

Ibanez

SERVICE MANUAL

MIDI GUITAR CONTROLLER MC1
MIDI GUITAR IMG2010 MANUAL No.077

## INDEX ##	SPECIFICATIONS	PAGE
	(NCI)-----	1
	ADJUSTMENT (NCI)-----	2
	TECHNICAL DATA INFORMATION (NCI/IMG)-----	2.3
	G-23 RLS (NCI/IMG)-----	4
	DISPOSITION OF PARTS (NCI)-----	5
	BLOCK DIAGRAM (NCI)-----	5
	PARTS LIST (NCI/IMG)-----	6.7.8
	ADJUSTMENT (IMG)-----	9
	SCHEMATIC DIAGRAM (IMG)-----	10
	PARTS ILLUSTRATION (IMG)-----	11
	P.C.B. (NCI/IMG)-----	12.13
	SCHEMATIC DIAGRAM (NCI)-----	14

SPECIFICATIONS ## (0dBV=775mV_{rms})

Frequency Response	20Hz ~ 20kHz	(-3.5dB/0dB) (-3.5dB/0dB) (-1.5dB/0dB)	SYNTH IN RETURN to MIX OUT RETURN to GUITAR OUT
Equiv. Input Noise	-91dBV (IRF-A) -90dBV (IRF-A)	(RETURN Shorted) (RETURN Shorted)	MIX OUT/SYNTH IN GUITAR OUT/SYNTH IN
Maximum Input Level	+7.5dBV	(1kHz THD=3%)	SYNTH IN, RETURN
Maximum Output Level	+6.5dBV	(1kHz THD=3%)	GUITAR OUT, MIX OUT
Input Impedance	25kohms 25kohms		SYNTH A.S EFFECT RETURN
Output Impedance	500ohms 500ohms 1kohms 500ohms 500ohms		EFFECT SEND GUITAR OUT MIX OUT (ATT.=0dB) MIX OUT (ATT.=15dB) MIX OUT (ATT.=30dB)
MIDI Program No. Channel	0-127 1-16		
Power Supply	11V 12V 13V 15V	(100V 50/60Hz) (120V 60Hz) (220V 50Hz) (240V 60Hz)	
Size	482x765x43(mm)	19.0x10.4x1.7(in)	
Weight	3.7(kg)	8.1(lbs)	

ADJUSTMENT

[A] GUITAR (V.C.A. OFFSET)

1.	Connection	SYNCHROSCOPE IMC1	to GUITAR OUT to MC1		
2.	Setting	MASTER BAL	CV max. CLV max.	IMC IMC	
3.	Switching	MODE SW	I, II, III	IMC	switching on all positions
4.	Adjustment	RT2	+/-0.2v		for minimum deviation

[B] SYNTH (V.C.A. OFFSET)

1.	Connection	SYNCHROSCOPE IMC1	to MIX OUT to MC1		
2.	Setting	MASTER, BAL LEVEL ATT.	CV max. 0dB	IMC IMC	
3.	Switching	MODE SW	I, II, III	IMC	switching on all positions
4.	Adjustment	RT1	+/-0.2v		for minimum deviation

TECHNICAL DATA INFORMATION

[A] POWER SUPPLY

1.	Connection	DIGITAL VOLT METER	to '+15'	'CHECK POINT'	
2.	Check		+15.0V	+/-0.5V	
3.	Connection	DIGITAL VOLT METER	to '-15'	'CHECK POINT'	
4.	Check		-15.0V	+/-0.5V	
5.	Connection	DIGITAL VOLT METER	to '+5'	'CHECK POINT'	
6.	Check		+5.0V	+/-0.5V	

[B] CLOCK

1.	Connection	FREQUENCY COUNTER	to '2Hz'	CHECK POINT	
2.	Check	FREQUENCY	2.000Hz	+0.002Hz, -0Hz	

[C] AD conv.

1.	Connection	DIGITAL VOLT METER	to 'Vref'	CHECK POINT	
2.	Check	AC VOLTAGE	+2.2V	+/-0.08V	

[D] BACKUP

1.	Connection	DIGITAL VOLT METER	to 'Vccdr'	CHECK POINT	
2.	Check	DC VOLTAGE	+6.0V +3.2V	+/-0.5V +/-0.1V	at POWER ON at POWER OFF

[E] SYNTH (FREQUENCY RESPONSE)

