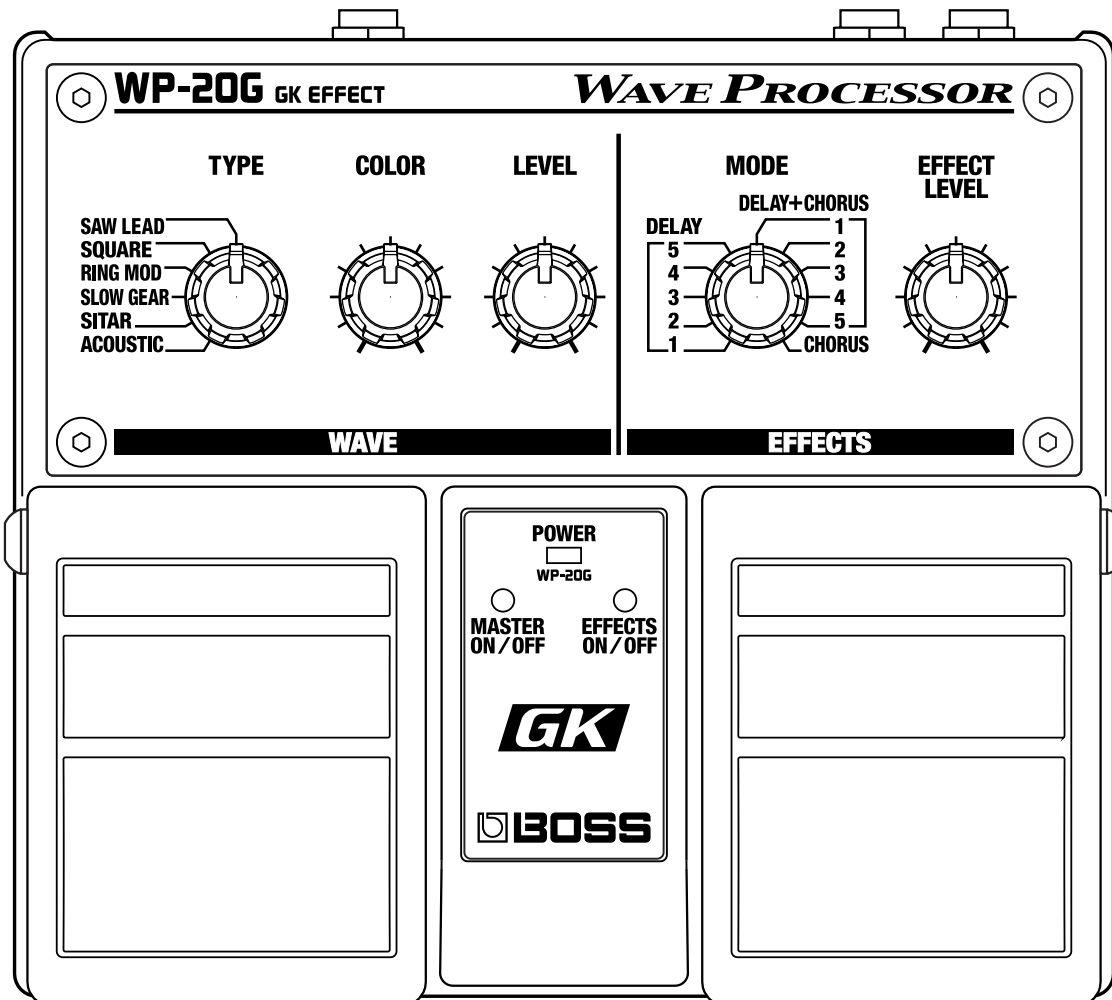


# WP-20G(T)

## SERVICE NOTES *Issued by RJA*

### GK EFFECT

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## SPECIFICATINS

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### WP-20G: GK Effect

#### Controls

Master On/Off Pedal  
Effects On/Off Pedal  
TYPE Knob  
COLOR Knob  
LEVEL Knob  
MODE Knob  
EFFECT LEVEL Knob  
NORMAL PU MIX Switch

#### Indicator

POWER Indicator (serves also as battery check indicator)  
MASTER ON/OFF Indicator  
EFFECTS ON/OFF Indicator

#### Connectors

GUITAR OUT Jack  
GUITAR RETURN Jack  
GK IN Connector  
OUTPUT Jack  
DC IN Jack (DC 9 V)

#### Nominal Input Level

GUITAR RETURN: -20 dBu

#### Input Impedance

GUITAR RETURN: 1 M(ohm)

#### Nominal Output Level

OUTPUT: -20 dBu  
GUITAR OUT: -20 dBu

#### Nominal Output Impedance

OUTPUT: 1 k(ohm)  
GUITAR OUT: 100 (ohm)  
Recommended Load Impedance  
10 k(ohm) or greater

#### Residual Noise Level

- 96 dBu(GK IN: terminated, Distortion: OFF, NORMAL PU MIX: OFF, IHF-A,typ)

#### Power Supply

DC 9 V: Dry Battery x 6, AC Adaptor

#### Current Draw

150 mA (9 V, with GK-2A)

- \* Expected battery life under continuous use:

Carbon: 2 hours

Alkaline: 6 hours

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

#### Dimensions

173 (W) x 158 (D) x 57 (H) mm

6-13/16 (W) x 6-1/4 (D) x 2-1/4 (H) inches

#### Weight

1.1 kg / 2 lbs 7 oz (including batteries)

#### Accessories

Dry Battery (LR6 (AA) type) x 6(#\*\*\*\*\*)

Owner's Manual English (#G6017300)

Japanese (#G6017299)

Roland Service (Information sheet)

#### Options

AC Adaptor: PSA series

Divided pickup: GK-2A (Roland)

Unit Selector: US-20 (Roland)

GK Connecting Cable: GKC-3 (3 m), GKC-5 (5 m), GKC-10 (10 m), C-13B(10 m) (Roland)

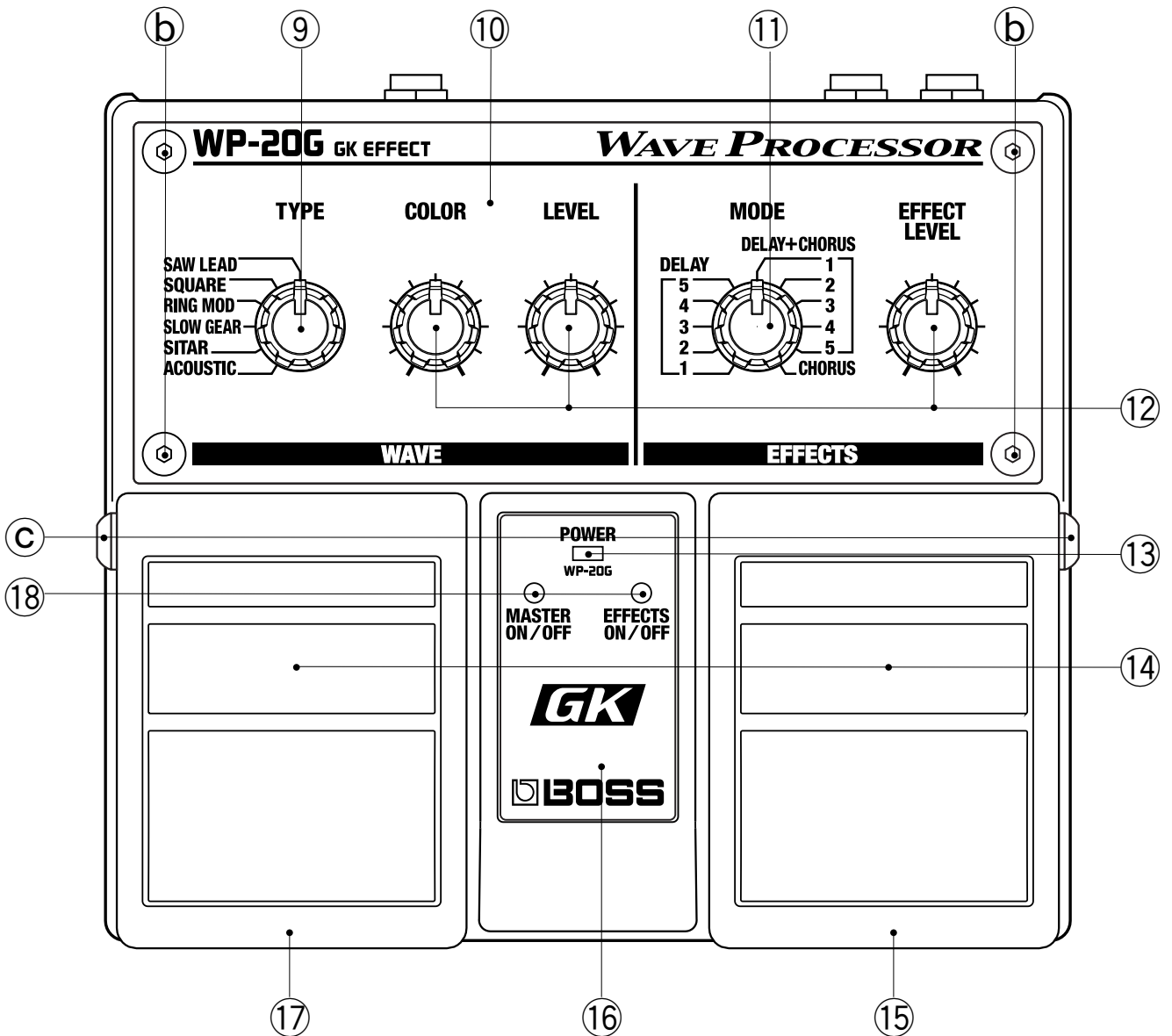
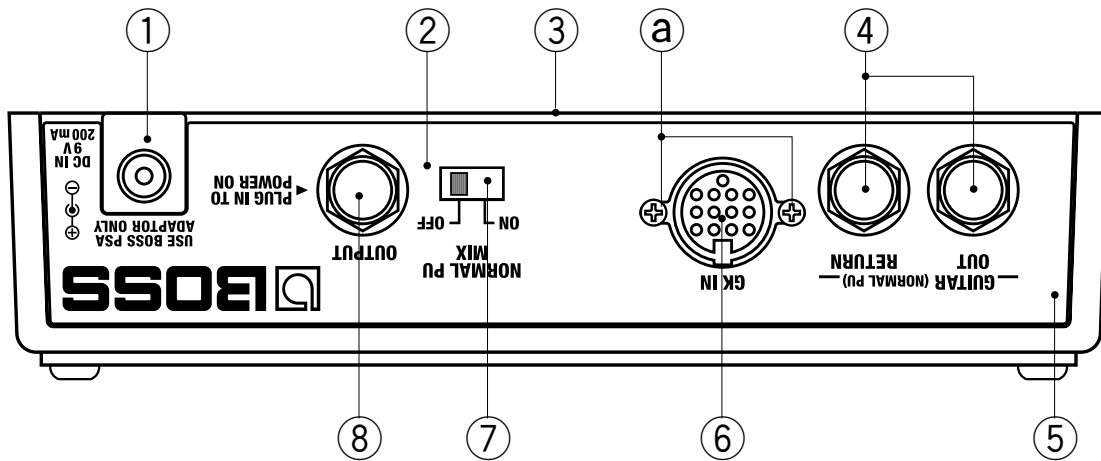
GK Parallel Box: GKP-4 (Roland)

