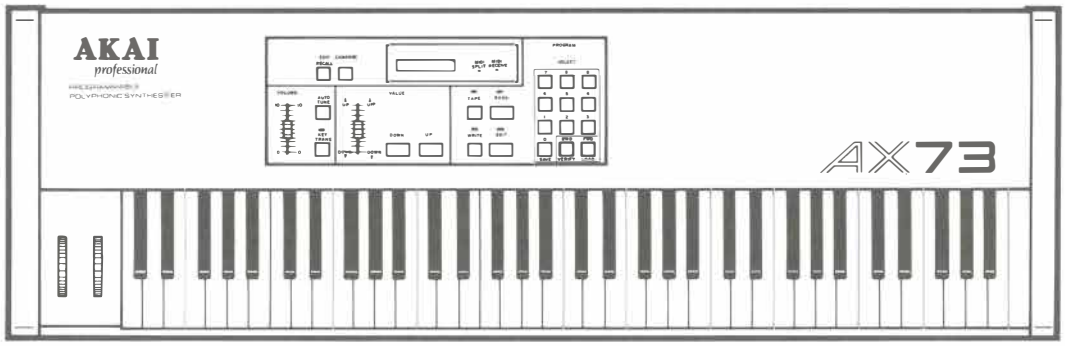
AKAI SERVICE MANUAL



PROGRAMMABLE POLYPHONIC SYNTHESIZER

MODEL AX73

CAUTION: Before servicing, to protect customer's sound data from being damaged, save all data to cassette tape.

SPECIFICATIONS

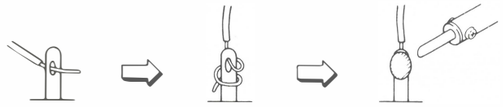
Key	73 key 6 octave C scale (Key velocity)
Voice	6 voice
Tone generator	VCO (voltage controlled oscillator)
Internal memory	100 sound programs.
External memory	Cassette interface
PARAMETERS	
VCO section	Octave (2′, 4′, 8′, 16′)
	Waveform
	(◿, ◺, ⊓, ◿+◺)
	Pulse width control
	PWM Speed control
	EG depth control
	Sampler ON/OFF
	Noise ON/OFF
	A-B Balance control
VCF section	Cut-off frequency control
	Resonance control
	Key follow control
	VCO modulation control
	HPF control
	EG depth and polarity switching (+/–)
	Key velocity control
EG section	EG switching (VCF, VCA, VCF = VCA, VCA GATE)
	Attack time
	Decay time
	Sustain level
	Release time
VCA section	Level
	Velocity
LFO section	LFO switching (VCO, VCF, VCA)
	Waveform
	(◿, ◺, ◹, ⊓, RND)
	Depth control
	Speed control
	Delay control
Chorus	OFF, 1, 2
Key assign	Poly, Unison
Bend	VCO (± 1 octave)
	Cut off frequency (Min to Max)
	Modulation depth (Min to Max)
MIDI channel	1 to 16
MIDI split	OFF, 0 – 6 upper, 6 – 0 lower
Function	Edit controls
	Value control volume
	Value UP/DOWN Key
	Edit recall ON/OFF
	Compare ON/OFF
	Edit
	Write
	Bank
	Ten Key (bank, program, parameter, select)
	FWD/LOAD Key
	O/SAVE Key
	BWD/VERIFY Key
	Master level control
	Master tune ON/OFF
	Auto tune control (± 50 cent)
	Memory protect ON/OFF
	LCD contrast control
	Key transpose ON/OFF
Wheel	Pitch bend/cut-off frequency wheel
	Modulation wheel
Display	LC display, LED
External Jacks	MIDI (IN, OUT, THRU)
	Tape (LOAD/IN, SAVE/OUT)
	Sampler input (13 pin/DIN)
	Sustain pedal
	Program up
	Audio output (LEFT (MONO), RIGHT)
	Headphone
Dimensions	1,152 (W) × 110 (H) × 346 (D) mm (45.2 × 4.3 × 13.6 inches)
Weight	15 kg (33.0 lbs)

* For improvement purposes, specifications and design are subject change without notice.

★SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locatoins.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 M ohms. but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for [C] or [A], specified insulation resistance should be headphone jacks line-in-out jacks etc. more than 2.2 M ohms (ground terminals, microphone jacks).

PRECAUTION FOR THE LITHIUM BATTERY

The LITHIUM BATTERY employed for memory Back up has a explosive probability when the BATTERY itself is excessive heated.

IN CASE OF REPLACING: RESOLDER and SOLDER AS RECOMMENDED WAY.

〔DANGER〕

〔RECOMMENDED WAY〕

★INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
[A]	USA
[B]	UK
[C]	Canada
[E]	Europe (except UK)
[J]	Japan
[S]	Australia
[V]	W. Germany only
[U]	Universal Area
[Y*]	Custom version

VOLTAGE CONVERSION

([V, E, B, S] Model only)

Before connecting the power cord, set the VOLTAGE SELECTOR located on the bottom plate with a screwdriver so that the correct voltage is indicated.

I. DISMANTLING OF UNIT

In case of trouble, etc, necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

1-1. HOW TO OPEN THE FRONT PANEL (Refer to Fig. 1-1)

1) Remove 8 screws as shown Fig. 1-1, and open the Front Panel as shown Fig. 1-3.

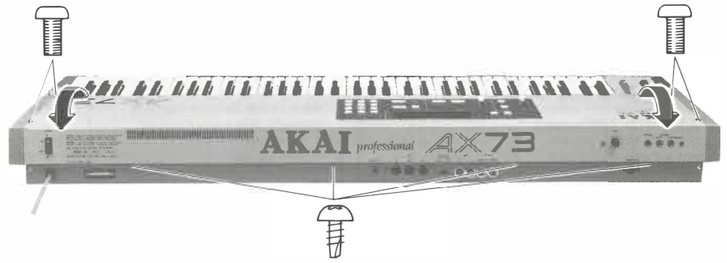


Fig. 1-1

1-2. HOW TO DISMANTLE THE KEYBOARD (Refer to Fig. 1-2 and Fig. 1-3)

1) Remove 6 screws on the Bottom plate, and disconnect the connectors P1 and P2 on the CPU PC Board.

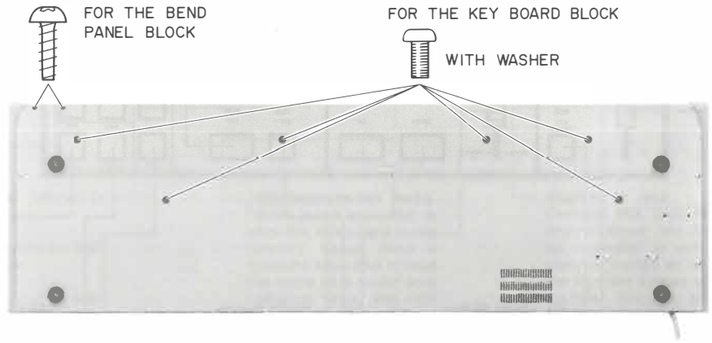


Fig. 1-2

1-3. HOW TO DISMANTLE THE BEND PANEL BLOCK (Refer to Fig. 1-2 and Fig. 1-3)

1) Remove 6 screws as shown Fig. 1-2 and Fig. 1-3, and disconnect the connectors P4, P5 on the CPU PC Board and P1 on the OPERATION (B) PC Board.

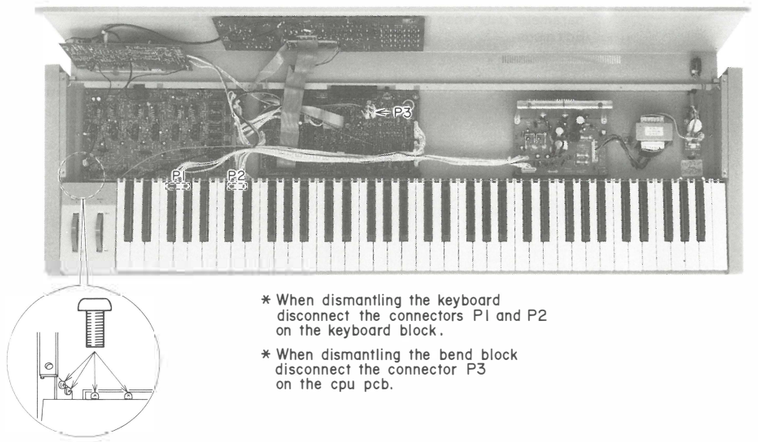


Fig. 1-3

II. CONTROLS

2-1. CONTROLS ON THE TOP PANEL

EDIT RECALL Button
Use this button to recall the last voice data edited when in the Edit mode.

COMPARE Button
Use this button to compare the voice to be preset with the previously set voice when in the Edit mode.

LC Display
Displays the program number voice names and the parameters.

MIDI RECEIVE Indicator
Lights when the MIDI message has been received.

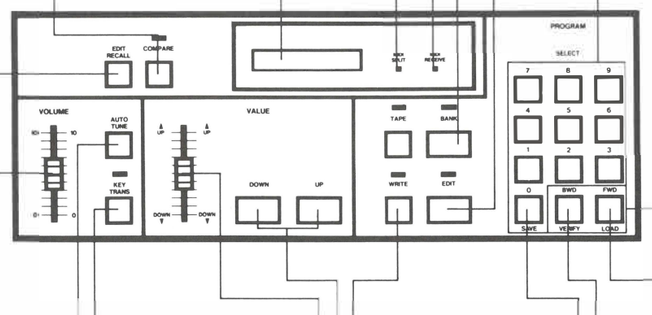
MIDI SPLIT Indicator
Lights when the split function is being used.

BANK Button
Use this button to recall the program number or the parameter.

EDIT Button
Use this button to program new voice data using data stored in the memory bank.

SELECT Button
Use these buttons to select either the program number or the parameter bank number.

FWD/BWD Button
Use these buttons to change the program number or parameters one step at a time.



VOLUME Control
Use this control to adjust the output level. The control can also be used to adjust the volume of the headphones.

AUTO TUNE Button
Press this button to tune all the AX73's VCOs and VCFs and to output the MIDI tuning request message.

KEY TRANS Button
Use this button to transfer the pitch ±1 octave from 3C. To cancel press the button again so that the LED turns off.

VALUE Control
Use this control to perform rough adjustment of the parameter data when in the Edit mode.

WRITE Button
Use this button to store the voice data programmed in the Edit mode in the memory bank.

UP/DOWN Buttons
Use these buttons to change the parameter data one step at a time when in the Edit mode. These buttons are used for fine adjustment of the data.

LOAD Button
Use this button to load the data from a tape into the memory bank.

VERIFY Button
Use this button to check that the memory bank data has been properly recorded on a tape.

SAVE Button
Use this button to save the data in the memory bank onto a tape.

2-2. CONTROLS AND JACKS

MEMORY PROTECT Switch
Use this switch to protect the memory bank. Keep it in the ON position to protect the memory, except when writing a program.

PEDAL SUSTAIN Jack
Use this jack to increase the release time through a pedal unit.

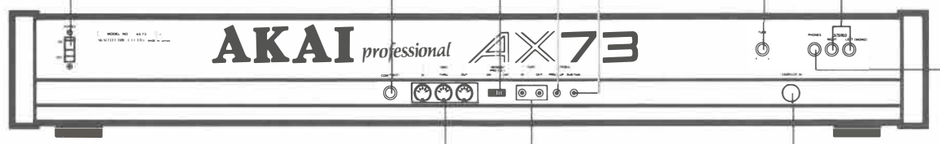
OUTPUT Jacks
Use these jacks for connection to the input of a keyboard amplifier or mixer.

PEDAL PRDGM UP Jack
Use this jack to increase the program number one step at a time through a pedal unit.

TUNE Control
Use this control to adjust the pitch of the AX73 to match other instruments. The pitch can be changed by ±50 cents.

CONTRAST Control
Use this control to adjust the contrast of the display.

POWER Switch



MIDI Jacks (IN/OUT/THRU)
IN Jack:
This jack is used for MIDI data reception.
OUT Jack:
This jack is used for MIDI data transmission.
THRU Jack:
This jack is used to output the data received at the MIDI IN without modification.

TAPE Memory IN/OUT Jacks
These jacks are used to save the voice data in the memory banks onto a cassette tape and to load the voice data saved on a cassette tape into the AX73 memory banks.
IN Jack:
Connect this jack to the tape recorder's OUTPUT jack.
OUT Jack:
Connect this jack to the tape recorder's MIC INPUT jack.

SAMPLER IN Jack
Connect this jack to an AKAI sampler (the S612, for example) to edit the sampler voices or to mix the sampler voices to the AX73's internal sound sources.

PHONE Jack
Use this jack to listen through stereo headphones.

