

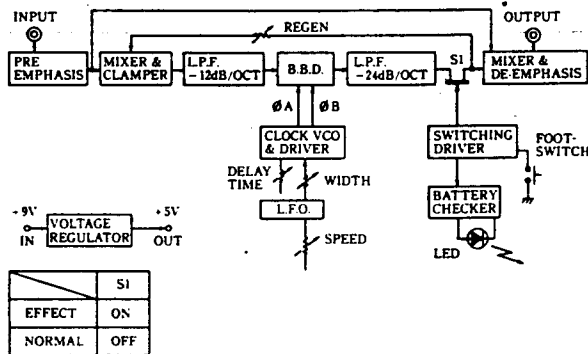
Ibanez FL9

Flanger

Service Manual NO. 002



★ BLOCK DIAGRAMS



★ ADJUSTMENT PROCEDURES

CLOCK

1. Set SPEED, REGEN, WIDTH & DELAY TIME controls fully CCW.
2. Connect the SYNCHROSCOPE & the FREQUENCY COUNTER at marked CPI
3. Adjust VR101 for a frequency of 40KHz.
4. Set DELAY TIME control fully CW and check frequency for about 500KHz ~ 600KHz.
5. Set WIDTH control fully CW and check clock frequency to be sweep from 40KHz to about 500KHz ~ 600KHz.

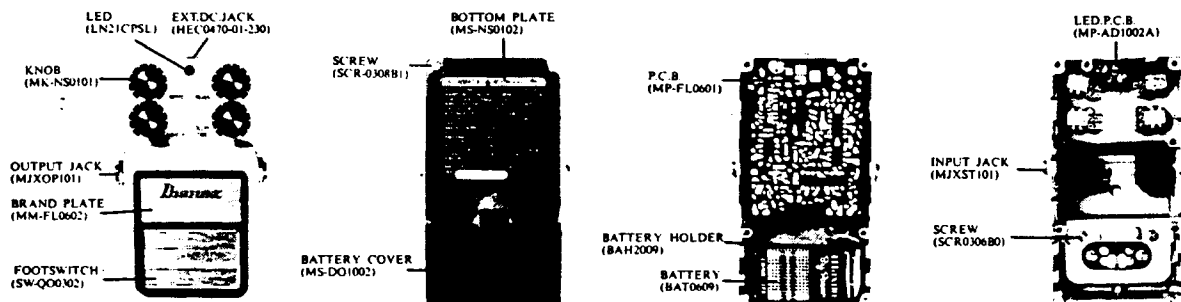
BIAS

1. Set REGEN & WIDTH controls fully CCW.
2. Put +5dBm ~ +10dBm (2.5V) 400Hz sinewave into INPUT.
3. Touch the probe of the SYNCHROSCOPE on the head of C115 and adjust VR102 for the clipped wave to be symmetrical.