- \* 0 dBu = 0.775 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



## LOCATION OF CONTROLS PARTS LIST

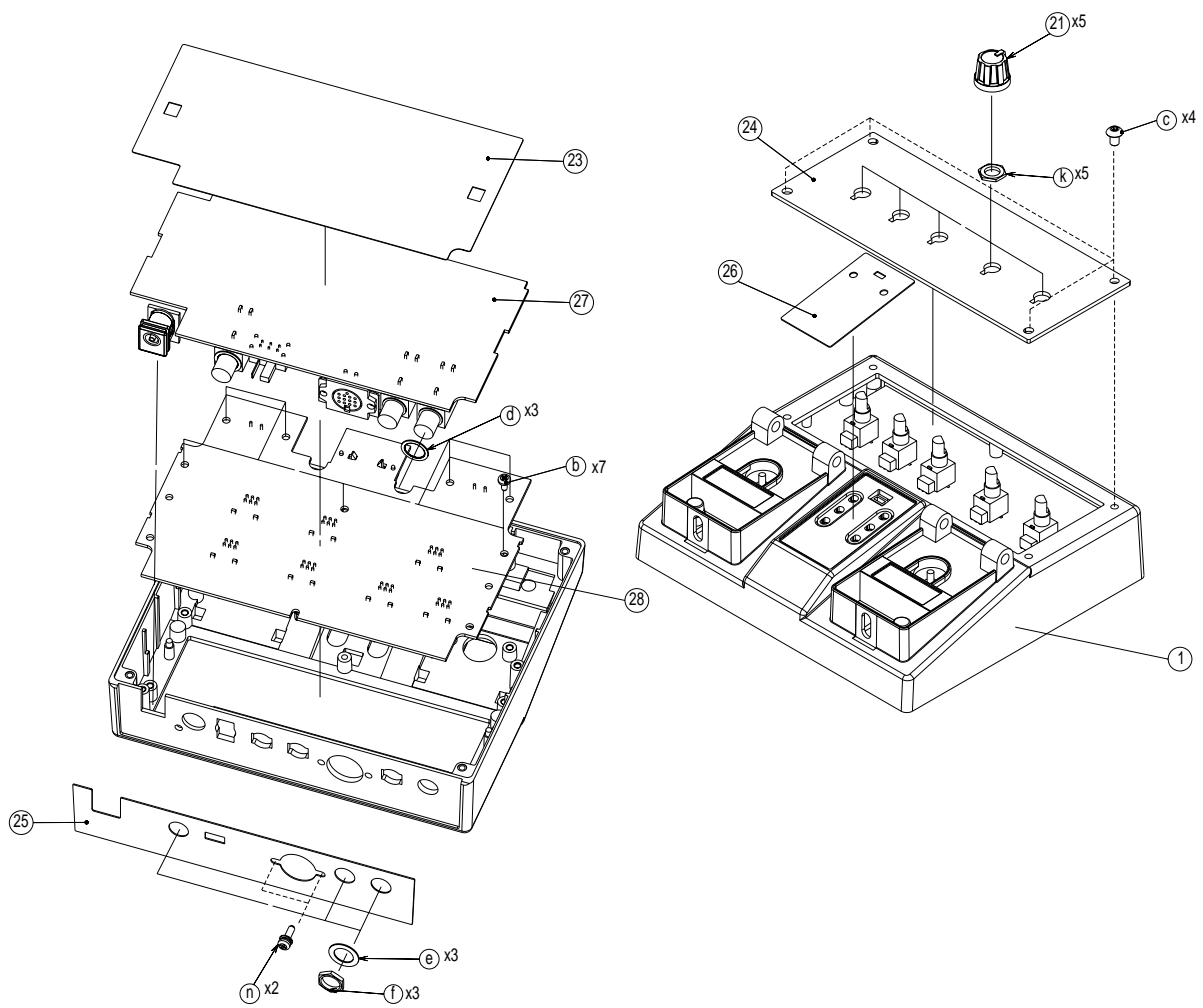
### [Parts]

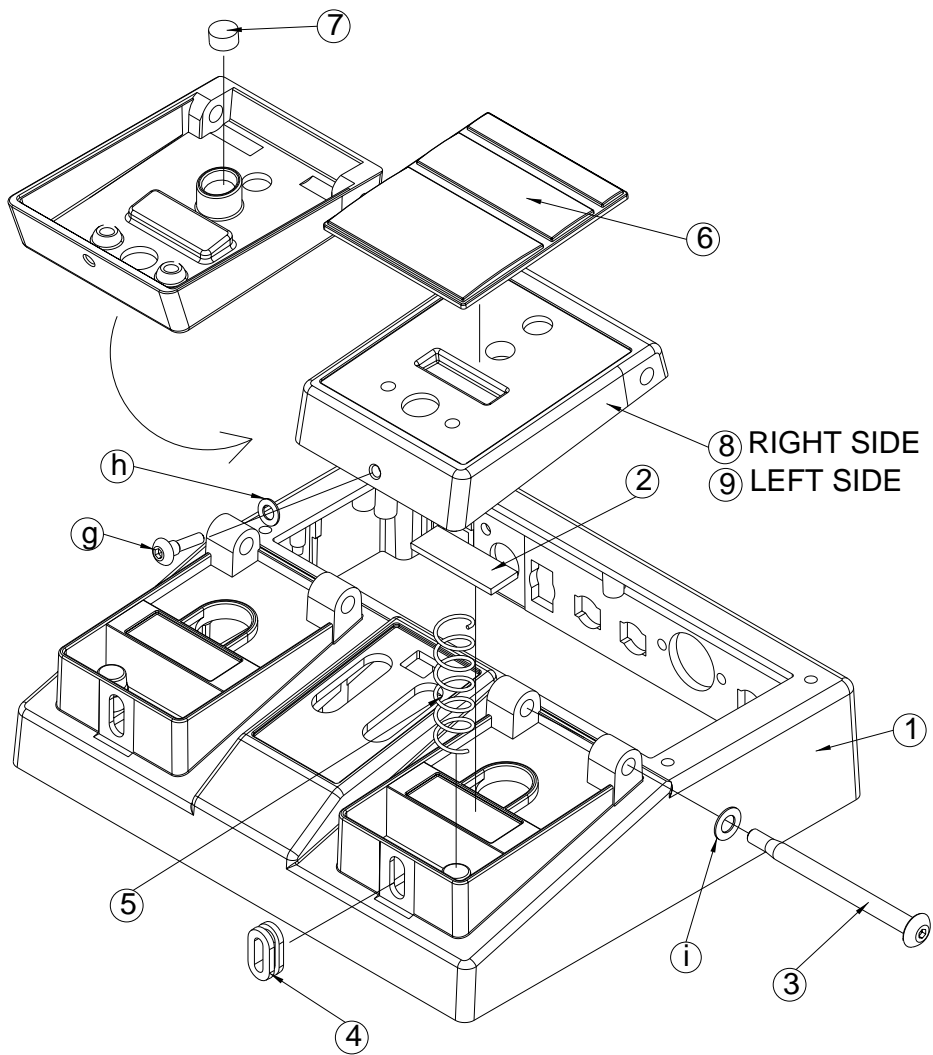
No.	Part Code	Part Name		Q'ty
1	F344940301	ADAPTOR JACK	DJ-0711B-020	1
2	G2017146	CASE		1
3	G2017148	BOTTOM COVER		1
3	G2357118	BOTTOM FOOT		2
3	G2017621	BATTERY COVER		1
3	G2537726	LABEL		1
4	13449155MF	PHONE JACK (MONO)	HTJ-064-12I	2
5	G2217150	REAR PANEL		1
6	00564556	DIN	TCS5093-10-4152	1
7	F3159104	SWITCH	SS037-P222BHH-PE9	1
8	13449150MF	PHONE JACK (STEREO)	HTJ-064-12D	1
9	G2477122	R-KNOB		1
	F3279804	POTENTIOMETER 6 CLICKS 50KB	RD901-40-125F-B54-06D	1
10	G2217146	PANEL		1
11	G2477122	R-KNOB		1
	F3279803	POTENTIOMETER 11 CLICKS 50KB	RD901-40-125F-B54-11D	1
12	G2477122	R-KNOB		3
	F3279802	POTENTIOMETERNO CLICK 50KB	RD901-40-125F-B54-00D	3
13	F5029126	POWER LED	L-113GDT	1
14	G2357116	PEDAL PLATE	62X53	2
15	G2187530	PEDAL R		1
16	G2217153	LED PANEL		1
17	G2187531	PEDAL L		1
18	1502928100	LED (RED)	L-34HDSL	2