1.	Connection	SIGNAL GENERATOR LEVEL METER IMC1	to SYNTH A to MIX OUT to MC1	-20dBv	
2.	Setting	MASTER, BAL MODE SW	CV max. I or II	IMC IMC	
3.	Check	LEVEL ATT.	-20dBv -35dBv -50dBv	+/-1dB +/-1dB +/-1dB	at ATT.=0dB at ATT.=15dB at ATT.=30dB
4.	Connection	FREQUENCY RESPONSE SIGNAL GENERATOR	20Hz-20KHz to SYNTH B	+0dB, -3.5dB -20dBv	refer to SPECIFICATION
5.	Check				SAME AS ABOVE

[F] RETURN (FREQUENCY RESPONSE)

1.	Connection	SIGNAL GENERATOR LEVEL METER IMC1	to RETURN to MIX OUT to MC1	-20dBv	
2.	Setting	MASTER BAL MODE SW LEVEL ATT.	CV max. CCV max. I or III 0dB	IMC IMC IMC	
3.	Check	FREQUENCY RESPONSE	20Hz-20KHz	+0dB, -3.5dB	refer to SPECIFICATION

[G] XDRM (FREQUENCY RESPONSE)

1.	Connection	SIGNAL GENERATOR LEVEL METER IMC1	to pin18 to SEND to MC1	-20dBv	24pin CONNECTOR
2.	Setting	MASTER, TONE BAL MODE SW LEVEL ATT.	CV max. CCV max. I or III 0dB	IMC IMC IMC	
3.	Check	FREQUENCY RESPONSE	20Hz-20KHz	+0dB, -1.5dB	refer to SPECIFICATION
4.	Connection	LEVEL METER	to GUITAR OUT		
5.	Check	FREQUENCY RESPONSE	20Hz-20KHz	+0dB, -1.5dB	refer to SPECIFICATION

TECHNICAL DATA INFORMATION

[A] POWER SUPPLY

1. Connection	DIGITAL VOLT METER	to [D-11]		GND: [D-9][E-10][D-12][E-11]
2. Check		+15.0V		
3. Connection	DIGITAL VOLT METER	to [E-12]		GND: [D-9][E-10][D-12][E-11]
4. Check		-15.0V		

[B] HEX-PU

1. Connection	SIGNAL GENERATOR LEVEL METER	to 1,2,4,5,6,7 to [D-2] to [E-4] to [E-3] to [D-1] to [E-1] to [E-2]	CONNECTOR-A for #1 for #2 for #3 for #4 for #5 for #6	INC
2. Input	1KHz -50dBv	sinewave		
3. Check	AMP.GAIN	-34dB -20dBv	+/-1dB +/-1dB	at min. for SRI-B at max. for SRI-B

[C] Mono-PU

1. Setting	TONE	CV max.	INC	
2. Connection	SIGNAL GENERATOR LEVEL METER	to 4 to [E-5]	CONNECTOR-C	series with 10Kohm resistor
3. Input	600Hz -20dBv	sinewave		
4. Check	AMP.GAIN	-11dBv	+/-1dB	
5. Connection	LEVEL METER	to [C-1]		
6. Check	AMP.GAIN	-22dBv -75dBv	+/-1dB +/-1dB	at MASTER to CV max. at MASTER to CCV max.

[D] TONE

1. Setting	MASTER TONE	CV max. CCV max.	INC INC	
2. Connection	same as [C]			
3. Input	1KHz -20dBv	sinewave		
4. Check	AMP.GAIN	-21dBv	+/-1dB	

[E] MODE SV

1. Connection	DIGITAL VOLT METER	to [E-6]		
2. Check	DC voltage	0V +13.5V	+/-0.5V	MODE SV : II or III MODE SV : I
3. Connection	DIGITAL VOLT METER	to [D-3]		
4. Check	DC voltage	0V +13.5V	+/-0.5V	MODE SV : I or II MODE SV : III

[F] CONTROL VOLTAGE

1. Check	DC voltage [E-10]	0V 11.8V	+/-0.5V	at MASTER to CV max. at MASTER to CV max.
2. Check	DC voltage [D-8]	0V 14.0V	+/-0.5V	at SENS to CCV max. at SENS to CV max.
3. Check	DC voltage [E-7]	0V 14.0V	+/-0.5V	at VEL to CCV max. at VEL to CV max.
4. Check	DC voltage [E-8]	0V 14.0V	+/-0.5V	at CYL to CCV max. at CYL to CV max.
5. Check	DC voltage [D-8] (MASTER to CV max.)	11.8V 0V	+/-0.5V +/-0.5V	at BAL to CCV max. at BAL to CV max.
6. Check	DC voltage [E-9] (MASTER to CV max.)	0V 11.8V	+/-0.5V +/-0.5V	at BAL to CCV max. at BAL to CV max.
7. Check	DC voltage [D-5]	-12.5V +12.5V	+/-0.5V +/-0.5V	at PITCH BEND to LOW max. at PITCH BEND to HIGH max.

