

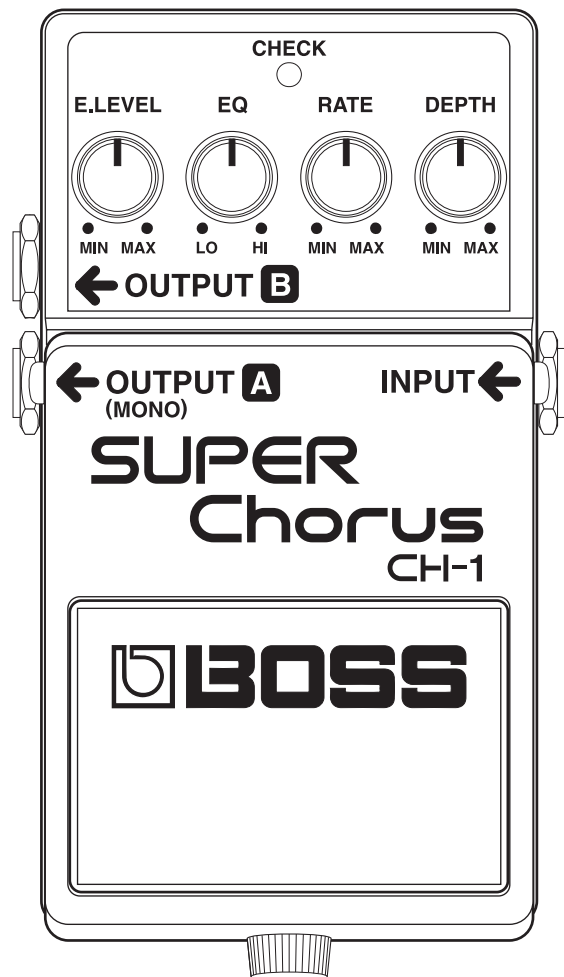
BOSS CH-1(T)
SUPER Chorus

SERVICE NOTES
Second Edition
Issued by RJA

SPECIFICATIONS.....2
 LOCATION OF CONTROLS,PARTS LIST3
 EXPLODED VIEW,PARTS LIST4
 PARTS LIST.....5
 THE INSPECTION METHOD7
 CIRCUIT BOARD.....8
 CIRCUIT DIAGRAM.....9

WARNING

Due to an IC change, the parts have been changed from serial No. AP11700. We call the new type of this model, CH-1A for identifying the old type and new type for convenience on service system. Although the model name will change from "CH-1" to "CH-1A", the product pedal is still labeled "CH-1". The appearance of "CH-1" and "CH-1A" are the same. Identify by the serial number or the model name that is silk-screen printed on the board. When referring to the service notes or ordering parts, check the model name using the above process. This service note is for "CH-1A". Refer to "CH-1 SERVICE NOTES" (#17059132) when repairing "CH-1". Variable resistor, jack, switch and mechanical parts for the "CH-1" and "CH-1A" are compatible



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SPECIFICATIONS

Power Supply

DC 9 V; Dry battery (6F22/9V)

AC Adaptor (PSA-series)

Current Draw

22 mA (DC 9 V)

* Expected battery life under continuous use:

Carbon: 12 hours

These figures will vary depending on the actual conditions of use.

Controls

Pedal Switch

Effect Level

Equalizer

Modulation Rate

Modulation Depth

Indicator

Check Indicator (serves also as battery check indicator)

Jacks

Input

Output A

Output B

AC Adaptor

Residual Noise

-95 dBu or less (IHF-A, Typ.) with EQ set to the center position

Input Impedance

1 M ohm

Output Load Impedance

10 k ohm or greater

Dimensions

73 (W) x 129 (D) x 59 (H) mm

2-7/8 (W) x 5-1/8 (D) x 2-3/8 (H) inches

Weight

400 g / 14 oz (including battery)

Accessories

OWNER'S MANUAL

ENGLISH(#G601721501)

JAPANESE(#G601721603)

Dry Battery(#*****); 6F22/9V (Carbon)

Leaflet ("USING THE UNIT SAFELY," "IMPORTANT NOTES," and "Information")

