

# Ibanez

## SERVICE MANUAL

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 \* POWERTRIO PT3 MANUAL No.140 \*  
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\*\* SPECIFICATIONS \*\* (0dBv=775mVrms)

INPUT IMPEDANCE	500Kohms	
OUTPUT IMPEDANCE	10Kohms	
MAXIMUM INPUT LEVEL	+4dBv	
MAXIMUM OUTPUT LEVEL	+4dBv	
MAXIMUM PHONES LEVEL	45mW x2, 32ohms	
BANDWIDTH (+1/-3dB)	20Hz-20KHz	
T.H.D. (1KHz, -20dBv)	< 0.1%	
EQUIVALENT INPUT NOISE (IHF-A, INPUT SHORTED)	< -100dBv	
DELAY TIME	1: 16msec-64msec 2: 64msec-256msec 3: 256msec-1024msec	DELAY
SWEEP SPEED	0.6Hz-6Hz	CHORUS
DELAY TIME	5.3-7.3msec.	
POWER REQUIREMENT (DC9V)	165mA max.	
SIZE (WxHxD) (mm)	266x39x178	
WEIGHT	820gms	

## \*\* ADJUSTMENT \*\*

## [A] DELAY-CLOCK

1. Setting	D-TIME, D-LEVEL REPEAT D-RANGE	CW max. CCW max. 16-64ms	
2. Connection	FREQUENCY COUNTER	to CP4	
3. Adjustment	SR4	for 256KHz	+/-1KHz
4. Resetting	D-TIME	CCW max.	
5. Check		for 1095KHz	+/-105KHz

## [B] DELAY-OFFSET

1. Setting	D-TIME D-LEVEL, REPEAT D-RANGE	CW max. CCW max. 16-64ms	
2. Connection	VOLT METER	to CP7/CP8	
3. Adjustment	SR3	for 0mV	( i.e. CP7-CP8=0mV )
4. Connection	VOLT METER	to CP2/CP3	
5. Adjustment	SR2	for 0mV	

## [C] DELAY-REPEAT

1. Setting	a guitar an amplifier D-RANGE another all knobs	to INPUT to OUTPUT 256-1024ms CW max.	
2. Input	guitar signal	to INPUT	one shot guitar signal
3. Adjustment	SR1	for -6dB	after the 20th repeat

## [D] CHORUS

1. Setting	SPEED, WIDTH	CCW max.	
2. Connection	FREQUENCY COUNTER OSCILLOSCOPE	to CP5 to CP5	
3. Adjustment	SR5	for 80KHz	+/-2KHz
4. Resetting	WIDTH	CW max.	
5. Check	SWEEP WIDTH	for 14usec	+/-2usec
6. Put	sinewave	400Hz 0dBv	on INPUT
7. Resetting	SPEED, WIDTH	CCW max.	
8. Connection	OSCILLOSCOPE	to CP6	
9. Adjustment	SR6		for the symmetrical sinewave

## \*\* CHECK \*\*

## [A] DELAY RANGE MUTE

1. Setting	D-TIME		change the D-TIME position
2. Check	the MUTE TIME		for appx. 1sec.

## [B] NOISE

1. Setting	D-TIME, D-LEVEL REPEAT D-RANGE	CW max. CCW max. 16-64ms	
2. Input	short		
3. Connection	NOISE METER	to OUTPUT A	
4. Check	the level	< -90dBv	IHF-A

## [C] HEADPHONES

1. Setting	BYPASS	ON	
2. Put	sinewave	-20dBv	
3. Connection	LEVEL METER	to PHONES	RATED LOAD 32ohms
4. Check	the level	-16dBv -24dBv -11dBv	at 100Hz at 350Hz at 2KHz