### [Screw]

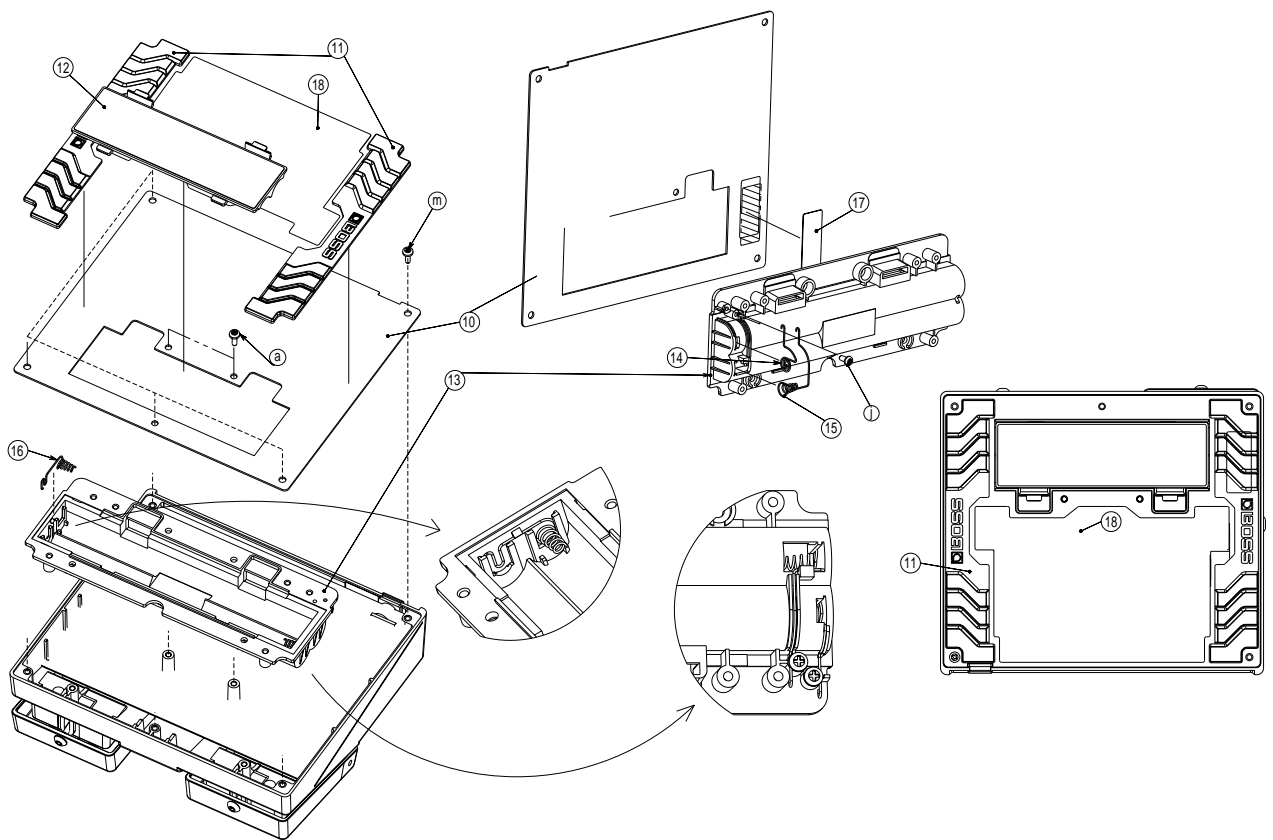
No.	Part Code	Part Name		Q'ty
a	H5019125	SCREW M3X10	PAN HEAD W/SW+PW FE BC	2
b	H5029850	SCREW M4X6	HEXAGON SOCKET BUTTON HEAD FE	4
c	H5029851	PEDAL SHAFT		2

# EXPLODED VIEW





# EXPLODED VIEW





## EXPLODED VIEW PARTS LIST

### [Parts]

No.	Part Code	Part Name	Q'ty
1	G2017146	CASE	1
2	G2357111	CUSHION R	2
3	H5029851	PEDAL SHAFT	2
4	2215770201	PEDAL GUIDE BUSH	215-702 2
5	2217710900	COIL SPRING	214-109 2
6	G2357116	PEDAL PLATE	62X53 2
7	G2357115	PEDAL FOOT	M8 2
8	G2187530	PEDAL R	1
9	G2187531	PEDAL L	1
10	G2017148	BOTTOM COVER	1
11	G2357118	BOTTOM FOOT	2
12	G2017621	BATTERY COVER	1
13	G2017620	BATTERY CASE	1
14	G2177308	BATTERY TERMINAL(+)	1
15	G2177309	BATTERY TERMINAL(-)	1
16	G2177307	BATTERY TERMINAL(+/-)	1
17	G2257130	BATTERY INSULATING SHEET	1
18	G2537726	LABEL	1
21	G2477122	R-KNOB	5
23	G2257131	INSULATING SHEET BOTTOM	1
24	G2217146	PANEL	1
25	G2217150	REAR PANEL	1
26	G2217153	LED PANEL	1
27	75D4820000	JACK BOARD ASSY	1
26	75D4830200	PANEL BOARD ASSY	1

### [Screw]

No.	Part Code	Part Name	Q'ty
a	H5019115	SCREW M3X8	PAN TAPPING-2 FEBZC 2
b	H5019110	SCREW M3X6	PAN TAPPING-2 FEZC 7
c	H5029850	SCREW M4X6	HEXAGON SOCKET BUTTON HEAD FE 4
d	H5039205	WASHER 12.5X9.5X0.5/0.9	INTERNAL TOOTH FENI 3
e	H5039112	WASHER M9	3
f	H5039510	NUT M9X12X2	FENI 3
g	H5029852	SCREW 4M3 FEBZC	HEXAGON SOCKET BUTTON HEAD 2
h	H5039413	NYLON WASHER M4.1X7.5X0.5	BLACK 2
I	H5039414	NYLON WASHER M5.1X9.5X0.5	BLACK 2
j	H5019430	SCREW M2.6X5	BINDING HEAD TAPTITE FEZC 2
k	H5039521	VR ACCESSORY NUT M7	5
m	H5019115	SCREW M3X8	PAN TAPPING-2 FEBZC 5
n	H5019125	SCREW M3X10	PAN HEAD W/SW+PW FE BC 2

# PARTS LIST

**SAFETY PRECAUTIONS:**

The parts marked  $\triangle$  have safety-related characteristics. Use only listed parts for replacement.

**SAFETY PRECAUTIONS:**

The parts marked  $\triangle$  have safety-related characteristics. Use only listed parts for replacement.

