

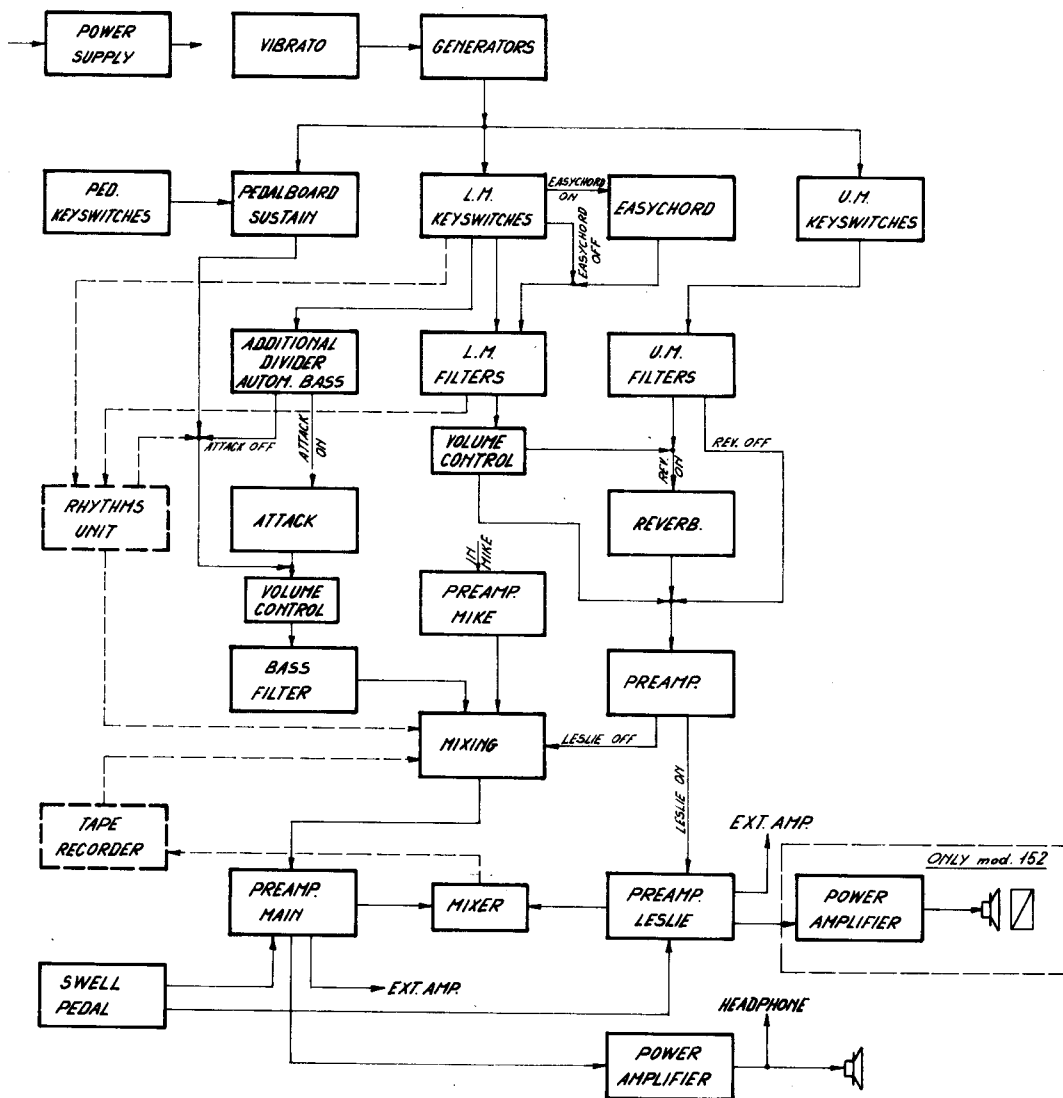
EFARFISA

ELECTRONIC ORGANS

MOD 151~152

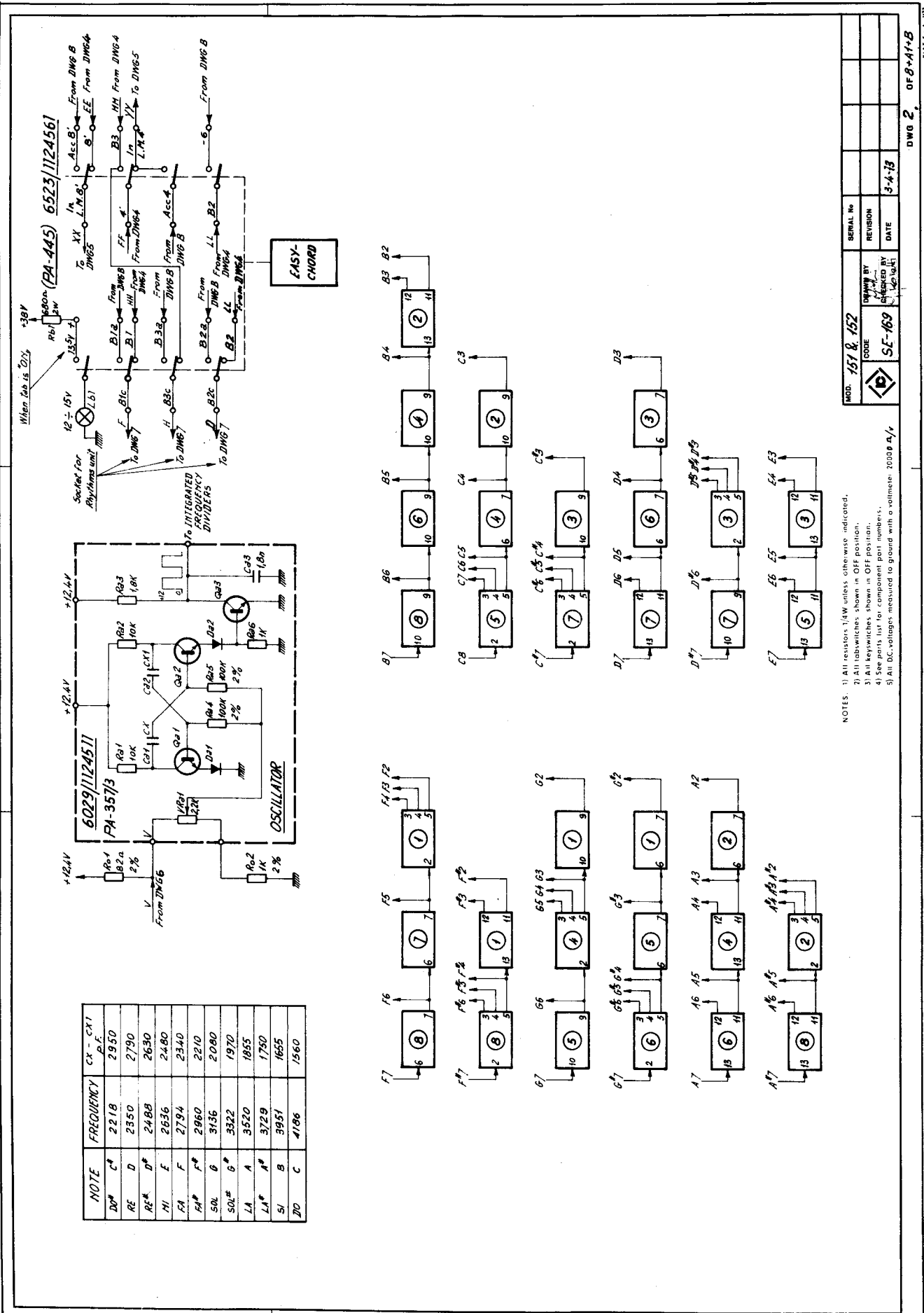
SCHEMATIC DIAGRAMS

BLOCK DIAGRAM



NOTES: 1) All resistors 1/4W unless otherwise indicated.
 2) All tab switches shown in OFF position.
 3) All keyswitches shown in OFF position.
 4) See parts list for component part numbers.
 5) All DC voltages measured to ground with a voltmeter 20000 Ω/V.

MOD. 151 & 152	DESIGNED BY	SERIAL No
CODE SC-169	DRAWN BY	REVISION
	CHECKED BY	DATE



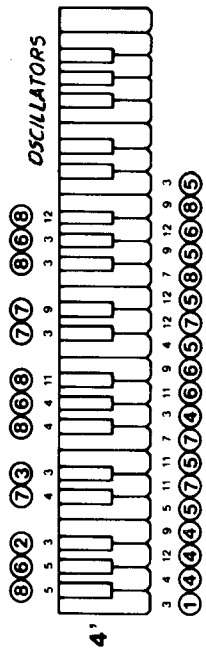
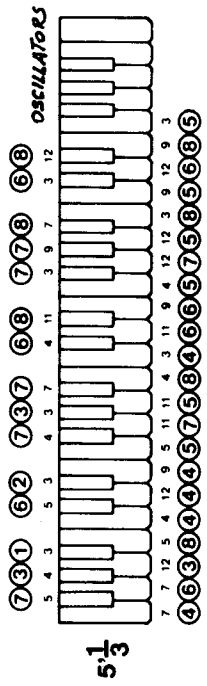
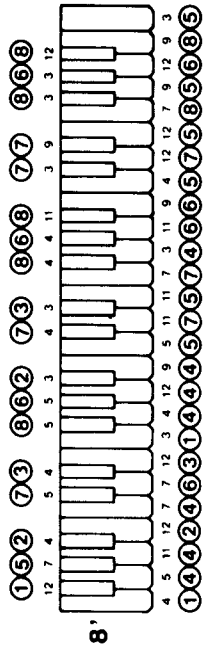
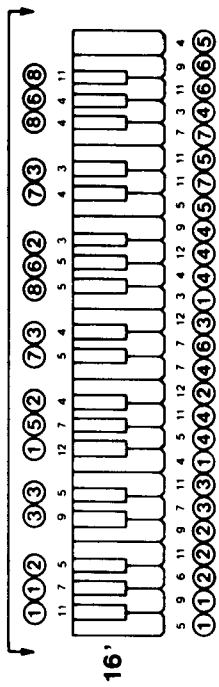
NOTE	FREQUENCY	CR - CX1	P.F.
DR*	2218	2950	
RE	2350	2790	
RF*	2488	2630	
HI	2636	2480	
FA	2794	2340	
HA*	2960	2210	
SOL	3136	2080	
SOL*	3322	1970	
LA	3520	1855	
LA*	3729	1750	
SI	3951	1655	
ZO	4186	1560	

