

 **HAMMOND**

SERVICE MANUAL

B-3P

CAUTION !
see safety notice inside

* Use this manual as a supplement to
"New B-3 SERVICE MANUAL."



JAN.2005



SUZUKI MUSICAL INST.MFG.CO.,LTD.

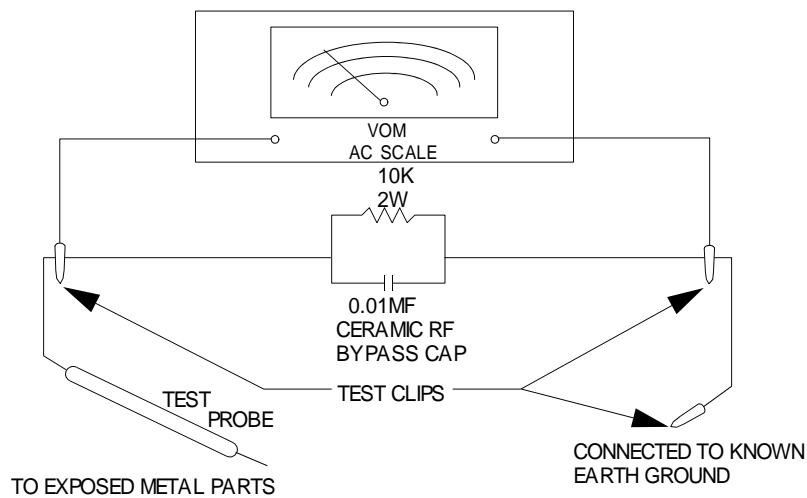
2-25-12,RYOKE,HAMAMATSU, JAPAN

SAFETY NOTICE

Great care has been taken in the design and manufacture of this product to assure that no shock hazard exists on any exposed metal parts. Internal service operations can expose the technician to hazardous line voltages and accidentally cause these voltages to appear on exposed metal parts during repair or reassembly of product components. To prevent this, work on these products should only be performed by those who are thoroughly familiar with the precautions necessary when working on this type of equipment.

To protect the user, it is required that all enclosure parts and safety interlocks be restored to their original condition and the following tests be performed before returning the product to the owner after any service operation.

Plug the AC line cord directly into a line voltage AC receptacle (do not use an isolation transformer for this test) and turn the product on. Connect the network (as shown below) in series with all exposed metal parts and a known earth ground such as a water pipe or conduit. Use an AC Voltmeter of 5,000 ohms per volt or higher sensitivity to measure the voltage drop across the network. Move the network connection to each exposed metal part (metal chassis, screw heads, knobs and control shafts, escutcheon, etc.) and measure the voltage drop across the network. Reverse the line plug and repeat the measurements. Any reading of 4 volts RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the product to the user.



CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

Advarsell

Lithiumbatteri. Eksplosjonsfare ved feilagtig håndtering.
Udskiftning må kun ske med batteri as samme fabriket og type.
Lebér det brugte batteri tilbage til leverandoren.

Norge: ADVARSEL

Lithiumbatteri - Eksplosjonsfare.
Ved utskiftning benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandoren.

Sverige: VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller et ekvivalent typ som rekommenderes av apparattillverkaren,
Kassera använt batteri enligt fabrikantens instruktion.

Finland: VAROITUS

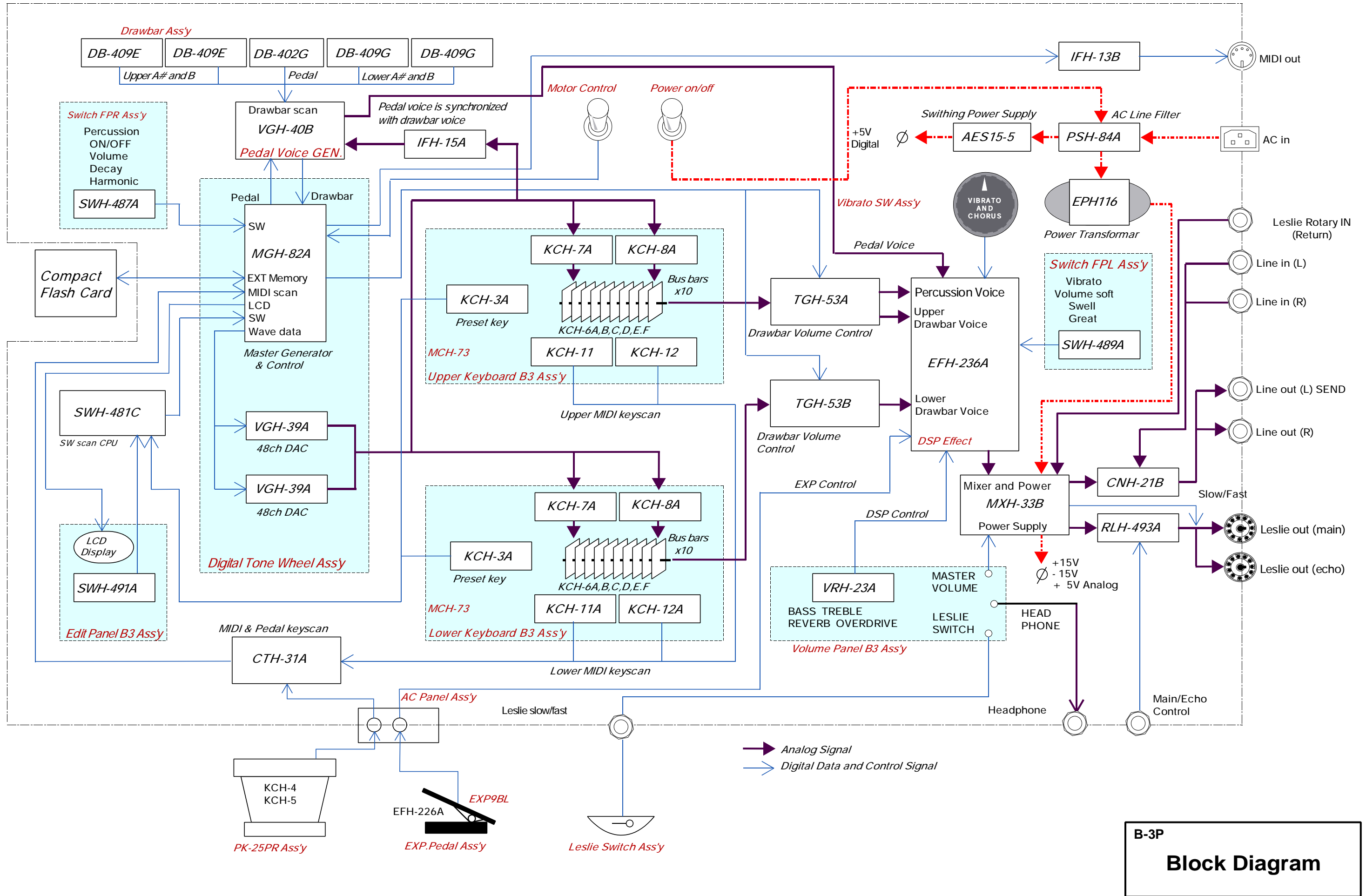
Paristo voi räjähtää, jos se on virheellisesti asennettu
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppöön, Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

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1.SPECIFICATIONS

Keyboards	Swell & Great (10-Mechanical contacts and Rubber contacts w/velocity) Pedal Keyboard 25-note, radiating, detachable
Sound Generator	96-Digital Tone Wheels
Harmonic Drawbars™	Swell 9 pitches 2 sets (16',5 1/3',8',4',2 2/3',1 3/5',1 1/3',1') Great 9 pitches 2 sets (16',5 1/3',8',4',2 2/3',1 3/5',1 1/3',1') Pedal 2 pitches (16',8')
Tone Wheels Select	Manuals 2 Choices Pedals 2 Choices
Percussion	PERCUSSION ON,VOLUME SOFT,DECAY FAST,THIRD HARMONIC Volume & Decay Edit
Vibrato and Chorus	V1,V2,V3,CI,C2,C3 Rotary Knob Swell On / Off Great On / Off Speed : 5 (6.10 - 7.25Hz)
Presets	Swell: 3 banks * 9 Preset keys + 2 Adjust keys + All Off(Cancel) Key Great: 3 banks * 9 Preset keys + 2 Adjust keys + All Off(Cancel) Key
Overdrive	DSP Overdrive
Extra Voice	Swell,Great,Pedal Individually Zoned 3 parts
Tuning	1 Hz Steps 430-450 Hz
Transpose	+/- 6 Semitones
LCD	20-characters, 2 lines 9 Control Switches
Leslie Switch	Slow /Stop/ Fast, MAIN/ECHO Select
Digital Reverb	Continuously Variable 8 Programs : Room 1-3, Hall 1-2, Plate, Church, Cathedral
Tone Controls	Bass / Treble
Other Controls	Motor Control Switch (Pitch Effect) Exp Pedal With Foot Swich
Memory Media	CompactFlash Card (MAX 256M)
Volume	Master,Tone Bass Treble,Reverb,Overdrive
MIDI OUT	3,ZONE
Terminals	Leslie Standard 11-pin out 2Socket(MAIN ECHO) Line In Left / Right Line Out Left(send) / Right (Line In Mix) Leslie Rotary Input(Return) MIDI Out Headphone
Power Supply	100V,120V,220V,240V AC 50/60Hz
Power Consumption	35W
Dimension	123(W),73(D),97(H)cm / 49(W)29(D)39(H)inch
Weight	132kg / 291lb
Accessories	AC Cord, Leslie Slow/Stop/Fast Switch,25key Pedal,Bench CF Card 32M, Music Rest
Option	MAIN/ECHO Select Switch



B-3P
Block Diagram

3.DISASSEMBLING PROCEDURE

 CAUTION:Disconnect ORGAN from A.C. source.

1.REMOVE THE COVER ASS'Y

- ♦ Remove the 4 screws(M5x20,Oval head,ZnB) and 4 rosette washer(Ø5,ZnB) from the cover ass'y.

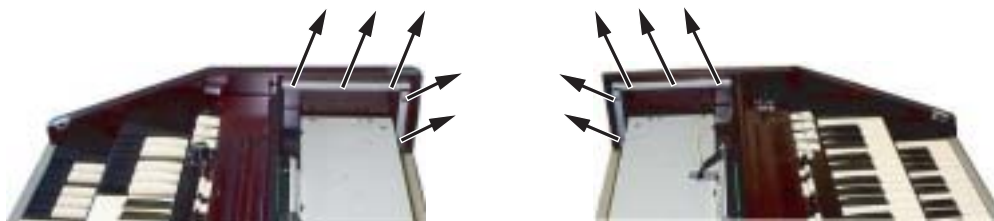


< When using CompactFlash >

- ♦ Remove the 2 screws(M4x12,Truss,ZnB) of HAMMOND Name Plate #1 from the cover ass'y.There is an exclusive slot.



2.REMOVE THE COVER BRACKETS(L)(R)

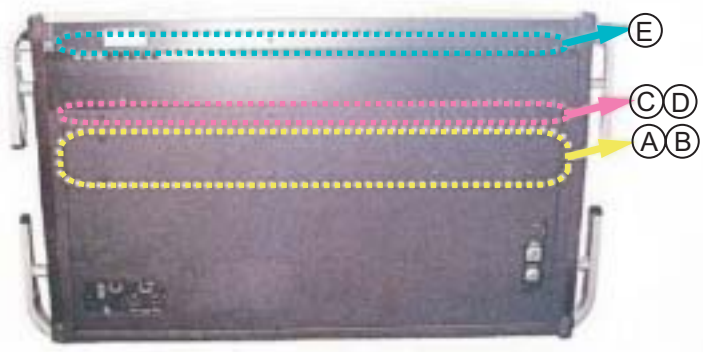


- ♦ Remove the 10 screws(M4x10,Bind,ZnB) from the cover brackets(L)(R).

3.REMOVE THE KEYBOARD

- ♦ Remove the 8 square claw washers (A) (Ø5,ZnB) and 8 screws (B) (M5x25,Truss,ZnB) from the upper keyboard.

- ♦ Remove the 4 square claw washers (C) (Ø5,ZnB), 4 screws (D) (M5x25,Truss,ZnB) and 4 screws (E) (M5x6,Truss,ZnB) from the lower keyboard.



Disassembly procedure for Multi Contact Keyboard

STEP 1

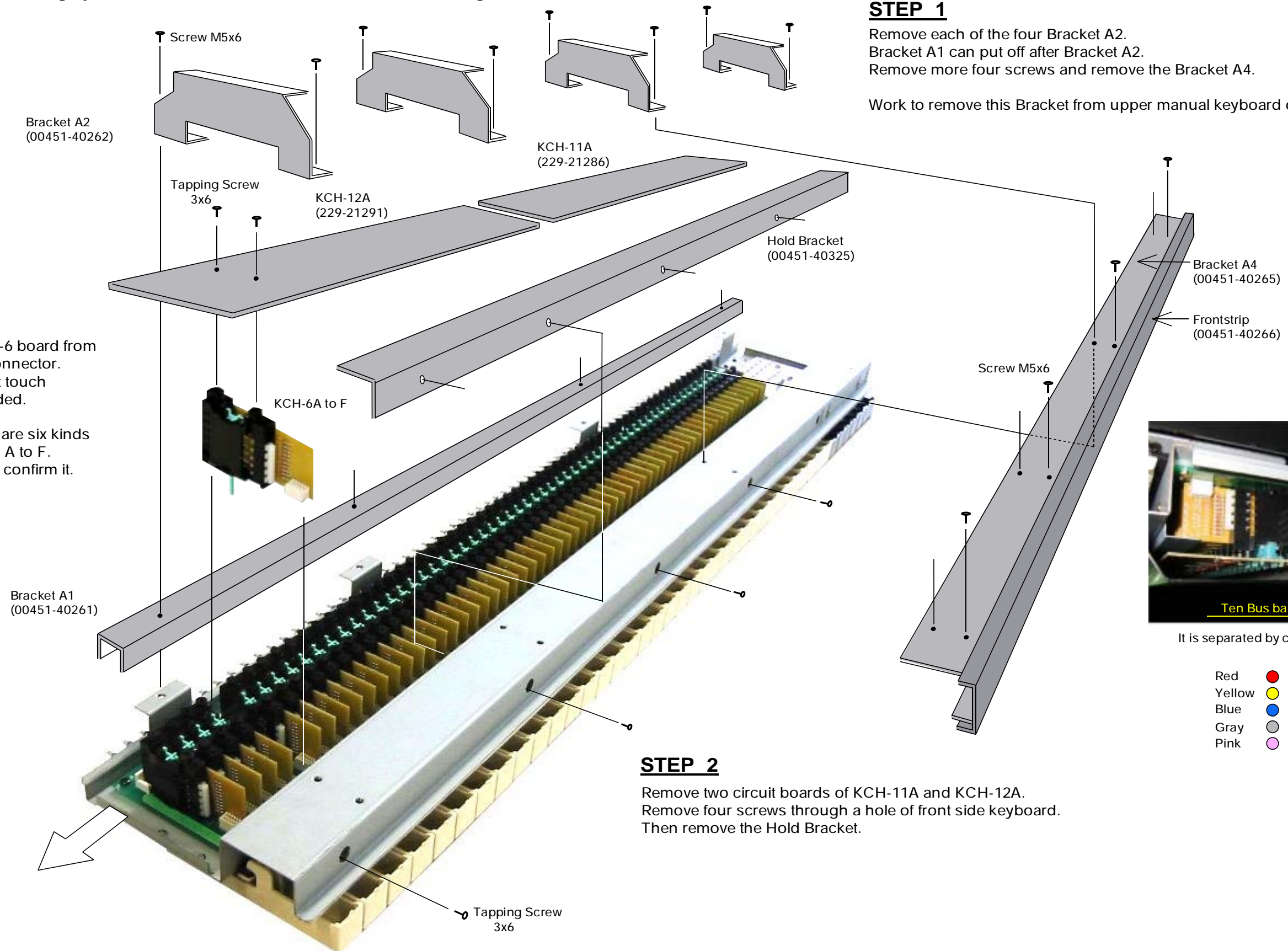
Remove each of the four Bracket A2.
Bracket A1 can put off after Bracket A2.
Remove more four screws and remove the Bracket A4.

Work to remove this Bracket from upper manual keyboard only.

STEP 4

Remove KCH-6 board from a side of a connector.
Please do not touch metal by handed.

KCH-6 board are six kinds of board from A to F.
Will you try to confirm it.

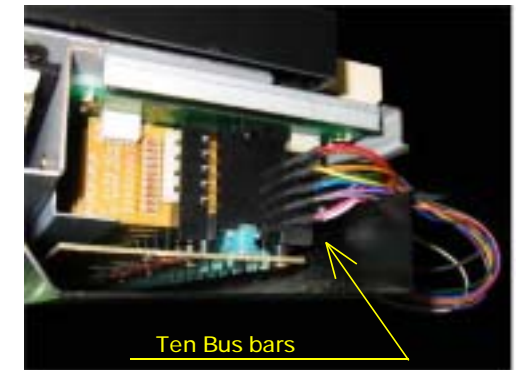


STEP 2

Remove two circuit boards of KCH-11A and KCH-12A.
Remove four screws through a hole of front side keyboard.
Then remove the Hold Bracket.

