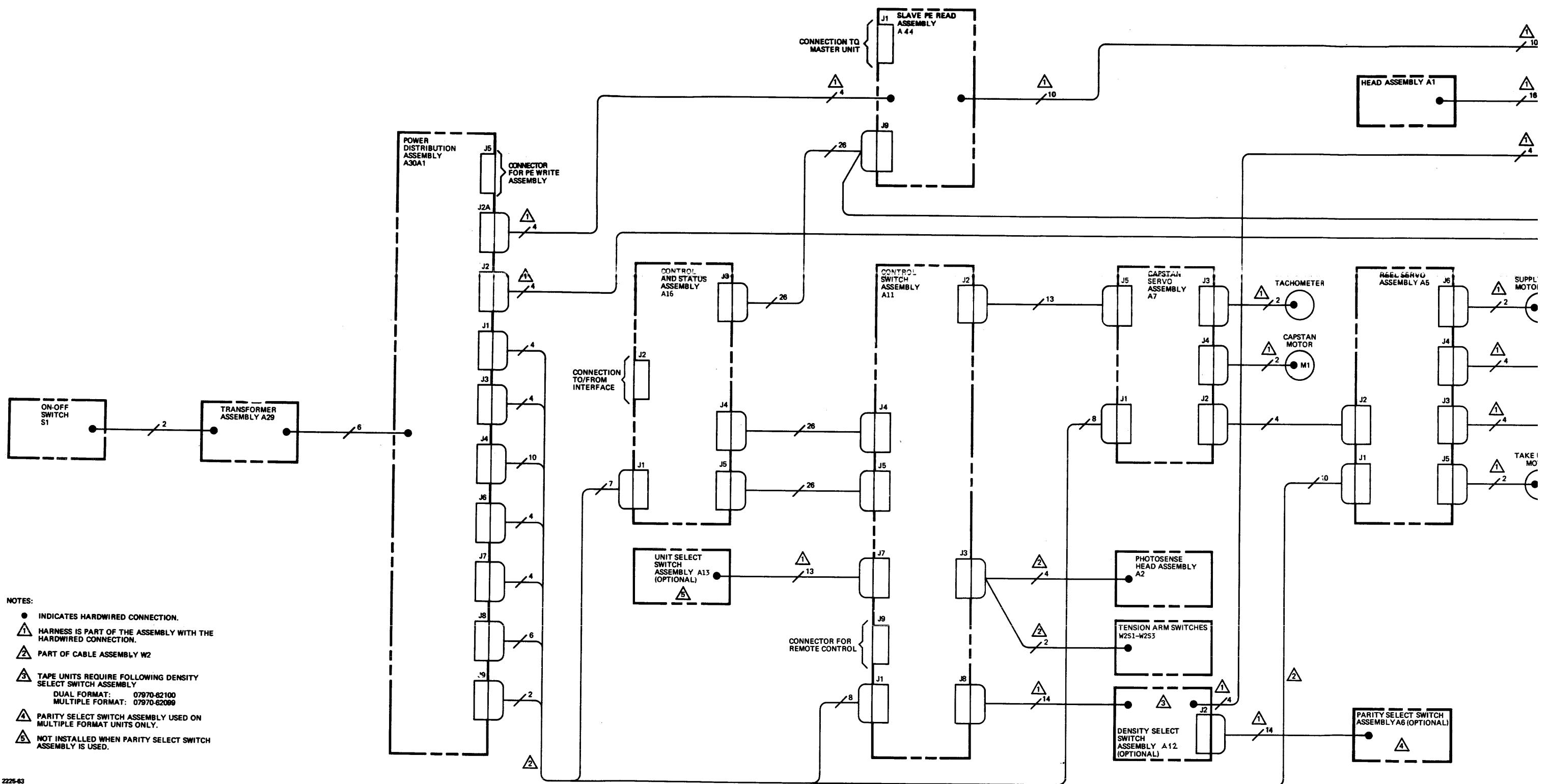


Figure 2-8. 7970E S  
Multiple Format Tape

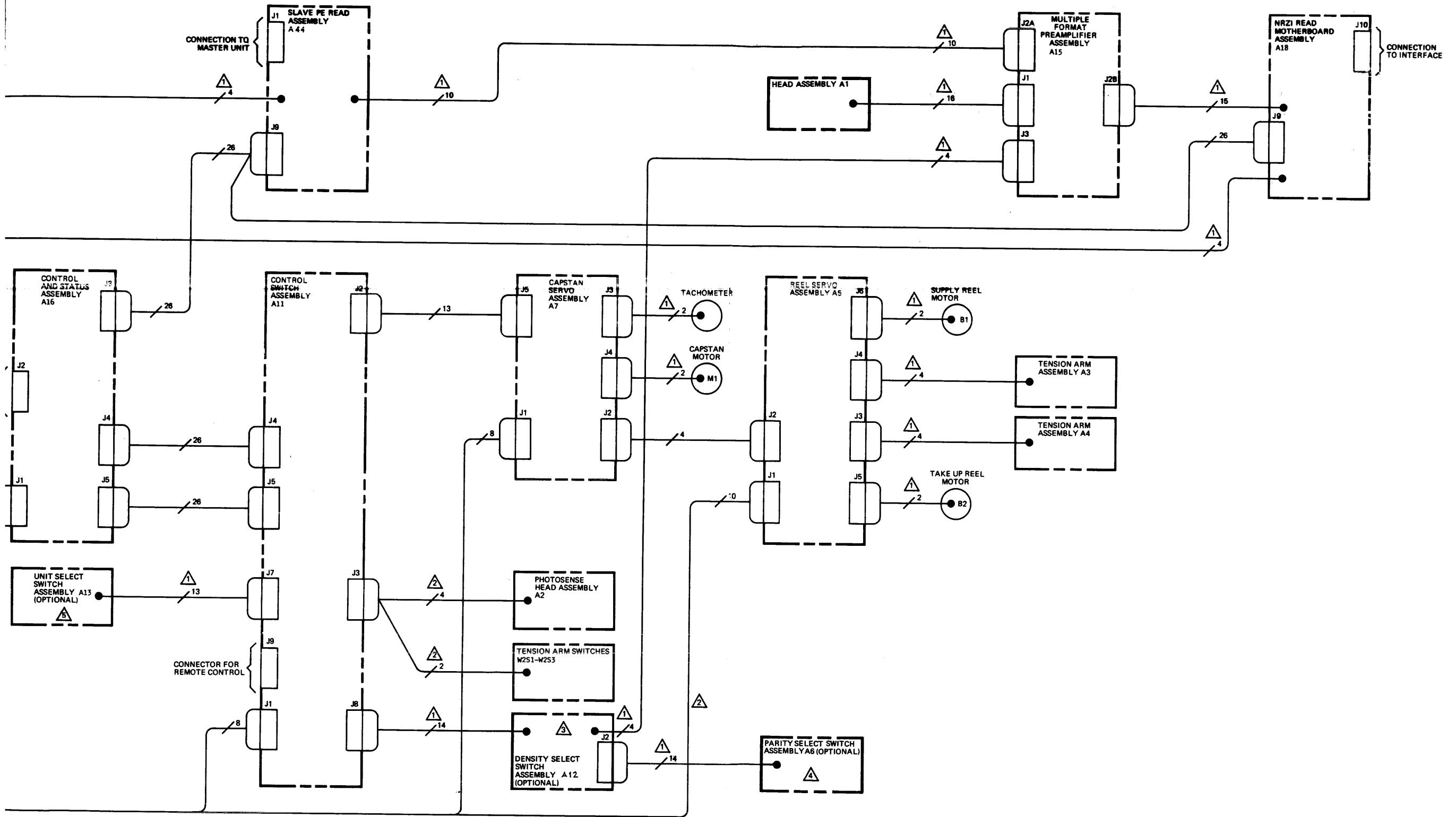


Figure 2-8. 7970E Slave Dual and  
Multiple Format Tape Units, Cabling Diagram

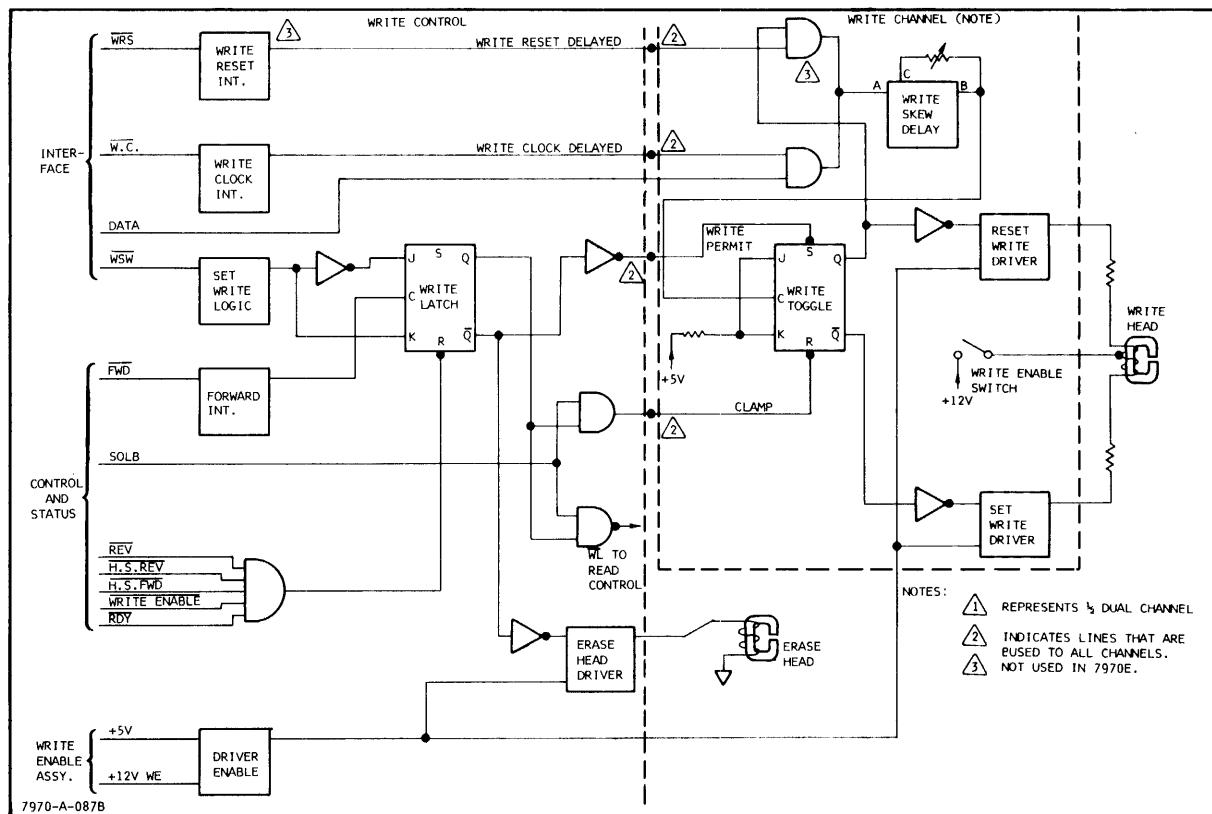


Figure 2-9. 7970B/E Write Circuits Block Diagram

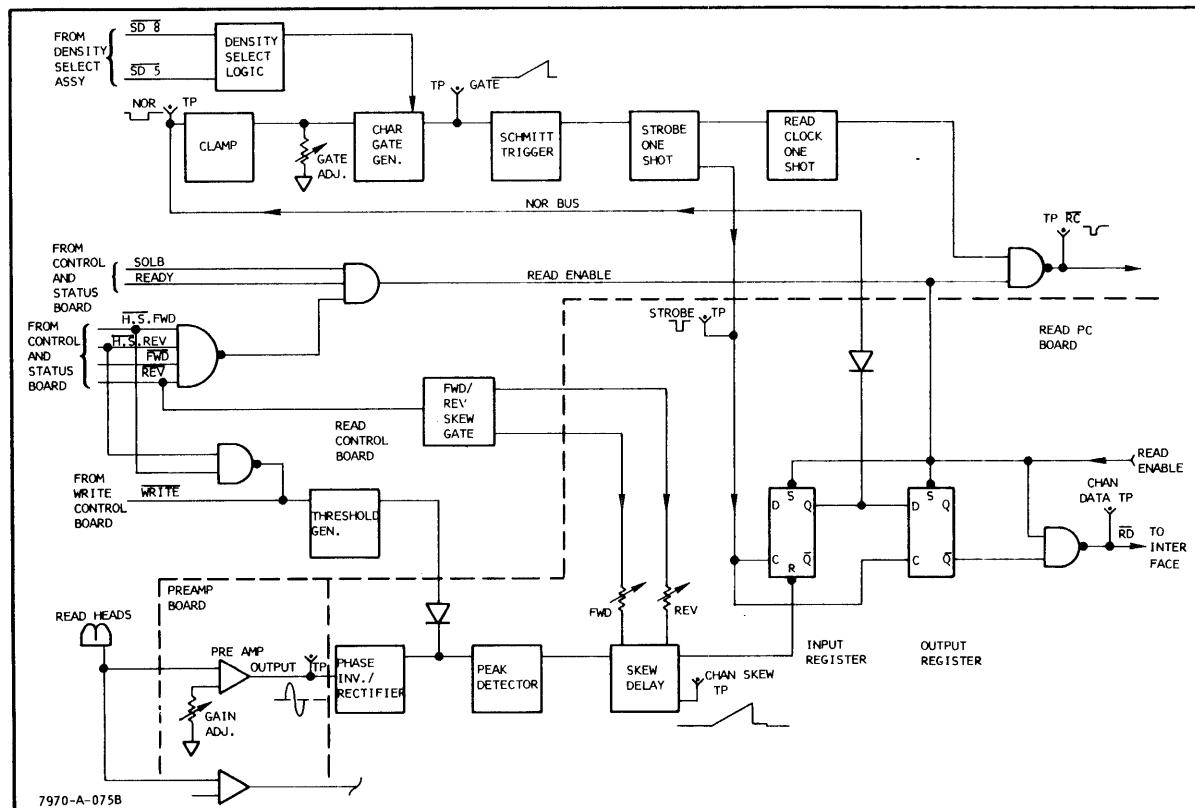
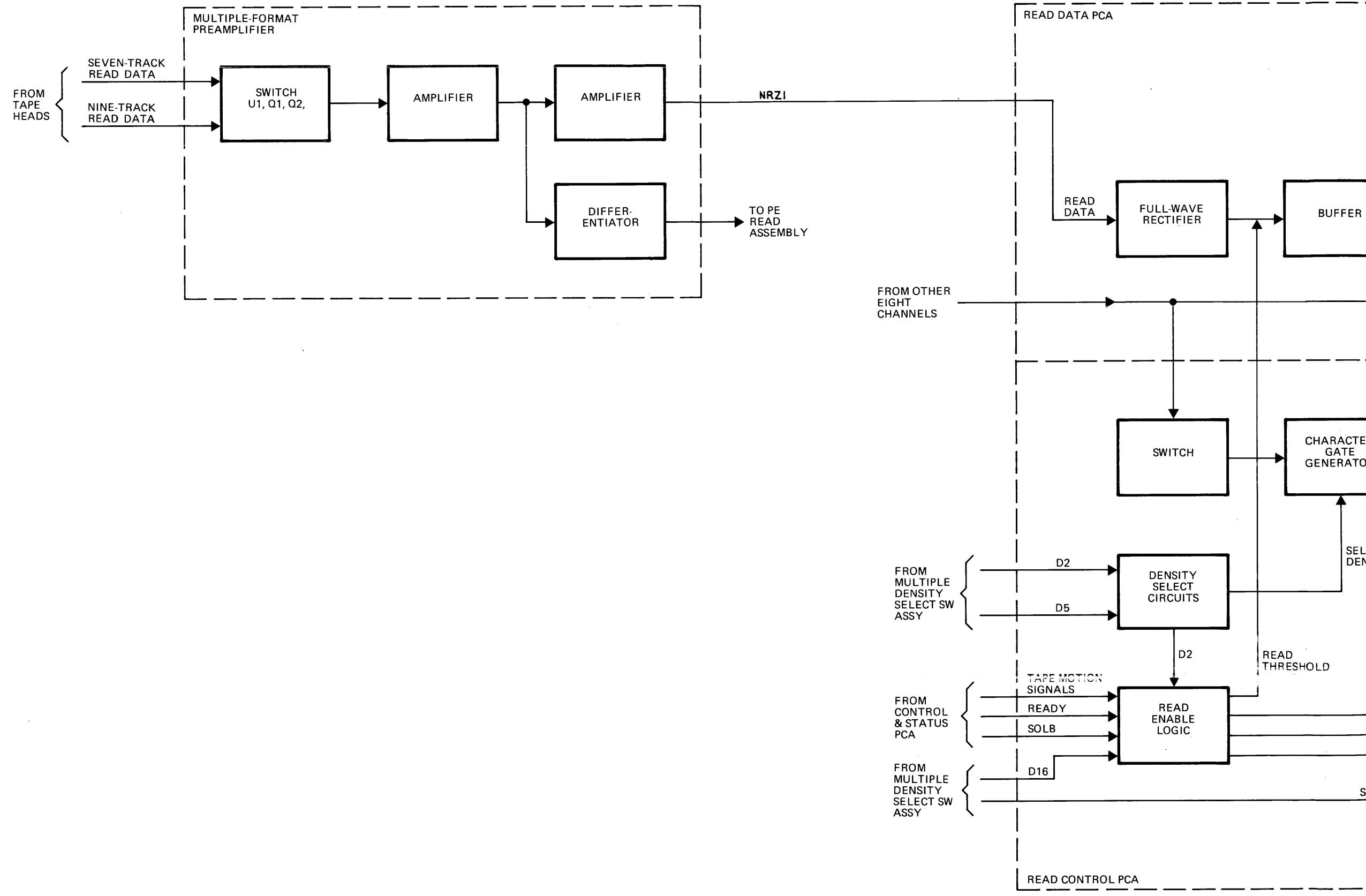
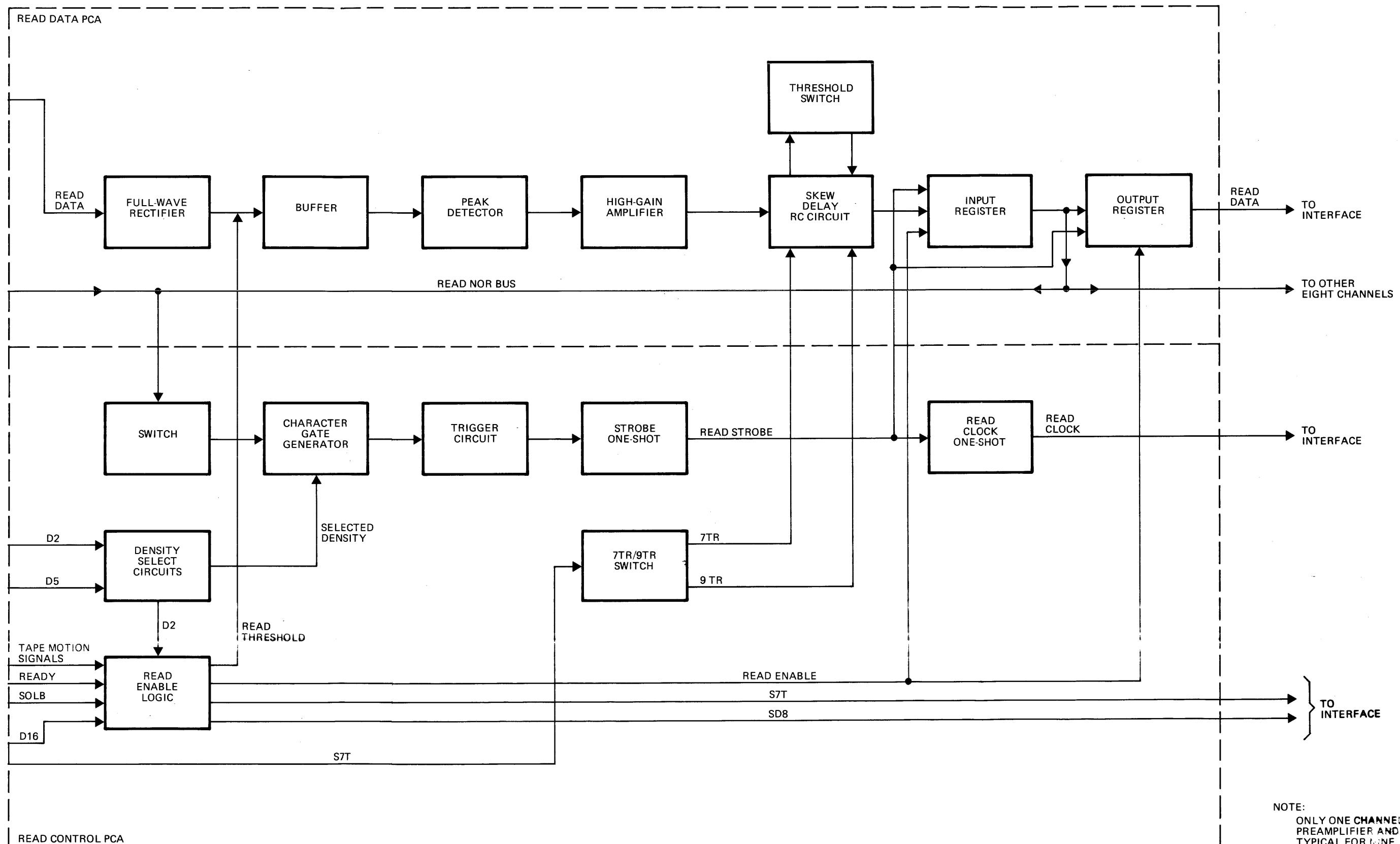


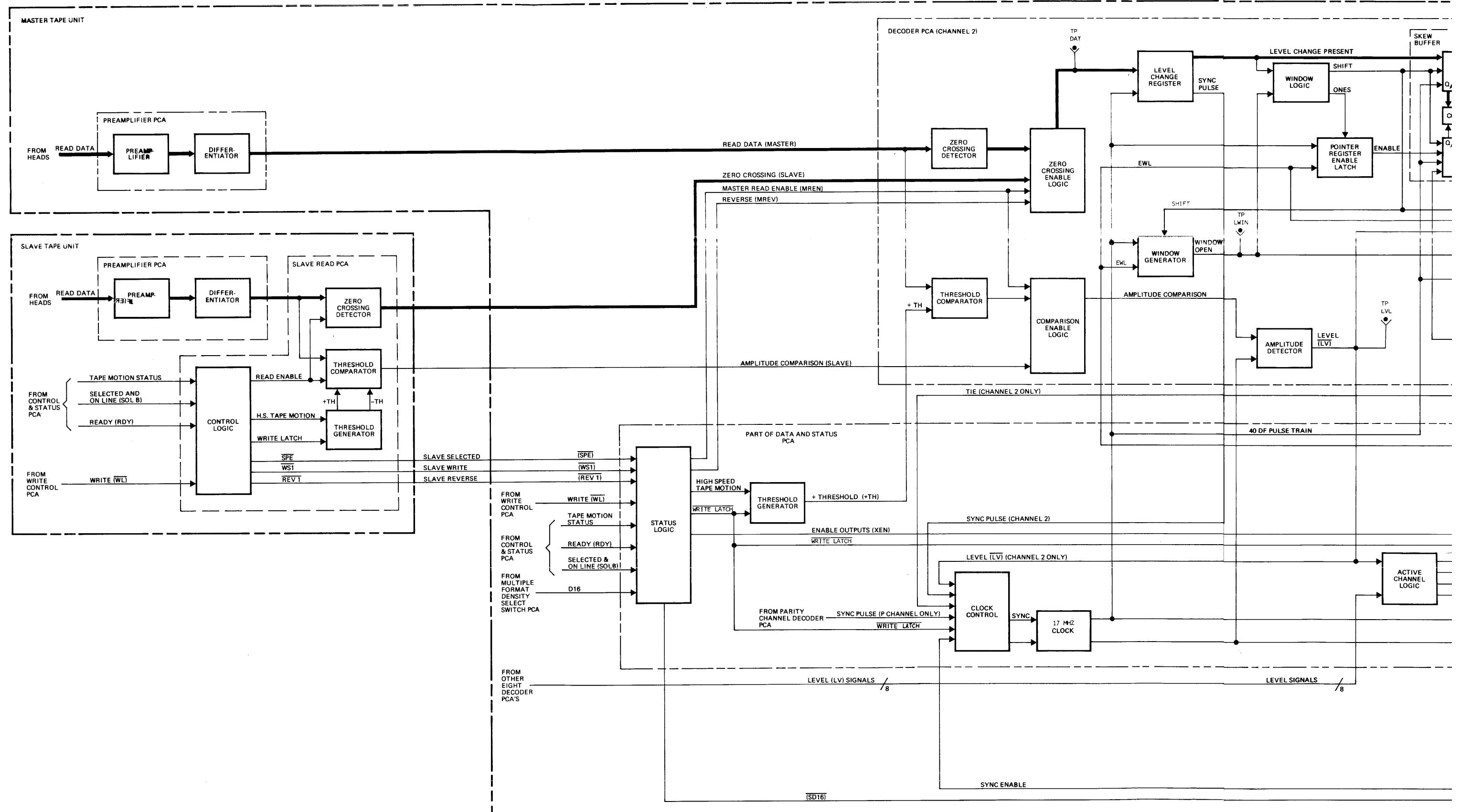
Figure 2-10. 7970B Read Circuits Block Diagram





