



PCW9256
PERSONAL COMPUTER
WORD PROCESSOR
SERVICE MANUAL

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TECHNICAL SPECIFICATION

PCW9256

Memory	: 256k RAM
Disk Drive	: 1 x 3.5" 720k, (facility to add second drive)
Display	: Paper white 12" monochrome screen with 90 columns x 32 lines displayed
Keyboard	: Full size, with 82 keys
Supplied Software	: LocoScript 1.5 word processing software, CP/M Plus, (Mallard BASIC, GSX graphics enhancement, Dr Logo educational training language)

DOT MATRIX PRINTER

General	: 9 pin dot matrix printer
Speed	: Up to 20 cps (high quality), 90 cps (draft mode)
Accessories supplied as standard	: Detachable tractor feed, single sheet loading system. Note: No other printer can be used with the PCW9256.

DIMENSIONS

Size	: W: 310mm, D: 360mm, H: 350mm.
Weight	: 14.5Kg.
Power Consumption	: 93 Watts max.

SAFETY TEST

Please note: When any work is carried out on a recorder, the following safety tests must be carried out to ensure continued electrical safety.

1). Flash Test

Test at 4kV between the live and neutral of the mains lead joined together and ALL accessible metal points on the exterior of the recorder.

2). Insulation Resistance Test

Test between the live and neutral of the mains lead joined together and ALL accessible metal points on the exterior of the set to show a resistance of at least 4Mohm

In keeping with our policy of continually improving our service, and the technical quality of our products, we reserve the right to change component types, manufacturers, sources of supply or technical specification at any time.

AMSTRAD PLC

BRENTWOOD HOUSE, 169 KINGS ROAD, BRENTWOOD, ESSEX CM14 4EF.

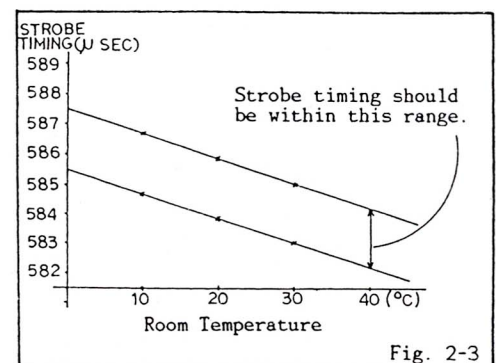
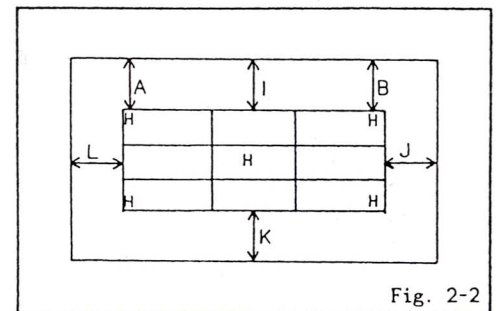
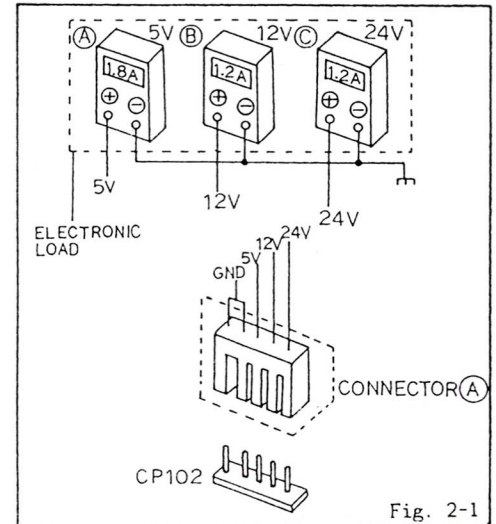
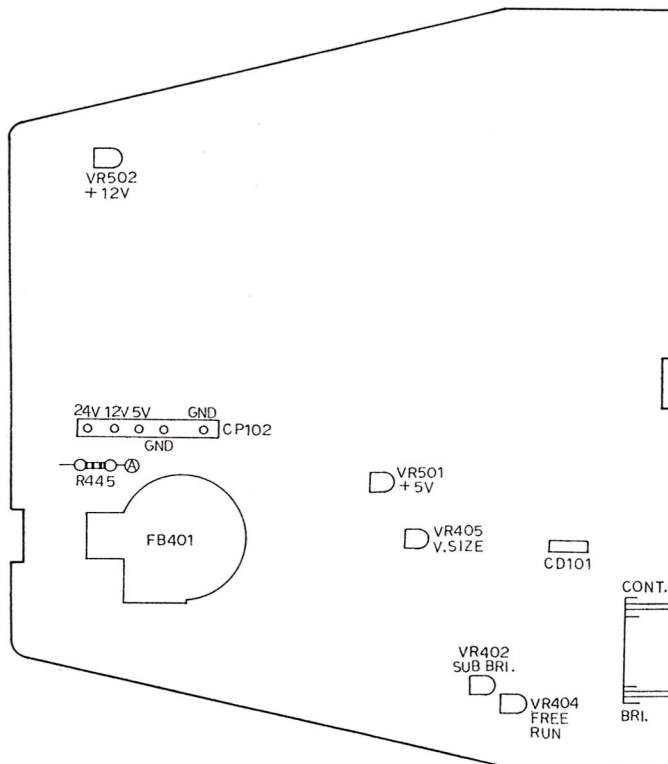
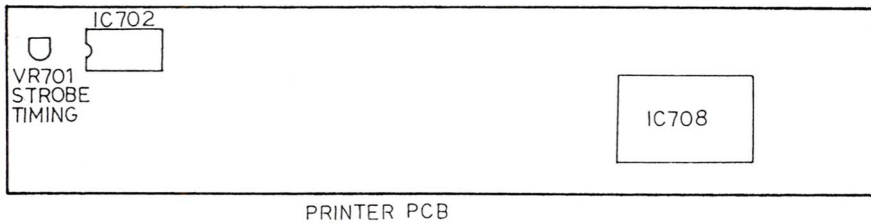
ALIGNMENT CHART FOR THE MONITOR

Equipment required: Digital Voltmeter; Oscilloscope; Frequency Counter; Test Pattern Generator; RP3 or Pattern Disc.

