AKAI

MODEL S900

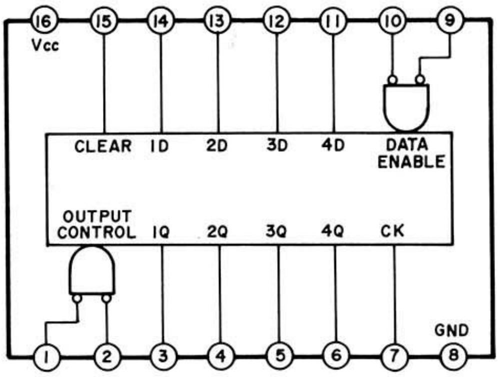
SCHEMATIC DIAGRAM AND PC BOARDS

TABLE OF CONTENTS

INFORMATION OF ICs

NAME OF IC	FUNCTION
74HC02P	Quad 2 Input NOR
74HC04P	Hex Inverters
74LS05P	Hex OC Inverters
74HC86P	Quad 2 Input EX-OR
74HC109P	Dual J$\overline{K}$-FFs with Preset and Clear
74HC173P	4 Bit Register 3 state
74HC244	Octal 3 state Bus Buffers
74HC374P	Octal 3 state D-FFs
74HC670P	4-4 Register Files (3 states)
AM2504PC	8 Bit/12 Bit Successive Approximation Registers
BA6110	Voltage Controlled Low Noise OP-Amp
BA9201	8 Bit D/A Convertor with Latch
BA9221	12 Bit D/A Convertor
DG211CJ	Quad Analog Switch
IR9311	Conparator
M5220P	Dual Low Noise Voltage Amplifier
M5223P	Dual J-FET Input OP-Amp
M5230P	Regulator (Variable output, + – teacking type)
M5238P	Dual FET Input OP Amp
MF6CN-50	6th order switched capacitor Butter worth Low pass filter
SRT9005	Molded Series Regulator
TA78012P	+12V Regulator
TA78M06P	+6V Regulator
TA79M06P	–6V Regulator
μPC812C-AK	Dual Low drift J-FET Input OP-Amp
μPD71054C	Programmable timer counter
μPD71055C	Parallel Interface unit
μPD7265C	Programmable Floppy Disk Drive
μPD8253C	Programmable Interval timer

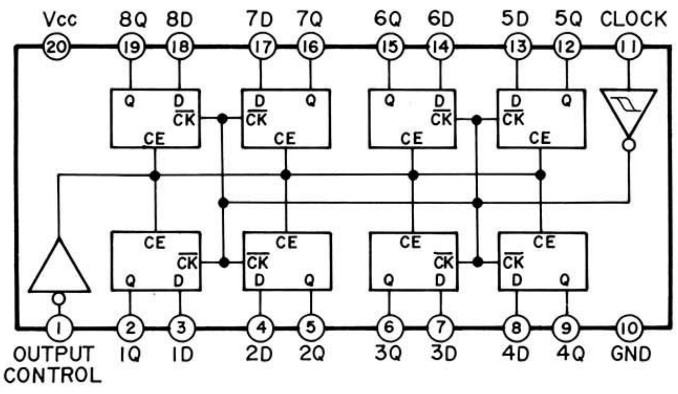
74HC173P



TRUTH TABLE

INPUT						OUTPUT $Q_A \sim Q_D$	OPERATION
CLEAR	CK	ENABLE		OUTPUT CONTROL			
		G1	G2	M	N		
L	↑	L	L	—		1D ~ 4D	DATA SET
L	↑	H	X	—		—	HOLD
		X	H				
H	X	X	X	—		LLLL	CLEAR
—				H	X	Z	—
				X	H		