**NOTE:**  
ONLY ONE CHANNEL IS SHOWN THROUGH THE  
PREAMPLIFIER AND READ DATA PCA AS  
TYPICAL FOR LINE.

Figure 2-11. 7970E NRZI Read Circuits Block Diagram



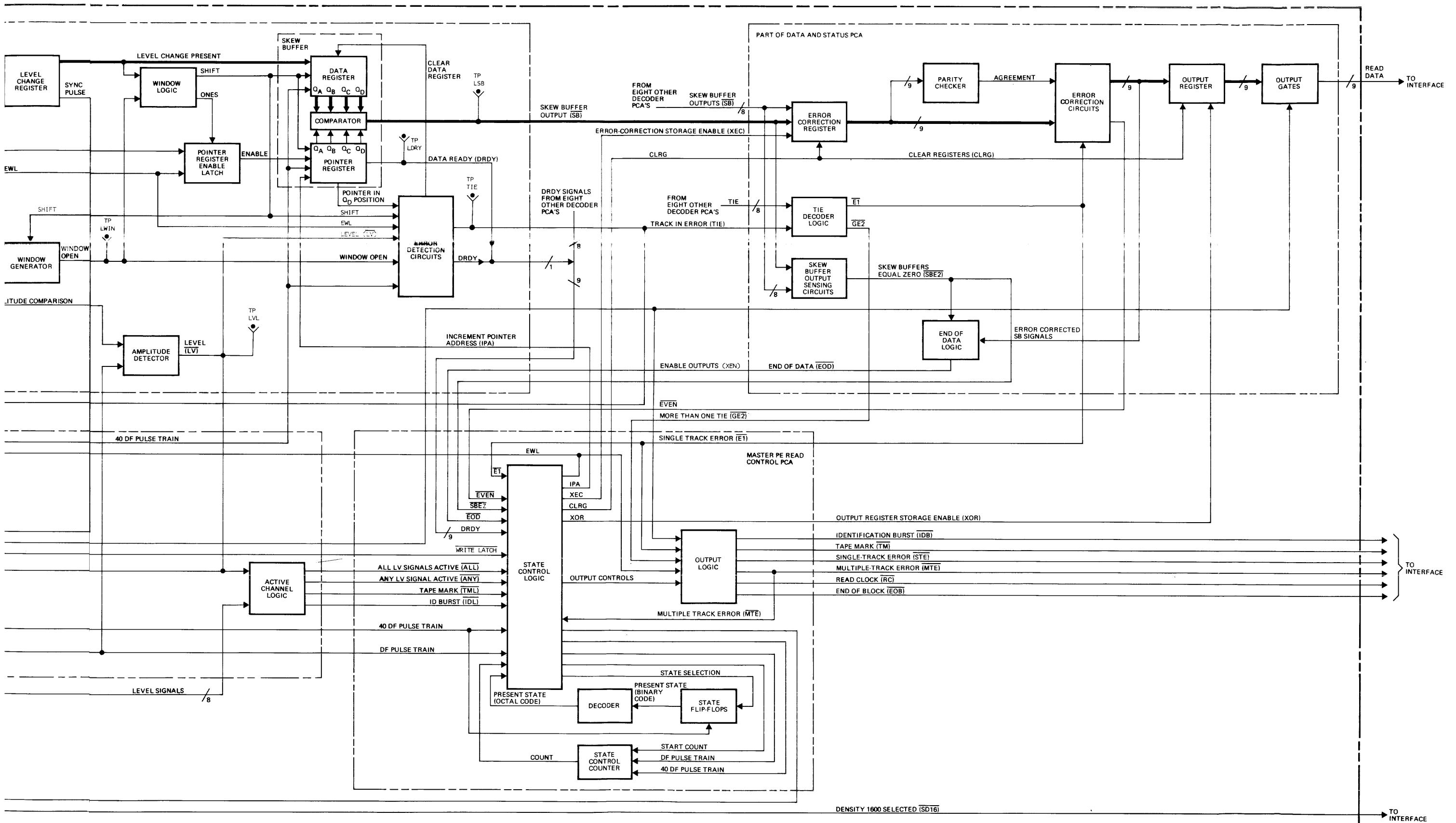


Figure 2-12. 7970E PE Read Circuit Block Diagram

CHANGE TO:

HP 7970B/E Digital Magnetic Tape Units  
Diagrams and Parts Manual

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**CHANGE DESCRIPTION:** This change to the manual reflects the addition of two new assemblies; a Photosense Head Assembly and a Power Transformer Assembly. Also included are errata corrections and parts changes for improved reliability.

**CHANGE INSTRUCTIONS:**

- 1 Insert the pages included with this change notice into the manual and remove the original pages. Page 2-32A/2-32B does not require the removal of any pages. The following pages are included with this change notice:

"Changed 22 December 1976":

Title page, iii, 2-17, 2-20A, 2-20B, and 2-25.

"Changed 1 December 1976":

2-18, 2-26, and 2-31.

"Added 1 December 1976":

2-32A/2-32B.



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**HEWLETT**  **PACKARD**

**DIAGRAMS AND PARTS MANUAL  
7970B/E**

**DIGITAL MAGNETIC TAPE UNITS**

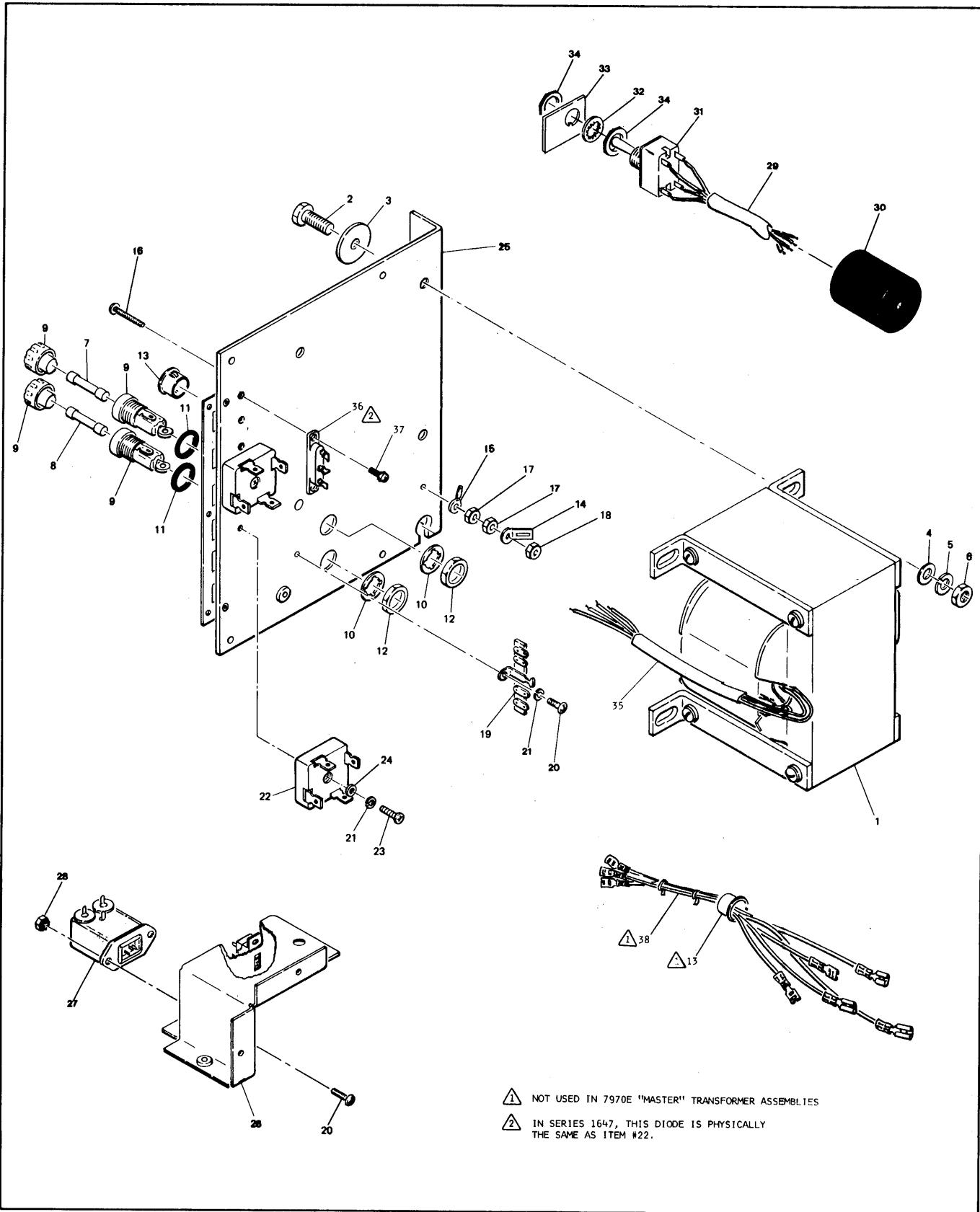
Manual Part No. 07970-90886  
Microfiche Part No. 07970-90891

Serial Numbers Prefixed:  
7970B--1107 thru 1648  
7970E--1127 thru 1648

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TRANSFORMER ASSEMBLY 07970-62351 (SERIES 1647, 1648)



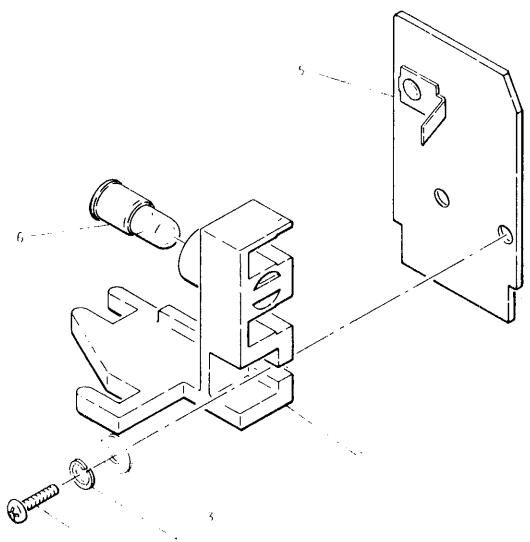
2225-116A

7970 B & E Power Transformer  
Assembly A29

2-20A  
Changed 22 December 1976

PHOTONSENSE HEAD PCA PARTS LIST  
07970-62345 (Series 1650)

REF. DES. / INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62345	PHOTONSENSE HEAD PCA, (Series 1650)
DS1	2140-0203	LAMP, 8428, 5V
Q1,2	1990-0087	PHOTOTRANSISTOR, Silicon
	0340-0726	INSULATOR, Transistor
R1,3	0757-0940	RESISTOR, fwd, 4.7K, 2%, .125W
R2,4	0698-8156	RESISTOR, fwd, 2.2M, 1%, .125W
1	0050-0685	CASTING, Aluminum
2	0520-0129	SCREW, 2-56, .312 in.
3	2190-0479	WASHER, Flat, #2
4	2190-0428	WASHER, Lock, #2
5	07970-82074	PHOTONSENSE HEAD PCB
6	2140-0203	LAMP, 8428, 5V



2225-106A

07970-62345 Photosense Head Assembly A2

2-32A/2-32B  
Added 1 December 1976

Change 2  
March 1977

Manual Part No. 07970-90886  
Print Date: NOV 1976

CHANGE TO:

HP 7970B/E Digital Magnetic Tape Units  
Diagrams and Parts Manual

CHANGE DESCRIPTION: This change to the manual reflects component changes due to parts availability problems.

CHANGE INSTRUCTIONS: On the parts lists for the following assemblies, change component part numbers as follows:

PCA	MANUAL PAGE	REF. DES.	CHANGE	
			FROM	TO
07970-60800	2-114	R11,15	2100-1761	2100-3580
07970-60810				
07970-60820	2-112	R11	2100-1761	2100-3580
07970-60830				

Change all PCA series numbers from 1025 to 1707.

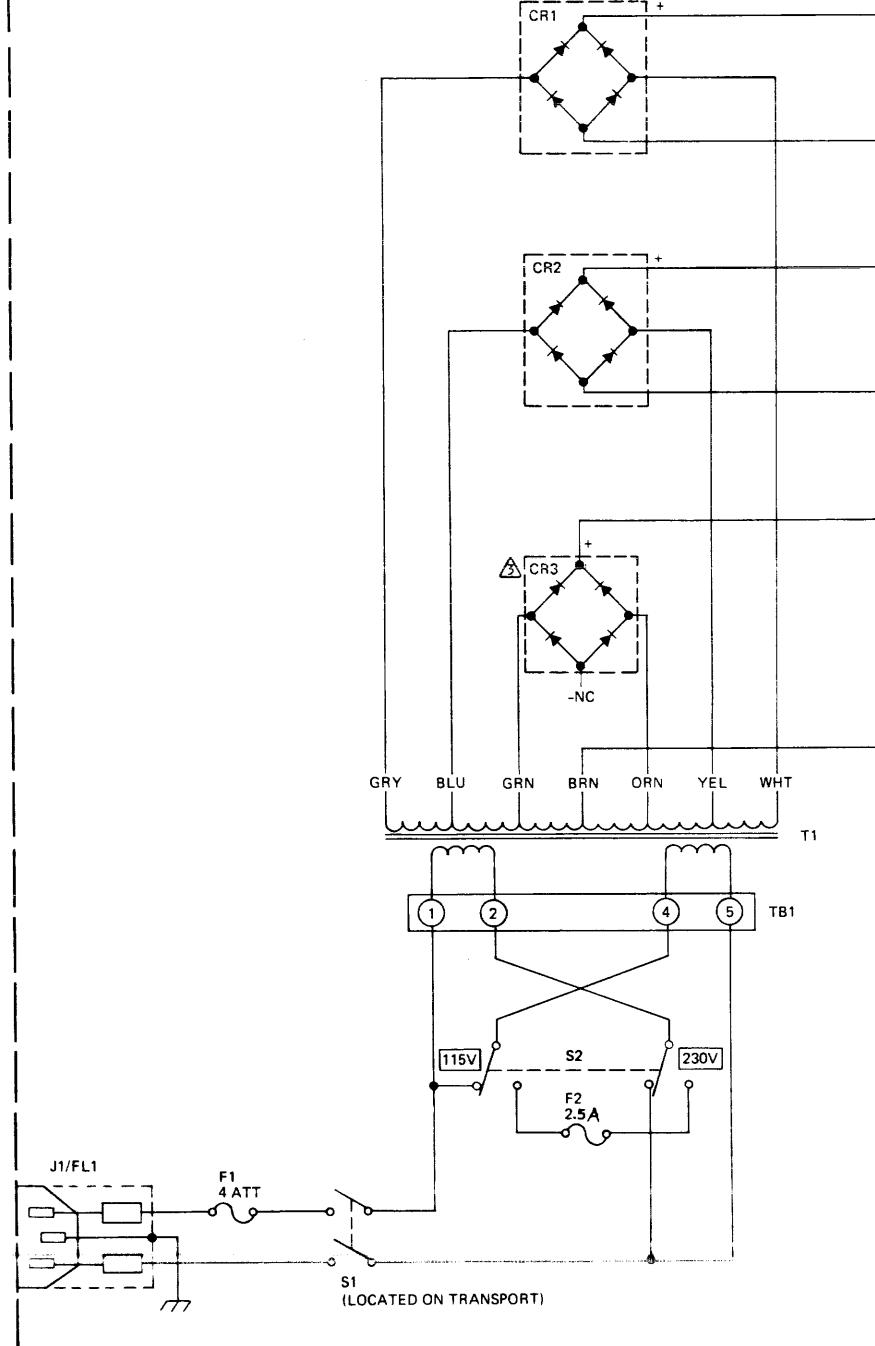
Change 7970B and 7970E Tape Units serial number prefix from 1648 to 1707.

 P.O. Box 15, Boise, Idaho 83707, Tel. 208-376-6000, TWX 910-970-5784



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TRANSFORMER ASSEMBLY A29  
07970-60471 SERIES 1411  
07970-62351 SERIES 1648

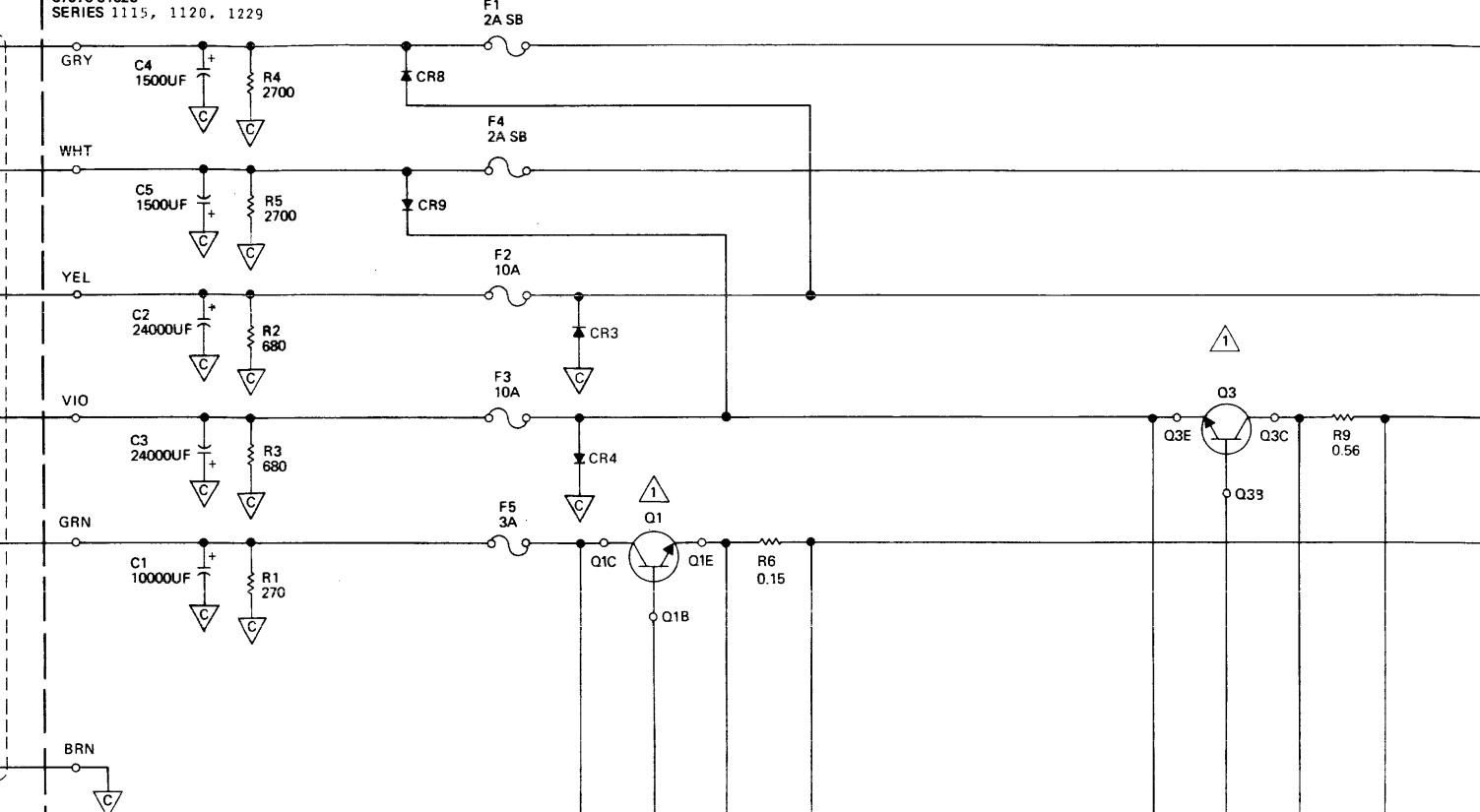


NOTES:

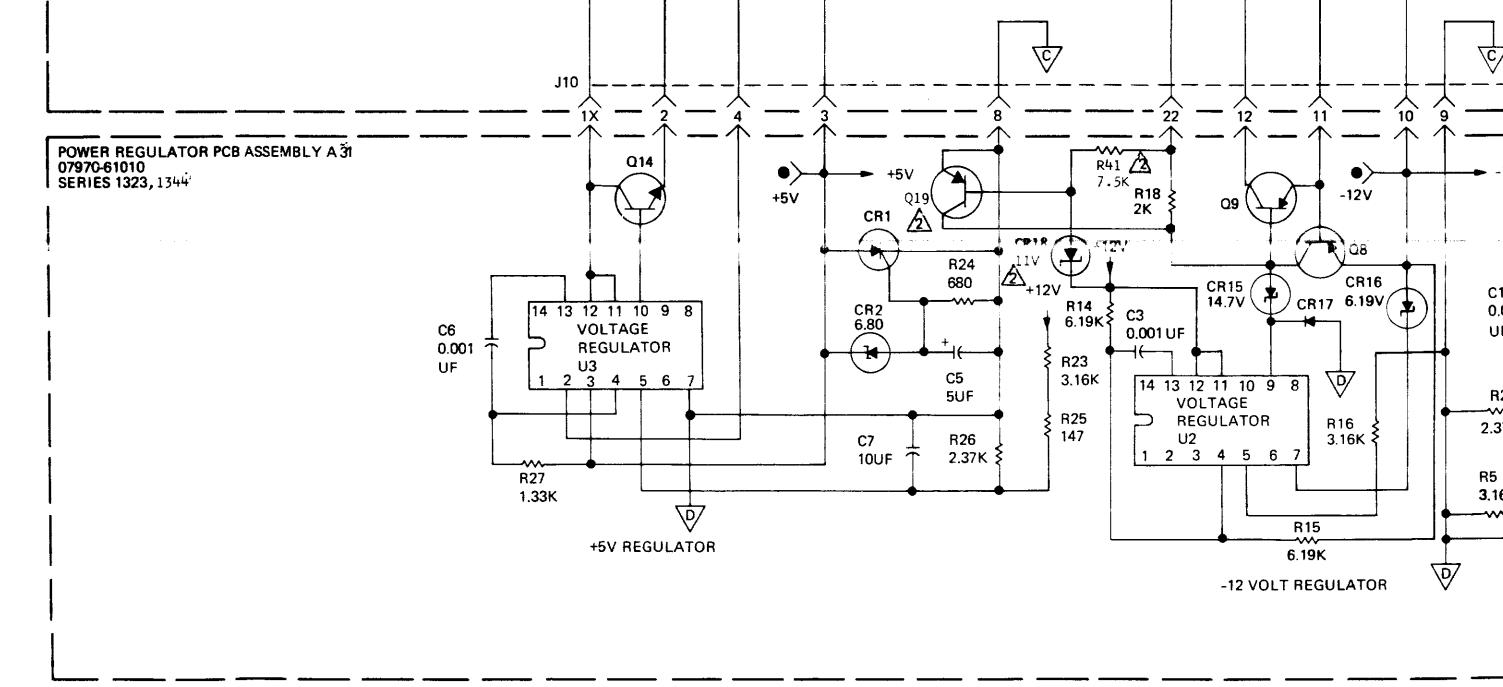
- THESE COMPONENTS ARE EXTERNALLY MOUNTED ON HEAT SINKS OR CHASSIS
- THESE POINTS ARE COMMON (GROUND)
- THESE POINTS ARE COMMON (SIGNAL RETURN)
- USED ONLY ON SERIES 1344 OR HIGHER
- BOTTOM TWO DIODES ABSENT IN CR3 ON 07970-62351 ASSEMBLIES.