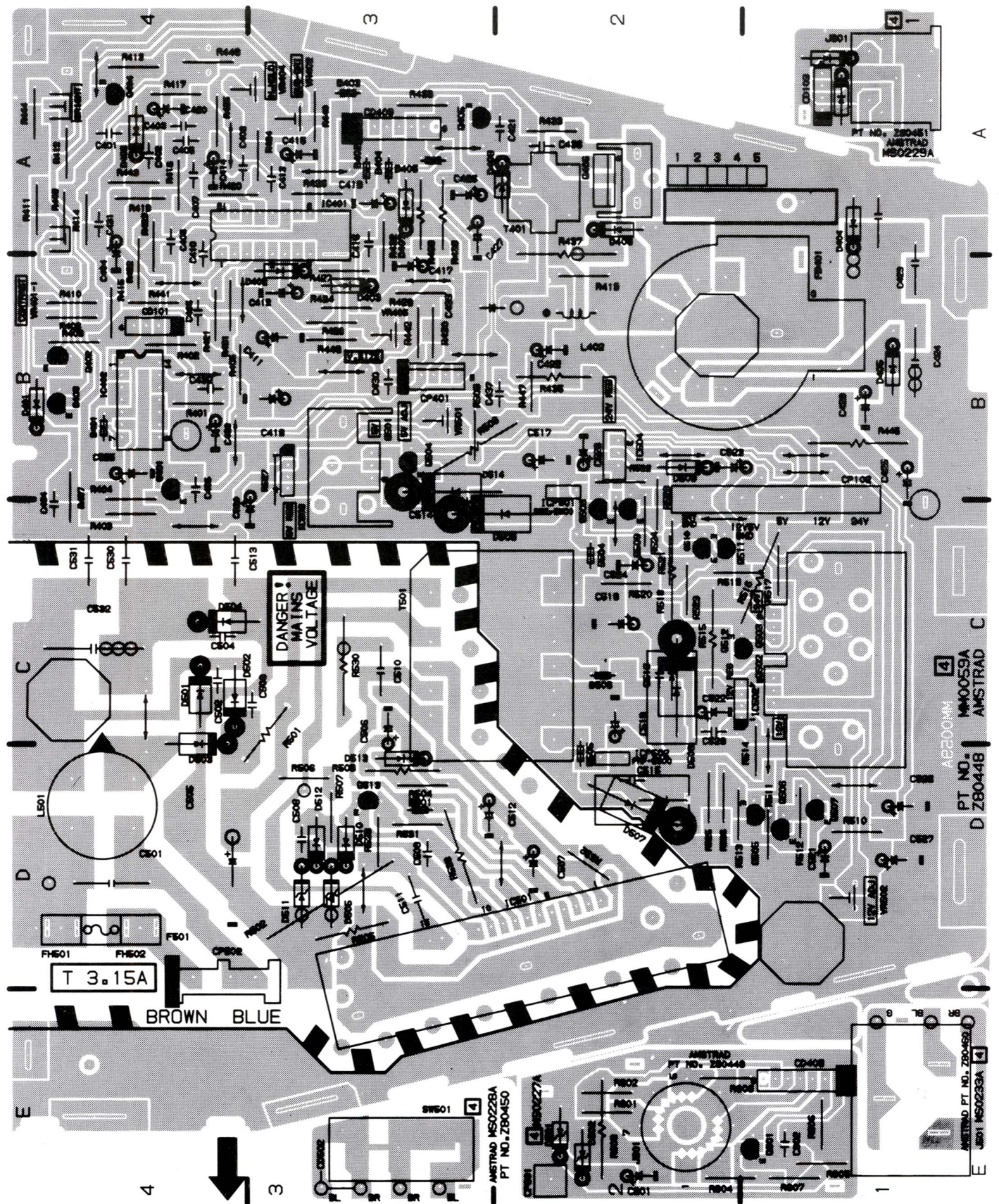
ALIGNMENT INSTRUCTIONS

STEP	FUNCTION	SIGNAL IN	SIGNAL OUT	METHOD	REMARKS
1.	D.C. 24V Adjustment.	Connector 'A'.	D.V.M.	Check if $24V \pm 1V$.	Disconnect CP101 to perform the test. Replace after tests. Ref. Fig. 2-1.
2.	D.C. 12V Adjustment.	Connector 'A'.	D.V.M.	Adjust VR502 to read $12V \pm 0.01V$. Set VR401 to max.	Disconnect CP101 to perform the test. Replace after tests. Ref. Fig. 2-1.
3.	D.C. 5V Adjustment.	Connector 'A'.	D.V.M.	Adjust VR501 to read $5V \pm 0.05V$. Set VR401 to max.	Disconnect CP101 to perform the test. Replace after tests. Ref. Fig. 2-1.
4.	V. Size Adjustment.	RP3 or Pattern Disk.	Monitor Screen.	Adjust VR405 for full size. $I = K = 10 \pm 2mm$.	Adjust Brightness control as required. Ref. Fig 2-2.
5.	Linearity Adjustment.	RP3 or Pattern Disk.	Monitor Screen.	Adjust DY to get Up/Down space from the centre of the screen in the test pattern. $A-B \leq 3mm$, $J-K \leq 3mm$, $L-J \leq 3mm$.	Adjust Brightness control as required. Ref. Fig 2-2.
6.	H. Hold Adjustment.	Free run no input.	Pin 5/CP401.	Adjust VR404 to read frequency 15625kHz.	
7.	Sub. Brightness Adjustment.	RP3 or Pattern Disk.	Monitor Screen.	Set Brightness, Contrast controls to min. position. Adjust VR402 for dim pattern.	Try till satisfied.
8.	Strobe Timing Adjustment.	RP3. Select Printer Test.	Monitor Screen.	Turn Pot. VR701 clockwise & anticlockwise till strobe timing "OK" command appears on the screen.	Strobe timing should not be too long or too short.

