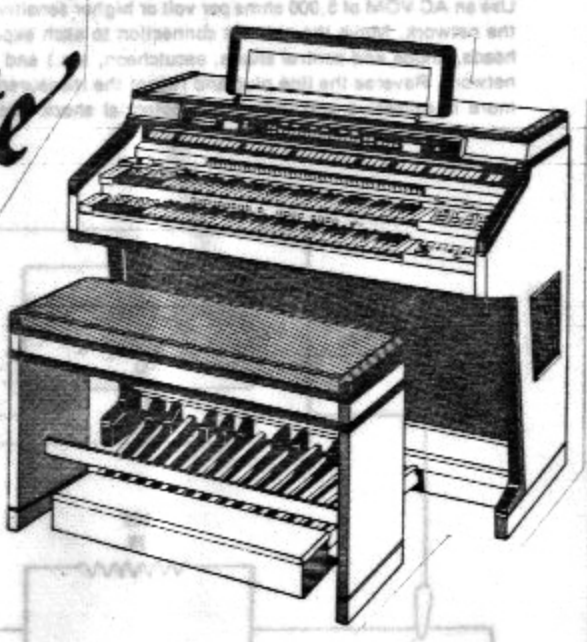
SERVICE MANUAL

Elegante



MODEL NO.

340100

340200

H000-006121

CAUTION

SEE SAFETY NOTICE ON INSIDE COVER SHEET

HAMMOND ORGAN COMPANY

A DIVISION OF MARMON COMPANY

A MEMBER OF THE MARMON GROUP OF COMPANIES

4200 W. Diversey Avenue • Chicago, Illinois 60639

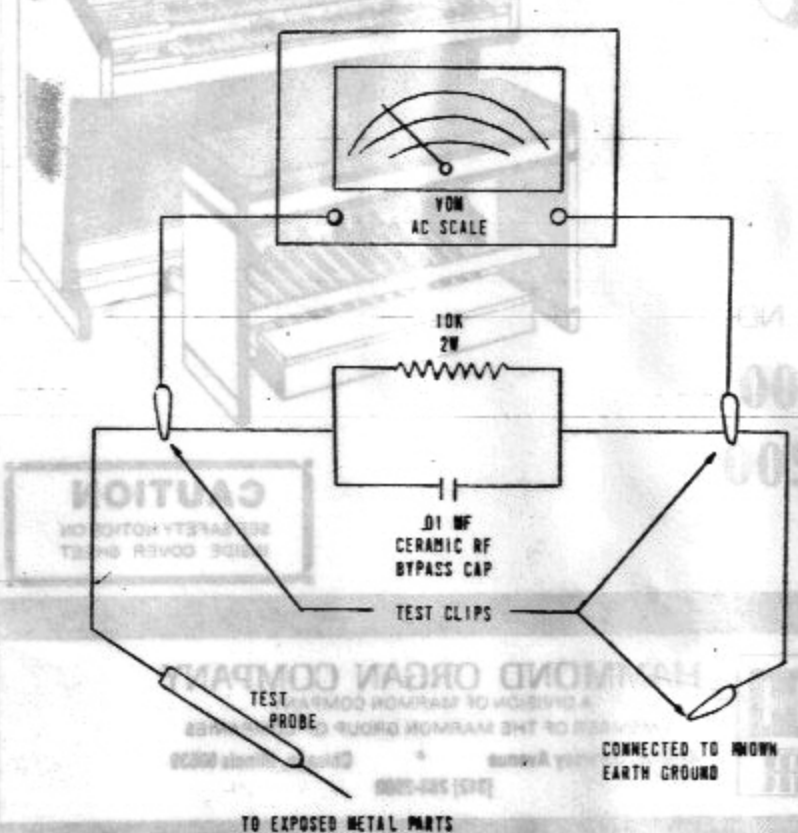
[312] 283-2000

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 VOM 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.



The HAMMOND Elegante—340100

Hammond proudly presents the flagship of the Hammond Organ line...the exciting new ELEGANTE. The ELEGANTE, a new four channel instrument, is truly a unique console organ. Musical creativity and professionalism are blended in the finest tradition of "Hammond Sound"® with the latest in distinctive features and effects.