NOTES: 1) All resistors 1/4W unless otherwise indicated.
 2) All keyswitches shown in OFF position.
 3) All keyswitches shown in OFF position.
 4) See parts list for component part numbers.
 5) All DC voltages measured to ground with a voltmeter 20000 R.M.V.

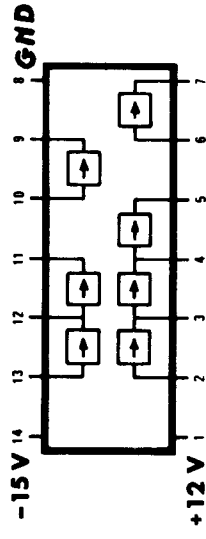
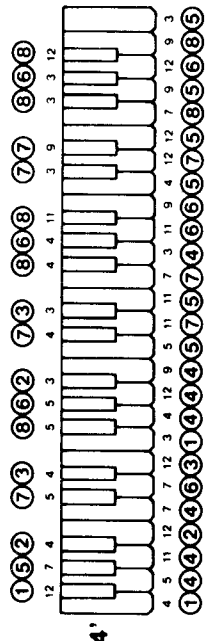
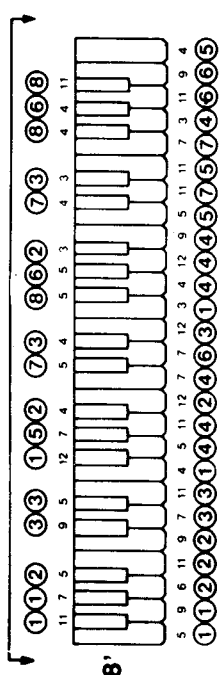
MOD. 151 R. 152	DESIGNED BY L. G. WILSON	SERIAL No.
CODE SF-169	CHECKED BY L. G. WILSON	REVISION
	DATE	3-4-73

REFERENCE TABLE
KEY to GENERATOR-BOARD

UPPER MANUAL



LOWER MANUAL



NOTES:
1) The tone generator of the keyboard notes are indicated with two numbers. The circled number, that appears also on the printed circuit board PA-447a indicates the integrated circuit; the second number indicates the integrated circuit pin.
2) Assembly of the I.C.s. should be made as shown in figures 1. and 2.