COMPONENT LOCATIONS

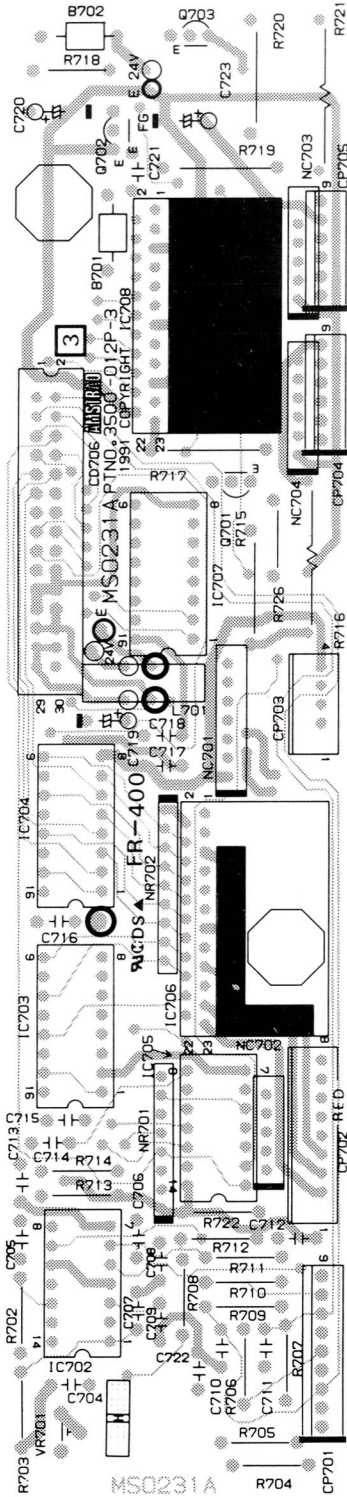


MONITOR/CRT P.C.B. COMPONENT LAYOUT

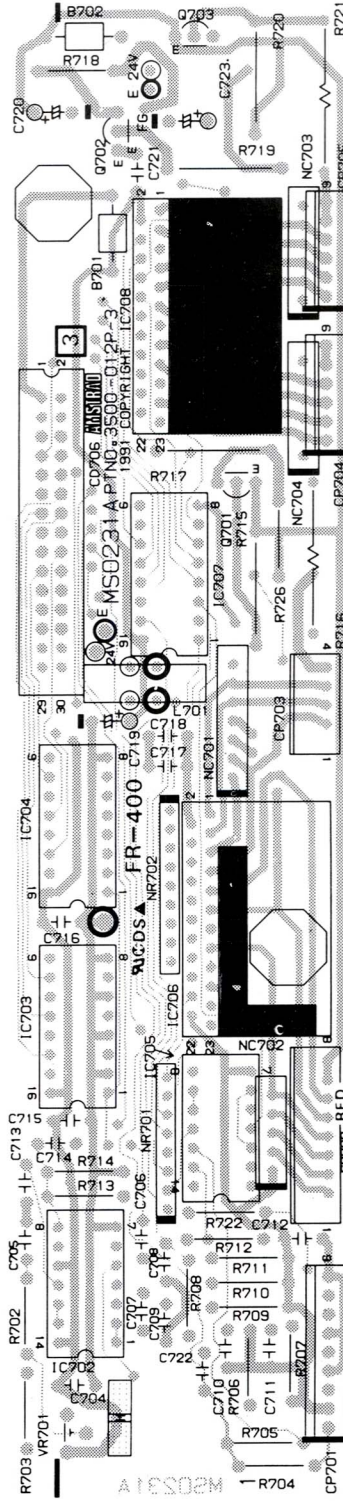


PRINTER P.C.B. COMPONENT LAYOUT

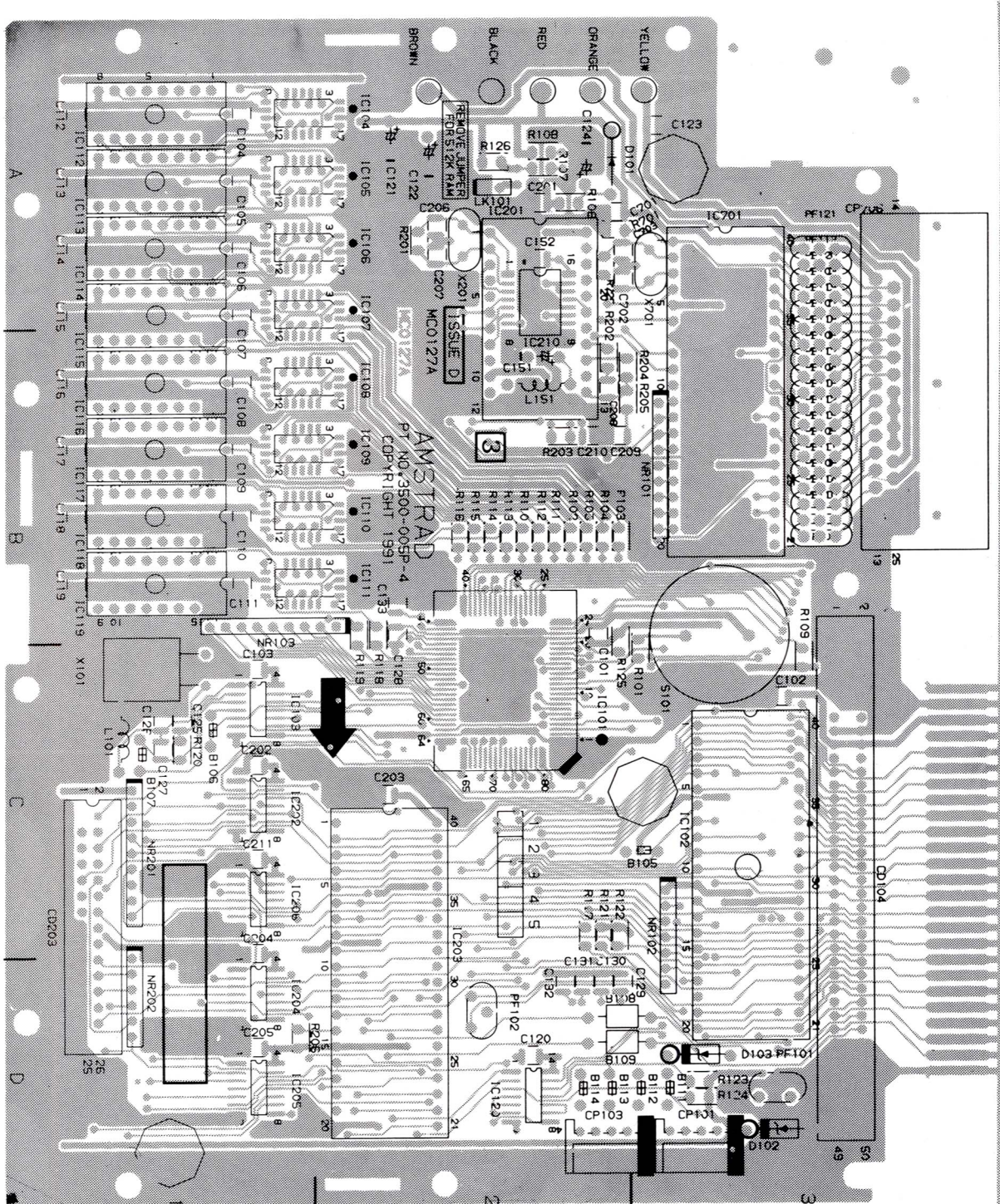
Top View



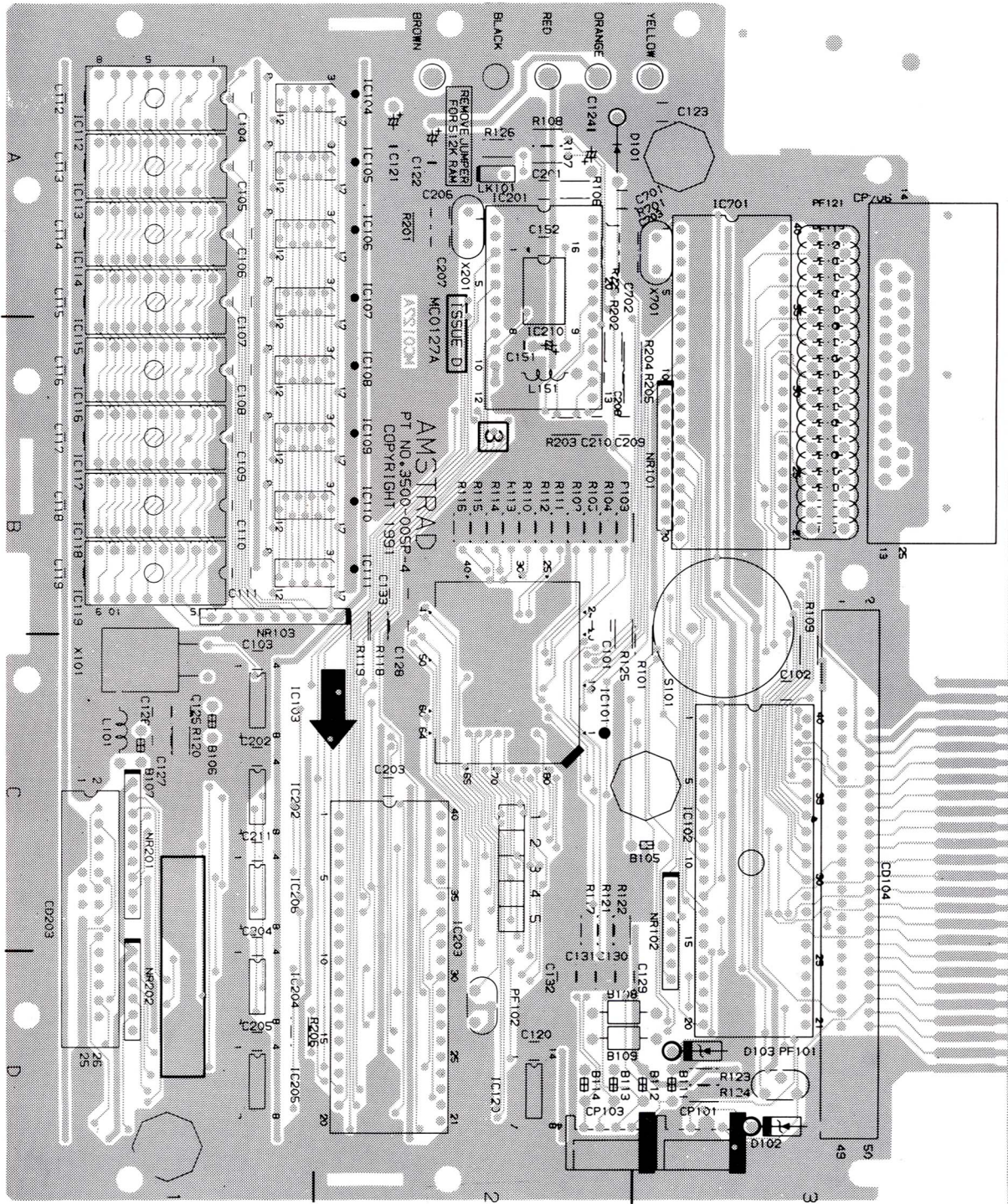
Bottom View



CPU P.C.B. COMPONENT LAYOUT TOP VIEW



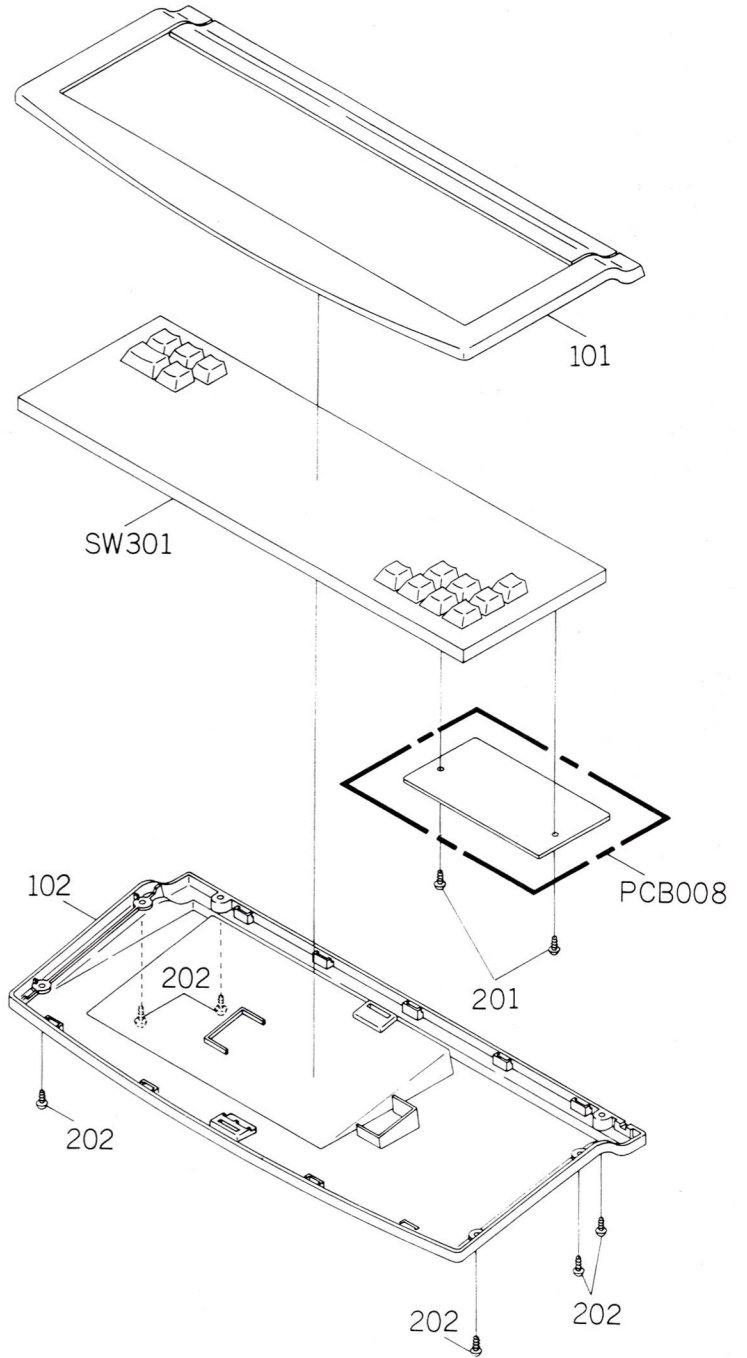
CPU P.C.B. COMPONENT LAYOUT BOTTOM VIEW