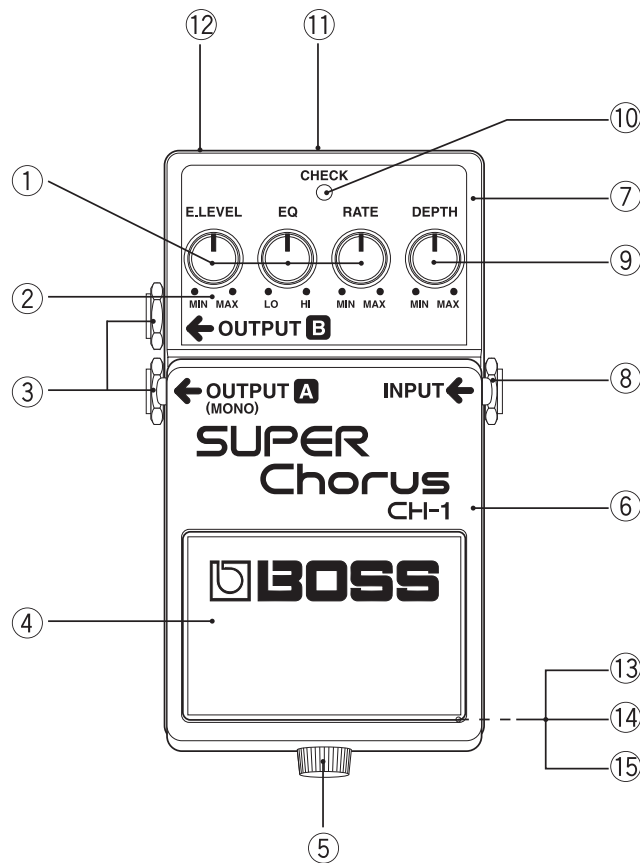
Options

AC Adaptor PSA-Series

* $0\text{ dBu} = 0.775\text{ Vrms}$

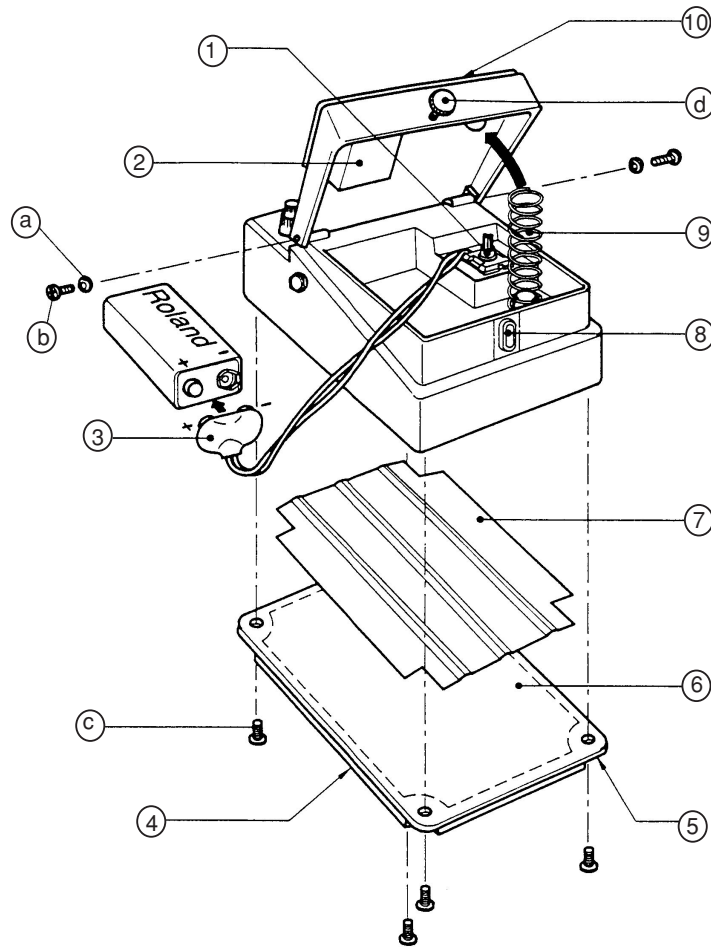
* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