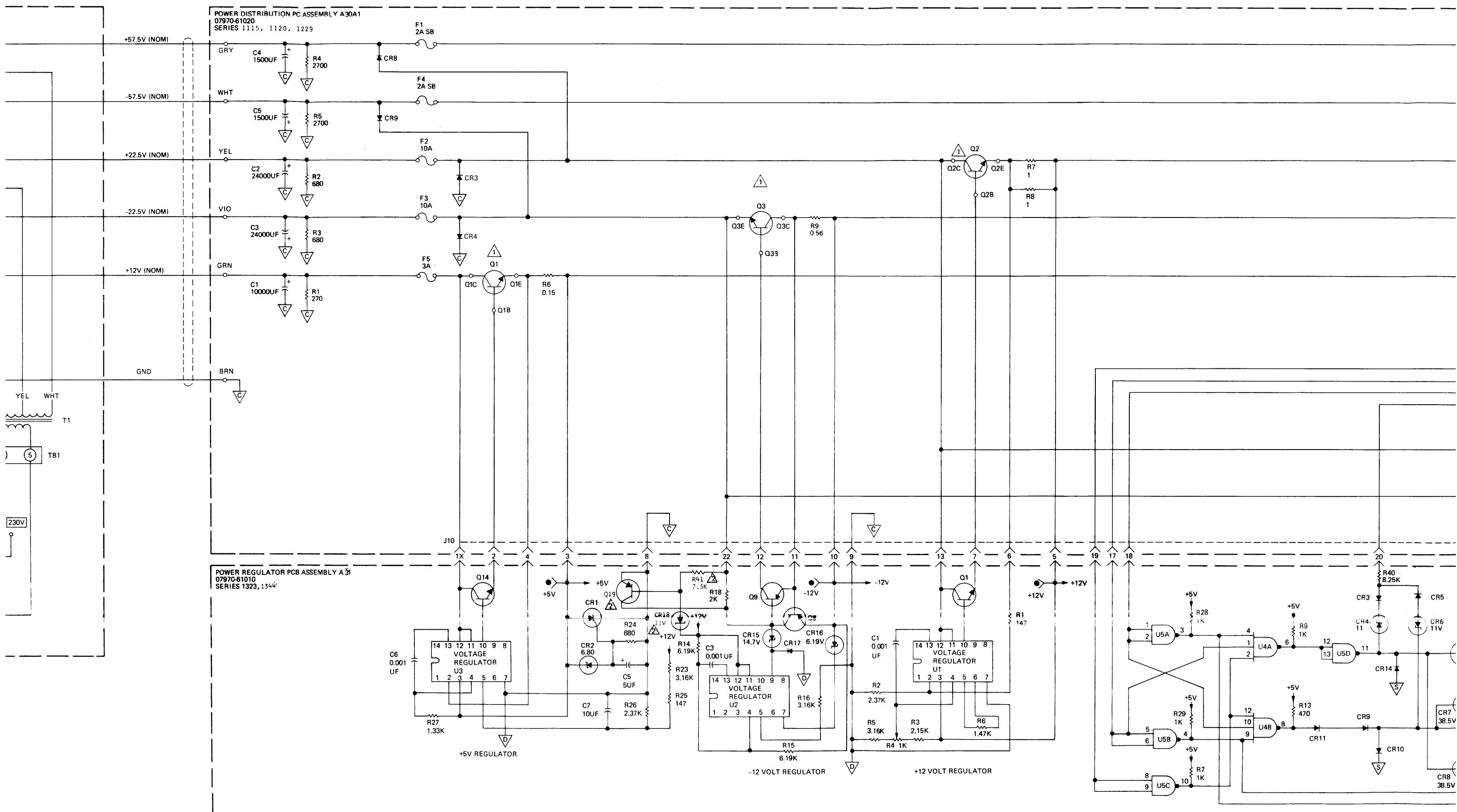
07970-0020

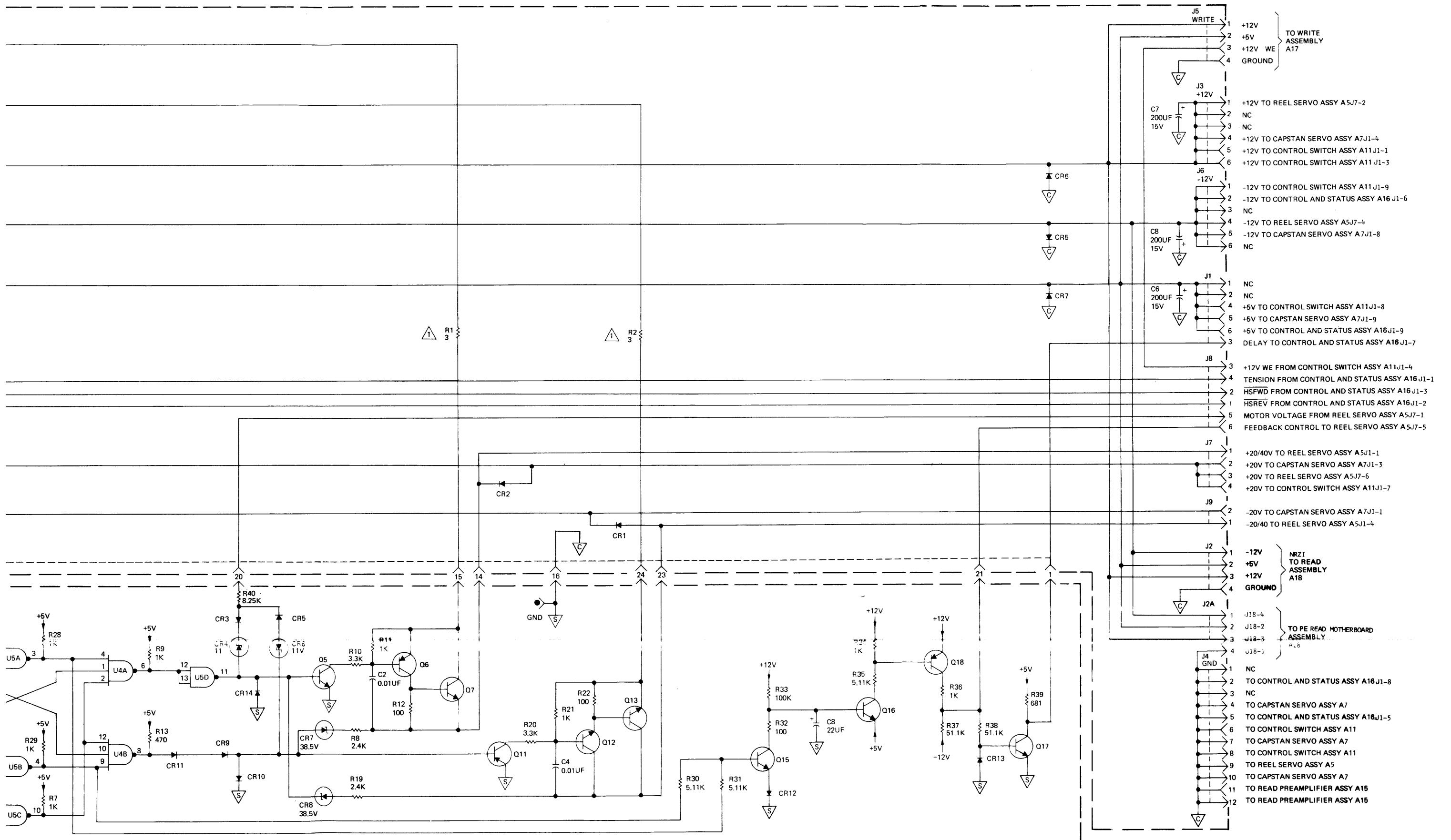
POWER DISTRIBUTION PC ASSEMBLY A30A1  
07970-61020 SERIES 1115, 1120, 1229



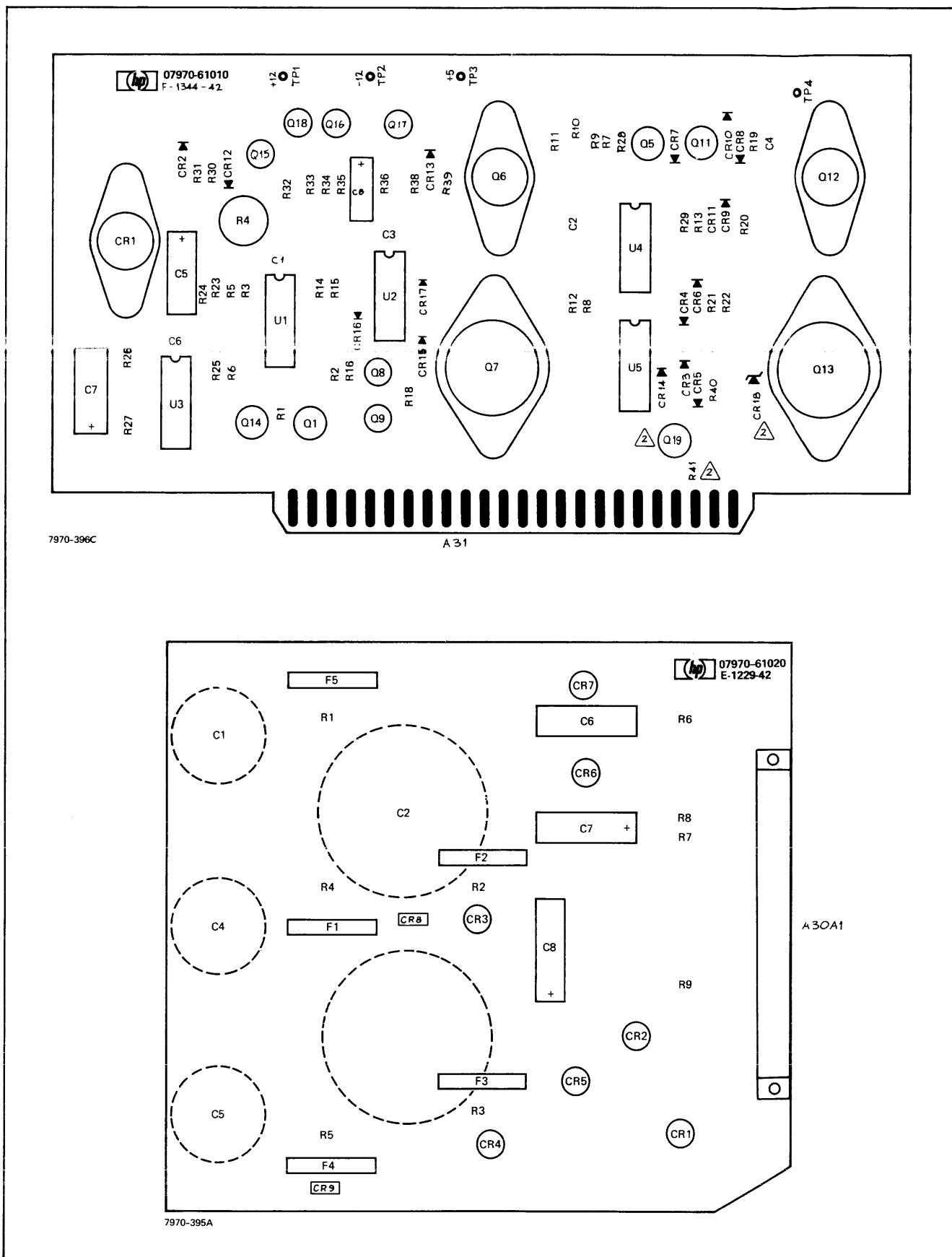
POWER REGULATOR PCB ASSEMBLY A31  
07970-61010 SERIES 1323, 1344







7970 B & Slave "E" Power Supply Assemblies A29/30/31



POWER REGULATOR PCA PARTS LIST  
07970-61010 (SERIES 1323, 1344)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1, C3, C6	07970-61010	POWER REGULATOR PCA (SERIES 1323)
C2, C4	0160-3456	CAPACITOR, Fxd, 1000pf, Cer.
C5	0160-2055	CAPACITOR, Fxd, .01uf, 100V
C7	0180-0172	CAPACITOR, Fxd, 5uf, -10 + 75%
C8	0180-0059	CAPACITOR, Fxd, 10uf, -10 + 75%
CR1	0180-0228	CAPACITOR, Fxd, 22uf, 15 VDC
	1884-0088	THYRISTOR, 2N3228
	0340-0180	INSULATOR, Friction
	2360-0195	SCREW, 6-32, .312 Pan
CR2	2420-0001	NUT, hex, 6-32
CR3, CR5	1902-0048	DIODE, Zener, 6.81V
CR4, CR6, CR18	1901-0025	DIODE, 100V, 200MA
CR7, CR8	1902-3171	DIODE, Zener, 11V
CR9-14, CR17	1902-3311	DIODE, Breakdown, 38.3V
CR15	1901-0040	DIODE, 30V, 50MA
CR16	1902-3202	DIODE, Zener, 14.7V
Q1, Q14	1854-0039	DIODE, Zener, 6.19V
Q5	1854-0022	TRANSISTOR, 2N3053, TO5
Q6	1853-0052	TRANSISTOR, 2N2102, TO5
	0340-0180	TRANSISTOR, 2N3740, TO66
	2360-0195	INSULATOR, Friction
	2420-0001	SCREW, 6-32, .312 Pan
Q7, Q13	1854-0063	NUT, hex, 6-32
	0340-0458	TRANSISTOR, 2N3055, TO3
	2360-0197	INSULATOR, Transistor
Q8, Q18, Q19	2420-0001	SCREW, 6-32, .375 Pan
Q9	1853-0036	NUT, hex, 6-32
Q11	1853-0027	TRANSISTOR, 2N3906, PL18
Q12	1853-0080	TRANSISTOR, PNP, SI, TO5
	1854-0072	TRANSISTOR, 2N4888, PL5
	0340-0180	TRANSISTOR, 2N3054, TO66
	2360-0195	INSULATOR, Friction
	2420-0001	SCREW, 6-32, .312 Pan
Q15, Q16, Q17	1854-0215	NUT, hex, 6-32
R1, R25	0698-3438	TRANSISTOR, 2N3904, PL5
R2, R26	0698-3150	RESISTOR, Fxd, 147, 1%, .125W
R3	0698-0084	RESISTOR, Fxd, 2.37K, 1%, .125W
R4	2100-1773	RESISTOR, Fxd, 2.15K, 1%, .125W
R5, R16, R23	0757-0279	RESISTOR, Variable, 1K
R6	0757-1094	RESISTOR, Fxd, 1K, 5%, .25W
R7, R9, R11	0683-1025	RESISTOR, Fxd, 1.47K, 1%, .125W
R21, R28, R29	0683-2425	RESISTOR, Fxd, 1K, 5%, .25W
R8, R19	0686-3325	RESISTOR, Fxd, 2.4K, 5%, .25W
R10, R20	0683-1015	RESISTOR, Fxd, 3.3K, 5%, .5W
R12, R22	0683-4715	RESISTOR, Fxd, 100, 5%, .25W
R13		RESISTOR, Fxd, 470, 5%, .25W

POWER DISTRIBUTION PCA  
07970-61020 (SERIES 1115, 1120, 1229)

DESCRIPTION
LATOR PCA (SERIES 1323) Fxd, 1000pf, Cer. Fxd, .01uf, 100V Fxd, 5uf, -10 + 75% Fxd, 10uf, -10 + 75% Fxd, 22uf, 15 VDC 2N3228 TOR, Friction 6-32, .312 Pan ex, 6-32 er, 6.81V I, 200MA er, 11V ikdown, 38.3V , 50MA er, 14.7V er, 6.19V , 2N3053, T05 , 2N2102, T05 , 2N3740, T066 OR, Friction 6-32, .312 Pan x, 6-32 .2N3055, T03 OR, Transistor 6-32, .375 Pan x, 6-32 .2N3906, PL18 PNP, SI, T05 2N4888, PL5 2N3054, T066 OR, Friction 6-32, .312 Pan x, 6-32 .2N3904, PL5 'xd, 147, 1%, .125W 'xd, 2.37K, 1%, .125W 'xd, 2.15K, 1%, .125W Variable, 1K 'xd, 1K, 5%, .25W 'xd, 1.47K, 1%, .125W 'xd, 1K, 5%, .25W  'xd, 2.4K, 5%, .25W 'xd, 3.3K, 5%, .5W 'xd, 100, 5%, .25W 'xd, 470, 5%, .25W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R14, R15	0757-0290	RESISTOR, Fxd, 6.19k, 1%, .125W
R16	0757-0279	RESISTOR, Fxd, 3.16K, 1%, .125W
R18	0686-2025	RESISTOR, Fxd, 2K, 5%, .5W
R24	0683-6815	RESISTOR, Fxd, 680,5%, .25W
R27	0757-0317	RESISTOR, Fxd, 1.33K, 1%, .125W
R30, R31, R35	0757-0438	RESISTOR, Fxd, 5.11K, 1%, .125W
R32	0757-0198	RESISTOR, Fxd, 100, 1%, .5W
R33	0757-0465	RESISTOR, Fxd, 100K, 1%, .125W
R34, R36	0757-0280	RESISTOR, Fxd, 1K, 1%, .125W
R37, R38	0757-0458	RESISTOR, Fxd, 51.1K, 1%, .125W
R39	0757-0419	RESISTOR, Fxd, 681, 1%, .125W
R40	0757-0441	RESISTOR, Fxd, 8.25K, 1%, .125W
1 R41	0757-0440	RESISTOR, Fxd, 7.5K, 1%, .125W
U1-3	1820-0439	IC, Voltage Regulator
U4	1820-0348	IC, Digital, MC844P
U5	1820-0256	IC, Digital, MC858P

△ CR18, Q19 and R41 used only on series 1344 or above.

REF. DES./ INDEX NO.	HP PART NO.
C1	07970-61020 0180-2326 2680-0128 2190-0012 C2, C3 0180-2681 2680-0128 2190-0012 C4, C5 0180-2325 2680-0128 2190-0012 C6, C8 0180-0104 CR1, CR2 1901-0630 CR3-CR7 1901-0415 0340-0164 CR8, CR9 1901-0026 F1, F4 2110-0303 F2, F3 2110-0051 F5 2110-0003 2110-0257 7124-2099 0360-1613 2680-0099 2740-0003 07970-80110 R1 0698-3629 R2, R3 0698-3635 R4, R5 0764-0043 R6 0812-0045 R7, R8 0811-1666 *R9 0811-1552 J10 1251-2025 1251-2503 1251-2504 0361-0013 0361-0137 SERIES 1120 0811-1665 SERIES 1229 0811-1552
*R9	
*R9	

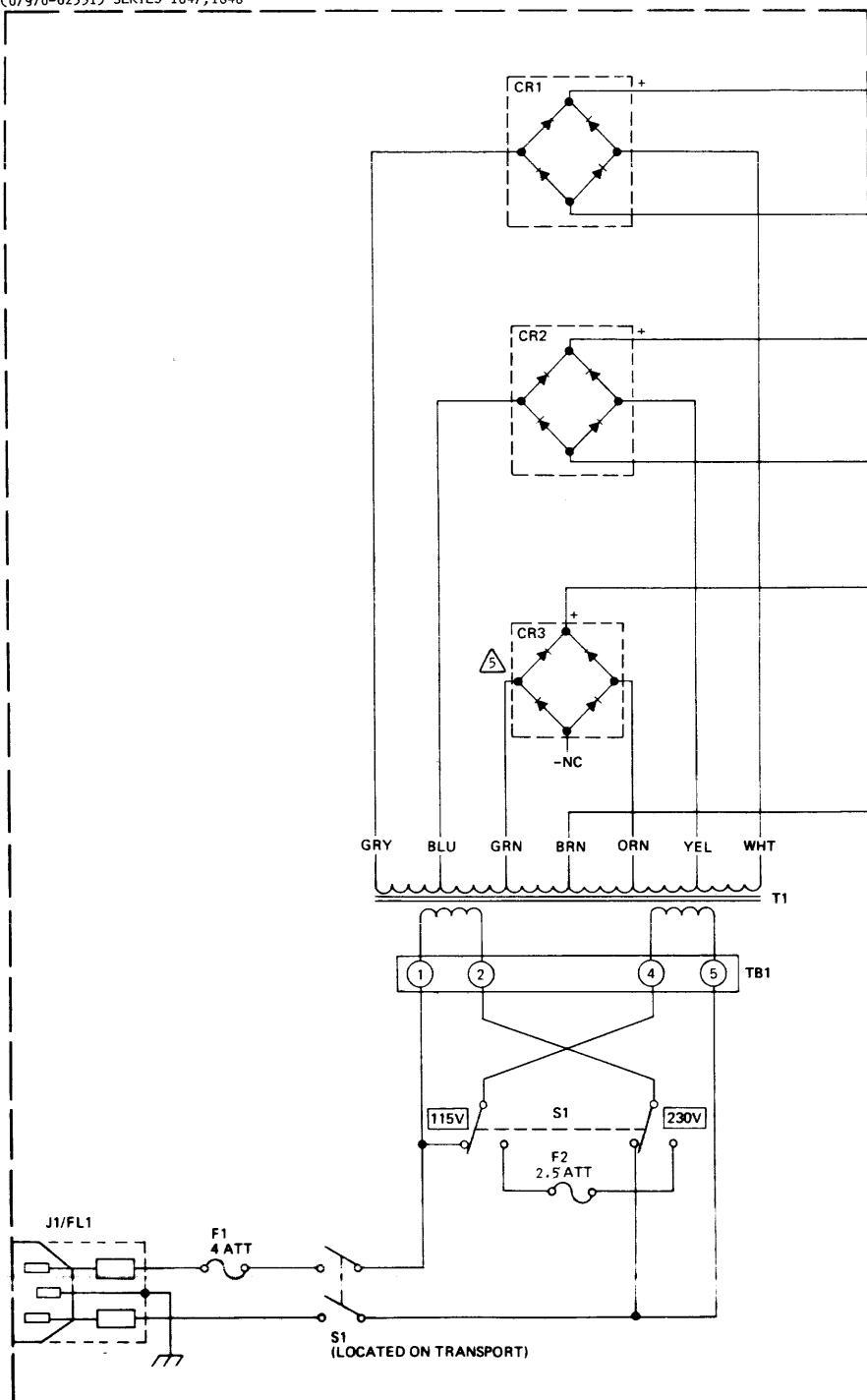
7970 B & Slave "E" Power Supply Assemb.

POWER DISTRIBUTION PCA  
07970-61020 (SERIES 1115, 1120, 1229)

DESCRIPTION
RESISTOR, Fxd, 6.19k, 1%, .125W
RESISTOR, Fxd, 3.16K, 1%, .125W
RESISTOR, Fxd, 2K, 5%, .5W
RESISTOR, Fxd, 680,5%, .25W
RESISTOR, Fxd, 1.33K, 1%, .125W
RESISTOR, Fxd, 5.11K, 1%, .125W
RESISTOR, Fxd, 100, 1%, .5W
RESISTOR, Fxd, 100K, 1%, .125W
RESISTOR, Fxd, 1K, 1%, .125W
RESISTOR, Fxd, 51.1K, 1%, .125W
RESISTOR, Fxd, 681, 1%, .125W
RESISTOR, Fxd, 8.25K, 1%, .125W
RESISTOR, Fxd, 7.5K, 1%, .125W
C, Voltage Regulator
C, Digital, MC844P
C, Digital, MC858P
: 1344 or above.