The peerless Auto Vari® 64 is totally enhanced with new flexibility and control ...a new illuminated rhythm selector panel...Hammond's exclusive Touch Tempo * ...a variety of original Rhythm Breaks...even the capability of programming the variation possibilities in limitless combinations.

This exclusive new console features the famous "Hammond Tonebar Sound," Hammond's exclusive Melody Maker,™ nine deluxe preset pistons, Hammond's Fascinating Fingers™ and even a deluxe Easy Play division. Truly an instrument with unmatched versatility and dependable performance ...the ELEGANTE by Hammond.

PRODUCT DATA SHEET

- **Multiplex Synthesis Technology**
- **Two 61-Note Keyboards**
  25 Pedals
- **Harmonic Tonebars**
  Two sets of 9 Harmonic Tonebars for each keyboard
- **Accents**
  Variable Repeat, Key Click, Percussion Fast, Pro Chord™
- **Poly Synthesis Percussion**
  1st, 2nd, 3rd, 4th, 5th, 6th, and 8th Harmonics, Vibraharp, Twin Mallet Marimba, and Chime Solo
- **Brite Percussion**
  Dual Voice, Pizzicato, Banjo, Harpsichord, Honky Tonk Piano, Piano, and Solo Piano
- **Upper Manual Voices**
  Tuba 16′, Post Horn 8′, Kinura 8′, Diapason 8′, Violin 4′
- **Lower Manual Voices**
  Diapason 8′, Horn 8′, Violina 4′
- **Pedals**
  16′ and 8′ Tonebars, Pedal Sustain (variable), Bass Guitar, Pedal Mute, Lower to Pedal
- **Easy Play Group**
  Variable Bass Walk, Memory, Note-A-Chord,™ One Finger Chords
- **Autochord®**
- **Auto Vari® 64**
  16 rhythms each with four programmable variations, Measure Selector, Tempo Selector, Volume Selector, Touch Tempo,® Rhythm Break, Continuous/Touch Start, Foot Switch Reset
- **Follow-The-Player-Rhythms**
  Bass Drum, Cymbal, Brush, Snare Drum
- **Animation**
  Leslie Upper, Leslie Lower, Leslie Reverb, Leslie Chorale, Vibrato On, Vibrato Small, Delayed Vibrato
- **Variable Reverb**
- **Brilliance, Volume Soft**
- **Philharmonic Strings™**
  Each manual features 16′, 8′, and 4′ Strings, Variable Attack, Variable Sustain, and Variable Volume
- **Fascinating Fingers**
  Patterns: Zig, Single, Up/Down, Strum
  Voices: Piano, Zither, Banjo, Cancel, Variable Volume
- **Pro Foot™**
  Piano Solo, Dual Voice, Leslie Speed, Rhythm Break, Rhythm Fade
- **Sustain**
  Variable Upper Manual, Variable Lower Manual, Variable Pedal
- **Piston Presets**
  Nine illuminated presets to register the entire organ
- **Preset Keys**
  Eleven reverse preset keys to control flexibility of upper and lower manuals and tonebars
- **Headphone Jack**
- **Speakers**
  One 15," Two 8," One 6½" speaker
  One 6" x 9" Leslie Rotosonic
- **Power Amplifiers**
  2—35 Watt, 2—10 Watt
- **Dimensions**
  53½" L, 51⅝" H (music rack up), 28¾" D
- **Weight**
  441 pounds, including pedals and bench

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  Tuba 16', Post Horn 8', Kinura 8', Diapason 8', Violin 4'
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  Diapason 8', Horn 8', Violina 4'
- **Pedals**
  16' and 8' Tonebars, Pedal Sustain (variable), Bass Guitar, Pedal Mute, Lower to Pedal
- **Easy Play Group**
  Variable Bass Walk, Memory, Note-A-Chord,™ One Finger Chords
- **Autochord®**
- **Auto Vari® 64**
  16 rhythms each with four programmable variations, Measure Selector, Tempo Selector, Volume Selector, Touch Tempo,® Rhythm Break, Continuous/Touch Start, Foot Switch Reset
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- **Tone Cabinet Controls**

