2000 INDIVIDUAL AUDIO OUT INSTRUCTIONS

How to open the 2000 and remove its keyboard:

1. Remove the three screws on each side panel.
2. On the bottom panel, remove the seven screws forward of and including the two large silver pan head screws (this will remove the keyboard also.) However, do not remove the four small silver panhead screws holding on the disk drive. The top panel can now be opened. Lift out the keyboard (be careful not to lose the two thick spacers and two washers from under the back brackets of the keyboard).
3. Remove PC2000-2 and PC2000-3 (the two bottom panel boards).

How to install the audio circuit board (PC2000-4):

1. On PC2000-3 carefully remove IC U333 (I-324, 5532) and clear the holes of solder. Also remove associated 30K feedback resistors (R-016 x 2) and 100pf capacitors (C-136 x 2) (To save time, these can be cut out with wire cutters.). See Fig. 1.
2. Remove all 3379 filter chips (socketed) except for voice 1 (U335). Carefully bend up pin 11 on each (parallel with top surface of 3379) and tin with a small amount of solder. Now reinstall the seven 3379 filter chips. Also, tin pin 11 of voice #1 filter while leaving it in the socket.
3. On the backside (solder side) of PC2000-3 locate U335 (3379 voice 1) (See Fig. 2). The label "35" is next to pin 1 of this chip. Find pins 11 and 17 of U335 (They are connected by a trace). Isolate these two pins from the rest of the circuitry by cutting this trace after pin 17 (Pins 11 and 17 should still be shorted).
   * **NOTE:** This cut is only done on voice 1. It helps to reduce noise in voice 1 by isolating it from unused traces.
4. Now the five noncoax center wires (J403) on the audio output circuit board (PC2002-4) can be soldered to the holes provided by the removal of U333 (See WL2000-6):

J403 wire #	U333 pin #
1	7
2	3
3	4
4	8
5	1

5. The remaining eight coax wires are soldered to the 3379's (pin 11) in sequential order (See WL2000-6):

PC2002-4(J404)	PC2000-3 PIN 11
4	U335
3	U341
2	U347
1	U353

PC2002-4(J402)	PC2000-3 PIN 11
4	U359
3	U365
2	U371
1	U378

How to install the audio output jack board:

1. Remove the disk drive cable from the top panel. Locate the cardboard template (CN2000-5) in the kit and fold it 90 degrees at the crease. With the back of the 2000 facing you (top panel closed) place the template across the top edge of the top panel (See Fig. 3). Position the template so that its left side lines up with the outermost "0" on the number "2000" and tape into place. Center punch each of the eight cross hairs. Now remove the template and drill a 1/8" pilot hole in all eight locations. Enlarge each hole to ½". File to deburr all edges.

* NOTE: Be sure to remove all shavings from inside the 2000.

2. Install the audio output jack board (PC2002-5) so that the 16 pin socket faces up. Place a washer and nut on each jack.

* NOTE: These jacks strip extremely easily so be careful when tightening. It is recommended to use some loctite superbond 416 on each of them to prevent loosening.

How to reassemble unit:

1. Reinstall PC2000-2 and PC2000-3.
2. To update the firmware, carefully remove the old firmware (U214) and replace with new 2002+ (version 4) firmware. See DZ2000-4.
3. Apply shielding to the bottom of the 2000 keyboard as per drawing DZ2000-4 (do procedure 1 first then 2).

   * NOTE: This shield is needed because of noise floating on the keyboard rail.

4. Hold the audio circuit board (PC2002-4) out of the way as you place the keyboard back into the 2000.
5. Now reinstall the two back keyboard screws (large silver panhead). Also remember to install the two thick spacers and two washers that go with these screws.
6. Mount the audio circuit board (PC2002-4) using two sheetmetal screws, two star washers and two plastic spacers (see DZ2000-4). These mounting holes may need to be enlarged to 1/8" (.125mm).

7. Install the 16 pin ribbon cable from the audio output circuit board (PC2002-4) to the audio output jack board (PC2002-5). Pin 1 of the circuit board goes to pin 1 of the jack board.
8. Functional Test the 2000.
9. Install the remaining three keyboard screws (two front rubber feet and middle black panhead) and reassemble unit.