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	07970-61020 0180-2326 2680-0128 2190-0012	POWER DISTRIBUTION PCA (SERIES 1115) CAPACITOR, 1000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C2, C3	0180-2681 2680-0128 2190-0012	CAPACITOR, 24000uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C4, C5	0180-2325 2680-0128 2190-0012	CAPACITOR, 1500uf SCREW, 10-32, .25 Pan WASHER, Lock, #10
C6, C8	0180-0104	CAPACITOR, 200uf
CR1, CR2	1901-0630	DIODE, Rectifier, Silicone
CR3-CR7	1901-0415	DIODE, Power 1N4997
CR8, CR9	0340-0164	INSULATOR
F1, F4	1901-0026	DIODE
F2, F3	2110-0303	FUSE, 2A, 250V
F5	2110-0051	FUSE, 10A
	2110-0003	FUSE, 3A
	2110-0257	FUSE, Clip
	7124-2099	LABEL
	0360-1613	LUG, Solder #5
	2680-0099	SCREW, 10-32, .375 Pan
	2740-0003	NUT, Lock
	07970-80110	PCB, Power Supply
R1	0698-3629	RESISTOR, fxd, 270, 5%, 2W
R2, R3	0698-3635	RESISTOR, fxd, 680, 5%, 2W
R4, R5	0764-0043	RESISTOR, fxd, 2.7K, 5%, 2W
R6	0812-0045	RESISTOR, fxd, 0.15, 5%, 3W
R7, R8	0811-1666	RESISTOR, fxd, 1.0, 5%, 2W
*R9	0811-1552	RESISTOR, fxd, 0.56, 5%, 2W
J10	1251-2025 1251-2503 1251-2504 0361-0013 0361-0137	CONNECTOR, PC 2 x 24 156D CONNECTOR, (Female Pins) Contact PC CONNECTOR, (Male Pins) Contact PC RIVET, 123DX, .375 RIVET, 123DX, .188
*R9	SERIES 1120 0811-1665	RESISTOR, fxd, 0.82, 5%, 2W
*R9	SERIES 1229 0811-1552	RESISTOR, fxd, 0.56, 5%, 2W

MASTER UNIT TRANSFORMER ASSEMBLY A29  
(07970-62073) SERIES 1411  
(07970-62351) SERIES 1647, 1648

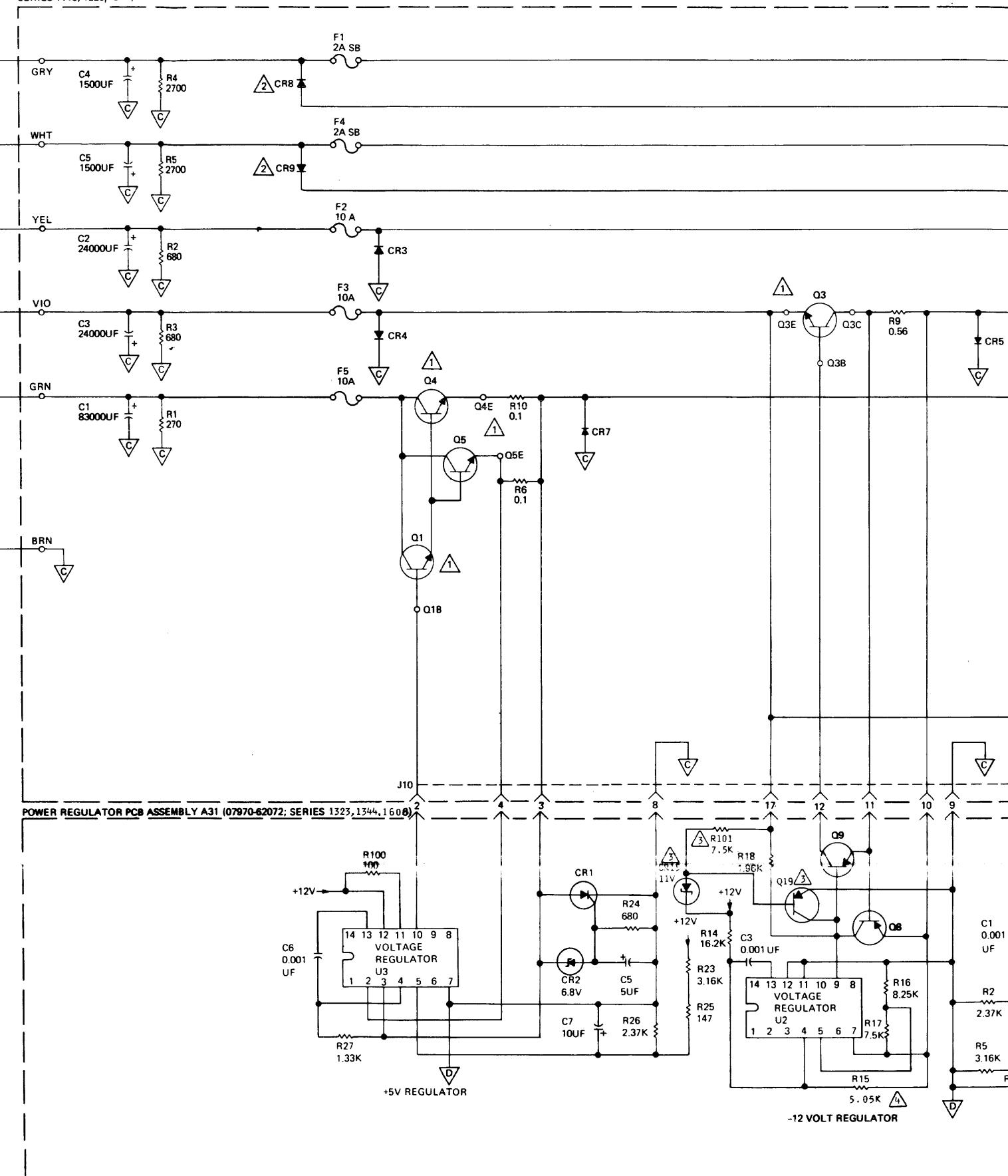


## NOTES

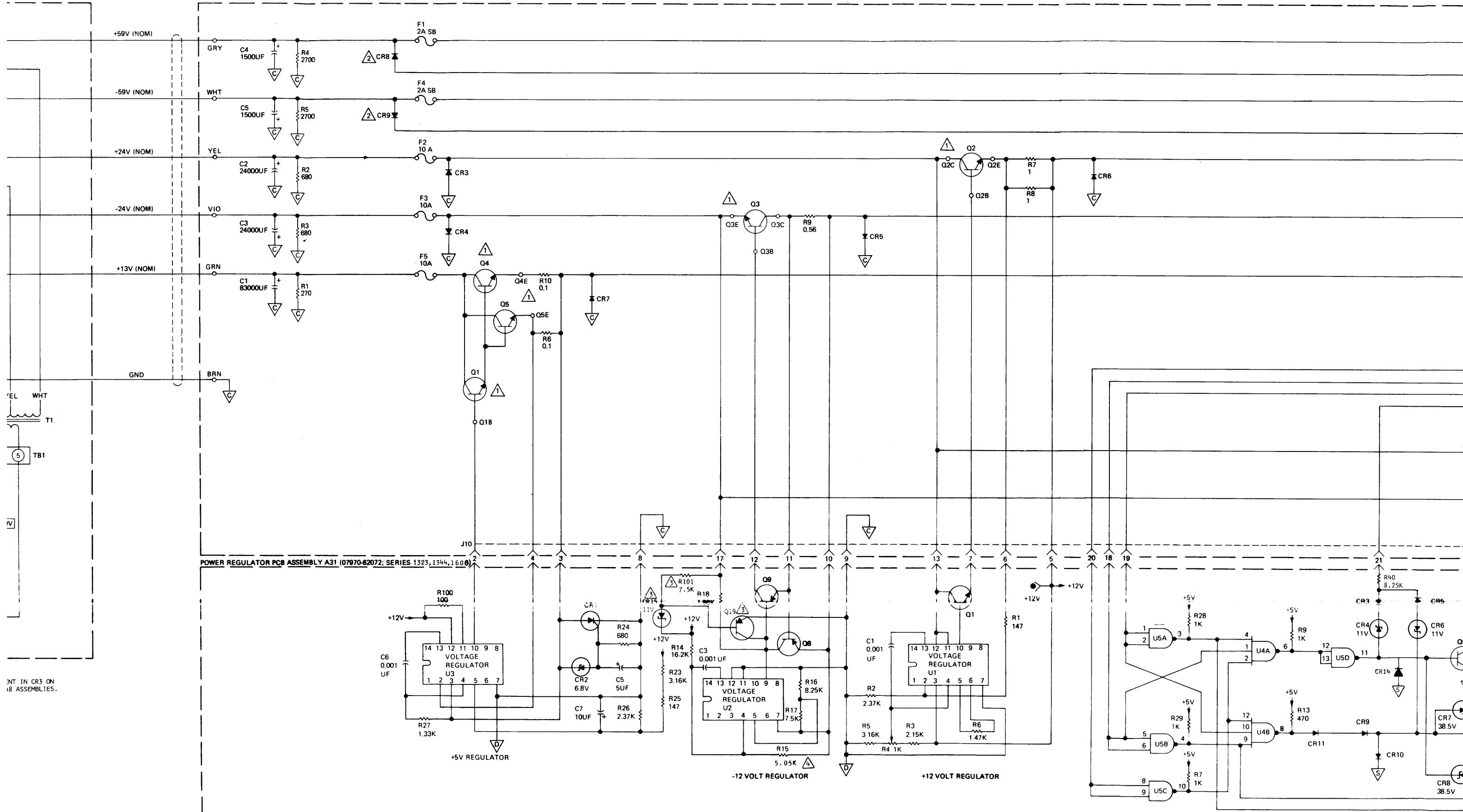
- 1** THESE COMPONENTS ARE EXTERNALLY MOUNTED ON HEAT SINKS OR CHASSIS.
  - 2** DIODES CR8 AND CR9 FIRST USED ON SERIES 1229.
  - 3** THESE COMPONENTS FIRST USED ON SERIES 1344.
  - 4** SERIES 1344 AND BELOW, R15 IS 5.11K.
  - C** THESE POINTS ARE COMMON (GROUND)
  - S** THESE POINTS ARE COMMON (SIGNAL RETURN).

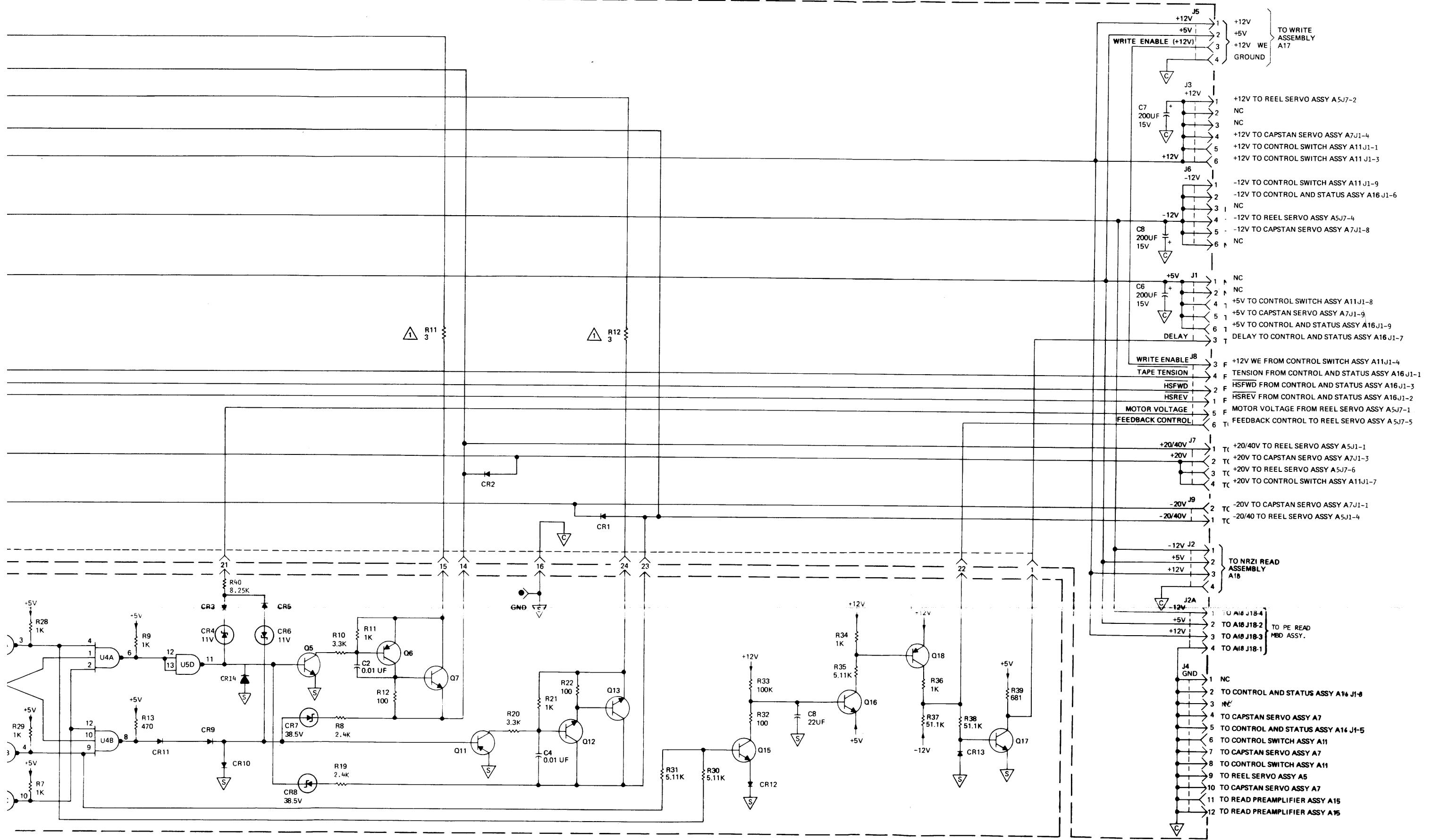
**5** BOTTOM TWO DIODES ABSENT IN CR3 ON  
07970-62351 SERIES 1648 ASSEMBLIES

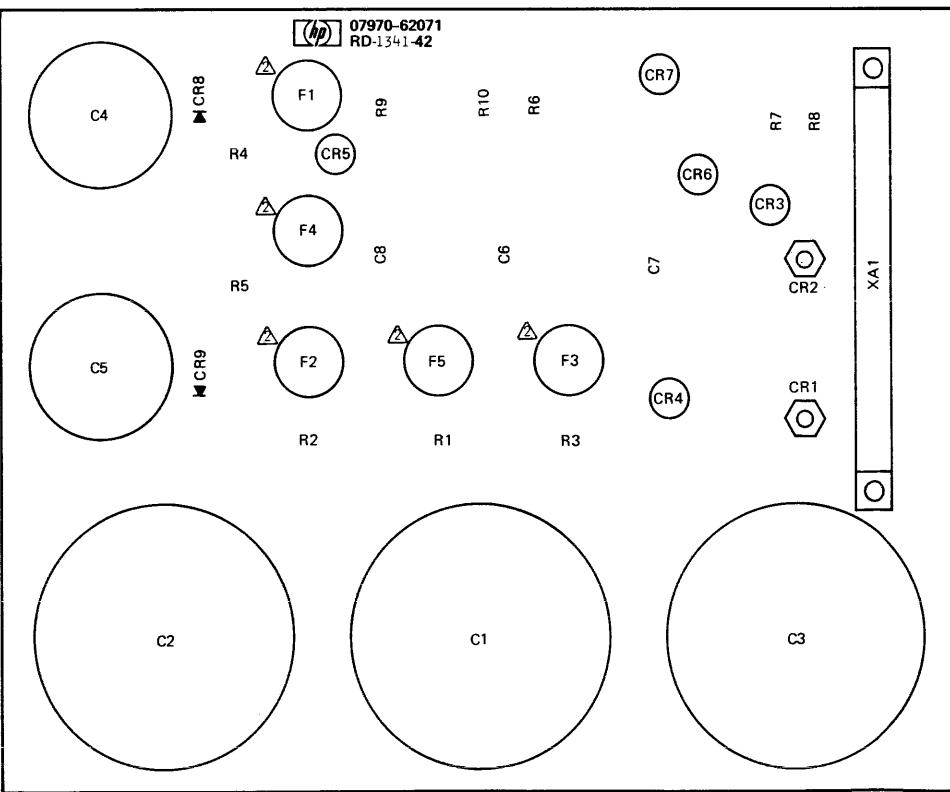
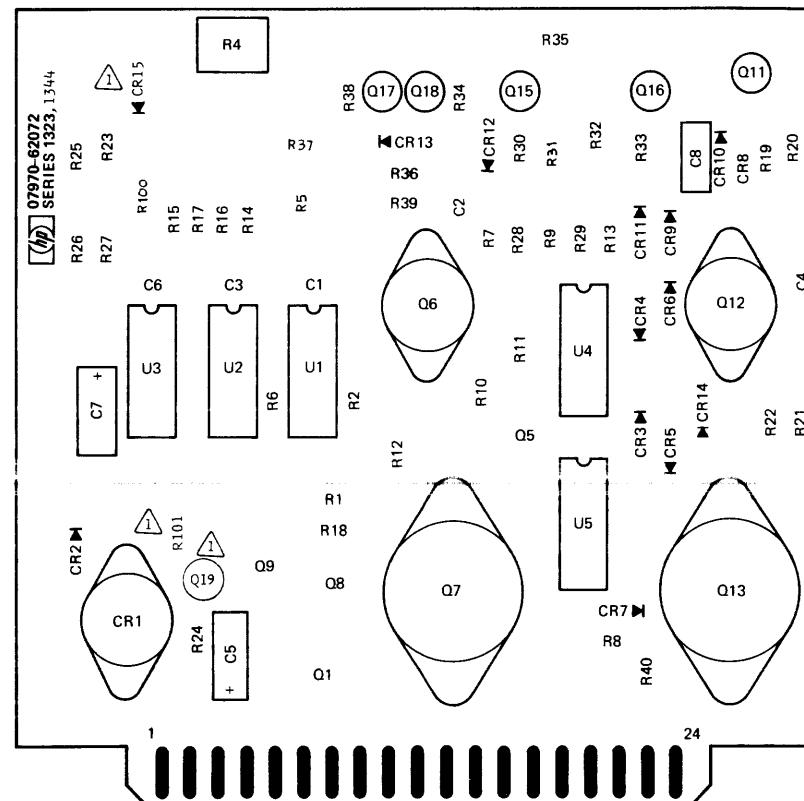
POWER DISTRIBUTION PCB ASSEMBLY A30A1  
(07970-62071;  
SERIES 1115, 1229, 1341)



POWER DISTRIBUTION PCB ASSEMBLY A30A1  
(07970-62071)  
SERIES 1115, 1229, (341)







PE POWER REGULATOR PCA (SERIES 1323, 1344, 1608)  
07970-62072

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1, C3, C6	07970-62072	PE POWER REGULATOR PCA (SERIES 1323, 1344)
C2, C4	0160-3456	CAPACITOR, fxd, 1000pf, Ceramic
C5	0160-2055	CAPACITOR, fxd, .01uf, 100V
C7	0180-0172	CAPACITOR, fxd, 5uf, - 10 + 75%
C8	0180-0059	CAPACITOR, fxd, 10uf, - 10 + 75%
CR1	0180-0228	CAPACITOR, fxd, 22uf, 15VDC
	1884-0088	THYRISTOR, 2N3228
	2200-0141	SCREW, 4-40, .312 Pan
	2260-0009	NUT, Lock, 4-40
CR2	1902-0048	DIODE, Zener, 6.81V
CR3, CR5	1901-0025	DIODE, 100V
CR4, CR6, CR15	1902-3171	DIODE, Zener, 11V
CR7, CR8	1902-3311	DIODE, Breakdown, 38.3V
CR9-CR14	1901-0040	DIODE, 30V, 50MA
Q1	1854-0039	TRANSISTOR, 2N3053, T05
Q5	1854-0022	TRANSISTOR, 2N2102, T05
Q6	1853-0052	TRANSISTOR, 2N3740, T066
	2200-0141	SCREW, 4-40, .312 Pan
	2260-0009	NUT, Lock, 4-40
Q7, Q13	1854-0063	TRANSISTOR, 2N3055, T03
	2200-0141	SCREW, 4-40, .312 Pan
	2260-0009	NUT, Lock, 4-40
△ Q8, Q18, Q19	1853-0036	TRANSISTOR, 2N3906, PL18
Q9	1853-0027	TRANSISTOR, PNP, SI, T05
Q11	1853-0080	TRANSISTOR, 2N4888, PL5
Q12	1854-0072	TRANSISTOR, 2N3054, T066
	2200-0141	SCREW, 4-40, .312 Pan
	2260-0009	NUT, Lock, 4-40
Q15-Q17	1854-0215	TRANSISTOR, 2N3904, PL5
R1, 25	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R2, 26	0698-3150	RESISTOR, fxd, 2.37K, 1%, .125W
R3	0698-0084	RESISTOR, fxd, 2.15K, 1%, .125W
R4	2100-1758	RESISTOR, Variable, 1K, 5%
R5, 23	0757-0279	RESISTOR, fxd, 3.16K, 1%, .125W
R6	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
R7, 9, 11, 21	0683-1025	RESISTOR, fxd, 1K, 5%, .25W
28, 29		RESISTOR, fxd, 2.4K, 5%, .25W
R8, 19	0683-2425	RESISTOR, fxd, 3.3K, 5%, .5W
R10, R20	0686-3325	RESISTOR, fxd, 100, 5%, .25W
R12, R22	0683-1015	RESISTOR, fxd, 470, 5%, .25W
R13	0683-4715	RESISTOR, fxd, 16.2K, 1%, .125W
R14	0757-0447	RESISTOR, fxd, 5.11K, 1%, .125W
*R15, 30, 31	0757-0438	
35		
R16, 40	0757-0441	RESISTOR, fxd, 8.25K, 1%, .125W
△ R17, 101	0757-0440	RESISTOR, fxd, 7.5K, 1%, .125W
R18	0698-0083	RESISTOR, fxd, 1.96K, 1%, .125W
R24	0683-6815	RESISTOR, fxd, 680, 5%, .25W

POWER DISTRIBUTION PCA  
07970-62071 (SERIES 1341)

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R27	0757-0317	RESISTOR, fxd, 1.33K, 1%, .125W
R32, 100	0757-0198	RESISTOR, fxd, 100, 1%, .5W
R33	0757-0465	RESISTOR, fxd, 100K, 1%, .125W
R34, R36	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R37, R38	0757-0458	RESISTOR, fxd, 51.1K, 1%, .125W
R39	0757-0419	RESISTOR, fxd, 681, 1%, .125W
U1, U2, U3	1820-0439	IC, Voltage Regulator
U4	1820-0348	IC, MC844P
U5	1820-0256	IC, MC858P
*R15	Series 1608 0698-7053	RESISTOR, fxd, 5.05K, .5W, .125W

 CR15, Q19, and R101 first used on series codes 1344.