TABLE OF CONTENTS

SECTION I
HOW THE ORGAN OPERATES

GENERATOR SYSTEM

Tone generation is accomplished by using a six channel 440/Multiplex generator system for melody, accompaniment and pedal voices. The 434/435 LSI system generates the pedal tones in the Ease of Play mode while an additional 435 LSI generates the arpeggiator tones. Therefore, the organ has the equivalent of 8 tone generating systems. The multiplex generators are assigned to: (1) Upper Keyboard Synthesis (9 tonebars); (2) Lower Keyboard Synthesis (9 tonebars); (3) Lower String Ensemble and Tab Voices; (4) Brite or Synthesis Percussion; (5) Upper String Ensemble, Synthesizer Voices, and Tab Voices; and (6) Pedal Voices.

Instead of using "Second Voices" on this organ, five "full time" tab voices on the upper keyboard and three on the lower keyboard are used. The upper keyboard voices are TUBA 16', POST HORN 8', KINURA 8', and VIOLIN 4'. The lower keyboard voices are DIAPASON 8', HORN 8', and VIOLINA 4'. As implied in the "full time" description they will add to all other voices.

In order to make the organ as easy to play as possible, it has been necessary to establish some priorities for the Upper, Lower and Pedals. They are as follows:

1. UPPER KEYBOARD

   a. Tonebar tones and/or reverse color preset voices play except when solo presets, or PISTONS are actuated.

   b. Brite percussion has priority over synthesis percussion except for CHIME SOLO.

   c. String Ensemble adds to all upper keyboard divisions except the solo presets and reverse color presets.

   d. Synthesizer voices add to all upper keyboard divisions except solo presets and reverse color presets.

   e. Tab voices add to each other and all upper divisions except solo presets and reverse color presets.

   f. Upper keyboard SUSTAIN is simultaneously applied to tonebar synthesis, string ensemble, and tab voices.

   g. CHIME SOLO has priority over all upper divisions except PIANO SOLO.

   h. PIANO SOLO has priority over all upper divisions except PISTONS.

   i. Organ PISTONS have priority over all upper keyboard divisions.

2. LOWER KEYBOARD

a. STRING ENSEMBLE adds to tonebar tones and tab voices.

b. SUSTAIN can be applied to String Ensemble, Synthesis tones and tab voices.

c. PISTONS have priority over String Ensemble and synthesis tonebars, tab voices and reverse color presets.

3. PEDALS

a. 16' and 8' pedal tonebars add to each other.

b. BASS GUITAR adds to both tonebar tones.

c. PEDAL SUSTAIN effects 16' and 8' pedal pitches and coupled lower keyboard tones.

d. PISTONS have priority over all pedal voices.

e. LOWER TO PEDAL coupler functions at all times.

REVERSE COLOR PRESETS

The 340 incorporates the Hammond reverse color keyboard presets on both upper and lower keyboards. As in the past, this feature provides for 9 preset division voices, 2 programmable division presets and a cancel key on each keyboard.

The specific voices used on the 9 preset voices on upper and lower keyboards are summarized in Table 1.

PISTONS

Nine combination PISTONS provide the selective performance shown in Table 2. The pistons are controlled by nine lighted momentary push buttons and a cancel button (not lighted) mounted in the front strip to the left of the Arpeggiator controls. The buttons are white and are marked 1 thru 9 and C (cancel).

PERCUSSION DIVISIONS

The upper keyboard has provision for both synthesis and brite percussion. The synthesis group includes 1st, 2nd, 3rd, 4th, 5th, 6th and 8th harmonics, VIBRAHARP, TWIN MALLET MARIMBA and CHIME SOLO. The brite group includes five percussion voices. These are PIANO, HONKY TONK PIANO, HARPSICHORD, BANJO and PIZZICATO. In addition, a PIANO SOLO preset is provided which cancels all upper keyboard voices.