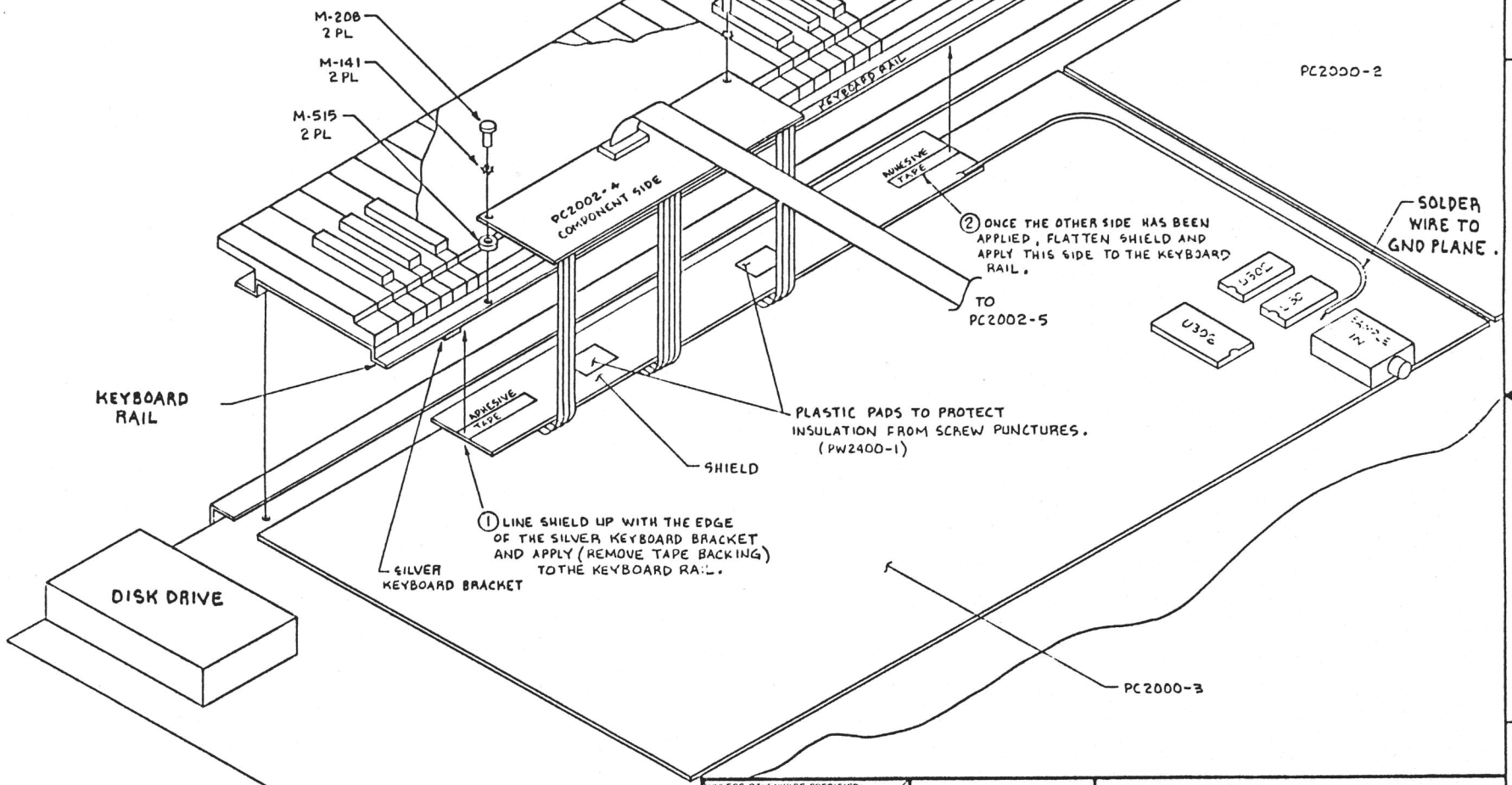
* NOTE: A ½" (12.7mm) greenlee punch is excellent for making the holes in the 2000 panel. You can order one from Greenlee Tool Division or a Greenlee Distributor.