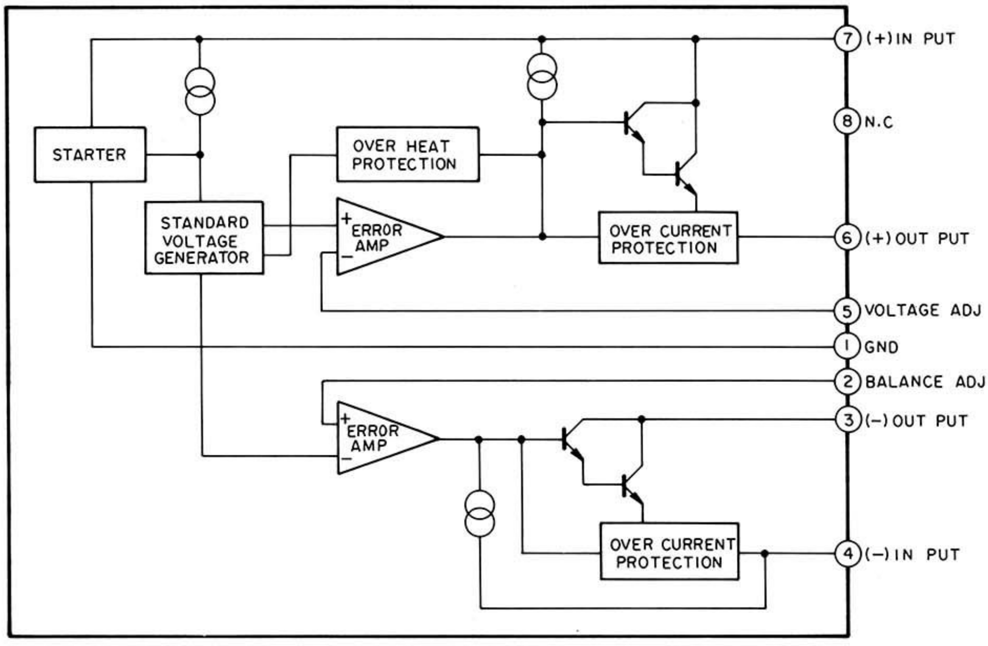
74HC374P



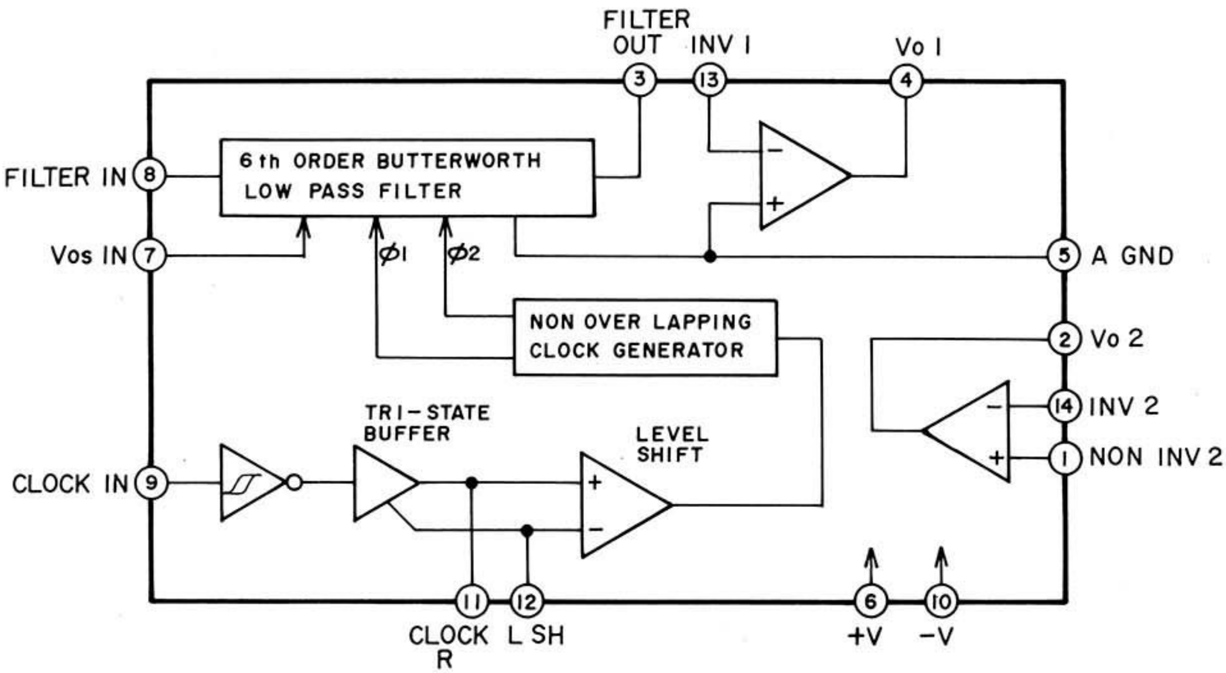
TRUTH TABLE

INPUT		OUTPUT
OUTPUT CONTROL	CK	
X	↑	DATA SET
H	X	OUTPUT HIGH IMPEDANCE

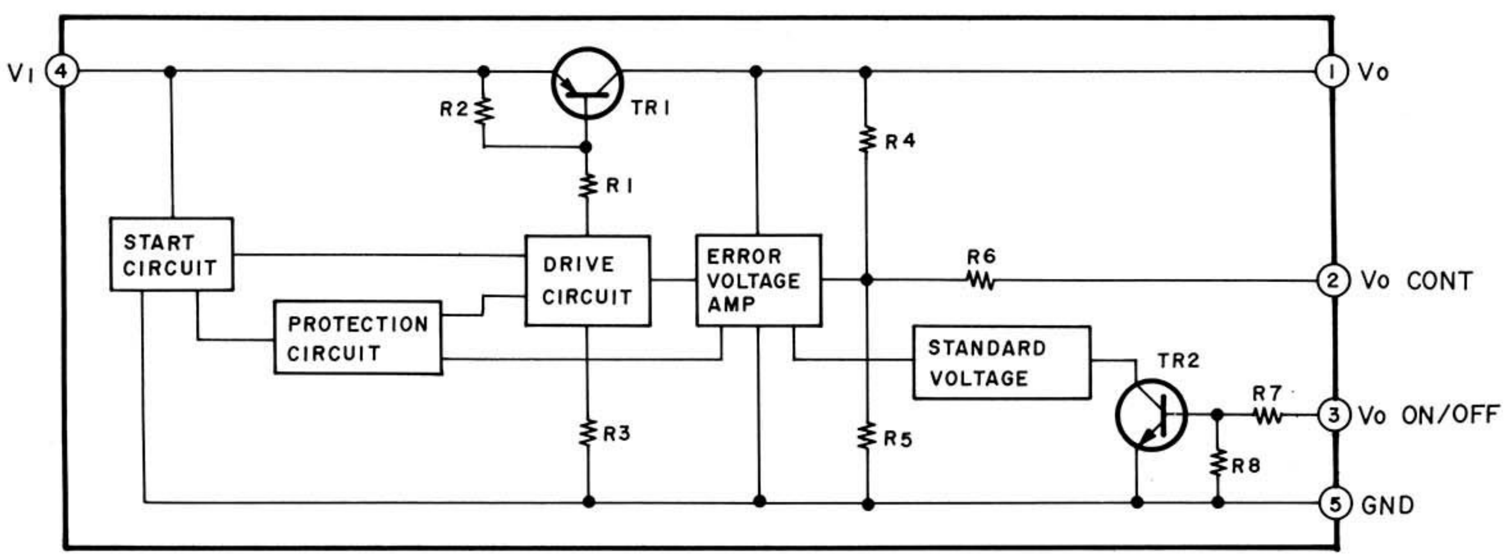
M5230L



MF6CN-50

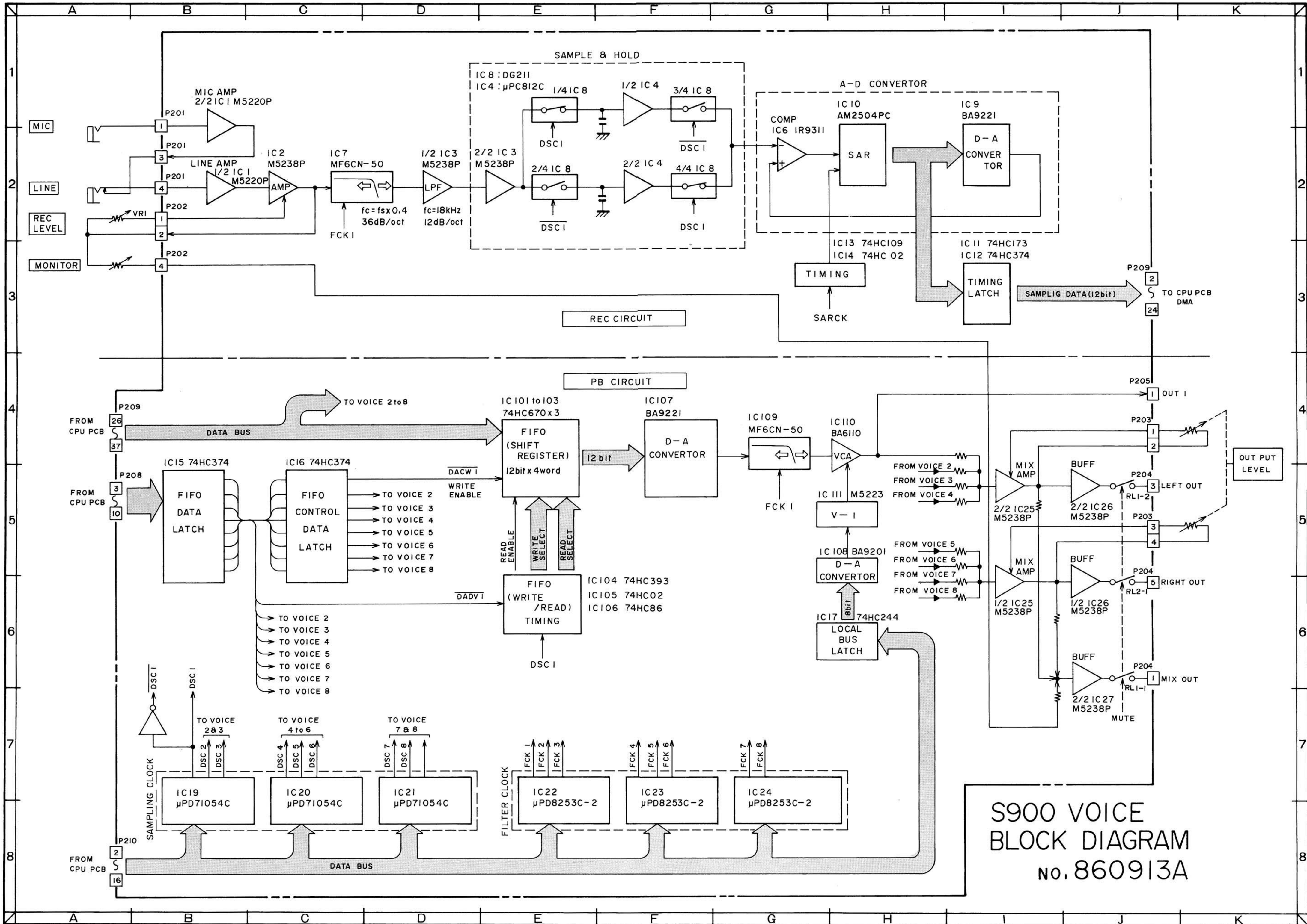


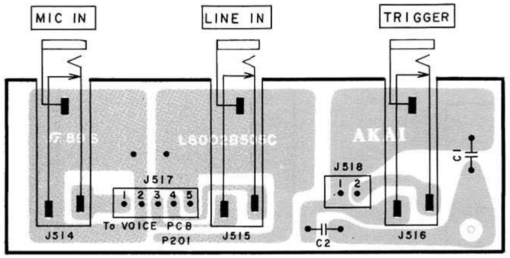
STR9005



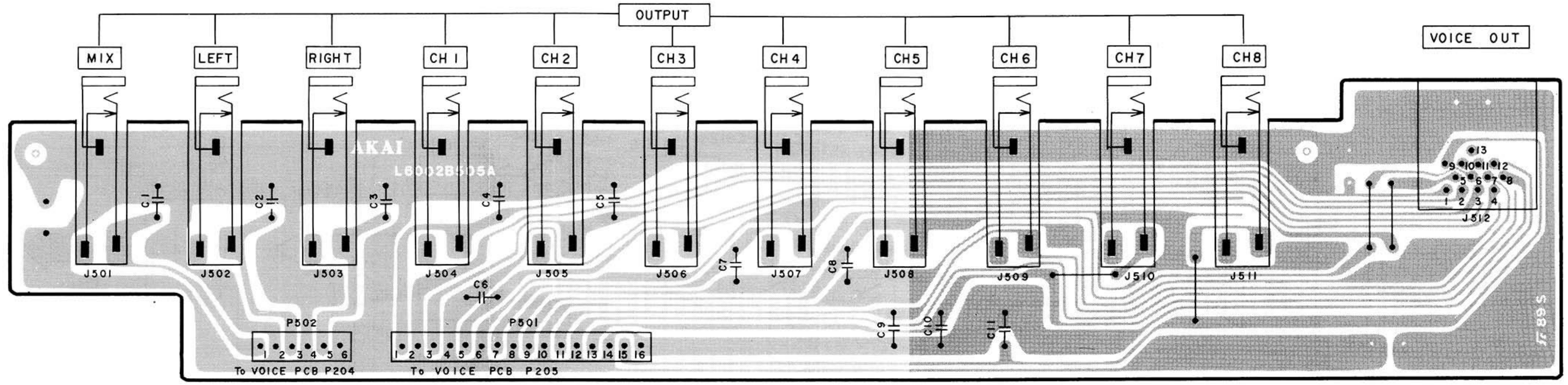