STEP 3

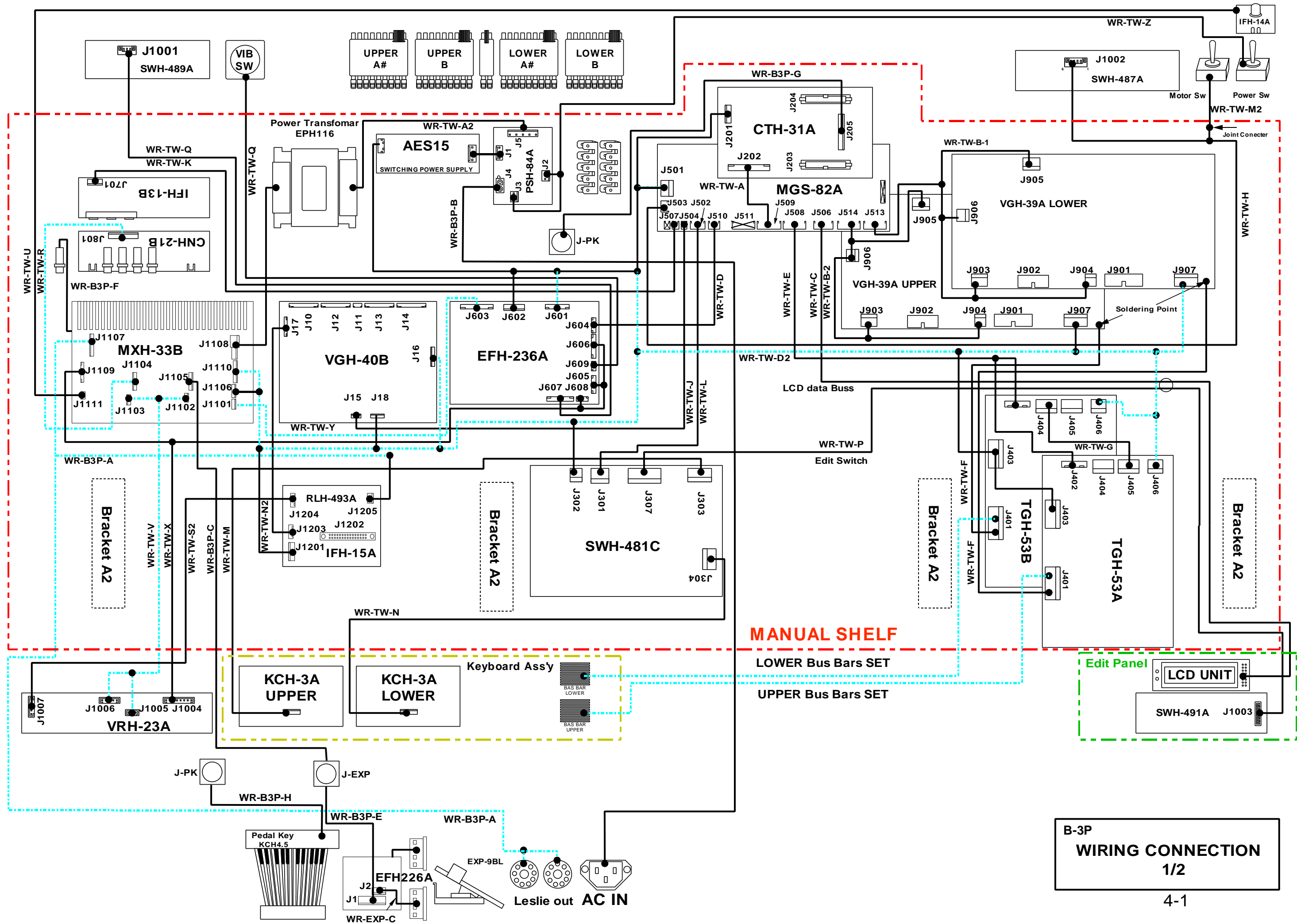
Put keyboard assembly upward and pull out bus bars.
When you touch the bus bar, please use gloves.



It is separated by color.

- | | | | |
|--------|---|--------|---|
| Red | ● | Brown | ● |
| Yellow | ● | Orange | ● |
| Blue | ● | Green | ● |
| Gray | ● | Violet | ● |
| Pink | ● | White | ○ |

B-3P
**Disassembly procedure
Manual Keyboard**



MANUAL SHELF

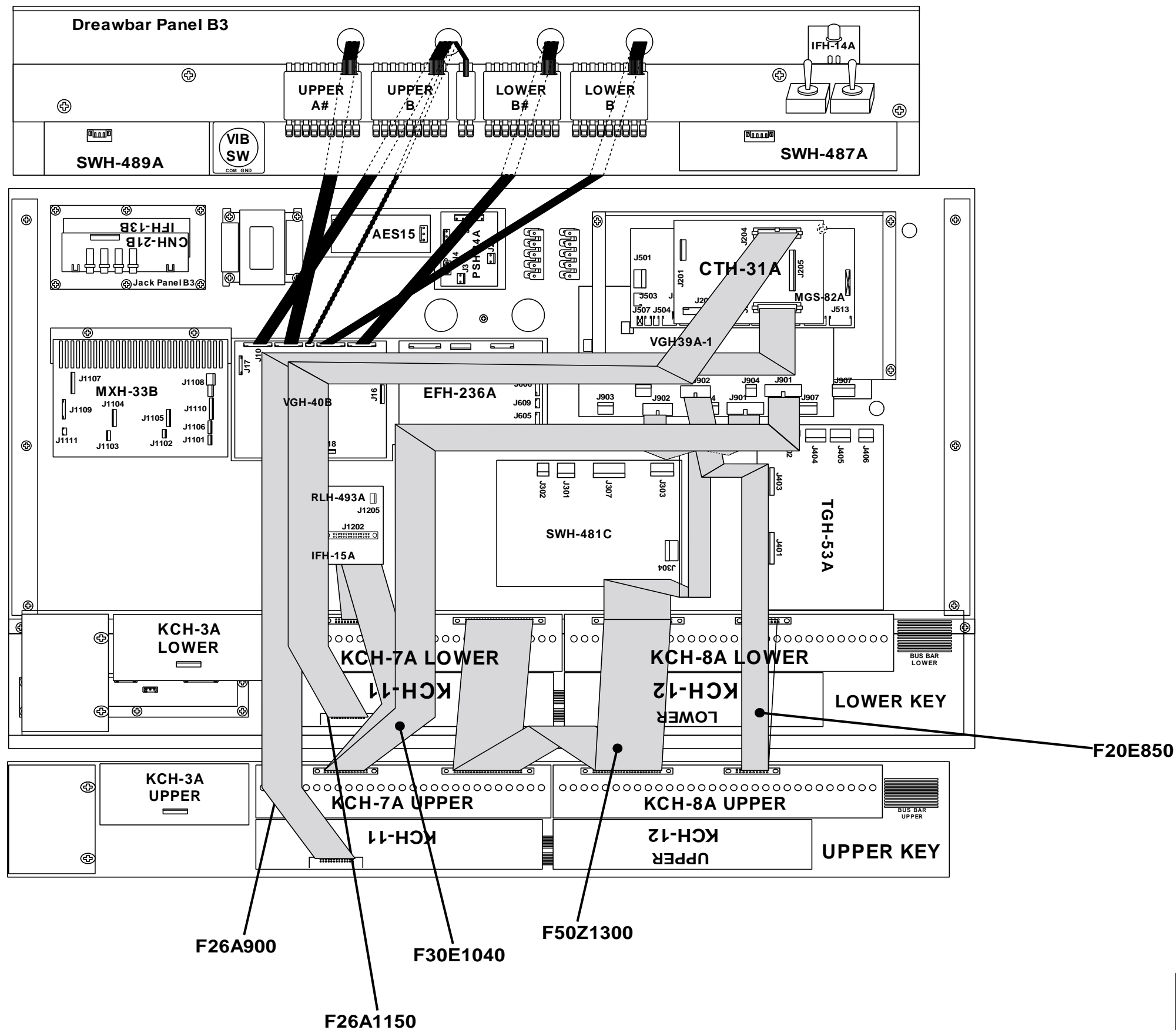
LOWER Bus Bars SET

UPPER Bus Bars SET

Edit Panel

**B-3P
WIRING CONNECTION
1/2
4-1**

Flat Cable Connection



B-3P
WIRING CONNECTION
2/2 FLATCABLE

5. WIRING CHART

B-3P

MAIN & MASTER GENERATOR MGH-82A						
PLUG No.	FROM PIN No.	TO PLUG & PIN No.	WIRE COLOR	TO PWB NAME	FUNCTION	
J501	1	AES15-4	YEL	SW AES-15	+5V	
	2	J201-3	↓	CTH-31A	+5V	
	3	J18-1	↓	VGH-40B	+5V	
	4	NC				
	5	AES15-2	BLK	SW AES-15	DGND	
	6	J201-5	↓	CTH-31A	DGND	
	7	J18-6	↓	VGH-40B	DGND	
J502	1	NC			+5V	
	2	J301-1	BRN	SWH-481C	SW IN	
	3	-2	RED		SW OUT	
	4	NC			DTR	
	5	NC			VAS VIN1	
	6	-3	ORG		SW RES	
	7	-6	BLK		DG	
J503	1	BREAK SW-2	YEL	BREAK SW	+5V	
	2	J1002-3	YEL	SWH-487A	+5V	
	3	BREAK SW-1	ORG	BREAK SW	CPU AN2	
	4	BREAK SW-3	BLK	BREAK SW	PICH	
	5	J1002-1	BRN	SWH-487A	MOD	
	6	-2	RED		AIN4	
	7	-4	ORG		AIN5	
J504	8	-5	YEL		AIN6	
	9	-6	BLK		DGND	
	1	J15-1	BRN	VGH-40B	BAS IN	
	2	-2	RED		BAS OUT	
	3	-3	ORG		BAS RES	
	J506	1		BLK		DGND
		2		YEL		LCD+5V
3		CN2-2	BRN	LCD UNIT	CONT	
4		CN1-6	RED		LCDA0	
5		CN2-3	ORG		LCDR/W	
6		CN1-5	YEL		LCDE	
7		CN2-4	GRN		D0	
8		CN1-4	BLU		D1	
9		CN2-5	VIO		D2	
10		CN1-3	GRY		D3	
11		CN2-6	WHT		D4	
12		CN1-2	PNK		D5	
13		CN2-7	BRN		D6	
14		CN1-1	RED		D7	
15		CN2-1	BLK		DG	
16		CN1-7	YEL		+5V	
J507	1	J701-3	YEL	IFH-13B	+5V	
	2	-1	BRN		MIDI IN	
	3	-2	RED		MIDI OUT	
	4	NC			SW RES	
J508	5	-4	BLK		DG	
	1	J402-4	WHT	TGH-53A	ST1	
	2	-3	PNK		ST2	
	3	-19	BRN		D0	
	4	-17	RED		D1	
	5	-15	ORG		D2	
	6	-13	YEL		D3	
	7	-11	GRN		D4	
	8	-9	BLU		D5	
9	-7	VIO		D6		
J508	10	J402-5	GRY		D7	
	11	-1	BLK		DG	
	12	-2	WHT		KEY DOWN	
	J509	1	J202-13	BRN	CTH-31A	KEY REST
		2	-9	RED		CS
		3	-11	ORG		RD
		4	-10	YEL		KEY IREQ
		5	-1	GRN		D0
		6	-2	BLU		D1
		7	-3	VIO		D2
		8	-4	GRY		D3
		9	-5	WHT		D4
		10	-6	PNK		D5
11		-7	BRN		D6	
12		-8	RED		D7	
13		NC				
J510	1	NC			+5V	
	2	J604-3	BRN	EFH-236A	OUT	
	3	-2	RED		IN	
	4	-4	ORG		DSP RES	
	5	-1	YEL		KEY DOWN	
	6	-6	BLK		DG	
J513	1	J905-3	BRN	VGH-39A	LSV0	
	2	J905-4	RED		RSV0	
	3	J905-5	ORG		LSV1	
	4	J905-6	YEL		RSV1	
	5	J905-2	GRN		LSV2	
	6	J905-1	BLU		RSV2	
	7	NC				
	8	NC				
	9	J903-4	VIO		WDCLK	
	10	J903-6	GRY		BCLK	
	11	J906-2	WHT		SELA2	
	12	J906-1	PNK		SELB2	
	13	J906-3	BRN		ENB	
14	NC			DG		
15	J904-1	RED		LSV3		
16	J904-2	ORG		RSV3		
17	J904-4	YEL		LSV4		
18	J904-3	GRN		RSV4		
19	J903-1	BLU		LSV5		
20	J903-2	VIO		RSV5		
J514	1	J905-3	BRN	VGH-39A	LSV10	
	2	-4	RED		RSV0	
	3	-5	ORG		LSV1	
	4	-6	YEL		RSV1	
	5	-2	GRN		LSV2	
	6	-1	BLU		RSV2	
	7	NC			DG	
	8	NC			DG	
	9	J903-4	VIO		WDCLK	
	10	J903-6	GRY		BCLK	
	11	J906-2	WHT		SELA2	
	12	J906-1	PNK		SELAB2	
	13	J906-3	BRN		ENB	
14	NC			DG		
15	J904-1	RED		LSV3		
16	J904-2	ORG		RSV4		
17	J904-4	YEL		LSV4		
18	J904-3	GRN		RSV4		

MAIN & MASTER GENERATOR MGH-82A					
PLUG No.	FROM PIN No.	TO PLUG & PIN No.	WIRE COLOR	TO PWB NAME	FUNCTION
J514	19	J903-1	BLU	VGH-39A	LSV5
	20	J903-2	VIO	VGH-39A	RSV5
48 VOICE D/A VGH-39A-1					
J901	1	J101		KCH-7A	HI WAVE
J902	1	J104		KCH-8A	LOW WAVE
J903	1	J513-19	BLU	MGH-82A	12L
	2	J513-20	VIO	↓	12R
	3	NC		↓	WDCLK
	4	J513-9	VIO	↓	WDCLK
	5	NC		↓	BCLK
	6	J513-10	GRY	↓	BCLK
J904	1	J513-15	RED	MGH-82A	10L
	2	-16	ORG	↓	10R
	3	-18	GRN	↓	11R
	4	-17	YEL	↓	11L
J905	1	J513-6	BLU	MGH-82A	9R
	2	↓ -5	GRN	↓	9L
	3	↓ -1	BRN	↓	7L
	4	↓ -2	RED	↓	7R
	5	↓ -3	ORG	↓	8L
	6	↓ -4	YEL	↓	8R
J906	1	J513-12	PNK	MGH-82A	SELB
	2	J513-11	WHT	↓	SELA
	3	J513-13	BRN	↓	ENB
J907	1	J1110-8	ORG	MXH-33B	+15V
	2	J907-2	ORG	VGH-39A-2	+15V
	3	J1110-6	BLK	MXH-33B	AGND
	4	J907-4	BLK	VGH-39A-2	AGND
	5	J1110-1	GRN	MXH-33B	-15V
	6	J907-6	GRN	VGH-39A-2	-15V
	7	J1106-5	BLK	MXH-33B	DGND
	8	J907-8	BLK	VGH-39A-2	DGND
	9	J1106-2	YEL	MXH-33B	+5V
	10	J907-10	YEL	VGH-39A-2	+5V
48 VOICE D/A VGH-39A-2					
J901	1	J102/103		KCH-7A ,8A	MIDI WAVE
J902	1	J102/103		KCH-7A ,8A	MIDI WAVE
J903	1	J514-19	BLU	MGH-82A	12L
	2	J514-20	VIO	↓	12R
	3	NC		↓	WDCLK
	4	J514-9	VIO	↓	WDCLK
	5	NC		↓	BCLK
	6	J514-10	GRY	↓	BCLK
J904	1	J514-15	RED	↓	10L
	2	↓ -16	ORG	↓	10R
	3	↓ -18	GRN	↓	11R
	4	↓ -17	YEL	↓	11L
J905	1	J514-6	BLU	↓	9R
	2	↓ -5	GRN	↓	9L
	3	↓ -1	BRN	↓	7L
	4	↓ -2	RED	↓	7R
	5	↓ -3	ORG	↓	8L
	6	↓ -4	YEL	↓	8R
J906	1	J514-12	PNK	↓	SELB

J906	2	J514-11	WHT	MGH-82A	SELA
	3	J514-13	BRN	MGH-82A	ENB
J907	1	NC			+15V
	2	J907-2	ORG	VGH-39A-1	+15V
	3	NC			AGND
	4	J907-4	BLK	VGH-39A-1	AGND
	5	NC			-15V
	6	J907-6	GRN	VGH-39A-1	-15V
	7	NC			DGND
	8	J907-8	BLK	VGH-39A-1	DGND
	9	NC			+5V
	10	J907-10	YEL	VGH-39A-1	+5V
MIDI KEY SCAN CTH-31A					
J201	1	NC			TXD
	2	NC			RXD
	3	J501-2	YEL	MGH-82A	+5V
	4	J302-1	YEL	SWH-481C	+5V
	5	J501-6	BLK	MGH-82A	DGND
	6	J302-3	BLK	SWH-481C	DGND
J202	1	J509-5	GRN	MGH-82A	D0
	2	↓ -6	BLU	↓	D1
	3	↓ -7	VIO	↓	D2
	4	↓ -8	GRY	↓	D3
	5	↓ -9	WHT	↓	D4
	6	↓ -10	PNK	↓	D5
	7	↓ -11	BRN	↓	D6
	8	↓ -12	RED	↓	D7
	9	↓ -2	RED	↓	CS
	10	↓ -4	YEL	↓	IREQ
	11	↓ -3	ORG	↓	RD
	12	NC		↓	NC
	13	↓ -1	BRN	↓	A/17
	14	NC		↓	D GND
J203	1~26	J011		KCH-11	UP KEY
J204	1~26	J012		KCH-11	LW KEY
J205	1	PK-25B J1	BLK	KCH-4A	
	2	↓	BLK/WHT	↓	
	3	↓	ORG	↓	
	4	↓	ORG/BLK	↓	
	5	↓	GRN	↓	
	6	↓	BRN/WHT	↓	
	7	↓	YEL	↓	
	8	↓	YEL/BLK	↓	
	9	↓	BRN	↓	
	10	↓	BRN/BLK	↓	
	11	↓	BLU	↓	
	12	↓	BLU/WHT	↓	
	13	↓	GRY	↓	
	14	↓	BRY/BLK	↓	
BASS VOICE & DRAWBAR SCAN VGH-40B					
J15	1	J504-1	BRN	MGH-82A	TxD0
	2	↓ -2	RED	↓	RxD0
	3	↓ -3	ORG	↓	Reset in
	4	NC			PA4
	5	NC			DG
J16	1	J1106-1	YEL	MXH-33B	+5V A
	2	J1106-4	BLK	MXH-33B	AGND
	3	NC			DGND