[G] PICK UP

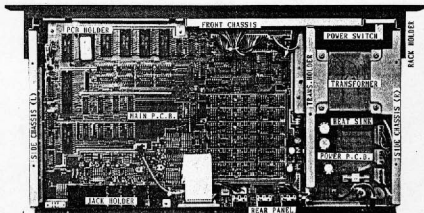
1. Connection	SYNCHROSCOPE	to 18		24pin CONNECTOR
2. Check	GUITAR SIGNAL (play)	max.10Vp-p		
3. Connection	SYNCHROSCOPE	to 19-24		23pin CONNECTOR
4. Check	GUITAR SIGNAL (play)	max.22Vp-p		

24p CONNECTOR	SYMBOL	12p(MCI) CONNECTOR	DIAGRAM	NAME	FUNCTION
No. 1	+15V	F-12	E-1	+15 Volts	Regulated +15V from the MCI.
2	-15V	F-11	F-2	-15 Volts	Regulated -15V from the MCI.
3	GND	E-11	E-3	GROUND	
4	GND	F-12	F-4	GROUND	
5	GND	F-10	F-5	GROUND	
6	GND	E-10	E-6	GROUND	
7	(UNUSED)	F-7	F-7	NC	
8	M VOL	F-9	F-8	MASTER VOLUME C.V.	C.V. from the MASTER VOLUME which controls the total VCA component of the MCI.
9	SYN VOL	E-9	E-8	SYNTHESIZER VOLUME C.V.	C.V. from the SYNTHESIZER VOLUME which controls the VCA component of the synthesizer.
10	GT VOL	F-8	F-10	GUITAR VOLUME C.V.	C.V. from the GUITAR VOLUME which controls the VCA component of the guitar.
11	CV 1	E-7	E-11	CONTROL VOLTAGE 1	Sensitivity C.V. for the MCI
12	CV 2	F-6	F-12	CONTROL VOLTAGE 2	Velocity C.V. for the MCI
13	CV 3	E-6	E-13	CONTROL VOLTAGE 3	Bend C.V. for the MCI
14	CV 4	E-8	E-14	CONTROL VOLTAGE 4	Control change C.V. for the MCI
15	SW 1	F-5	F-16	SW 1	Disable the synthesizer component of the MCI
16	SW 2	E-5	E-15	SW 2	Disable the guitar component of the MCI
17	(UNUSED)	F-4	F-17	NC	
18	GT SIG	F-3	F-18	GUITAR SIGNAL	Guitar signal from the normal pickups
19	SIG 1	E-3	E-19	SIGNAL #1	Divided signal of the 1st string from the divided pickup
20	SIG 2	E-4	E-20	SIGNAL #2	Divided signal of the 2nd string from the divided pickup
21	SIG 3	F-2	F-21	SIGNAL #3	Divided signal of the 3rd string from the divided pickup
22	SIG 4	E-2	E-22	SIGNAL #4	Divided signal of the 4th string from the divided pickup
23	SIG 5	E-1	E-23	SIGNAL #5	Divided signal of the 5th string from the divided pickup
24	SIG 6	F-1	F-24	SIGNAL #6	Divided signal of the 6th string from the divided pickup