	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)

JB -> JACK BOARD ASSY, PB -> PANEL BOARD ASSY

**CASING**

	G2357116	PEDAL PLATE	62X53		2
	G2017620	BATTERY CASE			1
	G2017621	BATTERY COVER			1
	G2017148	BOTTOM COVER			1
	G2357118	BOTTOM FOOT			2
	G2017146	CASE			1
#	G2217153	LED PANEL			1
#	G2217146	PANEL			1
	G2187531	PEDAL L			1
	G2187530	PEDAL R			1
	H5029851	PEDAL SHAFT			2
	G2217150	REAR PANEL			1

**KNOB,BUTTON**

	G2477122	R-KNOB			5
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**SWITCH**

	13129778	SKQKAH	TACT SWITCH	SW1, SW2 on Panel Board	2
	F3159104	SS037-P222BHH-PE9	SWITCH	SW1 on Jack Board	1

**JACK,EXT TERMINAL**

	13449150MP	HTJ-064-12D	PHONE JACK (STEREO)	JK2 on Jack Board	1
	13449155MF	HTJ-064-12I	PHONE JACK (MONO)	JK1, JK3 on Jack Board	2
	00564556	TCS5093-10-4152	DIN	CN1 on Jack Board	1
	F344940301	DJ-0711B-020	ADAPTOR JACK	JK4 on Jack Board	1

**PWB ASSY**

#	75D4820000	JACK BOARD ASSY			1
#	75D4830200	PANEL BOARD ASSY			1

**IC**

	02455056	S-80930ALMP-DAT-T2	IC (RESET)	IC8 on Jack Board	1
	02122423	AN78L07M-E1	IC (REGULATOR)	IC11 on Jack Board	1
	02124634	AN79L07M-E1	IC (REGULATOR)	IC9 on Jack Board	1
	00458034	TC75S51F TE85R	IC (OP AMP)	IC7 on Jack Board	1
	01906156	S-8520E33MC-BJS-T2	IC (DC-DC REGULATOR)	IC12 on Jack Board	1
	02568567	MB3778PFV	IC (DC-DC CONVERTER)	IC10 on Jack Board	1
	15189261	M5218AFP-600E	IC (BIPOLAR OP AMP)	IC1 on Jack Board	1
	02451434	AK4552VT	IC (AD/DA)	IC2, IC3, IC6 on Jack Board	3
#	02569812	MN101C30A VER.1.00	IC (8BIT CPU)	IC4 on Jack Board	1
	02568578	MN101C427BL VER.1.00	IC (8BIT CPU)	IC5 on Jack Board	1

**TRANSISTOR**

	F5309111	2SA1182Y	TRANSISTOR	Q15, Q18 on Jack Board	2
	15309104	2SA1586-GR(TE85R)	TRANSISTOR	Q10, Q11 on Jack Board	2
	15319108	2SC-3324GR-TE85R	TRANSISTOR	Q2, Q4, Q5, Q6, Q8, Q9, Q12, Q21 on Jack Boa	8
	F5319104	2SC2859Y	TRANSISTOR	Q19 on Jack Board	1
	15319107	2SC4116-GR(TE85R)	TRANSISTOR	Q13 on Jack Board	1
	15329521	RN1307(TE85R)	TRANSISTOR	Q7, Q22 on Jack Board	3
	F5139608	IRF7606	POWER MOS FET	Q16 on Jack Board	1
	15329103	2SK880GR-TE85R	FET TRANSISTOR	Q1, Q3, Q20 on Jack Board	2

**DIODE**

	02562878	02DZ5.1-Y(TPH3)	ZENER DIODE	D2 on Jack Board	1
	01019534	1SS355 TE-17	SWITCHING DIODE	D1, D4, D9, D10 on Jack Board	4
	F5029126	L-113GDT	POWER LED	LED3 on Panel Board	1

<b>DIODE</b>					
	1502928100	L-34HDSL	LED (RED)	LED1, LED2 on Panel Board	2
	F5339137	SS14 VF=0.45V	DIODE	D5,D6,D7,D8 on Jack Board	4
	15339120T0	1SS302(TE85R)	ARRAY DIODE	DA1, DA2, DA3 on Jack Board	3
<b>RESISTOR</b>					
	00566867	RPC05T 100 J	MTL.FILM RESISTOR	R25,R40,R60 on Jack Board	3
	00567023	RPC05T 101 J	MTL.FILM RESISTOR	R91 on Jack Board	1
	00567156	RPC05T 102 J	MTL.FILM RESISTOR	R4 on Jack Board	1
	00567289	RPC05T 103 J	MTL.FILM RESISTOR	R3,R8,R19,R24,R45,R48,R54,R56,R57,R67,R79,R8	13
	00567412	RPC05T 104 J	MTL.FILM RESISTOR	R7,R11,R96 on Jack Board	3
	00567556	RPC05T 105 J	MTL.FILM RESISTOR	R5,R30,R65,R92,R97,R102 on Jack Board	6
	00567290	RPC05T 123 J	MTL.FILM RESISTOR	R87 on Jack Board	1
	00567178	RPC05T 152 J	MTL.FILM RESISTOR	R90 on Jack Board	1
	00567301	RPC05T 153 J	MTL.FILM RESISTOR	R17,R20,R76 on Jack Board	3
	00567434	RPC05T 154 J	MTL.FILM RESISTOR	R80,R86on Jack Board	2
	00567189	RPC05T 182 J	MTL.FILM RESISTOR	R73 on Jack Board	1
	00567312	RPC05T 183 J	MTL.FILM RESISTOR	R59 on Jack Board	1
	00567190	RPC05T 222 J	MTL.FILM RESISTOR	R70 on Jack Board	1
	00567323	RPC05T 223 J	MTL.FILM RESISTOR	R6,R10,R13,R15,R22,R26,R33,R41,R51,R62 on Ja	10
	00566934	RPC05T 330 J	MTL.FILM RESISTOR	R93 on Jack Board	1
	00567089	RPC05T 331 J	MTL.FILM RESISTOR	R61,R82,R84 on Jack Board	3
	00567234	RPC05T 392 J	MTL.FILM RESISTOR	R89 on Jack Board	1
	00567112	RPC05T 471 J	MTL.FILM RESISTOR	R68 on Jack Board	1
	00567245	RPC05T 472 J	MTL.FILM RESISTOR	R12,R23,R32,R39,R50,R58,R71,R72,R77,R78,R81	11
	00567378	RPC05T 473 J	MTL.FILM RESISTOR	R1,R2,R29,R36,R37,R38,R49,R55,R101,R103,R104	11
	00567501	RPC05T 474 J	MTL.FILM RESISTOR	R18,R21,R98,R99 on Jack Board	4
	00567134	RPC05T 681 J	MTL.FILM RESISTOR	R43,R44 on Jack Board	2
	00567267	RPC05T 682 J	MTL.FILM RESISTOR	R74 on Jack Board	1
	00567278	RPC05T 822 J	MTL.FILM RESISTOR	R88 on Jack Board	1
	02239612	RR0816P-472-D	MTL.FILM RESISTOR	R16,R28,R35,R46,R53,R64 on Jack Board	6
	01909734	RR0816P-682-D	MTL.FILM RESISTOR	R14,R27,R34,R42,R52,R63 on Jack Board	6
	F5429373	22KF	CHIP RESISTOR (1608 TYPE)	R66 on Jack Board	1
	F5429374	33K OHM F RANK (1%)	CHIP RESISTOR (1608 TYPE)	R69 on Jack Board	1
<b>POTENTIOMETER</b>					
	F3279802	RD901-40-125F-B54-00D	POTENTIOMETERNO CLICK 50KB	VR1, VR3, VR4 on Panel Board	3
	F3279804	RD901-40-125F-B54-06D	POTENTIOMETER 6 CLICKS 50KB	VR5 on Panel Board	1
	F3279803	RD901-40-125F-B54-11D	POTENTIOMETER 11 CLICKS 50KB	VR2 on Panel Board	1
<b>CAPACITOR</b>					
	02341489	ECPU1C474MA5	MYLAR CAPACITOR(SUBMICRON)	C3 on Jack Board	1
	F5367542	10/16V ALUMINIUM	ELECTROLYTIC CAPACITOR	C1, C4 ,C6 on Jack Board	3
	F5367546	100/16V ALUMINIUM	ELECTROLYTIC CAPACITOR	C35, C39, C79, C82, C84, C85, C86, C88, C94,	13
	F5367503	47/6.3V ALUMINIUM	ELECTROLYTIC CAPACITOR	C21, C70 on Jack Board	2
	F5359730	ECJ1VC1H821J	CHIP CAPACITOR (1608 TYPE)		1
	F5359705	ECUV1H270JCV	CHIP CAPACITOR (1608 TYPE)	C72 on Jack Board	1
	F5359780	GRM39B103K50PT	CHIP CAPACITOR (1608 TYPE)	C11, C25, C77, C110, C111, C112, C114, C115,	10
	F5359740	GRM39B222K50PT	CHIP CAPACITOR (1608 TYPE)	C120 on Jack Board	1
	F5359775	GRM39B332K50PT	CHIP CAPACITOR (1608 TYPE)	C53, C54, C55, C56, C57, C76 on Jack Board	6
	F5359750	GRM39B392K50PT	CHIP CAPACITOR (1608 TYPE)	C64 on Jack Board	1
	F5359720	GRM39CH101J50PT	CHIP CAPACITOR (1608 TYPE)	C2, C9, C12 on Jack Board	3
	F5359704	GRM39CH220J50PT	CHIP CAPACITOR (1608 TYPE)	C58, C60 on Jack Board	2
	F5359709	GRM39CH330J50PT	CHIP CAPACITOR (1608 TYPE)	C75 on Jack Board	1
	F5359800	GRM39F104Z25PT	CHIP CAPACITOR (1608 TYPE)	C16,C18,C23,C24,C26,C27,C29,C30,C31,C32,C33,	38
	F5359790	GRM39F333Z50PT	CHIP CAPACITOR (1608 TYPE)	C92, C101 on Jack Board	2
	F5369601	1/50V	CHIP CAPACITOR	C7, C8, C13, C14, C19, C22, C28, C41, C42, C	17
	02231323	ECJ2VF1C105Z	CERAMIC CAPACITOR	C10,C15,C17,C43,C45,C52,C62,C66,C68,C113,C11	12
	F3629272KM	47UF/10V	ELECTROLYTIC CAPACITOR	C1 on Panel Board	1
<b>INDUCTOR,COIL,FILTER</b>					
	F2449216	SLF7045T-151MR40	SMD COIL	L4, L6, L7 on Jack Board	3
	12449384	SBT-0115W	EMI FILTER	L1 on Jack Board	1
	F2449210	SLF7032T-4R7M1R7-2(4.7UH)	EMD COIL	L3, L5 on Jack Board	2
<b>CRYSTAL,RESONATOR</b>					
	F5299108	HC-49SM 8MHZ	CRYSTAL	X1 on Jack Board	1
	01455201	MA-406 12.288MHZ	CRYSTAL	X2 on Jack Board	1
<b>CONNECTOR</b>					
	F3439160	53015-0210 2P P=2MM	CONNECTOR	CN5 on Jack Board	1
#	F3439177	A2001WV2-12P	CONNECTOR	CN2 on Jack Board	1
<b>WIRING,CABLE</b>					
	G3487163	WIRING BATTERY	L=80MM 2P		1