BASS VOICE & DRAWBAR SCAN VGH-40B						
PLUG No.	FROM PIN No.	TO PLUG & PIN No.	WIRE COLOR	TO PWB NAME	FUNCTION	
J16	4	J601-2	BRN	EFH-236A	LOUT	
	5	J601-3	BLK	EFH-236A	AGND	
	6	NC			ROUT	
	7	NC			SUB LOUT	
	8	NC			AGND	
	9	NC			SUB ROUT	
	10	NC			DB KEYDOWN	
	J17	1	NC		IFH-15A	PA5
		2	J1203-4	YEL	↓	DA0
		3	J1203-5	GRN	↓	DA1
4		NC		↓	EXP	
5		J1203-1	BRN	↓	TxD2	
6		J1203-2	RED	↓	RxD2	
7		NC		↓	SCK0	
8		J1203-3	ORG	↓	P61	
9		NC		↓	DG	
10		NC		↓	DG	
J18	1	J501-3	YEL	MGH-82A	+5V D	
	2	NC			+5V D	
	3	NC			+5V D	
	4	NC			DGND	
	5	NC			DGND	
	6	J501-7	BLK	MGH-82A	DGND	
	7	NC			NC	
DSP (EXPRESSION&TONE EFFECT) EFH-236A						
J601	1	J406-5	BLK	TGH-53A	AG	
	2	J16-4	BRN	VGH-40B	Lch2 IN	
	3	J16-5	BLK	VGH-40B	AG	
	4	J406-3	ORG	TGH-53A	Rch2 IN	
	5	J406-4	BLK	TGH-53B	AG	
	6	J406-1	YEL	TGH-53B	Rch1 IN	
	7	J406-4	BLK	TGH-53A	AG	
	8	J406-1	RED	TGH-53A	Rch1 IN	
	J602	1	AES-15-3	YEL	SW	+5V
		2	NC			+5V
3		NC			+5V	
4		AES-15-1	BLK	SW	DGND	
5		NC			DGND	
6		NC			DGND	
7		J1110-9			MXH-33B	+15V
J603	1	J1101-4	YEL	MXH-33B	+5V	
	2	NC			AG	
	3	NC			DG	
	4	NC			LOUT	
	5	NC			AG	
	6	J1101-1	BRN	MXH-33B	ROUT	
	7	NC			SUB LOUT	
	8	J1101-2	BLK	MXH-33B	AG	
	9	NC			SUB ROUT	
	10	NC			NC	
	11	NC			NC	
J604	1	J510-5	YEL	MGH-82A	KEY DOWN	
	2	↓ -3	RED	↓	TxD0	
	3	↓ -2	BRN	↓	RXD0	
	4	↓ -4	ORG	↓	RES IN	

J605	5	NC			PA0
	6	J510-6	BLK	MGH-82A	DG
	1	J1109-1	YEL	MXH-33B	+5V
	2	NC			FOOT SW1
	3	J1109-4	GRY	MXH-33B	P82
	4	J1109-9	WHT	↓	P94
	5	NC			DGND
	6	J1109-8	BLK	↓	DGND
	7	J1109-3	BLK	↓	DGND
	J606	1	J1004-8	BLK	VRH-23A
2		↓ -7	BLU	↓	AN6
3		↓ -6	GRN	↓	AN5
4		↓ -5	YEL	↓	AN4
5		↓ -4	ORG	↓	AN3
6		↓ -3	RED	↓	AN2
7		↓ -2	BRN	↓	AN1
8		J1109-5	VIO	MXH-33B	AN0
9		J1004-1	YEL	VRH-23A	+5V
J607		1	J1001-5	BLK	SWH-489A
	2	↓ -2	YEL	↓	+5V
	3	↓ -1	BRN	↓	D0
	4	↓ -3	RED	↓	D1
	5	↓ -4	ORG	↓	D2
	6	NC			D3
	7	NC			D4
	8	NC			D5
	9	NC			D6
	10	NC			D7
J608	1	J1109-6	PNK	MXH-33B	P60
	2	J1109-7	BRN	MXH-33B	P61
	3	NC			P62
	4	NC			NC
J609	1	VIB SW	BLK	VIB SW	DGND
	2	NC			NC
	3	VIB SW	WHT	↓	AN7
BUS AMP & 9 STEP VOLUME TGH-53A					
J401	1	NC			AG
	2	BLK	VGH-39-1.2		AG
	3	NC			AG
J402	1	J508-11	BLK	MGH-82A	DG
	2	↓ -12	WHT	↓	KEY DOWN
	3	↓ -2	PNK	↓	ST2
	4	↓ -1	WHT	↓	ST1
	5	↓ -10	GRY	↓	D7
	6	J402-6	GRY	TGH-53B	D7
	7	J508-9	VIO	MGH-82A	D6
	8	J402-8	VIO	TGH-53B	D6
	9	J508-8	BLU	MGH-82A	D5
	10	J402-10	BLU	TGH-53B	D5
	11	J508-7	GRN	MGH-82A	D4
	12	J402-12	GRN	TGH-53B	D4
	13	J508-6	YEL	MGH-82A	D3
	14	J402-14	YEL	TGH-53B	D3
	15	J508-5	ORG	MGH-82A	D2
	16	J402-16	ORG	TGH-53B	D2
	17	J508-4	RED	MGH-82A	D1
	18	J402-13	RED	TGH-53B	D1
	19	J508-3	BRN	MGH-82A	D0
	20	J402-20	BRN	TGH-53B	D0

BUS AMP & 9 STEP VOLUME TGH-53A					
PLUG No.	FROM PIN No.	TO PLUG & PIN No.	WIRE COLOR	TO PWB NAME	FUNCTION
J403	1	J1201-1	BLU	IFH-15A	-5V
	2	J403-2	BLU	TGH-53B	-5V
	3	J1201-6	YEL	IFH-15A	+5V
	4	J403-4	YEL	TGH-53B	+5V
	5	J1201-4	BLK	IFH-15A	DGND
	6	J403-6	BLK	TGH-53B	DGND
	7	J1201-5	ORG	IFH-15A	+15V
	8	J403-8	ORG	TGH-53B	+15V
	9	J1201-3	BLK	IFH-15A	AGND
	10	J403-10	BLK	TGH-53B	AGND
	11	J1201-2	GRN	IFH-15A	-15V
	12	J403-12	GRN	TGH-53B	-15V
J405	1	J404-1	WHT	TGH-53B	DS7
	2	↓ -2	↓	↓	DS8
	3	↓ -3	↓	↓	DS9
	4	↓ -4	↓	↓	DS10
	5	↓ -5	↓	↓	DS11
	6	↓ -6	↓	↓	DS12
	7	↓ -7	↓	↓	DG
J406	1	J601-8	RED	EFH-236A	DRA OUT
	2	NC		↓	
	3	J601-4	ORG		PER OUT
	4	J601-7	BLK		AG
	5	J601-1	BLK	↓	AG

**BUS AMP & 9 STEP VOLUME
TGH-53B**

J401	1	NC			AG
	2		BLK	VGH-39-1,2	AG
J402	3	NC			AG
	1	NC			DG
	2	↓			KEY DOWN
	3				ST2
	4				ST1
	5	↓			D7
	6	J402-6	GRY	TGH-53A	D7
	7	NC			D6
	8	J402-8	VIO		D6
	9	NC			D5
	10	J402-10	BLU		D5
	11	NC			D4
	12	J402-12	GRN		D4
	13	NC			D3
	14	J402-14	YEL		D3
	15	NC			D2
	16	J402-16	ORG		D2
	17	NC			D1
18	J402-18	RED		D1	
19	NC			D0	
20	J402-20	BRN	↓	D0	

J403	1	NC			-5V
	2	J403-2	BLU	TGH-53A	-5V
	3	J302-2	YEL	SWH-481C	+5V
	4	J403-4	YEL	TGH-53A	+5V
	5	J302-4	BLK	SWH-481C	DGND
	6	J403-6	BLK	TGH-53A	DGND
	7	J1110-7	ORG	MXH-33B	+15V
	8	J403-8	ORG	TGH-53A	+15V
	9	J1110-5	BLK	MXH-33B	AGND
	10	J403-10	BLK	TGH-53A	AGND
	11	J1110-2	GRN	MXH-33B	-15V
	12	J403-12	RGN	TGH-53A	-15V
J404	1	J405-1	WHT	TGH-53A	DS1
	2	↓ -2	↓	↓	DS2
	3	↓ -3	↓	↓	DS3
	4	↓ -4	↓	↓	DS4
	5	↓ -5	↓	↓	DS5
	6	↓ -6	↓	↓	DS6
	7	↓ -7	↓	↓	DG
J406	1	J601-6	YEL	EFH-236A	DRA OUT
	2	NC		↓	
	3	NC			PER OUT
	4	J601-5	BLK		AG
	5	NC		↓	AG

**PERCUSSION SWITCH
SWH-487A**

J1002	1	J503-5	BRN	MGH-82A	SIG4
	2	↓ -6	RED	↓	SIG5
	3	↓ -2	YEL		+5V
	4	↓ -7	ORG		SIG6
	5	↓ -8	YEL		SIG7
	6	↓ -9	BLK	↓	D GND

**VIBRATO SWITCH
SWH-489A**

J1001	1	J607-3	BRN	EFH-236A	SIG1
	2	↓ -2	YEL	↓	+5V
	3	↓ -4	RED		SIG2
	4	↓ -5	ORG		SIG3
	5	↓ -1	BLK	↓	DGND

**EDIT SWITCH
SWH-491A**

J1003	1	J307-4	BRN	SWH-481C	COM0
	2	↓ -2	RED	↓	COM2
	3	↓ -1	ORG		COM3
	4	↓ -7	YEL		SW9
	5	↓ -3	GRN		COM1
	6	↓ -6	BLU		SW8
	7	↓ -8	VIO	↓	SW10

**VOLUME PANEL
VRH-23A**

J1004	1	J606-9	YEL	EFH-236A	+5V
	2	↓ -7	BRN	↓	OVERDRIVE
	3	↓ -6	RED		REVERB
	4	↓ -5	ORG		TREBLE
	5	↓ -4	YEL		BASS
	6	↓ -3	GRN		SW
	7	↓ -2	BLU		SW
	8	↓ -1	BLK	↓	GND

VOLUME PANEL VRH-23A					
PLUG No.	FROM PIN No.	TO PLUG & PIN No.	WIRE COLOR	TO PWB NAME	FUNCTION
J1005	1	J1102-1	WHT	MXH-33B	Avcc
	2	-2	RED	↓	MAIN Vol
	3	-3	SHILD	↓	AGND
J1006	1	J1103-2	BLK	MXH-33B	AGND
	2	-1	RED	↓	L
	3	-3	WHT	↓	R
	4	-4	GRN	↓	OFF SW
J1007	5	-5	BLU	↓	OFF SW
	1	J1204-1	YEL	RLH-493A	+5V
	2	-2	BLK	↓	DG
	3	-3	BRN	↓	MAIN
	4	-4	RED	↓	ECHO
SWITCH SCAN SWH-481C					
J301	1	J502-2	BRN	MGH-82A	OUT
	2	-3	RED	↓	IN
	3	-6	ORG	↓	RES
	4	NC		↓	DG
	5	NC		↓	DG
J302	6	-7	BLK	↓	DG
	1	J201-4	YEL	CTH-31A	+5V
	2	J403-3	YEL	TGH-53B	+5V
J303	3	J201-6	BLK	CTH-31A	DGND
	4	J403-5	BLK	TGH-53B	DGND
	1	J1-3	BRN	KCH-3A	COM3
J304	2	-4	RED	↓	COM2
	3	-2	ORG	↓	COM1
	4	-1	YEL	↓	COM0
	5	-2	GRN	↓	COM1
	6	-4	BLU	↓	COM2
	7	-5	VIO	↓	COM3
	8	NC		↓	NC
	1	J1-7	BRN	KCH-3A	SW2
J307	2	-6	RED	↓	SW1
	3	-5	ORG	↓	SW0
	4	-1	YEL	↓	COM0
	5	-2	GRN	↓	COM1
	6	-4	BLU	↓	COM2
	7	-3	VIO	↓	COM3
	1	J1003-3	ORG	SWH-491A	COM3
	2	-2	RED	↓	COM2
	3	-5	GRN	↓	COM1
	4	-1	BRN	↓	COM0
	5	NC		↓	LED5
6	-6	BLU	↓	SW8	
7	-4	YEL	↓	SW9	
8	-7	VIO	↓	SW10	
9	NC		↓	SW10	
10	NC		↓	SW10	
11	NC		↓	SW10	

MIXER & POWER MXH-33B					
J1101	1	J603-6	BRN	EFH-226A	D/B IN
	2	-8	BLK	↓	AGND
	3	NC		↓	AGND
	4	-1	YEL	↓	5VAN
J1102	1	J1005-1	WHT	VRH-23A	OUT
	2	-2	RED	↓	IN
	3	-3	SHILD	↓	AGND
J1103	1	J1006-2	RED	VRH-23A	R
	2	-1	BLK	↓	AG
	3	-3	WHT	↓	L
	4	-4	GRN	↓	LES ON
	5	-5	BLU	↓	SW
J1104	1	J801-8	RED	CNH-21B	LINE IN R
	2	-7	SHILD	↓	AG
	3	-6	WHT	↓	LINE IN L
	4	NC		↓	NC
	5	-1	WHT	↓	L OUT
	6	-2	BLK	↓	AG
	7	-3	RED	↓	R OUT
	8	NC		↓	NC
J1105	1	EXP.PEDAL-2	BLK	EXP.PEDAL	DG
	2	EXP.PEDAL-1	GRY	EXP.PEDAL	FOOT SW
	3	J-2	BRN	EFH-226A	EXP.DC
	4	J-6	BLK	↓	LAMP.G
	5	J-5	GRN	↓	-15V
	6	J-3	BLK	↓	AG
	7	J-1	ORG	↓	+15V
	8	J-5	ORG	↓	+15V
J1106	1	J16-1	YEL	VGH-40B	+5V A
	2	J907-9	YEL	VGH-39A-1	+5V A
	3	NC		↓	+5V A
	4	J16-2	BLK	VGH-40B	AGND
	5	J907-7	BLK	VGH-39A-1	AGND
	6	NC		↓	AGND
J1107	1	J1205-4	BRN	RLH-493A	ROT IN
	2	Leslie 11Pin-2	RED	Leslie 11Pin	MAIN
	3	-3	ORG	↓	↓
	4	-4	BLK	↓	↓
	5	-5	BLK	↓	↓
	6	-6	BLU	↓	↓
	7	-7	VIO	↓	↓
	8	-8	GRY	↓	↓
	9	NC		↓	↓
	10	NC		↓	↓
	11	Leslie 11Pin-11	WHT	↓	↓
J1108	1	POWER TRANS.		EFH-116	
	2	↓		↓	
	3	↓		↓	
	4	↓		↓	
	5	↓		↓	
	6	↓		↓	

MIXER&POWER MXH-33B					
PLUG No.	FROM PIN No.	TO PLUG & PIN No.	WIRE COLOR	TO PWB NAME	FUNCTION
J1109	1	J605-1	YEL	EFH-236A	+5V
	2	NC			DGND
	3	J605-7	BLK	EFH-236A	DGND
	4	J605-3	GRY	EFH-236A	FOOT SW
	5	J606-8	VIO	EFH-236A	EXP.DC
	6	J608-1	PNK	EFH-236A	SLOW
	7	J608-2	BRN	EFH-236A	FAST
	8	J605-6	BLK	EFH-236A	DGND
	9	J605-4	WHT	EFH-236A	DETECT
J1110	1	J907-5	GRN	VGH-39A-1	-15V
	2	J403-11	GRN	TGH-53B	-15V
	3	NC			-15V
	4	NC			AGND
	5	J403-9	BLK	TGH-53B	AGND
	6	J907-3	BLK	VGH-39A-1	AGND
	7	J403-7	ORG	TGH-53B	+15V
	8	J907-1	ORG	VGH-39A-1	+15V
	9	J602-7	ORG	EFH-236A	+15V
J1111	1	NC	YEL	IFH-14A	+5V
	2	NC			DGND
	3	NC	BLK	IFH-14A	DGND

**PHASE SCAN & MAIN ECHO
IFH-15A/RLH-493A**

J1201	1	J403-1	BLU	TGH-53A	-5V
	2	J403-11	GRN		-15V
	3	J403-9	BLK		AG
	4	J403-5	BLK		DG
	5	J403-7	ORG		+15V
	6	J403-3	YEL		+5V
J1203	1	J17-5	BRN	VGH-40B	BV OUT 1
	2	-6	RED		BV OUT 2
	3	-8	ORG		SER A
	4	-2	YEL		SER B
	5	-3	GRN		SER C
J1204	1	J1007-1	YEL	VRH-23A	+5V
	2	-2	BLK		DG
	3	-3	BRN		MAIN
	4	-4	RED		ECHO
J1205	1	Leslie 11Pin-4	BLK	Leslie 11Pin	AGND
	2	-1	WHT		ECHO
	3	-1	BRN		MAIN
	4	J1107-1	BRN	MXH-33B	ROT IN

**LINE IN / OUT
CNH-21B**

J801	1	J1104-5	WHT	MXH-33B	L OUT
	2	-6	BLK		AG
	3	-7	RED		R OUT
	4	NC			D/B OUT
	5	NC			AG
	6	-3	WHT		LINE IN L
	7	-2	SHILD		AG
	8	-1	RED		LINE IN R
	9	NC			RES ROT IN
	10	NC			AG

MIDI JACK IFH-13B					
J701	1	J507-2	BRN	MGH-82A	MIDI IN
	2	-3	RED		MIDI OUT
	3	-1	YEL		+5V
	4	-5	BLK		GND
	5	NC			FOOT SW2

**AC LINE FILTER
PSH-84A-1**

J1	1	CN1-3	WHT	AES-15	N
	2	NC			
	3	NC			NC
	4	NC			
J2	5	CN1-1	BLK		LIVE
	1	POWER SW	WHT	POWER SW	Place J2 or J3
	2	NC			
J3	3	POWER SW	WHT		
	1	POWER SW	BLK		
J4	2	NC			
	3	POWER SW	BLK		
J5	1	AC INLET	BLK	AC INLET	
	2		WHT	AC INLET	

**5V SWITCHING POWER SUPPLY
AES15**

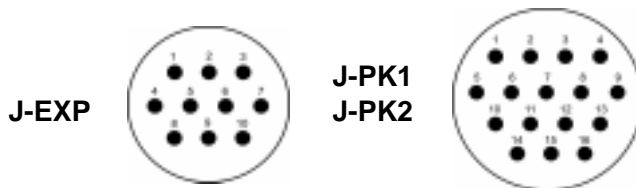
CN2	1	J602-4	BLK	EFH-236A	DGND
	2	J501-5	BLK	MGH-82A	DGND
	3	J602-1	YEL	EFH-236A	+5V D
	4	J501-1	YEL	MGH-82A	+5V D
CN1	1	J1-5	BLK	PSH-84A-1	LIVE
	2	NC			
	3	J1-1	WHT		N
	4	NC			
	5	EARTH	GRY	EARTH	FG