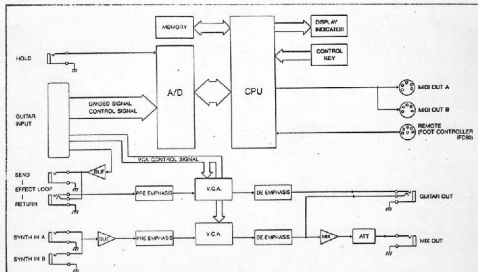
< note >

C.V. : Control Voltage

VCA : Voltage Controlled Amplifier



BLOCK DIAGRAM



#8 PARTS LIST #8		Mfr. pcn PARTS No.		REF.No.	REMARKS
MAIN P.C.B. (ANALOG PART)		1	PCB-MC-01010		R-1708/G-10 94HB
IC Op.Amp.	JRC	18	NJM0020	IC201-203,301-303,401-403, 501-503,601-603,701-703	
IC Op.Amp.	JRC	6	NJM05580	IC1-3,5-7	
IC V.C.A.	JRC	1	NJH130000	IC4	
DIGITAL TRANSISTOR	ROM	6	9TC113EP	0T1-6	
PT	TO	2	25C304(G)	Q1	
TRANSISTOR	TO	2	25C015(CR)	Q2,3	
DIODE	TO	13	1S1588	01-7,201,301,401,501,601,701	
2WENNER DIODE	NEC	6	805,128	0202,302,402,502,602,702	
CONNECTOR (M)	MOL	1	5207-74	4	7p
CONNECTOR (M)	MOL	2	5207-12A	6,7	12p
JACK	HO	3	HL0520-01-010	14,8,10	STEREO
JACK	HO	3	HL0520-01-110	15,6,7	CLOSED
JACK	HO	1	HL0305-01-010	10	
SNAP PLATE	HO	4	HL0989-01-180		for JACK
SLIDE SWITCH	ALP	1	SSSV12	SV1	
BUST COVER		1	NSP-INC-0101A		for SV1
SEMI FIXED R.	NRP	2	CYS44A00B19	RT1,2	IK
(DIGITAL PART)					
IC CPU	CHOS	NEC	1	μP07000RC	IC101
IC P-ROM	NEC	1	μP0272580	IC102	
IC RAM	CHOS	NEC	1	μP0108C-2	IC103
IC USART	CHOS	NEC	1	μP071051C	IC104
IC COUNTER	CHOS	NEC	4	μP071054C	IC105-109
IC AD CONV.	NS	1	ADC08D4LCN	IC106	18bit
IC P.F.	CHOS	TI	7	74HC74N	IC110,124-129
IC COUNTER	CHOS	TI	2	74HC393N	IC111,112
IC DECODER	CHOS	TI	3	74HC138N	IC113,114,134
IC OR	CHOS	TI	2	74HC32N	IC115,116
IC NAND	CHOS	TI	2	74HC00N	IC117,120
IC DATA SEL.	CHOS	TI	2	74HC251N	IC118,119
IC NAND	CHOS	TI	1	74HC30N	IC120
IC MULTIPLEX	CHOS	TO	2	TC40518P	IC121,122
IC F.F.	CHOS	TI	1	74HC174N	IC123
IC V.F.	TI	3	74V374N	IC124-132	HI-SPEED
IC DRIVER	CHOS	TI	1	74HC244N	IC133
IC INV.	CHOS	TI	1	74HC100N	IC135
IC INV.	TI	1	74V50N	IC137	HI-SPEED
IC BUFFER	CHOS	TO	3	TC40508P	IC138-140
IC INV.	CHOS	TI	1	74HC13N	IC141
IC RESET	MIT	1	FST5188	IC142	HI-SPEED
IC Op.Amp.	JRC	1	NJM0820	IC133	
PHOTO COUPLER	SHA	1	PT010	PT1	
DIGITAL TRANSISTOR	ROM	1	0TA143EF	Q101	
TRANSISTOR	TO	2	25C1815CR	Q102,103	
TRANSISTOR	ROM	2	25A8010	Q104,105	
TRANSISTOR	TO	9	25A10156R	Q106-114	
IC SOCKET	NRD	1	01152RP-7J	(IC102)	28p
BATTERY	FD	1	CR-2025-F		3.2V
DIODE	UN2	1	1K00	Q101	
DIODE	TO	1	1S1588	Q102-107	
CRYSTAL	KSS	1	BC-152U-A-RHT	XTAL	
CONNECTOR (M)	MOL	1	5207-10A	B	RHEX
CONNECTOR (M)	MOL	1	5207-13A	C	10p
CONNECTOR (M)	MOL	1	5207-12A	D	13p
CONNECTOR (M)	MOL	2	5207-05A	C,H	12p
CONNECTOR (F)	MOL	1	CNT-INC-0105A	C,H	5p
DIM CONNECTOR	HO	2	TCSS350-01-1011	J1,2	5p M101
DIM CONNECTOR	HO	1	TCSS350-01-1011	J3	8p REMOTE
IC REG.	PC	1	uA7805	IC144	
IC REG.	PC	1	uA7815	IC145	
IC REG.	PC	1	uA7815	IC146	
LED P.C.B.		1	PCB-DUE-0104C		ELC-4708/G-10 94HB
LED TSDIODES	SHA	8	GL-9P03B	SEC1-8	RED
LED	SHA	4	GL-9PR4	LED2,5,6,7	RED
LED	SHA	1	GL-9PG4	LED4	GREEN
CONNECTOR (M)	MOL	1	CNT-INC-0105A	C	13p
CONNECTOR (M)	MOL	1	CNT-INC-0104A	D	12p
KEYBOARD P.C.B.		1	PCB-DUE-0105C		ELC-4758/FR-4 94V-0
CONNECTOR (M)	MOL	1	CNT-INC-0101A	B	10p
24 PIN P.C.B.		1	PCB-ING-0102A		MCL-E-61/G-10 94HB
24 PIN CONNECTOR	TAI	1	SLC-1201-2125F		25p
CONNECTOR (F)	MOL	2	CNT-INC-0101A	E,F	12p