LOCATION OF CONTROLS, PARTS LIST



NO.	PART CODE	PART NAME	DESCRIPTION
1	2247738600	KNOB	247-386
	13279918	POTENTIOMETER (E.LEVEL/EQ/RATE)	RK0971110 250KC
2	2221758901	PANEL	
3	13449150MF	PHONE JACK (STEREO)	HTJ-064-12D
4	2235730400	FOOT BASE (PEDAL MAT)	235-304
5	H5029820	THUMB SCREW	3X10MM
7	752443C000	CASE	
6	752442T000	PEDAL	
8	F3449112	JACK (STEREO)	HTJ-064-13D
9	2247738600	KNOB (GRAY)	247-386
	F3239402	POTENTIOMETER	RD901-20-15K-B15 100KB
10	1502928100	LED (RED)	L-34HDSL
11	13449711	AC ADAPTOR JACK	HEC-0470-01-630
12	2253753801	PSA CAUTION	253-538
13	2202785100	BOTTOM COVER	
14	2235730500	BOTTOM BASE	
15	G253751603	BOTTOM CAUTION PSA	FCC/CE/C-TICK/EMC GRY

EXPLODED VIEW, PARTS LIST



[PARTS]

No.	PART CODE	PART NAME	DESCRIPTION	Q'TY
1	13129710	SWITCH (PUSH)	JM-0404	1
2	2226733300	CUSHION	226-333	1
3	F3419102	BATTERY CONNECTOR		1
4	G253751603	BOTTOM CAUTION PSA	FCC/CE/C-TICK/EMC GRY	1
5	2235730500	BOTTOM BASE	235-305	1
6	2202785100	BOTTOM COVER	202-851	1
7	2216756000	INSULATION SPACER		1
8	2215770201	PEDAL GUIDE BUSH	215-702	1
9	2217710900	COIL SPRING	217-109	1
10	2235730400	FOOT BASE (PEDAL MAT)	235-304	1

[SCREW]

No.	PART CODE	PART NAME	DESCRIPTION	Q'TY
a	H5039401	NYLON WASHER 3X6X0.5		2
b	40010267	SCREW M3X10	BINDING FE BZC	2
c	40010901	SCREW M3X6	BINDING B1 BZC	4
d	H5029820	SCREW M3X10	THUMB SCREW	1

PARTS LIST

SAFETY PRECAUTIONS:

The parts marked Δ have safety-related characteristics. Use only listed parts for replacement.

CONSIDERATION ON PARTS ORDRING

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

	QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER
Ex.	10	22575241	Sharp Key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.

NOTE: The parts marked # are new. (initial parts)


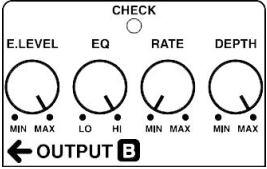
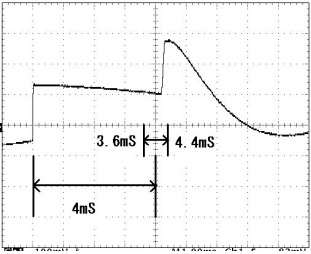