LCD UNIT					
PLUG No.	FROM PIN No.	TO PLUG & PIN No.	WIRE COLOR	TO PWB NAME	FUNCTION
CN1	1	J506-14	RED	MGH-82A	LB7
	2	-12	PNK		LB5
	3	-10	GRY		LB3
	4	-8	BLU		LB1
	5	-6	YEL		CS
	6	-4	RED		LA0
	7	↓ -16	YEL		+5V
CN2	1	J506-15	BLK		G
	2	-3	BRN		CONT
	3	-5	ORG		HWR
	4	-7	GRN		LB0
	5	-9	VIO		LB2
	6	-11	WHT		LB4
	7	↓ -13	BRN		LB6
MOTOR CONTROL SW					
	1	J503-3	ORG	MGH-82A	SW DOWN
	2	↓ -1	YEL		+5V
	3	↓ -4	BLK		SW UP
PRESET KEY KCH-3A(UPPER)					
J1	1	J303-4	YEL	SWH-481C	COM0
	2	↓ -3	ORG		COM1
	3	-1	BRN		COM2
	4	-2	RED		COM3
	5	-7	VIO		SW3
	6	-6	BLU		SW4
	7	↓ -5	GRN		SW5
	8	NC			
PRESET KEY KCH-3A(LOWER)					
J1	1	J304-4	YEL	SWH-481C	COM0
	2	↓ -5	GRN		COM1
	3	-7	VIO		COM3
	4	-6	BLU		COM2
	5	↓ -3	ORG		SW0
	6	-2	RED		SW1
	7	↓ -1	BRN		SW2
	8	NC			
MAIN Leslie 11Pin					
MAIN	1	J1205-3	BRN	RLH-493A	ROT OUT
	2	J1107-2	RED	MXH-33B	ST OUT(GND)
		Leslie 11Pin-2	RED	Leslie 11Pin	TO ECHO
	3	J1107-3	ORG	MXH-33B	AUXOUT(GND)
		Leslie 11Pin-3	ORG	Leslie 11Pin	TO ECHO
	4	J1107-4	BLK	MXH-33B	SIG GND
		Leslie 11Pin-4	BLK	Leslie 11Pin	TO ECHO
	J1205-1	BLK	RLH-493A	SIG GND	
5	J1107-5	BLK	MXH-33B	CONT GND	
	Leslie 11Pin-5	BLK	Leslie 11Pin	TO ECHO	
6	J1107-6	BLU	MXH-33B	POWER ON	
	Leslie 11Pin-6	BLU	Leslie 11Pin	TO ECHO	
7	J1107-7	VIO	MXH-33B	FAST	
	Leslie 11Pin-7	VIO	Leslie 11Pin	TO ECHO	

MAIN Leslie 11Pin					
	8	J1107-8	GRY	MXH-33B	TO ECHO
		Leslie 11Pin-8	GRY	Leslie 11Pin	
	9	NC			
	10	NC			
	11	J1107-11	WHT	MXH-33B	DC +24V IN
ECHO Leslie 11Pin					
ECHO	1	J1205-2	WHT	RLH-493A	ROT OUT
	2	Leslie 11Pin-2	RED	Leslie 11Pin	ST OUT
	3	↓ -3	ORG		AUX OUT
	4	-4	BLK		SIG GND
	5	-5	BLK		CONT GND
	6	-6	BLU		POWER ON
	7	-7	VIO		FAST
	8	↓ -8	GRY		SLOW
	9	NC			
	10	NC			
	11	NC			
EXP.PEDAL					
	1	J1105-2	GRY	MXH-33B	FOOT SW1
	2	J1105-1	BLK	MXH-33B	DG
	3	EXP.PEDAL-4	BLK	EXP.PEDAL	DG
	4	EXP.PEDAL-3	BLK	EXP.PEDAL	DG
EXPRESSION AMP EFH-226A					
J1	1	J1105-7	ORG	MXH-33B	+15
	2	↓ -3	BRN		OUT
	3	-6	BLK		AGND
	4	NC			NC
	5	-8	ORG		LAMP
	6	-4	BLK		DGND
	7	NC			AGND
	8	↓ -5	GRN		-15V
J2	1	EXP.Lamp	BRN	EXP.	LAMP
	2	↓	BLK		LAMP
	3	EXP.Photo Diode	BLK		Photo Diode
	4	↓	GRY		Photo Diode

25 NOTE PEDAL UNIT KCH-4A				ORGAN CONSOLE			
PLUG No.	FROM PIN No.	WIRE COLOR	CABLE CONNECTOR PIN No.	TO PLUG & PIN No.	TO PWB NAME	FUNCTION	
J5 ↓	1	NC	J-PK1-1	J-PK2-1	J205-1	CTH-31A	NC
	2	NC	2	2	2		NC
	3	WHT	3	3	3		FK22
	4	NC					NC
	5	WHT	4	4	4		FK21
	6	NC					NC
	7	WHT	6	6	6		FK20
	8	NC					NC
	9	WHT	5	5	5		FK19
	10		7	7	7		DB0
	11		8	8	8		DB1
	12		9	9	9		DB2
	13		10	10	10		DB3
	14		11	11	11		DB4
	15		12	12	12		DB5
	16		13	13	13		DB6
	17		14	14	14		DB7
	GND		15			GND	
	GND		16			GND	
EXP PEDAL UNIT EFH-226A				ORGAN CONSOLE			
PLUG No.	PIN No.	WIRE COLOR	CABLE CONNECTOR PIN No.	TO PLUG 8 PIN No.	TO PWB NAME	FUNCTION	
J1 ↓	1	BRN	J-EXP-7	J1105-7	MXH-33B	+15V	
	2	RED	3	3		OUT	
	3	BLK	6	6		AG	
	4	BLU	2	2		FOOT SW	
	5	ORG	8	8		+15V	
	6	GRY	4	4		LAMP GND	
	7	YEL	1	1		D GND	
	8	GRN	5	5		-15V	

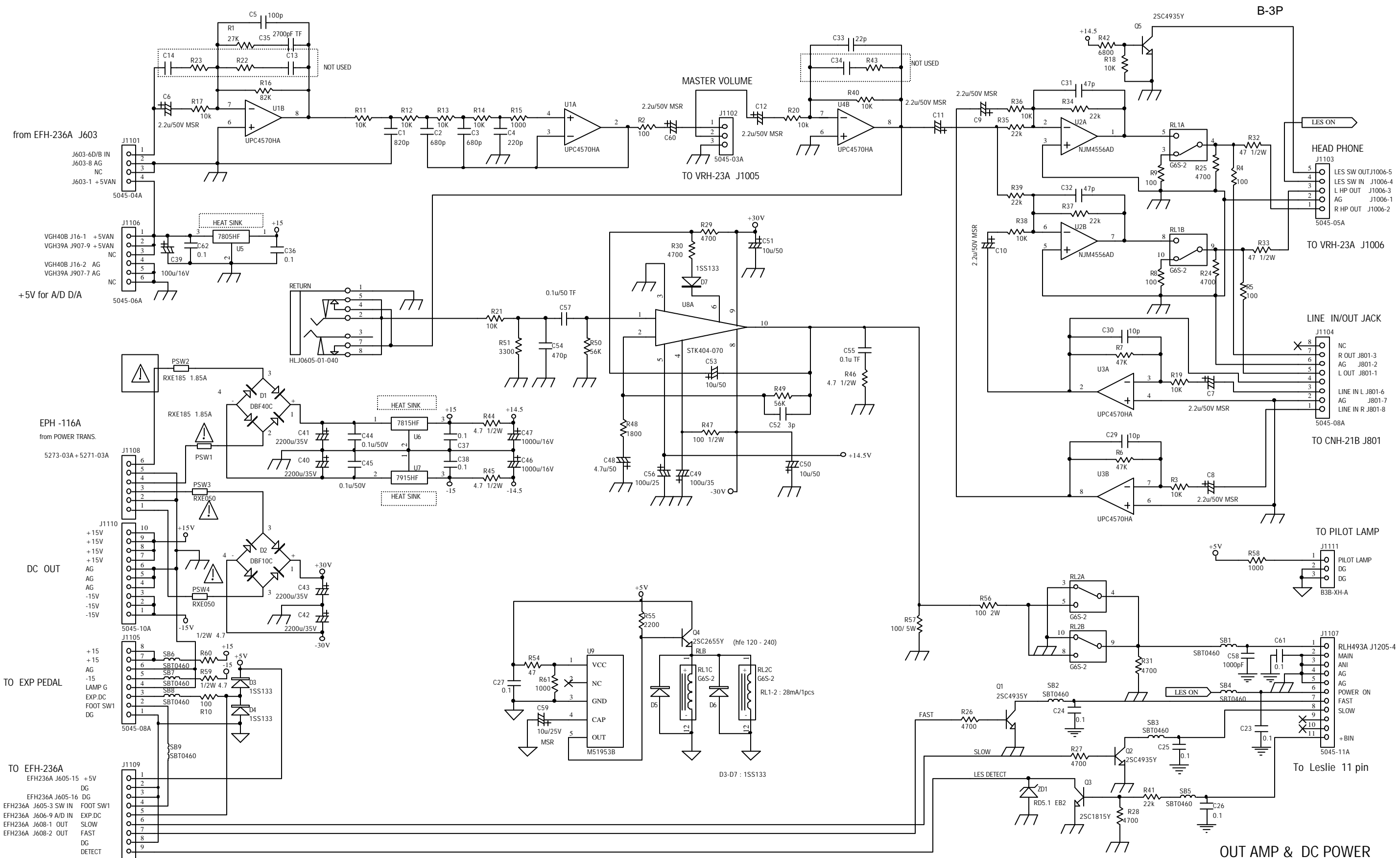
Note



6. Printed Wiring Board Ass'y List

Note : Please refer to New B-3 service manual for all schematics except MXH-33B.

PWB.NAME	PART No.	FUNCTION
MGH-82A	00228-24211	Main CPU & Tone Wheel Generator
VGH-39A (2sets)	00221-16201	96-ch. D/A Converter
VGH-40B	00221-16207	Drawbar Scan & Bass Voice Generator
TGH-53A (UM) TGH-53B (LM)	00230-14236 00230-14237	Bus Amp & Drawbar Volume
EFH-236A	00223-41286	Vibrato / Chorus & Expression (DSP)
MXH-33B	00230-06292	Mixer & Power Supply
IFH-13B EFH-226A	00232-14242 00223-41221	MIDI JACK EXP.PEDAL
CNH-21B PSH-84A	00225-39297 00224-18226	LINE IN/OUT Jack AC Line Fuse
CTH-31A	00220-20226	MIDI & Key Scan
IFH-15A RLH-493A	00232-14251 00225-41201	BASS Phase Scan Leslie MAIN / ECHO Switch
SWH-487A	00225-40256	Percussion Switch
SWH-489A	00225-40271	Volume Soft & Vibrato Switch
SWH-491A	00225-40291	LCD Edit Switch
VRH-23A	00225-40286	Rotary Volume Panel
SWH-481C	00225-40203	Switch Scan CPU
KCH-11A KCH-12A	00229-21386 00229-21387	UM / LM MIDI Key Contact
KCH-7A KCH-8A	00229-21266 00229-21271	Manual Key Contact Mother Board
KCH-6A~6F	00229-22216~21	10 Key Contact Ass'y
KCH-3A	00229-21246	Preset Key Contact
KCH-4A/5A	00229-21251 00229-21256	PK25 Key Contact



from EFH-236A J603
 J603-6D/B IN
 J603-8 AG
 NC
 J603-1 +5VAN
 5045-04A

VGH40B J16-1 +5VAN
 VGH39A J907-9 +5VAN
 NC
 VGH40B J16-2 AG
 VGH39A J907-7 AG
 NC
 +5V for A/D D/A
 5045-06A

EPH -116A
 from POWER TRANS.
 5273-03A + 5271-03A

DC OUT
 +15V
 +15V
 +15V
 +15V
 AG
 AG
 AG
 -15V
 -15V
 -15V
 5045-10A

TO EXP PEDAL
 +15
 +15
 AG
 -15
 LAMP G
 EXP.DC
 FOOT SW1
 DG
 5045-08A

TO EFH-236A
 EFH236A J605-15 +5V
 DG
 EFH236A J605-16 DG
 EFH236A J605-3 SW IN FOOT SW1
 EFH236A J606-9 A/D IN EXP.DC
 EFH236A J608-1 OUT SLOW
 EFH236A J608-2 OUT FAST
 DG
 DETECT
 B9B-PH-KS

B-3P

2SC4935Y

HEAD PHONE
 J1103
 LES SW OUT J1006-5
 LES SW IN J1006-4
 L HP OUT J1006-3
 AG J1006-1
 R HP OUT J1006-2
 5045-05A

TO VRH-23A J1006

LINE IN/OUT JACK
 J1104
 NC
 R OUT J801-3
 AG J801-2
 L OUT J801-1
 3
 4
 5
 6
 LINE IN L J801-6
 AG J801-7
 LINE IN R J801-8
 5045-08A