**WIRING,CABLE**

#	G3417188	WIRING 12P	L=65MM P=2MM	CN1 on PB to CN 2 on JB	1
	F3477146	RIBBON CABLE	3P L=40X5X5MM P=2MM	CN3 to CN4 on Jack Board	1

**SCREWS**

	H5019110	SCREW M3X6	PAN TAPPING-2 FEZC		7
	H5019115	SCREW M3X8	PAN TAPPING-2 FEBZC		7
	H5019125	SCREW M3X10	PAN HEAD W/SW+PW FE BC		2
	H5039205	WASHER 12.5X9.5X0.5/0.9	INTERNAL TOOTH FENI		3
	H5029850	SCREW M4X6	HEXAGON SOCKET BUTTON HEAD F		4
	H5029852	SCREW 4M3 FEBZC	HEXAGON SOCKET BUTTON HEAD		2
	H5039510	NUT M9X12X2	FENI		3
	H5039413	NYLON WASHER M4.1X7.5X0.5	BLACK		2
	H5039414	NYLON WASHER M5.1X9.5X0.5	BLACK		2
	H5019430	SCREW M2.6X5	BINDING HEAD TAPTITE FEZC		2
	H5039521	VR ACCESSORY NUT M7			5
	H5039112	WASHER M9			3

**PACKING**

	G2607212	PACKING CASE LOWER			1
#	G2627216	PACKING CASE UPPER			1
	G2237613	SIDE PAD			1
	G2237614	REAR PAD			1

**MISCELLANEOUS**

	G2357115	PEDAL FOOT	M8		2
	2215770201	PEDAL GUIDE BUSH	215-702		1
	2217710900	COIL SPRING	214-109		2
	G2257130	BATTERY INSULATING SHEET			1
	G2177308	BATTERY TERMINAL(+)			1
	G2177307	BATTERY TERMINAL(+)			1
	G2177309	BATTERY TERMINAL(-)			1
	G2357111	CUSHION R			2
	G2257131	INSULATING SHEET BOTTOM			1
#	G2537726	LABEL			1
	02123845	LEAF A		on Jack Board	1
	G2197126	LED GUIDE			1

**ACCESSORIES (Standard)**

#	G6017299	OWNER'S MANUAL	JAPANESE		1
#	G6017300	OWNER'S MANUAL	ENGLISH		1
#	*****	DRY BATTERY	LR(AA) TYPE 2P		3
	40232389	WARRNTY CARD	(JAPAN ONLY)		1



# IDENTIFYING VERSION NUMBER

1. Insert the AC adapter plug into the adapter jack while pressing the left ([MASTER ON/OFF] switch), and the right ([EFFECTS ON/OFF] switch) pedals.
2. Release the left and right pedals when the "POWER" LED comes on.
3. Press the left then the right pedal within 4 seconds.
4. Pressing the right pedal displays the version number as shown below.

	MASTER ON/OFF LED	EFFECTS ON/OFF LED
1.00	blinking	dark

## TEST MODE

### Required items

- Guitar with GK-2A + GK cable
- Oscilloscope
- Noise Meter
- Monitor speaker
- ADAPTOR (PSA TYPE)
- Bypass Cable

### Entering Test Mode

1. Connect the GK-2A to GK IN using the GK cable.  
Set the selection switch of the GK-2A to 'SYNTH'.
2. Insert the AC adapter plug into the adapter jack while pressing the left ([MASTER ON/OFF] switch) and the right ([EFFECTS ON/OFF] switch) pedals.
3. Release the left and right pedals when the "POWER" LED comes on.
4. Press the left then the right pedal within 4 seconds.
5. The unit will enter the test mode (selection waiting status), and all LEDs will come on.

Note: When the unit enters the test mode, it simultaneously performs an automatic DSP check.

The state of the LEDs when entering the test mode differs depending on this result.

For further information, refer to "1. DSP check".

Note: After performing 2, perform 3 and 4 within 4 seconds.

After the time has lapsed or if a different switch is operated, the unit does not enter the test mode but starts normal operation.

### Exiting Test Mode

Pressing the left pedal ([MASTER ON/OFF] switch) while in test item selection status exits the test mode.

### Skipping to a specific test item

Each test item and operator for running them are as follows:

Items 2 to 4 can be selected from the selection waiting status.

When the first item is completed, it automatically returns to the selection waiting status.

Note: "5. Normal pick-up (OUT/RETURN JACK) check" and "6. Switch and shock noise check", and "7. Battery operation check" are not test items within the Test mode program.

Perform these tests in normal operating mode without entering Test mode.

1. DSP check: enter the test mode.
2. Switch check: press the [NORMAL PU MIX] switch.
3. Volume check: controls the TYPE volume.
4. CODEC check: controls the MODE volume.
5. Normal pick-up (OUT/RETURN JACK) check: re-enters power (normal operation state)
6. Switch and shock noise check(normal operation state)
7. Battery operation check(normal operation state)

Caution: After repairing or servicing the WP-20G, you must be sure to check all items.

## Details of test items

### 1. DSP check

1. Enters the test mode.
2. When it enters the test mode, it automatically checks the internal memory (IRAM & PRAM) of the DSP.
3. If no problem exists, the "MASTER ON/OFF" LED and the "EFFECTS ON/OFF LED" come on and the unit stands by for test item selection.
4. The state of the LEDs and the reason when a problem occurs are as follows:  
Please check the IC5

	MASTER ON/OFF LED	EFFECTS ON/OFF LED
IRAM error	dark	blinking
PRAM error	blinking	dark

Note: The next test cannot be performed if a problem occurs.

### 2. Switch check

1. Moving the [NORMAL PU MIX] switch to either side enters the switch check.  
(The unit enters the switch check when the [NORMAL PU MIX] switch is moved from 'ON' to 'OFF' or vice versa).
2. Press the switch in the following order.  
Confirm that the LED displays as follows:

	MASTER ON/OFF LED	EFFECTS ON/OFF LED
NORMAL PU MIX	blinking	illuminated
GK-2A S1	illuminated	blinking
GK-2A S2	blinking	dark
LEFT PEDAL	dark	blinking
RIGHT PEDAL	illuminated	illuminated

Note: When several switches are simultaneously pressed, the "MASTER ON/OFF" LED and the "EFFECTS ON/OFF LED" simultaneously flash, and you cannot proceed to the next test.