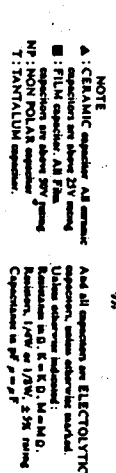
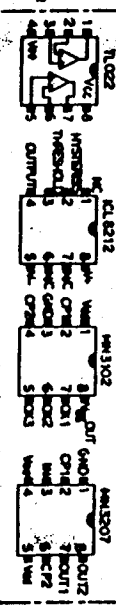
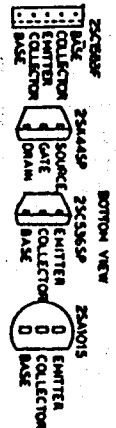
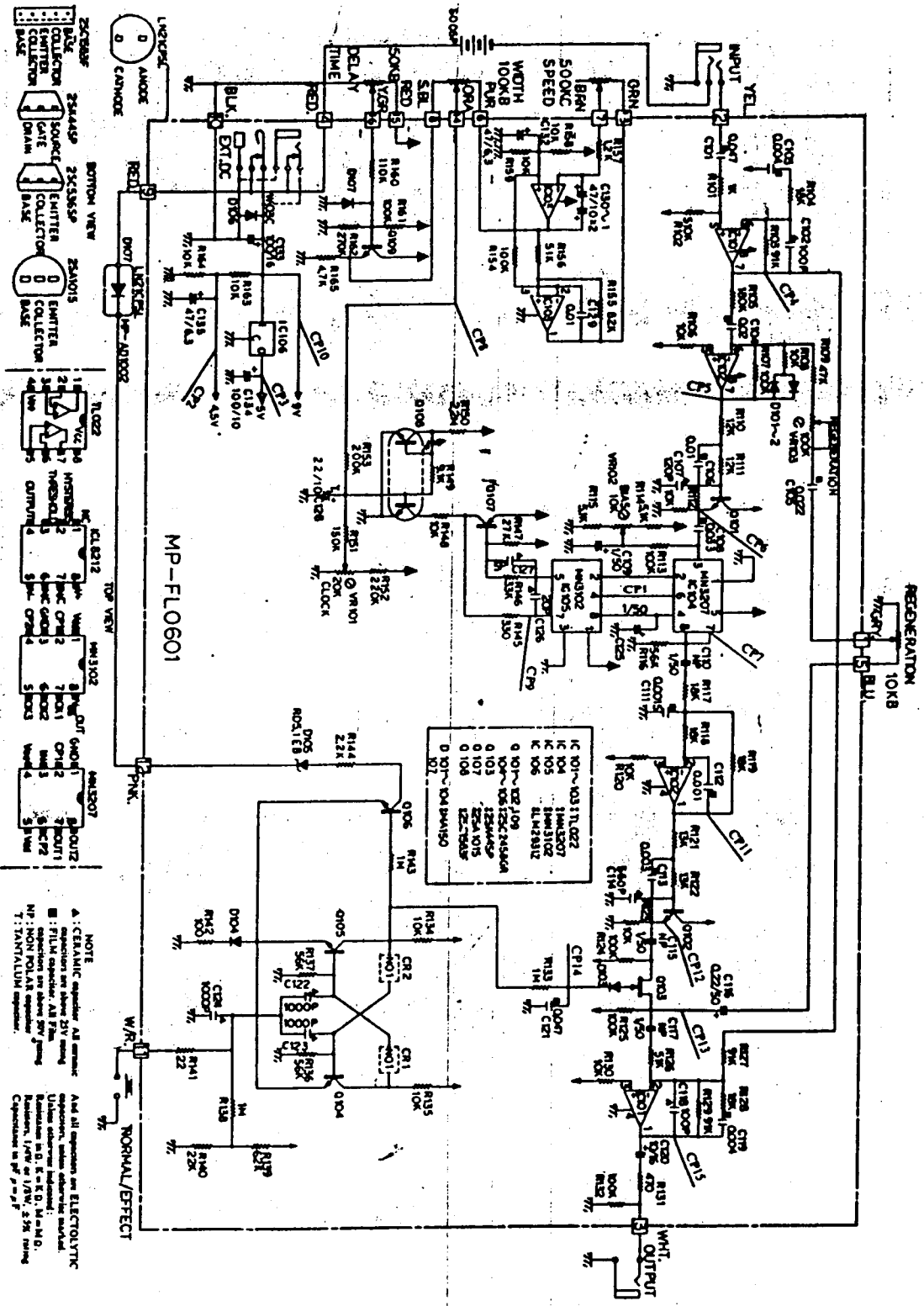
REGEN

1. Set SPEED, REGEN & WIDTH controls fully CW.
2. Connect the SYNCHROSCOPE to OUTPUT with no input signal.
3. Adjust VR103 for an oscillating position and remove VR103 slowly about 10 degrees not to be oscillate.