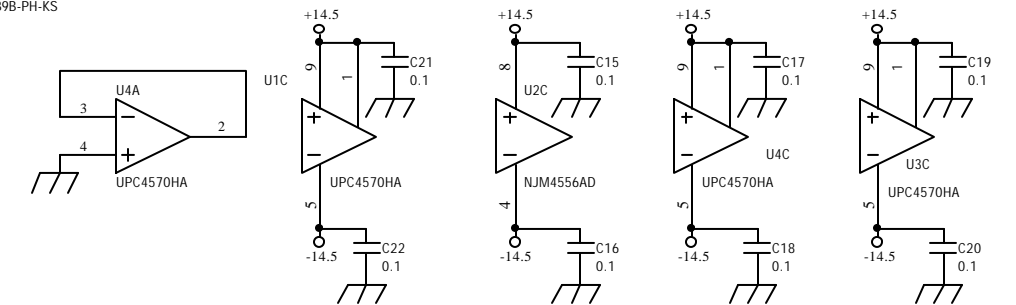
TO CNH-21B J801

TO PILOT LAMP
 J1111
 +5V
 R58 1000
 1
 2
 3
 PILOT LAMP
 B3B-XH-A

RLH493A J1205-4
 MAIN
 ANI
 AG
 AG
 AG
 POWER ON
 FAST
 SLOW
 +BIN
 5045-11A

To Leslie 11 pin

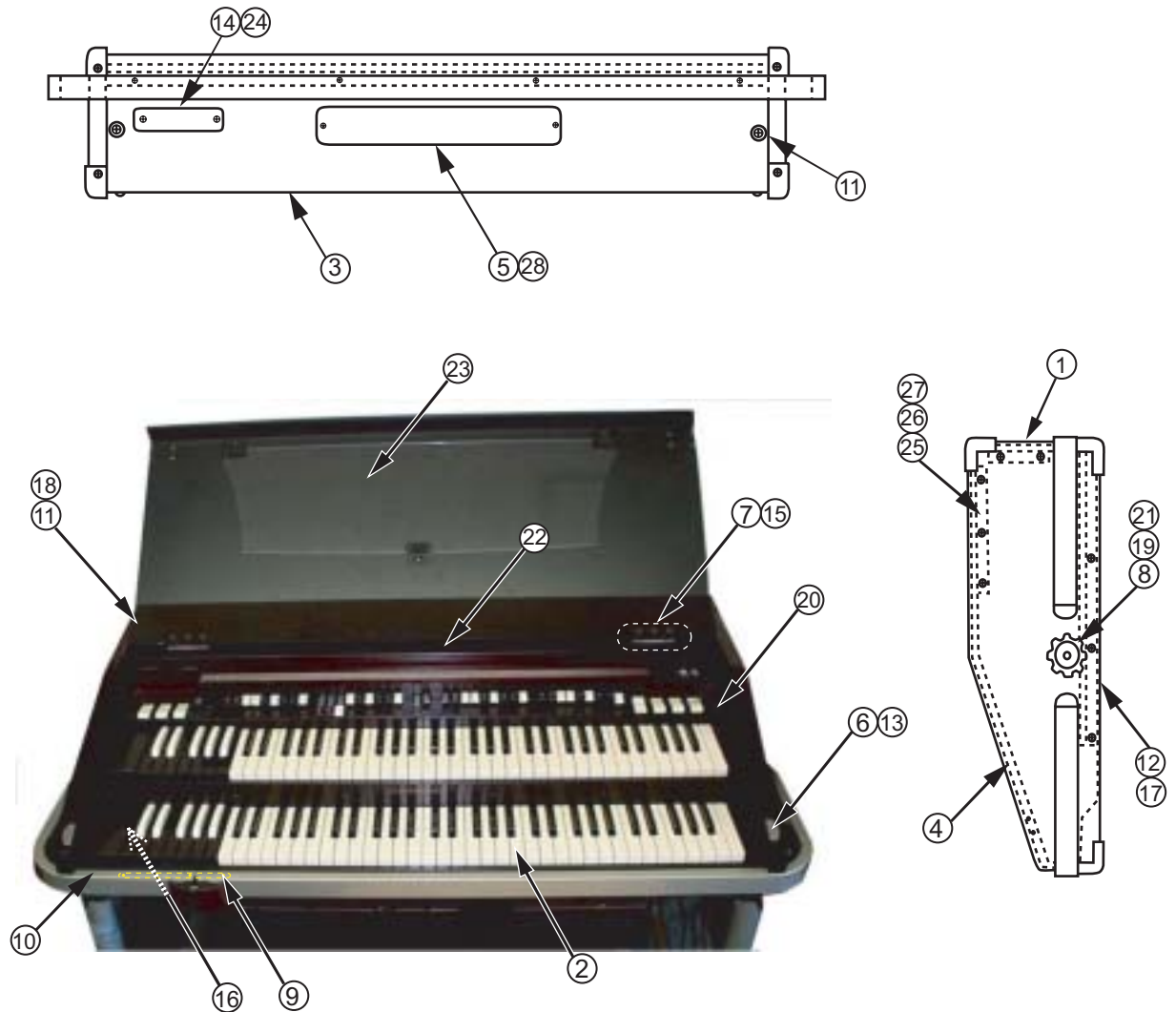
OUT AMP & DC POWER



B-3P
 MXH-33B
 00230-06292

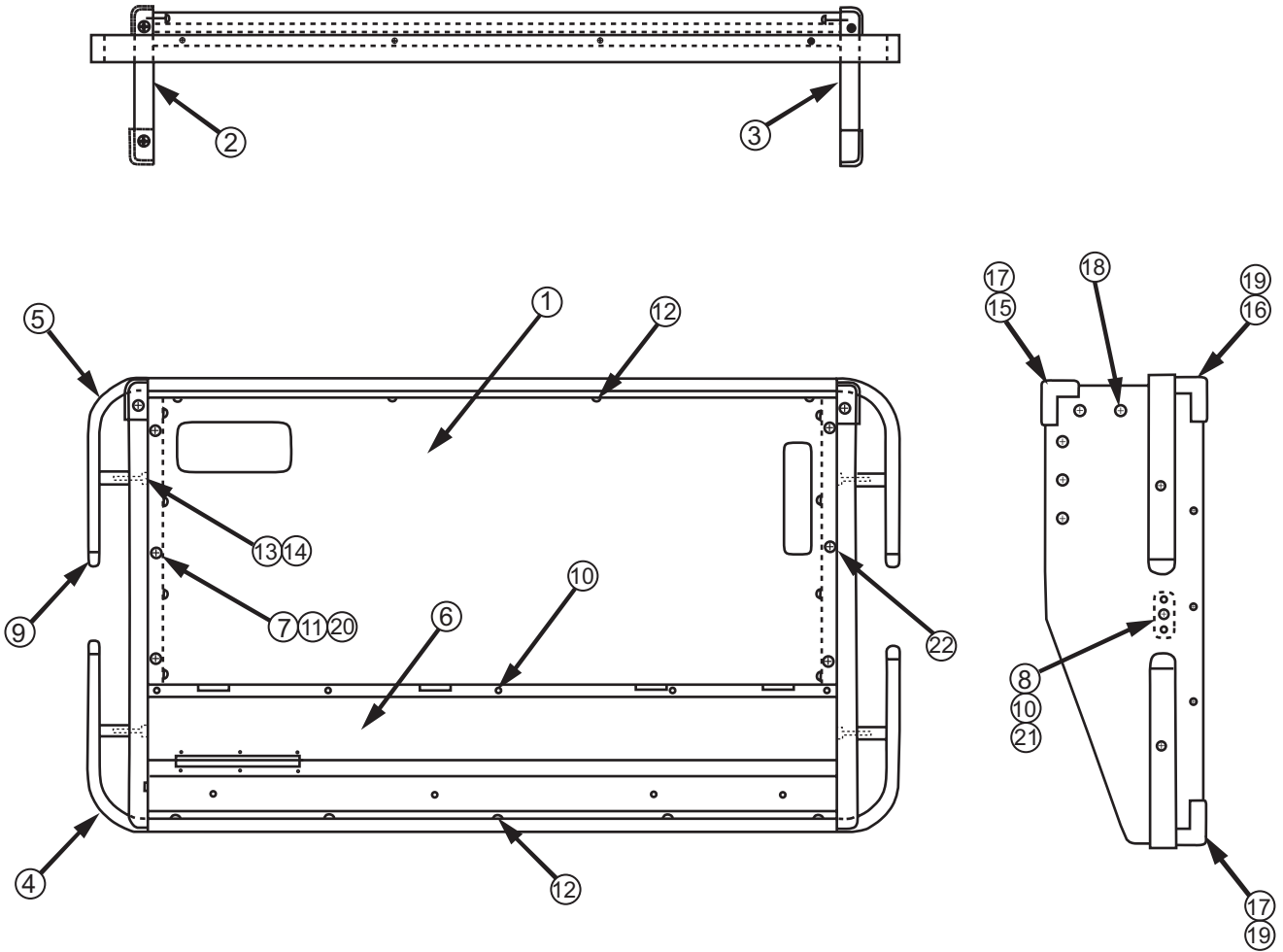
8.PARTS LIST

1. TOTAL ASS'Y (66371-01100)



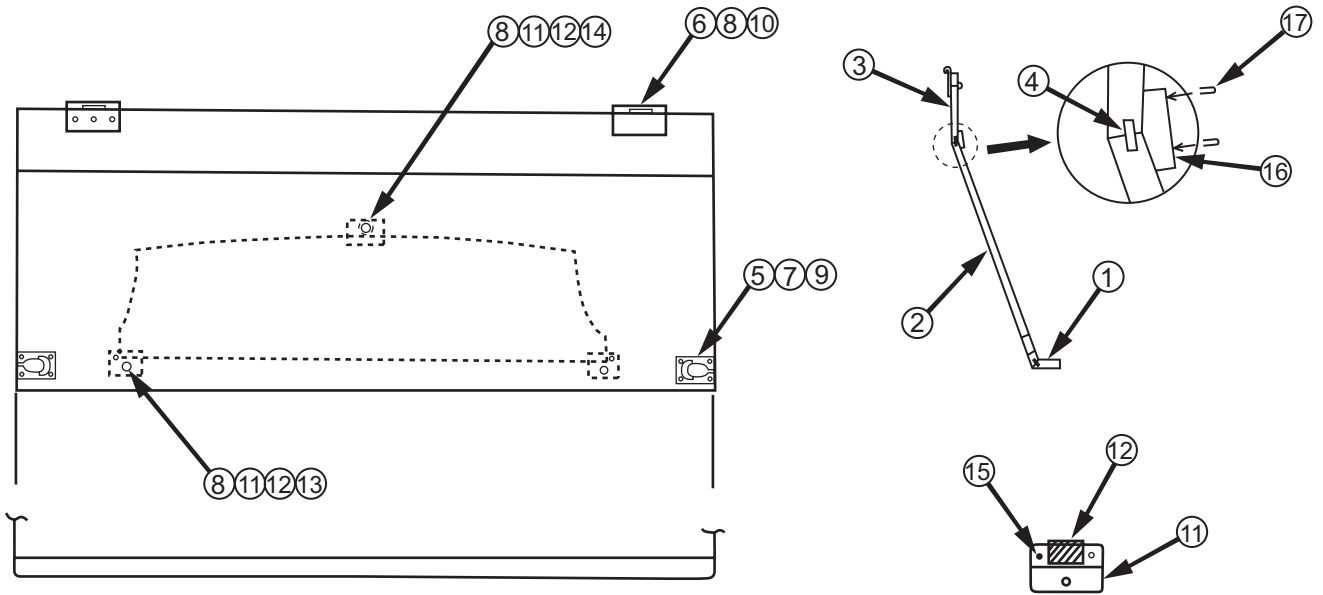
① Cabinet Total Ass'y	66371-01201	①⑥ Machine Screw	00703-65006
② Manual Shelf Board Top Ass'y	66371-02101	(Truss,M5x6,ZnB)	
③ Cover Ass'y	66371-01203	①⑦ Machine Screw	00703-65025
④ Cover Board Ass'y	66371-01202	(Truss,M5x25,ZnB)	
⑤ HAMMOND Name Plate #1	00451-40446	①⑧ Machine Screw	00703-25020
⑥ Supprt Bracket For Cover	00451-40432	(Oval head,M5x20,ZnB)	
⑦ Catcher Hinge TH-7	00352-01105	①⑨ Hexagon Nut (M12,ZnW)	00724-11200
⑧ KP Tooth Knob	00700-00002	②⑩ JBA Bolt	00453-40151
⑨ Pinch Screw	00700-04005	②⑪ Spring Washer (Ø12,ZnW)	00754-11200
⑩ Rubber Foot SJ-5012	00402-31075	②⑫ Drawbar Felt	00453-40138
⑪ Rosette Washer(Ø5,ZnB)	00750-04002	②⑬ Music Rest B-3P	00452-40172
⑫ Square Claw Washer(Ø5,ZnB)	00750-05001	②⑭ HAMMOND Name Plate #2	00451-40453
⑬ Tapping Screw Type 1	00613-32010	(Flat,Ø2x10,ZnB)	
⑭ Tapping Screw Type 1	00613-64010	②⑮ Cover Bracket (L)	00451-40433
(Truss,Ø4x10,ZnB)		②⑯ Cover Bracket (R)	00451-40434
⑮ Tapping Screw Type 1	00612-24012	②⑰ Machine Screw	00703-54010
(Oval head,Ø4x12,Ni)		(Bind,M4x10,ZnB)	
		②⑱ Machine Screw	00703-64012
		(Truss,M4x12,ZnB)	

2. CABINET TOTAL ASS'Y (66371-01201)



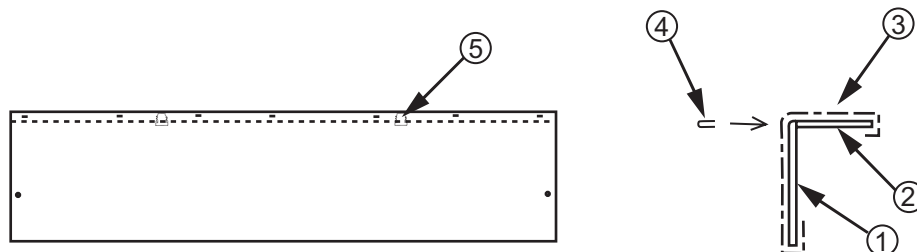
① Manual Shelf Board Ass'y	66371-01204	⑬ Plane Washer (Ø10,ZnB)	00743-11000
② Shelf Board (L)	00450-40615	⑭ Hexagon Socket head Cap Screw (M10x30,ZnB)	00713-71030
③ Shelf Board (R)	00450-40616	⑮ Protector #1	00452-40166
④ Body Frame (Front)	00451-40429	⑯ Protector #2L	00452-40168
⑤ Body Frame (Rear)	00451-40443	⑰ Protector #2R	00452-40169
⑥ Bottom Panel	00451-40255	⑱ Insert Nut Type E (M4x10,ZnY)	00730-04009
⑦ Frame PB-001	00450-40619	⑲ Tapping Screw Type 1 (Flat,Ø4x16,ZnB)	00613-34015
⑧ Knob Bolt Base	00451-40445	⑳ Leather Sheet	00453-40219
⑨ Square Pipe Cap	00452-40161	㉑ T-shape Weld Nut (M12)	00730-00004
⑩ Tapping Screw Type 1 (Truss,Ø4x16,ZnB)	00613-64016	㉒ Tapping Screw Type 1 (Flat,Ø4x30,ZnY)	00615-34030
⑪ Tapping Screw Type 1 (Truss,Ø4x45,ZnB)	00613-64045		
⑫ Pierced Screw	00690-04004		

3. COVER BOARD ASS'Y (66371-01202)



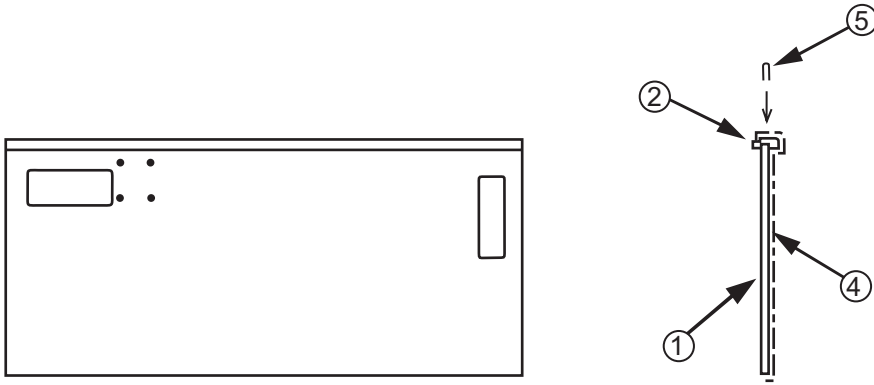
① Cover Board A	00450-40622	⑩ Machine Screw	00702-24008
② Cover Board B	00450-40623	(Oval, M4x8, NI)	
③ Cover Board C	00450-40624	⑪ Music Holder	00451-40456
④ Core Block For Cover	00450-40625	⑫ Holder Cushion	00453-40224
⑤ Metal Fitting Lid	00352-01104	⑬ Machine Screw	00703-54005
⑥ Catcher Hinge TH-7	00352-01105	(Bind, M4x5, ZnB)	
⑦ Insert Nut Type B	00730-03005	⑭ Pinch Screw (M4x8, Black)	00700-04006
(M3x8, ZnB)		⑮ Nylon Rivet (Ø3)	00760-03003
⑧ Insert Nut Type I	00730-04010	⑯ Cover Board Support Rail	00450-40664
(M4x12.5, ZnB)		⑰ Staple (4x12)	00781-24012
⑨ Machine Screw	00702-43012		
(Pan head, M3x12, NI)			

4. TOP ASS'Y (66371-01203)



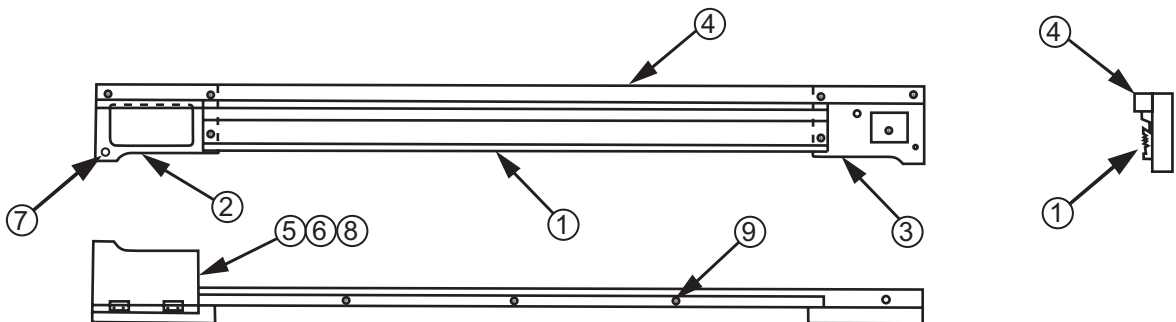
① Top board	00450-40620
② Top Rear	00450-40621
③ Staple (4x22)	00781-24022
④ Insert Nut Type B (M4x11.5, ZnY)	00730-04005
⑤ Leather Sheet(1150x500)	00453-40255

5. MANUAL SHELF BOARD ASS'Y (66371-01204)



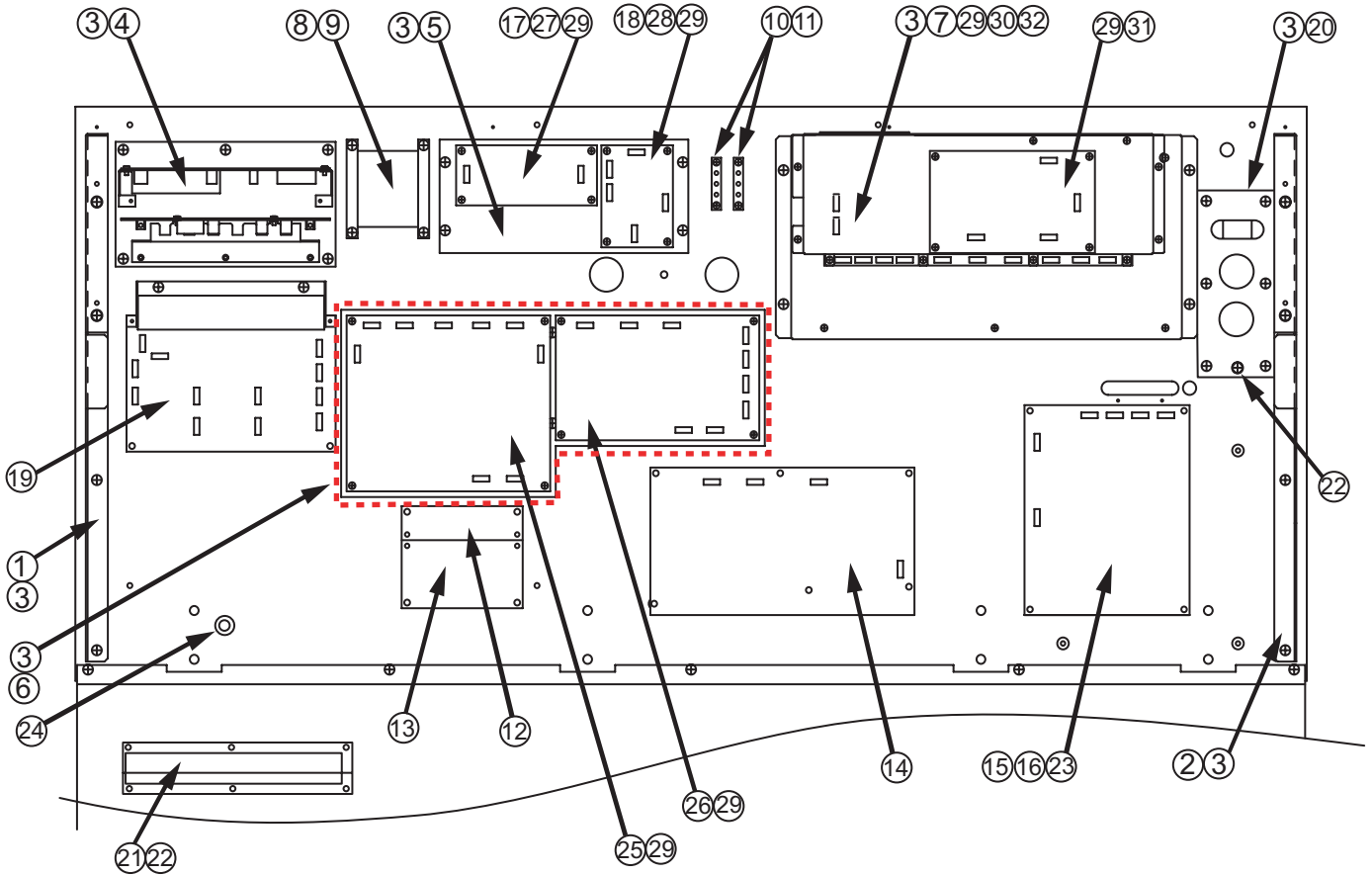
① Manual Shelf Board	00450-40617
② Rear Rail	00450-40618
③ Insert Nut Type B (M4x11.5,ZnY)	00730-04005
④ Leather Sheet(1150x620)	00453-40219
⑤ Staple(4x22)	00781-24022

6. MUSIC STOPPER ASS'Y (66371-01205)



① Music Rail	00450-40626
② Drawbar Endblock (L)	00450-40627
③ Drawbar Endblock (R)	00450-40628
④ Drawbar Rail	00450-40629
⑤ Endblock Cover	00450-40632
⑥ Hinge H15	00352-01081
⑦ Support rubber For Cover	00402-05121
⑧ Tapping Screw Type 1 (Flat,Ø2x10,ZnB)	00613-32010
⑨ Tapping Screw Type 1 (Truss,Ø4x30,ZnY)	00615-64030