PARTS LIST

PARTS NAME	Mkr.	part	PARTS No.	REF.No.	REMARKS
AC CORD	ON	1	FP075/0.75VVF	TYPE H	JAPAN 100V
AC CORD	KDK	1	KP11/SJ1182C	TYPE H	U.S.A. 120V
AC CORD	KDK	1	KP50/SJ1182C	TYPE T	CANADA 120V
AC CORD	SND	1	SP504/405VVF	TYPE Q	SWITZERLAND 220V
AC CORD	SND	1	SP508/CE930.75	TYPE R	U.K. 240V
AC CORD	KDK	1	KP550/1.TSA3	TYPE S	AUSTRALIA 240V
AC CORD	SND	1	SP503/405VVF	TYPE U	OTHER EUROPE 220V
AC CORD BUSHING	KIT	1	RF41	TYPE M	
AC CORD BUSHING	HVC	1	SR-SM-4	TYPE N.T.O.R.S.U	
TRANSFORMER	SD	1	PTA-BUF-0101A	TYPE H	
TRANSFORMER	SD	1	PTA-BUF-0102A	TYPE N.T	
TRANSFORMER	SD	1	PTA-BUF-0103E	TYPE Q.U	
TRANSFORMER	SD	1	PTA-BUF-0104A	TYPE R.S	
FUSE (pri.)	NGS	1	ES2-1100MA-0.5A	TYPE H	F1
FUSE (pri.)	NGS	1	ULCS-61ML-0.5	TYPE N.T	F1
FUSE (sec.)	NGS	1	ES2-0500	TYPE Q.R.S.U	F1
FUSE (sec.)	NGS	1	ES2-1000	TYPE S.R.S.U	F2
FUSE (sec.)	NGS	2	ES2-0500	TYPE S.R.S.U	F3,4
POWER SWITCH	MA	1	ES08213V (M-3-1)		
SPARK KILLER	MUR	2	BE1107F1032AC250V	TYPE H	CL5
SPARK KILLER	MUR	2	BE1150F100PVA1	TYPE N.T.O.R.S.U	CL5

FRONT PANEL		1	FFH-PC-0101A		
KEY RUBBER		1	KED-INC-0101A		
POWER SWITCH		1	SHR-1S		
FRONT CHASSIS		1	CWA-APP-01010		
SIDE CHASSIS (R)		1	MS-0P0701		
SIDE CHASSIS (L)		1	MS-0P0703		
PCB HOLDER		1	HLD-INC-0101A		
JACK HOLDER		1	HLD-INC-0102A		
TRANS HOLDER		1	MS-0P0705		
REAR PANEL		1	FFH-PC-0101A		
HEAT SINK		1	HSM-INC-0101A		
TOP COVER		1	MS-0P0700		
BOTTOM COVER		1	MS-0P0707		
RACK HOLDER		2	MS-0P0700		
RUBBER LEG		4	18120410101		
INSULATOR PLATE		1	IMS-0UC-0101A		

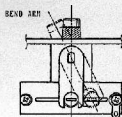
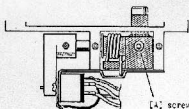
POWER P.C.B.		1	PCB-0UC-0100A		R-0731/PR-XFC 84V-6
DIGIT BRIDGE	UNZ	2	SV415-200	01.2	
CONNECTOR (F)	KAT	1	CNT-INC-0102A	A	7p
CONNECTOR (H)	MDL	2	527T-03A	P.SV.,TRANS.(pri.)	3p
CONNECTOR (H)	MDL	1	527T-05A	TRANS.(sec.)	5p
CONNECTOR (F)	KAT	1	5195-03	P.SV.	3p

PARTS LIST (INC)

PARTS NAME	Mkr.	part	PARTS No.	REF.No.	REMARKS
MAIN P.C.B.		1	PCB-INC-0101B		ELC-470R/G-10 940R
24PIN P.C.B.		1	PCB-INC-0102A		ELC-470R/G-10 940R
IC Op.Amp.	NI	6	MS218L	IC1-6	
VARIABLE R.	MA	1	FWK79A302103	VR1	8500K/850K
VARIABLE R.	MA	3	FVH9LA318854	VR2-4	850K
VARIABLE R.	MA	1	FVH9LA318055	VR5	9500K
VARIABLE R.	MA	1	FWK79A302854	VR6	2850K
SEMI FIXED R.	MA	6	FVN1AC400854	SR1-6	50K
SWITCH	NEO	1	FTK43	SW1	
CONNECTOR (F)	MDL	1	HBL8TS-1J	A	7p
CONNECTOR (H)	MDL	2	528T-3A	H,C	4p
CONNECTOR (H)	MDL	2	520T-12A	D,E	12p
CONNECTOR (F)	MDL	2	CNT-INC-0101A	D,E	12p
CONNECTOR (H)	YAJ	1	SLC-1204-2124H		24p
HEX PICKUP		1	HPJ-INC-2010		
VARIABLE R.		1	M1000R6231	for BEND ARM	B100K
CONNECTOR		1	CAT-SV1	for VARIABLE R.	
CONNECTOR		1	CAT-NH1	for NORMAL PICKUP	