III. THE KEYBOARD REACTION-SHIP TO EQUALLY TEMPERED SCALE FREQUENCIES AND MUSICAL-NOTATION

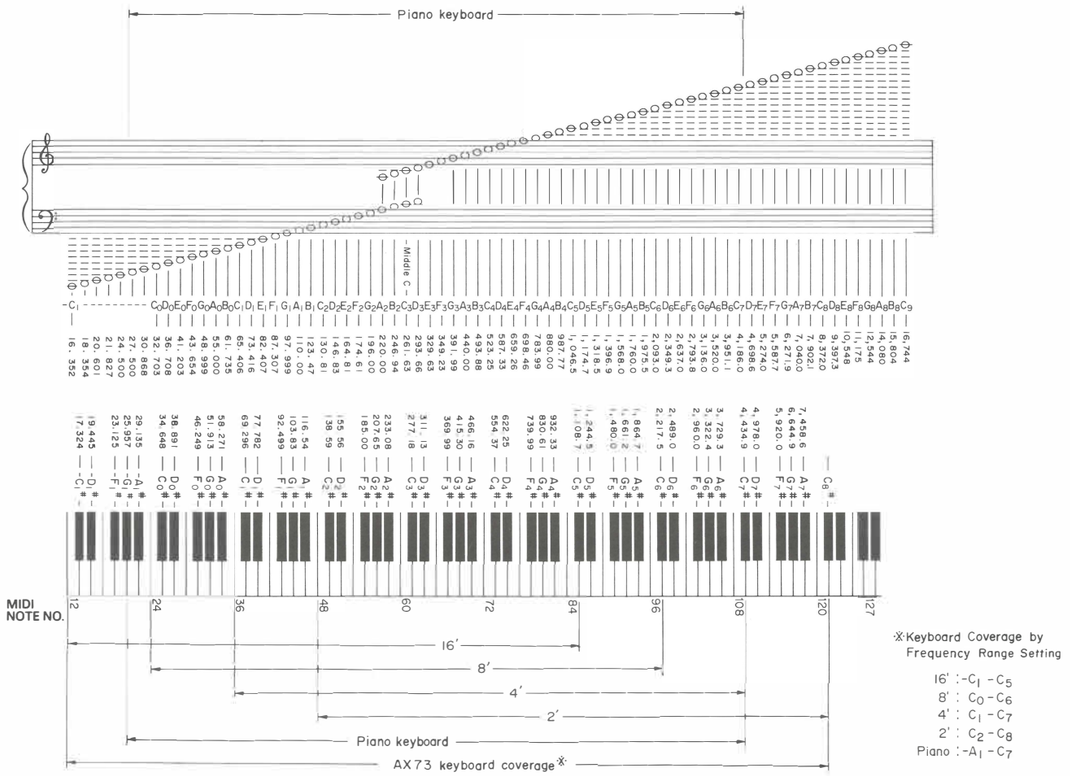


Fig. 3-1

IV. PRINCIPAL PARTS LOCATION

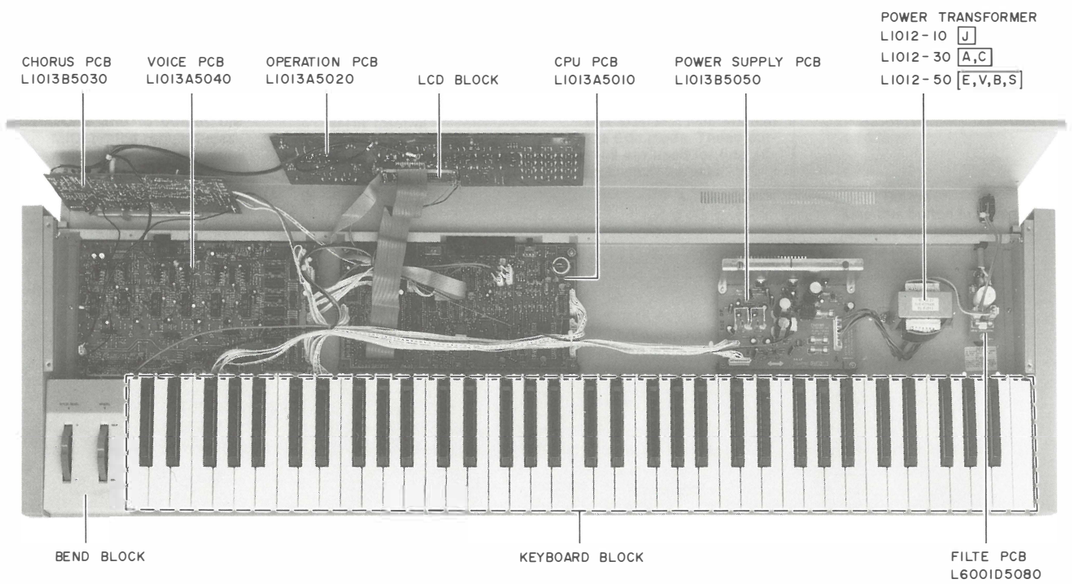


Fig. 4-1

V. ADJUSTMENT

5-1. OFF-SET OF FINAL VCA ON THE VOICE PC BOARD

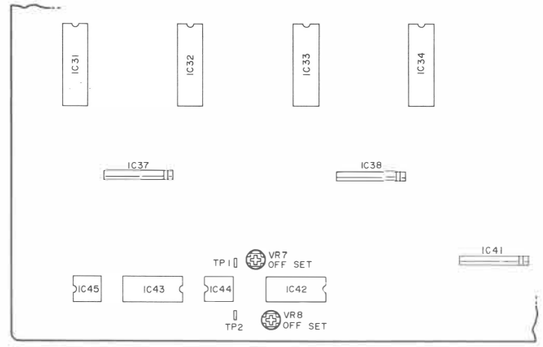


Fig. 5-1. VOICE PCB Adjustment and Test points

1) Set the VCA LEVEL to "100".
   [EDIT] ⇨ [BANK] ⇨ [3] [0] ⇨ MAX "100"]
   (PUSH PUSH PUSH VALUE CONTROL)
2) Connect the Digital DC voltmeter between TP1 (UPPER CH) or TP2 (LOWER CH) and chassis GND.
3) Adjust VR7 (UPPER CH) or VR8 (LOWER CH), so that the reading on the Digital DC voltmeter is within 0 ±2 mV.

5-2. BALANCE OF BBD OUTPUT ON THE CHORUS PC BOARD

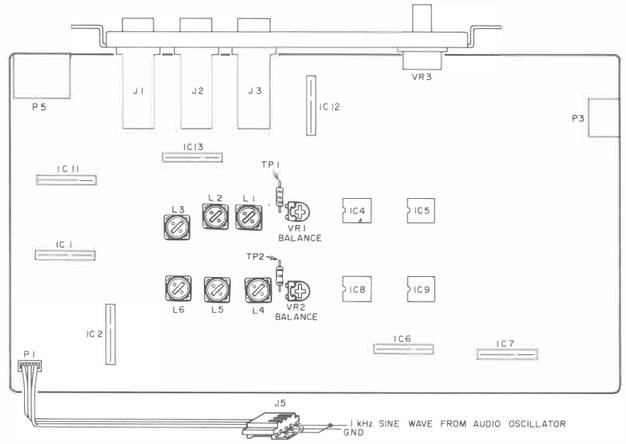


Fig. 5-2. CHORUS PCB Adjustment Points and Instrument Connection

1) Set the CHORUS "1" mode.
   [EDIT] ⇨ [BANK] ⇨ [4] [5] ⇨ [UP]]
   (PUSH PUSH PUSH PUSH)
2) Connect the oscilloscope between TP1 and chassis GND.
3) Extract J5 on the VOICE PCB and connect the Audio signal Generator between [1], [3] (HOT) and [2] (GND) of J5.
4) Supply 1 kHz sine wave and adjust output control of the audio oscillator so that the waveform on the oscilloscope is clipped a bit.
5) Adjust VR1 so that the clipping level at upper side and lower side of the waveform are the same clipping level.
6) Connect the oscilloscope between TP2 and chassis GND, and adjust VR2 as same manner as 5).

Note: When connecting the audio oscillator and J5, it's convenience by build a following special cord.

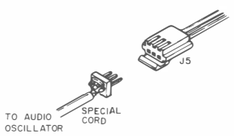


Fig. 5-3. Special Cord

5-3. OFF-SET OF IC11 (LF356) ON THE CPU PC BOARD

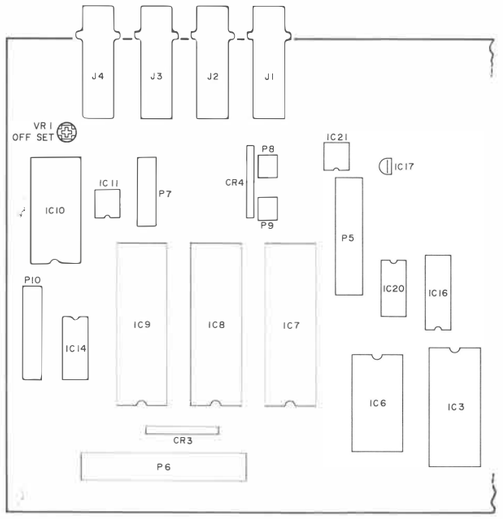


Fig. 5-4. Adjustment point

1) Set to center position of VR1 on the CPU PC Board.

VI. PARAMETERS

Display			
Parameter		Data	Description
E00	VCOaOCT (Octave)	2′, 4′, 8′, 16′	Switches the pitch. 8′ is the basic pitch. When set to 16′ or 4′, the range changes by one octave.
E01	VCOaWF (Wave Form)	⋀, ⋀, ⊓, ⋀+⋀	Switches the output waveform.
E02	VCOaPW	0～100	Sets the pulse width. However, operates at waveform selected by E01.
E03	VCOaPWMS	0～100	Sets the PWM depth depending on the pulse wave set by E02 VCOaPW. (NOTE: When E02 is "0", there is no PWM.) This adjusts the PWM speed.
E04	VCOaEG	0～100	Makes it possible to set EG for the VCOs.
E05	NOISE b	OFF/ON	Pink noise is output when "ON".
E06	SAMPLER b	OFF/ON	When AKAI sampler (S-612, etc.) is connected, it can be used as a sound source for the AX73.
E07	a—b BAL (BALance)	0～100	Adjusts output level balance between VCO(a) and NOISE and SAMPLER(b). When "0", only VCO(a) sound is produced, and when "100", only NOISE and SAMPLER(b) sound is produced.
E10	VCF FREQ (Cutoff FREQuency)	0～100	Adjusts the VCF cut-off frequency.
E11	VCF RESO (RESOnance)	0～100	Allows reinforcement of the cut-off point area determined by E10 VCF FREQ (cut-off frequency).
E12	VCF OWFM (Oscillator Wave Form Modulation)	0～100	Oscillator waveform modulation. Adds modulation from the VCOs to the VCFs depending on the waveform selected by E10.
E13	VCF EG	−50～0～+50	Controls the VCF cut-off frequency by EG signal, and changes the previously set VCF cut-off point. −50 ← 0 → +50 ⌐EG EG¬
E14	VCF KEYF (KEYboard Follow)	0～100	Changes the cut-off frequency depending on the keyboard position. Adjusts the degree of this change.
E15	VCF VELO (VELOcity)	−50～0～+50	Adjusts the amount of E13 VCF control by the speed at which the key is struck. (NOTE: When VCF EG is "0", VCF VELO effect is "0".)
E16	HPF (High Path Filter)	0～100	Adjusts the amount of low frequency which passes.

E20	EG SEL (Mode SELect)	A≠F,A=F	I. When A≠F, the EG effect acts on VCA for E21—24 and the EG effect acts on VCO and VCF for E25—28. (Refer to I) II. When A=F, the EG effect acts on VCA and VCF for E21—24 and on VCO for E25—28. (Refer to II)
I.			
E21	EGA A (Attack)	0～100	Sets the VCA attack time.
E22	EGA D (Decay)	0～100	Sets the VCA decay time.
E23	EGA S (Sustain)	0～100	Sets the VCA sustain level.
E24	EGA R (Release)	0～100	Sets the VCA release time.
E25	EGOF A	0～100	Sets the VCO and VCF attack time.
E26	EGOF D	0～100	Sets the VCO and VCF decay time.
E27	EGOF S	0～100	Sets the VCO and VCF sustain level.
E28	EGOF R	0～100	Sets the VCO and VCF release time.
II.			
E21	EGAF A	0～100	Sets the VCA and VCF attack time.
E22	EGAF D	0～100	Sets the VCA and VCF decay time.
E23	EGAF S	0～100	Sets the VCA and VCF sustain level.
E24	EGAF R	0～100	Sets the VCA and VCF release time.
E25	EGO A	0～100	Sets the VCO attack time.
E26	EGO D	0～100	Sets the VCO decay time.
E27	EGO S	0～100	Sets the VCO sustain level.
E28	EGO R	0～100	Sets the VCO release time.
E30	VCA LEV (LEVel)	0～100	Sets the Final VCA level.
E31	VCA VELO (VELOcity)	−50～0～+50	Adjusts the degree to which the VCAs are controlled by the strength at which the key is struck.
E40	LFO SEL	OFF,VCO,VCF,VCA	Makes it possible to apply LFO to either the VCOs, VCFs, or VCAs.
E41	LFO WF (Wave Form)	◺, ◿, ◿◺, ⊓, RNDM	Makes it possible to select the LFO waveform.
E42	LFO FREQ (FREQuency)	0～100	Adjusts the LFO change speed.
E43	LFO DP (Depth)	0～100	Sets the depth of frequency modulation.
E44	LFO DEL (DELay)	0～100	Adjusts the time required from when a key is pressed until the effect is produced.
E45	CHORUS	OFF, 1, 2	Applies the stereo chorus effect.

E50	ASSIGN	POLY,DUAL,UNI	Sets to 6 chords in the POLY mode, 3 chords in the DUAL mode, and 1 chord in the UNI (unison) mode.
E51	SOL PORT (PORTament)	0～100	Applies the portamento effect in the DUAL or UNI (unison) modes.
E52	DETUNE	0～100	Applies the effect in the DUAL or UNI (unison) modes. Richness and softness can be added to the sound by slightly changing the VCO frequency.
E60	WH BND O (Pitch BeND Range,VCO)	0～12	Makes pitch variable in semi-tone steps. At "12", the pitch is variable by ±1 octave.
E61	WH BND F (Pitch BeND Range,VCF)	0～100	Makes the cut-off frequency variable.
E62	WH MOD (MODulation level)	0～100	Makes the LFO modulation variable. * When "0", LFO is not applied when the modulation wheel is operated.
E70	MIDI SP (SPlit)	OFF,UPP,LOW	Makes split function selection possible. When UPP (upper), the lower MIDI CH. becomes n+6. When LOW (lower), the upper MIDI CH. becomes n+6. Ex.: When UPP is set for MIDI CH. 2, the lower MIDI CH. is 8.
E71	MIDI SPP (SPlit Point)	1C～7C	Makes it possible to select the split point by pressing a key. The key which has been pressed is indicated on the display.
E72	MIDI CH	1～16	Makes MIDI CH. selection possible. (When E70 is set at MIDI SP UPP, the channel becomes the upper MIDI channel, and when E70 is set at LOW, the channel becomes the lower MIDI channel.)
E73	MIDI PC (Program Change)	ENA,DIS	When set at ENA (enable), the MIDI program change data can be transmitted or received. When set at DIS (disable), the data cannot be transmitted or received.
E80	LABEL	A～Z, 0～9, [SPACE], Etc	Makes it possible to input a voice name in up to 12 letters. The cursor is moved by the FWD/BWD buttons, and the letters are selected by the slide controller or the UP/DOWN buttons. (Refer to Page 8)

* The E72 MIDI CH and E73 MIDI PC are common for all 100 programs.

VII. VOICE CHART

* Programed at the factory.

Program Number	Voice Name	Program Number	Voice Name
00	STRINGS 1	50	MR BASS
01	BRASS	51	MICRO BASS
02	PIANO	52	MINI BASS
03	SYN CLAV 1	53	PIT BASS
04	CLAVITAR	54	BASS
05	MR BASS	55	STEEL DRUM 1
06	WIND SYN	56	STEEL DRUM 2
07	ELECTRICITY	57	SCREAMER
08	STEEL DRUM 1	58	DUAL
09	PROFIT $	59	LEAD 2
10	PIANO 1	60	VIBE HARP
11	SYN PIANO A	61	SYN HARP 1
12	ELEC PIANO	62	SYN HARP 2
13	SYN PIANO	63	MALLET
14	TOY PIANO	64	CELLESTE
15	PIANO 3	65	OBI KHANOBE
16	ROCKY ROAD	66	MUSIC BOX
17	SYN PIANO	67	STEEL DRUM 1
18	FM PIANO	68	STEEL DRUM 2
19	PIANO 1A	69	HARMONIUM
20	STRINGS 1	70	FUNKY ORGAN
21	CELLO 1	71	FLUTE
22	STRINGS 3	72	RECORDER
23	CELLO BOW	73	ORGAN 1
24	STRGS + HORN	74	ORGAN 2
25	STRINGS 1A	75	PICCOLO
26	STRING FLUTE	76	GLASS ORGAN
27	ORCHESTRA	77	CHURCH ORGAN
28	LOW STRINGS	78	WHISTLE
29	HEAVEN	79	WOODWINDS
30	FRENCH HORN	80	LEAD 1
31	FRENCH HORN 2	81	AHS MALE
32	HIGH HORNS	82	CLAVITAR
33	SYN BRASS 1	83	CELLESTE
34	SYN BRASS 2	84	MUSIC BOX
35	HORNS 1	85	CLASSIC
36	HORNS 3	86	TRUMPET
37	SYN BRASS 3	87	OBI KHANOBE
38	SECTIONAL	88	SYN PIANO A
39	HOPEFULL	89	WOODSYNTH
40	SYN CLAV 1	90	SAMPL + HOLD
41	SYN CLAV 2	91	INDUSTRIAL
42	FANCY CLAV	92	PHASER
43	SYNFUL	93	DEPATCH MODE
44	RUST BELT	94	HEAVEN
45	PHASER	95	CELLO
46	CHAMBER 1	96	STRINGS 1
47	CHAMBER 2	97	HORNS 3
48	HARMONIUM	98	QUINCY $
49	DEPATCH MODE	99	WIND SYN

VIII. MIDI IMPLEMENTATION CHART

[Programmable Polyphonic Synthesizer]

Model AX-73 MIDI Implementation Chart Version : 1.0

Function ...	Transmitted	Recognized	Remarks
Basic Default Channel Changed	1 – 16 1 – 16	1 – 16 ★ 1 – 16 ★	☆ memorized
Mode Default Messages Altered	MODE 3, MODE 4 ★★★★★★★★★★★★★★★★★★	MODE 3 × ×	memorized
Note Number : True voice	24 – 96 ★★★★★★★★★★★★★★★★★★	0 – 127 24 – 120	
Velocity Note ON Note OFF	○ 9 nH V = 1 – 127 ○ 9 nH V = 0, 8 nH	○ ○	
After Touch Key's Ch's	× ×	× ×	
Pitch Bender	○	○	7 bit RESO
Control Change 1 7 64	○ × ○	○ ○ ○	Modulation wheel Volume Sustain foot sw
Prog Change : True #	○ 0 – 99 ★★★★★★★★★★★★★★★★★★	○ 0 – 127 0 – 99	
System Exclusive	×	×	
System : Song Pos : Song Sel Common: Tune	× × ○	× × ○	
System : Clock Real Time : Commands	× ×	× ×	
Aux : Local ON/OFF : All Notes OFF Mes- : Active Sense sages : Reset	× ○ × ×	× ○ × ×	
Notes			

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

IX. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.
   a) Mechanism Block
   b) PC Board

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification
A small "x" indicates that this part is not shown in the Photo or Illustration.
This number corresponds with the individual parts index number in that figure.
This number corresponds with the Figure Number.