S900 VOICE BLOCK DIAGRAM

No. 860913A

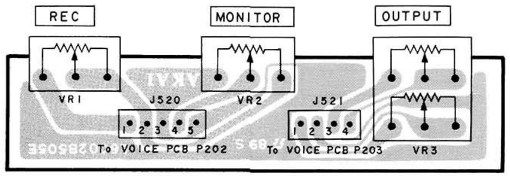




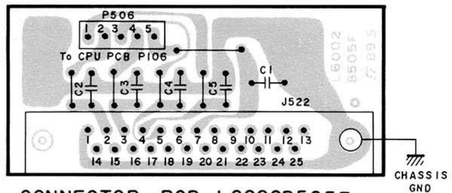
INPUT JACK PCB L6002B505C



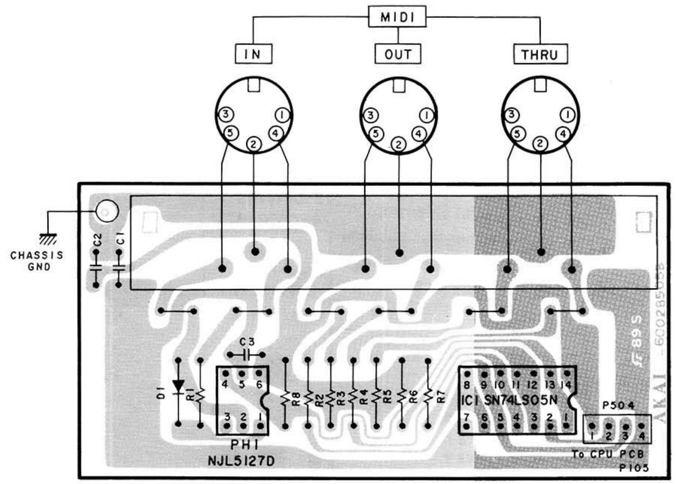
OUTPUT JACK PCB L6002B505A



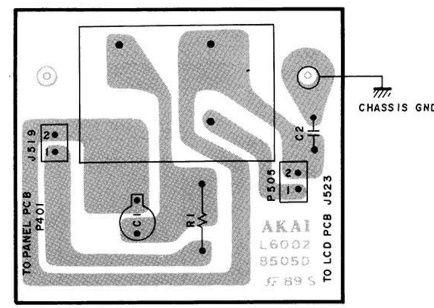
VR PCB L6002B505E



CONNECTOR PCB L6002B505F

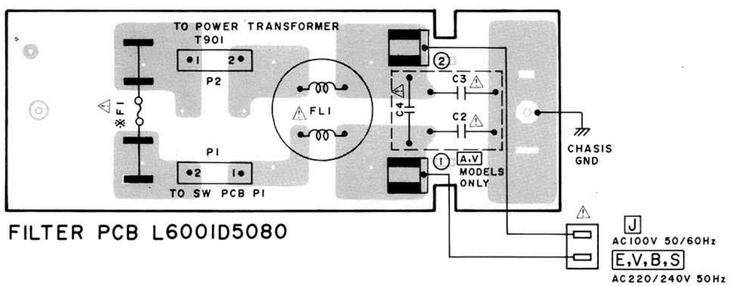


MIDI JACK PCB L6002B505B