GREENLEE TOOL DIVISION
Customer Service
4455 Boeing Drive
Rockford, IL 61109
Phone: (815)397-7070
Catalog # 730
Part # 500 2408.6

884 Parts List

CM884 x 1	Assembly Instructions
CM2000-4 x 1	Operating Instructions
CN2000-3 x 1	Hole Punch Template
E-231 x 1	16 Pin Ribbon Cable
J-090-1 x 8	Nut and Washer
M-141 x 2	#6 External Tooth Starwasher
M-208 x 2	#6 x 3/8" Pan Head Phillips
M-515 x 2	Nylon Spacer
M-413 x 1	PC2002-5 Audio Output Jack Board
M-418 x 1	PC2002-4 Audio Output Circuit Board
Z-419 x 1	Shield Assembly

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES
FRACTIONS DECIMALS ANGLES
.xx ±
.xxx ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

APPROVALS	DATE
DWN Stuart Lubick	2-17-87
CHECKED	
ELEC ENGR	
MECH ENGR	
MFG ENGR	

	MODEL 884
NEXT ASSY	USED ON
APPLICATION	

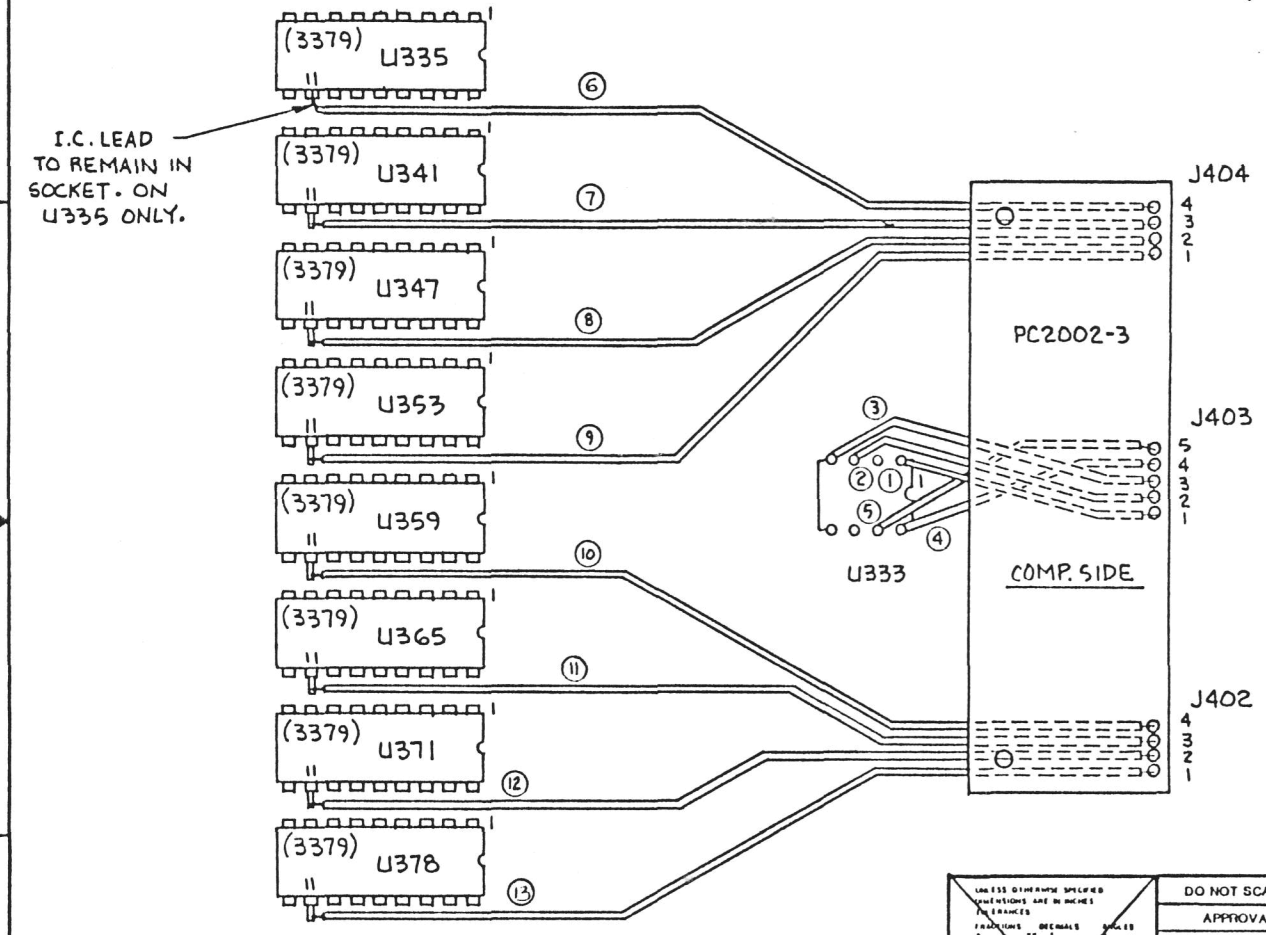
SEQUENTIAL CIRCUITS INC
3051 N. FIRST ST.
SAN JOSE, CA. 95134