7. MANUAL SHELF BOARD ASS'Y (66371-02101)



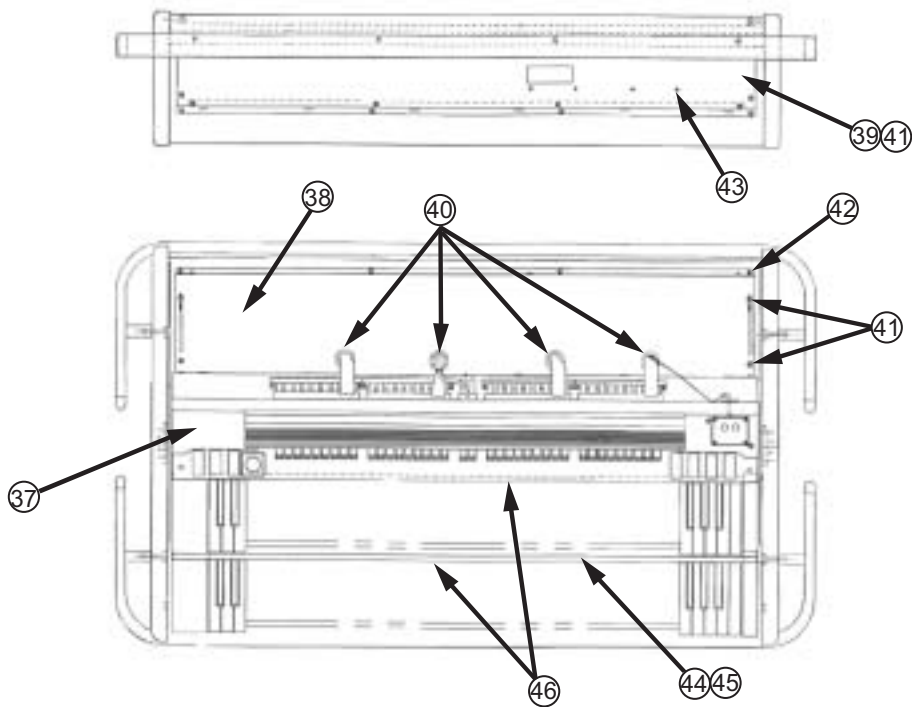
- | | | | |
|---|-------------|--|-------------|
| ① Side Bracket (L) | 00451-40267 | ①⑦ Insulating Sheet AES15-5 | 00453-40148 |
| ② Side Bracket (R) | 00451-40268 | ①⑧ Insulating Sheet PSH-84A | 00453-40149 |
| ③ Tapping Screw Type 1
(Truss, Ø4x10, ZnB) | 00613-64010 | ①⑨ MXH-33B Ass'y | 00230-06292 |
| ④ Jack Panel B3P Ass'y | 66371-02103 | ②⑩ AC Panel Ass'y | 66371-02104 |
| ⑤ PWB Charassis B3-B | 00451-40281 | ②⑪ Volume Panel B3 Ass'y | 66311-02108 |
| ⑥ PWB Charassis B3-A | 00451-40280 | ②⑫ Tapping Screw Type 2
(Bind, Ø4x8, ZnB) | 00623-54008 |
| ⑦ Digital Tone Wheel Ass'y | 66311-02121 | ②⑬ Dual Lock PWB Spacer | 00453-40178 |
| ⑧ Power Transformer EPH-116A | 00307-00316 | ②⑭ Plastic Throat | 00452-00040 |
| ⑨ Machine Screw (M4x15, ZnB) | 00705-84015 | ②⑮ VGH-408 Ass'y | 00221-16207 |
| ⑩ Fasten Tab #250 | 00314-09005 | ②⑯ EFH-236A Ass'y | 00223-41286 |
| ⑪ Tapping Screw Type 1
(Bind, Ø3x12, ZnB) | 00613-53012 | ②⑰ Switching Power Supply | 00366-01013 |
| ⑫ RLH-493A Ass'y | 00225-41201 | ②⑱ PSH-84A Ass'y | 00224-18226 |
| ⑬ IFH-15A Ass'y | 00232-14251 | ②⑲ Machine Screw
(Bind, M3x5, ZnB) | 00703-53005 |
| ⑭ SWH-481C Ass'y | 00225-40203 | ③⑩ FCC Cover-A4 | 00451-40272 |
| ⑮ TGH-53A Ass'y | 00230-14236 | ③⑪ CTH-31A Ass'y | 00220-20226 |
| ⑯ TGH-53B Ass'y | 00232-14237 | ③⑫ Tapping Screw Type 2
(Bind, Ø3x6, ZnB) | 00623-53006 |

WIRING

WR-TW-A	00443-01160	WR-TW-N	00443-01172
WR-TW-D	00443-01163	WR-TW-Q	00443-01174
WR-TW-E	00443-01164	WR-TW-R	00443-01175
WR-TW-G	00443-01166	WR-TW-Y	00443-01182
WR-TW-H	00443-01167	WR-TW-A2	00443-01184
WR-TW-J	00443-01168	WR-TW-D2	00443-01187
WR-TW-K	00443-01169	WR-TW-F2	00443-01189
WR-TW-L	00443-01170	WR-TW-G2	00443-01190
WR-TW-M	00443-01171	WR-TW-N2	00443-01196

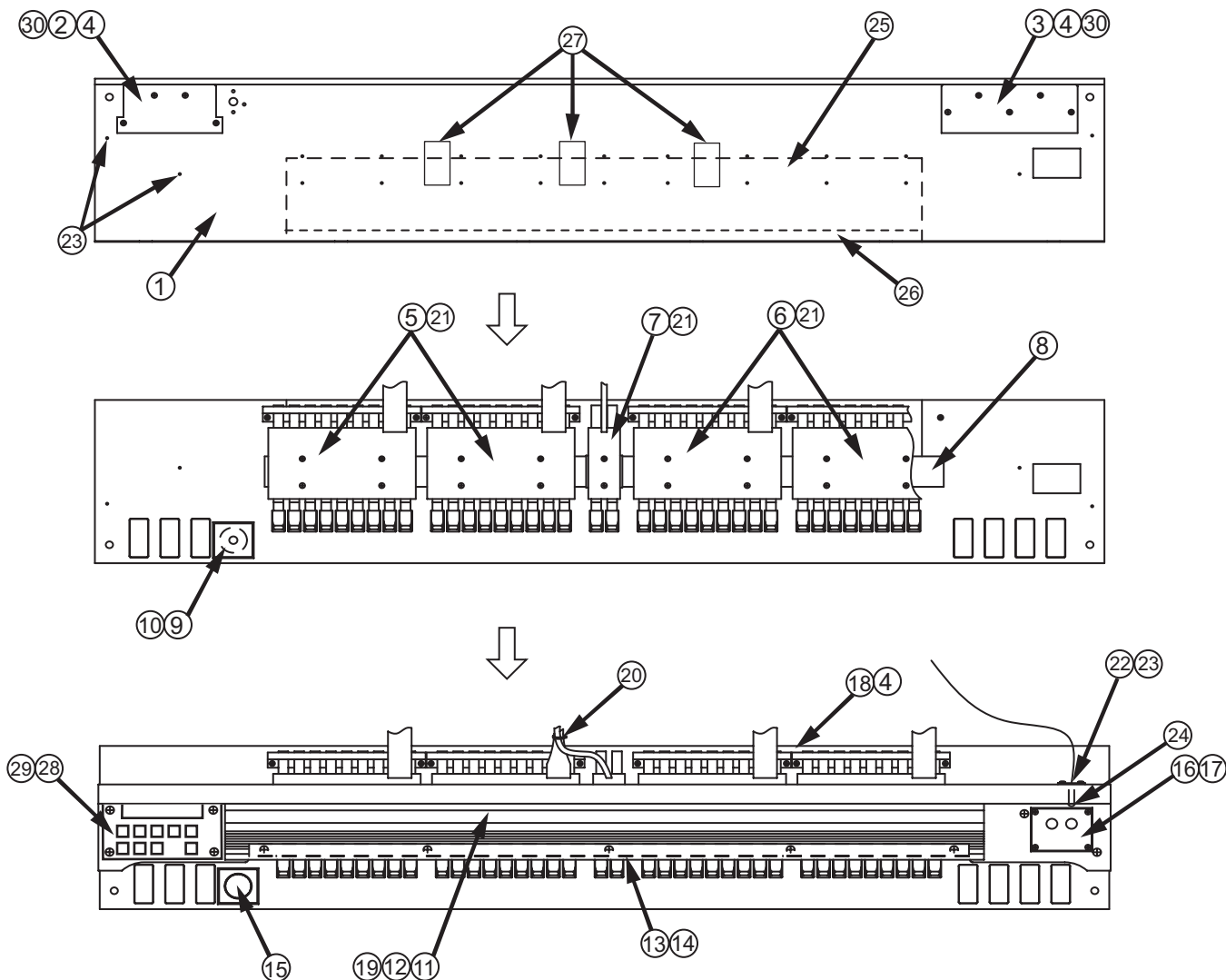
FLAT CABLE

F30E1040	00444-09001	F26A900	00444-05008
F20E850	00444-04002	F26A1150	00444-05009
F50Z1300	00444-08001		



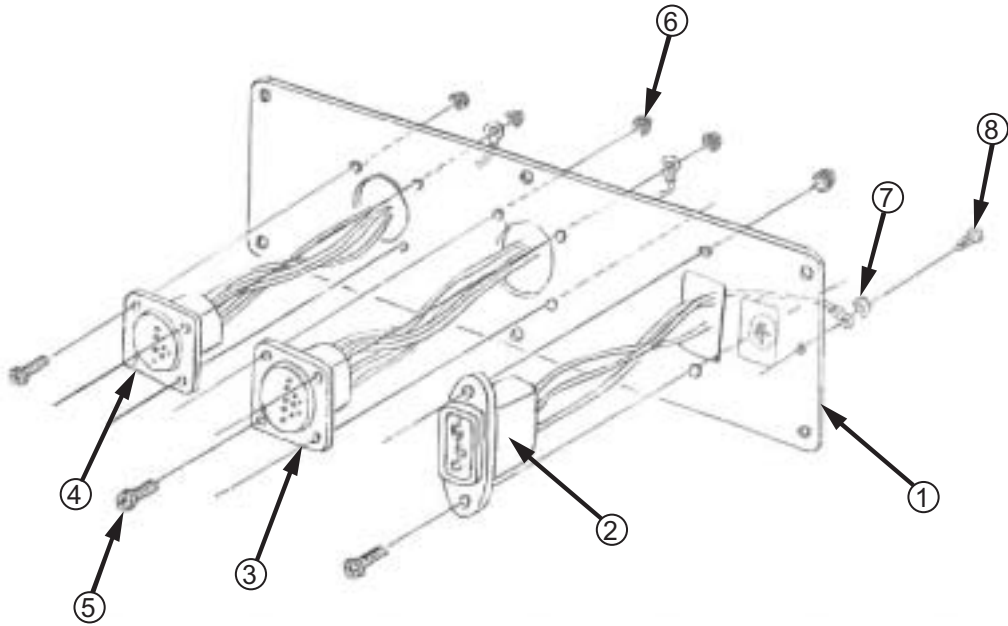
③⑦ Front Panel B3P Ass'y	66371-02102	④③ Tapping Screw Type 2	00623-53006
③⑧ FCC Cover A1	00451-40269	(Bind,Ø3x6,ZnB)	
③⑨ FCC Cover A2	00451-40270	④④ Front Strip	00451-40266
④⑩ Grommet (Ø30-6.5)	00453-40150	④⑤ Tapping Screw Type 2	00623-63008
④① Tapping Screw S Tight	00673-64010	(Truss,Ø3x8,ZnB)	
(Truss,Ø4x10,ZnB)		④⑥ Key Felt (10x1015)	00402-03218
④② Tapping Screw Type 1	00613-64010		
(Truss,Ø4x10,ZnB)			

9. FRONT PANEL ASS'Y (66371-02102)



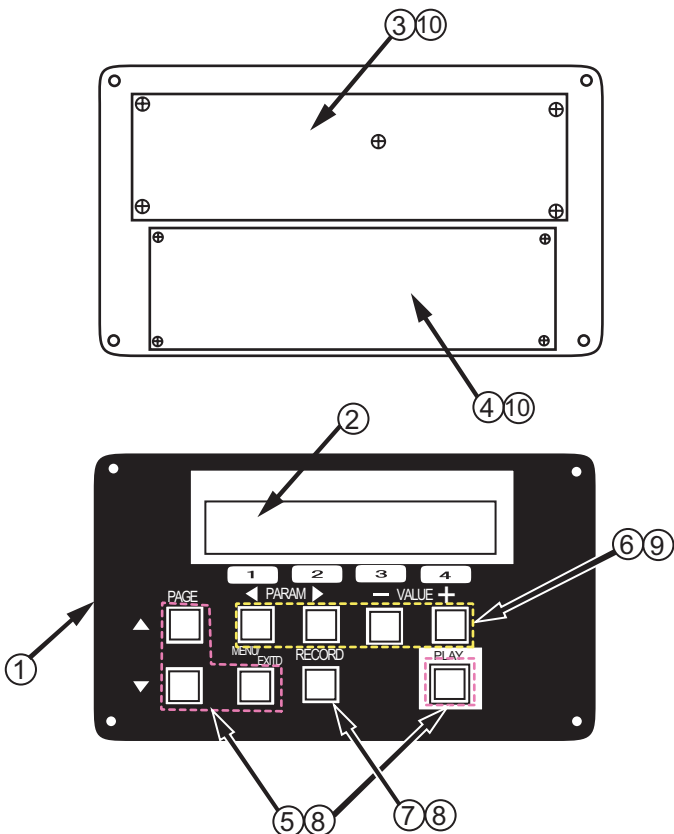
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| ① Drawbar Panel B3P | 00451-40438 | ①⑦ Tapping Screw Type 1 | 00613-23012 |
| ② Switch FPL Ass'y | 66311-02103 | (Oval,Ø3x12,ZnB) | |
| ③ Switch FPR Ass'y | 66311-02104 | ①⑧ Drawbar Support | 00451-40322 |
| ④ Tapping Screw Type 2 | 00623-53006 | (Bind,Ø3x6,ZnB) | |
| | | ①⑨ Hexagon Nut With Flange | 00728-84000 |
| ⑤ Drawbar Ass'y DB-409E | 00278-09241 | ②⑩ Wire Tie | 00340-07002 |
| ⑥ Drawbar Ass'y DB-409G | 00278-09242 | ②⑪ Tapping Screw Type 2 | 00623-53025 |
| ⑦ Drawbar Ass'y DB-402G | 00278-02208 | (Bind,Ø3x25,ZnB) | |
| ⑧ Drawbar Plate B3 | 00451-40288 | ②⑫ IFH-14A Ass'y | 00232-14246 |
| ⑨ Vibrato SW Ass'y | 66311-02122 | ②⑬ Tapping Screw Type 1 | 00613-53012 |
| ⑩ Vib Knob Plate | 00451-40276 | (Bind,Ø3x12,ZnB) | |
| ⑪ Music Stopper Ass'y | 66311-01221 | ②⑭ Pilot Lamp Lens | 00452-40140 |
| ⑫ Machine Screw | 00703-24035 | ②⑮ Aluminum Sheet (FL) | 00453-40155 |
| (Oval,M4x35,ZnB) | | ②⑯ Conducting Tape | 00453-40006 |
| ⑬ Drawbar Cover | 00451-40256 | ②⑰ Cable Clamp | 00340-06018 |
| ⑭ Tapping Screw Type 1 | 00613-64008 | ②⑱ Edit Panel Ass'y | 66371-02105 |
| (Truss,Ø4x8,ZnB) | | ②⑲ Tapping Screw Type 1 | 00613-53008 |
| ⑮ V/C Knob (B-3) | 00452-40137 | (Bind,Ø3x8,ZnB) | |
| ⑯ Power Panel B3 Ass'y | 66311-02111 | ③⑰ Switch B3 Set | 66311-02105 |

9.AC PANEL ASS'Y(66371-02104)



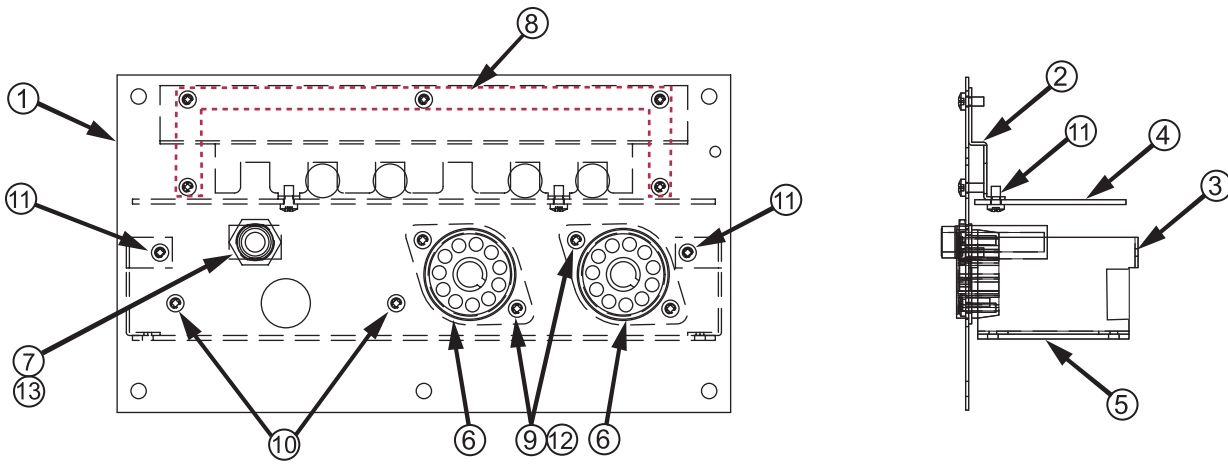
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| ① Power Plate | 00451-40431 | ⑥ Hexgon Nut With Flange (M4,ZnB) | 00725-83000 |
| ② Wiring WR-B3P-B | 00443-01295 | ⑦ Toothed Lock Washer (Ø4,ZnY) | 00755-44000 |
| ③ Wiring WR-B3P-G | 00443-01300 | ⑧ Tapping Screw Type 2 | 00623-54008 |
| ④ Wiring WR-B3P-C | 00443-01296 | (Bind,Ø4x8,ZnB) | |
| ⑤ Machine Screw | 00703-53010 | ⑨ Earth Label | 00454-40019 |
| (Bind,M3x10,ZnB) | | | |