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
6-C1B	EC-350949	C MMY V 223M 250DC [J]
6-C1C	EC-338397	C MMY V 223M 125AC [C,A]
6-X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination
[A]: AAL(U.S.A.) [S]: SAA(Australia)
[B]: BEAB(England) [U]: U/T(Universal Area)
[C]: CSA(Canada) [V]: VDE(W. Germany)
[E]: CEE(Europe) [Y]: Custom Version
[J]: JPN(Japan)
SP (Service Parts) Classification
These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

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

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT

RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.		PART NO.	DESCRIPTION
1		BT-364697	⚠ TRANS POWER L1012-10 27 [J]
2		BT-364243-A	⚠ TRANS POWER L1012-30 27 [C,A]
3		BT-364698-A	⚠ TRANS POWER L1012-50 27 [E,V,B,S]
4		ED-200213	⚠ D SILICON DBA40C-K15 200/2.6A
5		ED-357038	⚠ D SILICON DBB10B 100/1.0A
6		ED-359863	D LED LN81CV-(LF) AK ORANGE
7		ED-364261	D LED SLP-981C-50
8		ED-357754	D SILICON DS135D 200/1.0A
9		ED-301911	D SILICON H DS448
10		ED-344280	D SILICON H GMA-01-FY2 FO5
11		ED-331626	D ZENER H HZ3 B2
12		ED-329058	D ZENER H HZ5 C1
13		ED-331617	D ZENER H HZ6 A3
14		ED-319167	D ZENER H HZ6 C3
15		ED-306012	D ZENER H HZ7 A3
16		ED-346463	D ZENER H HZ7FA F10 C3
17		EF-355226	⚠ FUSE BET T 1.00A 250V [B]
18	N	EF-359343	⚠ FUSE BET T 1.60A 250V [B]
19		EF-358974	⚠ FUSE BET T 630MA 250V [B]
20		EF-623103	⚠ FUSE SEMKO T 1.00A 250V [E,V,S]
21		EF-601964	⚠ FUSE SEMKO T 1.60A 250V [E,V,S]
22		EF-601942	⚠ FUSE SEMKO T 630MA 250V [E,V,S]
23		EF-309387	⚠ FUSE TSC A 250V 1.00A [J]
24		EF-311839	⚠ FUSE TSC A 250V 1.60A [J]
25		EF-309392	⚠ FUSE TSC 125V 1.25A [C,A]
26		EF-308847	⚠ FUSE TSC 125V 1.60A [C,A]
27		EI-348123	⚠ IC M5230L
28		EI-359552	⚠ IC M5236L
29		EI-359626	⚠ IC NJM78M15A
30		EI-359628	⚠ IC NJM79M15A
31		EI-364319	IC CD4051BE
32		EI-364246	IC CEM3394
33		EI-365872	IC EHK-MD6207
34		EI-355891	IC HD74LS32P
35		EI-360954	IC IR9311
36		EI-364245	IC LA6082S
37		EI-364273	IC LF356N
38		EI-364308	IC MN3009
39		EI-360228	IC MN3101
40		EI-353227	IC M5216L
41	N	EI-337228	IC M5218L
42		EI-362588	IC M5238P
43		EI-355904	IC M74LSO4P
44		EI-364275	IC M74LSO5N
45		EI-366167	IC M74LS139
46		EI-355906	IC M74LS14P
47		EI-355917	IC M74LS373P
48		EI-355909	IC M74LS38P
49		EI-355910	IC M74LS42P
50		EI-364247	IC NJM13600
51		EI-364253	IC PST520D-2
52		EI-302233	IC TC4051BP
53		EI-310036	IC TC4066BP
54		EI-362521	IC TC5564PL-20
55	N	EI-367332-C	IC TMM27128AD-20 AX73 V1.2A CUSTOM
56		EI-357060	IC μPD7811G-144
57		EI-354146	IC μPD8253C-2
58		EI-354149	IC μPD8255AC-2
59		EI-364257	OSC X'TAL NR-18 12MC
60		EM-365254	IND LCD DM001ZL7
61		EQ-348929	RELAY SIGNAL G5A-232P 2TR 12V
62		ER-365262	⚠ R FUSE ERD2FC S10 1/4W 7R5J
63		ER-328278	⚠ R FUSE ERD2FC 1/4W 10ROG
64		ER-364336	⚠ R OMF H S12 FS 1W 201J
65		ER-360725	⚠ R OMF H S12 FS 1W 221J
66		ER-341331	⚠ R OMF H S15 FS 1W 181J
67		ER-366282	⚠ R OMF H S15 FS 1W 911J
68		ER-326169	R FUSE ERD2FC S10 1/4W 22R0G
69		ER-364478	⚠ SW SEESAW SDDT SPST TYPE=A T=8.5
70		ER-306430	⚠ SW SLIDE J-S4013 #01 01-2
71		ES-364255	SW SLIDE SSP322
72		ES-349367	SW TACT SKHHAK003A
73		ET-356817	⚠ TR 2SB891 Q,R
74		ET-354083	⚠ TR 2SD1189 Q,R
75	N	ET-364560	PHOTO SENSOR NJL5127D
76		ET-348302	TR FET 2SK381 C,D F05
77		ET-353899	TR 2SA1317 S,T,U
78		ET-360067	TR 2SC3330 T,U F05
79		ET-349081	TR 2SC3383 S,T
80		ET-349608	TR 2SC3383 T,U
81		ET-349592	TR 2SC3400 F05
82		ET-352994	TR 2SC3401 F05
83		EV-358829	R S-FIX H RH0615CJ4J 3P 223
84		EV-307709	R S-FIX H RH0651CJ4 3P 0.05W 223
85		EV-336770	R S-FIX H RH0651CS4 3P 0.05W 473
86		EV-365865	VR ROTARY V012LPH B202 L=20
87		EV-364321	VR ROTARY 12P10XOD B103
88		EV-354254	VR ROTARY 16L10XOW 103 CUSTOM-2
89		EV-354253	VR ROTARY 16P20X3T A503
90		EV-365877	VR SLIDE VJ4513-2GPVNB5 203
91		EV-365876	VR SLIDE VJ4513-2PVNB5 103
92		EZ-358816	BATTERY LITHIUM BR2032-1HF

1. PC BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
1-1	BA-L1013A050A	PC VOICE BLK AX73
1-2	BA-L1013A020A	PC CPU BLK AX73
1-3	BA-L1013A030A	PC OPERATION BLK AX73
1-4	BA-L1013A070A	PC CHORUS BLK AX73
1-5	BA-L1013A060A	PC POWER BLK AX73 [J]
1-5A	BA-L1013A060B	PC POWER BLK AX73 [C,A]
1-5B	BA-L1013A060C	PC POWER BLK AX73 [E,V,B,S]

2. VOICE PC BOARD

REF. NO.	PART NO.	DESCRIPTION
2-C80 to 85	EC-362220	C PP V F05 PP 202J 50DC
2-D1	ED-331626	D ZENER H HZ3 B2
2-D2	ED-346463	D ZENER H HZ7FA F10 C3
2-D3	ED-301911	D SILICON H DS448
2-D4 to 19	ED-344280	D SILICON H GMA-01-FY2 F05
2-IC1	EI-364319	IC CD4051BE
2-IC2	EI-364319	IC CD4051BE
2-IC3,4	EI-302233	IC TC4051BP
2-IC5 to 20	EI-364245	IC LA6082S
2-IC21 to 27	EI-337228	IC M5218L
2-IC28 to 30	EI-310036	IC TC4066BP
2-IC3l to 36	EI-364246	IC CEM3394
2-IC37 to 39	EI-337228	IC M5218L
2-IC40	EI-360954	IC IR9311
2-IC41	EI-337228	IC M5218L
2-IC42,43	EI-364247	IC NJM13600
2-IC44,45	EI-362588	IC M5238P
2-J1	EJ-360771	DIN J TCS5037-01-241 13P
2-TR1 to 3	ET-349592	TR 2SC3400 F05
2-TR4	ET-360067	TR 2SC3330 T,U F05
2-TR5 to 15	ET-349081	TR 2SC3383 S,T
2-TR16	ET-352994	TR 2SC3401 F05
2-VR7,8	EV-336770	R S-FIX H RHO651CS4 3P 0.05W 473
2-1	EJ-363001	SOCKET IC DILB20P-8J

3. CPU PC BOARD

REF. NO.	PART NO.	DESCRIPTION
3-C11	EC-347205	⚠ C MC V F05 FM 220J 500DC
3-D1 to 09	ED-301911	D SILICON H DS448
3-FR1	ER-326169	⚠ R FUSE ERD2FC S10 1/4W 22R0G
3-IB1 to 4	EH-355561	COMP R EXB-R88 103K
3-IB5	EH-362519	COMP R RML-S4-J103
3-IC1	EI-357060	IC UPD7811G-144
3-IC2	EI-355917	IC M74LS373P
3-IC3	EI-367332-C	IC TMM27128AD-20 AX73 V1.2A CUSTOM
3-IC5	EI-362521	IC TC5564PL-20
3-IC6	EI-354146	IC μPD8253C-2
3-IC7 to 9	EI-354149	IC μPD8255AC-2
3-IC10	EI-365872	IC EHK-MD6207
3-IC11	EI-364273	IC LF356N
3-IC12	EI-355910	IC M74LS42P
3-IC13,14	EI-366167	IC M74LS139
3-IC15	EI-355891	IC HD74LS32P
3-IC16	EI-355917	IC M74LS373P
3-IC17	EI-364253	IC PST520D-2
3-IC18	EI-355906	IC M74LS14P
3-IC19	EI-364275	IC M74LS05N
3-IC20	EI-355904	IC M74LSD4P
3-IC21	EI-360954	IC IR9311
3-J1 to 4	EJ-364322	PHONE J 2P HLJ0520-110 W/NUT WASHER
3-J5	EJ-364256	DIN J M1704 3P
3-PH1	ET-364560	PHOTO SENSOR NJL5127D
3-R37	ER-366282	⚠ R OMF H S15 FS 1W 911J
3-SW1	ES-364255	SW SLIDE SSP322
3-TR1,2	ET-349608	TR 2SC 3383 T,U
3-TR4	ET-360067	TR 2SC3330 T,U F05
3-VR1	EV-307709	R S-FIX H RH0651CJ4 3P 0.05W 223
3-VR2	EV-365865	VR ROTARY V012LPH B202 L=20
3-X1	EI-364257	OSC X'TAL NR-18 12MC
3-1	EJ-358691	SOCKET IC DILB28P-8J

4. OPERATION PC BOARD

REF. NO.	PART NO.	DESCRIPTION
4-D1 to 22	ED-301911	D SILICON H DS448
4-D24,25	ED-364261	D LED SLP-981C-50
4-D26 to 31	ED-359863	D LED LN81CV-(LF) AK ORANGE
4-IC1,2	EI-355909	IC M74LS38P
4-SW1 to 22	ES-349367	SW TACT SKHHAK003A
4-VR1	EV-365876	VR SLIDE VJ4513-2PVNB5 103
4-VR2	EV-365877	VR SLIDE VJ4513-2GPVNB5 203

5. CHORUS PC BOARD

REF. NO.	PART NO.	DESCRIPTION
5-D1 to 10	ED-301911	D SILICON H DS448
5-IC1,2	EI-337228	IC M5218L
5-IC4	EI-364308	IC MN3009
5-IC5	EI-360228	IC MN3101
5-IC6,7	EI-337228	IC M5218L
5-IC8	EI-364308	IC MN3009
5-IC9	EI-360228	IC MN3101
5-IC11	EI-337228	IC M5218L
5-IC12	EI-353227	IC M5216L
5-IC13	EI-337228	IC M5218L
5-J1,2	EJ-354105	PHONE J 2P HLJ0520-110 6.3
5-J3	EJ-353031	PHONE J 3P HLJ0520-010
5-L1,4	EO-365240	COIL VARI 1 25-5592-11 85.80MH
5-L2,5	EO-365241	COIL VARI 1 25-5593-11 86.70MH
5-L3,6	EO-365243	COIL VARI 1 25-5594-11 81.20MH
5-RL1	EQ-348929	RELAY SIGNAL G5A-232P 2TR 12V
5-R85	ER-341331	⚠ R OMF H S15 FS 1W 181J
5-R120 to 123	ER-364336	⚠ R OMF H S12 FS 1W 201J
5-TR1,2	ET-348302	TR FET 2SK381 C,D F05
5-TR3,4	ET-360067	TR 2SC3330 T,U F05
5-TR5	ET-348302	TR FET 2SK381 C,D F05
5-TR6,7	ET-353899	TR 2SA1317 S,T,U
5-TR8	ET-348302	TR FET 2SK381 C,D F05
5-TR9,10	ET-352994	TR 2SC3401 F05
5-TR11	ET-353899	TR 2SA1317 S,T,U
5-TR12,13	ET-360067	TR 2SC3330 T,U F05
5-TR14	ET-352994	TR 2SC3401 F05
5-TR15	ET-353899	TR 2SA1317 S,T,U
5-TR16,17	ET-360067	TR 2SC3330 T,U F05
5-TR18	ET-348302	TR FET 2SK381 C,D F05
5-VR1,2	EV-358829	R S-FIX H RH0615CJ4J 3P 223
5-VR3	EV-364321	VR ROTARY 12P10X0D B103