A REPEAT tab and variable rate slider which effects all voices in these divisions except the solo presets is provided. The repeat rate range is from 2 to 17Hz.

The KEY CLICK feature provided on this model effects only tonebar tones on both keyboards and percussion harmonic tones on the upper keyboard.

To provide for balancing percussion voices against the other divisions of the organ a volume control is incorporated on the tonebar base.

A new DUAL VOICE™ feature is incorporated into the brite percussion. When thistab is operated it turns on (couples) both 16' and 4' pitches and turns off the 8' pitch. It is controllable by either the control panel tab or the programmable foot switch on the expression pedal.

PRO CHORD™ is also incorporated in this division. This feature is available atall times. With this tab depressed, any lower keyboard note (chords) played will automatically key, at a lesser volume, the corresponding notes on the upper keyboard above the note(s) played on the upper. This feature operates from A1 to G#5 on the upper keyboard for a total of 48 keys.

PEDALS

The pedal bass has three additive voices - 16' and 8' tonebars and BASS GUITAR. In the normal playing mode pedals perform polyphonically. The pedals have priority over AUTOCHORD® or BASS WALK modes of automatic pedal playing. For example, if the player is in the BASS WALK mode and desires to inject his own bass pattern or legato pedal, he may simply play pedals in the normal manner.

The automatic bass line will be canceled and the pedals will sound with the voices set up on the tonebars or tabs. On release of the pedal the automatic bass again sounds at the start of the next programmed bass note as determined by the rhythm unit tempo.

Sustain and tone quality are controlled by a PEDAL SUSTAIN tab with a variable slider and a PEDAL MUTE tab. In addition lower voices may be keyed by the pedals with the LOWER TO PEDAL tab.

STRING ENSEMBLE

This model has a full complement of string voices called PHILHARMONIC STRINGS®. The controls are mounted in the upper right-hand endblock. The string voices consist of three pitches (16', 8' and 4') on the upper keyboard and three pitches (16', 8' and 4') on the lower. Independent controls for string ATTACK, SUSTAIN, and VOLUME are provided for each keyboard. Separate rocker tab controls have been provided to turn SUSTAIN "on". This allows the player to preset the amount of this effect. The SUSTAIN controls on this endblock also control the degree of sustain on other voices as noted earlier under priorities. The BRILLIANCE tab will effect the strings.

In order to achieve optimum performance of the String Ensemble group, three channel acoustic mix is used.

SYNTHESIZER VOICES

Mounted in the lower right-hand endblock are nine momentary rocker tabs (SAX, CLARINET, TROMBONE, OBOE, TRUMPET, ACCORDION, HAWAIIAN GUITAR, DO-WAH and NOVELTY), each with its own LED indicator. These voices are controlled by a VOLUME slider pot and CANCEL momentary push-button also mounted in the endblock. This feature is called MELODY MAKER®.

EASE OF PLAY

This organ utilizes the full Ease of Play chord recognition capability of the 434/435 LSI system to provide true root/fifth AUTOCHORD®, ONE-FINGER CHORD, MEMORY and BASS WALK. In addition, visual keyboard memory is provided by NOTE-A-CHORD®.

The ONE-FINGER CHORD tab, when activated, converts twenty lower keyboard notes (C2 through G3) to twenty, three note chords (C through Gm) as indicated on the chord strip, and activates the appropriate pedal tone.

The same twenty notes that function with the ONE-FINGER CHORD tab also work with the MEMORY tab. In the MEMORY mode of operation, note(s) continue to playafter the key(s) have been released. Both an audio and visual memory is accomplished with the NOTE-A-CHORD® tab. This tab works on C2 through B3 keys.When activated, keys remain depressed and playing, after the player has let go.