10.EDIT PANEL ASS'Y(66371-02105)



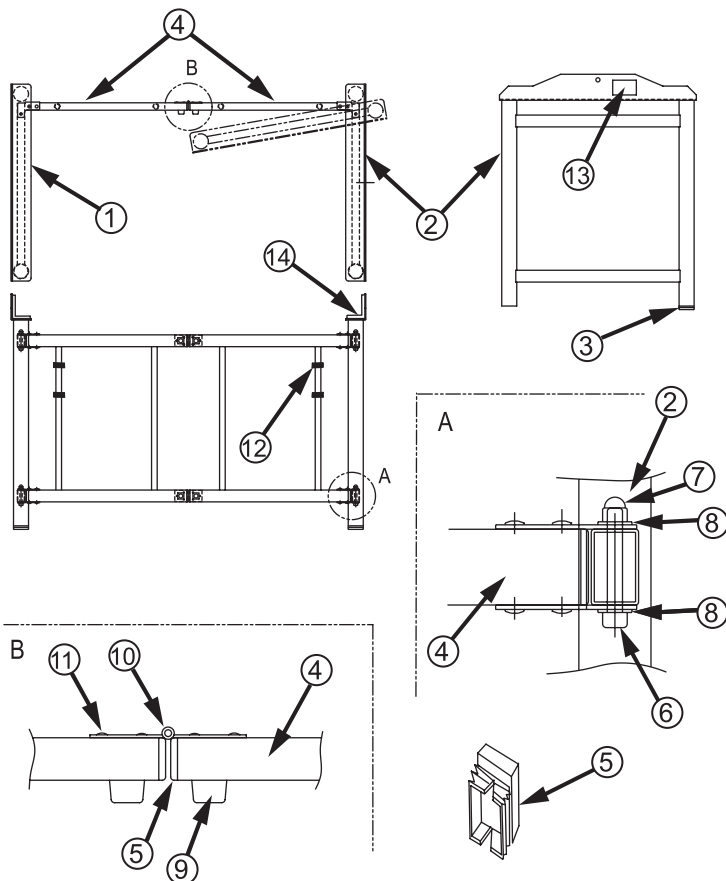
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|----------------------------|-------------|
| ① Edit Panel | 00451-40439 |
| ② LCD Cover B3 | 00452-40139 |
| ③ SWH-491A Ass'y | 00225-40291 |
| ④ LCD Unit B3 Ass'y | 66311-02110 |
| ⑤ Color Button (Dark Grey) | 00304-02106 |
| ⑥ Color Button (Grey) | 00304-02107 |
| ⑦ Color Button (Red) | 00304-02126 |
| ⑧ Holder (Dark Grey) | 00304-02108 |
| ⑨ Holder (Grey) | 00403-02090 |
| ⑩ Tapping Screw | 00623-53005 |
| (Bind,Ø3x5,ZnB) | |

12. JACK PANEL B-3P ASS'Y (66371-02103)



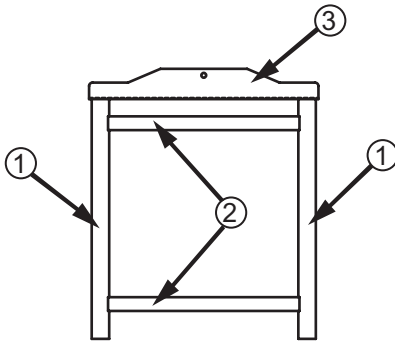
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|-----------------------|-------------|------------------------------------|-------------|
| ① Rear Jack Panel B3P | 00451-40450 | ⑨ Machine Screw(Bind,M3x10,ZnB) | 00703-53010 |
| ② Jack BKT XC-3EN | 00451-40189 | ⑩ Tapping Screw P Tight | 00683-53008 |
| ③ Jack BKT B3 | 00451-40282 | (Bind,Ø3x8,ZnB) | |
| ④ CNH-21B Ass'y | 00225-39297 | ⑪ Tapping Screw Type 2 | 00623-53006 |
| ⑤ IFH-13B Ass'y | 00232-14242 | (Bind,Ø3x6,ZnB) | |
| ⑥ Wiring WR-B3P-A | 00443-01294 | ⑫ Hexagon Nut With Flange (M3,ZnY) | 00725-83000 |
| ⑦ Wiring WR-B3P-F | 00451-01299 | ⑬ Jack Nut | 00332-12005 |
| ⑧ Machine Screw | 00703-53006 | | |
| (Bind,M3x6,ZnB) | | | |

13. MAIN STAND WELD ASS'Y (66371-01301)



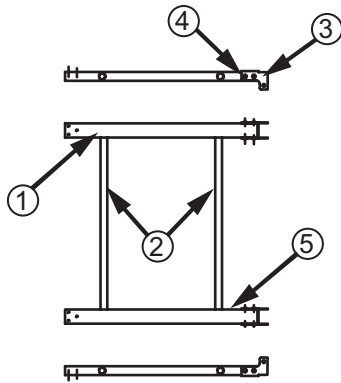
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|--------------------------------|-------------|
| ① Main Stand Weld Ass'y (L) | 66371-01401 |
| ② Main Stand Weld Ass'y (R) | 66371-01402 |
| ③ Round Adjuster Set | 00453-40213 |
| ④ Main Stand Weld Ass'y (Rear) | 66371-01403 |
| ⑤ Rectangle Stopper | 00453-40214 |
| ⑥ Hexagon Socket Head | 00714-78060 |
| Cap Screw (M8x60,ZnW) | |
| ⑦ U Nut With Cap (M8,ZnW) | 00724-98000 |
| ⑧ Plain Washer (Ø8,ZnW) | 00744-80000 |
| ⑨ Rubber Foot | 00453-40217 |
| ⑩ Flat Hinge | 00451-40442 |
| ⑪ Tapping Screw Type 2 | 00614-24016 |
| (Oval,Ø4x16,ZnW) | |
| ⑫ Velcro (Both Sides) | 00453-40223 |
| ⑬ Caution Label | 00412-02519 |
| ⑭ Main Stand Felt Type L | 00453-40227 |

13. MAIN STAND WELD ASS'Y (L,R) (66371-01402 R)



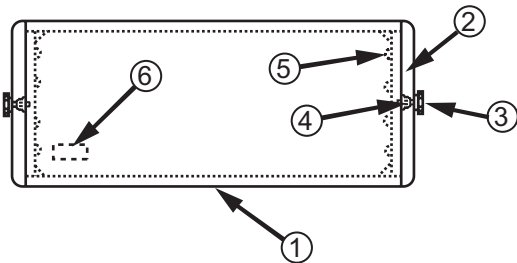
- ① Round Pipe For Main Stand (Ø50.8) 00451-40420
- ② Square Pipe For Main Stand 00451-40421
- ③ L Bracket For Main Stand 00451-40419

14. MAIN STAND WELD ASS'Y (REAR) (66371-01403)



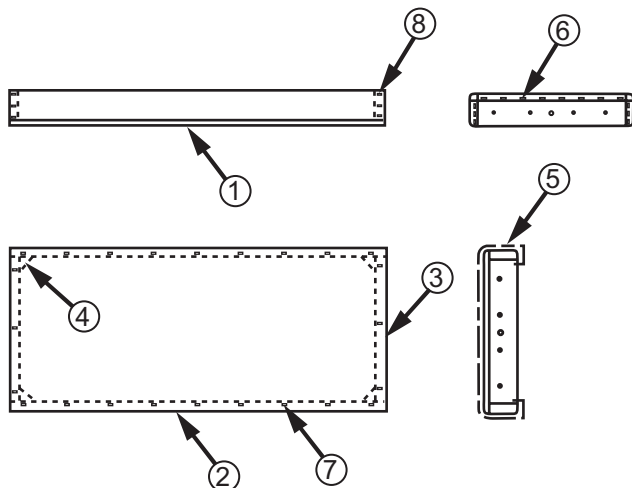
- ① Square Pipe For Main Stand B-(L) 00451-40422
- ② Round Pipe For Main Stand (Ø19.1) 00451-40423
- ③ Hinge For Main Stand 00451-40418
- ④ Blind Rivet NS63 00760-05003
- ⑤ Square Pipe For Main Stand B-(R) 00451-40480

15. BENCH SEAT ASS'Y (66377-01100)



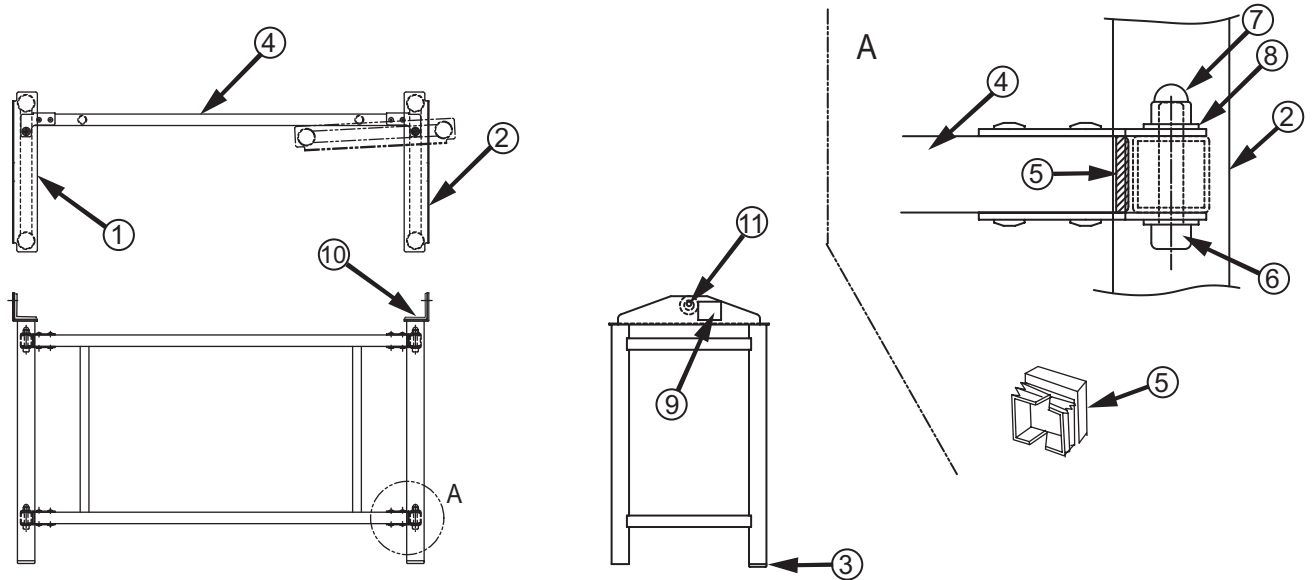
- ① Bench Seat Frame Ass'y 66377-01101
- ② Bench Side Board 00450-40634
- ③ Knob Bolt (M8x35,KG B2) 00700-08003
- ④ Insert Nut Type B (M8x20.5,ZnY) 00730-08003
- ⑤ Tapping Screw Type 1 (Truss,Ø4x45,ZnB) 00613-64045
- ⑥ ID Label 00412-01049

16. BENCH SEAT FRAME ASS'Y (66377-01101)



- ① Bench Seat 00450-40635
- ② Bench Seat Frame A 00450-40636
- ③ Bench Seat Frame B 00450-40637
- ④ Triangle Frame 00402-21825
- ⑤ Leather Sheet (900x600) 00453-40255
- ⑥ Staple (10x6) 00781-21006
- ⑦ Staple (4x22) 00781-24022
- ⑧ Staple (4x35) 00781-24035

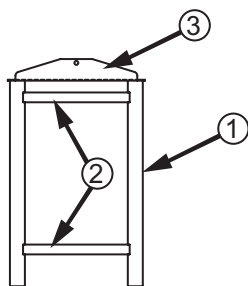
18 .BENCH STAND TOTAL ASS'Y (66311-01301)



- | | | | |
|---------------------------------|-------------|---------------------------|-------------|
| ① Bench Stand Weld Ass'y (L) | 66377-01401 | ⑦ U Nut With Cap | 00724-98000 |
| ② Bench Stand Weld Ass'y (R) | 66377-01402 | ⑧ Plain Washer | 00744-80000 |
| ③ Flat Round Stopper | 00453-40215 | ⑨ Caution Label | 00412-02519 |
| ④ Bench Stand Weld Ass'y (Rear) | 66377-01403 | ⑩ Bench Stand Felt Type L | 00453-40228 |
| ⑤ Flat Square Stopper | 00453-40216 | ⑪ Knob Bolt (M8x35,KG B2) | 00700-08003 |
| ⑥ Hexagon Socket Head Cap Screw | 00714-78045 | | |

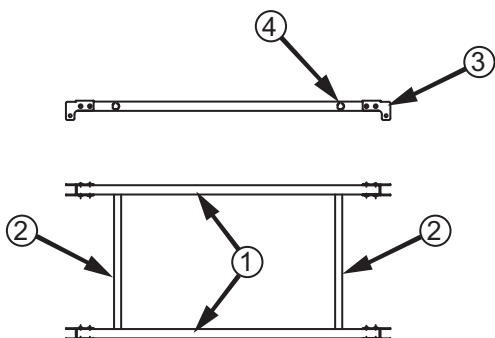
(66377-01401 L)

19 .BENCH STAND WELD A'SSY (L,R) (66377-01402 R)



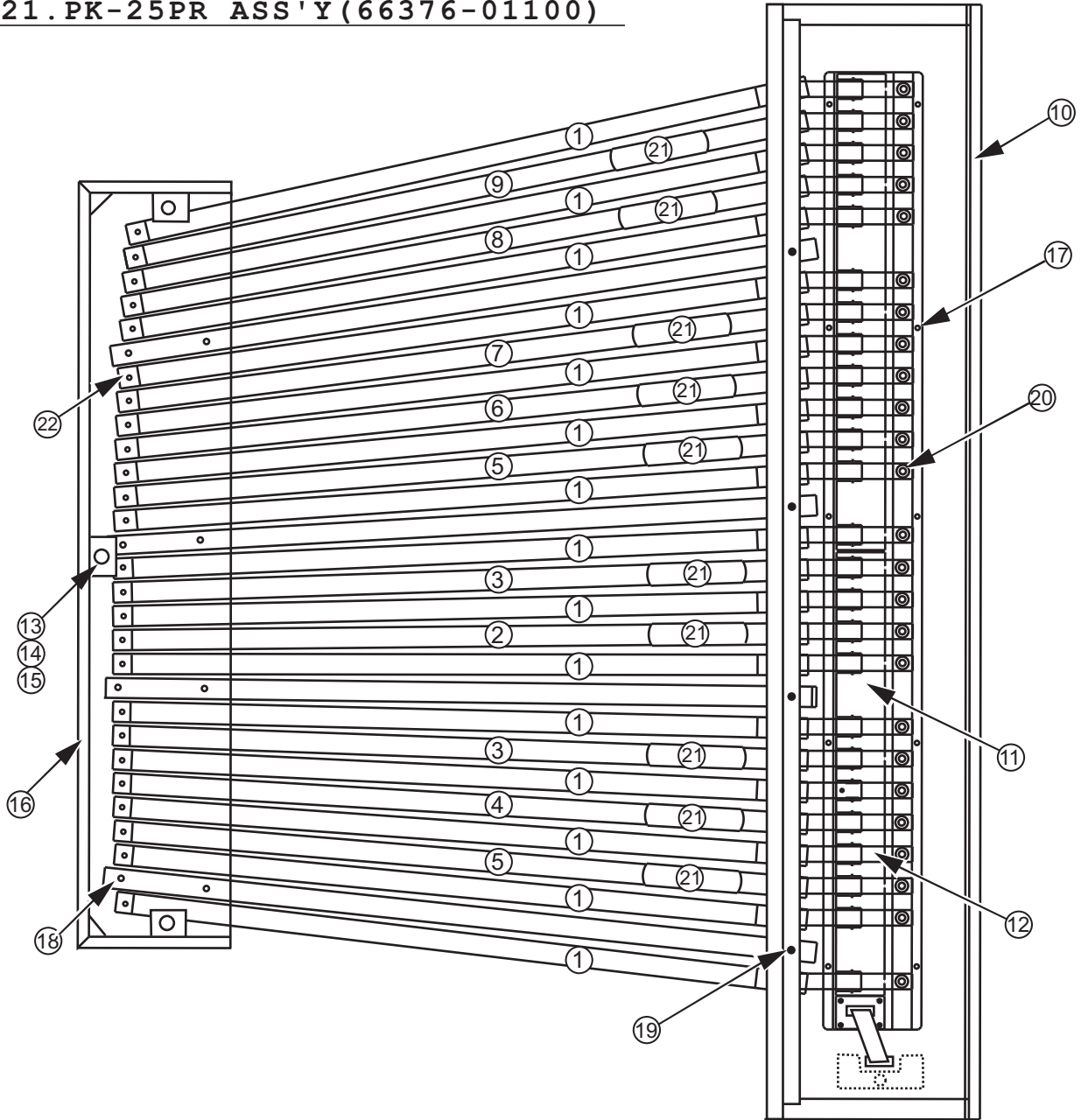
- | | |
|---------------------------------|-------------|
| ① Round Pipe For Bench Stand | 00451-40425 |
| ② Square Pipe For Bench Stand A | 00451-40426 |
| ③ L Bracket For Bench Stand | 00451-40424 |

20 .BENCH STAND WELD ASS'Y (REAR) (66377-01403)