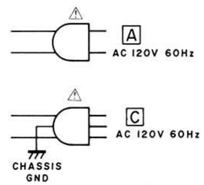


INVERTOR PCB L6002B505D

※	J	C.A	E.V.S.B
F1	1.25A250V	1.6A 125A	T500mA 250V

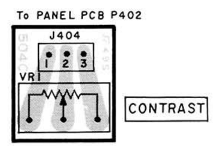


FILTER PCB L6001D5080

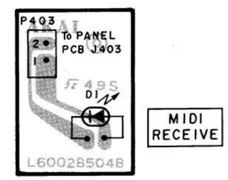


WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

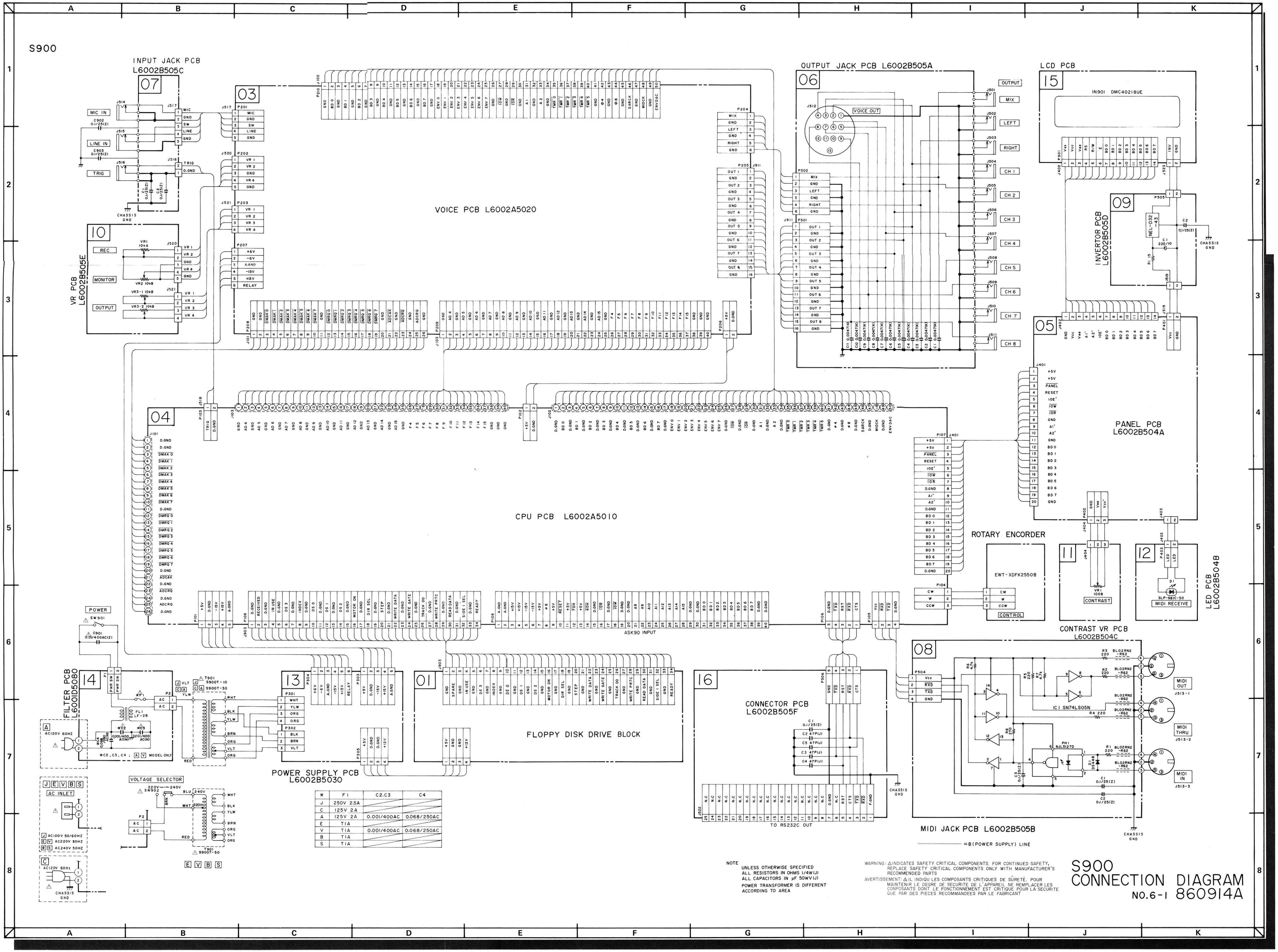
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT