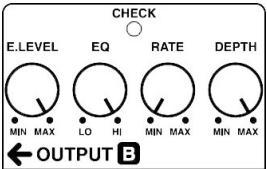
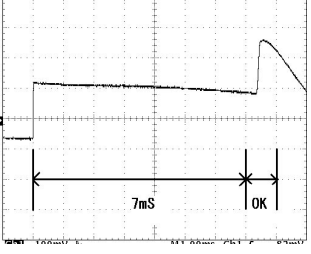
CASING					
	2235730500	BOTTOM BASE	235-305		1
	2235730400	FOOT BASE (PEDAL MAT)	235-304		1
	2202785100	BOTTOM COVER	202-851		1
#	752443C000	CASE			1
#	2221758901	PANEL			1
#	752442T000	PEDAL			1
KNOB,BUTTON					
	2247738600	KNOB	247-386 (GRAY)		4
SWITCH					
	13129710	JM-0404	SWITCH (PUSH)	SW1	1
JACK,EXT TERMINAL					
	13449150MF	HTJ-064-12D	PHONE JACK (STEREO)	JK2,JK3 (OUT PUT A , OUT PUT B)	2
	F3449112	HTJ-064-13D	JACK (STEREO)	JK1 (IN PUT)	1
	13449711	HEC-0470-01-630	AC ADAPTOR JACK	JK4	1
PWB ASSY					
#	752443O000	JACK BOARD ASSY	CH-1A		1
#	752443L000	LED BOARD ASSY	CH-1A		1
#	752443P001	MAIN BOARD ASSY	CH-1A		1
IC					
	F5199105	S-81250 SGY-Z	IC (REGULATOR)	IC6	1
	02894289	NJM022BM	IC (OP AMP)	IC2,IC4	2
	F5209133	ES56028S	IC (ECHO)	IC1	1
	15289141	M5223AFP-600D	IC (BIPOLAR OP AMP)	IC5	1
TRANSISTOR					
	15319108	2SC-3324GR-TE85R	TRANSISTOR	Q1	1
	15319107	2SC4116-GR(TE85R)	TRANSISTOR	Q5,Q6,Q7,Q8,Q9,Q10	6
	F5329530	2SK879Y	FET TRANSISTOR	Q2,Q4	2
	15329103T0	2SK880-GR(TE85R)	FET TRANSISTOR	Q3	1
DIODE					
	01019534	1SS355 TE-17	SWITCHING DIODE	D3,D4	2
	1502928100	L-34HDSL	LED (RED)	LED1	1
	15339121	1SS301(TE85R)(CHIP)	DIODE	DA1,DA2	2
	F5339201	GS1G	DIODE	D2	1
	F5339312	RD5.6S B3	DIODE	D1	1
RESISTOR					
	00567023	RPC05T 101 J	MTL.FILM RESISTOR	R56	1
	00567156	RPC05T 102 J	MTL.FILM RESISTOR	R1,R18,R71	3
	00567289	RPC05T 103 J	MTL.FILM RESISTOR	R2,R5,R7,R9,R10,R12,R19,R23,R25,R27,R35,R37,	13
	00567412	RPC05T 104 J	MTL.FILM RESISTOR	R3,R21,R28,R33,R40,R41,R62	7
	00567556	RPC05T 105 J	MTL.FILM RESISTOR	R6,R14,R20,R24,R34,R53,R69,R70	8
	00567290	RPC05T 123 J	MTL.FILM RESISTOR	R11,R26	2
	00567423	RPC05T 124 J	MTL.FILM RESISTOR	R58	1
	00567301	RPC05T 153 J	MTL.FILM RESISTOR	R43,R61,R63	3
	00567189	RPC05T 182 J	MTL.FILM RESISTOR	R42	1
	00567312	RPC05T 183 J	MTL.FILM RESISTOR	R16,R17	2
	00567323	RPC05T 223 J	MTL.FILM RESISTOR	R22	1
	00567456	RPC05T 224 J	MTL.FILM RESISTOR	R68	1