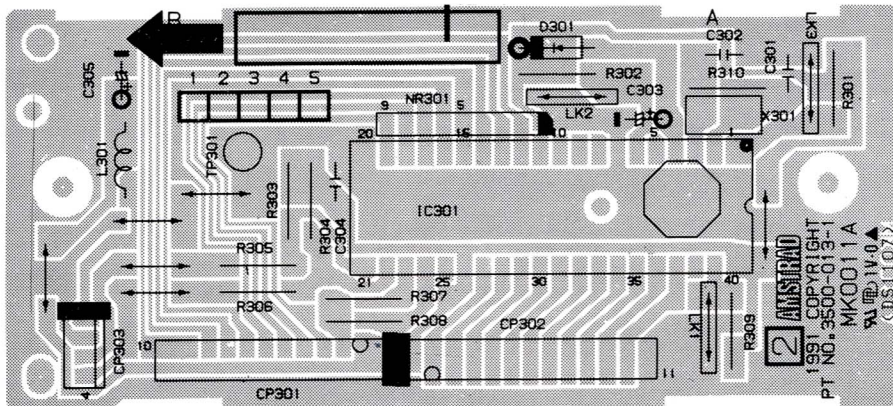
KEYBOARD EXPLODED VIEW

KEYBOARD CABINET PARTS LIST

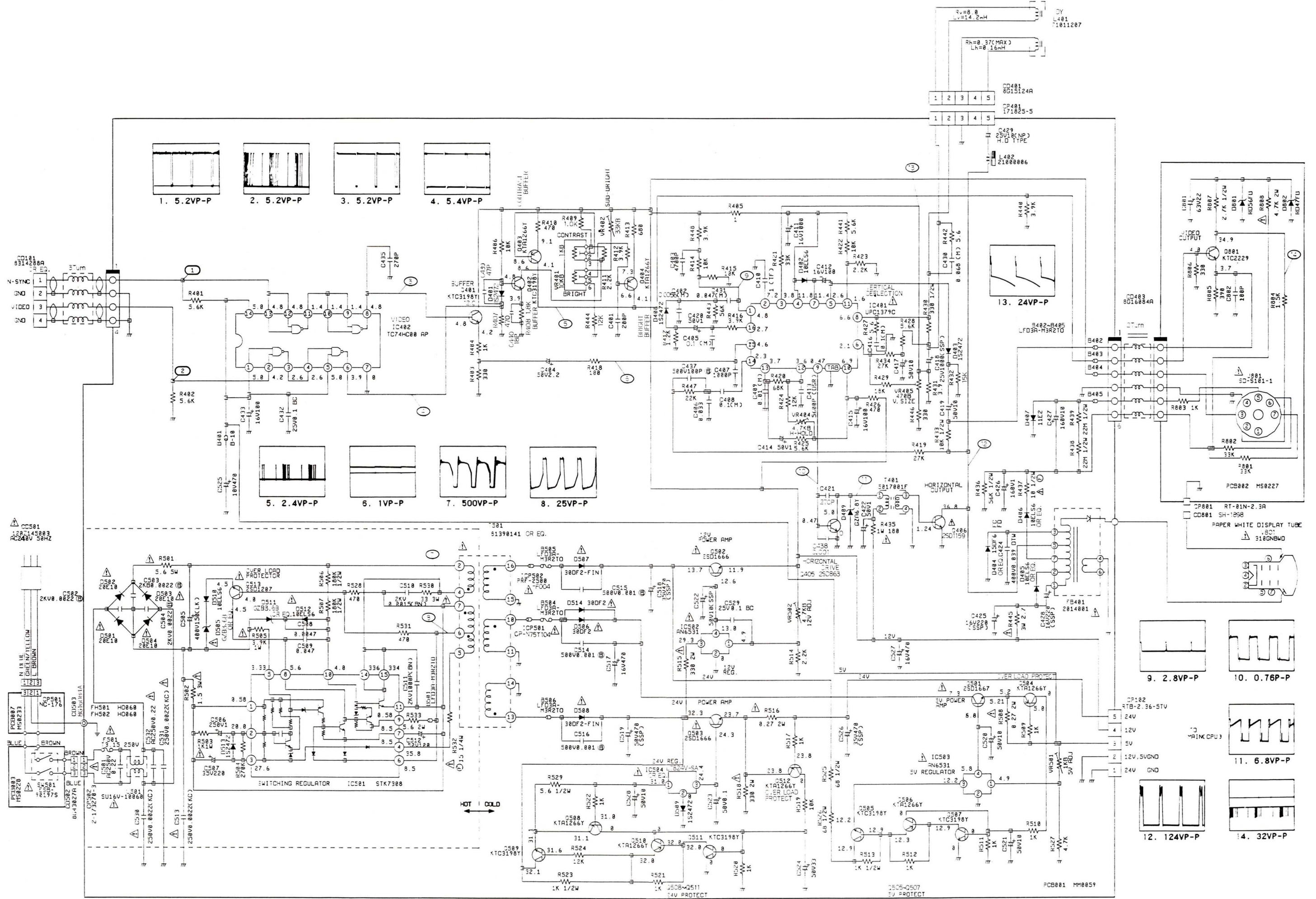
Ref. No.	Description	Part No.
101	Cabinet Top	272634
	Plate Brand	272756
102	Cabinet Bottom	272635
	Leg Rubber	
	Sheet Rating	272765
	Package, Left (Keyboard)	
	Package Right (Keyboard) (Set)	272766



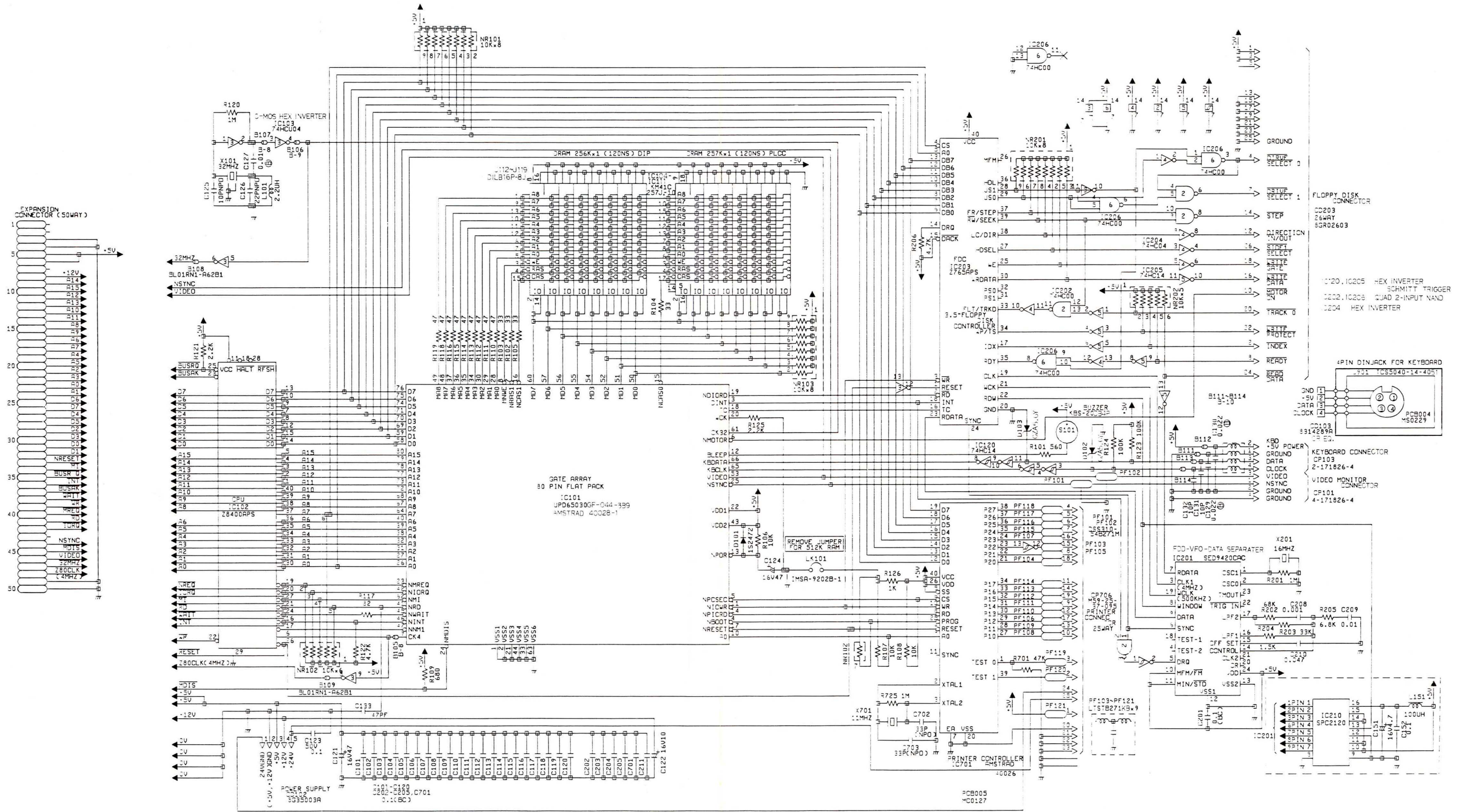
KEYBOARD P.C.B.