TITLE
ASSEMBLY DIAGRAM,
2000 UPDATE

SIZE	DRAWING NO.	REV
C	DZ2000-4	A

SCALE: NONE SHEET 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



WIRE NO.	AWG	COLOR	LENGTH	FROM	TO	SCI P/N
1	22	BLACK	2½"	J403-1	U333-1	E-054
2				J403-2	U333-3	
3				J403-3	U333-4	
4				J403-4	U333-7	
5				J403-5	U333-8	
6		BLACK COAX	4"	J404-4	U335-11	E-045
7			3½"	J404-3	U341-11	
8			3¾"	J404-2	U347-11	
9			4¼"	J404-1	U353-11	
10			3¾"	J402-4	U359-11	
11			3¾"	J402-3	U365-11	
12			4¼"	J402-2	U371-11	
13			5¼"	J402-1	U378-11	

	MODEL 884
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
FRACTIONS ± DECIMALS ± ANGLES
MATERIAL
FINISH

DO NOT SCALE DRAWING		
APPROVALS	DATE	
DWN Stuart Locks	2-17-87	
CHECKED		
ELEC. ENGR		
MECH. ENGR		
MFG. ENGR		

SEQUENTIAL CIRCUITS INC. 3051 N. FIRST ST. SAN JOSE, CA. 95134

TITLE: WIRE LIST, 2000 UPDATE

SIZE	DRAWING NO.	REV
B	WL2000-6	A

SCALE: NONE | SHEET 1 OF 1

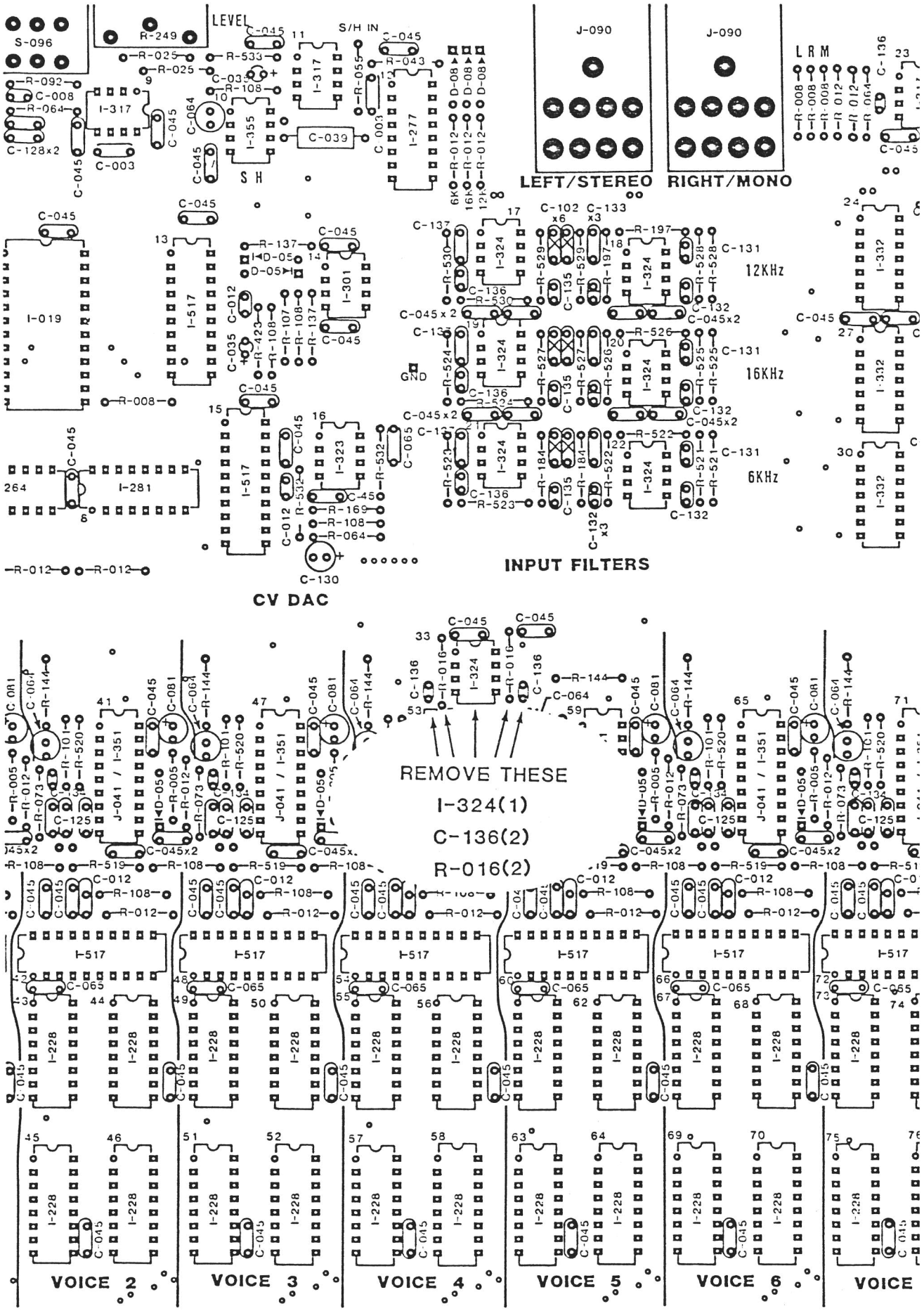
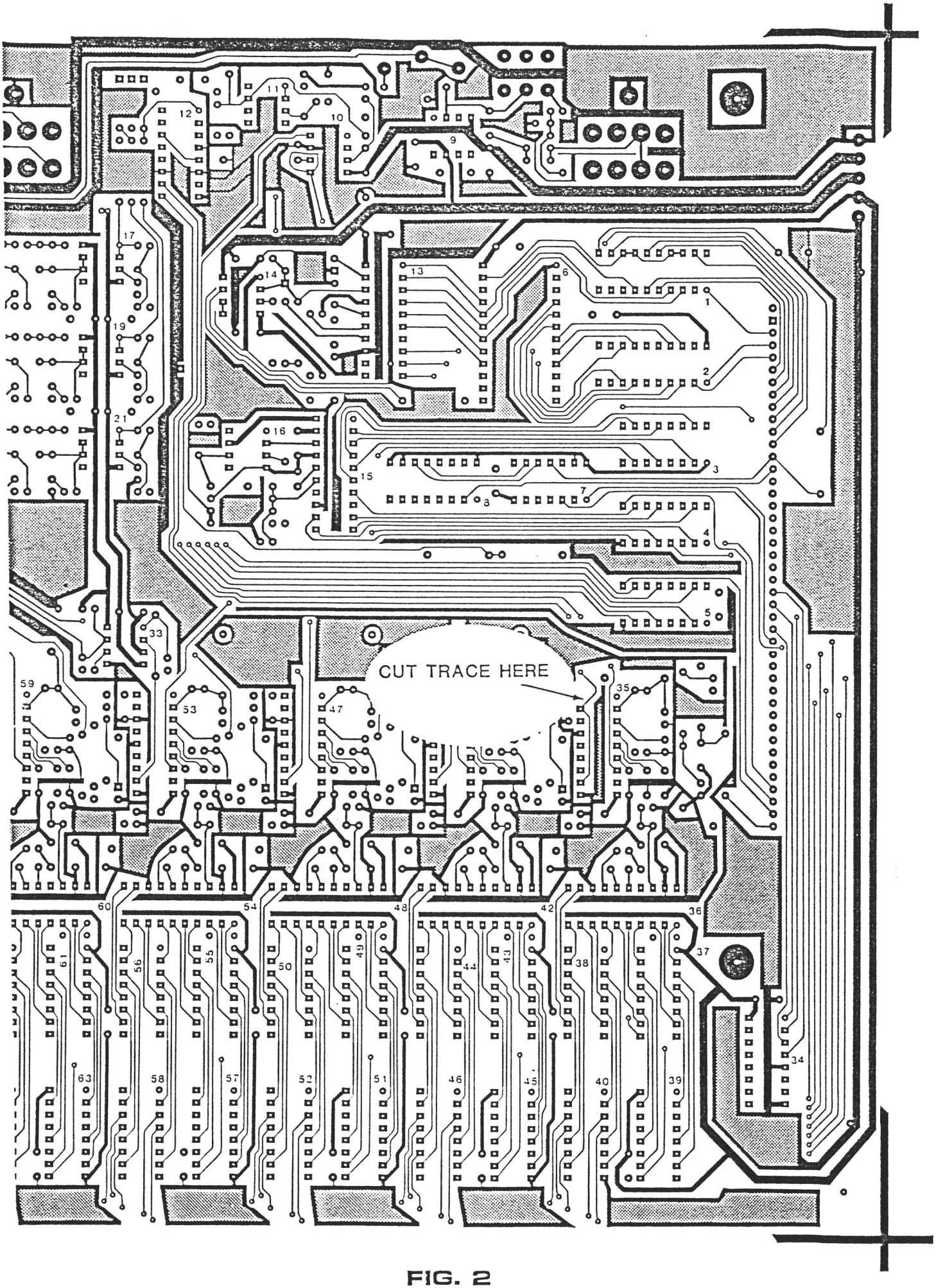