CONTRAST VR PCB
L6002B504C



LED PCB
L6002B504B



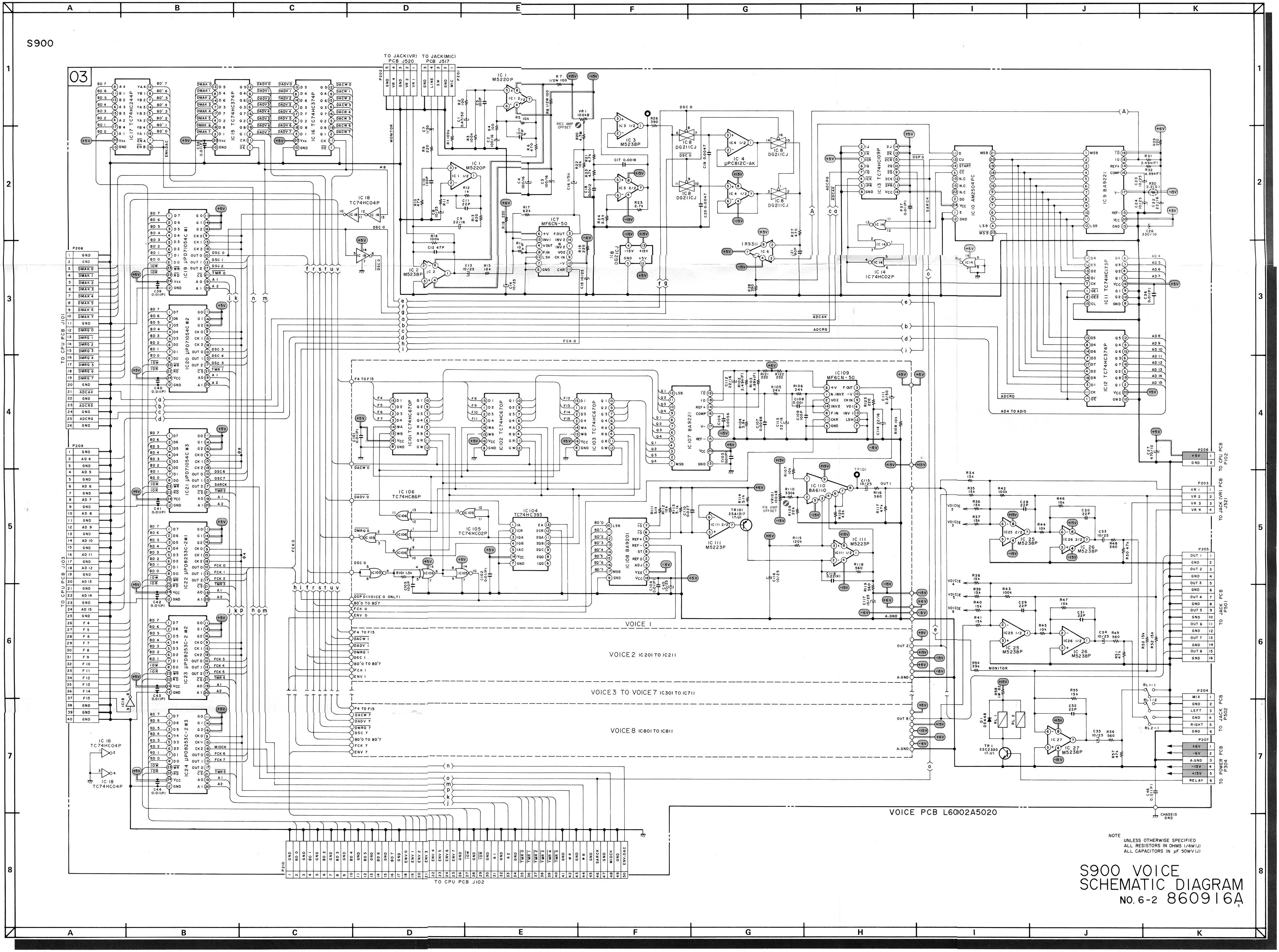
*	F1	C2.C3	C4
J	250V 2.5A		
C	125V 2A		
A	125V 2A	0.001/400AC	0.068/250AC
E	T1A		
V	T1A	0.001/400AC	0.068/250AC
B	T1A		
S	T1A		

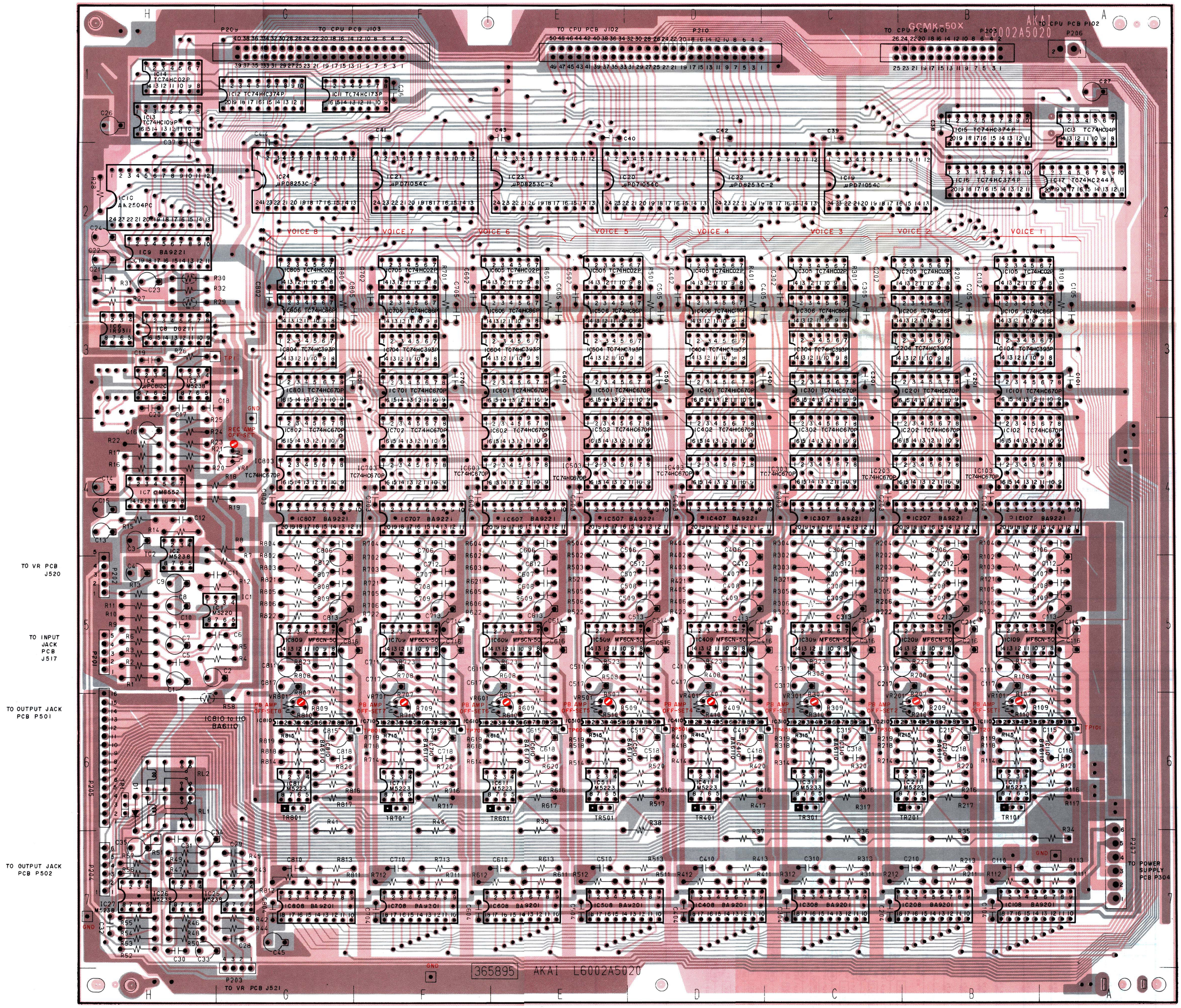
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN µF 50WV(J)
POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