MONITOR SCHEMATIC DIAGRAM

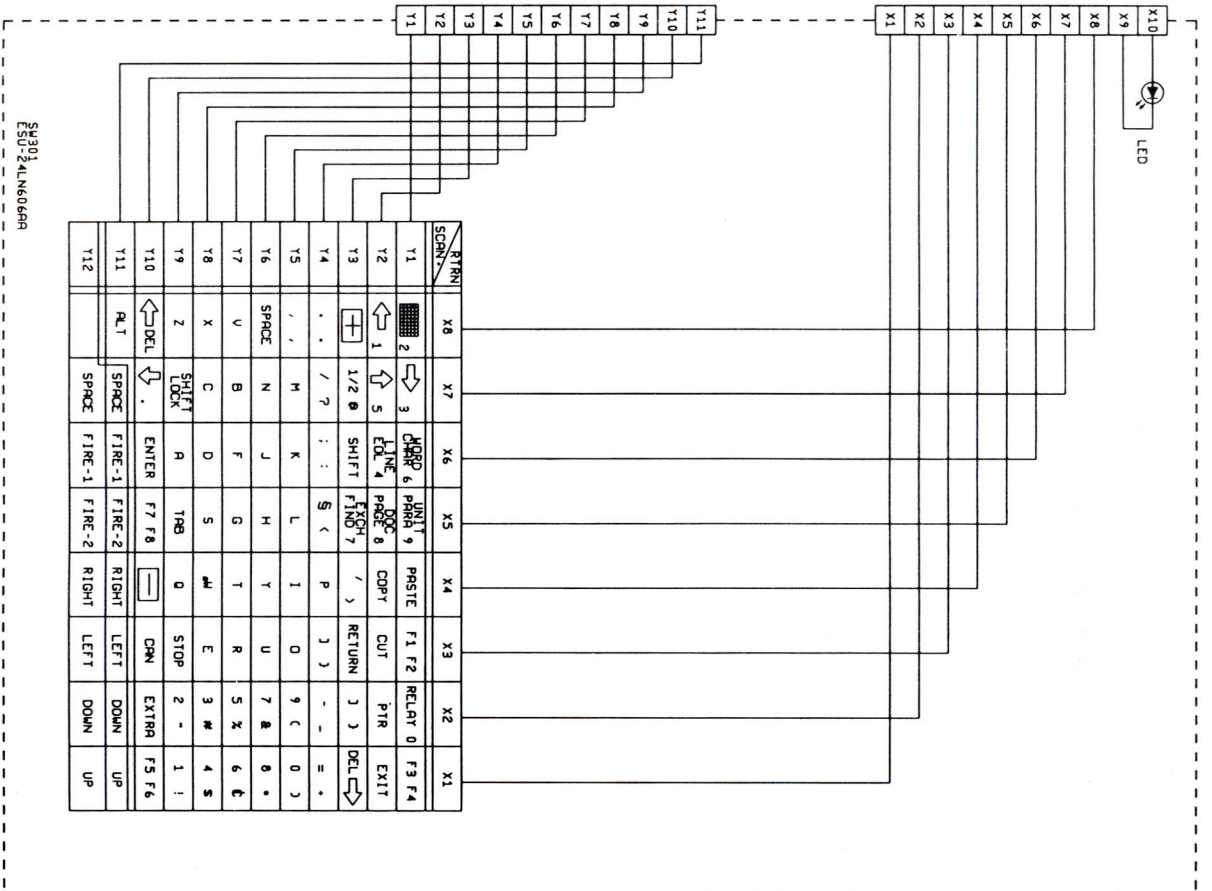
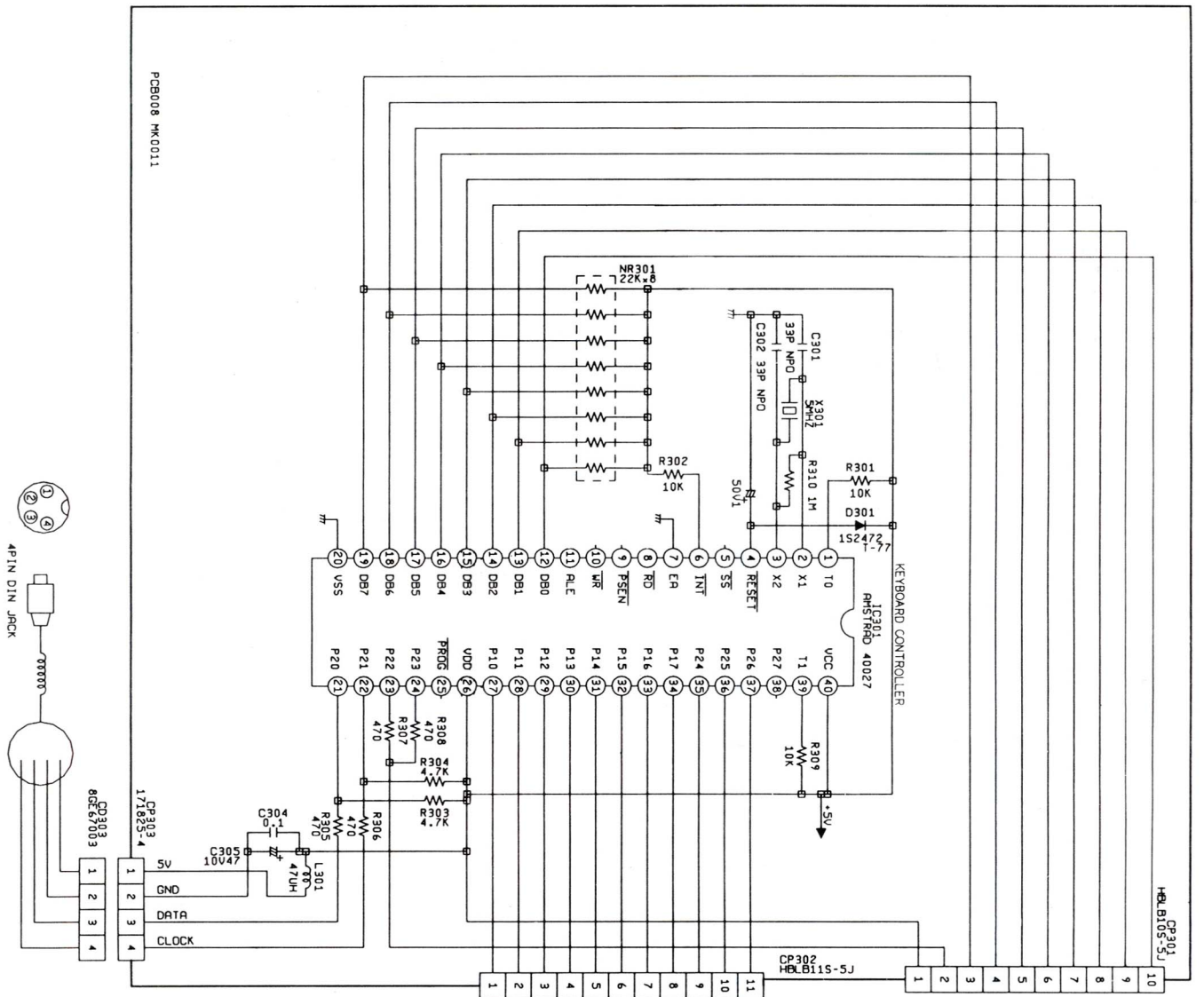


CPU P.C.B. SCHEMATIC DIAGRAM



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE W/O-OUT NOTICE.

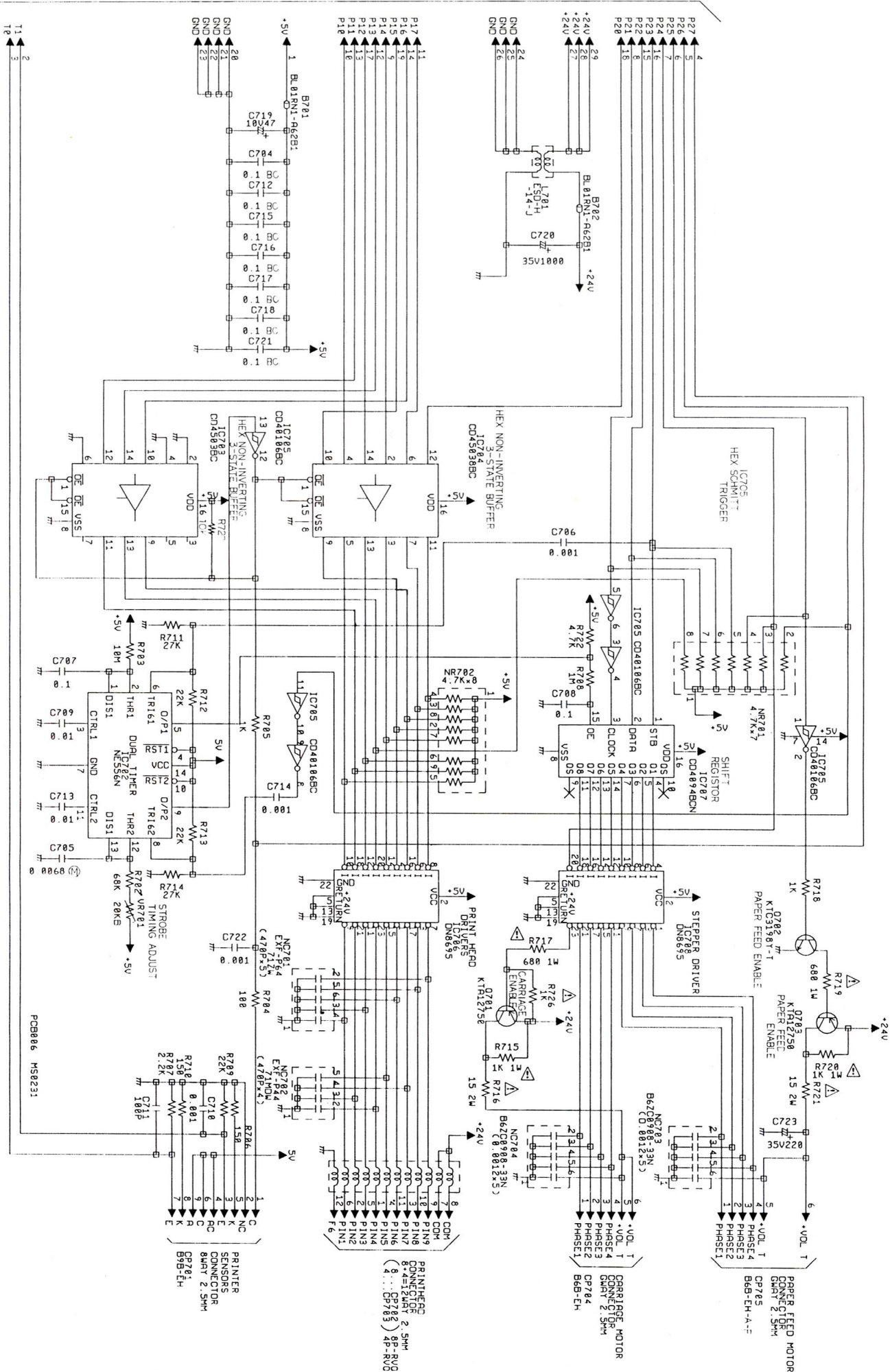
KEYBOARD P.C.B. SCHEMATIC DIAGRAM



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PRINTER CONTROL P.C.B. SCHEMATIC DIAGRAM