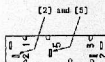
1# PARTS LIST (ING) #1

PARTS NAME	pcs	PARTS No.	REF.No.	REMARKS
(BRIDGE & PICK UP)				
Bridge Base	1	YM-01		Black
Saddle	6	YM-02		Black
Saddle High Adjust Bolt	12	YM-03		Black 4x5
Saddle Tighten Bolt	2	YM-04		Black 4x12
Arm	1	YM-05		Black
Torque Bush	2	YM-06		Nylon
HEX Pick Up	1	YM-07	MPU-ING-2010	
High Adjust Screw	2	YM-08		Black 3x16
Spring	2	YM-09		Nickel 3.2x11
Bolt for Bearing	2	YM-10		Black 3x4
Screw for Base	2	YM-11		3.5x16
Humbucking Pick Up	2	YM-12		w/Screw & Spring
(TAILPIECE)				
Tailpiece Base	1	YM-15		Black
Tailpiece Cover	1	YM-16		Black
Tuning Knob	6	YM-17		Black
Nylon Washer	8	YM-18		
Washer	8	YM-19		Black
String Holder	8	YM-20		Black
Spring	8	YM-21		
Roller	8	YM-22		Black
Pin A	2	YM-23		Stainless Both Side
Pin B	1	YM-24		Stainless Center
E-Washer	4	YM-25		
Screw for Cover	3	YM-26		Black 2.6x8
Screw for Base	4	YM-27		Black 3.5x25
(ARM HOLDER)				
Arm Holder	1	YM-28		Black
Bender Pin	1	YM-29		Stainless
Lever	1	YM-30		
Bracket	1	YM-31		
Bender Spring	1	YM-32		
Washer	1	YM-33		
Ball Bearing	2	YM-34		01a12x4x1
Bush	1	YM-35		
Bolt for Lever	1	YM-36		3x4
Bolt for Bender Pin	1	YM-37		Black 4x5
Screw for Bracket	4	YM-38		3x5
Variable Resistor	1	YM-39	HIDCKB8231	B100K
Screw for Variable R.	2	YM-40		2.6x4
Toothed Washer	1	YM-41		
(STRING LOCK)				
String Lock Base	1	YM-42		Black
Base Plate	1	YM-43		
Pressure Pad	6	YM-44		
Bolt	6	YM-45		Black 5x6 P=0.5
Screw for Base Plate	5	YM-46		3x8
Screw for Lock Base	4	YM-47		Black 3x20
(OTHERS)				
Dead End	2	YM-51	YE600BK	Black w/Screw & Plate
Back Plate	1	YM-52		Black
Screw for Back Plate	7	YM-53		Black 3x12
Large Control Knob	3	YM-54		Black
Medium Control Knob	3	YM-55		Black
Joint Plate	1	YM-57	YE670BK	Black w/Screw & Plate
Rubber Cap	1	YM-58		
5mm Vrench	1	YM-59		
25mm Vrench	1	YM-60		
2mm Vrench	1	YM-61		
(ELECTRONICS)				
Normal Jack	1	YM-62	YE242	w/Hut & Washer
24pin Cable	1	YM-63		5m
24pin Cable	1	YM-64		10m (Option)
3-Way Toggle Switch	1	YM-65	YE232-271BK	AFT-2881-PR, SV500

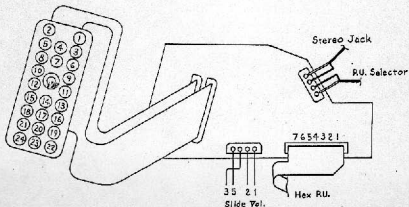


ADJUSTMENT (1MG VARIABLE RESISTOR FOR PITCH BEND)

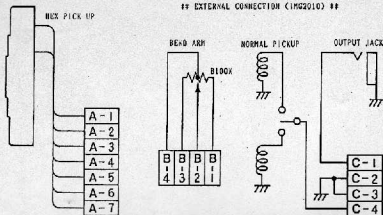
1. Remove [A] screw.
2. Contact the OHM METER PROBES to [2] and [5].
3. Set the resistor knob for just zero ohm of it's center. The zero ohm center keeps approx. 2mc.
4. Set the BEND ARM for it's center. Then tighten the [A] screw.