★ DISPOSITION OF PARTS



★ SCHEMATIC DIAGRAMS



NOTE

- ▲: CERAMIC capacitor. All ceramic capacitors are shown 50V rating.
- : FILM capacitor. All film capacitors are shown 50V rating.
- MP: NON POLAR capacitor.
- T: TANTALUM capacitor.

And all capacitors are ELECTROLYTIC capacitors, unless otherwise indicated.

Resistor values: R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28.

Capacitor values: C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15.

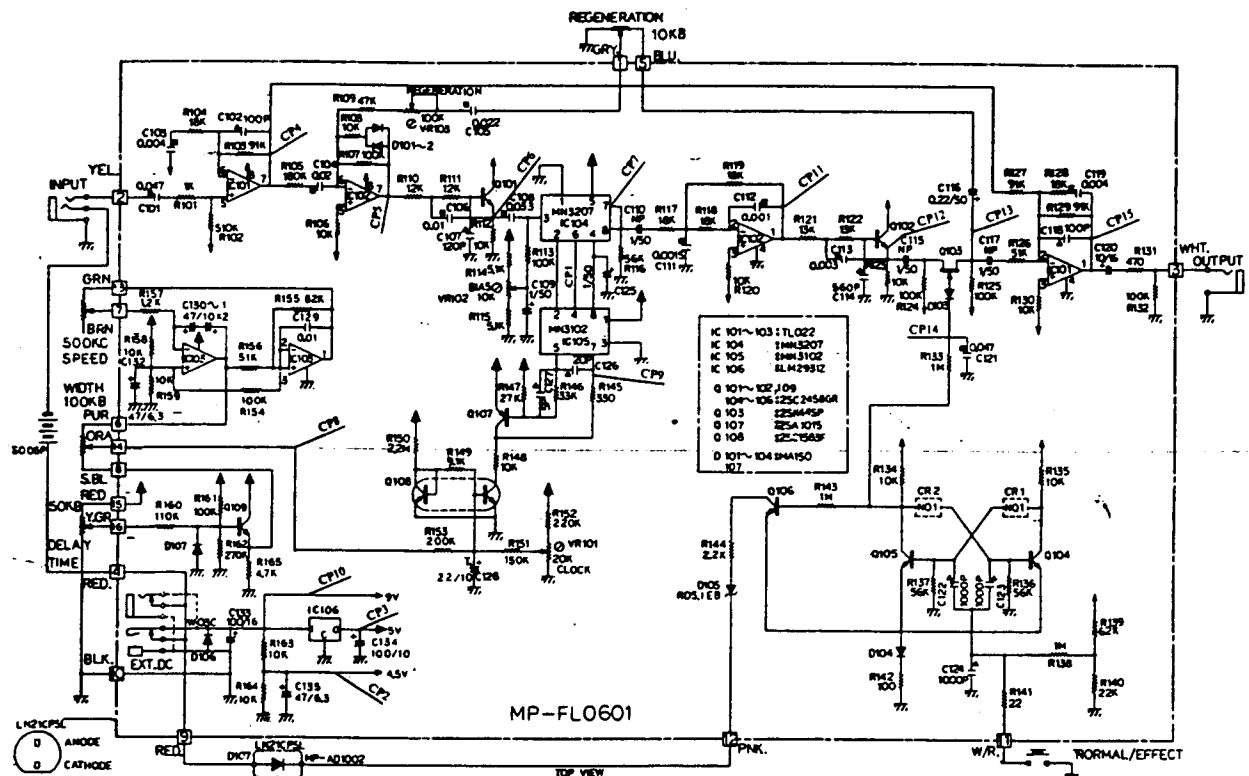
FL9

FL9

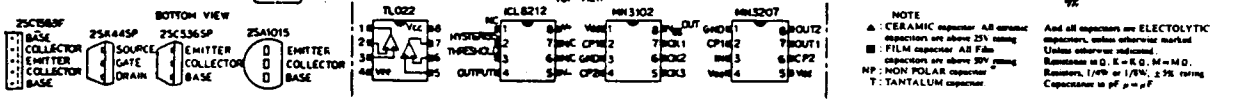
★ SCHEMATIC DIAGRAMS

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MP-FL0601