6. POWER SUPPLY PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-C1	EC-322804	C EC V CUT AS1 472M 16.0DC
6-C2,3	EC-316231	C EC V CUT AS1 222M 35.0DC
6-D1	ED-200213	⚠ D SILICON DBA40C-K15 200/2.6A
6-D2	ED-357038	⚠ D SILICON DBB10B 100/1.0A
6-D3	ED-357754	D SILICON DS135D 200/1.0A
6-D4	ED-319167	D ZENER H HZ6 C3
6-D5,6	ED-357754	D SILICON DS135D 200/1.0A
6-D7	ED-306012	D ZENER H HZ7 A3
6-D9,11	ED-329058	D ZENER H HZ5 C1
6-D12	ED-357754	D SILICON DS135D 200/1.0A
6-D13	ED-301911	D SILICON H DS448
6-D14	ED-331617	D ZENER H HZ6 A3
6-D15	ED-319167	D ZENER H HZ6 C3
6-FR1,2	ER-328278	⚠ R FUSE ERD2FC 1/4W 10ROG
6-FR3	ER-365262	⚠ R FUSE ERD2FC S10 1/4W 7R5J
6-IC1	EI-359552	⚠ IC M5236L
6-IC2	EI-359626	⚠ IC NJM78M15A
6-IC3	EI-359628	⚠ IC NJM79M15A
6-IC4	EI-348123	⚠ IC M5230L
6-R1	ER-360725	⚠ R OMF H S12 FS 1W 221J
6-TR1,3	ET-356817	⚠ TR2SB891 Q,R
6-TR2	ET-354083	⚠ TR 2SD1189 Q,R
6-TR4 to 6	ET-360067	TR 2SC3330 T,U F05
6-TR7	ET-354083	⚠ TR 2SD1189 Q,R
6-1	EZ-200473	SILICON RUBBER SHEET TC-30
6-2	ZW-632226	WASHER INSULATOR (BUSH M)
6-F2	EF-311839	⚠ FUSE TSC A 250V 1.60A [J]
6-F2A	EF-308847	⚠ FUSE TSC 125V 1.60A [C,A]
6-F2B	EF-601964	⚠ FUSE SEMKO T 1.60A 250V [E.V.S]
6-F2C	EF-359343	⚠ FUSE BET T 1.60A 250V [B]
6-F3,4	EF-309387	⚠ FUSE TSC A 250V 1.00A [J]
6-F3A,4A	EF-309392	⚠ FUSE TSC 125V 1.25A [C,A]
6-F3B,4B	EF-623103	⚠ FUSE SEMKO T 1.00A 250V [E,V,S]
6-F3C,4C	EF-355226	⚠ FUSE BET T 1.00A 250V [B]

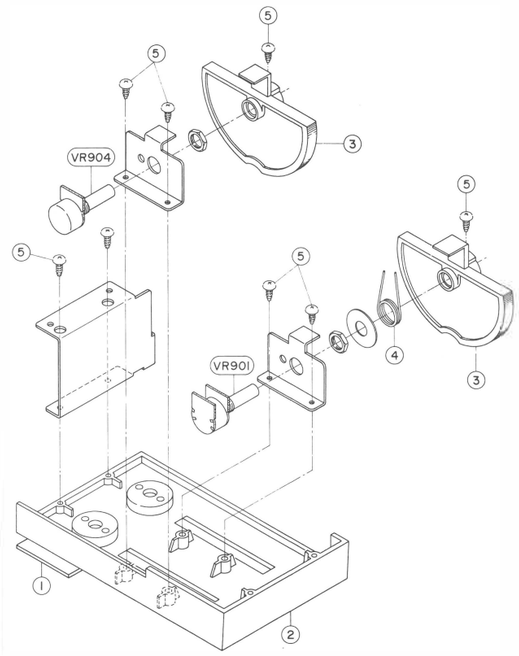
7. LINE FILTER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
	LINE FILTER PC BOARD	
7-C2,3	EC-358450	⚠ C CE V B 102M 400AC
7-C4	EC-338411	⚠ C CE V FZ 103P 400AC
7-FL1	EO-360068	COIL LF LF-2 B
	ASSEMBLY BLOCK	
7-F1	EF-309387	⚠ FUSE TSC A 250V 1.00A [J]
7-F1A	EF-309392	⚠ FUSE TSC 125V 1.25A [C,A]
7-F1B	EF-601942	⚠ FUSE SEMKO T 630MA 250V [E,V,S]
7-F1C	EF-358974	⚠ FUSE BET T 630MA 250V [B]

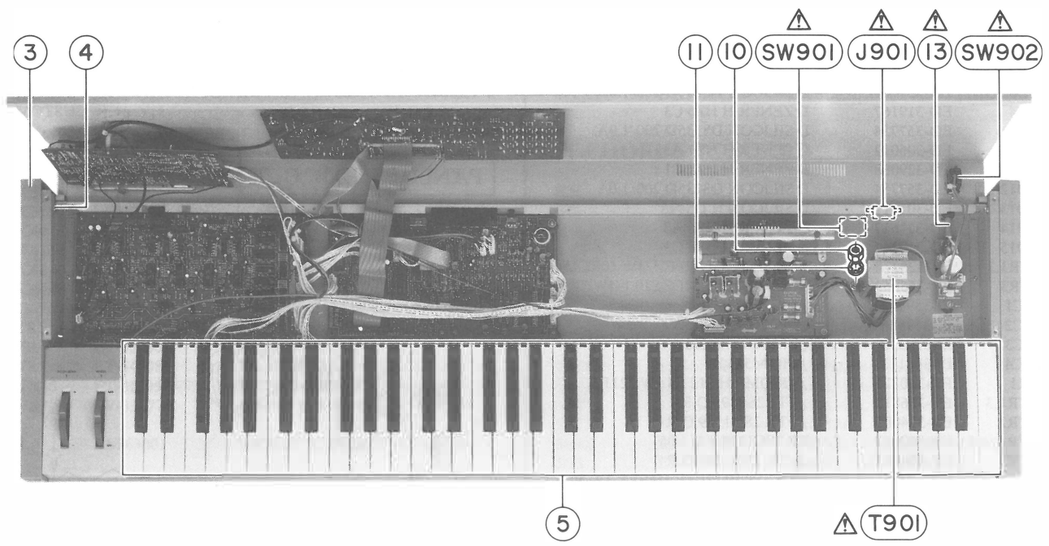
8. PANEL BEND BLOCK

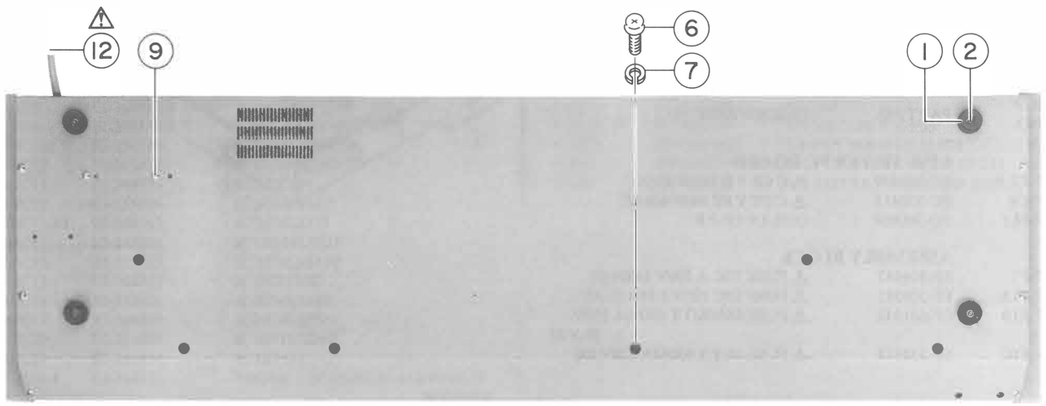
REF. NO.	PART NO.	DESCRIPTION
8-1	SE-362387-A	MASK PANEL
8-2	SP-345550C	PANEL BEND [C]
8-3	MI-354552B	WHEEL [B]
8-4	ZG-354553	SP BEND
8-5	ZS-310984	PT BR30×08STL CMT
8-VR901	EV-354253	VR ROTARY 16P20×3T A503
8-VR904	EV-354254	VR ROTARY 16L10xOW 103 CUSTOM-2

PANEL BEND BLOCK

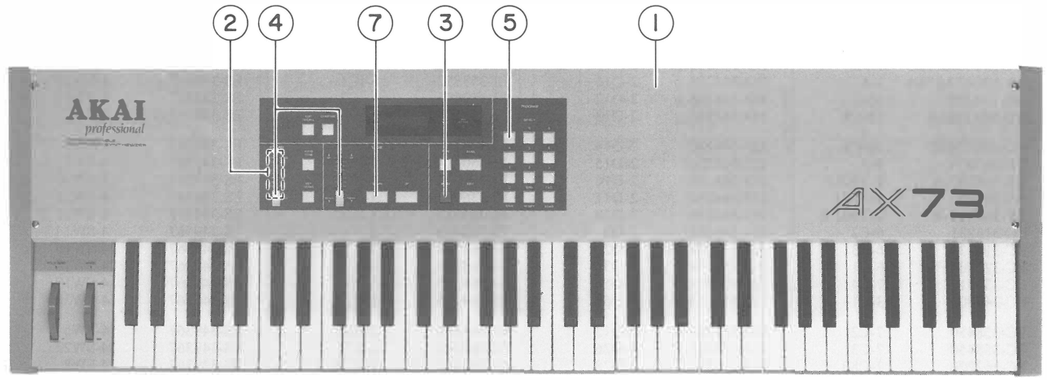


ASSEMBLY BLOCK





FINAL ASSEMBLY BLOCK



9. ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
9-1	SA-332850	ROUND FOOT
9-2	ZS-360715	ST PAN30×08STL CMT C080 (FOOT FIX)
9-3	SC-364225B	COVER SIDE(B)
9-4	ZS-362499	PT BID40×18STL NI3 (COVER SIDE FIX)
9-5	BK-365879	KEYBOARD SWITCH ESK-807
9-6	ZS-322570	ST BID40×08STL NI3 (KEYBOARD FIX)
9-7	ZW-273914	SW40 (KEYBOARD FIX)
9-8	ZW-698308	RV NYL30×055 BL
9-9	ZS-366897	BID40×10STL NI3 (TRANS POWER FIX)
9-10	ZW-413267	N FRANGE 40STL CMT (TRANS POWER FIX)
9-11	ZW-273892	TW40 (TRANS POWER FIX)
9-12	EW-365947	⚠ AC CORD 250 SKP210KS17B A J [J]
9-12A	EW-366055	⚠ AC CORD 250 KP11WSJT18 US [A]
9-12B	EW-359641	⚠ AC CORD 2 CORES KP-419C/ KS-17 [E,V]
9-12C	EW-358631	⚠ AC CORD 2 CORES KS-17 LTBS2F BS [B]
9-12D	EW-358630	⚠ AC CORD 2 CORES KP560 LTSA2F KS17 S [S]
9-12E	EW-357931	⚠ AC CORD 3 CORES VM0033A SJT18AWG UC [C]
9-13	EZ-302906	STRAIN RELIEF SR-6N-4 [C,A]
9-14	SZ-362390	HOLDER LCD
9-BT1	EZ-358816	BATTERY LITHIUM BR2032-1HF
9-IN1	EM-365254	IND LCD DM001ZL7
9-J901	EJ-358633	⚠ SOCKET INLET SOT017 2P [J,E,V,B,S]
9-SW901	ES-306430	⚠ SW SLIDE J-S4013 #01 01-2 [E,V,B,S]
9-SW902	ES-364478	⚠ SW SEESAW SDDT SPST TYPE=A T=8.5
9-T901	BT-364697	⚠ TRANS POWER L1012-10 [J]
9-T901A	BT-364243-A	⚠ TRANS POWER L1012-30 [C,A]
9-T901B	BT-364698-A	⚠ TRANS POWER L1012-50 [E,V,B,S]

10. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
10-1	BD-B362380	PANEL FRONT PART AX73 [J]
10-1A	BD-B362380B	PANEL FRONT PART AX73 [C,A]
10-1B	BD-B362380C	PANEL FRONT PART AX73 [E,V,B,S]
10-2	SE-362389A	MASK VOLUME [A]
10-3	SK-364216B	KNOB PUSH [B] RED
10-4	SK-364219B	KNOB SLIDE [B]
10-5	SK-364216C	KNOB PUSH [C]
10-6	SK-362385	KNOB PUSH
10-7	SK-322105	KNOB
10-8x	ZS-322570	ST BID40×08STL NI3 (IND CLD FIX)
10-9x	AX-369345	REFERANCE SHEET