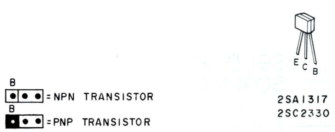
AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

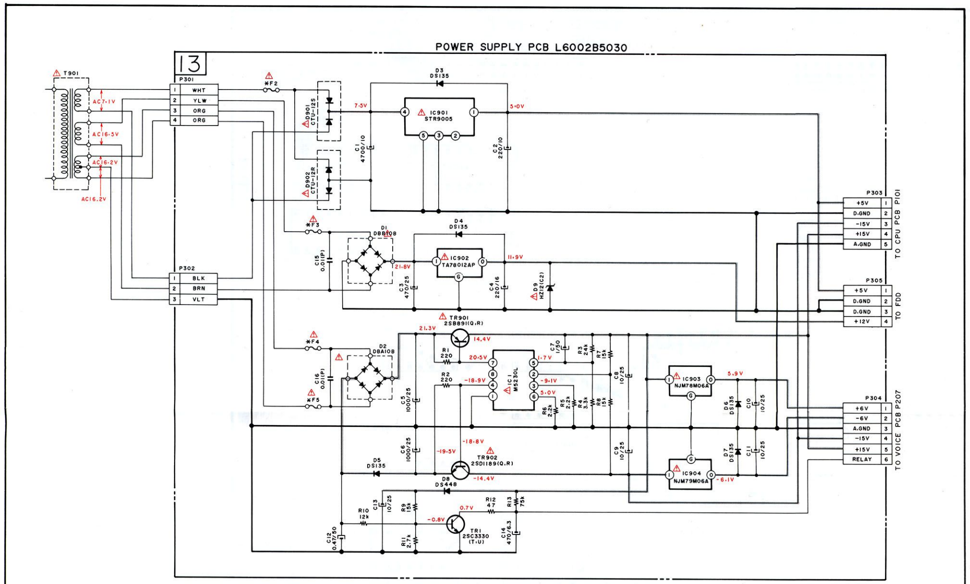
S900 CONNECTION DIAGRAM
NO.6-1 860914A


S900
03
VOICE 1
VOICE 2 IC201 TO IC211
VOICE 3 TO VOICE 7 IC301 TO IC711
VOICE 8 IC801 TO IC811
VOICE PCB L6002A5020
TO CPU PCB J101
TO CPU PCB J103
TO CPU PCB J102
TO JACK(VR) PCB J520
TO JACK(MIC) PCB J517
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN µF 50WV(J)
S900 VOICE
SCHEMATIC DIAGRAM
NO. 6-2 860916A



VOICE PCB L6002A5020





*	F2	F3	F4	F5
J	250V 4A	250V 630mA	250V 1A	250V 1A
C.A	125V 4A	125V 630mA	125V 1A	125V 1A
E.V.B.S	T3.15A	T630mA	T800mA	T800mA

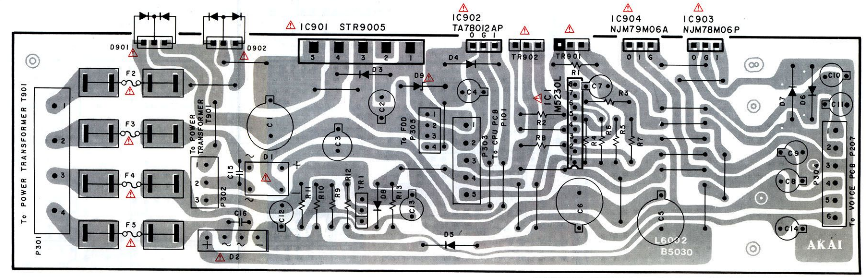
———— : B (POWER SUPPLY) LINE

NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV (J)
(FS) = FAIL SAFE RESISTORS

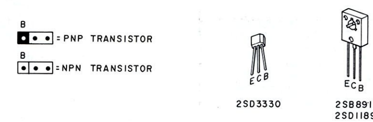
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