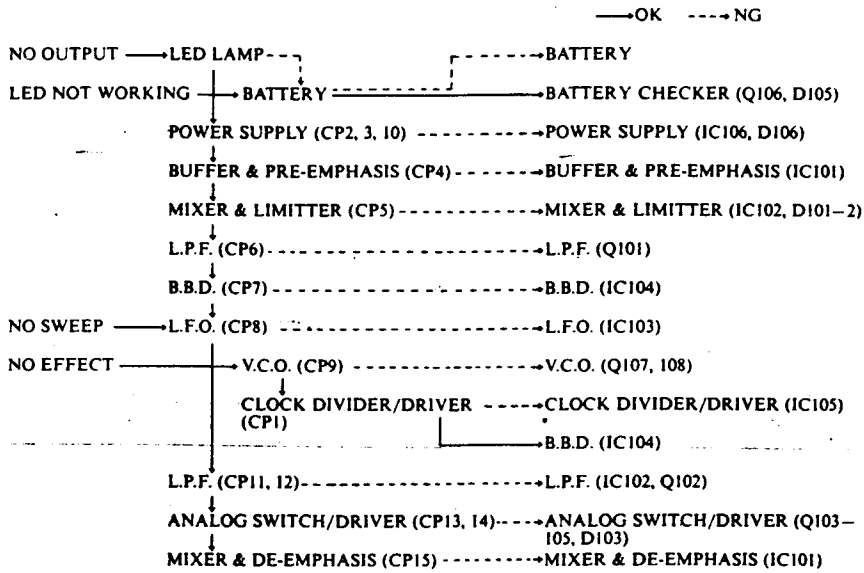


NOTE

- ▲: CERAMIC capacitor All ceramic capacitors are above 25V rating
- : FILM capacitor All Film capacitors are above 50V rating
- NP: NON POLAR capacitor
- T: TANTALUM capacitor

And all capacitors are ELECTROLYTIC capacitors, unless otherwise marked. Unless otherwise indicated, Resistor in Ω, K = K Ω, M = M Ω, Standard: 1/4W or 1/8W, ± 5% rating Capacitor in pF, μF

★ TROUBLE SHOOTING



REMARK: SIGNAL OF CP IS THE WAVE INPUTTING A SINE WAVE SIGNAL TO INPUT.

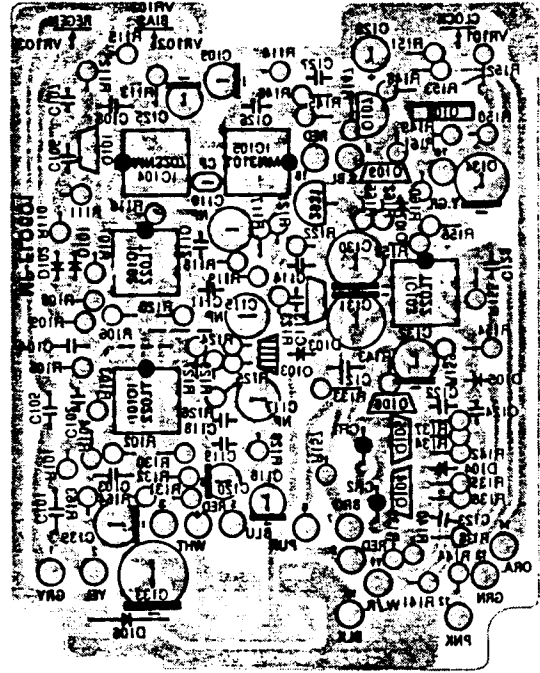
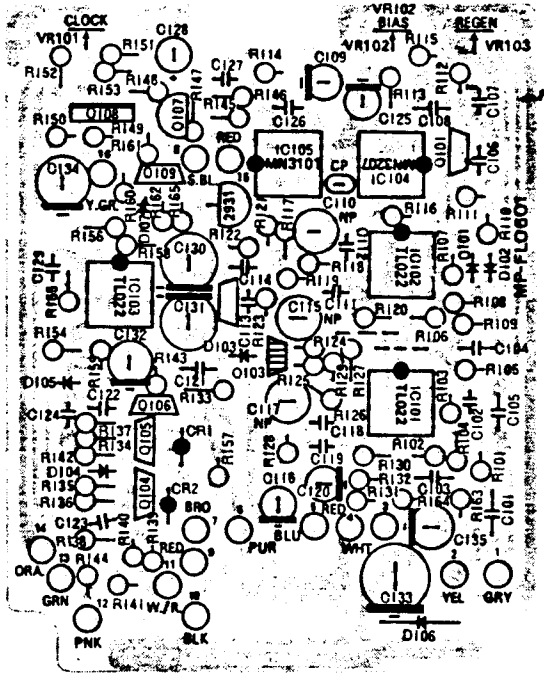
V - VOLTAGE
S - SIGNAL