INDEX

AX73

PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.
AX-369345	10-9x	ED-344280	2-D4	EI-355906	3-IC18	ER-364336	5-R120
BA-L1013A020A	1-2	ED-344280	2-D5	EI-355909	4-IC1	ER-364336	5-R121
BA-L1013A030A	1-3	ED-344280	2-D6	EI-355909	4-IC2	ER-364336	5-R123
BA-L1013A050A	1-1	ED-344280	2-D7	EI-355910	3-IC12	ER-365262	6-FR3
BA-L1013A060A	1-5	ED-344280	2-D8	EI-355917	3-IC2	ER-366282	3-R37
BA-L1013A060B	1-5A	ED-344280	2-D9	EI-355917	3-IC16	ES-306430	9-SW901
BA-L1013A060C	1-5B	ED-344280	2-D10	EI-357060	3-IC1	ES-349367	4-SW9
BA-L1013A070A	1-4	ED-344280	2-D11	EI-359552	6-IC1	ES-349367	4-SW17
BD-B362380	10-1	ED-344280	2-D12	EI-359626	6-IC2	ES-349367	4-SW1
BD-B362380B	10-1A	ED-344280	2-D13	EI-359628	6-IC3	ES-349367	4-SW2
BD-B362380C	10-1B	ED-344280	2-D14	EI-360228	5-IC5	ES-349367	4-SW4
BK-365879	9-5	ED-344280	2-D15	EI-360228	5-IC9	ES-349367	4-SW6
BT-364243-A	9-T901A	ED-344280	2-D16	EI-360954	2-IC40	ES-349367	4-SW10
BT-364697	9-T901	ED-344280	2-D17	EI-3360954	3-IC21	ES-349367	4-SW11
BT-364698-A	9-T901-B	ED-344280	2-D18	EI-362521	3-IC5	ES-349367	4-SW12
EC-316231	6-C2	ED-346463	2-D2	EI-362588	2-IC44	ES-349367	4-SW14
EC-316231	6-C3	ED-357038	6-D2	EI-362588	2-IC45	ES-349367	4-SW16
EC-322804	6-C1	ED-357754	6-D3	EI-364245	2-IC5	ES-349367	4-SW18
EC-338411	7-C4	ED-357754	6-D5	EI-364245	2-IC6	ES-349367	4-SW19
EC-347205	3-C11	ED-357754	6-D6	EI-364245	2-IC7	ES-349367	4-SW20
EC-358450	7-C2	ED-357754	6-D12	EI-364245	2-IC8	ES-349367	4-SW5
EC-358450	7-C3	ED-359863	4-D26	EI-364245	2-IC9	ES-349367	4-SW22
EC-362220	2-C80	ED-359863	4-D28	EI-364245	2-IC10	ES-349367	4-SW8
EC-362220	2-C81	ED-359863	4-D29	EI-364245	2-IC11	ES-349367	4-SW13
EC-362220	2-C82	ED-359863	4-D30	EI-364245	2-IC12	ES-349367	4-SW7
EC-362220	2-C83	ED-359863	4-D27	EI-364245	2-IC13	ES-349367	4-SW3
EC-362220	2-C84	ED-359863	4-D31	EI-364245	2-IC14	ES-349367	4-SW15
EC-362220	2-C85	ED-364261	4-D24	EI-364245	2-IC15	ES-349367	4-SW21
ED-200213	6-D1	ED-364261	4-D25	EI-364245	2-IC16	ES-364255	3-SW1
ED-301911	2-D3	EF-308847	6-F2A	EI-364245	2-IC17	ES-364478	9-SW902
ED-301911	3-D1	EF-309387	6-F3	EI-364245	2-IC18	ET-348302	5-TR1
ED-301911	3-D2	EF-309387	6-F4	EI-364245	2-IC19	ET-348302	5-TR8
ED-301911	3-D3	EF-309387	7-F1	EI-364245	2-IC20	ET-348302	5-TR5
ED-301911	3-D4	EF-309392	6-F3A	EI-364246	2-IC32	ET-348302	5-TR2
ED-301911	3-D5	EF-309392	6-F4A	EI-364246	2-IC33	ET-348302	5-TR18
ED-301911	3-D6	EF-309392	6-F1A	EI-364246	2-IC36	ET-349081	2-TR15
ED-301911	3-D7	EF-311839	6-F2	EI-364246	2-IC34	ET-349081	2-TR5
ED-301911	3-D8	EF-355226	6-F3C	EI-364246	2-IC35	ET-349081	2-TR14
ED-301911	3-D9	EF-355226	6-F4C	EI-364246	2-IC31	ET-349592	2-TR1
ED-301911	4-D1	EF-358974	7-F1C	EI-364247	2-IC43	ET-349592	2-TR3
ED-301911	4-D3	EF-359343	6-F2C	EI-364247	2-IC42	ET-349592	2-TR2
ED-301911	4-D4	EF-601942	7-F1B	EI-364253	3-IC17	ET-349608	3-TR2
ED-301911	4-D5	EF-601964	6-F2B	EI-364257	3-X1	ET-349608	3-TR1
ED-301911	4-D7	EF-623103	6-F3B	EI-364273	3-IC11	ET-352994	2-TR16
ED-301911	4-D8	EF-623103	6-F4B	EI-364275	3-IC19	ET-352994	5-TR10
ED-301911	4-D2	EH-355561	3-IB1	EI-364308	5-IC8	ET-352994	5-TR9
ED-301911	4-D9	EH-355561	3-IB2	EI-364308	5-IC4	ET-352994	5-TR14
ED-301911	4-D6	EH-355561	3-IB3	EI-364319	2-IC2	ET-353899	5-TR15
ED-301911	4-D10	EH-355561	3-IB4	EI-364319	2-IC1	ET-353899	5-TR7
ED-301911	4-D11	EH-362519	3-IB5	EI-365872	3-IC10	ET-353899	5-TR11
ED-301911	4-D12	EI-302233	2-IC3	EI-366167	3-IC13	ET-353899	5-TR6
ED-301911	4-D13	EI-302233	2-IC4	EI-366167	3-IC14	ET-354083	6-TR2
ED-301911	4-D14	EI-310036	2-IC28	EI-367332-C	3-IC3	ET-354083	6-TR7
ED-301911	4-D15	EI-310036	2-IC29	EJ-353031	5-J3	ET-356817	6-TR3
ED-301911	4-D16	EI-310036	2-IC30	EJ-354105	5-J1	ET-356817	6-TR1
ED-301911	4-D17	EI-337228	2-IC41	EJ-354105	5-J2	ET-360067	2-TR4
ED-301911	4-D18	EI-337228	2-IC37	EJ-358633	9-J901	ET-360067	3-TR4
ED-301911	4-D19	EI-337228	2-IC38	EJ-358691	3-1	ET-360067	5-TR4
ED-301911	4-D20	EI-337228	2-IC39	EJ-360771	2-J1	ET-360067	5-TR13
ED-301911	4-D21	EI-337228	2-IC21	EJ-363001	2-1	ET-360067	5-TR16
ED-301911	4-D22	EI-337228	2-IC22	EJ-364256	3-J5	ET-360067	5-TR3
ED-301911	5-D1	EI-337228	2-IC23	EJ-364322	3-J1	ET-360067	5-TR12
ED-301911	5-D2	EI-337228	2-IC24	EJ-364322	3-J2	ET-360067	5-TR17
ED-301911	5-D3	EI-337228	2-IC25	EJ-364322	3-J3	ET-360067	6-TR4
ED-301911	5-D4	EI-337228	2-IC26	EJ-364322	3-J4	ET-360067	6-TR6
ED-301911	5-D5	EI-337228	2-IC27	EM-365254	9-IN1	ET-360067	6-TR5
ED-301911	5-D6	EI-337228	5-IC1	EO-360068	7-FL1	ET-364560	3-PH1
ED-301911	5-D7	EI-337228	5-IC2	EO-365240	5-L1	EV-307709	3-VR1
ED-301911	5-D8	EI-337228	5-IC6	EO-365240	5-L4	EV-336770	2-VR7
ED-301911	5-D9	EI-337228	5-IC7	EO-365241	5-L5	EV-336770	2-VR8
ED-301911	5-D10	EI-337228	5-IC11	EO-365241	5-L2	EV-354253	8-VR901
ED-301911	6-D13	EI-337228	5-IC13	EO-365243	5-L6	EV-354254	8-VR904
ED-306012	6-D7	EI-348123	6-IC4	EO-365243	5-L3	EV-358829	5-VR1
ED-319167	6-D4	EI-353227	5-IC12	EQ-348929	5-RL1	EV-358829	5-VR2
ED-319167	6-D15	EI-354146	3-IC6	ER-326169	3-FR1	EV-364321	5-VR3
ED-329058	6-D9	EI-354149	3-IC7	ER-328278	6-FR1	EV-365865	3-VR2
ED-329058	6-D11	EI-354149	3-IC8	ER-328278	6-FR2	EV-365876	4-VR1
ED-331617	6-D14	EI-354149	3-IC9	ER-341331	5-R85	EV-365877	4-VR2
ED-331626	2-D1	EI-355891	3-IC15	ER-360725	6-R1	EW-357931	9-12E
ED-344280	2-D19	EI-355904	3-IC20	ER-364336	5-R122	EW-358630	9-12D

AX73

PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.
EW-358631	9-12C	SE-362387-A	8-1	ZS-310984	8-5	ZW-698308	9-8
EW-359641	9-12B	SE-362389A	10-2	ZS-322570	9-6		
EW-365947	9-12	SK-322105	10-7	ZS-322570	10-8		
EW-366055	9-12A	SK-362385	10-6	ZS-360715	9-2		
EZ-200473	6-1	SK-364216B	10-3	ZS-362499	9-4		
EZ-302906	9-13	SK-364216C	10-5	ZS-366897	9-9		
EZ-358816	9-BT1	SK-364219B	10-4	ZW-273892	9-11		
MI-354552B	8-3	SP-354550C	8-2	ZW-273914	9-7		
SA-332850	9-1	SZ-362390	9-14	ZW-413267	9-10		
SC-364225B	9-3	ZG-354553	8-4	ZW-632226	6-2		

MEMO

ABBREVIATIONS FOR THE SERVICE MANUAL

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AMP (Amp)	AMPlifier	MINI	MINImum
BBD	Backet Brigade Diode	MIX	MIXer
BCD	Binary Code Decimal	MOD	MODulation
B.DOWN	Brak Down	M.WHEEL	Modulation WHEEL
B.UP	Back UP	OSC	OSCillator
CE	Chip Enable	RAM	Random Access Memory
CH	CHannel	RD	ReaD
COMP	COMParator	REG	REGulator
CONT	CONTrol	RESO	RESOnance
CV	Control Voltage	RL	ReLay
D/A	Digital to Analogue	ROM	Read Only Memory
EG	Envelope Generator	S/H	Sample and Hold
EXT	EXTernal	SW	SWitch
FREQ	FREQuency	THRU	THRoUgh
HPF	High Pass Filter	TRANS	TRANSpose
INH	INHibit	U	Upper
INT	INTerrupt	VA	Voltage Analog
INV	INVerter	VCA	Voltage Controlled Amplifier
L	Lower	VCF	Voltage Controlled Filter
LFO	Low Frequency Oscillator	VR	Variable Resistor
MAX	MAXimum	V_{REF}	REFerence Voltage
MEMO	MEMOry	WR	WRite
MIDI	Musical Instrument Digital Interface		

AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-Ku, Tokyo, Japan
TEL Tokyo (742) 5111 CABLE HIFIAKAI TOKYO TELEX J26261
Printed No. 860728-G1-500 Printed Date: August 29, 1986
Printed in Japan

SERVICE BULLETIN

The following pages are the additional Service Bulletins.
Please file them accordingly under the Service Bulletin section of the appropriate Service Manual.
Discard the previous INDEX page and the last page of the previous bulletin if necessary.
These pages are numbered sequencially. In case you find the numbers missing, please notify us.

MODEL: AX73

INDEX

Bulletin No.	Subject No.	Page No.	Description
MS-0009	001	1	Mute Time change
MS-0010	002	1	Detune Countermeasure
	003	2	VCO Leak Countermeasure
MS-0013	004	3	"ALL NOTE OFF" Countermeasure
MS-0017	005	4	VELOCITY countermeasure

This page is missing from this scan.

MODEL: AX73 No. MS-0009 DATE: June 1986

001 Subject: Trouble countermeasure

Symptom: Sound level and Pitch change for a moment when played within a few seconds after unit is turned on.

Cause: Operation not stabilized

Remedy: Change C26 in Power Supply PCB from 100u/6.3v to 330u/6.3v to prolong mute time from 1 sec. to 3 sec.

	Ref. No.	Part No.	Description
(FORMER)	6-C26	---	C EC 101M 6.3DC
(NEW)	6-C26Z	EC-320536	C EC 331M 6.3DC

Changed from : June 1986
Service Ref. No. : CNL 0211

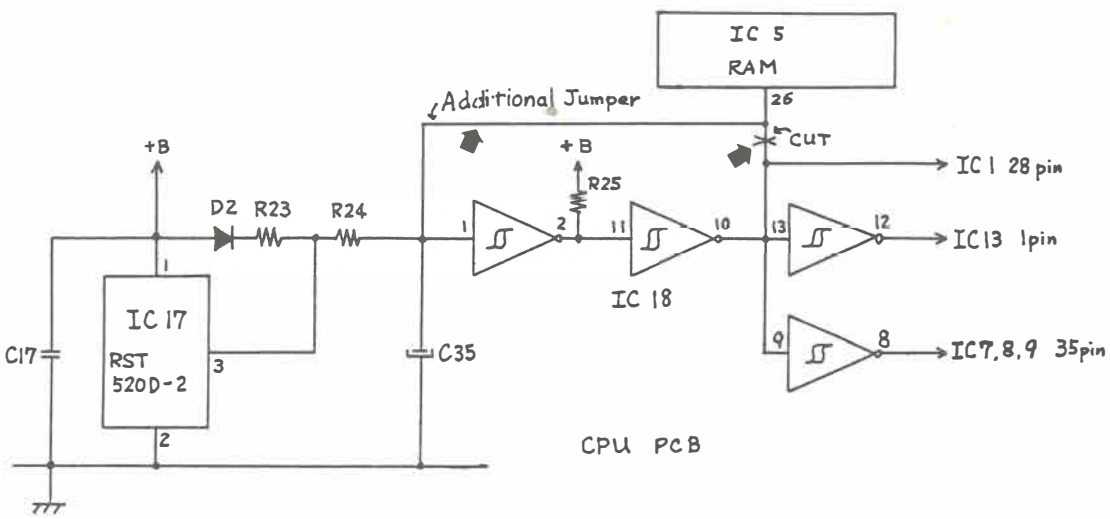
MODEL: AX73 No. MS-0010 DATE: August 1986

002 Subject: Trouble countermeasure

Symptom : Only 1 voice may get detuned as far as 6 semitones when unit is switched off while properly tuned and switched on again.

Cause : Tuning data in RAM IC (IC5 on CPU PCB) gets re-written when unit is switched on and off due to the dispersion in reset pulse timing and sensitivity of RAM IC.

Remedy Change reset circuit in CPU PCB as follows as a service measure.



Service Ref. No. : MJ-0016

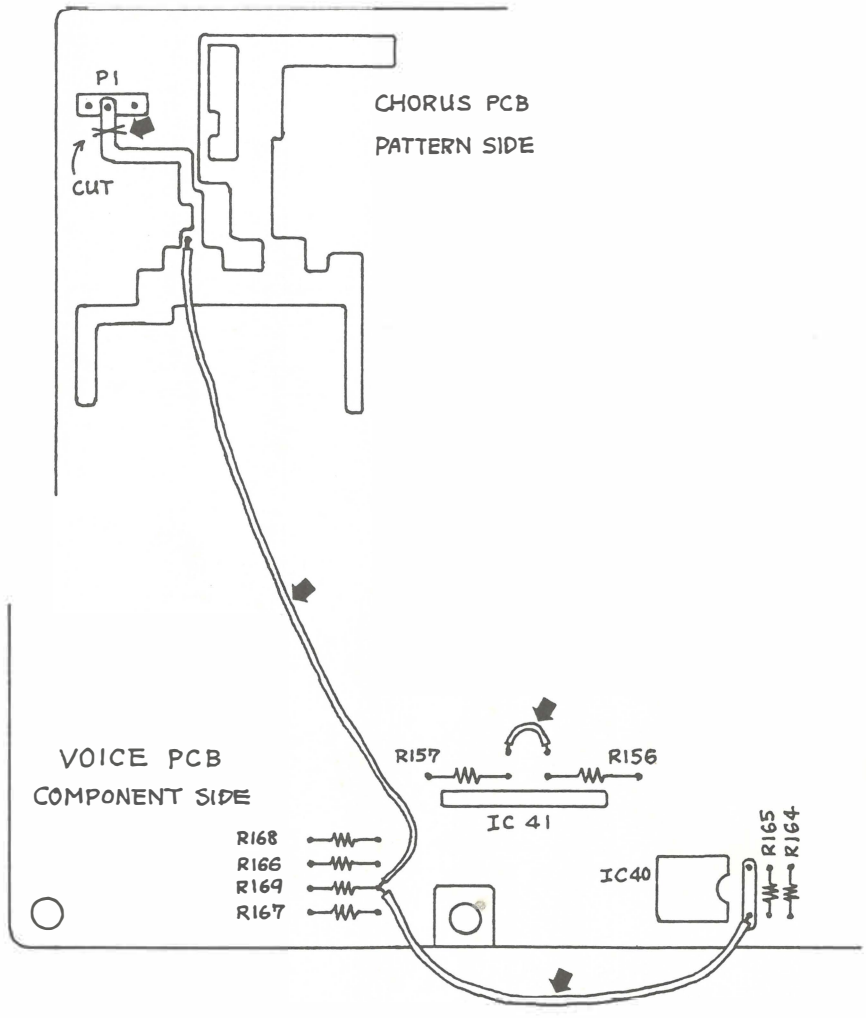
MODEL: AX73 No. MS-0010 DATE: August 1986

003 Subject: Trouble countermeasure

Symptom : Previously played notes can be heard after release.

Cause : Leak of VCO to output.

Remedy : Modify GND lines on VOICE PCB and CHORUS PCB as follows.



Changed from : September 1986
Service Ref. No. : CNL0262

005 Subject: Trouble countermeasure

Symptom: When a chord is played, the unit may produce the maximum velocity (MIDI Note On Velocity 127) even though the keys are played very softly.
This is very INTERMITTENT.