## \*\* TROUBLE SHOOTING \*\*

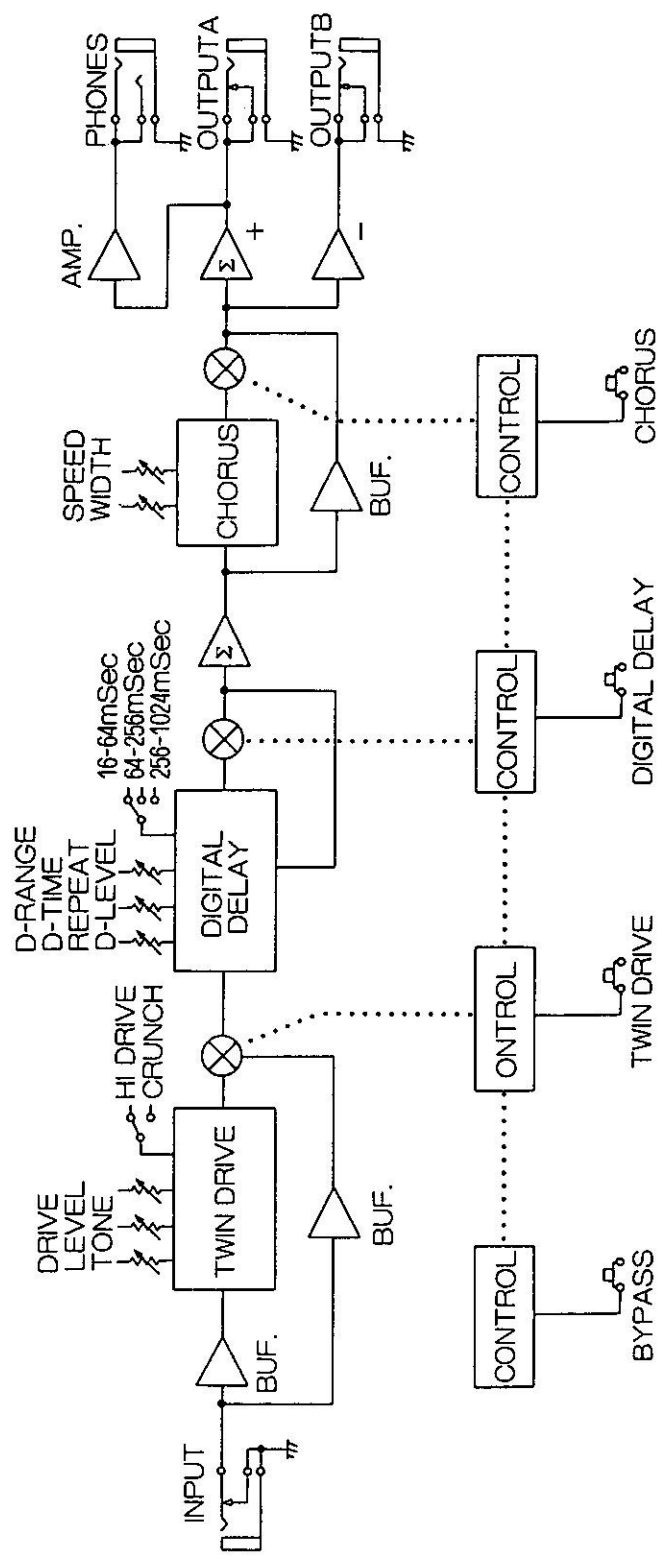
(A) NO POWER		YES ;	NO ;	REMARKS
001	DC9V at D28 ?	GO TO 003	GO TO 002	use AC109
002	Check JK5, D28, AC Adapter			
003	DC5V at C128 ?	GO TO 005	GO TO 004	
004	Check IC22, C128,C129			
005	DC5V at COMMON<-->OUT of IC23 ?	GO TO 007	GO TO 006	
006	Check IC23, C131			
007	DC4.5V at C20 ( schematic point-A ) ?	GO TO 009	GO TO 008	
008	Check R37,R38, C20			
009	DC4.5V at C21 ( schematic point-B ) ?	GO TO 011	GO TO 010	
010	Check R39,R40, C21			
011	DC4.5V at C103 ( schematic point-C ) ?	GO TO 013	GO TO 012	
012	Check IC17B, R190,R191, C102,C103			
013	DC4.5V at C125 ( schematic point-D ) ?	END	GO TO 014	
014	Check IC4B, R230,R231, C124,C125			

(B) NO OR BAD OUTPUT		YES ;	NO ;	REMARKS
101	Audio signal at C22 ?	GO TO 103	GO TO 102	
102	Check IC1,IC2, D1-D4, JK1, VR1-VR3, SW1			
103	Audio signal at C28 ?	GO TO 105	GO TO 104	
104	Check IC3,IC4			
105	Audio signal at C75 ?	GO TO 107	GO TO 106	
106	Check IC14, TR15, D16,D17			
107	Audio signal at CP6 ?	GO TO 109	GO TO 108	
108	Check IC15,IC19, TR18, Q6, D25,D26			
109	Audio signal at JK2,JK3 ?	GO TO 111	GO TO 110	
110	Check IC19,IC20, JK2,JK3			
111	Audio signal at JK4 ?	GO TO 113	GO TO 112	
112	Check IC21, JK4			
113	DELAY normal ?	GO TO 115	GO TO 114	
114	Check IC5-13,TR7-11, SW2,VR4-6, D8-11,29-31			
115	SWEEP/WIDTH normal ?	GO TO 117	GO TO 116	
116	Check IC15-IC18, TR16,TR17, VR7,VR8, D23,D24			
117	LED/Switching control normal ?	END	GO TO 118	
118	Refer to SWITCHING CHART Check SW3-SW6, LED1-LED4 Check TR2-TR6,TR10-TR14,TR19-TR25 Check Q1-Q5, D5-D7,D12-D14,D18-D22,D27			

## \*\* PARTS LIST \*\*

PARTS NAME	Mkr.	pcs	PARTS No.	REF.No.	REMARKS
TOP COVER		1	CHA-PT3-0101A	PT3	
BOTTOM COVER		1	CHA-PT3-0103A		
POT. KNOB		8	KNB-PUE-0101RDA		
PEDAL		4	CHA-PT3-0102A		
SPRING		4	SPR-PT3-0102A		
NAME PLATE		1	NPT-PT3-0101A		
RUBBER FOOT		5	LEG-PUE-0101A		
CAUTION LABEL		1	CSL-0101A		
SERIAL LABEL		1	SSL-PT3-0101A		
SCREW		16	PTB3X8NI		
AC ADAPTER		1	AC109		