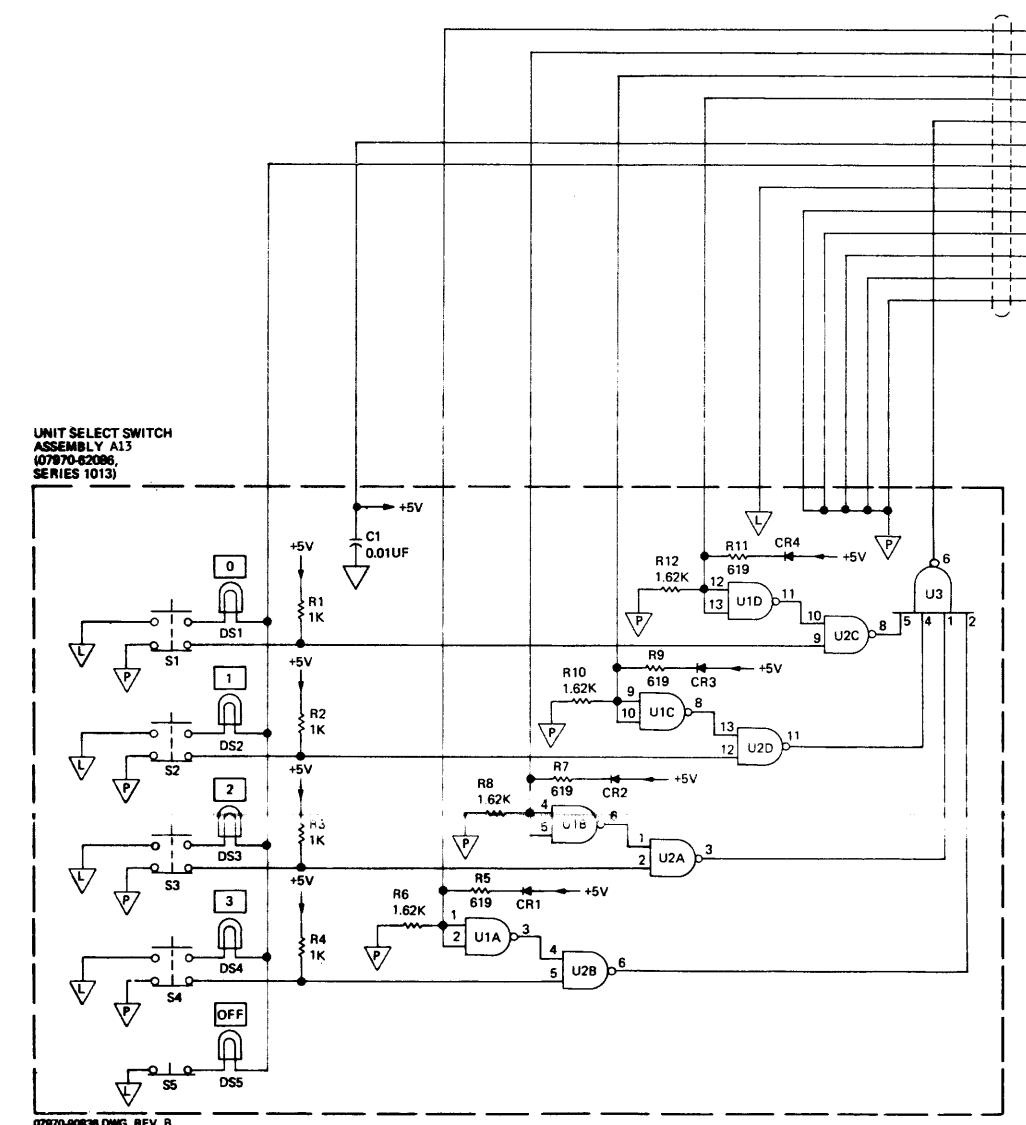
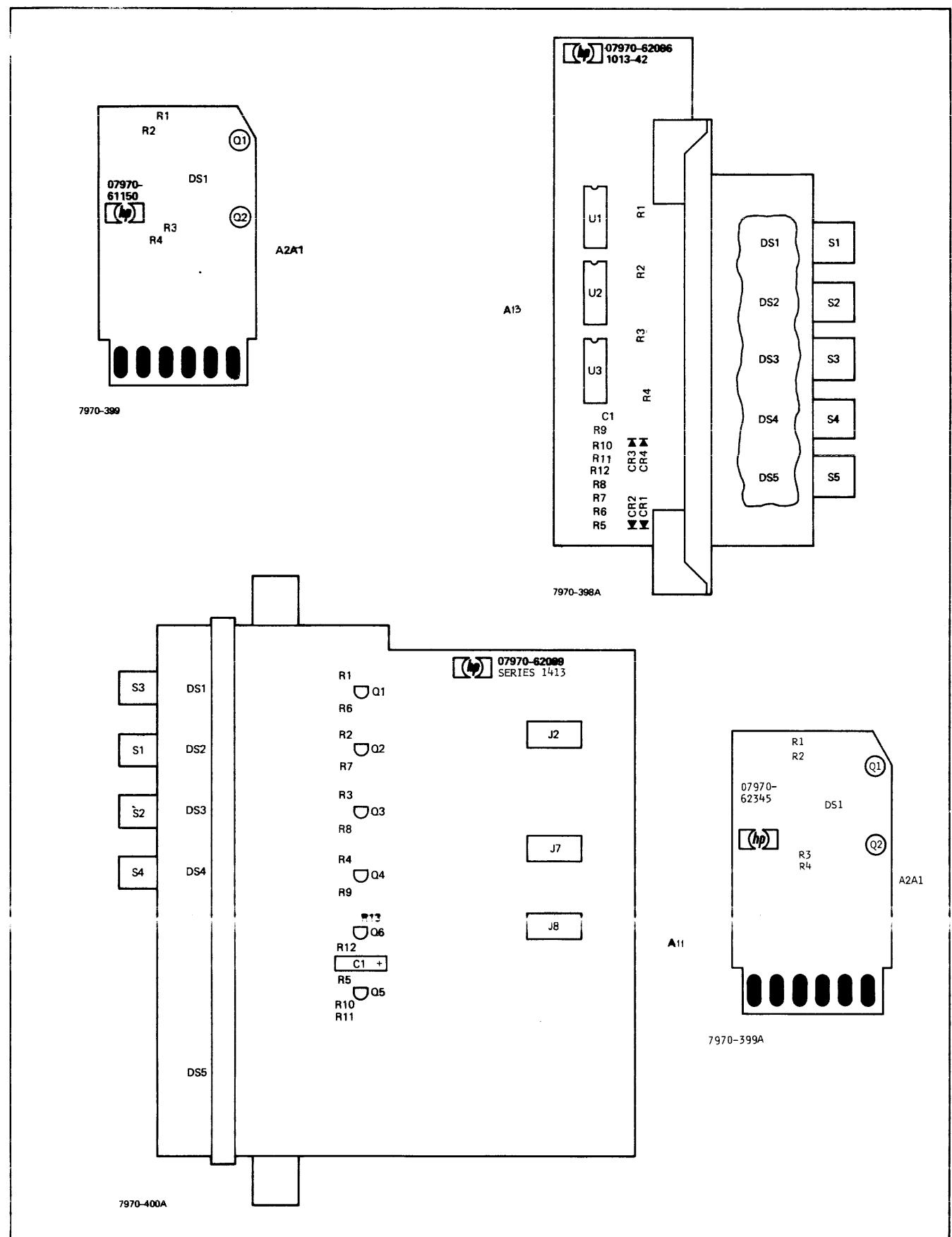
REF. DES./ INDEX NO.	HP PART NO.
C1	07970-62071 0180-2426 2680-0099 2190-0012
C2, C3	0180-2681 2680-0099 2190-0012
C4, C5	0180-2325 2680-0099 2190-0012
C6, C7, C8	0180-0104 1901-0630 2740-0003
CR1, CR2	1901-0415 0340-0164
CR3-CR7	1901-0415 0340-0164
CR8, CR9	1901-0026 2110-0303
F1, 4	2110-0051
F2, F3, F5	2110-0257
*XF1-5	R1 0698-3629
R2, R3	R2, R3 0698-3635
R4, R5	R4, R5 0764-0043
R6, R10	R6, R10 0811-2490
R7, R8	R7, R8 0811-1666
R9	R9 0811-1552
J5	J5 1251-2025
J1-4, 6-9	J1-4, 6-9 1251-2503
J1-4, 6-9	1251-2504 0360-1613
	2190-0008
*XF1-5	SERIES 1341 2110-0257

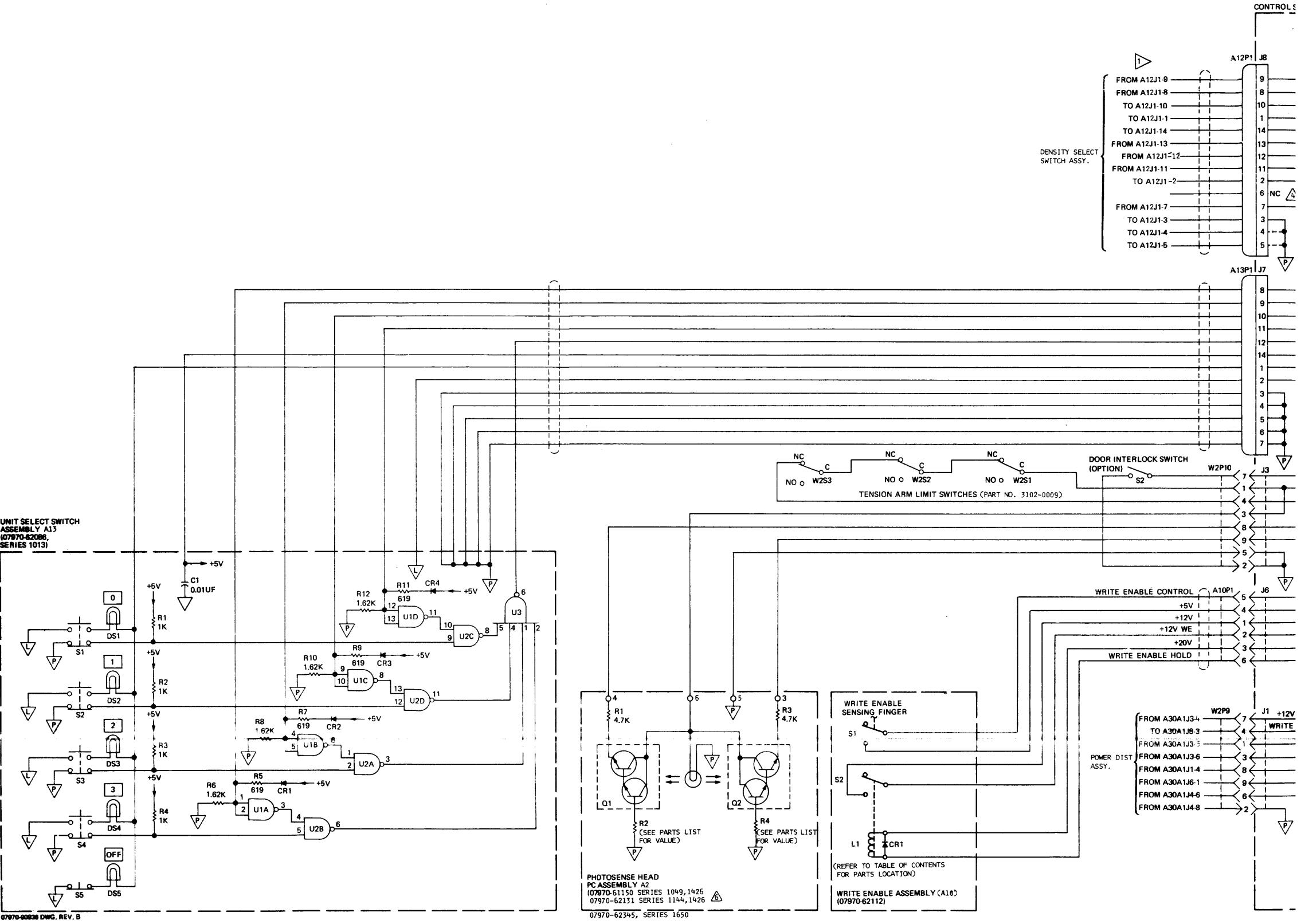
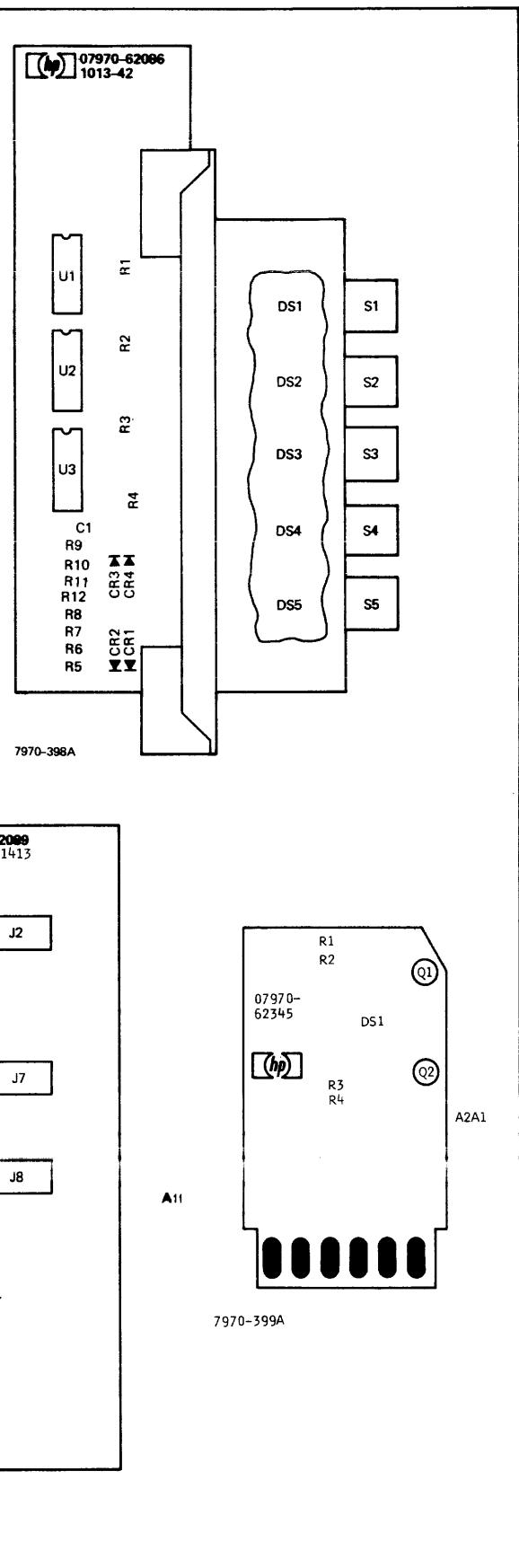
POWER DISTRIBUTION PCA  
07970-62071 (SERIES 1341)

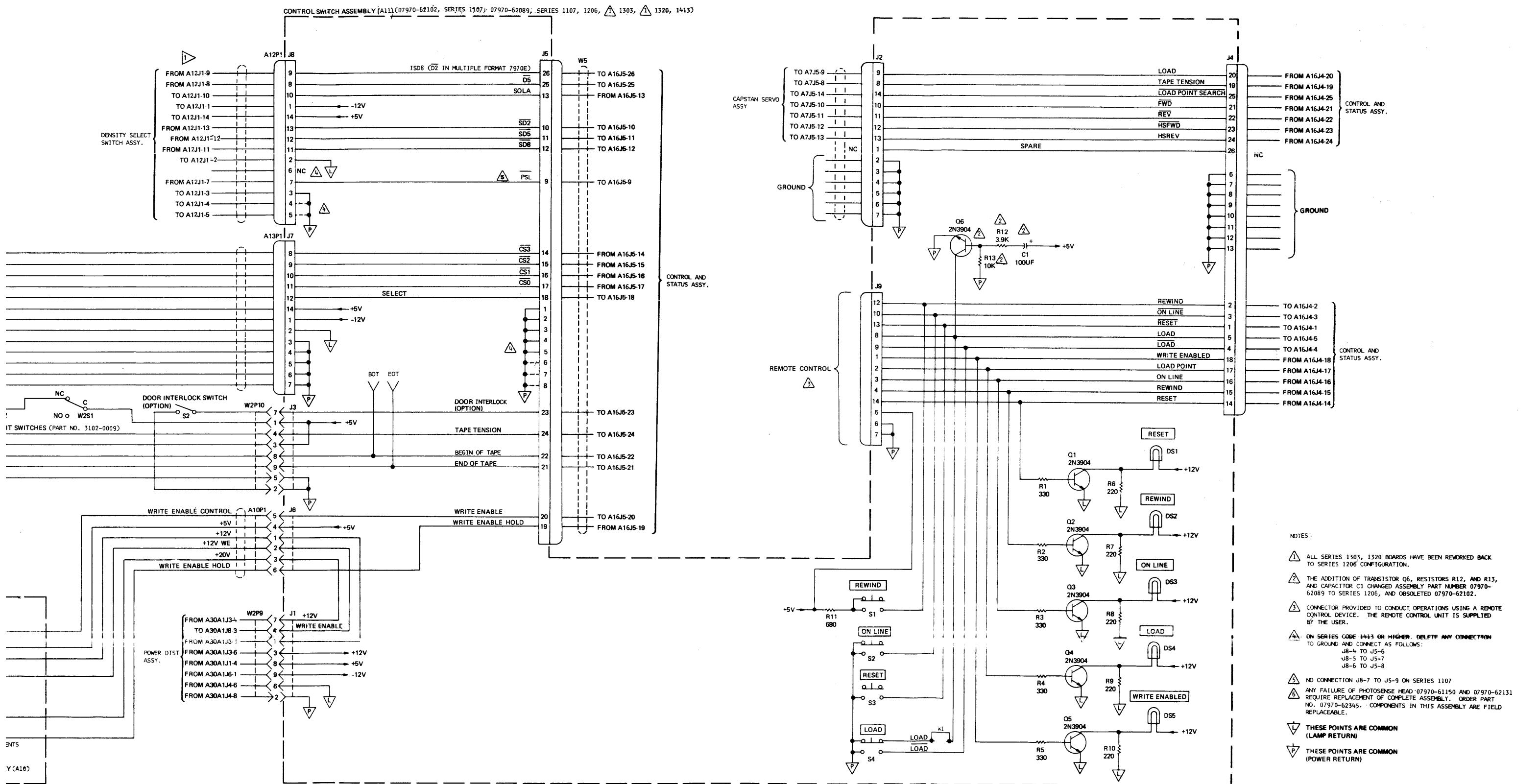
DESCRIPTION
RESISTOR, fxd, 1.33K, 1%, .125W
RESISTOR, fxd, 100, 1%, .5W
RESISTOR, fxd, 100K, 1%, .125W
RESISTOR, fxd, 1K, 1%, .125W
RESISTOR, fxd, 51.1K, 1%, .125W
RESISTOR, fxd, 681, 1%, .125W
IC, Voltage Regulator
IC, MC844P
IC, MC858P
RESISTOR, fxd, 5.05K, .5W, .125W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1	07970-62071 0180-2426 2680-0099 2190-0012	POWER DISTRIBUTION PCA (SERIES 1341) CAPACITOR, fxd, 83000uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C2, C3	0180-2681 2680-0099 2190-0012	CAPACITOR, fxd, 24000 uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C4, C5	0180-2325 2680-0099 2190-0012	CAPACITOR, fxd, 1500uf SCREW, 10-32, .375 Pan WASHER, Lock, #10
C6, C7, C8	0180-0104	CAPACITOR, fxd, 200uf
CR1, CR2	1901-0630	DIODE, Rectifier, Silicone
CR3-CR7	2740-0003 1901-0415 0340-0164	NUT, Lock, 10-32 DIODE, Power INSULATOR, Transistor
CR8, CR9	1901-0026	DIODE
F1, 4	2110-0303	FUSE, 2A, 250V, SLO BLO
F2, F3, F5	2110-0051	FUSE, 10A, MB
*XF1-5	2110-0257	CLIP, Fuse Holder
R1	0698-3629	RESISTOR, fxd, 270, 5%, 2W
R2, R3	0698-3635	RESISTOR, fxd, 680, 5%, 2W
R4, R5	0764-0043	RESISTOR, fxd, 2.7K, 5%, 2W
R6, R10	0811-2490	RESISTOR, fxd; 0.1, 3%, 5W
R7, R8	0811-1666	RESISTOR, fxd, 1, 5%, 2W
R9	0811-1552	RESISTOR, fxd, .56, 5%, 2W
J5	1251-2025	CONNECTOR, PC 2x24 .1560
J1-4, 6-9	1251-2503	CONTACT PC Female Pins
J1-4, 6-9	1251-2504	CONTACT PC Male Pins
	0360-1613	LUG, Solder #5
	2190-0008	WASHER, Lock #6
*XF1-5	SERIES 1341 2110-0257	CLIP, Fuse Holder

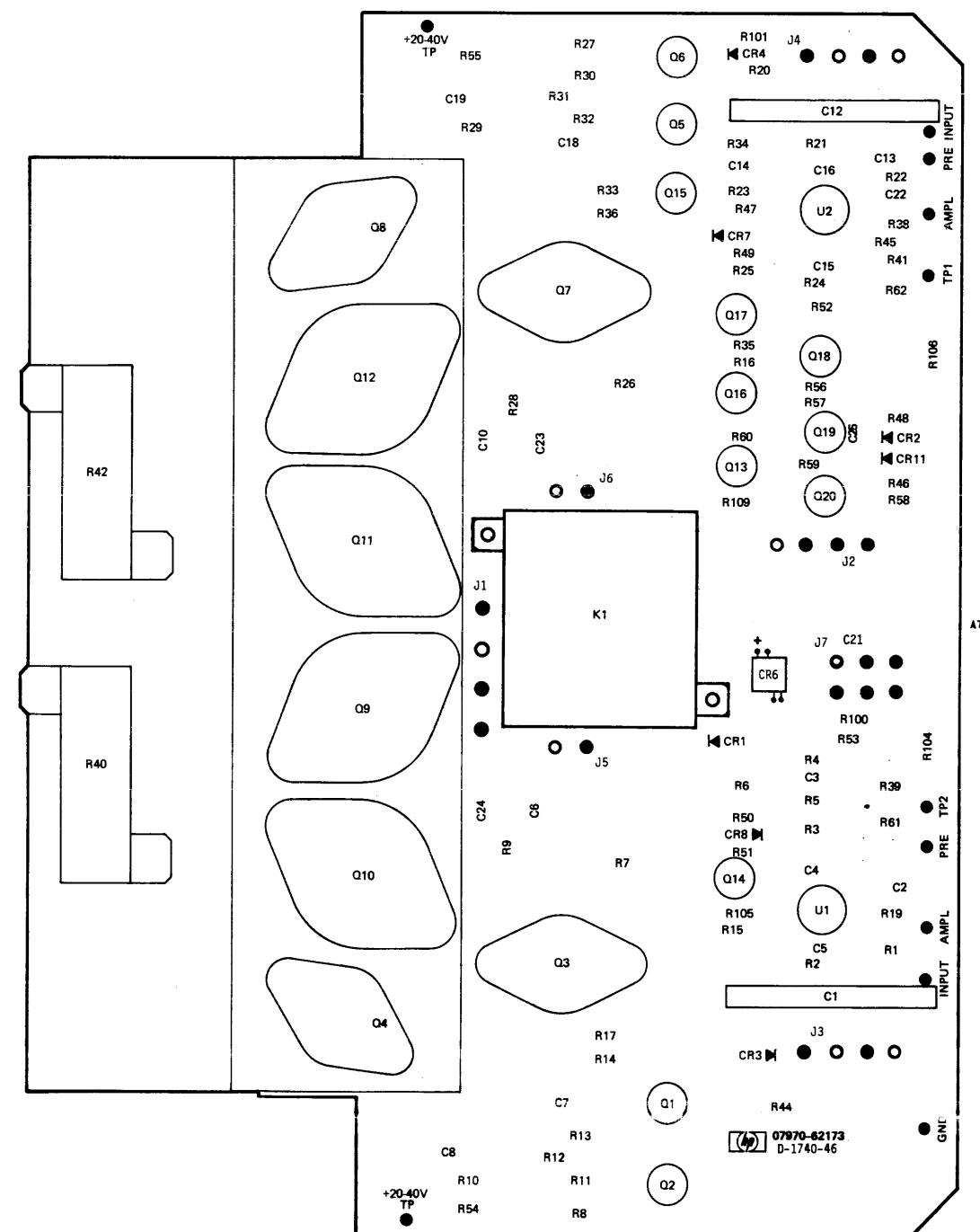
series codes 1344.