S900
POWER SUPPLY
SCHEMATIC DIAGRAM
NO.6-3 860915A



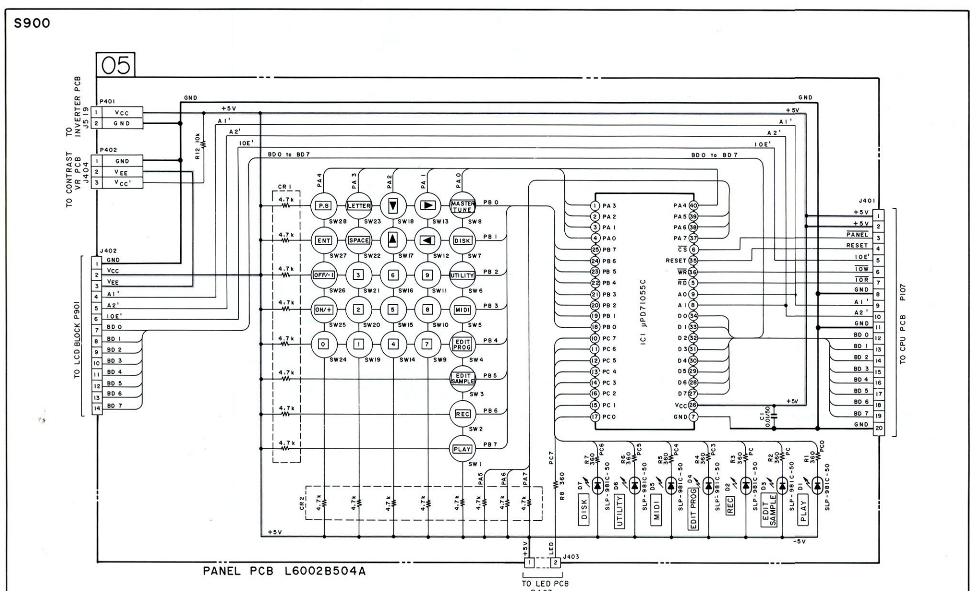
POWER SUPPLY PCB L6002B5030



WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

S900

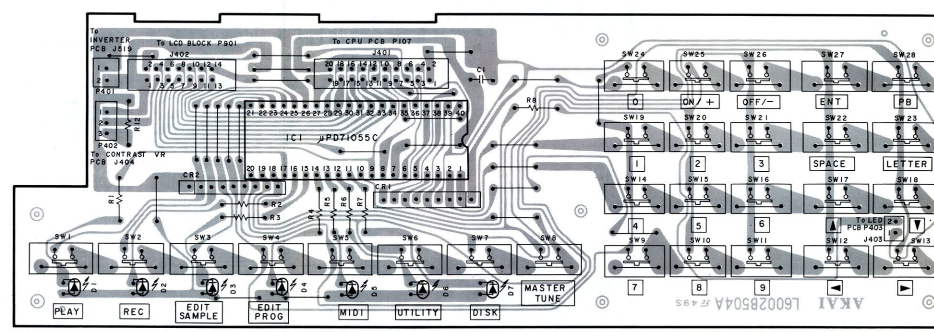


PANEL PCB L6002B504A

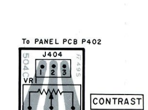
———— : B (POWER SUPPLY) LINE

NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV (P)

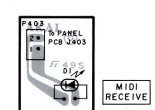
S900 PANEL
SCHEMATIC DIAGRAM
NO.6-4 860917A