PCB		1	PCB-PT3-0101B		
IC Op. Amp.	MB	10	M5218AP	IC1-6,14,17,19,20	
IC Comparator	JRC	1	NJM311D	IC7	
IC Op. Amp.	MB	2	M5238P	IC8,9	
IC DELAY	ACT	1	MC4102F	IC10	
IC DRAM	TO	1	TMM41258AZ-12	IC11	
IC F/F	NEC	1	74HC174	IC12	
IC MULTI VIB.	NEC	1	74HC123	IC13	
IC BBD	MA	1	MN3207	IC15	
IC BBD Driver	MA	1	MN3102	IC16	
IC Op. Amp.	TI	1	TL022CP	IC18	
IC Phone. Amp.	JRC	1	NJM386D	IC21	
IC Regulator	JRC	1	NJM7805FA	IC22	
IC Regulator	JRC	1	NJM7905FA	IC23	
LED	MA	4	LN28RPX	LED1-4	
TRANSISTOR	TO	16	2SC1815GRTPE2	TR1,3-6,11-15,20-25	
TRANSISTOR	TO	3	2SA1015YTPE2	TR2,7,10	
TRANSISTOR	TO	6	2SC1815BLTPE2	TR8,9,16-19	
FET	TO	6	2SK246YTPE2	Q1-6	
DIODE	MA	29	MA165TA5	D1-14,16-27,29-31	
DIODE	HT	1	W03C	D28	
PHONES JACK	HO	3	HLJ0520-01-110	JK1-3	
PHONES JACK	HO	1	HLJ0520-01-010	JK4	
DC JACK	HO	1	HEC-0470-01-230	JK5	
CHECK POINT	TDW	8	LC-3-G	CP1-8	
VARIABLE R.	MA	1	EVU-F2A-F20-A54	VR1	
VARIABLE R.	MA	1	EVU-F2A-F20-G24	VR2	
VARIABLE R.	MA	1	EVU-F2A-F20-A14	VR3	
VARIABLE R.	MA	1	EVU-F2A-F20-B54	VR4	
VARIABLE R.	MA	2	EVU-F2A-F20-B14	VR5,6	
VARIABLE R.	MA	1	EVU-F2A-F20-A15	VR7	
VARIABLE R.	MA	1	EVU-F2A-F20-B15	VR8	
SEMI FIXED R.	MA	2	EVN-D8A-A03-B14	SR1,6	
SEMI FIXED R.	MA	2	EVN-D8A-A03-B23	SR2,3	
SEMI FIXED R.	MA	1	EVN-D8A-A03-B55	SR4	
SEMI FIXED R.	MA	1	EVN-D8A-A03-B25	SR5	
SWITCH	ALP	1	SSSU01-PUE3	SW1	
SWITCH	ALP	1	SSSU01-PUE01	SW2	
SWITCH	ALP	4	SKCLAR	SW3-6	
GND TERMINAL	SB	1	STY-PT3-0101A		
LED SPACER	DIS	4	SPC-PT3-0101A		
EMI FILTER	MA	3	EXC-EMT103BT	EM1-3	



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Status		TWIN DRIVE			DELAY			CHORUS					
		ON	OFF		ON	OFF		ON	OFF				
		PASS	EFF.	PASS	EFF.	PASS	EFF.	PASS	EFF.	PASS	EFF.		
Check Item	TR4	LOW	LOW	HI	HI	-	-	-	-	-	-	-	-
	TR13	-	-	-	LOW	LOW	HI	HI	-	-	-	-	-
	TR21	-	-	-	-	-	-	-	-	LOW	LOW	HI	HI
	TR23	LOW	LOW	HI	HI	LOW	HI	HI	HI	LOW	LOW	HI	HI
	TWIN DRIVE FET Q1	OFF	-	ON	-	-	-	-	-	-	-	-	-
	TWIN DRIVE FET Q2	-	ON	-	-	-	-	-	-	-	-	-	-
	DELAY FET Q3	-	-	-	-	ON	-	-	OFF	-	-	-	-
	DELAY FET Q4	-	-	-	-	ON	-	-	OFF	-	-	-	-
	CHORUS FET Q5	-	-	-	-	-	-	-	-	-	ON	-	OFF
	TWIN DRIVE LED LED1	ON	ON	OFF	OFF	-	-	-	-	-	-	-	-
	DELAY LED LED2	-	-	-	ON	ON	OFF	OFF	OFF	-	-	-	-
	CHORUS LED LED3	-	-	-	-	-	-	-	-	ON	ON	OFF	OFF
	BYPASS LED LED4	-	-	-	-	-	-	-	-	-	-	-	-

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