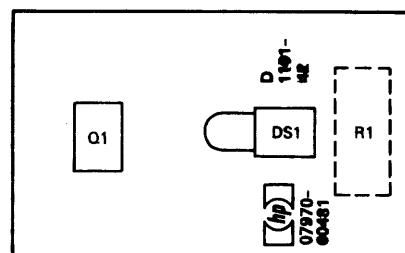




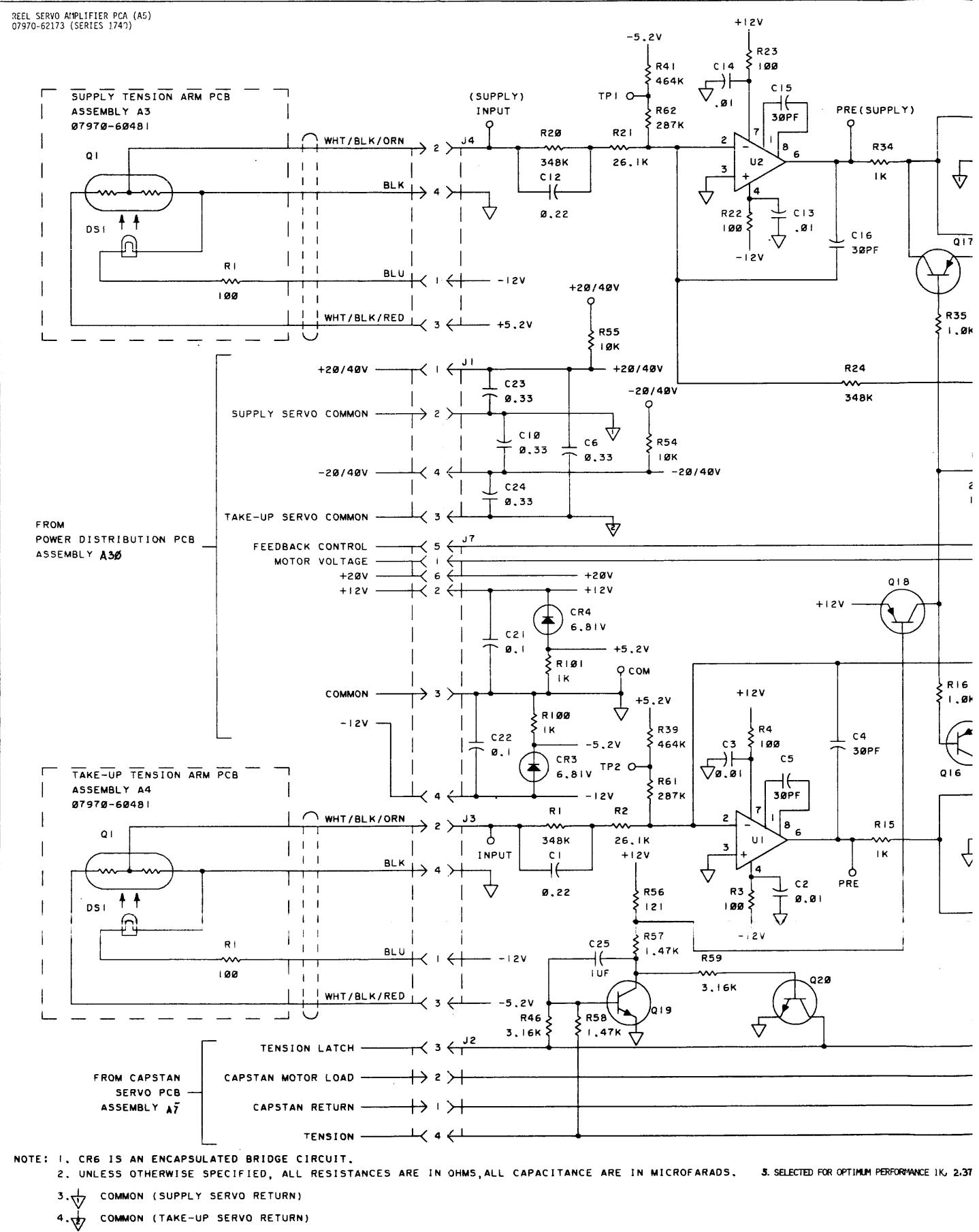
Control Switch Assembly All, Photosense Head Assembly A2,  
and Unit Select Switch Assembly A13



7970-62173AB

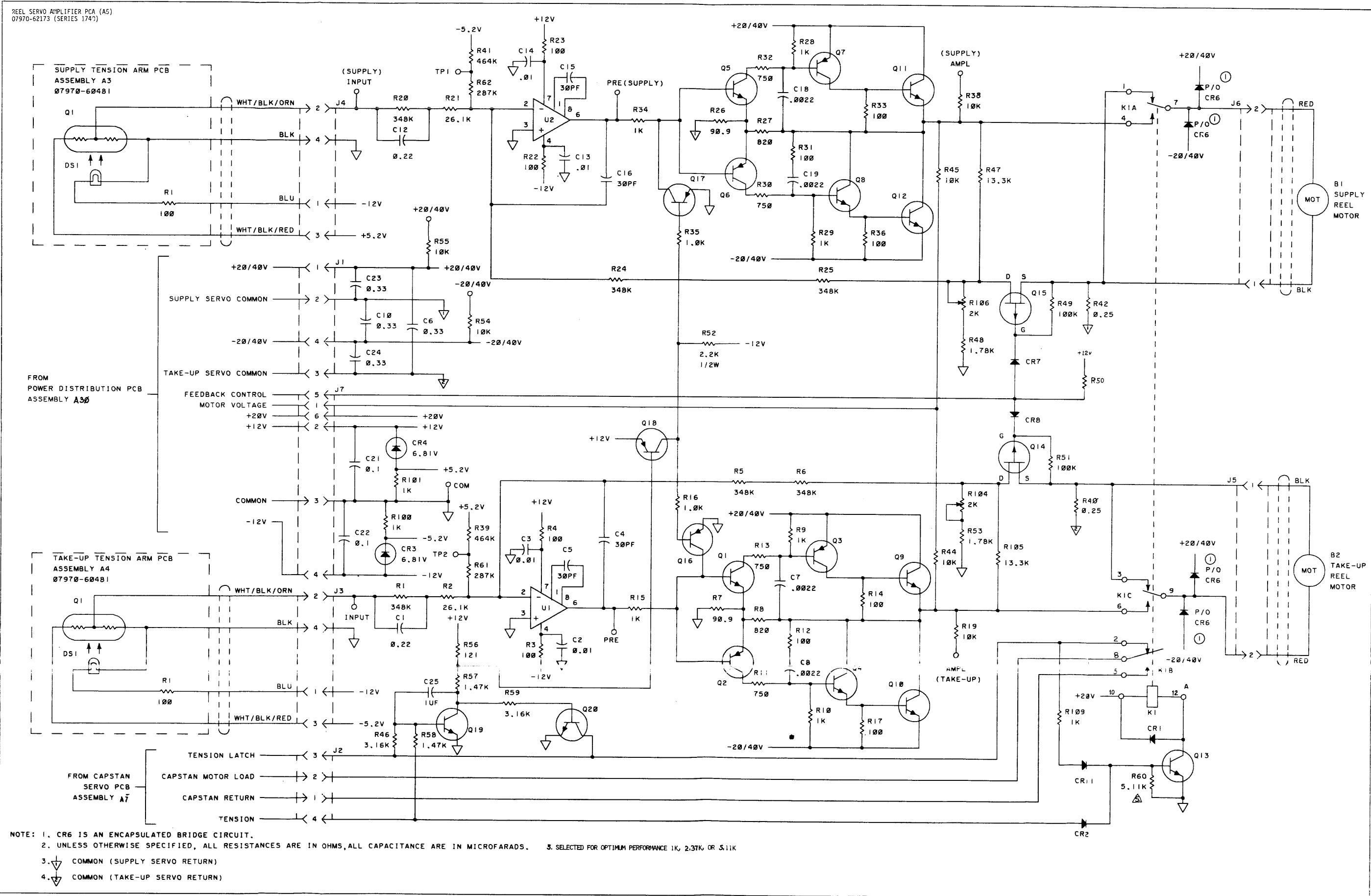


REEL SERVO AMPLIFIER PCA (A5)  
07970-62173 (SERIES 1740)



NOTE: 1. CR6 IS AN ENCAPSULATED BRIDGE CIRCUIT.  
2. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCES ARE IN OHMS, ALL CAPACITANCE ARE IN MICROFARADS.  
3. ▽ COMMON (SUPPLY SERVO RETURN)  
4. ▽ COMMON (TAKE-UP SERVO RETURN)

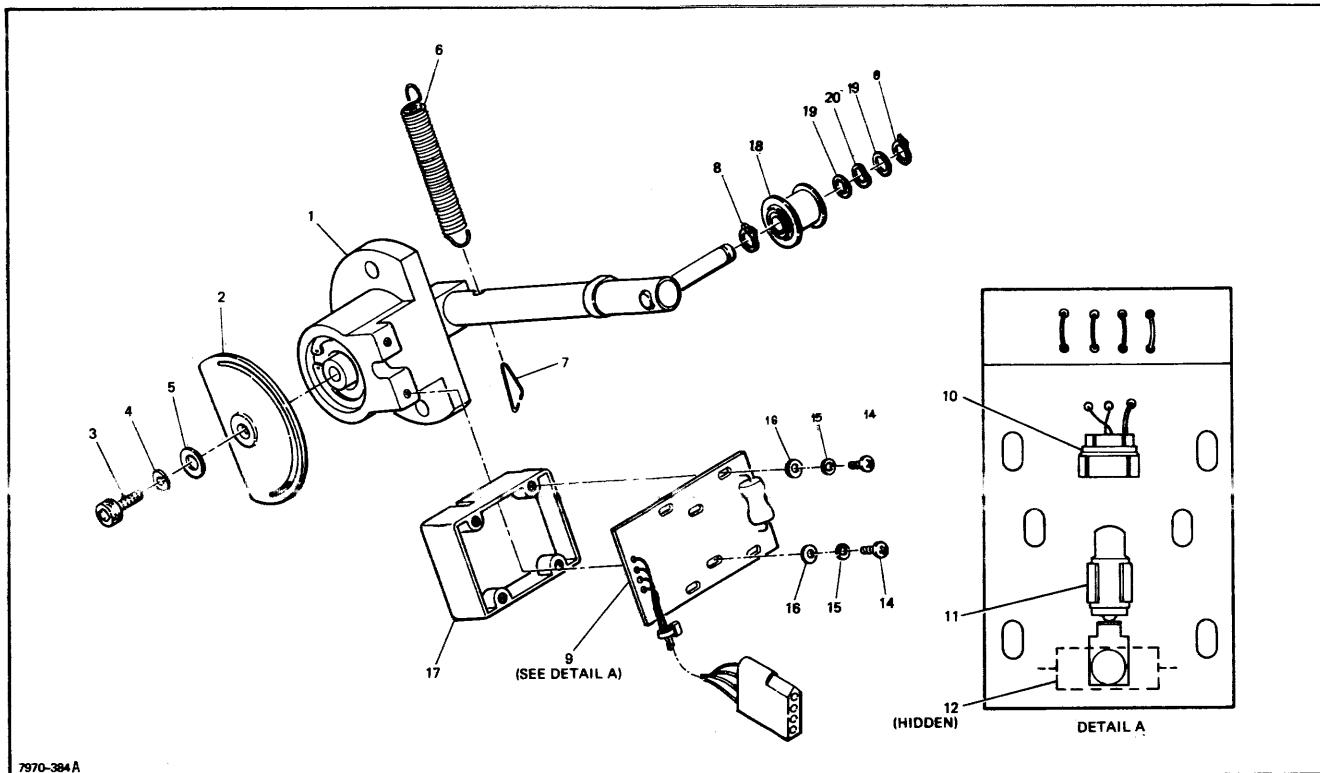
5. SELECTED FOR OPTIMUM PERFORMANCE 1K, 2.37



Tension Arm Assembly A3/A4 and  
Reel Servo PC Assembly A5

## REEL SERVO PCA PARTS LIST

07970-62173 (Series 1740)



## TENSION ARM ASSEMBLY PARTS LIST

07970-60181

REF. DES/ INDEX NO.	HP PART NO.	DESCRIPTION
1	07970-60181	TENSION ARM ASSEMBLY
2	07970-20190	HOUSING, Bearing
3	07970-00380	SHADE, Photocell
4	3030-0038	SCREW, 10-32, .5in.
5	2190-0034	WASHER, Lock, #10
6	2190-0420	WASHER, Flat, #10
7	1460-1181	SPRING, Extension
8	1460-1250	SPRING, Torsion
9	0510-0238	RING, Retaining
10	07970-60481	PCA, Tension Arm & Cable
11	1990-0307	PHOTOCONDUCTOR, Dual (Q1)
12	2140-0351	LAMP, 6V, #328, (DS1)
14	0698-3620	RESISTOR, fxd, 100, 5%, 2W, (R1)
15	2200-0141	SCREW, 4-40, .312 Pan
16	2190-0003	WASHER, Lock, #4
17	3050-0105	WASHER, Flat, #4
18	07970-40203	HOOD, Tension Arm
19	07970-60130	GUIDE, Tape
20	3050-0032	WASHER, Flat .010 thick
	3050-0253	WASHER, Spring, #10

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62173	REEL SERVO ASSY (Series 1740)
C1, 12	0160-0380	CAPACITOR, fxd, .22uf, 10%
C2,3,13,14	0160-2055	CAPACITOR, fxd, .01uf, 100V
C4,5,15,16	0160-2199	CAPACITOR, fxd, 30pf, 5%
C6,10,23,24	0160-2128	CAPACITOR, fxd, .33uf, 20%
C7,8,18,19	0160-0154	CAPACITOR, fxd, .0022uf, 10%
C21,22	0150-0121	CAPACITOR, fxd, .1uf, 10%
C25	0160-0127	CAPACITOR, fxd, 1.0uf
CR1,2,5,7,8,11	1901-0040	DIODE, 30V, 50ma
CR3,4	1902-0048	DIODE, Zener, 6.8iv
CR6	1901-0035	DIODE, Bridge Rectifier
CR11	1901-0040	DIODE
K1	0490-0891	RELAY, 3PDT, 24Vdc
	0490-0890	SOCKET, Relay
	1460-1182	SPRING, Hold Down
Q1,5	1854-0022	TRANSISTOR, 2N2101 TO5
Q2,6	1853-0080	TRANSISTOR, 2N4888 PL5
Q3,7	1853-0323	TRANSISTOR, 2N6211
Q4,8	1854-0399	TRANSISTOR, 2N3583
Q9-12	1854-0490	TRANSISTOR, 2N6259
Q13,19,20,21	1854-0215	TRANSISTOR, 2N3904 PL5
Q14,15	1855-0390	TRANSISTOR, 2N4342 TO18
Q16,17	1853-0322	TRANSISTOR, 2N2946A TO46
Q18	1853-0036	TRANSISTOR, 2N3906 PL18
	0340-0177	INSULATOR, Bushing
	2200-0147	SCREW, 4-40, .5 Pan
	2260-0001	NUT, Hex, 4-40
	2260-0009	NUT, Lock, 4-40
R1,5,6,20,24,25	0698-3458	RESISTOR, fxd, 348K, 1%, .125W
R2,21	0698-3159	RESISTOR, fxd, 2.61K, 1% .125W
R3,4,22,23	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R7,26	0757-0797	RESISTOR, fxd, 90.9, 1% .5W
R8,27	0698-3637	RESISTOR, fxd, 820, 5% 2W
R9,10,15,28,29	0683-1025	RESISTOR, fxd, 1K, 5% .25W
34,100,101,109		
R11,13,30,32	0761-0058	RESISTOR, fxd, 750, 5% 1W
R12,31	0757-0401	RESISTOR, fxd, 100, 1% .125W
R14,17,33,36	0758-0086	RESISTOR, fxd, 100 1% .25W
R16,35	0757-0280	RESISTOR, fxd, 1K, 1% .125W
R19,38,54,55	0683-1035	RESISTOR, fxd, 10K, 5% .25W
R39,41	0698-3260	RESISTOR, fxd, 464K, 1%, .125W
R40,42	0811-2048	RESISTOR, fxd, .25, 1%, 25W
R44,45	0686-1035	RESISTOR, fxd, 10k, 5%, .125W
R46,59	0757-0279	RESISTOR, fxd, 3.16K,1%, .125W
R47,105	0757-0289	RESISTOR, fxd, 13.3K,1% .125W
R48,53	0757-0278	RESISTOR, fxd, 1.78K,1%, .125W
R49,51	0757-0465	RESISTOR, fxd, 100K 1%, .125W

REEL SERVO PCA PARTS LIST  
07970-62173 (Series 1740)

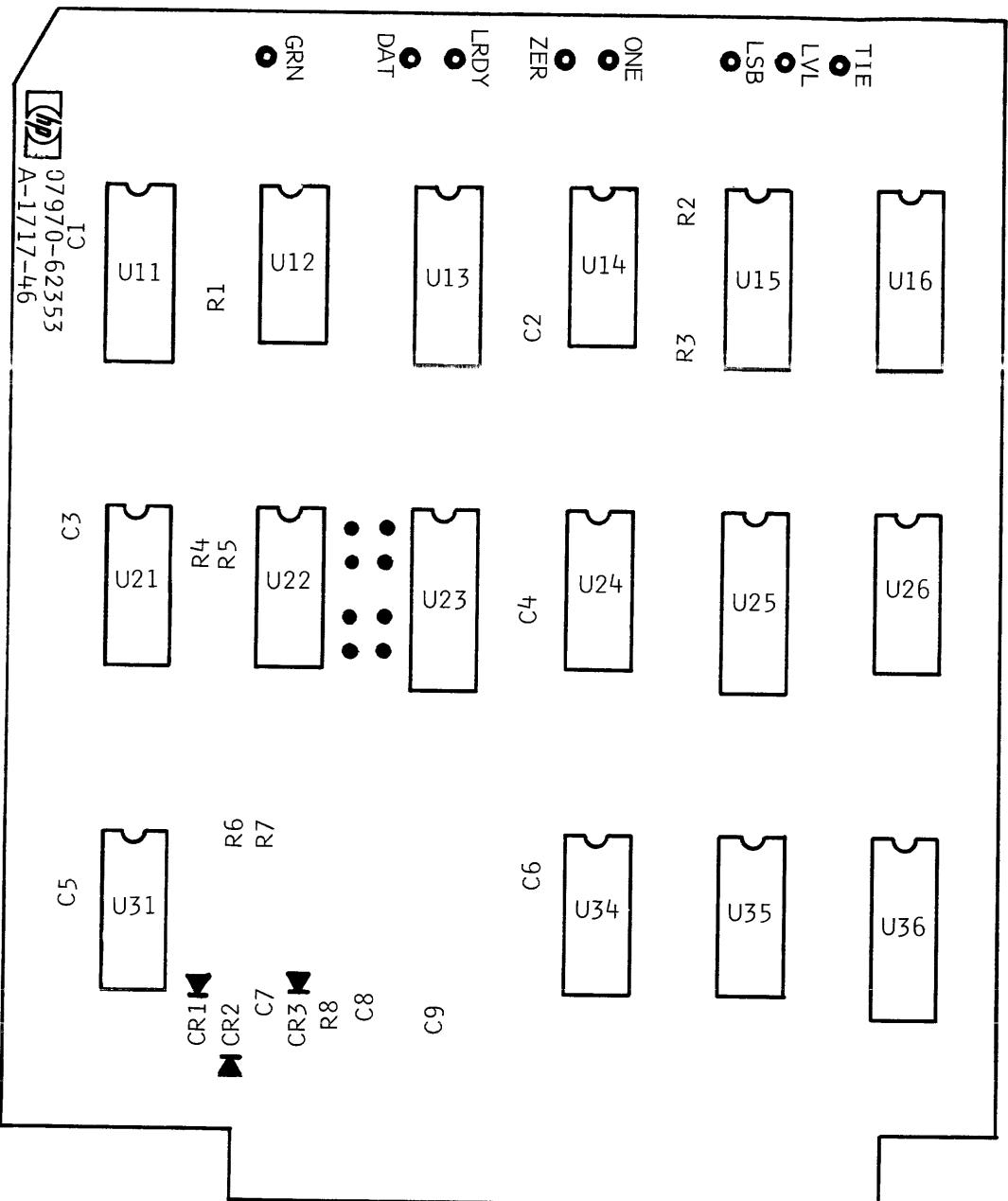
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62173	REEL SERVO ASSY (Series 1740)
C1, 12	0160-0380	CAPACITOR, fxd, .22uf, 10%
C2,3,13,14	0160-2055	CAPACITOR, fxd, .01uf, 100V
C4,5,15,16	0160-2199	CAPACITOR, fxd, 30pf, 5%
C6,10,23,24	0160-2128	CAPACITOR, fxd, .33uf, 20%
C7,8,18,19	0160-0154	CAPACITOR, fxd, .0022uf, 10%
C21,22	0150-0121	CAPACITOR, fxd, .1uf, 10%
C25	0160-0127	CAPACITOR, fxd, 1.0uf
CR1,2,5,7,8,11	1901-0040	DIODE, 30V, 50ma
CR3,4	1902-0048	DIODE, Zener, 6.8iv
CR6	1901-0035	DIODE, Bridge Rectifier
CR11	1901-0040	DIODE
K1	0490-0891	RELAY, 3PDT, 24Vdc
	0490-0890	SOCKET, Relay
	1460-1182	SPRING, Hold Down
Q1,5	1854-0022	TRANSISTOR, 2N2101 TO5
Q2,6	1853-0080	TRANSISTOR, 2N4888 PL5
Q3,7	1853-0323	TRAMISITOR, 2N6211
Q4,8	1854-0399	TRANSISTOR, 2N3583
Q9-12	1854-0490	TRANSISTOR, 2N6259
Q13,19,20,21	1854-0215	TRANSISTOR, 2N3904 PL5
Q14,15	1855-0390	TRANSISTOR, 2N4342 TO18
Q16,17	1853-0322	TRANSISTOR, 2N2946A TO46
Q18	1853-0036	TRANSISTOR, 2N3906 PL18
	0340-0177	INSULATOR, Bushing
	2200-0147	SCREW, 4-40, .5 Pan
	2260-0001	NUT, Hex, 4-40
	2260-0009	NUT, Lock, 4-40
R1,5,6,20,24,25	0698-3458	RESISTOR, fxd, 348K, 1%, .125W
R2,21	0698-3159	RESISTOR, fxd, 2.61K, 1% .125W
R3,4,22,23	0683-1015	RESISTOR, fxd, 100, 5%, .25W
R7,26	0757-0797	RESISTOR, fxd, 90.9, 1% .5W
R8,27	0698-3637	RESISTOR, fxd, 820, 5% 2W
R9,10,15,28,29	0683-1025	RESISTOR, fxd, 1K, 5% .25W
34,100,101,109		
R11,13,30,32	0761-0058	RESISTOR, fxd, 750, 5% 1W
R12,31	0757-0401	RESISTOR, fxd, 100, 1% .125W
R14,17,33,36	0758-0086	RESISTOR, fxd, 100 1% .25W
R16,35	0757-0280	RESISTOR, fxd, 1K, 1% .125W
R19,38,54,55	0683-1035	RESISTOR, fxd, 10K, 5% .25W
R39,41	0698-3260	RESISTOR, fxd, 464K, 1%, .125W
R40,42	0811-2048	RESISTOR, fxd, .25, 1%, 25W
R44,45	0686-1035	RESISTOR, fxd, 10k, 5%, .125W
R46,59	0757-0279	RESISTOR, fxd, 3.16K,1%, .125W
R47,105	0757-0289	RESISTOR, fxd, 13.3K,1% .125W
R48,53	0757-0278	RESISTOR, fxd, 1.78K,1%, .125W
R49,51	0757-0465	RESISTOR, fxd, 100K 1%, .125W

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
R50	0757-0458	RESISTOR, fxd, 51.1K, 1%, .125W
R52	0686-2225	RESISTOR, fxd, 2.2K, 5%, .25W
R56	0757-0403	RESISTOR, fxd, 121K, 1%, .125W
R57,58	0757-1094	RESISTOR, fxd, 1.47K, 1%, .125W
*R60	{ 0757-0438 0757-0280 0757-3150	RESISTOR, fxd, 5.11K, 1%, .125W RESISTOR, fxd, 1K, 1%, .125W RESISTOR, fxd, 2.37K, 1%, .125W}
R61,62	0698-3456	RESISTOR, fxd, 287K 1%, .125W
R104,106	2100-1759	RESISTOR, Var, 2K, 5%, 1W
U1,2	1820-0223	IC, LM301AH
	07970-20849	BRACKET, Reel Servo
	1205-0085	DISSIPATOR, Heat (Q3&7)

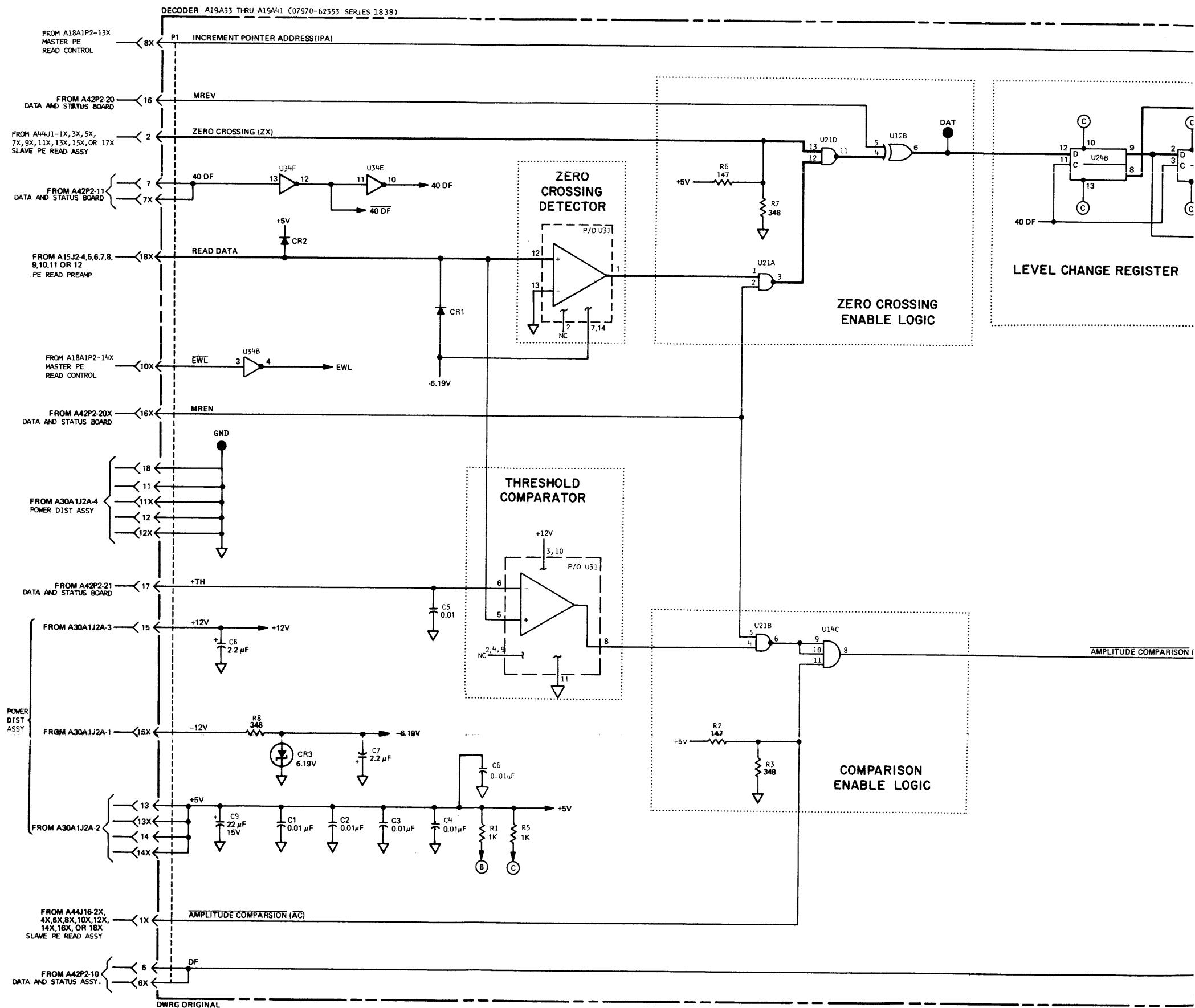
\*R60 is selected for optimum performance