CP1	CP2	CP3	CP4	CP5	CP6	CP7	CP8	CP9	CP10	CP11	CP12,13	CP14	CP15
S	V	V	S	S	S	S	S	S	V	S	S	V	S
	4.5	5							9			EFFECT: 8, NORMAL: 0.5	

★ P.C.B.

(TOP VIEW)

(BOTTOM VIEW)



★ PARTS LIST

PARTS NAME	TYPE	PARTS NO.	REF. NO.
CASE BODY		MS-FL0101	
BOTTOM PLATE		MS-NS0102	
BOTTOM RUBBER		BR-DO1003A	
BATTERY COVER		MS-DO1002	
BATTERY RUBBER		BR-DO1004A	
P.C.B.		MP-FL0601	
FOOTSWITCH	Q-1	SW-Q00302	
INPUT JACK	MOLD STEREO	MJXST101	
OUTPUT JACK	MOLD OPEN	MJXOP101	
EXT. DC. JACK		HEC0470-01-230	
KNOB	15.5φ mm	MK-NS0101	
BRAND PLATE		MM-FL0602	
BATTERY	006P 9V	BAT0609	
BATTERY HOLDER	200	BAH2009	
SCREW	3×8 mm BI	SCR-0308BI	
SCREW	3×6 mm BO	SCR-0306BO	
SCREW	3×6 mm BI	SCR-0306BI	
LED	LN21CPSL	LN21CPSL	
LED. P.C.B.		MP-AD1002A	
IC	MN3207	MN3207	IC104
IC	MN3102	MN3102	IC105
IC	TL022CP	TL022CP	IC101-103
IC	LM2931Z	LM2931Z	IC106
TRANSISTOR	2SC2458GR/BL	2SC2458GR/BL	Q101, 102, 109 Q104 - 106
TRANSISTOR	2SA1048Y/GR	2SA1048Y/GR	Q107
FET	2SK44SPC	2SK44SPC	Q103
DIODE	RD5.1EB	RD5.1EB	D105
DIODE	W03C	W03C	D106
DIODE	MA150	MA150	D101 - 104, 107
VARIABLE RESISTOR	12φ 10KB	EVJJOA313B14	REGENERATION
VARIABLE RESISTOR	12φ 50KB	EVJJOA313B54	D-TIME
VARIABLE RESISTOR	12φ 100KB	EVJJOA313B15	WIDTH
VARIABLE RESISTOR	12φ 500KC	EVJJOA313C55	SPEED
SEMI FIXED RESISTOR	10K 3P	EVN-KOA103P3	VR102
SEMI FIXED RESISTOR	20K 3P	EVN-KOA203P3	VR101
SEMI FIXED RESISTOR	100K 3P	EVN-KOA104P3	VR103
TRANSISTOR	2SC1583F	2SC1583F	Q108

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