With SILENT/SOUND in the sound position and AUTOCHORD® "on", the organ is in the Ease of Play mode which automatically chops the lower tab voices and pedals. BASS SWING - BASS WALK tab is functional in this mode only. BASS SWING creates an alternating root/fifth pedal pattern when either ONE-FINGER CHORD is depressed and a key held or when a three, or more note, chord is played. The organ recognizes the chord and plays the appropriate root/fifth pedals. BASS WALK plays a sequenced pattern of pedal notes depending on the chord played and rhythm selected. The pedal pattern continues even when the keys are released. WALTZ, MARCH 6/8, BLUES, MARCH 4/4 and DISCO rhythms are not programmed for BASS WALK.

AUTOMATIC ARPEGGIATOR

Located to the right of the pistons in the front strip are eight momentary push-buttons, seven of which are lighted, called FASCINATING FINGERS®. The first four red push-buttons from left to right control the sequence of the arpeggio, either ZIG, SINGLE UP, UP/DOWN or STRUM. The next three yellow buttons to the right are the voices (PIANO, ZITHER, and BANJO) which arpeggiate. They can be used singly or in combination. The last push-button (CANCEL) is not lighted and cancels both mode and voice buttons. Also mounted in the front strip is a volume control to balance this section with other keyboard voices.

RHYTHM

This organ incorporates an AUTO VARI® 64 (PRO) rhythm unit which has all the features of an AUTO VARI® 64 plus TOUCH TEMPO, RHYTHM BREAK, RHYTHM FADE and PROGRAMMABLE VARIATIONS. The complete operation of this rhythm unit is explained in the following paragraphs.

PATTERNS

The sixteen patterns (WALTZ thru TANGO) in this unit are momentary push-buttons that light when on. Two or more rhythms can be activated at the same time.

In addition to the sixteen patterns there are four "follow the player" voices; BASS DRUM, CYMBAL, BRUSH and SNARE DRUM. The first two are activated by depressing a pedal while the second two are keyed by the lower keyboard. These voices function only when the rhythm unit is not running.

VARIATIONS

There are four VARIATIONS (A,B,C and D) for each of the sixteen patterns. The VARIATIONS are controlled by the AUTO-VARI, PROGRAM and MEASURE switches. Any one of the four VARIATIONS of a rhythm pattern may be selected simply by depressing the desired push-button. The AUTO-VARI switch, when activated, automatically changes the VARIATION of the pattern, either in a fixed sequence of A,B,C,D,A...(PROGRAM switch "off") or a programmed sequence (PROGRAM switch "on"). The rate in which the VARIATIONS advance is determined by the MEASURE position selected. Programming of the VARIATIONS is accomplished by turning "on" PROGRAM, with AUTO-VARI "off" and depressing any combination of VARIATION buttons, up to a maximum of sixteen. Turning "on" the AUTO-VARI switch then activates the sequence. The sequence is reset to A,B,C,D when the PROGRAM switch is turned "off".

SILENT SOUND / TOUCH TEMPO

This "touch pad", as its name implies, has two modes of operation. In the SILENT SOUND mode, when the TOUCH TEMPO® push-button is "off" (not lighted), "tap" the pad once for the rhythm to sound and once again to silence the pattern. The speed in this mode is determined by the TEMPO slider position. The TOUCH TEMPO® mode of operation is activated when the amber TOUCH TEMPO® button is "on" (lighted). Tap the pad four times to program the speed and once again to start the rhythm. During the first three taps the red indicator is lit. The fourth tap lights the green indicator and cancels the red. While the rhythm is running the green light is "on", in either mode.

The SILENT SOUND / TOUCH TEMPO pad functions as just described unless the CONTINUOUS TOUCH START switch is in the TOUCH START mode. In this mode, the pattern voices are activated when a lower key or pedal is depressed and continues to sound until they are turned "off" by the TOUCH TEMPO® pad.

Another way to silence the rhythm unit is by means of a foot switch mounted on the right side of the expression pedal. Activating the foot switch silences the voices as long as the switch is held. Upon releasing the switch the voices return in tempo unless the FOOT SWITCH RESET is "on", then they will begin on beat 1 of MEASURE 1 of VARIATION A or the first programmed VARIATION.