S-096
LEVEL
S/H IN
J-090
J-090
LRM
LEFT/STEREO
RIGHT/MONO
S H
INPUT FILTERS
12KHz
16KHz
6KHz
GND
CV DAC
REMOVE THESE
I-324(1)
C-136(2)
R-016(2)
VOICE 2
VOICE 3
VOICE 4
VOICE 5
VOICE 6
VOICE

FIG. 1


CUT TRACE HERE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
19
21
33
34
35
36
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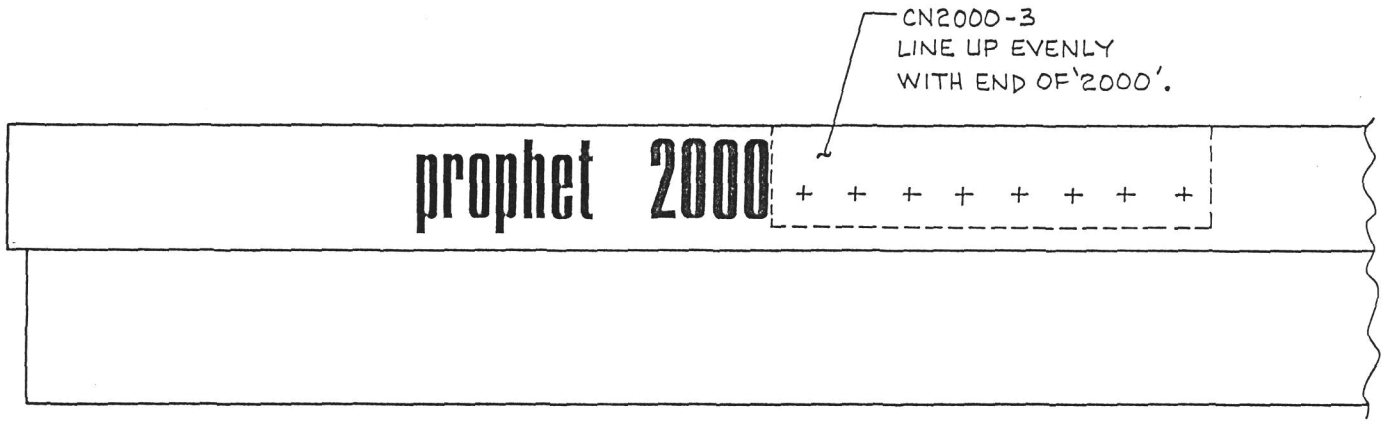
61
63