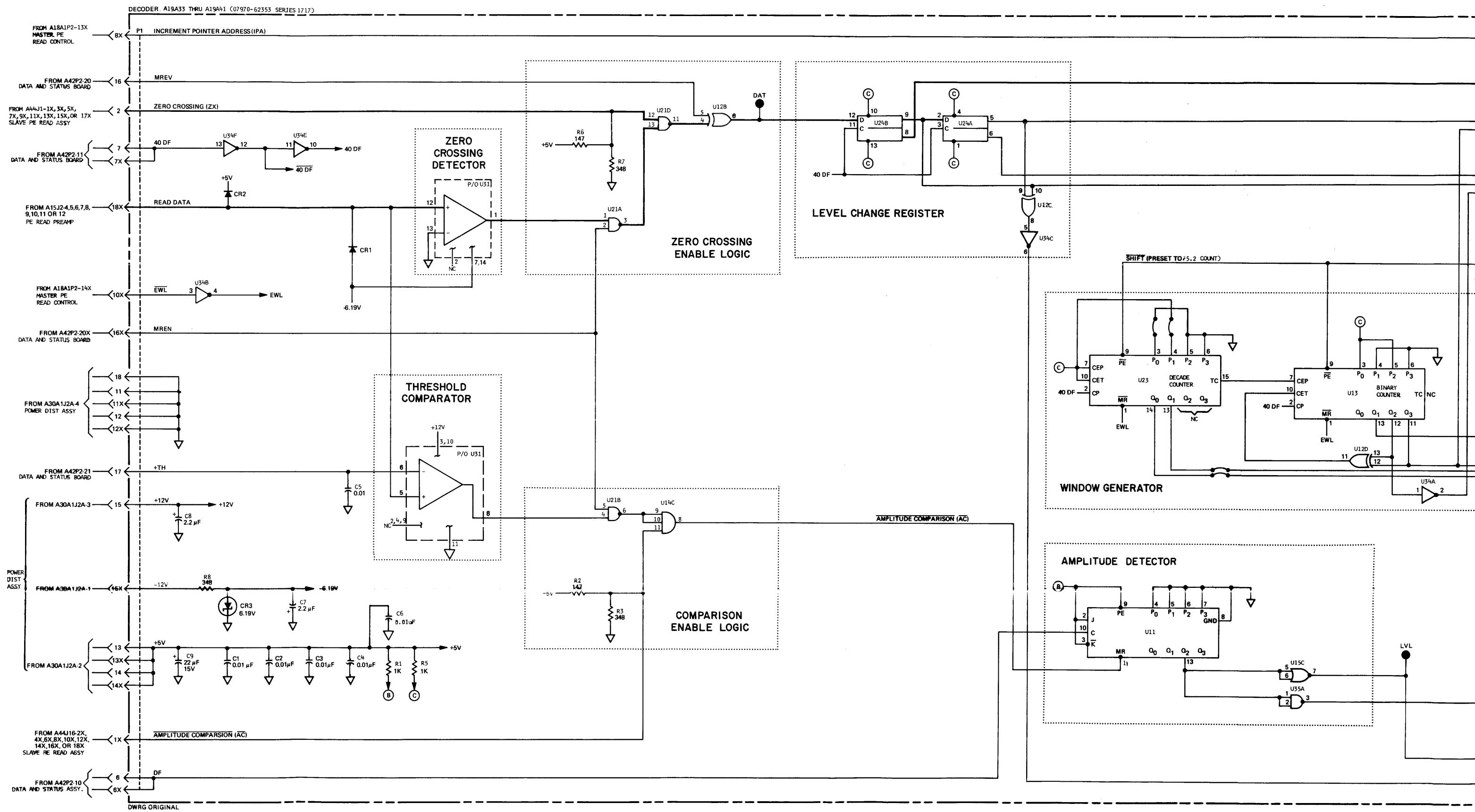
Tension Arm Assembly A3/A4 and  
Reel Servo PC Assembly A5

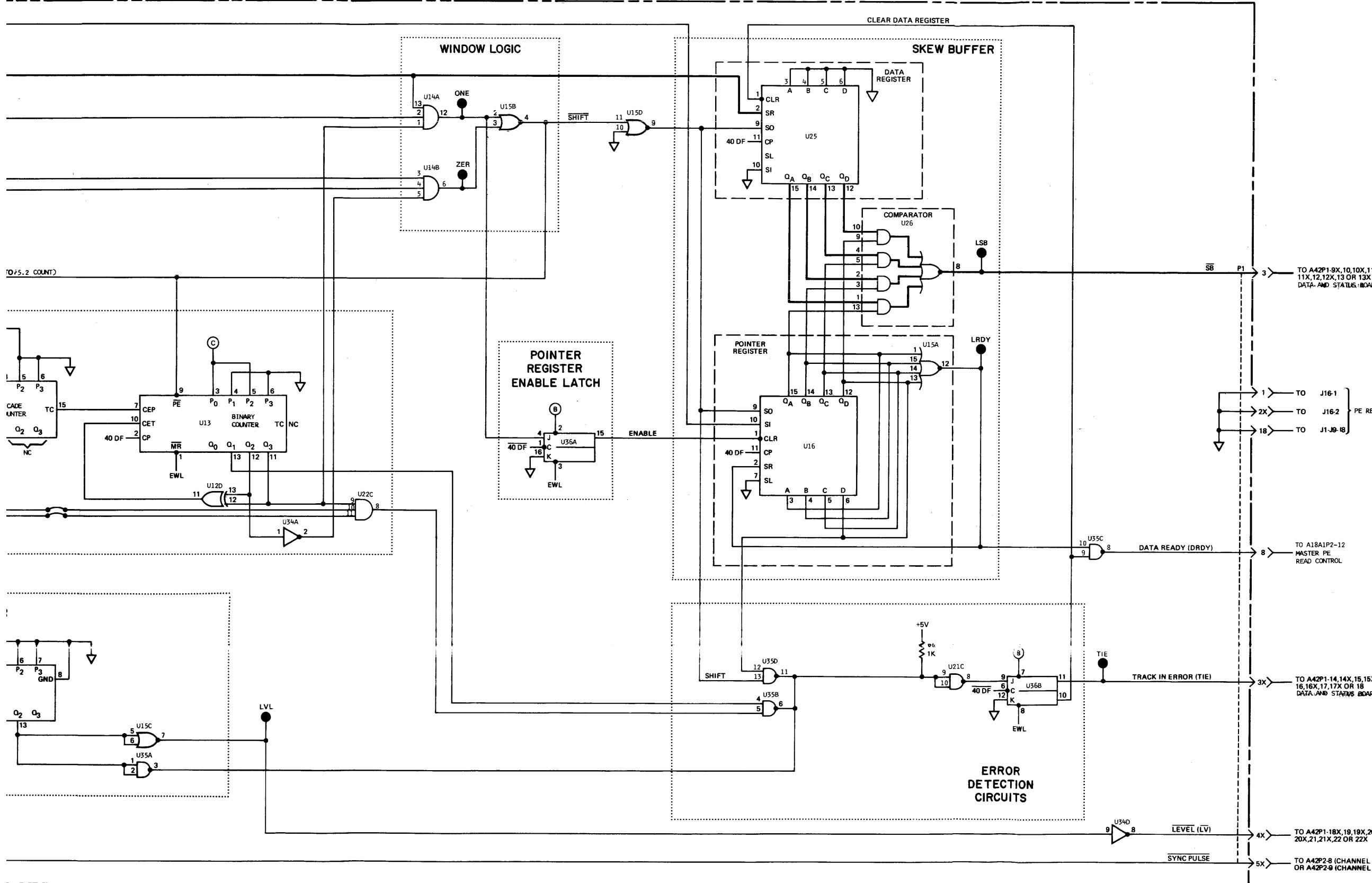
DECODER PCA PARTS LIST  
07970-62353 (Series 1717)



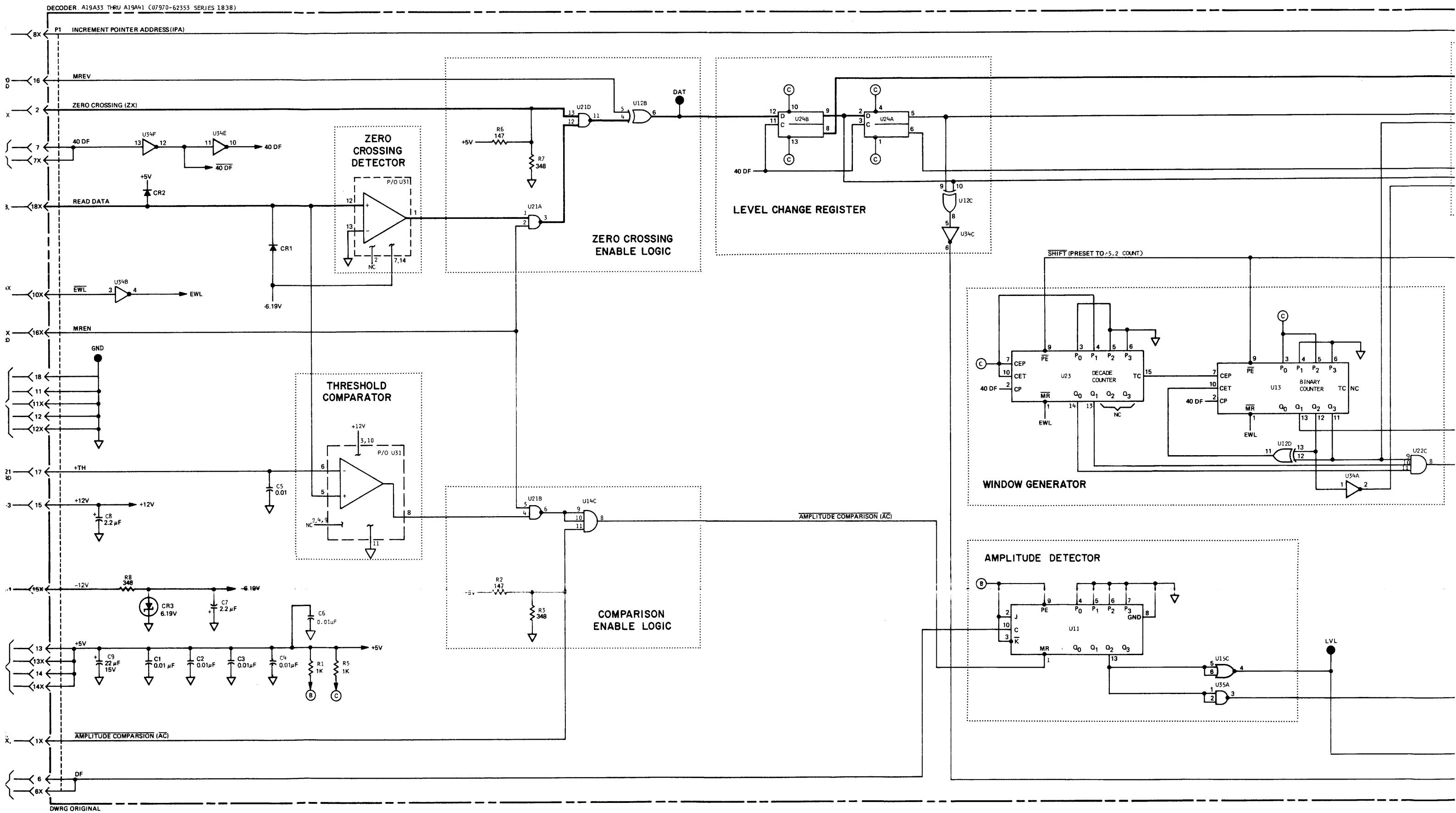
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1-6	0160-2055	CAPACITOR, fxd, .01uf, 100V
C7,8	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
C9	0180-0228	CAPACITOR, fxd, 22uf, 15Vdc
CR1,2	1901-0040	DIODE, 30V, 50MA
CR3	1902-0049	DIODE, Zener, 6.19V
R1,4,5	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R2,6	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R3,7,8	0698-3445	RESISTOR, fxd, 348, 1%, .125W
U11	1820-0659	IC, 93L00PC, Shift Register
U12	1820-0282	IC, Digital, SN7486N, Gate
U13	1820-0778	IC, 93L16PC, Counter
U14,22	1820-1066	IC, 7411PC, Gate
U15	1820-0745	IC, 9015DC, Gate
U16,25	1820-0743	IC, SN7419N, Shift Register
U21	1820-0054	IC, Digital, SN7400N, Gate
U23	1820-0669	IC, 93L10DC, Counter
U24	1820-0077	IC, Digital, SN7474N, FF
U26	1820-0074	IC, Digital, SN7454N, Gate
U31	1826-0051	IC, UA702C, Op Amp
U34	1820-0174	IC, Digital, SN7404N, Inverter
U35	1820-0269	IC, SN7403N, Gate
U36	1820-0076	IC, Digital, SN7476N, FF
	5040-6001	EXTRACTOR
	1480-0116	PIN, Crooved

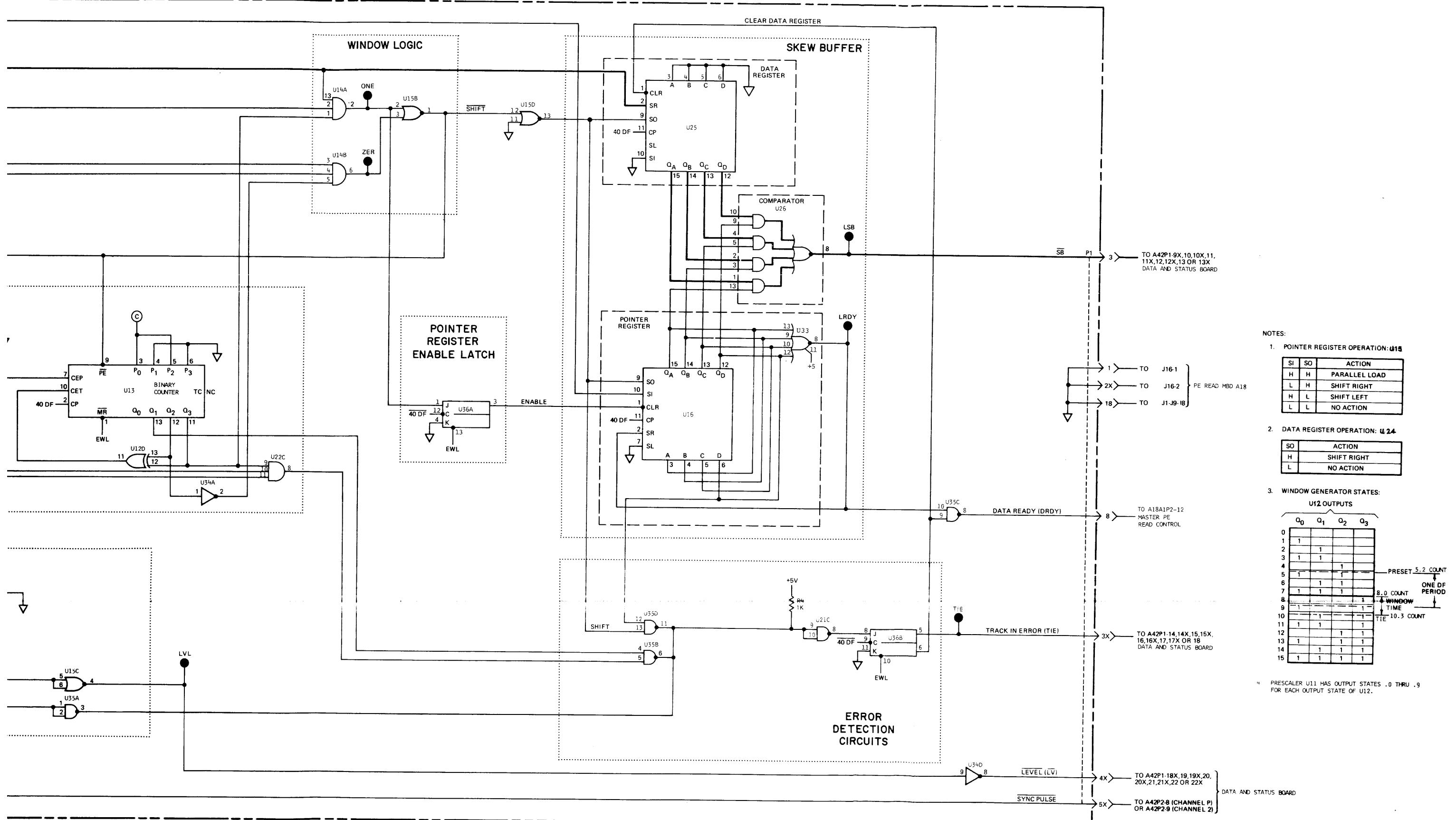






Decoder PC Assembly A19A33 thru A19A41  
2-96B  
Added 28 July, 1977

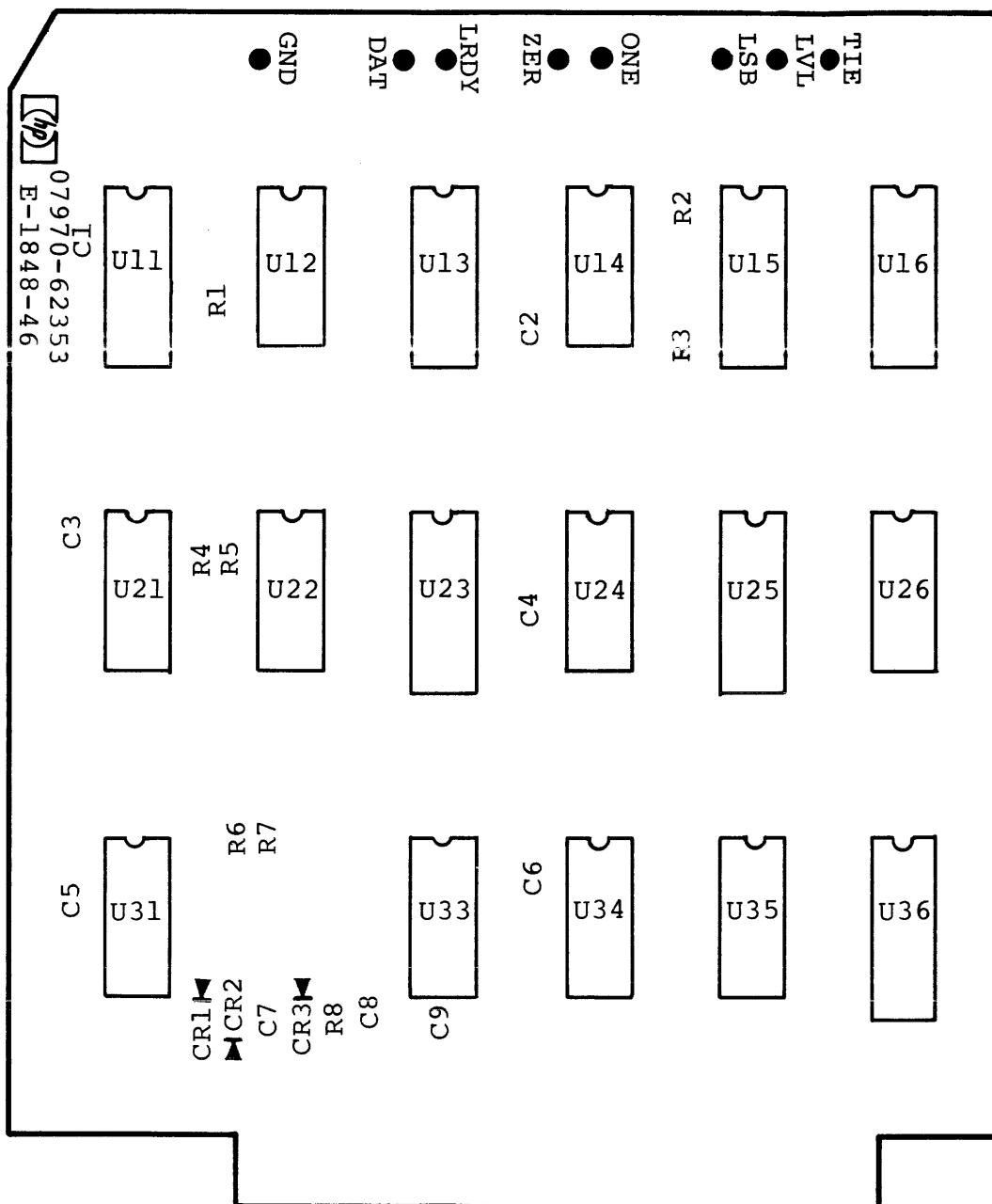




Decoder PC Assembly A10A33 thru A19A41

Added FEB 1979

DECODER PCA PARTS LIST  
07970-62353 (Series 1838)



REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
C1-6	0160-2055	CAPACITOR, Fxd, .01uf, 100Vdc
C7,8	0180-0197	CAPACITOR, fxd, 2.2uf, 10%
C9	0180-0228	CAPACITOR, fxd, 22uf, 15Vdc
CR1,2	1901-0040	DIODE, 30V, 50MA
CR3	1902-0049	DIODE, Zener, 6.19V
R1,4,5	0757-0280	RESISTOR, fxd, 1K, 1%, .125W
R2,6	0698-3438	RESISTOR, fxd, 147, 1%, .125W
R3,7,8	0698-3445	RESISTOR, fxd, 348, 1%, .125W
U11	1820-1300	IC, SN74LS195AN
U12	1820-1211	IC, DN74LS86N, Gate
U13	1820-0778	IC, 93L16PC, Counter
U14,22	1820-1203	IC, SN74LS11N, Gate
U15	1820-1144	IC, SN74LS02N, Gate
U16,25	1820-0743	IC, SN7419N, Shift Register
U21	1820-1197	IC, SN7400N, Gate, DM74LS00N
U23	1820-0669	IC, 94L10DC, Counter
U24	1820-1112	IC, SN74LS74AN, FF
U26	1820-0074	IC, SN7454N, Gate
U31	1826-0051	IC, UA702C, Op Amp
U33	1820-0655	IC, SN7425N, Gate
U34	1820-0174	IC, SN7404N, Inverter
U35	1820-0269	IC, SN7403N, Gate
U36	1820-0281	IC, SN7476N, FF
	5040-6001	EXTRACTOR
	1480-0116	PIN, Grooved

**DESCRIPTION**

, Fxd, .01uf, 100Vdc  
, fxd, 2.2uf, 10%  
, fxd, 22uf, 15Vdc  
, 50MA  
ier, 6.19V  
fxd, 1K, 1%, .125W  
fxd, 147, 1%, .125W  
fxd, 348, 1%, .125W  
195AN  
86N, Gate  
C, Counter  
11N, Gate  
02N, Gate  
N, Shift Register  
N, Gate, DM74LS00N  
C, Counter  
74AN, FF  
N, Gate  
, Op Amp  
N, Gate  
N, Inverter  
N, Gate  
N, FF

ed

Decoder PC Assembly A19A33 thru A19A41

2-96D

Added FEB 1979

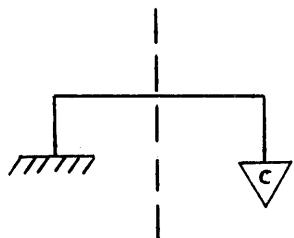
CHANGE TO:

HP 7970B/E Digital Magnetic Tape Units  
Diagrams and Parts Manual

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**CHANGE DESCRIPTION:** A grounding change has been made to 7970 series tape unit power distribution assemblies to further protect the 24Vdc supply. This manual change reflects this. In addition, this change details component changes made necessary due to parts availability problems.

**CHANGE INSTRUCTIONS:** On power distribution PCA's, part no's. 07970-61020 and 07970-62071, indicate on the schematic diagrams the addition of a chassis common connection as shown below:



Note that this connection is made by adding short wire jumpers from the ground plane of the PCA to the chassis mounting points at the corners of the PCA.

Change the series numbers of both PCAs from 1229 to 1709.



P.O. Box 15, Boise, Idaho 83707, Tel. 208-376-6000, TWX 910-970-5784



Europe: 1217 Meyrin-Geneva, Switzerland • Cable "HEWPACKSA" Tel. (022) 41.54.00

Change 4  
May 1977

Manual Part No.: 07970-90886  
Print Date: NOV 1976

CHANGE TO:

HP 7970B/E Digital Magnetic Tape Unit  
Diagrams and Parts Manual

---

**CHANGE DESCRIPTION:** This change reflects information being added to the manual for parts changes to the 07970-62351 Power Transformer Assembly. The assembly series code changes from 1648 to 1720.