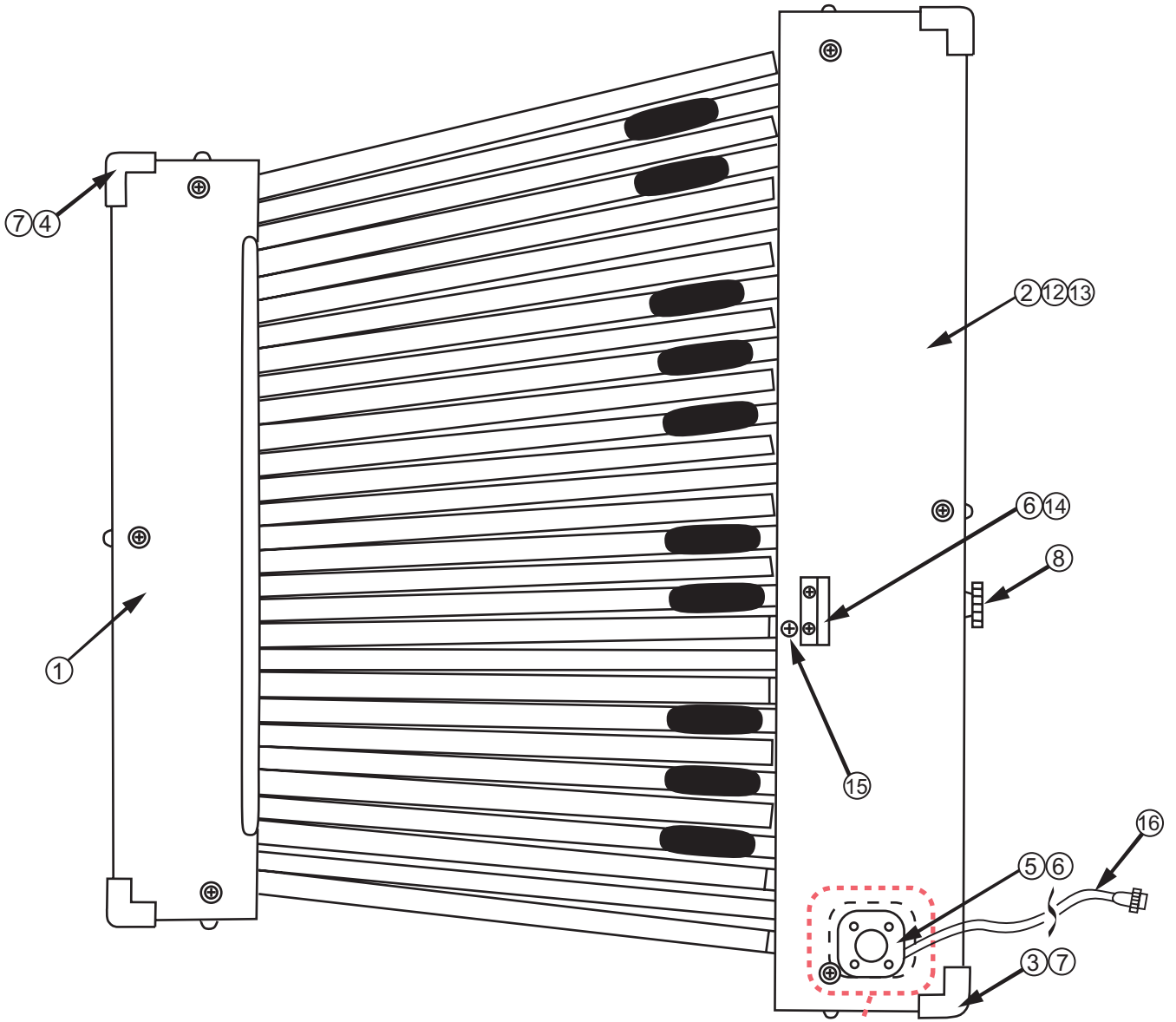


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|--|-------------|
| ① Square Pipe For Bench Stand B | 00451-40427 |
| ② Round Pipe For Bench Stand C (Ø19.1) | 00451-40428 |
| ③ Hinge For Bench Stand | 00451-40440 |
| ④ Blind Rivet | 00760-05003 |

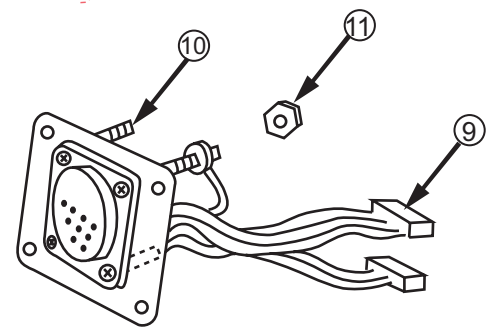
21 . PK-25PR ASS'Y (66376-01100)



① White Key Ass'y	00234-	⑬ Housing A'ssy	66376-
② Black Key Ass'y #1	3023500234-	⑭ Tapping Screw Type	0210200700-
③ Black Key Ass'y #3	3024100234-	⑮ 1(Truss,Ø4x10,ZnB)Machi	0400500705-
④ Black Key Ass'y #5	30242	⑯ ne Screw	4508000705-
⑤ Black Key Ass'y #7	00234-	(Pan	4509500625-
⑥ Black Key Ass'y #9	3024300234-	⑰ head,M5x80,ZnY)Machine	5301000234-
⑦ Black Key Ass'y #11	3024400234-	Screw	1901400234-
⑧ Black Key Ass'y #15	3024500234-	⑱ (Pan head,M5x95,ZnY)	19015
⑨ Black Key Ass'y #17	3024600234-	Tapping screw Type	
⑩ SW Box Ass'y	3024700234-	⑳ 2(Bind,Ø3x10,ZnY)Black	
⑪ SW Lever Rail Ass'y	3024866376-	㉑ Pedal Hinge Spring	
⑫ SW Lever Plate	02101		
⑬ PK BKT	00234-		
⑭ Tapping Screw Type 2	33106A00401-		
(Oval	1309500451-		
⑮ head,Ø4x25,ZnB)Rosette	4031700623-		

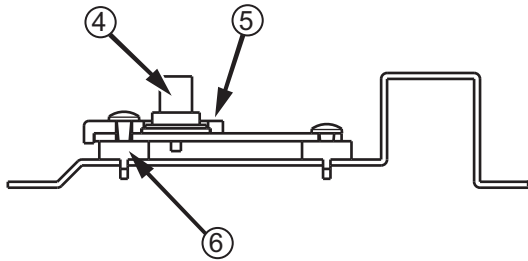
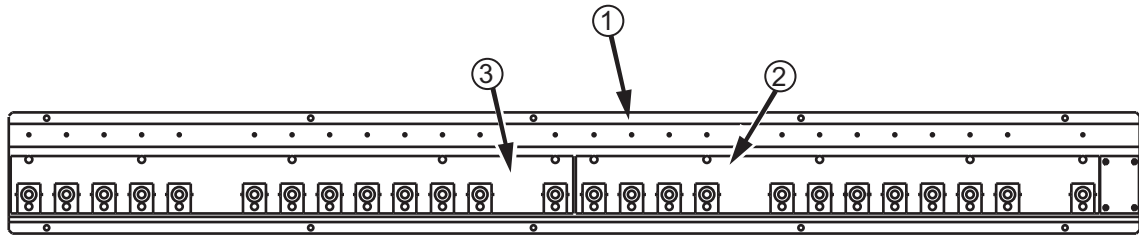


- ① PK Top Cover Ass'y 66376-02104
- ② SW Box Cover 00450-40646
- ③ Protector Leslie 00452-40153
- ④ Protector #3 00452-40170
- ⑤ PK plate 00451-40437
- ⑥ Tapping Screw Type 1 (Truss, Ø4x10, ZnB) 00613-64010
- ⑦ Tapping Screw Type 1 (Flat head, Ø4x16, ZnB) 00613-34016
- ⑧ Knob Bolt G(M6x15) 00700-06003
- ⑨ Wiring WR-B3P-I 00443-01302
- ⑩ Machine Screw (Bind, M3x10, ZnB) 00703-53010
- ⑪ Hexagon Nut With Flange 00725-83000
- ⑫ AL Sheet PR 00453-40221
- ⑬ Leather Sheet 00453-40219
- ⑭ EXP Stopper 00451-40479



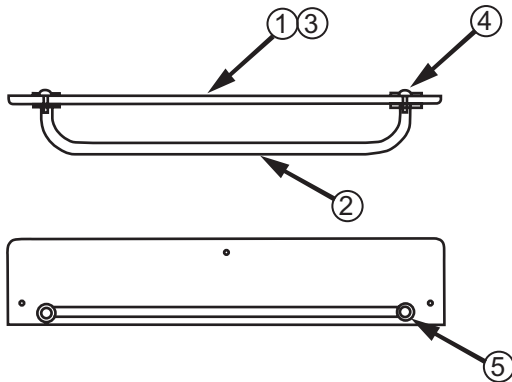
- ⑮ Tapping Screw (Truss, Ø4x35, ZnB) 00613-64035
- ⑯ Cable WR-B3P-H 00443-01301

22. SWITCH LEVER RAIL ASS'Y (00234-33106A)



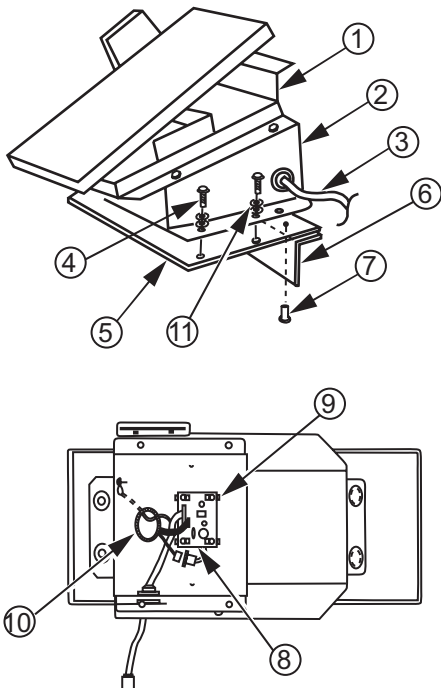
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|-----------------------|-------------|
| ① SW Lever Rail | 00401-13461 |
| ② KCH-4A Ass'y | 00229-21251 |
| ③ KCH-5A Ass'y | 00229-21256 |
| ④ Contact Rubber | 00280-21007 |
| ⑤ SW Supprt | 00402-31126 |
| ⑥ PWB Spacer E-00-022 | 00402-31177 |

23. PK TOP COVER ASS'Y (66376-02104)



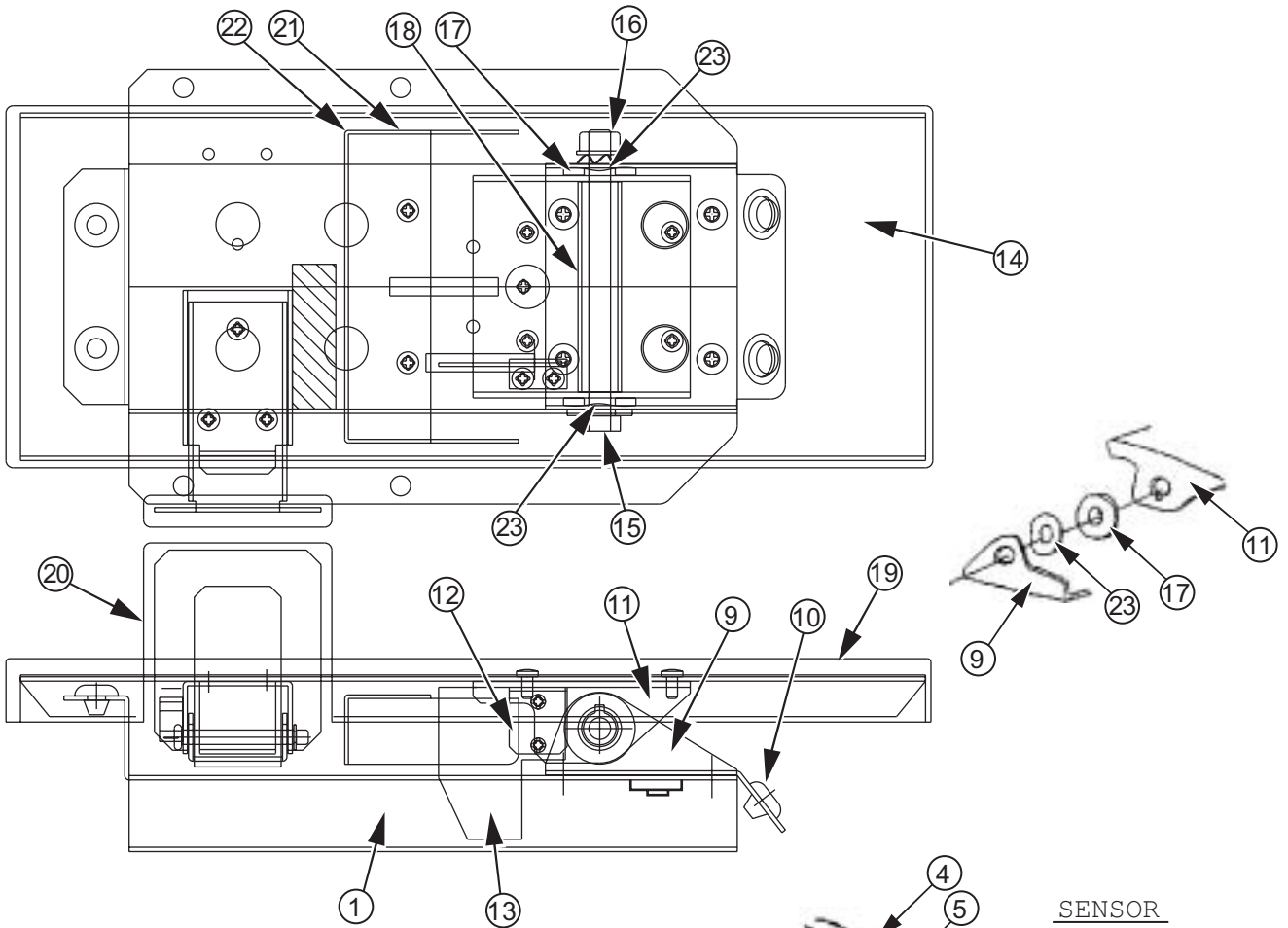
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|--|-------------|
| ① PK Top Cover | 00450-40647 |
| ② Foot Rest Pipe | 00451-40444 |
| ③ Leather Sheet | 00453-40219 |
| ④ Machine Screw
(Truss, M6x20, ZnB) | 00703-66020 |
| ⑤ Foot Rest Pipe Holder | 00451-40454 |

24. EXP. PEDAL ASS'Y (66376-02105)

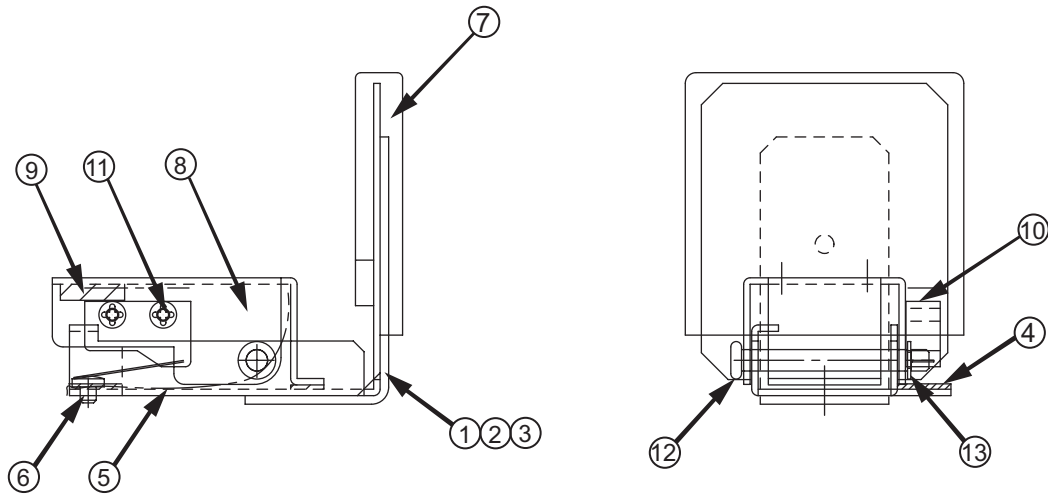


- | | |
|---|-------------|
| ① EXP-9BL Ass'y | 00234-36202 |
| ② EXP Base | 00451-40436 |
| ③ Wiring WR-B3P-E | 00443-01298 |
| ④ Machine Screw
(Bind, M4x5, ZnB) | 00703-54005 |
| ⑤ EXP Plate | 00451-40464 |
| ⑥ EXP Bracket | 00451-40435 |
| ⑦ Tapping Screw Type 2
(Bind, Ø4x8, ZnB) | 00623-54008 |
| ⑧ EFH-226B | 00223-41222 |
| ⑨ Locking Support | 00354-01010 |
| ⑩ Grommet | 00453-40141 |
| ⑪ Spring Washer(Ø4, ZnB) | 00753-14000 |

25 . EXP - 9BL (00234 - 36202)



①	Frame(EXP)	00451-40031		
②	EXP.Base(Pla)	00234-07003		
③	Reflection Board	00234-01013		
④	Photo Diode	00321-06002		
⑤	Lug Terminal	00760-02001		
⑥	Lock Pin	00770-03001		
⑦	Lamp Base	00303-12003		
⑧	Lamp	00308-01001	⑬	Shutter(9M)
⑨	Support BKT	00451-40441	⑭	EXP.Pedal Plate(EXP)
⑩	Bush	00234-07011	⑮	Hex Head Bolt
⑪	Plate Support	00451-40033	⑯	U Nut
⑫	Shutter BKT Installing	00451-40034	⑰	Pedal Spacer
⑬	Shutter(9M)	00452-40144	⑱	Spacer Pipe(EXP)
⑭	EXP.Pedal Plate(EXP)	00451-40150	⑲	Pedal Rubber
⑮	Hex Head Bolt	00713-16075	⑳	Foot SW Ass'y
			㉑	Wire Sticker
			㉒	EXP.P.Cover EXP-5MFL
			㉓	Pedal Spacer(Paper)
				00757-96000
				00452-40009
				00451-40036
				00453-40135
				00234-34220
				00340-05005
				00401-12290
				00453-40023

26.FOOT SW ASS'Y (00234-34220)

① Lever Welder BKT	00234-34221	⑧ Support BKTStopper	00451-40038
② Lever BKT	00451-40044	⑨ Felt(B)	00453-40017
③ Lever Support BKT	00451-40045	⑩ Mini Micro Switch	00301-07010
④ Stopper Felt(A)	00453-40016	⑪ MachineScrew (Bind,M2x10,ZnB)	00703-52010
⑤ Spring	00401-06018A	⑫ Hinge Pin	00776-24035
⑥ Machine Screw (Bind,M3x4,ZnB)	00703-53004	⑬ Retaining Ring E type	00757-83000
⑦ Rubber	00402-05012		