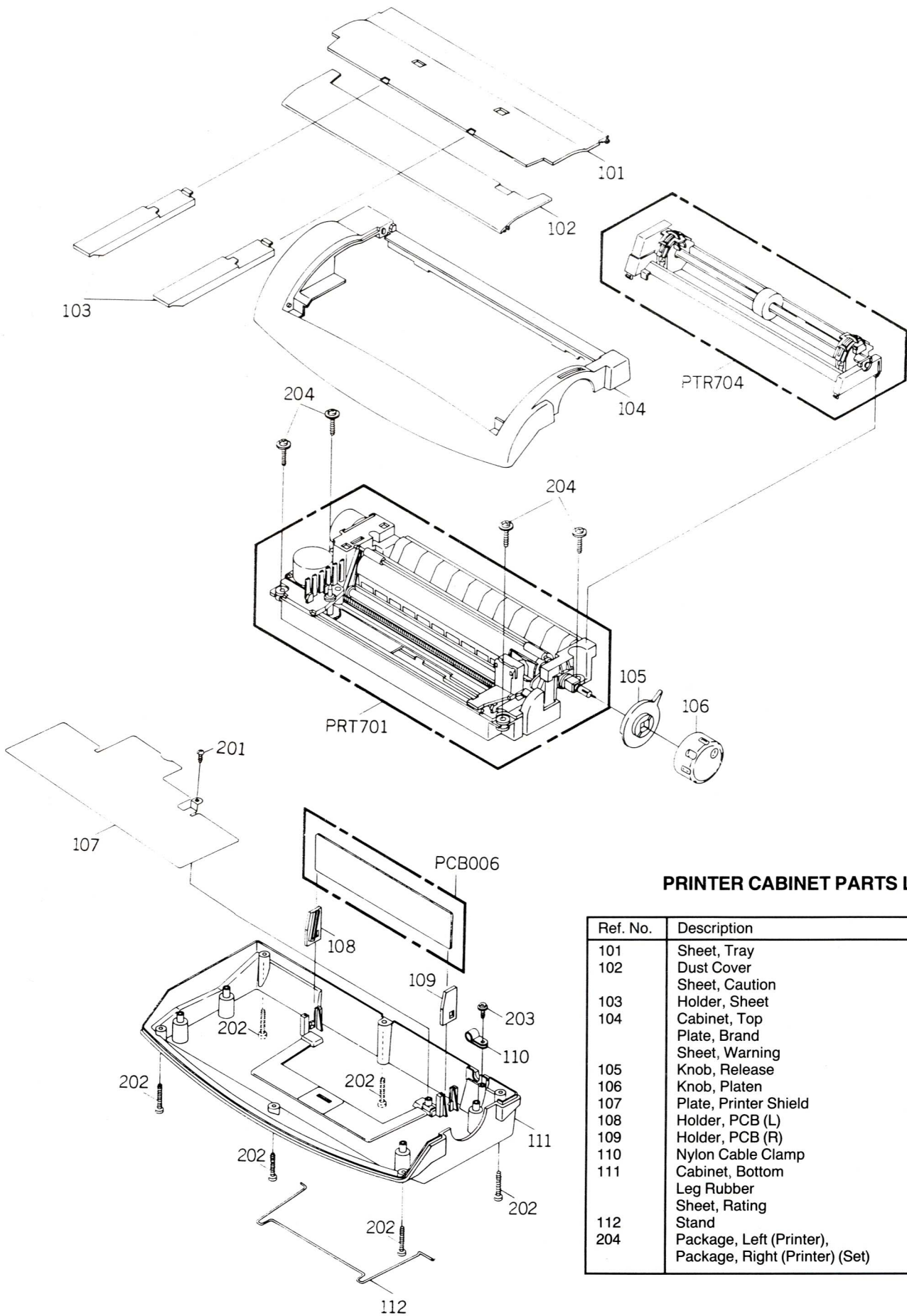
CD706
8BR13801



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY Δ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

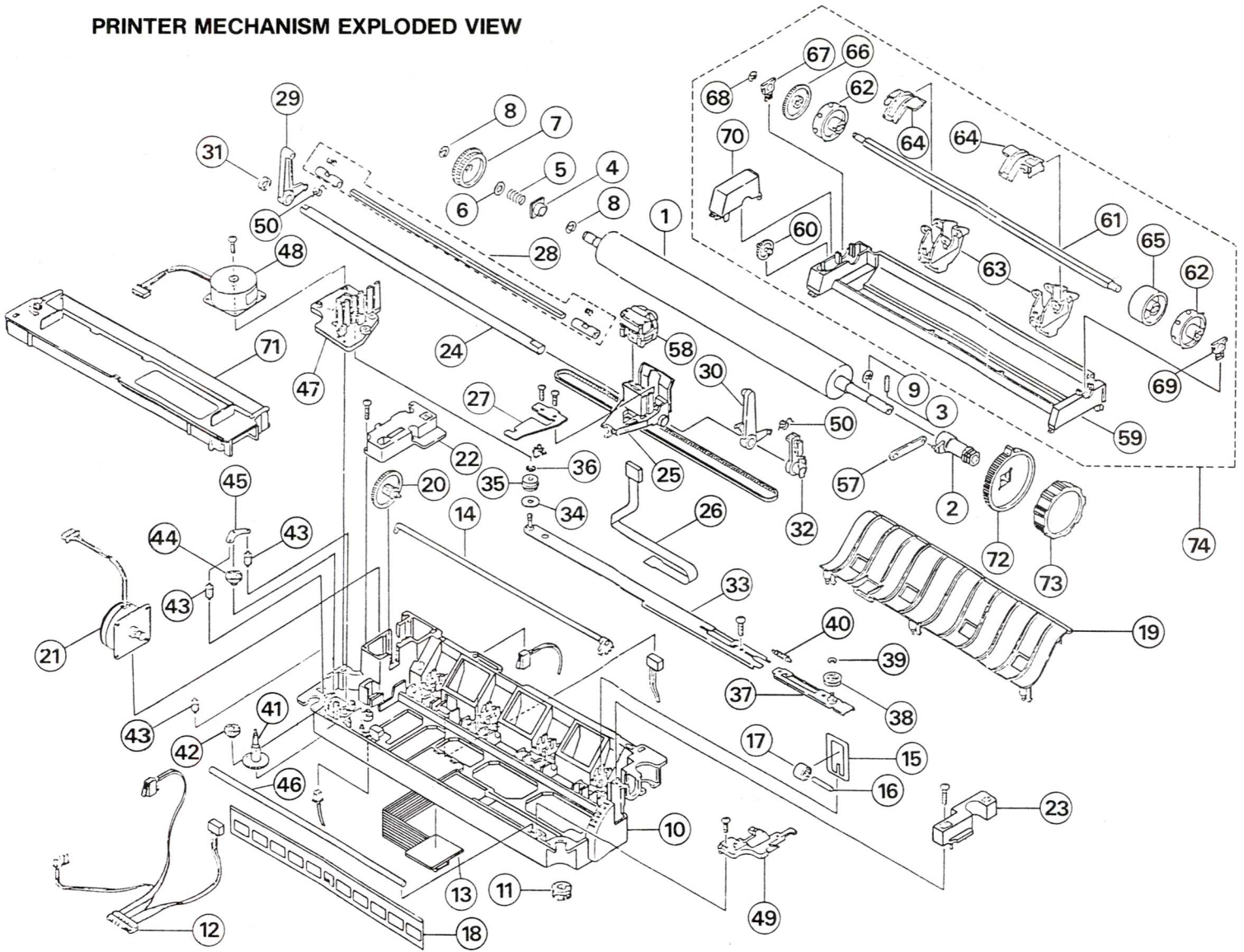
PRINTER EXPLODED VIEW



PRINTER CABINET PARTS LIST

Ref. No.	Description	Part No.
101	Sheet, Tray	272754
102	Dust Cover	272755
	Sheet, Caution	
103	Holder, Sheet	171123
104	Cabinet, Top	272626
	Plate, Brand	272756
	Sheet, Warning	
105	Knob, Release	272757
106	Knob, Platen	272758
107	Plate, Printer Shield	
108	Holder, PCB (L)	272759
109	Holder, PCB (R)	272760
110	Nylon Cable Clamp	272761
111	Cabinet, Bottom	272627
	Leg Rubber	
	Sheet, Rating	272762
112	Stand	272763
204	Package, Left (Printer),	
	Package, Right (Printer) (Set)	272764