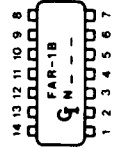


fig. 1.

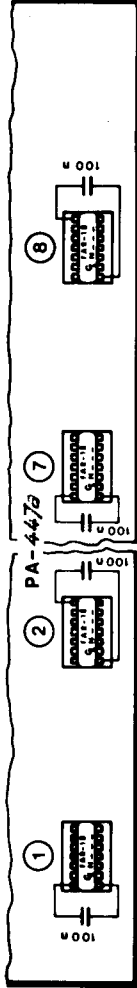
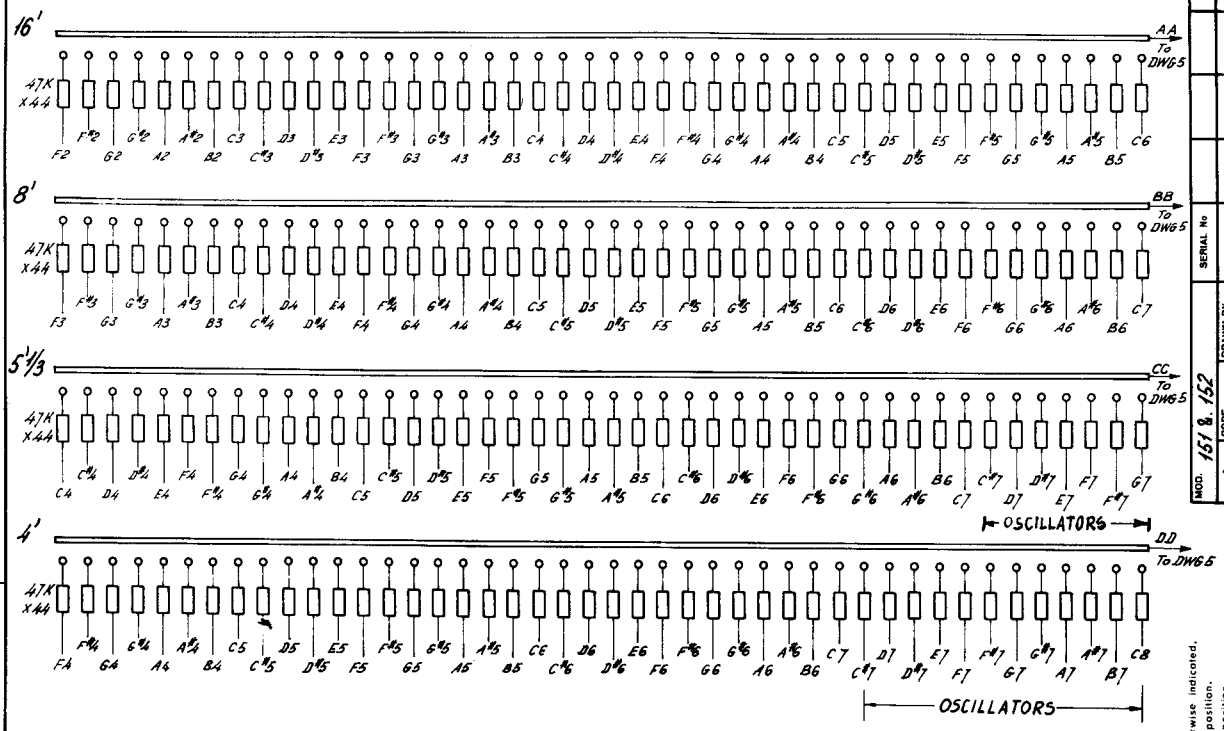


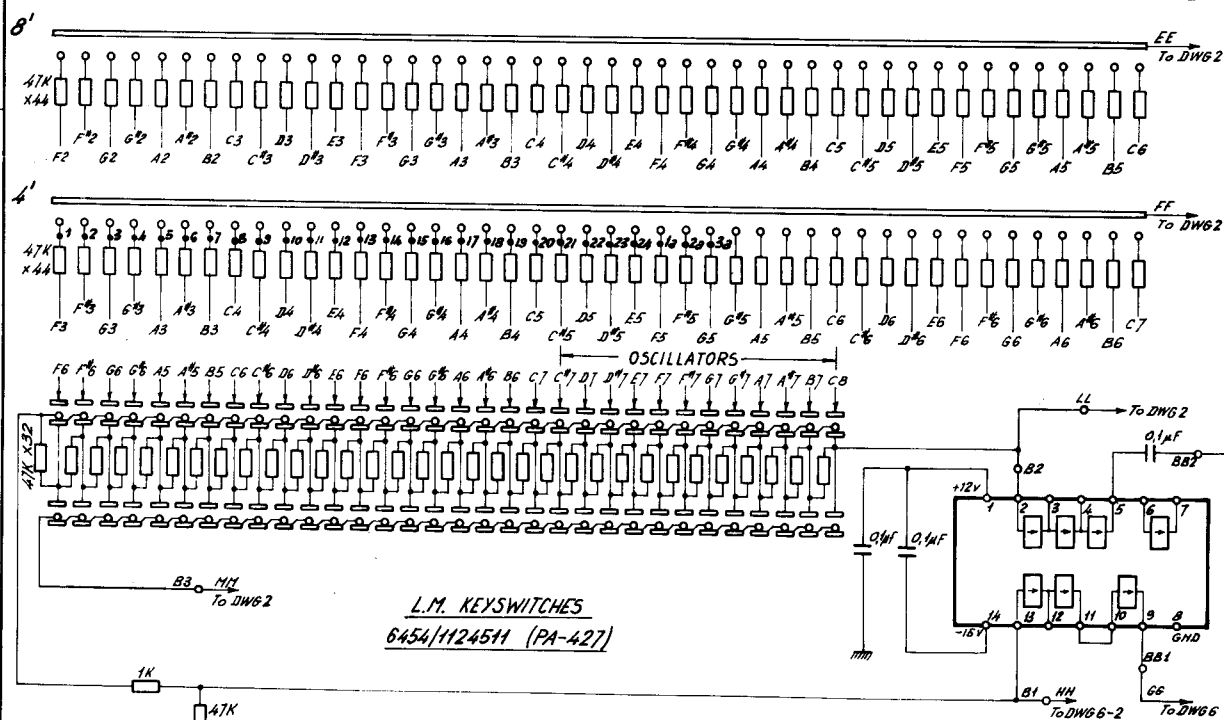
fig. 2.