RESISTOR					
	00567334	RPC05T 273 J	MTL.FILM RESISTOR	R4,R8	2
	00567345	RPC05T 333 J	MTL.FILM RESISTOR	R36,R52,R65	3
	00567112	RPC05T 471 J	MTL.FILM RESISTOR	R48	1
	00567378	RPC05T 473 J	MTL.FILM RESISTOR	R13,R15,R55,R59	4
	00567256	RPC05T 562 J	MTL.FILM RESISTOR	R60	1
	00567389	RPC05T 563 J	MTL.FILM RESISTOR	R38,R39,R45,R46	4
	01892767	MCR03 EZH J 752	CHIP RESISTOR(1608TYPE)	R29,R31	2
	01892989	MCR03 EZH J 753	CHIP RESISTOR(1608TYPE)	R30,R32	2
POTENTIOMETER					
	13279918	RK0971110 250KC	POTENTIOMETER	VR1,VR2,VR3 (E,LEVEL , EQ , RATE)	3
	F3239402	RD901-20-15K-B15 100KB	POTENTIOMETER	VR4 (DEPTH)	1
CAPACITOR					
	13549329M0	ECQ-B1H104KF3 0.1/50V	POLYEST. CAPACITOR	C8	1
	13639546M0	ECEA1CKA100B 10UF/16V	CHEMICAL CAPACITOR	C1,C7,C17,C35,C47,C48	6
	13639550M0	ECEA1CKA101B 100UF/16V	CHEMICAL CAPACITOR	C27,C32,C33	3
	13639549M0	ECEA1CKA470B 47UF/16V	CHEMICAL CAPACITOR	C14,C36,C53	3
	13639602M0	ECEA1HKA010B 1UF /50V	CHEMICAL CAPACITOR	C2,C16	2
	13639601M0	ECEA1HKAR47B 0.47/50V	CHEMICAL CAPACITOR	C13,C54	2
	01674701	ECJ1VF1E104Z 0.1UF/16VK	CERAMIC CAPACITOR(CHIP)	C10,C25,C26,C34,C37	5
	02450767	ECJ1VB1E183K	CERAMIC CAPACITOR	C21,C23	2
	01674612	ECJ1VB1H103K	CERAMIC CAPACITOR	C28,C30,C46,C49,C50	5
	01674478	ECJ1VB1H122K	CERAMIC CAPACITOR	C55	1
	01674523	ECJ1VB1H272K	CERAMIC CAPACITOR	C12,C15	2
	01674534	ECJ1VB1H332K	CERAMIC CAPACITOR	C19,C22	2
	01674578	ECJ1VB1H682K	CERAMIC CAPACITOR	C3,C5	2
	02456534	ECJ1VF1C334Z	CERAMIC CAPACITOR	C24,C29	2
	01674667	ECJ1VF1H333Z	CERAMIC CAPACITOR	C56	1
	01674689	ECJ1VF1H473Z	CERAMIC CAPACITOR	C20,C31	2
	01674334	ECUV1H101JCV	CERAMIC CAPACITOR	C4,C9	2
	01674389	ECUV1H221JCV	CERAMIC CAPACITOR	C41,C42	2
	01674390	ECUV1H271JCV	CERAMIC CAPACITOR	C11,C18	2
	01674423	ECUV1H471JCV	CERAMIC CAPACITOR	C38,C39	2
WIRING,CABLE					
	G3477101	FLAT CABLE			1
SCREWS					
	H5029820	SCREW M3X10	THUMB SCREW		1
	H5029325	SCREW 3X6	PAN HEAD TAPTITE-2 BZC		5
	H5039205	WASHER 12.5X9.5X0.5/0.9	INTERNAL TOOTH FENI		3
	H5039510	NUT M9X12X2	FENI		3
	H501941301	SCREW 3X10MM	BINDING MACHINE FEBC		2
	H5039104	JACK WASHER M9.2X14X1.6	AL		2
	22137709	JACK SPACER M9.6X14X1.0			1
	H5039401	NYLON WASHER 3X6X0.5			2
	H5039521	VR ACCESSORY NUT M7			4
	H5039112	WASHER M9			3
	40010267	SCREW M3X10	BINDING FE BZC		2
	40010901	SCREW M3X6	BINDING BI BZC		4
PACKING					
	G2627738	INNER BOX			1
#	2262770603	PACKING CASE			1
MISCELLANEOUS					
	G253751603	BOTTOM CAUTION PSA	FCC/CE/C-TICK/EMC GRY		1
	40016512	INSULOK TIE	80M/M T-18S		2
	2226733300	CUSHION	267-333		1
	2253753801	PSA CAUTION	253-538		1
	2216756000	INSULATION SHEET	216-560		1
	2215770201	PEDAL GUIDE BUSH	215-702		1
	2217710900	COIL SPRING	214-109		1
	F3419102	BATTERY CONNECTOR			1
	H2369402	POLYCA PIPE M3X6X6			1
ACCESSORIES (Standard)					
#	G601721603	OWNER'S MANUAL	JAPANESE		1
#	G601721501	OWNER'S MANUAL	ENGLISH		1
	*****	Dry Battery			1

THE INSPECTION METHOD

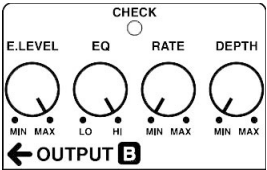
Output waveform check

1. Connect an oscillator to the INPUT jack, and input test signal.
2. Connect an oscilloscope to the OUTPUT A jack.
3. Check that the minimum and maximum values for the delay time are as follows.