RHYTHM FADE

Activating the FADE switch once causes the rhythm volume to gradually become inaudible (approximately 10 seconds). To return to the level set by the VOLUME pot operate the FADE switch again or perform a Stop/Start cycle. This feature may also be activated by the PRO FOOT® switch.

RHYTHM BREAK

There are six breaks assigned to twelve specific rhythm patterns. The break assignments are shown in Table 3. A RHYTHM BREAK is initiated by touching the break pad at any time when one of the patterns with an assigned break is playing. The amount (number of beats) of break that one hears is determined by the time of initiation.

If the break is triggered at the start of measure one beat one, two full measures of the break will play. If the break is triggered at any time after beat one measure one, only the remaining period of the two measure cycle will play. This musical logic was established to prevent the break from getting out of step with the basic pattern. However, it also permits the player to do creative drum fills with 2 or 3 beat (etc.) breaks.

If the break is triggered when AUTOCHORD® with MEMORY is on, the lower keyboard and pedal will go silent. However, if one is holding any lower keys, the notes will sound. After the break, the player must restore memory by playing the lower keyboard if he wishes to hear lower and pedal in AUTOCHORD Mode.

A break may be played as an introduction simply by touching the break pad before starting the rhythm pattern with the SILENT/SOUND pad.

This feature may also be selectively triggered by the PRO FOOT® switch mounted on the left hand side of the expression pedal.

Located to the right of the VOLUME and TEMPO sliders are two switches labeled AUTOCHORD® and SUSTAIN CHORD. Activating the AUTOCHORD® switch, with the rhythm unit running, will cause the lower keyboard tab voices and pedals to sound rhythmically with the pattern enabled. Turning "on" SUSTAIN CHORD allows the pedals to continue in the AUTOCHORD® mode while the chords remain constant.

TRANSPOSER

The TRANSPOSER control section is located in the upper left-hand endblock. The transposer features a transposition range of two half steps up and four half steps down. Control means is achieved by seven miniature momentary lighted push-buttons. The organ powers up in the 0 position lighting the green LED.

PROGRAMMABLE SWITCH

Two foot controlled switches are incorporated on the swell pedal. As on other Hammond products the right hand switch controls the rhythm unit to provide for foot control of "cancel" or "reset" modes of operation. Since the auto arpeggiator runs off the rhythm unit clock, it can also be controlled by the right hand foot switch.

The left hand foot switch is designed to be programmable to select one of five functions. The function options are PIANO SOLO, DUAL VOICE®, LESLIE SPEED, RHYTHM FADE and RHYTHM BREAK. The programmable selector switches are push type and located in the lower left hand endblock. This feature is called PRO FOOT®.

REVERBERATION

A Type IX Reverb Unit is used to provide this feature. The degree of REVERB is controlled by a slider pot mounted on the tonebar base. An additional control tab is provided in the Leslie® animation group to permit the LESLIE ON REVERB effect to be obtained at the player's option. In this mode of playing some main channel signal is sampled by the reverb system. Therefore, some of the "dry" organ voices have some degree of Leslie® animation.

ANIMATION

This model incorporates a two speed Leslie® Rotosonic unit. The organ also provides for keyboard separation so that upper and lower keyboards may be independently animated by the Leslie®.

The percussion divisions, synthesizer instruments, pedals and rhythm voices are channeled only through the main amplifier so that they are always "dry" with respect to Leslie® animation.

After vibrato is also available in two depths and delayed. It effects all organ voices except rhythm voices, brite percussion, harmonic percussion, and pedals.

A tone cabinet output socket is incorporated in the organ to accept the Lelie 11 pin plug used on the self-powered series of tone cabinets.

The third and fourth audio channels, which are used exclusively for String Ensemble are not animated by the Leslie or after vibrato. Since the tone cabinet and headphone outputs feed two channel devices, the organ provides for electrical mix of the String Ensemble in these accessories. A switch is provided next to the tone cabinet plug, which permits acoustic mix for a 4 channel tone cabinet system.