Cause: Incorrect process timing in Key assign operation.

Remedy: Replace the ROM IC in CPU PCB with the ROM IC version V1.4 which also contains all previous revisions including non-acceptance of "ALL NOTE OFF" message.

Ref. No.	Part No.	Description
3-IC3z	EI-367332J5	IC TMM27128AD-20 AX73 V1.4A

Changed from : October 1987
Interchangeability : NEW part to OLD and NEW units
Service Ref. No. : CNL0589

AKAI

MODEL AX73

SCHEMATIC DIAGRAM AND PC BOARD

TABLE OF CONTENTS

CONTROL BLOCK DIAGRAM 2
VOICE & CHORUS BLOCK DIAGRAM 3
CONNECTION DIAGRAM 4
FILTER, POWER SUPPLY, OPERATION PC Board 5
CPU SCHEMATIC DIAGRAM 6
CPU PC Board 7
VOICE SCHEMATIC DIAGRAM 8
VOICE PC Board 9
CHORUS SHCEMATIC DIAGRAM 10
CHORUS PC Board 11
ICs 12

AX73

KEY MATRIX

KEY RETURN (SW-A)

KEY RETURN (SW-B)

KEY STROBE

IC12 M74LS42P
BCD TO DECIMAL DECODER

IC1 μPD78IIG-144

8 BIT MICRO COMPUTER WITH A-D CONVERTER

DATA BUS (8 BIT)

ADDRESS BUS (16 BIT)

IC2 μ74LS373P
ADDRESS LATCH
A0 to A7
ALE
LE

IC3 TMM27128
ROM
A0 to A13

IC5 TC5564P
RAM
A0 to A12

IC6 μPD8253
PROGRAMMABLE INTERVAL TIMER
A0, A1

INT 1
SLK
RD
WD
RESET
INT 2
TXD
RXD
A
ADC IN
VREF

IC13 M74LS139
ADDRESS DECODER
CHIP SELECT FOR EACH IC
TO IC13 CS
TO IC5 CS
TO IC9 CS
TO IC8 CS
TO IC7 CS
TO IC6 CS
RESET

IC16 M74LS373P
ADDRESS LATCH
CE
IC20 IC15
IC15
WD
A7

IC14 M74LS139
CHIP SELECTOR

ADDRESS BUS

DATA BUS

IC20 2/6 M74LS04P
INV
TUNE SIGNAL FROM VOICE PCB

IC7 μPD8255AC-2
PROGRAMMABLE PERIPHRAL INTERFACE
D7 to D0
RESET
RD
WD
CS
A1
A0

TR4
DRIVE
IC21 IR9311
AMP

TAPE OUT
PROGRAM UP
SUSTAIN
TAPE IN
MEMORY PROTECT

LCD BLOCK
LCD
LCD CONTROLLER

OPERATION PCB
L1013A5020

SWITCHING CONTROL DATA FOR VOICE PCB (IC1 to 4)

IC8 μPD8255AC-2
PROGRAMMABLE PERIPHRAL INTERFACE

KEY RETURN

KEY STROBE

OPERATION KEY MATRIX

LED ON/OFF CONTROL

INDICATOR LED

CHIP SELECT DATA FOR VOICE PCB (IC1 to 4)

IC9 μPD8255AC-2
PROGRAMMABLE PERIPHRAL INTERFACE

IC10 EHK-MD6207
16 BIT D-A CONVERTER
14 BIT DATA

IC11 LF356N
I-V

VA
EXT IN
NOISE A
NOISE B
MUTE
CONTROL TO VOICE PCB

CHORUS
LFO 1/2
INPUT SELECT
MUTE RELAY
CONTROL TO CHORUS PCB

BEND BLOCK
PITCH BEND
M. WHEEL
V REF
TUNE
VALUE

ANALOGUE DATA IN

X1
TRI,2
CLOCK GENERATOR

IC18

IC19 M74LS05

PHI PHOTO COUPLER

IC18 M74LS14P

IC17 RST520D-2
RESET CIRCUIT

RESET FOR IC13

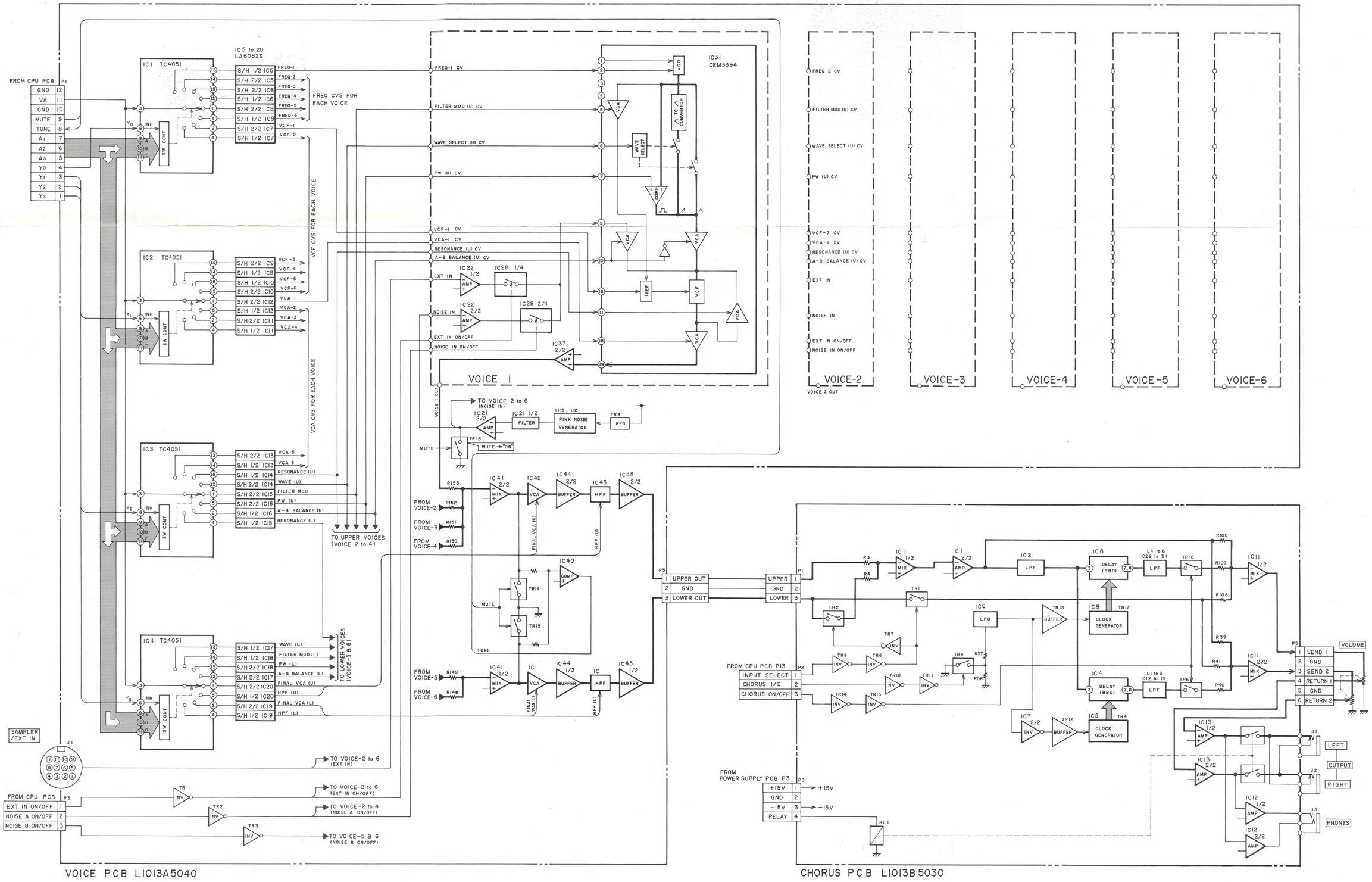
RESET FOR IC7, 8, 9

RESET FOR IC1, 5

IN
THRU
OUT
MIDI

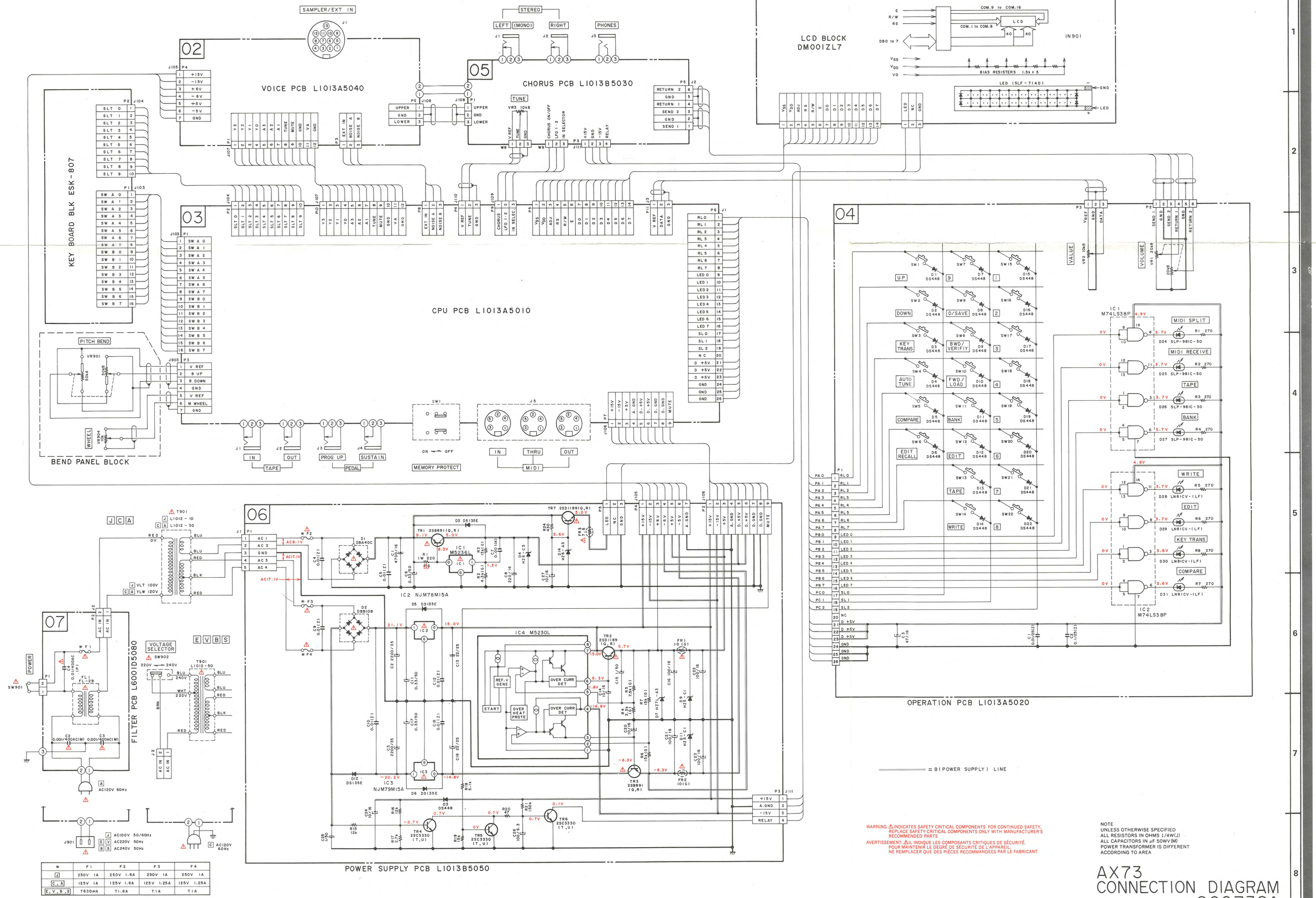
CPU PCB L1013A5010

AX73
CONTROL
BLOCK DIAGRAM
NO.2-1 860736A(A2)



AX73
VOICE & CHORUS BLOCK DIAGRAM
NO.2-2 860737A 2

AX73



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

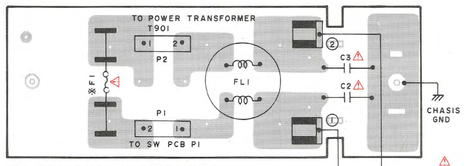
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

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

AX73 CONNECTION DIAGRAM

NO. 4-1 860738A 3

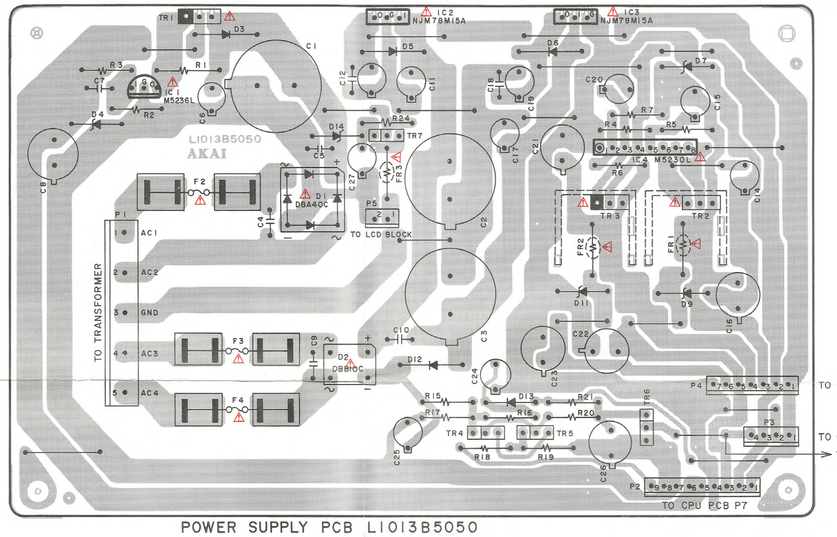
※	J	C.A	E.V.S.B
F1	1.25A250V	1.6A 125A	T500mA 250V