MOD 151 B.152	SERIAL No.	
CODE	REVISED	
DATE	3-3-73	
SE-169	DATE	



U.M. KEYSWITCHES
6533/H24571 (PA-447/1)

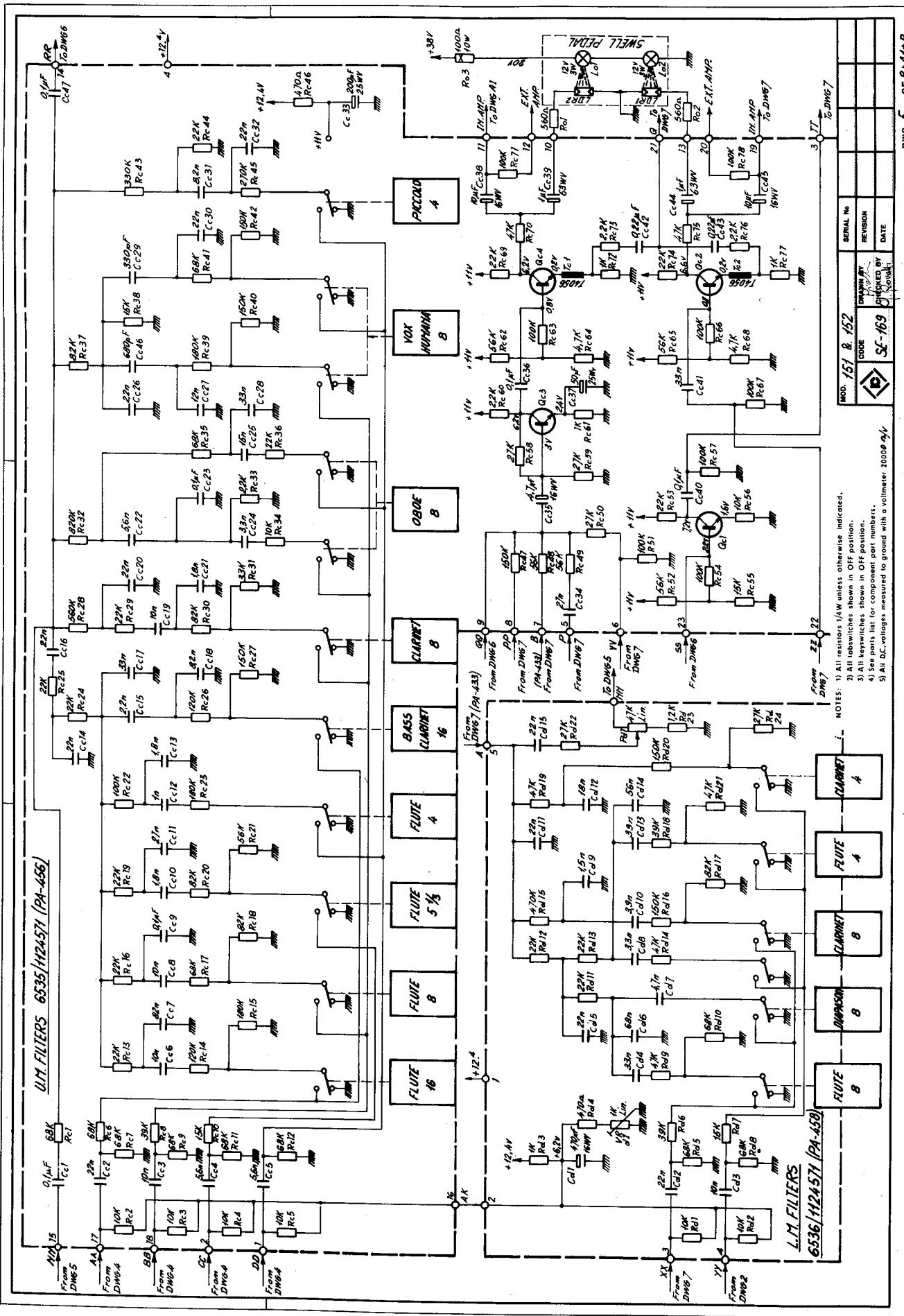
- NOTES: 1) All resistors 1/4W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.
5) All DC voltages measured to ground with a voltmeter 2000mV.