PRINTER MECHANISM EXPLODED VIEW



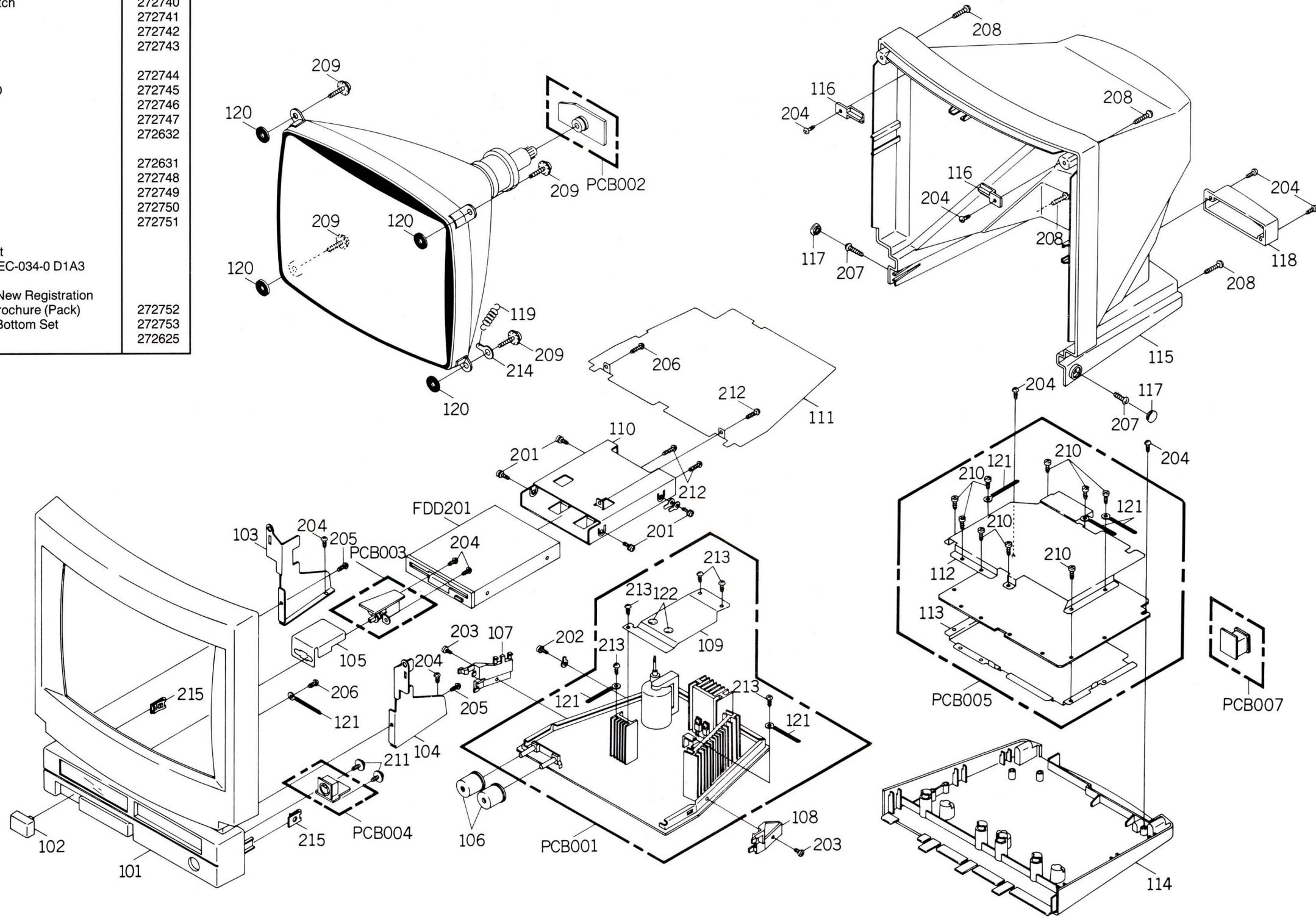
PRINTER MECHANISM PARTS LIST

Ref.	Description	Part No.	Ref.	Description	Part No.
1	Platen	171701	34	Set Collar	171735
2	Release Sleeve	171702	35	Carriage Gear	171736
3	Spring Pin	171703	36, 39	E Ring 2oz	171737
4	LF Bearing	171704	37	Set, Carriage Bracket B	171738
5	LF Spring	171705	38	Pulley	171739
6	Poly Slider	171706	40	Tension Spring	171740
7	LF Gear B	171707	41	RF Gear B	171741
8	E Ring 6oz	171708	42	RF Gear A	171742
9	E Ring 5oz	171709	43	Switch Gear	171743
10	Frame	171710	44	RF Gear C	171744
11	Rubber Foot	171711	45	RF Plate	171745
12	Set, Sensor	171712	46	Carriage Sub Shaft	171746
13	Set, Head, P.C.B.	171713	47	RF Gear Cover	171748
14	Release Shaft	171714	48	Set, Carriage Motor	171749
15A/B	Pressure Spring	171715A/B	49	Cover B	171750
16	P Shaft	171716	50	Bail Arm Spring	171751
17	Set, Pressure Roller	171717	57	Release Link	171752
18	Paper Press	171718	58	Print Head	171753
19	Paper Guide	171719	59	Tractor Frame	171754
20	LF Gear A	171720	60	Tractor Gear B	171755
21	Set, LF Motor	171721	61	Tractor Shaft	171756
22	LF Gear Cover	171722	62	Sprocket	171757
23	Cover A	171724	63	Tractor Bracket	171758
24	Carriage Shaft	171725	64	Tractor Cover	171759
25	Set, Carriage	171726	65	Idle	171760
26	Set, Head Cable	171727	66	Tractor Gear A	171761
27	Head Bracket	171728	67, 69	Tractor Bearing	171762
28	Set, Bail Shaft	171729	68	E Ring 4oz	171763
29	Bail Arm L	171730	70	Tractor Gear Cover	171764
30	Bail Arm R	171731	71	Ribbon	
31	Carriage Sleeve A	171732	72	Release Knob	171765
32	Set, Gap Lever	171733	73	Platen Knob	171766
33	Set, Carriage Bracket A	171734	74	Tractor Assembly	171211

MONITOR CABINET PARTS LIST

Ref. No.	Description	Part No.
101	Cabinet, Front Assy	272630
	Cabinet, Front	
	Plate, Brand	272756
	Plate, FDD	
102	Button, Power	272737
103	Frame, CRT (L)	272738
104	Frame, CRT (R)	272739
105	Cover, Power Switch	272740
106	Knob, Control	272741
107	Holder, PCB (L)	272742
108	Holder, PCB (R)	272743
109	Plate, Shield	
110	Frame, FDD	272744
111	Sheet, Shield FDD	272745
112	Shield, Top	272746
113	Shield, Bottom	272747
114	Cabinet, Bottom	272632
	Leg Rubber	
115	Cabinet, Back	272631
	Sheet, Rating	272748
116	Cover, Hole	272749
117	Screw, Cap	272750
118	Cover, Card Edge	272751
119	Spring, Earth	
120	Sheet, Crt Support	
121	Cord Clamp No PEC-034-0 D1A3	
122	Card, Spacer	
	Guarantee Card, New Registration	272752
	Card User Club Brochure (Pack)	272753
	Package—Top—Bottom Set	272625
	Gift Box	

MONITOR CABINET EXPLODED VIEW



ELECTRICAL PARTS LIST

Description	Ref. No.	Part No.
IC's		
IC101	IC UPD65030GF-044-3B9 (AMS 40028-1)	272769
IC102	IC Z8400APS	40080
IC103	IC MC74HCU04D	272251
IC104-111	IC KM41C257J-10	272770
IC120, 205	IC MC74HC14D	227248
IC201	IC SED9420CAC	171034
IC202, 206	IC MC74HC00ADR2	272771
IC203	IC Z765APS	40018
IC204	IC MC74HC04ADR2	272772
IC301	IC AMSTRAD40027	171043
IC401	IC UPC1379C Δ	272773
IC402	IC TC74HC00AP	171035
IC501	IC STK7308 Δ	170445
IC502, 503	IC AN6531 Δ	171041
IC504	IC L7824V-SA Δ	177043
IC701	IC AMSTRAD 40026	171038
IC702	IC NE556N	171131
IC703, 704	IC CD4503BC	171132
IC705	IC CD40106BC	171133
IC706, 708	IC DN8695	272774
IC707	IC CD4094BCN	171135
Transistors		
Q401, 402, 505, 507, 509, 511, 702	TR KTC3198Y-AT	272775
Q403, 404, 504	TR KTA1266Y-AT	272776
Q405	TR 2SD863E-AE	271164
Q406	TR 2SD1159 Δ	171044
Q501	TR 2SD1667 (R, S) Δ	177045
Q502, 503, 506, 508, 510, 512, 513	TR 2SD1666 (R, S) Δ	170451
Q701, 703	TRKTA10130-AT	171136
Q801	TR KTC2229Y-AT	171046
Diodes		
D101, 301, 401, 403, 408, 509, 513	D 1S2472-T-77	170455
D102, 103	DZ GZA5.6 Y BT	240006
D402, 405, 406, 510, 512	D Rect 10ELS6TA1	272049
D404	D 15DF6-FC	271180
D407	D 11E2TA1	171049
D409	DZ GZA6.8 Y BT	240377
D501-504	D 20E10FA13 Δ	171048
D505, 511	DZ GZB3.6B Δ	171458
D506, 514	D 30DF-2FC Δ	171052
D507, 508	D 30FD2-FIN Δ	272767
D801	DZ RD56FB	171054
D802	DZ RD47FB	272768
Coils		
L101	Coil 2.2 μ H	171055
L301	Coil 47 μ H	171119
L401	DY 71011207	272795
L402	Coil, Linearity 21000006	170631
L501	Coil, Line Filter AC SU16V-10060 Δ	272796
L701	Coil, Line Filter ESD-H-14-J	272797
T401	Trans, Horizontal Drive 5017001F	272798
T501	Trans, Switching 81390141 Δ	272799
PCB Assemblies		
PCB001	PCB Assy MM0059-S Monitor PCB	
PCB002	PCB Assy MS0227 CRT PCB	
PCB003	PCB Assy MS0228 Switch PCB	
PCB004	PCB Assy MS0229 Kbd Socket PCB	
PCB005	PCB Assy MC0127 CPU PCB	272628
PCB006	PCB Assy MS0231 Printer PCB	272780
PCB007	PCB Assy MS0233 AC Input PCB	
PCB008	PCB Assy MK0011 ICBD PCB	