AUDIO SYSTEM

The basic audio system consists of two 10 watt and two 35 watt amplifiers. One 35 watt unit is dedicated to the main "dry" channel, while the other powers the Leslie channel. The 10 watt amplifers are dedicated to amplifying the String Ensemble channels.

The speaker complement consists of a 15 inch Woofer and 6" Tweeter in the main channel; an 6X9 inch U-13 Leslie® speaker; and an 8 inch speaker in each of theString Ensemble channels.

AUXILIARY CONNECTIONS

Provisions are made for an auxiliary audio input and headphones. Both of these connections are made by 1/4 inch phone jacks. The headphone jack is located under the organ shelf on the right side of the organ, while the auxiliary input circuit is under expression and designed to have an impedance of 47,000 ohms and produce full output with a 1/4 volt signal.

The headphone jack is wired to perform properly with either mono or stereo phones without adapters. All organ speakers go silent when the phone plug is connected.

LIGHTING

In addition to lighted controls in several areas, the 340 incorporates a music desk light and control panel light. Lights are controlled by a switch mounted on the rhythm control panel. However, the organ power ON/OFF switch will control all the line power to the organ. Therefore, the lights can not be turned "ON" unless the organ is "ON". A pedal light with its own switch is also provided.

TABLE 1

REVERSE COLOR MANUAL PRESETS

UPPER KEYBOARD

C	-	Cancel
C#	-	Glockenspiel/Sub Fund. 2nd and 5th Harmonics.
D	-	Tibias 8' & 2'/(008408004).
D#	-	Theatre Tuba/(008000000), Tibia 16'
E	-	Novel Solo 8'/(088800880).
F	-	Tibia Solo/(830000048).
F#	-	Kinura 8' Tibia 4' (000800000).
G	-	Full Tibias 16'/(608807006).
G#	-	Theater Ensemble/(808808008), 16', 8', 4' Strings, 1/2 Vol.
A	-	Hammond Sound/(768878667).
A#	-	Adjust (1st group Tonebars).
B	-	Adjust and Percussion (2nd group Tonebars).

LOWER KEYBOARD

C	-	Cancel
C#	-	Music Box/000800004), Full Sustain.
D	-	Harp/(008000000), Full Sustain.
D#	-	Flute - String Chorus 4'/(000806003), 4' String.
E	-	Open diapason 8'/(005642200).
F	-	Accompaniment 8'/(007222222).
F#	-	Flute-String Chorus 8'/(008603000), 8' String.
G	-	Full Accompaniment 8'/(007656311).
G#	-	Tibia 8'/(008030000).
A	-	Bombarde 16'/(847767666).
A#	-	Adjust (1st group Tonebars).
B	-	Adjust (2nd group Tonebars).

TABLE 2
340 COMBINATION PISTONS

PRESET	UPPER KEYBOARD	LOWER KEYBOARD	PEDALS
#1	Vibraharp Maximum Sustain Leslie, Slow	005200000 Leslie	43
#2	8' String (Approx. 1/2 Vol.) 000800000 (Approx. 1/3 Sus.) Leslie, Fast	004400020 Leslie	64
#3	888000000 3rd Harmonic Leslie, Slow	006442000 Leslie	08
#4	808808008 Leslie, Fast	008855000 Leslie	66
#5	858858558 16', 8', 4' Strings (Full Vol.) Leslie, Fast	8', 4' Strings (Full Vol.) 008806004 Leslie	86
#6	808808000 Leslie Fast Post Horn Diapason Vibrato Optional	08705000 Leslie Horn Violina	78
#7	16', 8', 4' Strings (Full Volume)	8', 4' Strings (3/4 Volume)	66
#8	808808880 Leslie, Slow	008603003 Leslie	83
#9	Cancels everything except Melody Maker. If no Melody voice is selected, selects Sax, but can be changed to others while any other presets are on.	006400000 Leslie Slow 4' String (1/4 Volume)	56

Notes:

a) CANCEL returns organ to normal tab and tonebar operation.

b) All String Ensemble settings will be with SUSTAIN Off.

c) Percussion Voices, Tab Voices, MELODY MAKER™, Animation, Tonebars, PIANO SOLO and CHIME SOLO will not operate in any of the PISTON positions except as noted above.

d) PISTONS will not affect PEDAL MUTE, PEDAL SUSTAIN, LOWER TO PEDAL coupler, Reverb, Rhythm, MEMORY, VOLUME SOFT, BRILLIANCE and Easy Play features.

e) KEYCLICK is optional on PISTON 3 only.