L.M. KEYSWITCHES
6454/H24571 (PA-427)

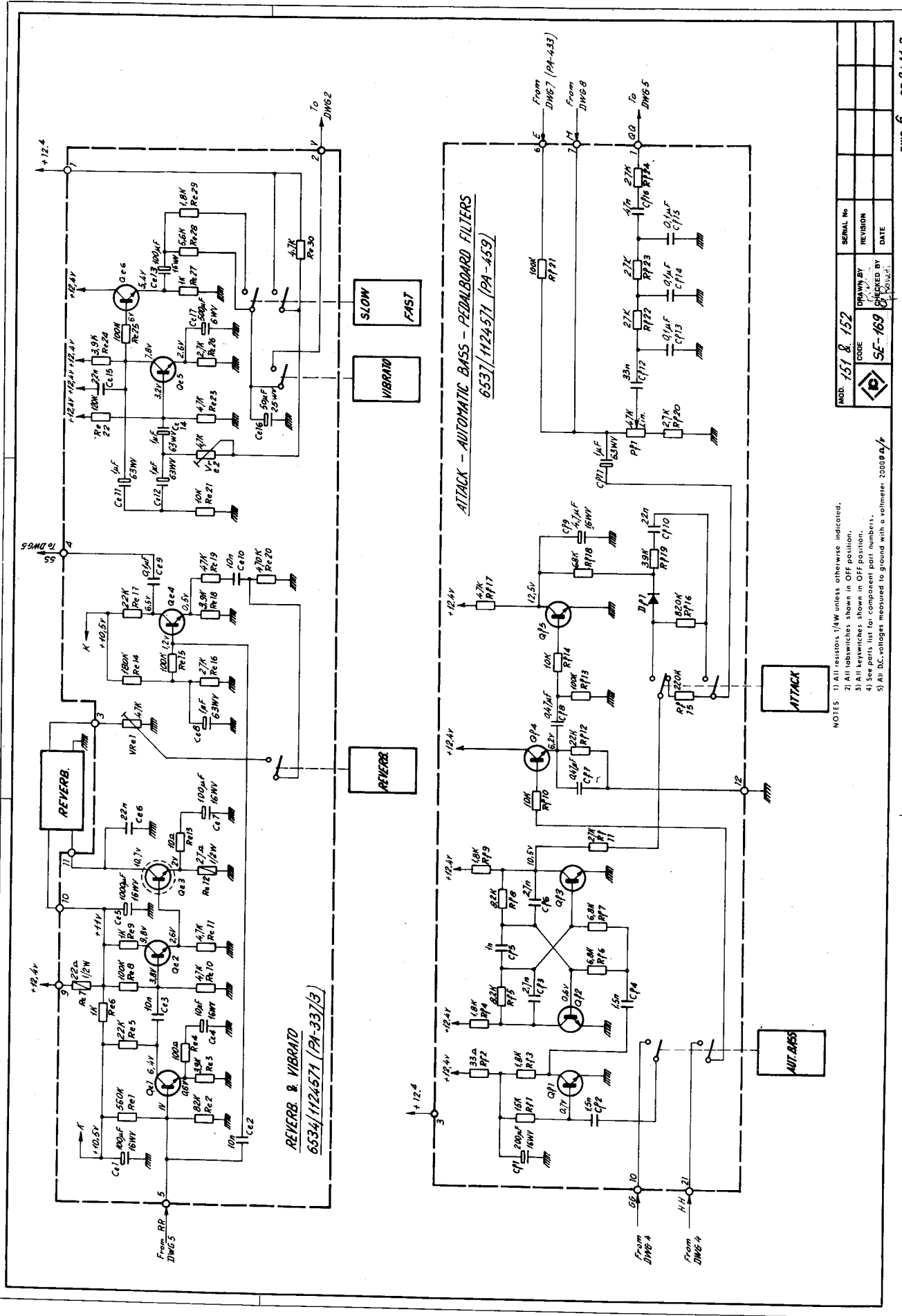
N.B.: THE PINS 1...24; 1a; 2a; 3a TO POINTS 1...24; 1a; 2a; 3a. DWG "B",

NO. 157 & 152	SERIAL NO.	REVISION	DATE
CODE	DESIGNED BY	CHECKED BY	
SF-163	C. K. COULTER		7-3-73



- NOTES:
- 1) All resistors 1/4W unless otherwise indicated.
 - 2) All tubecases shown in OFF position.
 - 3) All keyswitches shown in OFF position.
 - 4) See parts list for component part numbers.
 - 5) All DC voltages measured to ground with a voltmeter. 20000 Ω .