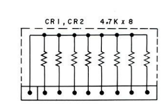
PANEL PCB L6002B504A

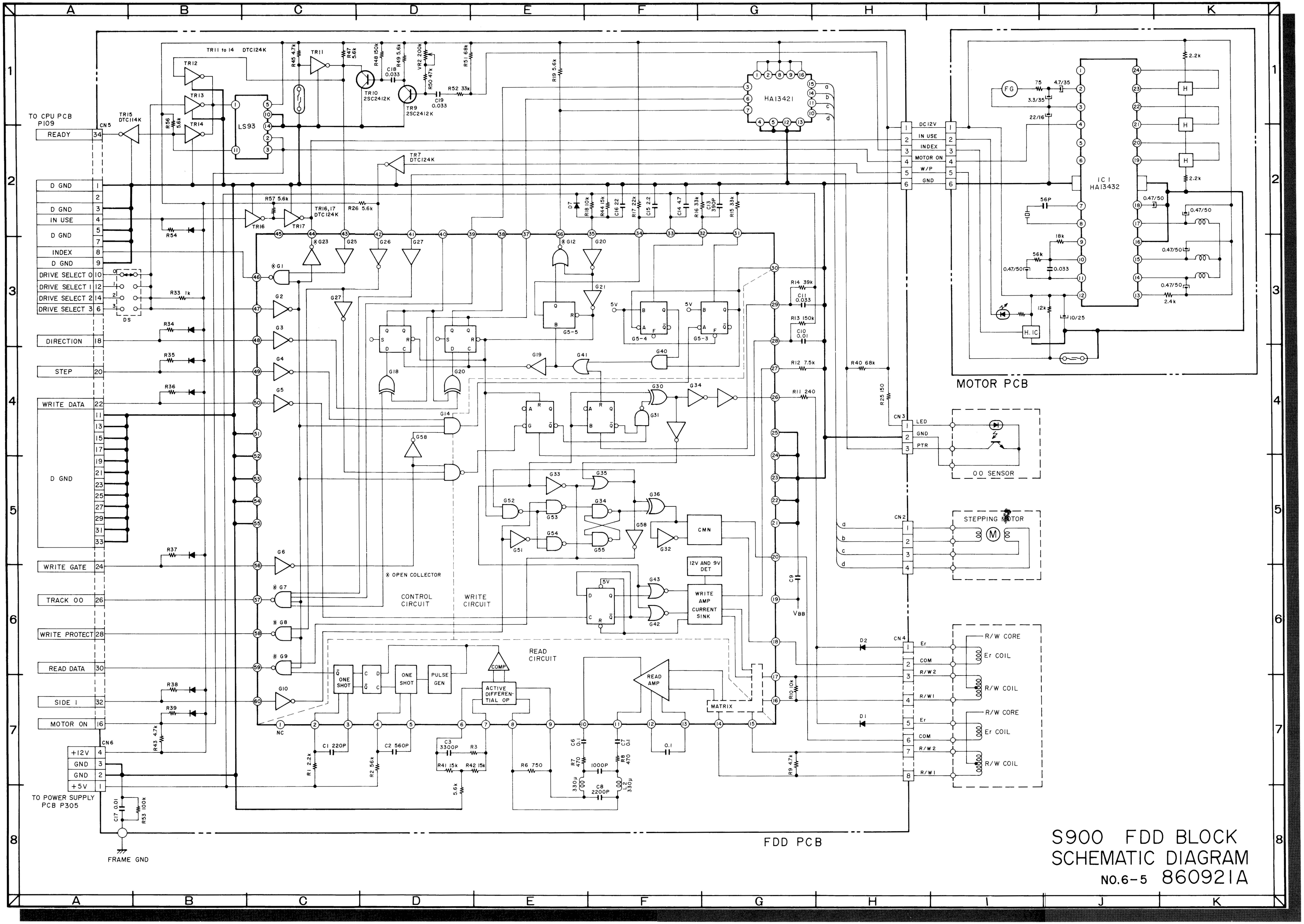


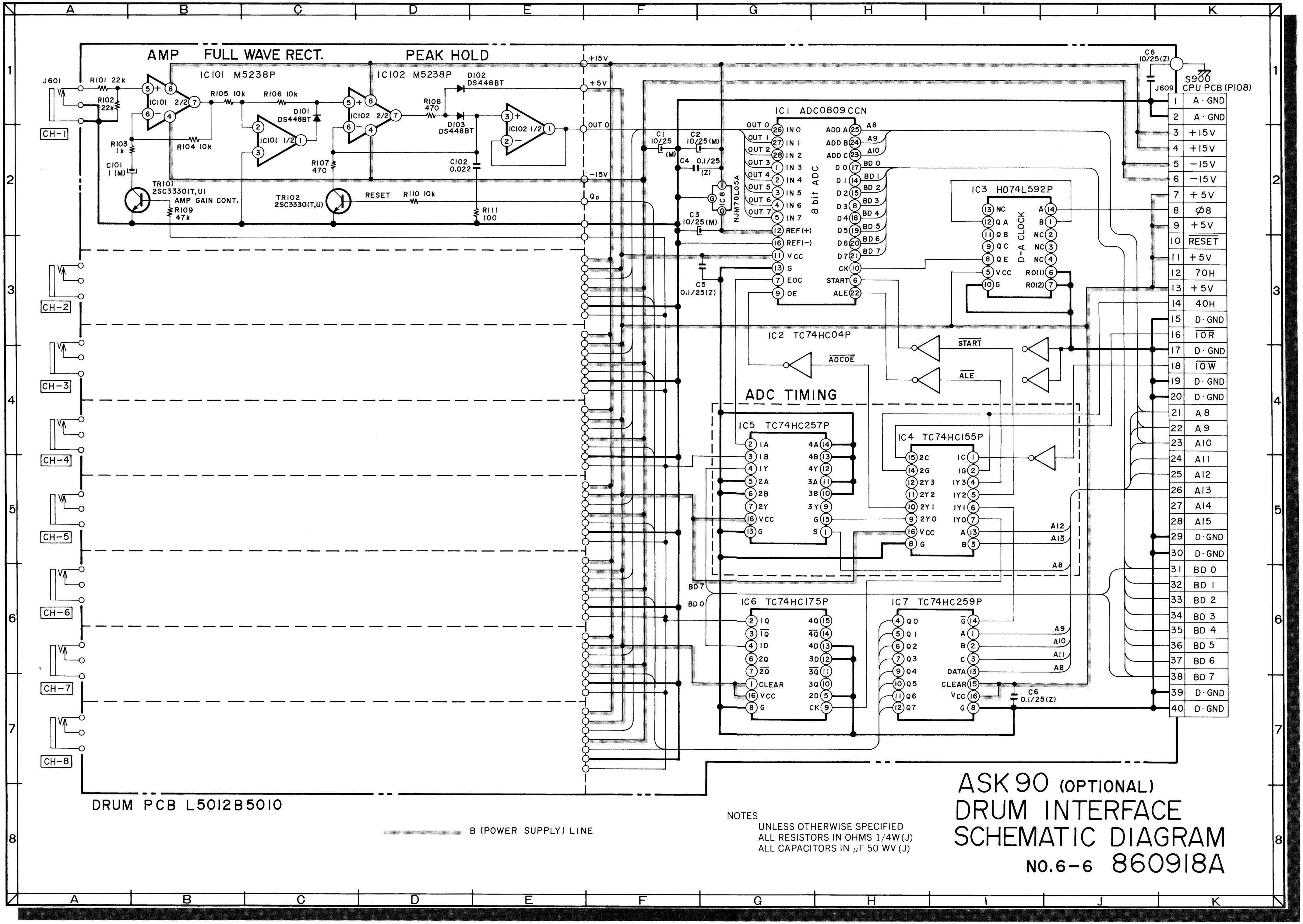
CONTRAST VR PCB
L6002B504C



LED PCB
L6002B504B




S900 FDD BLOCK SCHEMATIC DIAGRAM
NO.6-5 860921A
FDD PCB
MOTOR PCB
TO CPU PCB P109
CN5
READY
D GND
IN USE
INDEX
DRIVE SELECT 0
DRIVE SELECT 1
DRIVE SELECT 2
DRIVE SELECT 3
DIRECTION
STEP
WRITE DATA
WRITE GATE
TRACK 00
WRITE PROTECT
READ DATA
SIDE 1
MOTOR ON
CN6
+12V
GND
+5V
TO POWER SUPPLY PCB P305
FRAME GND
TR11 to 14 DTC124K
TR15 DTC114K
TR16,17 DTC124K
TR7 DTC124K
TR10 2SC2412K
TR9 2SC2412K
LS93
HA13421
IC1 HA13432
CONTROL CIRCUIT
WRITE CIRCUIT
READ CIRCUIT
※ OPEN COLLECTOR
ONE SHOT
PULSE GEN
COMP
ACTIVE DIFFERENTIAL OP
READ AMP
MATRIX
CMN
12V AND 9V DET
WRITE AMP CURRENT SINK
DC12V
W/P
GND
CN3
LED
PTR
00 SENSOR
CN2
STEPPING MOTOR
CN4
Er
COM
R/W2
R/W1
R/W CORE
Er COIL
R/W COIL
H.IC
FG
VBB



AMP
FULL WAVE RECT.
PEAK HOLD
IC101 M5238P
IC102 M5238P
J601
R101 22k
R102 22k
R103 1k
C101 1 (M)
R104 10k
R105 10k
R106 10k
D101 DS448BT
D102 DS448BT
D103 DS448BT
R107 470
R108 470
C102 0.022
R110 10k
R111 100
R109 47k
TR101 2SC3330(T,U)
TR102 2SC3330(T,U)
AMP GAIN CONT.
RESET
CH-1
CH-2
CH-3
CH-4
CH-5
CH-6
CH-7
CH-8
DRUM PCB L5012B5010
+15V
+5V
OUT 0
-15V
C1 10/25 (M)
C2 10/25(M)
C3 10/25(M)
C4 0.1/25 (Z)
C5 0.1/25(Z)
IC8 NJM78L05A
IC1 ADC0809CCN
8 bit ADC
IC3 HD74LS92P
D-A CLOCK
IC2 TC74HC04P
START
ADCOE
ALE
ADC TIMING
IC5 TC74HC257P
IC4 TC74HC155P
IC6 TC74HC175P
IC7 TC74HC259P
C6 0.1/25(Z)
C6 10/25(Z)
S900
J609
CPU PCB (P108)
1 A·GND
2 A·GND
3 +15V
4 +15V
5 -15V
6 -15V
7 +5V
8 Ø8
9 +5V
10 RESET
11 +5V
12 70H
13 +5V
14 40H
15 D·GND
16 IOR
17 D·GND
18 IOW
19 D·GND
20 D·GND
21 A8
22 A9
23 A10
24 A11
25 A12
26 A13
27 A14
28 A15
29 D·GND
30 D·GND
31 BD0
32 BD1
33 BD2
34 BD3
35 BD4
36 BD5
37 BD6
38 BD7
39 D·GND
40 D·GND
B (POWER SUPPLY) LINE
NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV (J)
ASK90 (OPTIONAL)
DRUM INTERFACE
SCHEMATIC DIAGRAM
NO.6-6 860918A