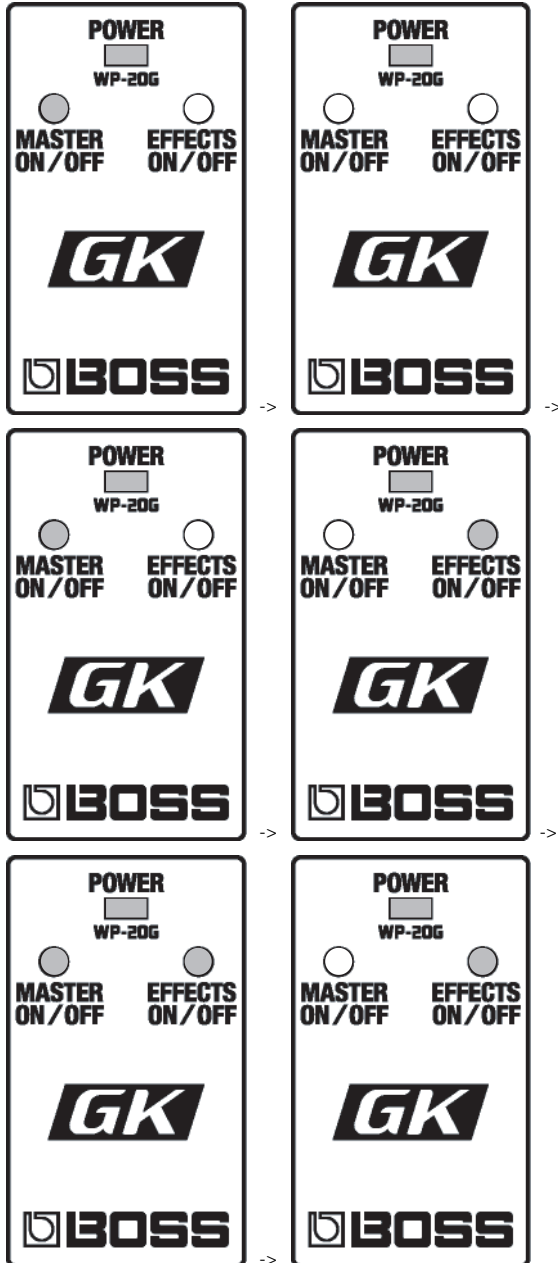
Note: When the left pedal check is completed, the "MASTER ON/OFF" LED and the "EFFECTS ON/OFF LED" come on and the unit stands by for test item selection.

### 3. Volume check

1. To enter the volume check, set the GK-2A's selection switch to 'SYNTH', turn all volume controls including the GK-2A's volume (SYNTHVOL) to minimum and control the TYPE volume.
2. Perform the check in the following order: Confirm that the LED comes on and off as follows:

- TYPE volume check

Turn the TYPE volume control one click at a time from the left (minimum) and confirm that the LED changes as follows:



- COLOR volume check

Turn the COLOR volume control from the left (minimum) and confirm that the LED changes as follows:



- LEVEL volume check

Turn the LEVEL volume control from the left (minimum) and confirm that the LED changes as with the COLOR volume.

- MODE volume check

Turn the MODE volume control one click at a time from the left (minimum) and confirm that the LED changes as follows:





• EFFECT LEVEL volume check

Turn the EFFECT LEVEL volume from the far left (minimum) to far right (maximum), and verify that the LEDs change as with the color volume.

• GK-2A SYSTH VOL volume check

Turn the GK-2A SYSTH VOL volume from the far left (minimum) to the far right (maximum), and verify that the LEDs change as with the COLOR volume.

- Press the right pedal and complete the check.

The "MASTER ON/OFF" LED and the "EFFECTS ON/OFF LED" come on and the unit stands by for test item selection.

### 4.CODEC check

Moving the MODE volume control from 'DELAY 1' initiates the CODEC check.

Note: When the MODE volume control is set to 'DELAY+CHORUS 1-5' or 'CHORUS', the "MASTER ON/OFF LED" and the "EFFECTS ON/OFF LED" come on and the unit stands by for test item selection.

- ERAM check

1. Setting the MODE volume control to 'DELAY2' automatically initiates the check.

The "MASTER ON/OFF" LED and the "EFFECTS ON/OFF " LED flash alternately.

2. Confirm that the "MASTER ON/OFF" LED and the "EFFECTS ON/OFF " LED are both on.

3. If a problem exists, the "MASTER ON/OFF" LED and the "EFFECTS ON/OFF" LED simultaneously flash and you cannot proceed to the next check.

Please check the IC5

- D/A check & MUTE check

1. Setting the MODE volume control to 'DERAY 3' turns the "MASTER ON/OFF" LED on, and turns the "EFFECTS ON/OFF" LED off, and enters the D/A check.

2. Connect an oscilloscope to the OUTPUT jack, and confirm that a 0.25Vp-p rectangular wave of 375 Hz is output.

3. Confirm that the "MASTER ON/OFF " LED flashes and the waveform is muted (no waves are output) when the left pedal is pressed.

4. Press the left pedal again, and confirm that the waveform is output again.

- A/D thru check

1. Setting the MODE volume control to 'DERAY 4' initiates the A/D thru check.

Set the switch of the GK-2A to 'SYNTH'.

2. It will automatically enter the string 1 check.

Confirm that the "MASTER ON/OFF" LED comes on and the "EFFECTS ON/OFF" LED goes off.

Connect an oscilloscope to the OUTPUT jack, and confirm that only the waveform for string 1 is output.

Confirm that no waveforms are output when unselected strings are played.

3. Pressing the [UP/S2] switch of the GK-2A initiates the string 2 check.

Confirm that both the "MASTER ON/OFF" LED and "EFFECTS ON/OFF" LED go off, and that only the waveform for string 2 is output.

Also, confirm that no waveforms are output when unselected strings are played.

4. Press the [UP/2S] switch of the GK-2A as above, and confirm that only the selected waveforms of strings 3,4,6 and 5 are output.

The selected string and the LED display are as follows.

	MASTER ON/OFF LED	EFFECTS ON/OFF LED
1st string	illuminated	dark
2nd string	dark	dark
3rd string	illuminated	dark
4th string	dark	illuminated
6th string	illuminated	illuminated
5th string	dark	illuminated

Note: To return to the previous string check, press the [DOWN/S1] switch of the GK-2A



- Noise check
1. Setting the MODE volume control to 'DELAY 5' turns the "MASTER ON/OFF" LED off and the "EFFECTS ON/OFF LED" to flash, then enters the noise check.
  2. Disconnect the GK-2A, and connect a noise meter to OUTPUT JACK without connecting anything to GK IN.
  3. Confirm that the noise level is -90 dBm (DIN-Audio) or lower.

Note: Noise check disconnects the GK-2A from the plug, for the time being.

## 5.Normal pick-up (OUT/RETURN JACK) check

1. Turn the [NORMAL PU MIX] switch on while the main power supply is off, then insert the AC adapter plug into the adapter jack.
2. Confirm that the "MASTER ON/OFF" LED is on.
3. Set the switch of the GK-2A to 'GUITAR'.
4. Connect an oscilloscope to the OUTPUT jack, and confirm that a waveform is output when the guitar is played.
5. Connect one side of the bypass cable to GUITAR OUT jack, and confirm that no waveform is output when the guitar is played.
6. Connect the remaining side of the bypass cable to RETURN jack, and confirm that a waveform is output when the guitar is played.
7. Confirm that no waveform is output when the guitar is played while the [NORMAL PU MIX] switch is off.