MOD. 751 B. 752	DATE
DESIGNED BY	REVISION
CHECKED BY	DATE
SC-169	



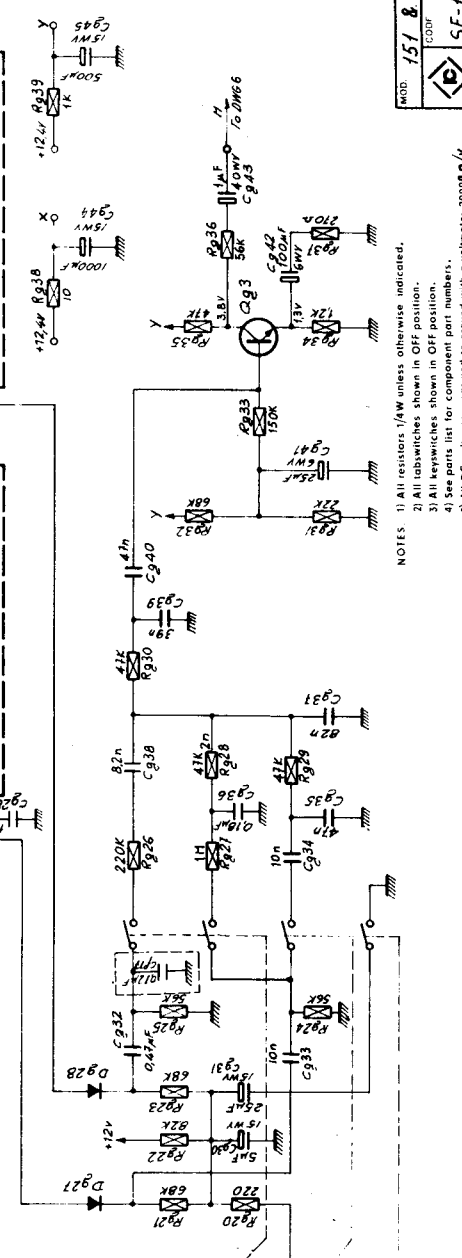
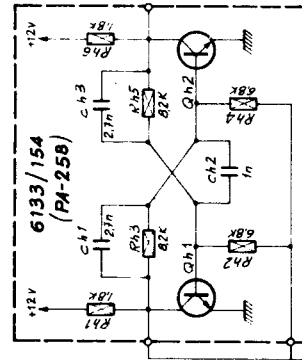
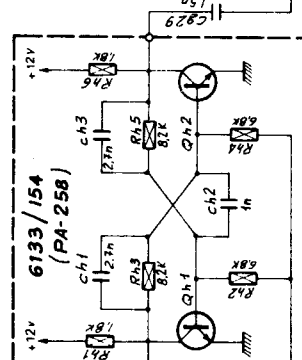
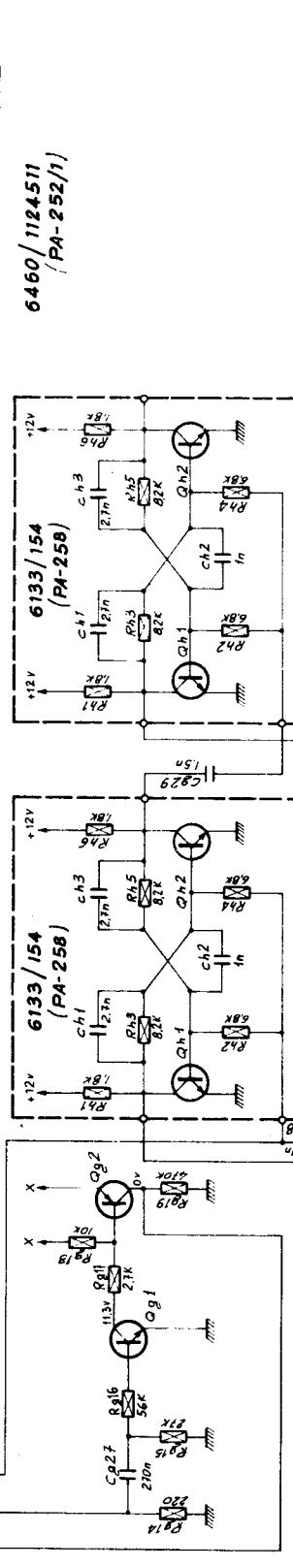
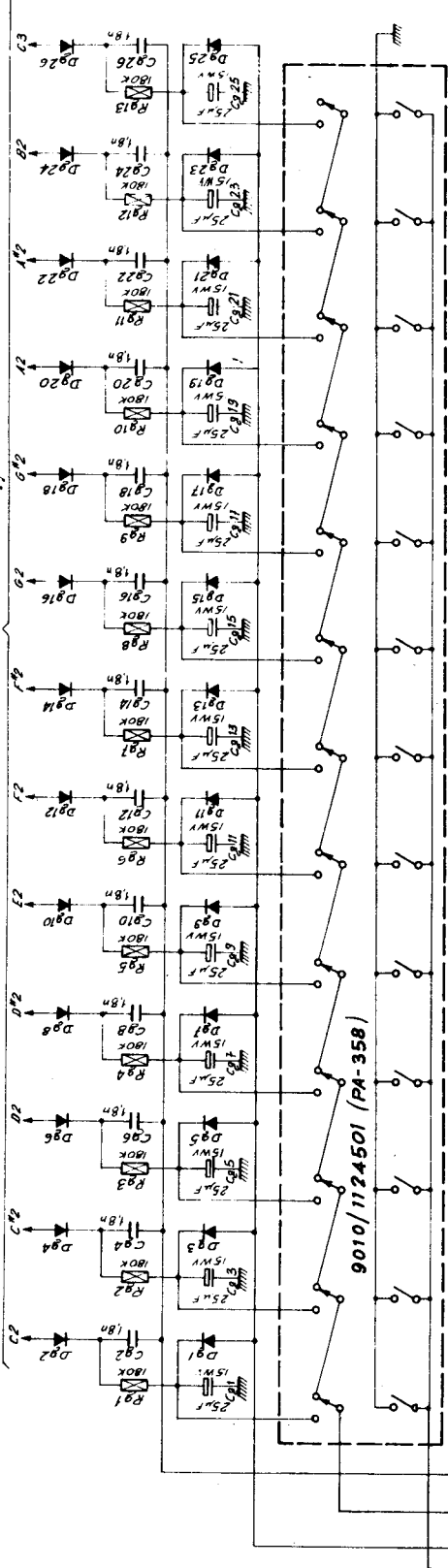
ATTACK - AUTOMATIC BASS - PEDALBOARD FILTERS
6537/1124571 (PA-459)

REVERB & VIBRATO
6534/1124571 (PA-337/3)

- NOTES:
- 1) All resistors 1/4W unless otherwise indicated.
 - 2) All labswitches shown in OFF position.
 - 3) All keyswitches shown in OFF position.
 - 4) See parts list for component part numbers.
 - 5) All DC voltages measured to ground with a voltmeter, 20000 Ω/V.