FILTER PCB L600ID5080

J AC 100V 50/60Hz
A.C AC 120V 60Hz
INLET
E.V.S AC220V~240V 50Hz

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

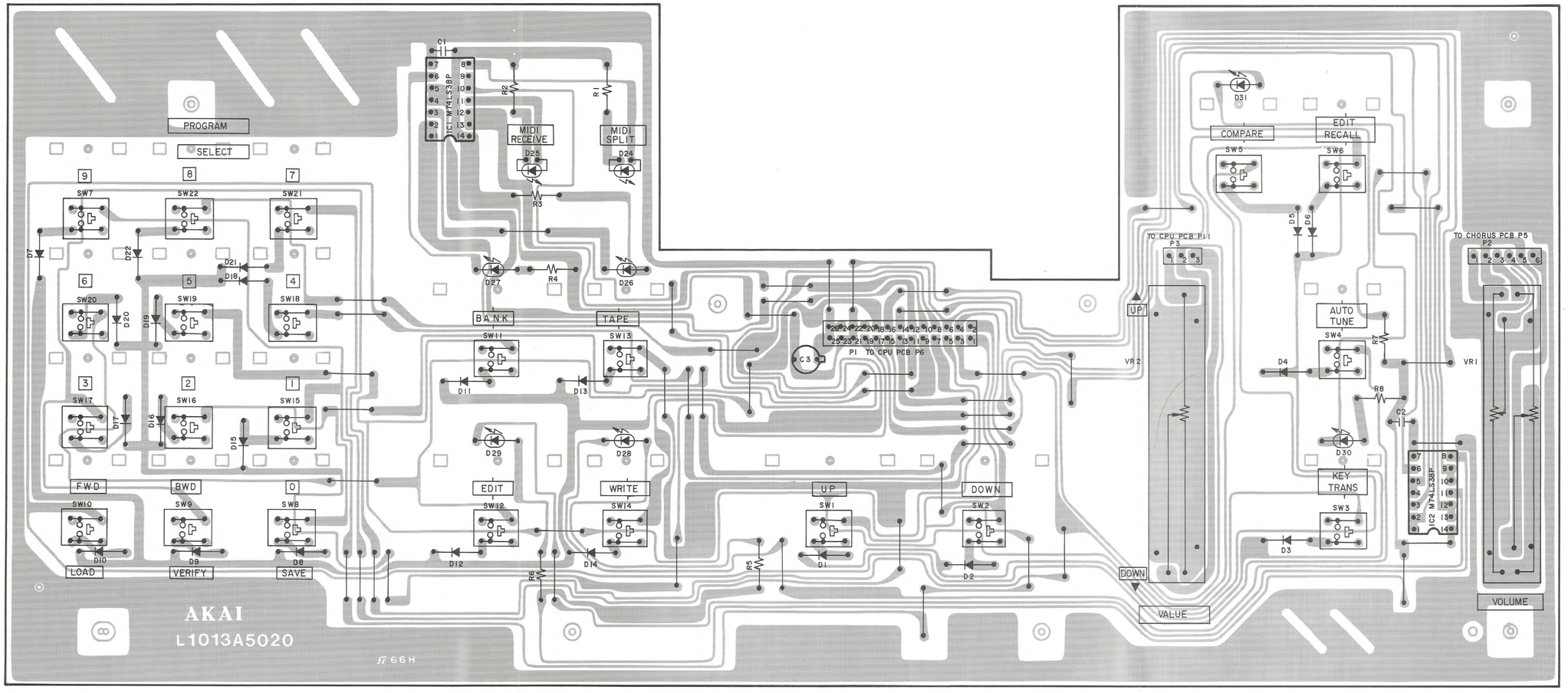


2SB891
2SD1189

2SC3330

POWER SUPPLY PCB L1013B5050

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



OPERATION PCB L1013A5020

03

IC1 μPD78116-144
IC2 M74LS373P
IC3 TMM27128D-20
IC5 TC5564PL-20
IC6 μPD8253C-2
IC7 μPD8255AC-2
IC8 μPD8255AC-2
IC9 μPD8255AC-2
IC10 EHK-MD6207
IC11 LF356N
IC12 M74LS42P
IC13 M74LS139
IC14 M74LS139
IC15 HD74LS32P
IC16 M74LS373P
IC17 RST5209D-2
IC18 M74LS14P
IC19 M74LS05N
IC20 M74LS04P
IC21 IR9311

J103 P1 — TO KEY BOARD BLK P1
J104 P2 — TO KEY BOARD BLK P2
J903 P3 — TO PITCH BEND
J110 P4 — TO CHORUS PCB W5
P11 — TO OPERATION PCB P3

P5 — TO LCD BLK IN901
P7 J106 — TO POWER SUPPLY PCB P2
P6 J1 — TO OPERATION PCB P1
P8 — TO VOICE PCB P3
P9 J109 — TO CHORUS PCB W5
P10 J107 — TO VOICE PCB (P1)

IB1 10x8 (K)
IB2
IB3 10x8 (K)
IB4 10x8 (K)
IB5

J1 TAPE IN
J2 TAPE OUT
J3 PROG UP
J4 SUSTAIN
PEDAL
J5 IN THRU OUT

MEMORY PROTECT SW1

= B(POWER SUPPLY) LINE

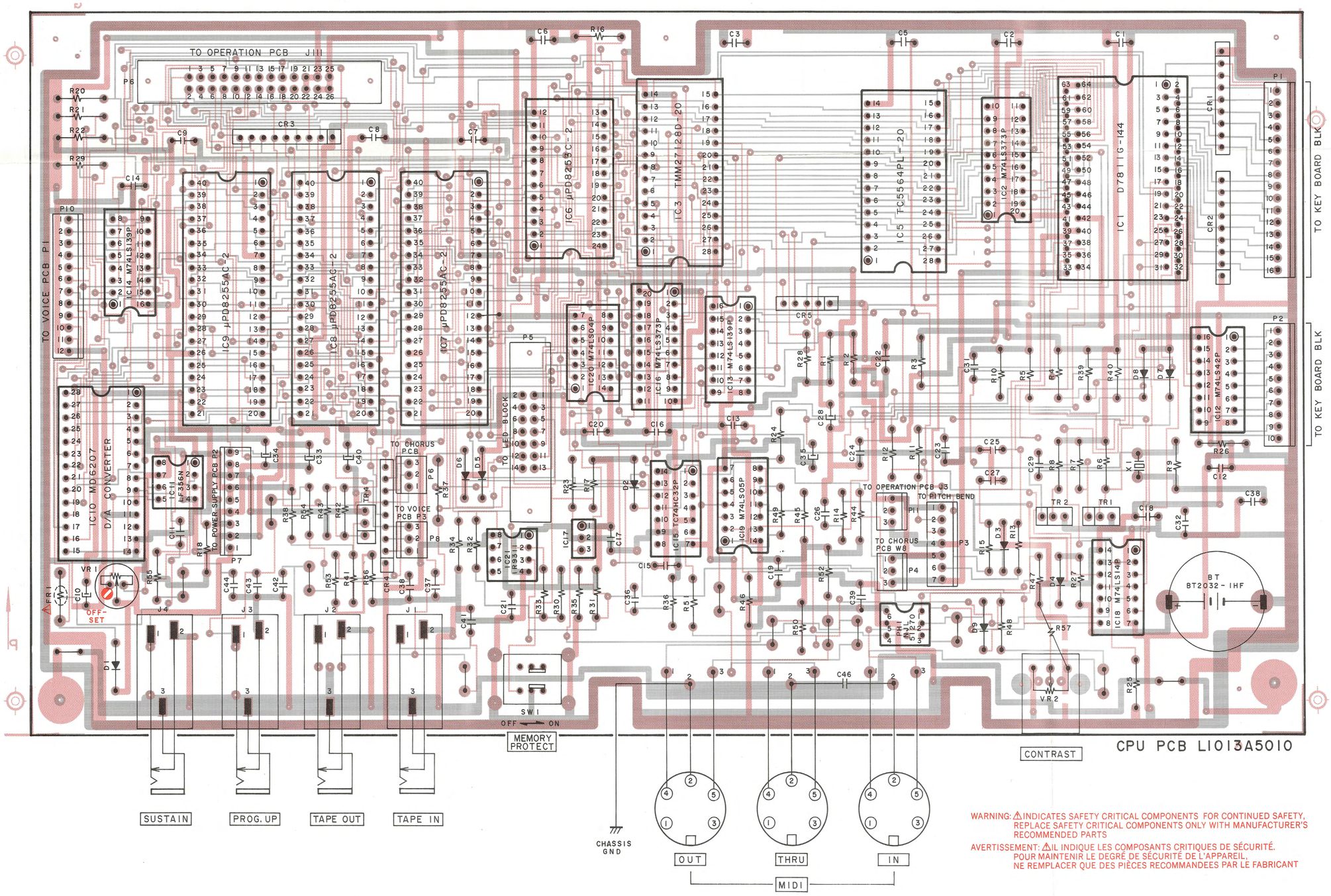
CPU PCB L1013A5010

001957

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 25WV(Z)

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

AX73 CPU SCHEMATIC DIAGRAM NO.4-2 860739A



LOCATION OF COMPONENTS

IC1 --- A1	IC12 --- A2
IC2 --- A1	IC13 --- B1
IC3 --- B1	IC14 --- D1
IC5 --- B1	IC15 --- C2
IC6 --- C1	IC16 --- C1
IC7 --- C1	IC17 --- C2
IC8 --- D1	IC18 --- A2
IC9 --- D1	IC19 --- B2
IC10 --- D2	IC20 --- C1
IC11 --- D2	IC21 --- C2

PHI --- B2

TRI --- A2
TR2 --- A2
TR4 --- C2

TRI,2 --- 2SC3383
TR4 ---- 2SC3330

2SC3383

2SC3330

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 RECOMMANDEES PAR LE FABRICANT

02

IC 1 CD4051BE
IC 2 CD4051BE
IC 3 TC4051BP
IC 4 TC4051BP
BINARY-TO 8 DECODER
LOGIC LEVEL CONVERTER

IC7 LA6082S
IC8 LA6082S
IC5 LA6082S
IC6 LA6082S
IC11 LA6082S
IC12 LA6082S
IC10 LA6082S
IC9 LA6082S
IC16 LA6082S
IC15 LA6082S
IC14 LA6082S
IC13 LA6082S
IC19 LA6082S
IC20 LA6082S
IC18 LA6082S
IC17 LA6082S

VCF 2
FREQ 5
VCF 1
FREQ 3
FREQ 2
FREQ 1
FREQ 4
FREQ 6
VCA 3
VCA 1
VCA 4
VCF 5
VCF 4
VCF 3
VCF 6
VCA 2
A-B BALANCE (U)
FILTER MOD (U)
RESONANCE (L)
RESONANCE (U)
VCA 6
VCA 5
WAVE SHAPER (U)
PW (U)
FINAL VCA (L)
FINAL VCA (U)
HPF (L)
PW (L)
FILTER MOD (L)
WAVE SHAPER (L)
A-B BALANCE (L)
HPF (U)

J107 P1
TO CPU PCB PIO
A.GND 12
VA 11
A.GND 10
MUTE 9
TUNE 8
A1 7
A2 6
A3 5
YO 4
Y1 3
Y2 2
Y3 1

SAMPLER/EXT IN J1
VOICE 5
VOICE 6
VOICE 3
VOICE 2
VOICE 1
VOICE 4

J3 P3
TO CPU PCB P8
EXT IN ON/OFF 1
NOISE A ON/OFF 2
NOISE B ON/OFF 3

TR1 2SC3400
TR2 2SC3400
TR3 2SC3400

VCF 6
VCA 6
FREQ 6
FILTER MOD (L)
WAVE SHAPER (L)
PW (L)
A-B BALANCE (L)
RESONANCE (L)
EXT IN 6
EXT 6 IN ON/OFF
NOISE IN
NOISE B ON/OFF
IC36
IC27
IC39 (1/2)
IC30 (3/4,4/4)
(LOWER) VOICE 6

VCF 5
VCA 5
FREQ 5
FILTER MOD (L)
WAVE SHAPER (L)
PW (L)
A-B BALANCE (L)
RESONANCE (L)
EXT IN 5
EXT 5 IN ON/OFF
NOISE IN
NOISE B ON/OFF
IC35
IC26
IC39 (2/2)
IC30 (1/4,2/4)
(LOWER) VOICE 5

VCF 4
VCA 4
FREQ 4
FILTER MOD (U)
WAVE SHAPER (U)
PW (U)
A-B BALANCE (U)
RESONANCE (U)
EXT IN 4
EXT 4 IN ON/OFF
NOISE IN
NOISE A ON/OFF
IC34
IC25
IC38 (1/2)
IC29 (3/4,4/4)
(UPPER) VOICE 4

VCF 3
VCA 3
FREQ 3
FILTER MOD (U)
WAVE SHAPER (U)
PW (U)
A-B BALANCE (U)
RESONANCE (U)
EXT IN 3
EXT 3 IN ON/OFF
NOISE IN
NOISE A ON/OFF
IC33
IC24
IC38 (2/2)
IC29 (1/4,2/4)
(UPPER) VOICE 3

VCF 2
VCA 2
FREQ 2
FILTER MOD (U)
WAVE SHAPER (U)
PW (U)
A-B BALANCE (U)
RESONANCE (U)
EXT IN 2
EXT 2 IN ON/OFF
NOISE IN
NOISE A ON/OFF
IC32
IC23
IC37 (1/2)
IC28 (3/4,4/4)
(UPPER) VOICE 2

VCF 1
VCA 1
FREQ 1
FILTER MOD (U)
WAVE SHAPER (U)
PW (U)
A-B BALANCE (U)
RESONANCE (U)
EXT IN 1
EXT 1 IN ON/OFF
NOISE IN
NOISE A ON/OFF
IC31~36 CEM3394
IC37~39 M5218L
IC28~30 TC4066BP
IC22~27 M5218L
(UPPER) VOICE 1

IC40 IR-9311
IC41 M5218L
IC42(2/2),IC43(2/2),IC44(1/2),IC45(1/2)
LOWER CH
(SAME AS UPPER CH)
IC42 NJM13600
IC44 M5238P
IC43 NJM13600
IC45 M5238P
UPPER CH
IC21 M5218L

TR4 2SC3301(T,U)
TR5 2SC3383(S)
TR16 2SC3401
TO CHORUS PCB ①
TO CHORUS PCB ②

TO POWER SUPPLY PCB P4
P4 J105 GND -5V +5V -6V +6V -15V +15V
TO OPERATION(AMP) PCB J114
P5 J108 LOWER OUT GND UPPER OUT

NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)

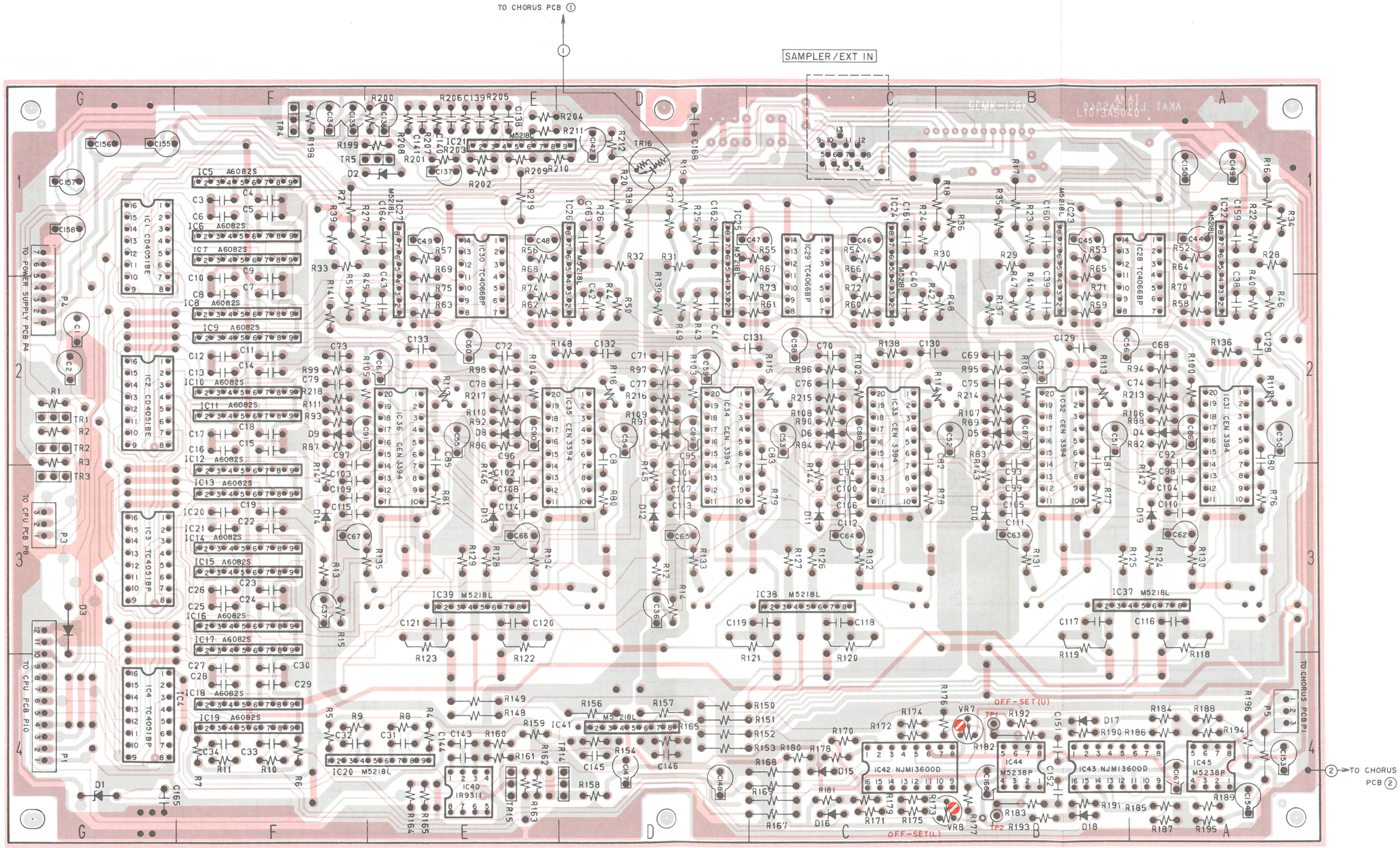
※ Indicated voltage are mesuared at all VR controls "MINE", and program [1] position
Also mesuared after initalased by power SW "ON"