## 6.Switch and shock noise check

1. Turn the [NORMAL PU MIX] switch off, and set up the knobs of panel as follows.
 

TYPE	:SAW LEAD
COLOR	:CENTER
LEVEL	:CENTER
DELAY	:DELAY-5
EFFCT LECEL	:CENTER

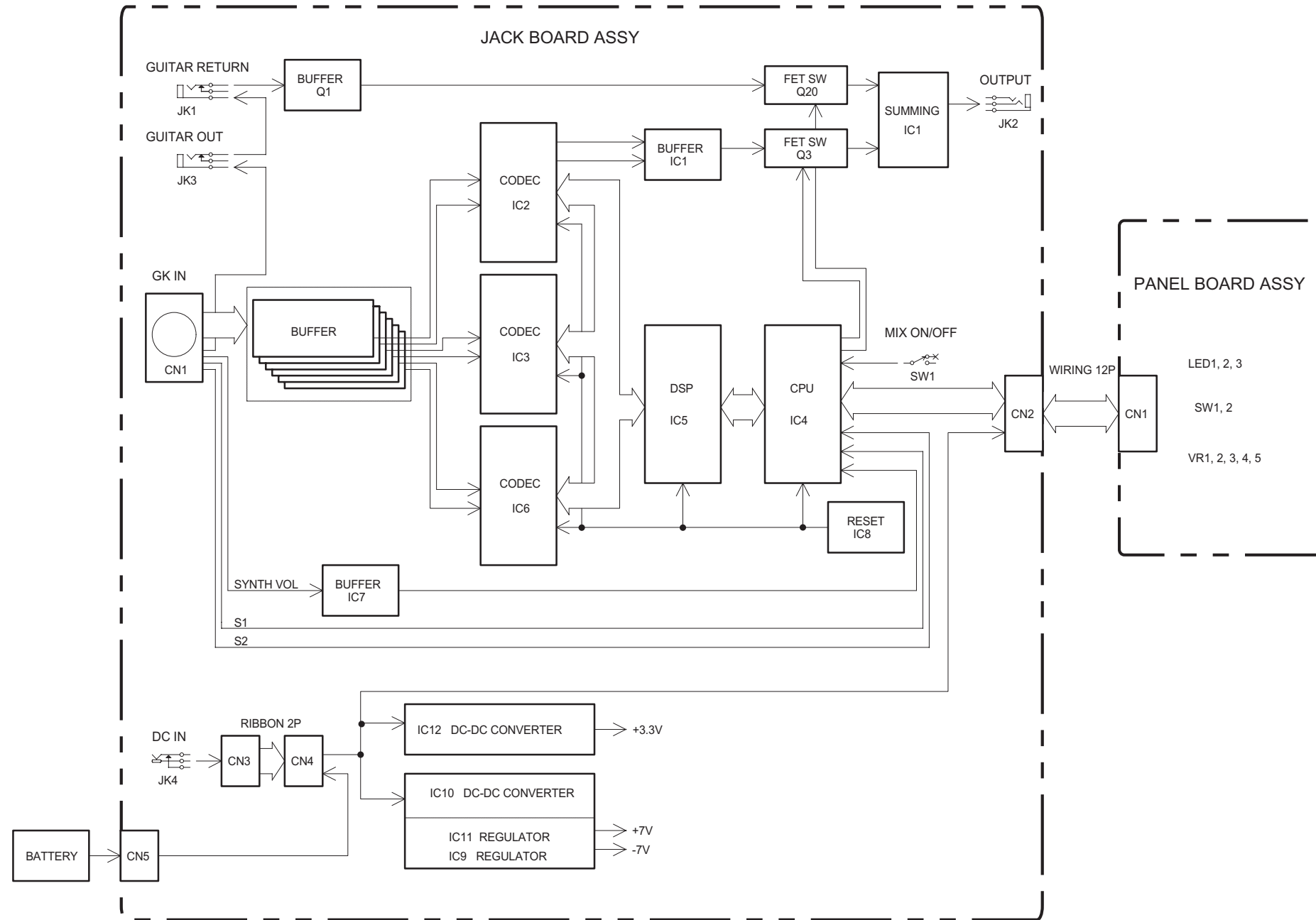
 and set the GK-2A's SYNTH VOL to maximum and the selection switch to 'MIX'.  
Place the guitar in as noiseless an environment as possible.
2. Connect the monitor speaker to OUTPUT jack.
3. Press the left pedal repeatedly, and switch the 'MASTER ON' and 'MASTER OFF'.
4. Confirm that no abnormal switch noise is generated.
5. Press the left pedal and turn the "MASTER ON/OFF" LED off ('MASTEROFF'), and subject the unit to a shock from 10 cm high to confirm that no abnormal noise is generated.
6. Press the left pedal and turn the "MASTER ON/OFF" LED on ('MASTERON'), and subject the unit a shock from 10cm high to confirm that no abnormal noise is generated.

## 7.Battery operation check

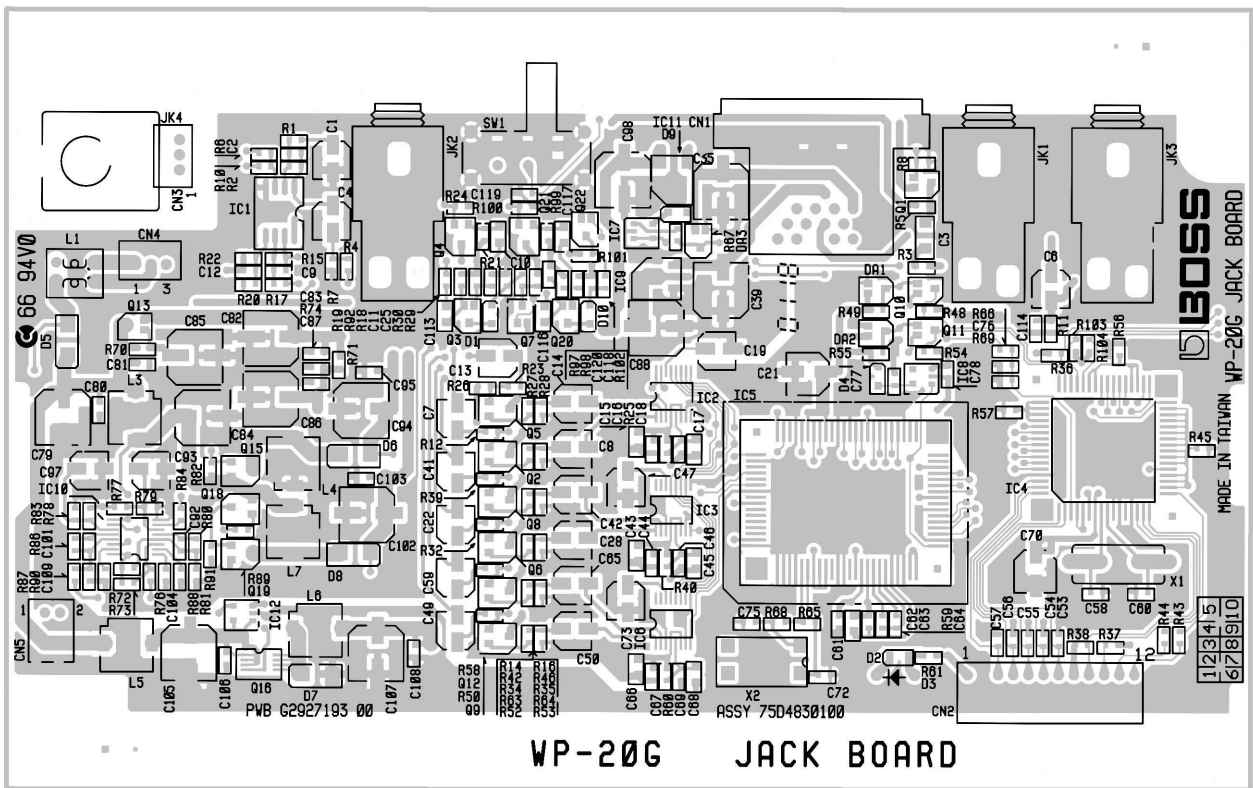
1. Put the batteries in the battery compartment and insert the plug into the OUTPUT jack.
2. Check that power is turned on.
3. Check that the unit is operating normally.

Note : Always check the battery after repairing or servicing the product.