MOD. 757 & 152	SERIAL No
CODE	REVISION
DRAWN BY SF-169	APPROVED BY
DATE	DATE

To KEYSWITCHES BOARD PA-44711

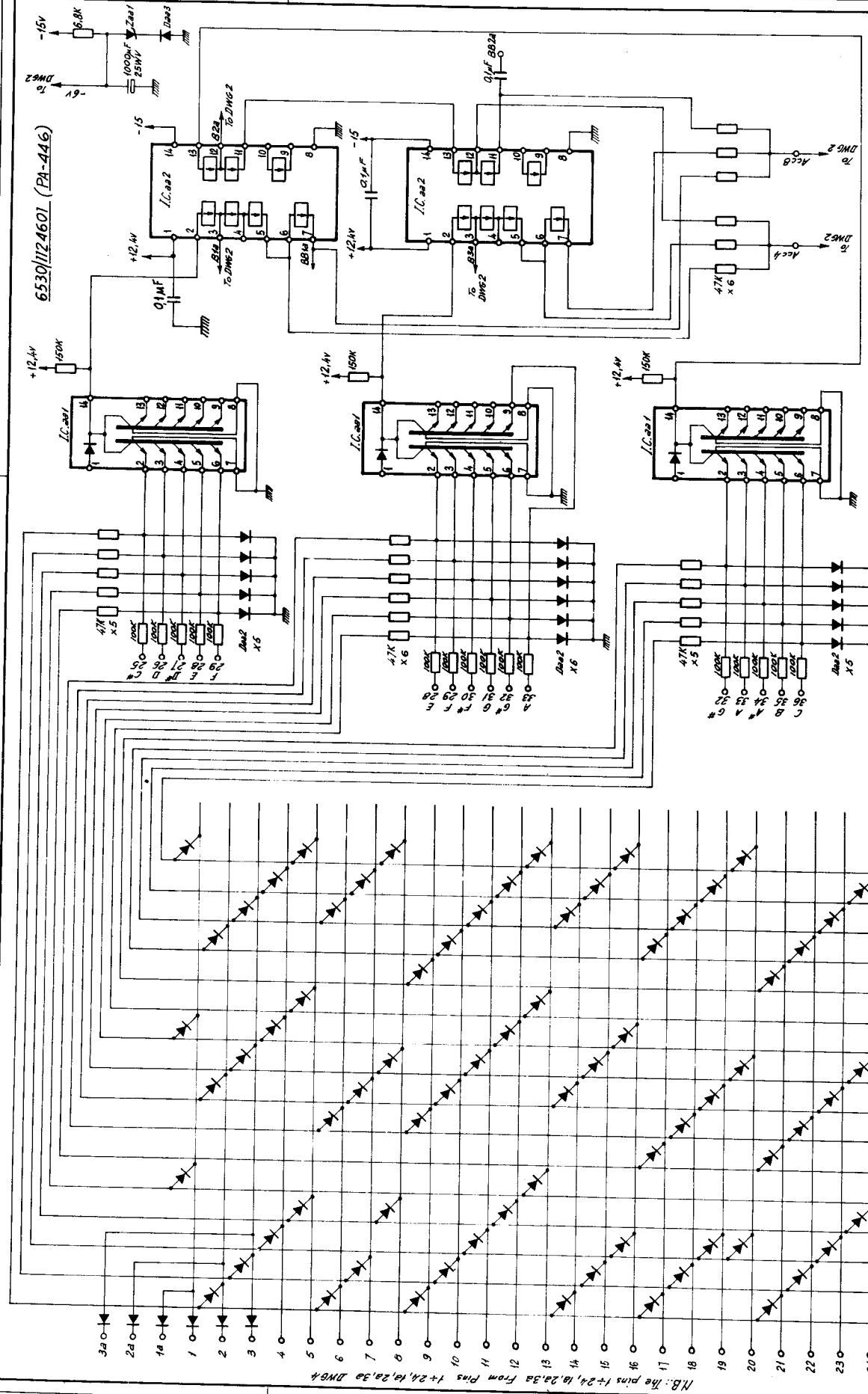


16' 8' SUSTAIN

NOTES: 1) All resistors 1/4W unless otherwise indicated.
 2) All labellings shown in OFF position.
 3) All keyswitches shown in OFF position.
 4) See parts list for component part numbers.
 5) All DC voltages measured to ground with a voltmeter. 200000/4

MOD. 151 & 152	REV. 1	DATE
DESIGNED BY	REV. 2	DATE
CHECKED BY	REV. 3	DATE
APPROVED BY	REV. 4	DATE

6530/1124601 (PA-446)



NB: The pins (+24, 19, 20, 23) From Pins 1+24, 19, 20, 23 DMC4

ALL MATRIX'S DIODES ARE 1N4004

- NOTES:
- 1) All resistors 1/4W unless otherwise indicated.
 - 2) All switches shown in Off position.
 - 3) All keyswitches shown in Off position.
 - 4) See parts list for component part numbers.
 - 5) All DC voltages measured to ground with a voltmeter: 20000 ohm/V

NO. 151-152-153-154	REVISION	DATE
CODE	DESIGNED BY	
SC-174	CHECKED BY	
	APPROVED BY	

Models 151 & 152

TRANSISTORS (Q) & DIODES (D) LIST

①

Schem. Ref.	Circuit	Type	Part Code
<u>CHASSIS</u>	<u>POWER SUPPLY CHASSIS (DWG A1/SE 166)</u>		<u>8000/1124601</u>
Q 2	Series Stabilizer.....	Westinghouse 156 - 043 Solitron H 9340.....	W/1800 W/1800
D 2	Rectifier Bridge.....	ITT STANDARD B 40-C 2200 SIEMENSE B 40-C 2200 AEG B 40-C 2200	Y/14 - Y/15 Y/14 - Y/15 Y/14 - Y/15
<u>PA 355</u>	<u>VOLTAGE REGULATOR BOARD (DWG A1/SE 166)</u>		<u>6449/1124501</u>
Q 1	Series Stabilizer.....	SGS BC 286.....	W/1601
D 1	Rectifier Diode (Bridge).....	MISTRAL SFD 182..... TEXAS 1N 914.....	B/77 B/108
Z 1	Voltage Reference-Diode Zener.. (13V-1W)	IRCI 1 Z 13..... MOTOROLA 1N4743.....	B/105 B/105
Z 2	Voltage Reference-Diode Zener.. (15V-400mV)	ITT STANDARD ZF 15.... MOTOROLA 1N5245-B.....	B/106
<u>PA 359</u>	<u>POWER AMPLIFIER BOARD (DWG A1/SE 166)</u>		<u>6450/1124601</u>
Q 3	Input Preamplifier PNP.....	SGS 1W 9640.....	W/89 - W/1500
Q 4	Temperature Compensator.....	MISTRAL BC 207 A or B. BC 209 B or C.	W/1401 W/1407 - W/1410
Q 5	Driver Amplifier NPN.....	SGS BC 286.....	W/1601
Q 6	Driver NPN.....	SGS BC 286.....	W/1601
Q 7	Driver PNP.....	SGS BC 287.....	W/1702
Q 8 - Q 9	Power Transistors.....	WESTINGHOUSE 156-043.. SOLITRON H 9340.....	W/1800 W/1800