FIG. 2



REAR PANEL
VIEW

FIG. 3

PROPHET 2000 / 2002
"PLUS" KIT OPERATION NOTES

The Prophet 2000 / 2002 Plus update provides the often-requested feature of individual voice outputs. A few other features have also been added. Changes are decribed below. In all other respects the unit operates as described in the operation manual (CM2000C).

INDIVIDUAL OUTPUTS

The Prophet 2000/2's stereo output system was designed for its principal use, as a keyboard sampler. But players also want to use particularly the 2002 as a drum machine expander or multi-timbral sequence playback unit (in Mode 4). In these applications the original stereo output system can be annoying because the sounds fly back and forth as a left or right voice is assigned. Without separate outputs, the sounds cannot be positioned consistently in a stereo mix nor processed by external gear.

Addressing this, eight output jacks, one for each voice, have been added to the back panel. To enable these individual outputs, select the DYNAMIC ALLOCATION function, and set its value to "FO" (Fixed Output). When this option is selected, two sounds are routed to each voice output jack. (There are sixteen sounds routed to eight voices). Specifically, sounds 1 and 9 are routed out voice 1, sounds 2 and 10 play through voice 2, sounds 3 and 11 through voice 3, and so on, through sounds 8 and 16 being forced out voice 8.

Forced output allows you to externally treat or pan individual voices. But, some care must be exercised, because two sounds now compete for each voice. The voice can only play one sound at a time and the most recent note always wins. For example, if forced output is on, and sound 12 is a sustained note playing through voice 4, when sound 4 appears, it will shut-off sound 12. For this reason, this mode is not recommended for keyboard-type applications. (If you are in Layer mode or one of the three Crossfade modes, and play a note which has competing sounds mapped to it, the result will be unpredictable.) However, sometimes you can turn this abruptness to advantage, for example, by assigning sounds that you do want to compete. Examples of these are closed and open hi-hats, normal or slapped bass, or acoustic/electric sounds. In these cases, Velocity Switch mode will be a handy way to control the sound choices.

CROSSFADE LOOPING

A new feature, linear crossfade looping can create virtually seamless loops. Basically, it smooths out the differences between the samples near the loop points. Crossfading modifies the sample memory by mixing ranges of the sample with itself. It is therefore not reversible unless the sound has already been saved on disk.

To perform a crossfade loop:

1. Edit either the sustain or release loop as well as you can. Be sure to use INC/DEC at least once at both points, so that zero-crossings or zero-slopes are located. Save to disk and verify.

2. Select LOOP MODE. The loop that will be crossfaded will be the last one (sustain or release) that was edited.

3. Press EXECUTE.

   During processing, a "-" appears in the display.

4. If you don't like the result, re-load the sound (using LOAD ONE), try different loop points, and repeat the crossfade.

In general, a longer crossfade loop gives better sound. And this function automatically takes the largest crossfade loop that it can. However, if you want to shorten the crossfade range you can do this by using the following somewhat esoteric information. To prevent overlap, the size of the crossfade is limited by the least of the following three factors a) the difference between the playback start and loop start points, b) the difference between the loop end point and playback end point, and c) the distance between the loop points, divided by two. So, you can artificially shorten the crossfade by temporarily lowering the end point towards the loop end, doing the crossfade, then moving the end point back out.

KEYBOARD OUTPUT IN MODE 4

Prophet 2002 users can ignore this. In the previous software, the Prophet 2000 would not transmit from the keyboard when operating in MIDI Mode 4. With the Plus, it does transmit local keyboard events on the selected base channel.

MISCELLANEOUS

The implementation of MIDI Second Release Pedal has been adjusted to match other manufacturer's Hold Pedal.

In previous software, a bug prevented sound 8 from being heard under BUILD MAP. This has been corrected.

Previous software erroneously echoed received Program Selects. This has been stopped.