# Block Diagram

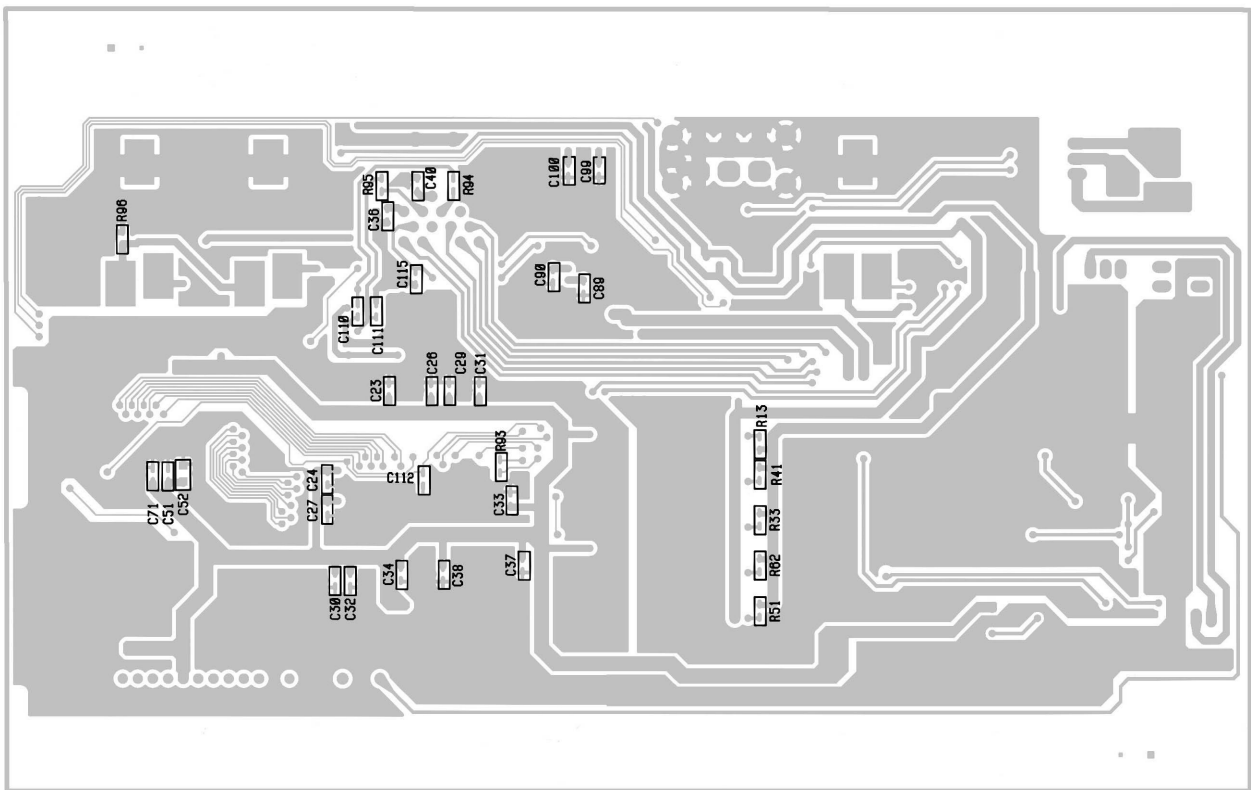


# Circuit Board (JACK BOARD)



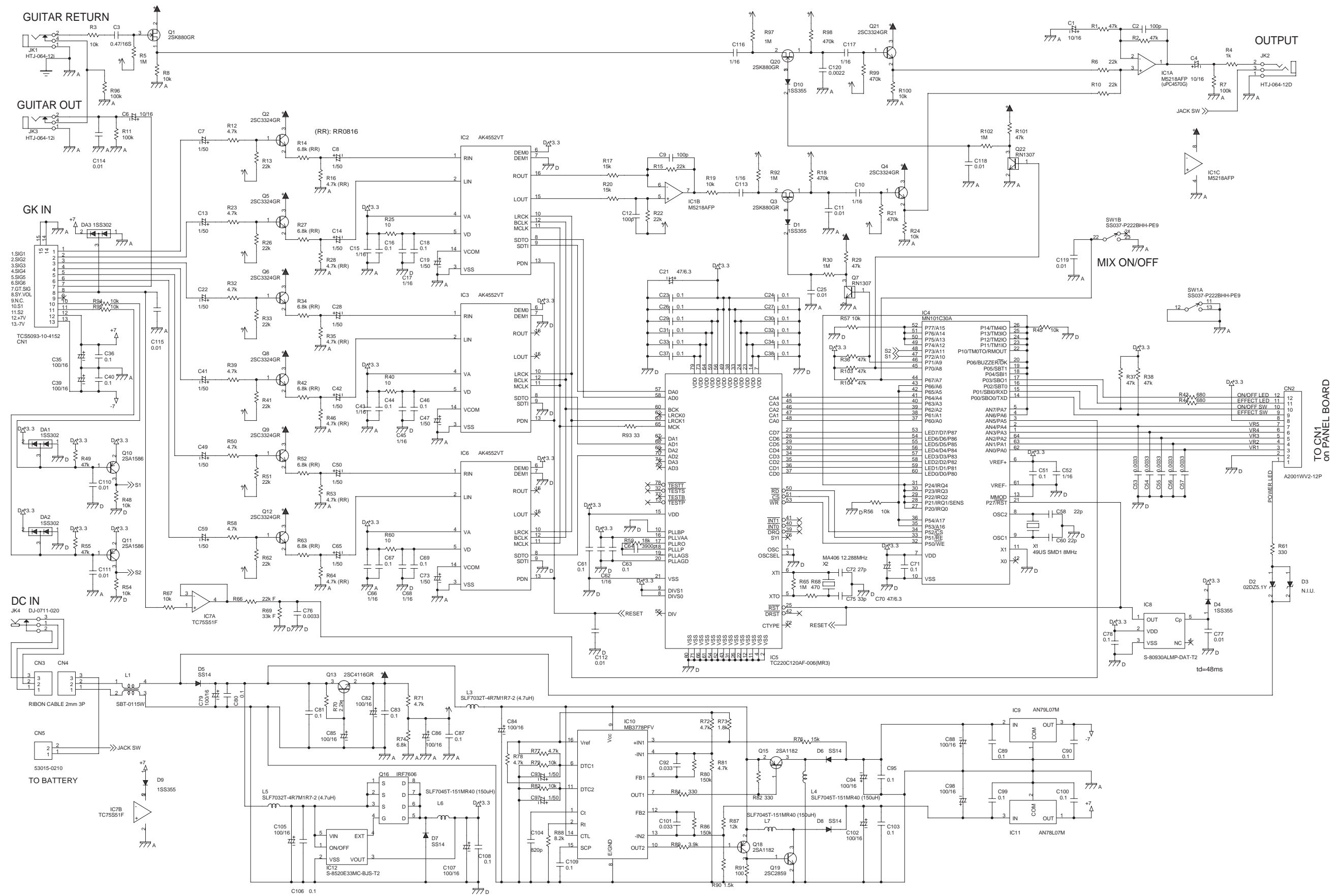
View from component side

# Circuit Board (JACK BOARD)

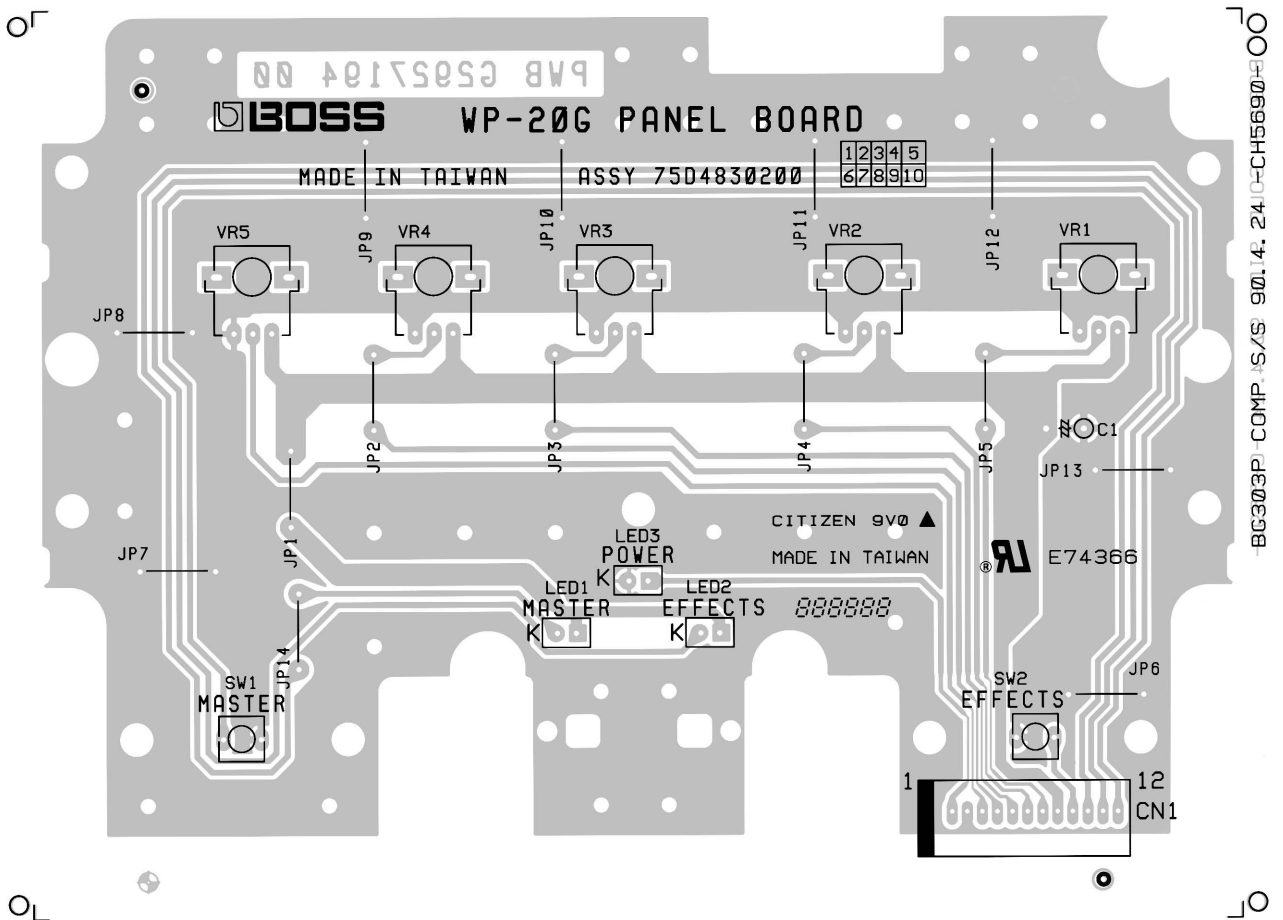


View from foil side

# Circuit Diagram (JACK BOARD)



# Circuit Board (PANEL BOARD)



View from component side

# Circuit Diagram (PANEL BOARD)