**CHANGE INSTRUCTIONS:** Insert the pages included with this change notice into the manual. Remove the original title page and pages iii and iv. The following pages are included with this change notice:

Title page, iii, iv, 2-20C, and 2-20D



P.O. Box 15, Boise, Idaho 83707, Tel. 208-376-6000, TWX 910-970-5784



Europe: 1217 Meyrin-Geneva, Switzerland • Cable "HEWPACKSA" Tel. (022) 41.54.00

HEWLETT  PACKARD

DIAGRAMS AND PARTS MANUAL

7970B/E

DIGITAL MAGNETIC TAPE UNITS

Manual Part No. 07970-90886

Microfiche Part No. 07970-90891

Serial Numbers Prefixed:

7970B--1107 thru 1720

7970E--1127 thru 1720

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## TRANSFORMER ASSEMBLY

07970-62351 (SERIES 1647, 1648)

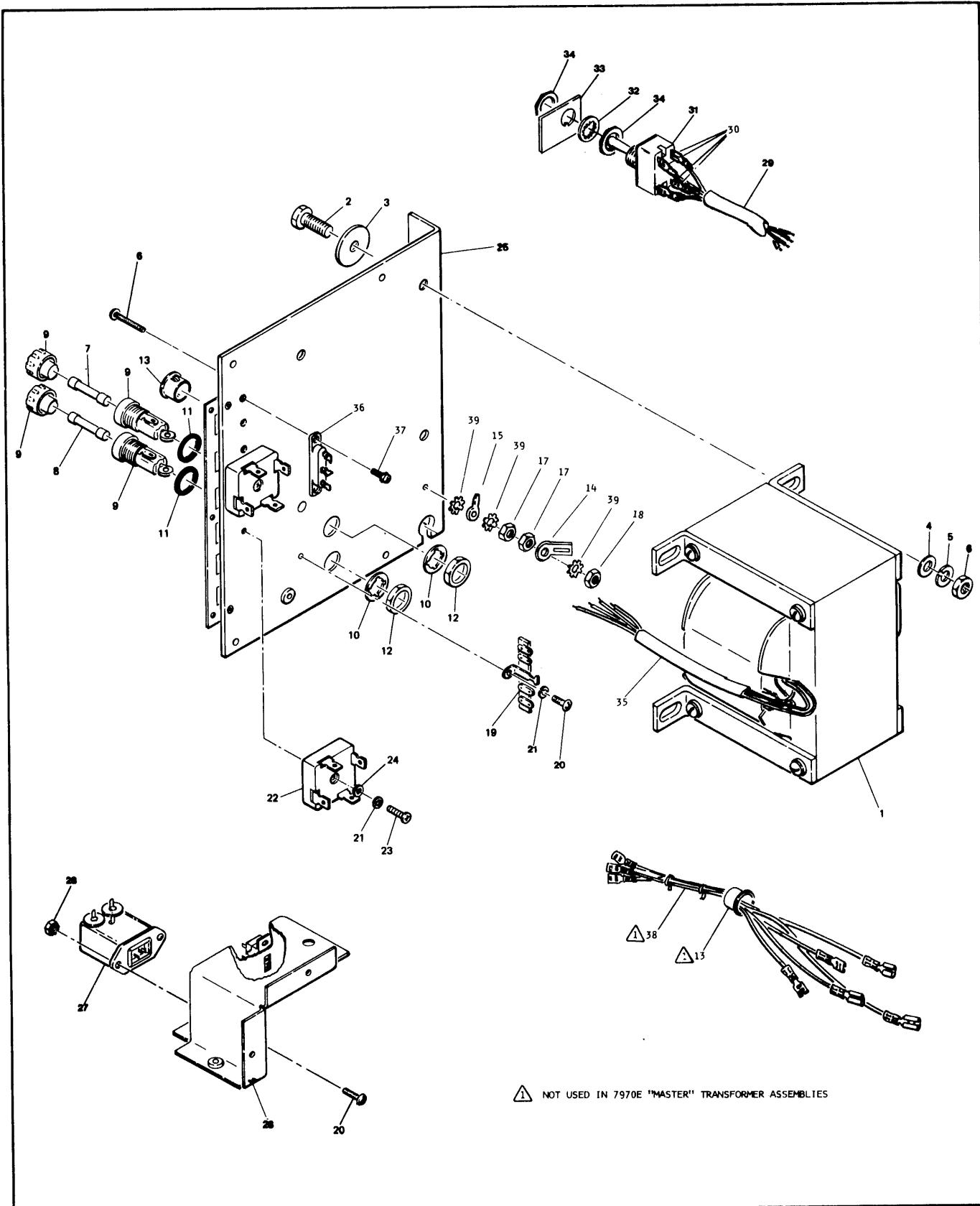
REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62351	TRANSFORMER ASSEMBLY (SERIES 1647)
1	9100-3921	TRANSFORMER, POWER (T1)
2	0570-0108	BOLT, hex, 1/4-20, .75 in.
3	3050-0723	WASHER, flat, .26 in. ID
4	3050-0225	WASHER, flat, .25 in. ID
5	2190-0431	WASHER, lock, .25 in.
6	2950-0004	NUT, hex, 1/4-20
7	2110-0365	FUSE, 4A, 250V, SLO-BLO (F1)
8	2110-0380	FUSE, 2.5A, 250V, SLO-BLO (F2)
9	1400-0084	FUSE HOLDER, Post Type (XF1,XF2)
10	2190-0037	WASHER, lock, .5 Int.
11	0900-0016	O-RING, 15 in. ID
12	2950-0038	NUT, fuse holder, 1/2-24
13	0400-0056	BUSHING, SNAP, NYLON, .375 ID
14	0360-0043	TERMINAL, SOLDER LUG, #5
15	0362-0452	LUG, CRIMP, #6
16	2360-0203	SCREW, 6-32, .625 PAN
17	2420-0002	NUT, HEX, 6-32
18	2420-0001	NUT, HEX, 6-32
19	0360-1590	TERMINAL STRIP, LUG TYPE
20	2200-0141	SCREW, 4-40, .312 PAN
21	2190-0003	WASHER, lock, #4
22	1906-0017	DIODE BRIDGE, RECTIFIER (CR1,CR2)
23	2200-0091	SCREW, 4-40, .562 in.
24	2190-0416	WASHER, #4
25	07970-01171	PANEL, POWER TRANSFORMER
26	07970-60461	BRACKET, ASSEMBLY (INCLUDES S2)
27	9100-0531	FILTER (FL1) AND J1
28	2260-0009	NUT, LOCK, 4-40
29	8120-1624	CABLE, POWER
30	1401-0083	CAP, Protective
31	3101-0646	SWITCH, Toggle, dpst
32	2190-0102	WASHER, Lock
33	7120-4575	PLATE, Indicator
34	2950-0035	NUT, 15/32 - 32
35	0890-0291	SLEEVING, 3/8 in.
*36	1906-0017	DIODE BRIDGE, RECTIFIER (CR3)
37	2360-0119	SCREW, 6-32, .438 in.
1 38	07970-60920	CABLE, TRANSFORMER
*36	Series 1648 1906-0039	DIODE BRIDGE, RECTIFIER (CR3)



Not used in 7970E "Master" Transformer Assemblies

7970 B & E Power Transformer  
Assembly A 29

TRANSFORMER ASSEMBLY 07970-62351 (SERIES 1720)



2225-1108

**7970 B & E Power Transformer  
Assembly A29**

2-20C

Change 5  
JUL 1977

Manual Part No.: 07970-90886  
Print Date: NOV 1976

CHANGE TO:

HP 7970B/E Digital Magnetic Tape Units  
Diagrams and Parts Manual

---

**CHANGE DESCRIPTION:** This change to the manual reflects the addition of a new Decoder printed-circuit assembly for improved performance of 7970E tape units.

**CHANGE INSTRUCTIONS:**

- 1 Insert the pages included with this change notice into the manual. Discard pages iii and iv. The following pages are included with this change notice:

Changed 28 July 1977 - page iii

Page iv

Added 28 July 1977 - pages 2-96A and 2-96B



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CHANGE TO:

7970B/E DIGITAL MAGNETIC TAPE UNIT  
Diagrams and Parts Manual

**CHANGE DESCRIPTION:** This change documents parts and instructions necessary to update the manual to current standards.  
The following series code changes

07970-62173 from 1524 to 1740

The unit serial prefix changes

from 1524 to 1740

**CHANGE INSTRUCTIONS:**

1. Insert the enclosed new pages in the appropriate location in the manual. Discard the old title page
2. Page 2-34, Write Enable Parts List 07970-62122, Ref. Des./Index no. item 13. Delete part no. 2190-0417 and add part no. 2190-0479 in its place.
3. Page 2-54, Reel Motor Assembly Parts List, 07970-60170/60171, Ref. Des./Index no. item 4. Delete part no 07970-20700 and add part no. 0510-0617 in its place.
4. Page 2-56, Tension Arm Assembly Parts List, Ref. Des./Index no. item 9. Delete item 13 - 07970-60870 Cable - and add the words "and Cable" to item 9.



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**HEWLETT  PACKARD**

**DIAGRAMS AND PARTS MANUAL**

**7970B/E**

**DIGITAL MAGNETIC TAPE UNITS**

Manual Part No. 07970-90886

Microfiche Part No. 07970-90891

**Serial Numbers Prefixed:**

7970B--1107 thru 1740

7970E--1127 thru 1740

07970-90886

HEWLETT-PACKARD COMPANY  
15 N. PHILLIPPI ST., BOISE, IDAHO, U.S.A.

PRINTED: NOV 1976  
Changed 13 May, 1977

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1-2.	Parts Cross Reference . . . . .	1-5
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nge 7  
1978

Manual Part No.: 07970-90886  
Print date: NOV 1976

CHANGE TO:  
7970B/E DIGITAL MAGNETIC TAPE UNIT  
Diagrams and Parts Manual

---

CHANGE DESCRIPTION: Due to a dimensional change to the casting,  
the unit serial prefix changes from 1740 to  
1802.

CHANGE INSTRUCTIONS: Change the series on the Title page  
from 1740 to 1802.



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CHANGE 8  
AUG 1978

Manual Part No. 07970-90886  
Print Date NOV 1976

CHANGE TO:

HP 7970B/E Digital Magnetic Tape Units  
Diagrams and Parts Manual  
Manual Part No. 07970-90886

pco 46-1083

CHANGE DESCRIPTION

This change changes the solenoid mounting screw and washer on the Write Enable Assembly. It also up-dates some parts modifications.

CHANGE INSTRUCTIONS

Make the following changes to parts list on page 2-34:

Write Enable Assy. 07970-62122

	Ref. Des. Index No.	HP Part No.	Description
Delete	3	3050-0066	WASHER, Flat #6
Delete	8	2190-0061	WASHER, Lk, Hel, #4

Change the following parts to read as indicated below:  
(The underline portion shows the changed information)

2	2360- <u>0191</u>	SCREW, 6-32,.25Pan
4	2190- <u>0085</u>	WASHER, Lk, <u>#6</u>
7	2200- <u>0105</u>	SCREW, 4-40,.312 <u>Pan</u>
11	<u>3101-2140</u>	SWITCH, Sens.,(S2)
13	2190- <u>0479</u>	WASHER, Flat, #2



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CHANGE TO:  
7970B/E DIAGRAMS AND PARTS MANUAL

Manual Part No. 07970-90886

---

CHANGE DESCRIPTION

This change notice describes modification to the tape unit to satisfy VDE requirements for European customers.

The serial prefix number of the tape unit changes from 1802 to 1838.

CHANGE INSTRUCTIONS

1. Insert new page (2-20E/F) provided with this change.
2. On page 2-20D (Transformer Assy. 07970-62351) place an astrisk (\*) in front of the following index numbers: 1,9,10,11,12,27,28, and 31.
3. At the bottom of page 2-20D, below 1 Not used in 7970E "Master" Transformer Assy., add:  
\* These parts have changed at series 1838, see series parts listing on page 2-20E.
3. Change the manual title page series number from 1802 to 1838.



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**TRANSFORMER ASSEMBLY**  
**07970-62351 (SERIES 1720)**

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	07970-62351	TRANSFORMER ASSEMBLY (SERIES 1720)
1	9100-3921	TRANSFORMER, Power (T1)
2	0570-0108	BOLT, hex, 1/4-20, .75 in.
3	3050-0723	WASHER, flat, .26 in. ID
4	3050-0225	WASHER, flat, .25 in. ID
5	2190-0431	WASHER, lock, .25 in.
6	2950-0004	NUT, hex, 1/4-20
7	2110-0365	FUSE, 4A, 250V, SLO-BLO (F1)
8	2110-0380	FUSE, 2.5A, 250V, SLO-BLO (F2)
9	1400-0084	FUSE HOLDER, Post Type (XF1, XF2)
10	2190-0037	WASHER, lock, .5 Int.
11	0900-0016	O-RING, .5 ID
12	2950-0038	NUT, Fuseholder, 1/2-24
13	0400-0056	BUSHING, Snap, nylon, .375 ID
14	0360-0043	TERMINAL, Solder Lug, #5
15	0362-0452	LUG, Crimp, #6
16	2360-0203	SCREW, 6-32, .625 Pan
17	2420-0002	NUT, hex, 6-32
18	2420-0001	NUT, hex, 6-32
19	0360-1590	TERMINAL STRIP, Lug Type
20	2200-0141	SCREW, 4-40, .312 Pan
21	2190-0003	WASHER, #4
22	1906-0017	DIODE BRIDGE, Rectifier (CR1, CR2)
23	2200-0091	SCREW, 4-40, .562 in.
24	2190-0416	WASHER, #4
25	07970-01171	PANEL, Power Transformer
26	07970-60461	BRACKET, Assembly (Includes S2)
27	9100-0531	FILTER, (FL1) and J1
28	2260-0009	NUT, Lock, 4-40
29	8120-1624	CABLE, Power
30	0362-0522	LUG, Crimp
31	3101-2173	SWITCH, Toggle, dpst
32	2190-0102	WASHER, Lock
33	7120-4575	PLATE, Indicator
34	2950-0035	NUT, 15/32-32
35	0890-0769	SLEEVING, Heat Shrink
36	1906-0039	DIODE BRIDGE, Rectifier (CR3)
37	2360-0119	SCREW, 6-32, .438 in.
38	07970-60920	CABLE, Transformer
39	2190-0008	WASHER, Lock, external

**1** Not used in 7970E "Master" Transformer Assemblies.

## TRANSFORMER ASSEMBLY

07970-62351

REF. DES./ INDEX NO.	HP PART NO.	DESCRIPTION
	<u>SERIES 1838</u>	<p>* 1 9100-4094 TRANSFORMER, Power (T1)</p> <p>* 9 2100-0566 FUSE HOLDER, Post Type (XF1, XF2)</p> <p>*10 DELETE NOT USED ON SERIES 1838</p> <p>*11 DELETE NOT USED ON SERIES 1838</p> <p>*12 2110-0569 NUT, Fuseholder</p> <p>*27 9135-0092 FILTER, (F1) and J1</p> <p>*28 DELETE NOT USED OF SERIES 1838</p> <p>*31 3103-2333 SWITCH, Toggle, dpst</p>

7970 B & E POWER TRANSFORMER  
ASSEMBLY A29

2-20E/20F

ADDED SEP 1978

CHANGE TO:

7970B/E DIGITAL MAGNETIC TAPE UNIT  
PARTS AND DIAGRAMS MANUAL

---

Change Description

This change to the manual reflects design changes to the tape unit and manual errata correction.

Change Instructions

Page 2-67.

In the table under Notes  $\triangle_1$ , change the 21-45 ips capacitor value in the last column of the table from 5.1 pfd to 33 pfd.

Add this statement to Note  $\triangle_1$  - Series 1838 changes the 21-45 ips 5.1 pfd capacitor to 33 pfd.

This change changes the series of the preamp from 1709 to 1838.

Under Notes  $\triangle_1$ , in the last column of the table, add capacitor designators 27 and 29 to the list.

In the schematic change C18 to C33 and C33 to C18.



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CHANGE TO:

7970B/E DIGITAL MAGNETIC TAPE UNIT  
PARTS AND DIAGRAMS MANUAL

CHANGE DESCRIPTION

This change to the manual reflects design changes to the tape unit.

CHANGE INSTRUCTIONS

Page 2-29 1251  
Control and Status PC Assemblies A16 (07970-62062). Add 1850 to the series numbers in the upper left corner of the schematic and place a "▲" beside the 1850. Add the following note to the lower left of the schematic:

▲ — Series 1850 changes U4  
from 1820-0054 to 1820-1197.

Page 2-30 1251

Control and Status PCA Parts List (7970-62062). Add 1850 to the series numbers for 07970-62062. Place an asterisk in front of the Ref. Des./Index no. listing U1, 4, 14, 16, 19, 21. At the bottom of the parts list make the following addition:

*U4	1820-1197	Series 1850 changes U4 from 1820-0054 to 1820-1197.
-----	-----------	---

Page 2-30A 1251

Control and Status PC Assembly A16 (07970-62336). Add 1850 to the series number is the upper left corner of the schematic and place a "▲" beside the 1850. Add the following note to the lower left of the schematic.

▲ Series 1850 changes U4  
from 1820-0054 to 1820-1197.

Page 2-30B 1251

Control and Status PCA Parts List (07970-62336). Add 1850 to the series number. Place an asterisk in front of the Ref. Des./Index no. U1, 4, 14. At the bottom of the parts list make the following addition:

*U4	1820-1197	Series 1850 changes U4 from 1820-0054 to 1820-1197.
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Page 2-47	1190
Capstan Servo PC Assembly A7. Add 1826 to the series numbers at the top left of the schematic.	
Page 4-48	1190
Single Speed Capstan Servo PCA Parts List. Add 1826 to the Series 1344, 1410 numbers. Change Ref. Des./Index No. U1 part number from 1820-0256 to 1820-0269 and change its parts description to - Quad dual input TTL NAND gate.	
Page 2-50	1048
Dual Speed Capstan Servo PCA Parts List. Delete part 2190-0008, Washer, Lock #6 and change part 2360-0195 Screw 6-32, .312 Pan to 2360-0115 Screw 6-32, .312/Washer.	
Page 2-105	1228
Slave PE Read PC Assembly A44. Change the value of R1 to the schematic from 42.2K to 43.2K. Also add 1850 to the series number (1118) at the top left of the schematic. Below "Notes:" add the following note:	
3	Series 1850 changes R1 from 42.2K to 43.2K.
Place a "3" by R1 in the schematic and the 1850 series number.	
Page 2-106	1228
Slave PE Read PCA Parts List. Add 1850 to the parts list series number (1118). Change Ref. Des./Index No. R1 from 0340-3450 to 0757-0256 and the value 42.2K to 43.2K.	
Page 2-56B	1034
Tension Arm Assembly A3/A4. Delete Ref. Des./Index No. item 8, it is no longer used. Delete item 8 in both the parts list and the exploded view.	
Page 2-83	Errata
Single Channel Read Data PC Assembly A18A2. On the parts layout diagram IC U3 should be U2.	
Page 2-84	Errata
Single Channel Read PC Assembly. In the parts list Ref. Des./Index No. item U3 should read U2.	

Reel Motor Assembly Part List-Change the part numbers of designator item 15 and 17 from their present value to the new part number as listed in the table below.

Ref. Des./ Index No.	Old Part Number	New Part Number
15	07970-00044	3050-0943
	07970-00043	3050-0942
	07970-00040	3050-0939
	07970-00041	3050-0940
17	07975-20140	1500-0524

CHANGE TO:  
7970B/E DIGITAL MAGNETIC TAPE UNIT  
PARTS AND DIAGRAMS MANUAL

CHANGE DESCRIPTION

This change to the manual reflects design changes to the tape unit.

CHANGE INSTRUCTIONS

Change part number and description of the following transistor from 1853-0080 -- 2N4888 PL5 to 1853-0456 -- 2N4888 TO92. Make this change to the parts lists on the manual pages indicated below.

Page	Parts List	Transistor
Page 2-14 and Page 2-18 and Page 2-22	Power Regulator PCA 07970-61010	Q11
Page 2-26	PE Regulator PCA 07970-62072	Q11
Page 2-56 and Page 2-56B	Reel Servo PCA 07970-62173	Q2,6
Page 2-58	Reel Servo PCA 07970-62024	Q2,6



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Change 13  
FEB 1979

Manual Part No.: 07970-90886  
Print Date: NOV 1976

CHANGE TO:

7970B/E DIGITAL MAGNETIC TAPE UNIT  
PARTS AND DIAGRAMS MANUAL

---

CHANGE DESCRIPTION

This change to the manual reflects design changes to the unit.

CHANGE INSTRUCTIONS

Insert page 2-69C/D, which is provided with this change notice  
into the proper section of the manual.



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Change 14  
APR 1979

Manual Part No.: 07970-90886  
Print Date: NOV 1976

CHANGE TO:  
7970B/E DIGITAL MAGNETIC TAPE UNIT  
PARTS AND DIAGRAMS MANUAL

---

CHANGE DESCRIPTION

This change to the manual reflects design changes to the tape unit.

CHANGE INSTRUCTIONS

Page 2-45/2-46 CAPSTAN MOTOR ASSEMBLY PARTS LIST, 07970-60141

To Ref. Des., item #1 (Capstan - 07970-20391), add the part number \*07970-20889 and place an asterisk in front of this number as shown.

Also, add the following note to the bottom of the parts list -

\* - The 07970-20889 capstan pulley is used only on capstan motors which contain the label "Use 07970-20889 replacement pulley for this motor."

Use capstan 07970-20391 on all other Capstan Motor Assemblies.



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CHANGE TO:  
7970B/E DIGITAL MAGNETIC TAPE UNIT  
PARTS AND DIAGRAMS MANUAL

CHANGE DESCRIPTION

This change updates the manual to reflect modifications to the tape unit.

CHANGE INSTRUCTIONS

The table below contains IC part number changes to be made to the parts lists located on the pages as indicated below.

Manual Page #	Parts List ASSEMBLY	DESIGNATOR	PART NUMBER CHANGE FROM	CHANGE TO	QUANTITY
113	07970-60800	U1	1820-0479	1820-0175	1
		U2	1820-0094	1820-1197	1
113	07970-60810	U1	1820-0479	1820-0175	1
		U2	1820-0094	1820-1197	1
111	07970-60820	U1	1820-0479	1820-0175	1
		U2	1820-0094	1820-1197	1
111	07970-60830	U1	1820-0479	1820-0175	1
		U2	1820-0094	1820-1197	1
17	07970-61010	U4	1820-0348	1820-1256	1
77	07970-62004	U1	1820-0348	1820-1256	1
		U4	1820-0349	1820-0054	1
97	07970-62043	U18,21 35,36	1820-0205	1820-1208	4
		U19,27	1820-0141	1820-0511	2
		U31,33	1820-0742	1820-1793	2
		U47	1820-0637	1820-1206	1
		U112,212	1820-0899	1820-0705	2
		U1	1820-0348	1820-1256	1
		U4	1820-0349	1820-0054	1
79	07970-62061				



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Manual Page #	Parts List ASSEMBLY	DESIGNATOR	PART NUMBER CHANGE FROM	PART NUMBER CHANGE TO	QUANTITY
29	07970-62062	U11,13,23 U15,18	1820-0141 1820-0348	1820-0511 1820-1256	3 2
25	07970-62072	U4	1820-0348	1820-1256	1
79	07970-62092	U1 U4	1820-0348 1820-0349	1820-1256 1820-0054	1 1
85	07970-62166	U3	1820-0348	1820-1256	1
81	07970-62167	U3	1820-0348	1820-1256	1
85	07970-62168	U3	1820-0348	1820-1256	1
81	07970-62169	U3	1820-0348	1820-1256	1
75	07970-62170	U1 U4	1820-0348 1820-0349	1820-1256 1820-0054	1 1
75	07970-62171	U1 U4	1820-0348 1820-0349	1820-1256 1820-0054	1 1
103	07970-62278	U11,12,112 U26,27,29, 37 U42 U46,411 U48	1820-0231 1820-0637	1820-0716 1820-1206	3 4
95	07970-62294	U11 U12	1820-0669 1820-0778	1820-0899 1820-0716	1 1
96A	07970-62353	U13 U23	1820-0778 1820-0669	1820-0716 1820-0889	1 1
30A	07970-62336	U11,13,23 U15,18	1820-0141 1820-0348	1820-0511 1820-1256	3 2