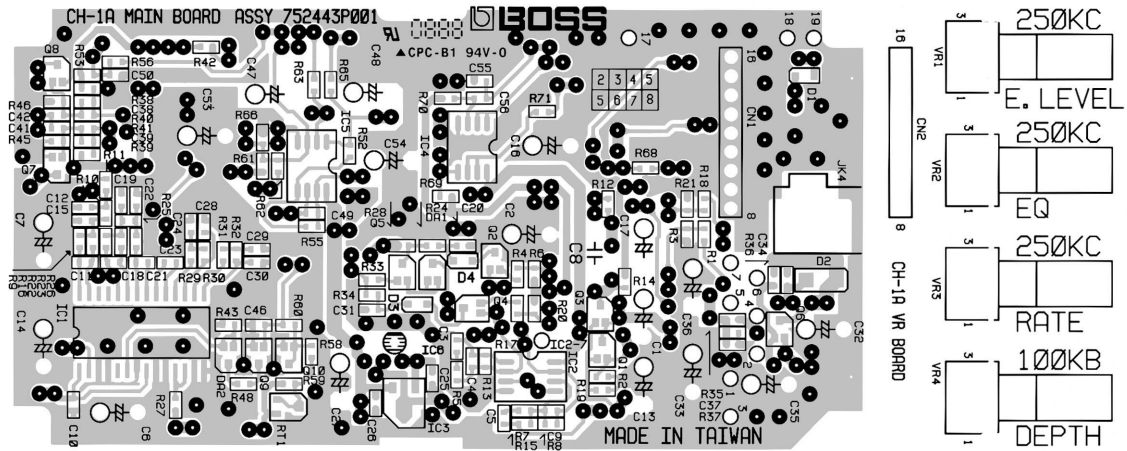
INPUT	SET CONTROLS	OUTPUT Waveform
 <p>30Hz 200mVp-p</p>		<p>Minimum DELAY TIME Check OK : 3.6mS~4.4mS</p>  <p>(RANGE:1mS/DIV, 100mV/DIV)</p>
 <p>30Hz 200mVp-p</p>		<p>Maximum DELAY TIME Check OK : 7mS~8mS</p>  <p>(RANGE:1mS/DIV, 100mV/DIV)</p>

. Residual noise check

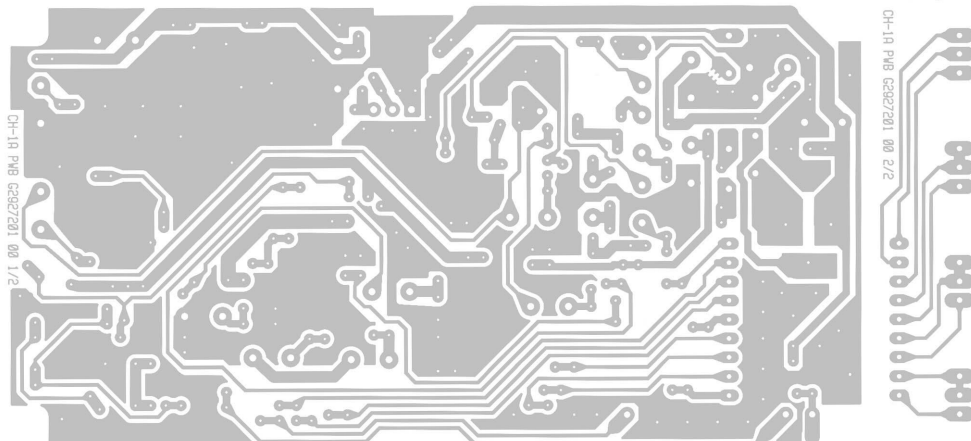
1. Connect a 47kΩ short plug to the INPUT jack.
2. Connect a noise meter to the OUTPUT A jack.
3. Measure the noise and check that it is -95dBu(IHF-A) or lower.

INPUT	SET CONTROLS	OUTPUT Waveform
<p>47k ohm Short Plug</p>		<p>Noise Check OK : < -95dBu(IHF-A)</p>

CIRCUIT BOARD



View from component side



View from foil side

CIRCUIT DIAGRAM