Description	Ref. No.	Part No.
Variable Resistors		
VR401	VR, OT EVU-G2AFA00007	272788
VR402	VR SF EVNDXAA03BY4	272789
VR404	VR SF RH0638CS3R02A	272790
VR405	VR SF RH0638CS2R02A	272791
VR501	VR SF RH0638C13R02A	272792
VR502	VR SF RH0638CS3R02A	272793
VR701	VR SF EVN-K0AA00B24	272794
Switches		
SW301	Switch, Keyboard ESU24LN606AA	272633
SW501	Switch, Push ESB-90197S Power On/Off	171013
Miscellaneous		
J112-119	Socket, IC D1LB16P-8JT	
J801	Socket, CRT SD-S101-1	272800
J901	Jack, DIN TCS5040-14-4051	272801
B105, 107	Core, Beads B-8	
B106	Core, Beads B-9	
B108, 109, 701, 702	Core, Beads BL01RN1-A62B1	
B111-114, 401	Core, Beads B-10	
B402-405, 501, 504-506	Core, Beads LFD3A-M3R2TO	
CD303	Cord, Din 8GE67003	272802
CD501	Cord Set, AC 120Z145003	271066
CD706	Cord, Connector 8BR13001	272803
CP501	Socket AC NC-176 Δ	272804
CP706	Connector, D-Sub M59-25-37-095SS8	272806
F501	Fuse BET3.15A(T) 250V Δ	171531
FB401	Transformer Flyback 2014001 Δ	171023
FH501, 502	Holder H0060	
FDD201	Floppy Disc Drive UODC-45A	272508
ICP501	IC Protector ICP-N75T104 Δ	171057
ICP502	IC Protector PRF-2500-F004 Δ	272807
NC701	C.Network EXF-P6471ZW 470pFx5	272808
NC702	C.Network EXF-P4471MDW 470pFx4	178257
NC703, 704	C.Network B6ZC0908-33N 0.0012 Ω Fx5	272805
NR101, 103, 201	NR RGLD8X103J 10Kx8	272250
NR102	NR RGLD6X-103J 10Kx6	272809
NR202	NR RGLD5X103J 10Kx5	272810
NR301	NR RGLD8X223J 22Kx8	272811
NR701	NR RGLD7X472J 4.7Kx7	171139
NR702	NR RGLD8X472J 4.7Kx8	171140
PF101, 102	Filter, EMI DSS310-54B271M	272812
PF103-121	Filter, EMI LTSTB271KB	272813
PRT701	Printer Mechanism AMS PT NO Z70315	171127
PRT703	Ribbon Cassette AMS PT NO AWD1201A	Soft 06041
PRT704	Tractor PT AWD1101A	171211
S101	Buzzer Piezo-Electri KBS-20DB-4P	171061
SJ101	Connector, PCB Side IMSA-9206H-T	
V801	CRT 310GNBWD CRT Δ	272814
X101	Crystal HC-49/U 32.000MHZ	171063
X201	Ceramic, OSC CSA16.00MX7	171231
X301	Ceramic, OSC KBR-5.0M	171232
X701	Ceramic, OSC KBR-11.0M	171064
	Keyboard Assy Complete	272633
	User Instructions	272667
Fuse Resistors		
10 Ω 1/2W	R437 Δ	176341
15 Ω 1/4W	R532	1420155
Solid Resistors		
22M Ω 1/2W	R438, 439	271449
Cement Resistors		
5.6 Ω 5W	R501 Δ	272214

Description	Ref. No.	Part No.
Carbon Resistors 1/8W		
33 Ω	R102-105	240128
47 Ω	R110-116, 118-119	240130
82 Ω	R117	240134
560 Ω	R101	240145
680 Ω	R109	240146
1K Ω	R126	240151
1.5K Ω	R204	240153
2.2K Ω	R125, 121	240155
4.7K Ω	R122, 206	240159
6.8K Ω	R205	240161
10K Ω	R106-108	240165
33K Ω	R203	240171
47K Ω	R701	240173
68K Ω	R202	240175
100K Ω	R123, 124	240179
1.0M Ω	R201,120,725	240191
Carbon Resistors 1/4W		
1.0 Ω	R405	272777
3.9 Ω	R431	272778
5.6 Ω	R442	176293
100 Ω	R418, 704	176285
150K Ω	R706, 710	192254
330K Ω	R403, 446, 806	10044
390K Ω	R805	240508
470K Ω	R30308, 407, 410, R426, 528, 531	10048
680K Ω	R413	10052
1.0K Ω	R404, 409, 509-512, 517, 520-522, 705, 718, 726, 803	10061
1.2K Ω	R417	192253
1.5K Ω	R804	272140
1.8K Ω	R408	176289
2.2K Ω	R411, 423, 707, 514	192256
3.9K Ω	R412, 416, 440, 448	10075
4.7K Ω	R303, 304, 722, 527	10077
5.6K Ω	R401, 402, 425, 428, 441	10079
10K Ω	R301, 302, 309, 406, 414, 415, 422, 519	240511
12K Ω	R424, 524	10087
27K Ω	R419	10095
33K Ω	R421, 801, 802	10097
68K Ω	R420, 702	10105
5.6K Ω	R427	176293
12K Ω	R444	10087
15K Ω	R432	10089
18K Ω	R429	10091
22K Ω	R447, 709, 711, 713	10093
27K Ω	R434, 711, 714	10095
56K Ω	R443	10103
270K Ω	R504	272142
1M Ω	R310, 708	10147
10M Ω	R703	240213
Carbon Resistors 1/2W		
68 Ω	R525, 526	194217
330 Ω	R430	174834
1.0K Ω	R513, 523	174835
2.7K Ω	R807	176749
5.6 Ω	R529	176375
10K Ω	R433	1400168
56K Ω	R436	176539
180K Ω	R506, 507	272779
Carbon Resistors 1/6W		
10K Ω	R727	152194
Metal Oxide Resistors		
180 Ω 1W	R435 Δ	271447
680 Ω 1W	R717, 719, 720	1420158
1K Ω 1W	R503, 715	170406
3.9K Ω 1W	R505 Δ	176543
15 Ω 2W	R716, 721	176389
0.27 Ω 2W	R508, 516 Δ	272780
330 Ω 2W	R516, 518 Δ	272674
4.7K Ω 2W	R808 Δ	271448
5.6 Ω 2W	R533	151920
33 Ω 3W	R530	271220
1.5 Ω 3W	R502	151915
2.7 Ω 3W	R445 Δ	272781

Description	Ref. No.	Part No.
Electrolytic Capacitors		
10 μ F 25V	C429	254024
1000 μ F 25V	C418	152567
0.1 μ F 50V	C523	150908
1.0 μ F 50V	C414, 420, 422, 303	157563
2.2 μ F 50V	C404	157672
10 μ F 50V	C417, 419, 520-522, 528	240462
33 μ F 50V	C524	254025
100 μ F 50V	C512	272784
470 μ F 50V	C519	272785
220 μ F 35V	C507, 723 Δ	201722
470 μ F 35V	C518, 526	150919
1000 μ F 35V	C720	271229
47 μ F 10V	C305, 719	157648
470 μ F 10V	C525	270963
1.0 μ F 160V	C426	272638
10 μ F 160V	C427	170608
150 μ F 400V	C505	157792
1 μ F 250V	C506	157564
22 μ F 63V	C801	157647
Polyester Capacitors 50V		
0.0056 μ F	C402	272137
0.01 μ F	C409	176309
0.1 μ F	C405, 408, 416	240249
0.047 μ F	C431	176312
0.0068 μ F	C705	176361
0.068 μ F	C430	170129
Metal Polyester Capacitor AC250V		
0.22 μ F	C501, 532 Δ	272786
Polypropylene Capacitor 400V		
0.039 μ F	C424	272787
Metal Plastic Capacitor 50V		
1 μ F	C410	272469
Plastic Capacitor 50V		
0.0056 μ F	C413	174818
Ceramic Capacitors—All capacitors are 50V unless stated otherwise		
0.001 μ F	C208,438, 706, 710, 722	250073
0.01 μ F	C127, 209, 409, 709, 713	270517
0.1 μ F	C101-120, 123, 128, 201-205, 211, 701	177938
0.022 μ F	C129, 130	270518
0.033 μ F	C406	153922
0.047 μ F	C210, 509	153924
0.0047 μ F	C403, 508	170600
10pF	C125, 131, 132	270506
18pF	C440	270032
22pF	C126	250167
33pF	C301, 302, 702, 703	250422
47pF	C133, 439	270508
100pF	C711, 802	250145
200pF	C401	272179
270pF	C421, 435	251517
1000pF	C407, 714	192269
0.1 μ F 25V	C432, 529	270516
0.1 μ F 12V	C304, 704, 707, 708, 712, 715-718, 721	175181
0.0015 μ F 2KV	C510	271245
0.001 μ F 2KV	C511	272099
2200pF 2KV	C502,503, 504 Δ	272671
100pF 250V	C437	272815
2200pF 2		