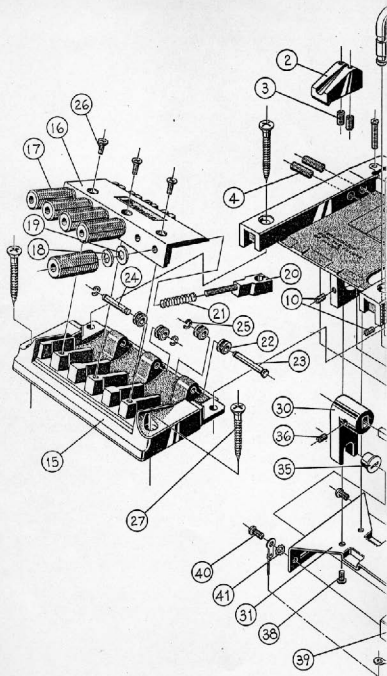


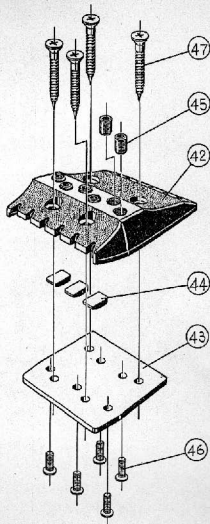
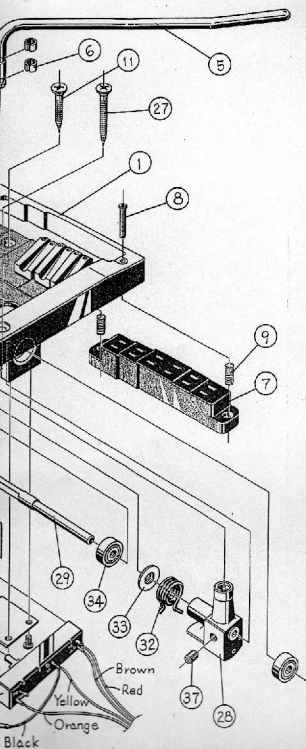
VARIABLE RESISTOR



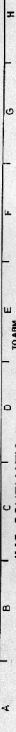
EXTERNAL CONNECTION (1MG2010)







A B C D E F G H



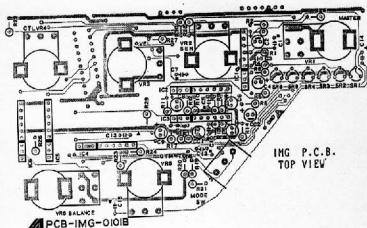
IC, SW List
IC1-8---M521BL
SW1 ---FTE43

12345678
A M521BL

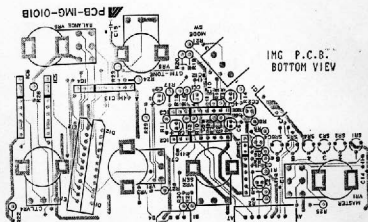
A : CERAMIC capacitor. All ceramic capacitors are above 25V rating.
M : FILM capacitor. All film capacitors are above 50V rating.
NP : NON POLAR capacitor.
T : TANTALUM capacitor.
And all capacitor are ELECTROLYTIC capacitors, unless otherwise marked.

The user's rating and/or schematic diagram will be changed without notice.

Resistance in Ω , K = K Ω , M = M Ω Resistors, 1/4W or 1/8W $\pm 5\%$ rating.



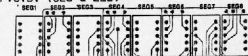
IMG P.C.B.
TOP VIEW



IMG P.C.B.
BOTTOM VIEW

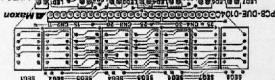
P.C.B.

P.C.B. (SEG & LED)

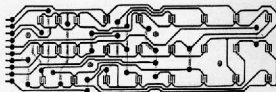


(TOP VIEW)

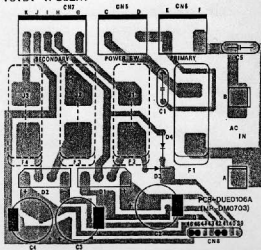
(BOTTOM VIEW)