=B(POWER SUPPLY) LINE

VOICE PCB L1013A5040

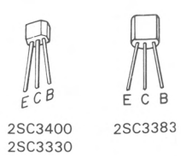
AX73 VOICE SCHEMATIC DIAGRAM

NO. 4-3 860215B 3



VOICE PCB L1013A5040

IC1 : G-1	IC11 : F-2	IC21 : E-1	IC31 : A-2	IC41 : D-4	TR1 : G-2	2SC3400.....TR1,2,3	
IC2 : G-2	IC12 : F-3	IC22 : A-1	IC32 : B-2	IC42 : C-4	TR2 : G-2	2SC3330.....TR4	
IC3 : G-3	IC13 : F-3	IC23 : B-1	IC33 : C-2	IC43 : B-4	TR3 : G-3	2SC3383.....TR5,TR14,TR15	
IC4 : G-4	IC14 : F-3	IC24 : C-1	IC34 : D-2	IC44 : B-4	TR4 : F-1		
IC5 : F-1	IC15 : F-3	IC25 : D-1	IC35 : D-2	IC45 : A-4	TR5 : E-1		
IC6 : F-1	IC16 : F-3	IC26 : E-1	IC36 : E-2		TR14 : D-4		
IC7 : F-1	IC17 : F-3	IC27 : E-1	IC37 : A-3		TR15 : E-4		
IC8 : F-2	IC18 : F-4	IC28 : A-1	IC38 : C-3				
IC9 : F-2	IC19 : F-4	IC29 : C-1	IC39 : E-3				
IC10 : F-2	IC20 : E-4	IC30 : E-1	IC40 : E-4				



AX73

05

IC1 M5218L

IC2 M5218L

IC4 MN3009

IC5 MN3101

IC7

IC6 1/2

IC6 2/2

IC8 MN3009

IC9 MN3101

IC11 M5218L

IC12 M5216L

IC13 M5218L

TR1 2SK381 (C,D)

TR2 2SK381 (C,D)

TR3 2SC3330 (T,U)

TR4 2SC3330 (T,U)

TR5 2SK381

TR6 2SA1317 (T,U)

TR7 2SC1317 (T,U)

TR8 2SK381 (C,D)

TR9 2SC3401

TR10 2SC3401

TR11 2SA1317 (T,U)

TR12 2SC3330 (T,U)

TR13 2SC3330 (T,U)

TR14 2SC3401

TR15 2SA1317 (T,U)

TR16 2SC3330 (T,U)

TR17 2SC3330 (T,U)

TR18 2SK381

D1 DS448

D2 DS448

D3 DS448

D4 DS448

D5 DS448

D6 DS448

D7 DS448

D8 DS448

D9 DS448

D10 DS448

RL1-1

RL1-2

RL1

VR1 22k BALANCE

VR2 22k BALANCE

VR3 10kB TUNE

TO VOICE PCB P5
UPPER
GND
LOWER

TO CPU PCB P9
IN SELEC
LFO 1,2
CHORUS ON/OFF

TO OPERATION PCB P2
SEND 1
GND
SEND 2
RETURN 1
GND
RETURN 2

TO VOICE PCB (1)

TO VOICE PCB (2)

STEREO
Lch
Rch

PHONES

TO POWER PCB P3
+15V
GND
-15V
RELAY

TO CPU PCB (P4)
V REF
TUNE
GND

CHORUS PCB L10138B5030

= B (POWER SUPPLY) LINE

= SIGNAL LINE

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

AX73 CHORUS SCHEMATIC DIAGRAM

NO.4-4 860741A(A2)

2SC3330
2SA1317
2SC3401

2SK381

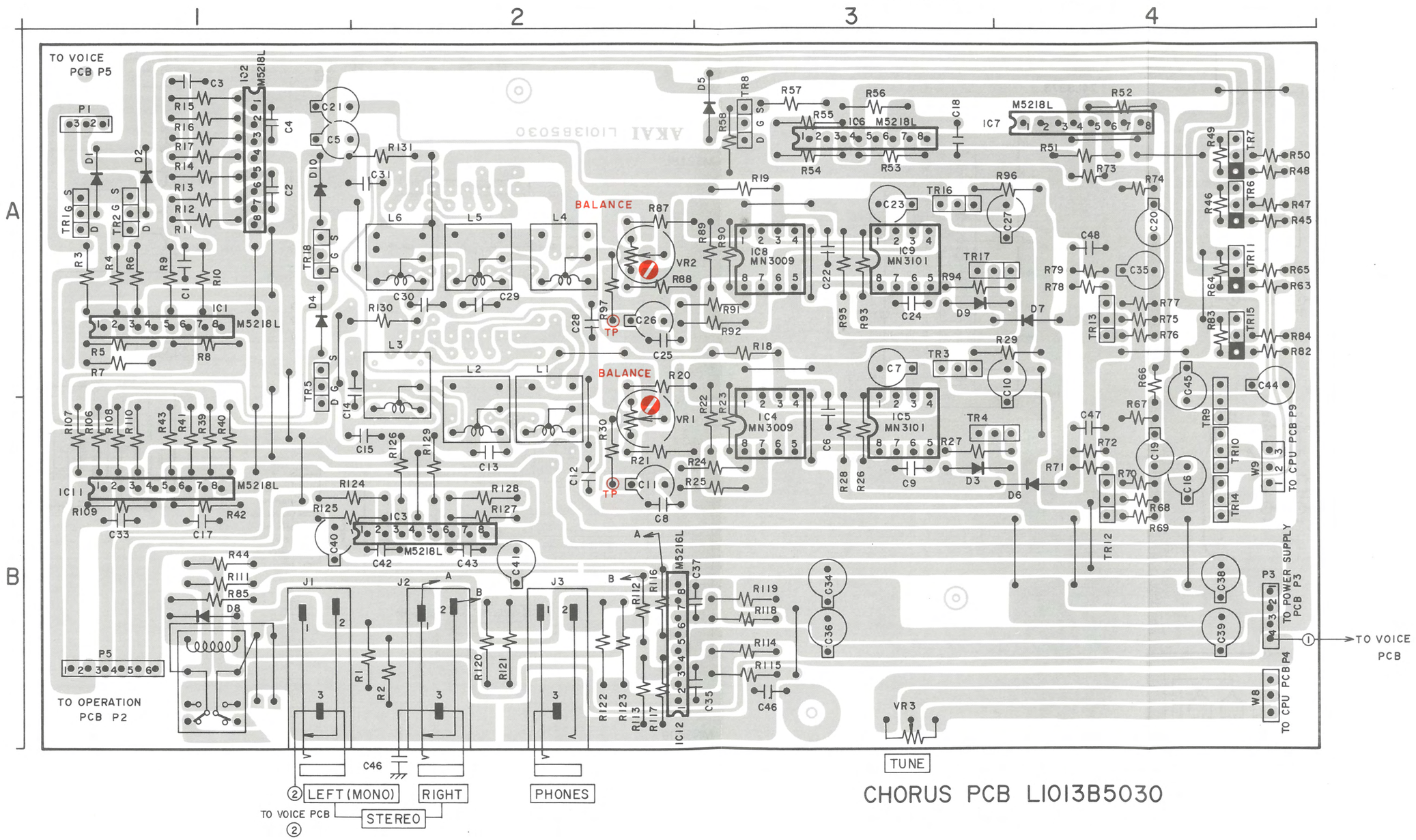
LOCATION OF COMPONENTS

IC's

IC1	A1
IC2	A1
IC4	B3
IC5	B3
IC6	A3
IC7	A4
IC8	A3
IC9	A3
IC11	B1
IC12	B2
IC13	B2

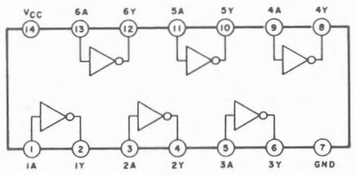
TR's

TR1	A1
TR2	A1
TR3	A3
TR4	B3,4
TR5	A,B1
TR6	A4
TR7	A4
TR8	A3
TR9	A,B4
TR10	B4
TR11	A4
TR12	B4
TR13	A4
TR14	B4
TR15	A4
TR16	A3
TR17	A3,4
TR18	A1

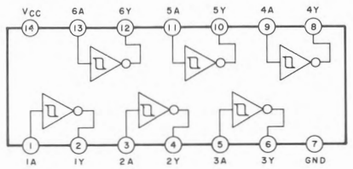


CHORUS PCB L1013B5030

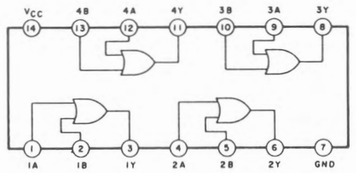
74LS04P
74LS05P



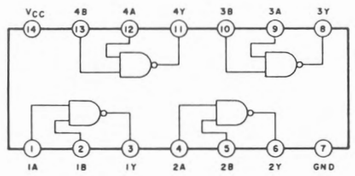
74LS14P



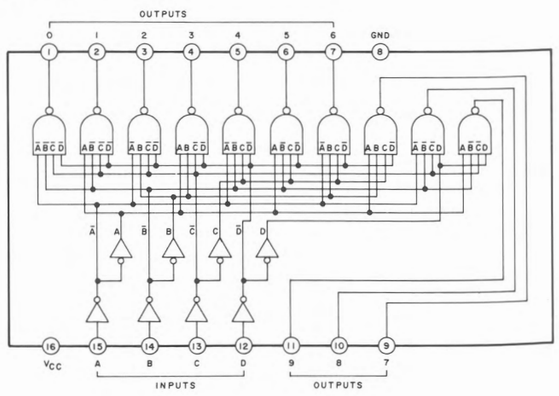
74LS32P



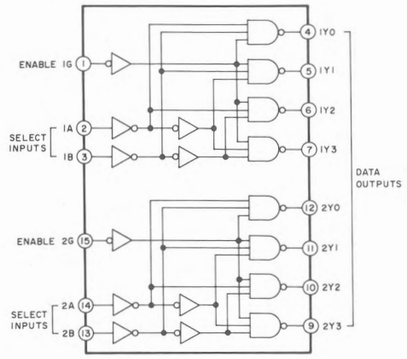
74LS38P



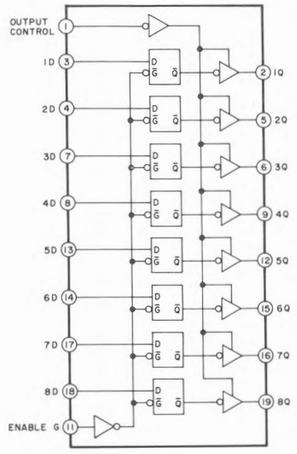
74LS42P



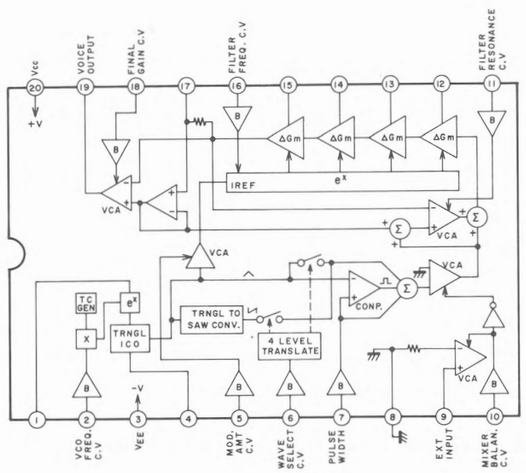
74LS139



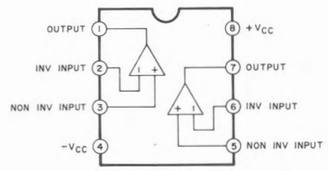
74LS373



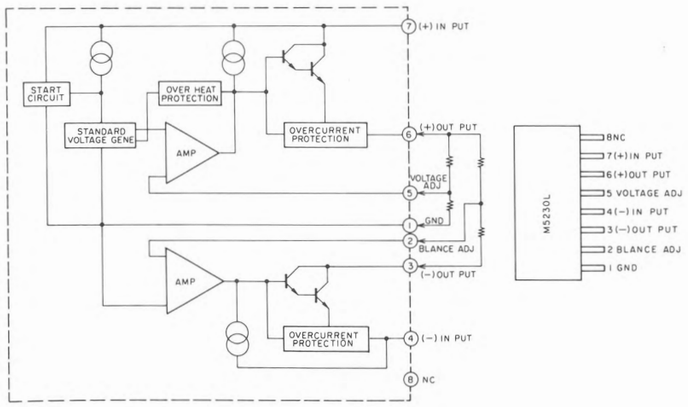
CEM3394



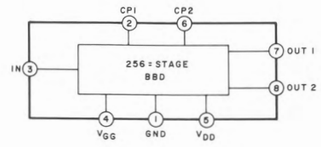
M5218L



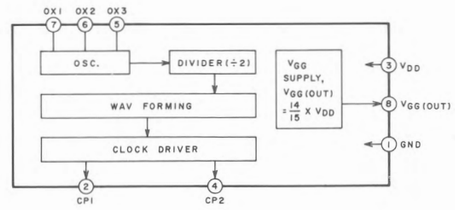
M5230L



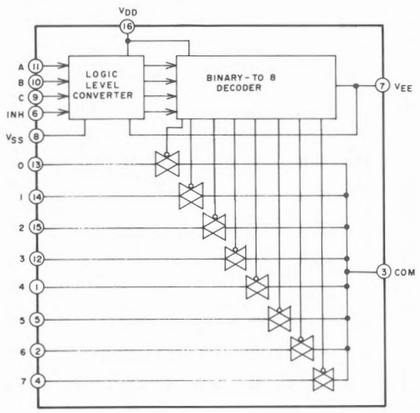
MN3009



MN3101



TC4051BP, CD4051BE



TC4066BP