Models 151 & 152

TRANSISTORS (Q) & DIODES (D) LIST

2

Schem.Ref.	Circuit	Type	Part Code
<u>PA 357 - 3</u>	<u>OSCILLATOR (DWG 2/ SE 169)</u>		<u>6029/1124511</u>
Q a 1	MVBTR. Master Oscillator.....	{ BC 108 A,B or C..... BC 109 - B or C..... BC 208 A,B or C..... BC 209 - B or C..... 2N5172.....	W/1406
Q a 2	MVBTR. Master Oscillator.....		W/1409 - W/1412
Q a 3	Buffer Amplifier.....		W/1404
			W/1407 - W/1410
D a 1	Base Breakdown Protection.....	SGS 1X9809.....	B/34
D a 2			
<u>PA 447 - 1</u>	<u>KEYSWITCH BOARD U.M. (DWG 4/ SE 169)</u>		<u>6533/1124571</u>
I.C. 1 - 8	Integrated Frequency Divider..	GIE.....	W/1100 - W/1101
<u>PA 427</u>	<u>KEYSWITCH BOARD L.M. (DWG 4/ SE 169)</u>		<u>6454/1124511</u>
I.C. 1	Integrated Frequency Divider..	GIE.....	W/1100 - W/1101
<u>PA 456</u>	<u>UPPER MANUAL FILTERS BOARD (DWG 5/ SE 169)</u>		<u>6535/1124571</u>
Q c 1	Lesliechannel Preamplifier....	{ BC 209 - B red dot.... BC 239 - B red dot....	W/1413
Q c 2	Lesliechannel Final Preamplifier		
Q c 3	Mainchannel Preamplifier.....		
Q c 4	Mainchannel Final Preamplifier		
<u>PA 337 - 3</u>	<u>REVERB. VIBRATO BOARD (DWG 6/ SE 169)</u>		<u>6534/1124571</u>
Q e1-Q e2	Reverberation Preamplifier....	BC 109 B or C..... BC 209 B or C.....	W/1409 - W/1407
Q e 3	Reverberation Driver.....	SGS BC 286.....	W/1601
Q e 4	Reverberation Preamplifier....	BC 109 B or C, red dot BC 209 B or C, red dot	W/1415 - W/1413
Q e 5	Vibrato Oscillator.....	{ BC 109 B or C..... BC 209 B or C.....	W/1409 - W/1407
Q e 6	Vibrato Buffer.....		

Models 151 & 152

TRANSISTORS (Q) & DIODES (D) LIST

3

Schem. Ref.	Circuit	Type	Part Code
<u>PA 459</u>	<u>AUTOMATIC BASS - ATTACK BOARD (DWG 6/SE 169)</u>		<u>6537/1124571</u>
Q f 1	Automatic Bass Driver.....	G.E. 2N 5172.....	W/1425
Q f 2-Q f 3	Automatic Bass Frequency Divid	BC 109 B or C.....	W/1412 - W/1409
		BC 209 B or C.....	W/1407 - W/1410
Q f 4	Attack Control.....	BC 109 B or C.....	W/1412 - W/1409
		BC 209 B or C.....	W/1407 - W/1410
Q f 5	Attack Control.....	G.E. 2N 5172.....	W/1425
		BC 109 B or C.....	W/1412 - W/1409
		BC 209 B or C.....	W/1407 - W/1410
D f 1	Attack Gate.....	SGS 1X9809.....	B/34
		TEXAS D 525 A or B.....	B/110 - B/111
<u>PA 435 - 1</u>	<u>PREAMPLIFIER MIKE (DWG 7/ SE 169)</u>		<u>6551/1125601</u>
Q i 1-Q i 2	Preamplifier Transistors.....	BC 209 B or C.....	W/1413
		BC 239 B or C.....	
		BC 109 B or C.....	W/1416 - W/1415
		BC 149 B.....	W/1418 - W/1414
<u>PA 252 - 1</u>	<u>SUSTAIN - PEDALBOARD (DWG 8/ SE 169)</u>		<u>6460/1124511</u>
Q g 1	Pulse Amplifier.....	G.E. 2N 5172.....	W/1425
		BC 109 B or C.....	W/1412 - W/1409
		BC 209 B or C.....	W/1407 - W/1410
Q g 2	Reset.....	BFW 87 (Mullard).....	W/153
Q g 3	Audio Preamplifier.....	BC 109 B or C red dot..	W/1415 - W/1418
		BC 209 B or C red dot..	W/1413 - W/1416
D g1-D g26	Memory gate and Reset.....	SGS 1X9809.....	B/34
Dg27-D g28	Sustain gate.....	TEXAS D 252 A or B.....	B/110 - B/111

Models 151 & 152

TRANSISTORS (Q) & DIODES (D) LIST

Schem.Ref.	Circuit	Type	Part Code
<u>PA 258</u>	<u>DIVIDER MODULE (DWG 8/ SE 169)</u>		<u>6133/154</u>
Q h 1 Q h 2	Frequency Divider.....	G.E. 2N 5172.....	W/1425
<u>PA 446</u>	<u>EASYCHORD MERORY (DWG B/ SE 174)</u>		<u>6530/1124601</u>
I.C. aa 1	Gate with 10 Emitter.....	GIE - MISTRAL.....	W/1100 - W/1101
I.C. aa 2	Divider Frequency.....	ITT - STANDARD TBA 470	W/1202
Z aa 1	Voltage Reference-Diode Zener (5,6-400mA)	ITT - STANDARD ZPD 5,6 MULLARD BZX79 C5V6.... IRCI - 1N 752A..... MOTOROLA - 1N 5232B...	B/69
D aa 1 D aa 2 D aa 3	Matrix Diodes..... Diodes..... Threshold Diode.....	[SGS - IX9809..... TEXAS - D 525 A or B..	B/34 B/110 - B/111