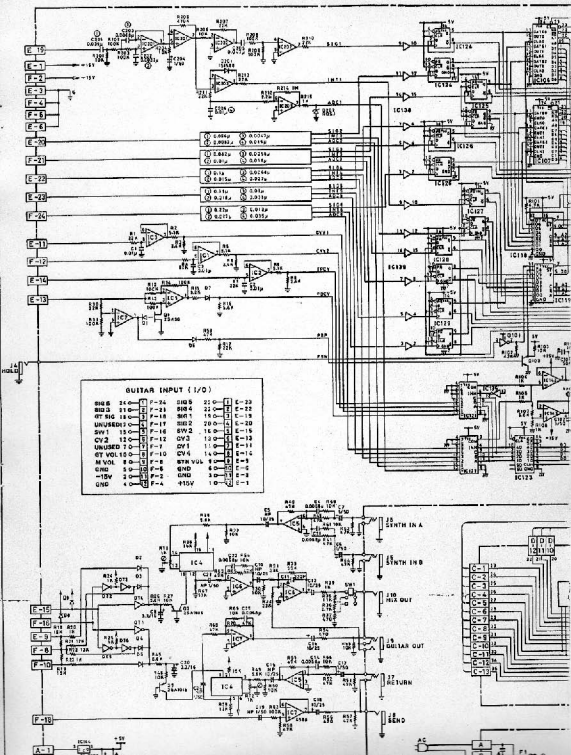


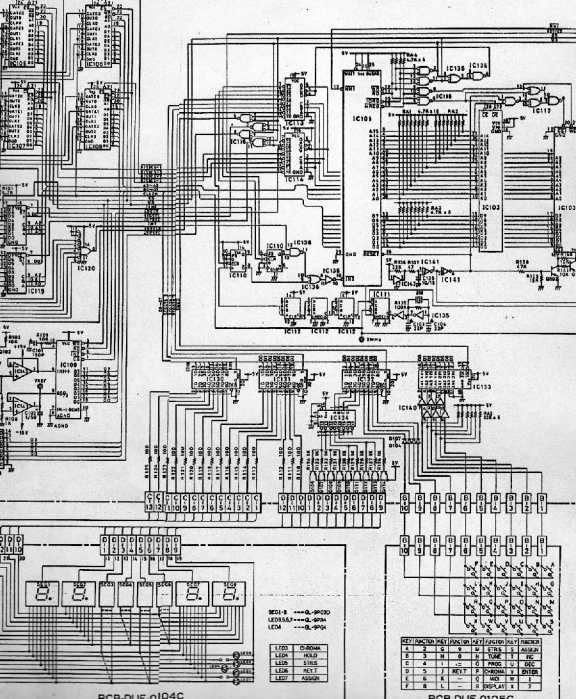
P.C.B. (KEYBOARD)

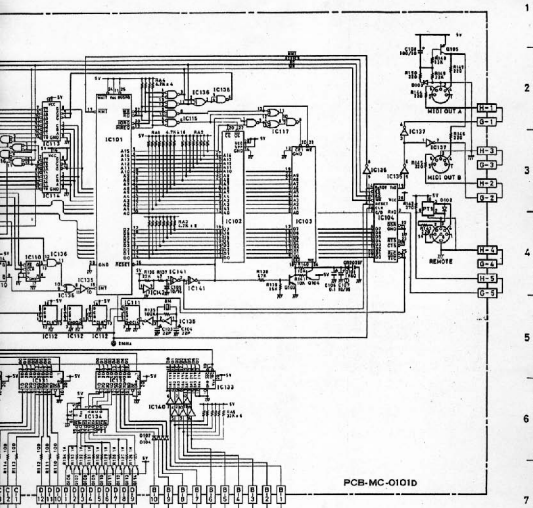


P.C.B. (POWER)

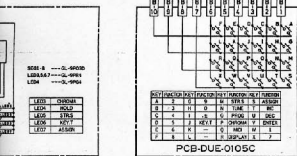








PCB-MC-0101D



PCB-DUE-0105C

IC, Q, PT, D, L, M	
IC1-3, 5-7	84445500
IC4	844136000
IC101	WFO70008C
IC102	WFO725960
IC103	WFO7445 C 2
IC104	WFO710510
IC106-108	WFO71054C
IC109	AC00040H
IC110, IC124-129	74HC74
IC111-112	74HC39
IC113-114, IC184	74HC138
IC115-116	74HC32
IC117	74HC00
IC118-119	74HC253
IC120	74HC30
IC121-122	4051
IC123	74HC174
IC124-125	74LS167
IC126	74LS164
IC127	74LS165
IC128	74LS166
IC129	74LS167
IC130-140	4050
IC141	74HC14
IC142	PS75088
IC143	74LS168
IC144	74LS169
IC145	74LS170
IC146	74LS171
IC201-203, 301-303	74LS172
IC401-403, 501-503	74LS173

1
2
3
4
5
6
7
8
9

PCB- MC-0101B

MC1 P.C.B.
BOTTOM VIEW