TABLE 3

RHYTHM BREAK ASSIGNMENTS

BREAK	PATTERN USE
1	DISCO, CHA-CHA
2	MARCH 4/4 POLKA, DIXIELAND
3	WESTERN/SHUFFLE, JAZZ
4	SAMBA, BOSSA NOVA, RHUMBA/BEGUINE, TANGO
5	BALLAD
6	HARD ROCK
None	WALTZ, MARCH 6/8, BLUES ROCK, LIVERPOOL

Model: 340200

GENERAL

The Model 340200 organ operates in the same manner as the Model 340100 previously described, with the exception of a change in the ANIMATION section and the addition of a TONE CABINET CONTROL section.

ANIMATION

The Model 340200 tone cabinet plug provides for four channel cabinets. Therefore, the electrical mix switch described previously has been removed. All other operations in Model 340100 ANIMATION section apply.

TONE CABINET CONTROL

Located in the front strip on the right side are two momentary lighted push-buttons labeled MAIN OFF and ECHO ON. These switches function as their names imply (MAIN being the organ and ECHO a separate tone cabinet) provided a tone cabinet is connected.

SECTION III
DISASSEMBLY PROCEDURE

TO REMOVE REAR COVER:

1) Disconnect organ from A.C. line voltage source.

2) Remove ten 5/16" hex head screws from rear cover. Pull the cover gently away from organ.

TO REMOVE TOP PANEL ASSEMBLY:

1) Follow steps to remove rear cover.

2) Remove two 1/4" hex head screws that secure the swing panel, as shown in Figure A, Number 1.

3) Fold down the swing panel, as shown in Figure A, Number 2.

4) Support swing panel, in down position, by attaching nylon cord to bracket, as shown in Figure A, Number 3.

5) Disconnect music lights by unplugging P1, located underneath the top panel assembly, as shown in Figure B, Number 1.

6) Remove two 1/4" hex head screws from both right and left sides of the top rail, as shown in Figure B, Number 2.

7) Reach in from the rear of the organ and release the latch on both right and left sides of the organ, as shown in Figure B, Number 3.

8) Gently lift the top panel up and away from the organ.

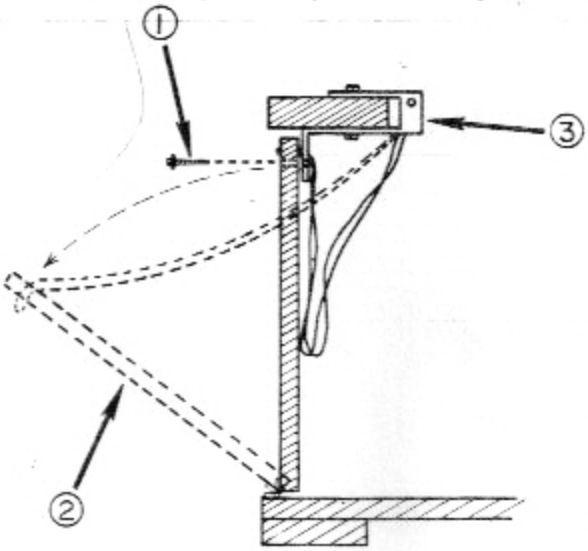


FIGURE A

TO SWING BACK RHYTHM UNIT:

1) Follow steps to remove top panel assembly.

2) Remove two 1/4" hex head screws that secure the unit to the support angle, as shown in Figure C, Number 1.

3) Gently pivot rhythm unit back until it rests on the top rail, as shown in Figure C, Number 2.

NOTE: CAUTION SHOULD BE TAKEN TO PREVENT EXCESSIVE TENSION ON THE WIRING.

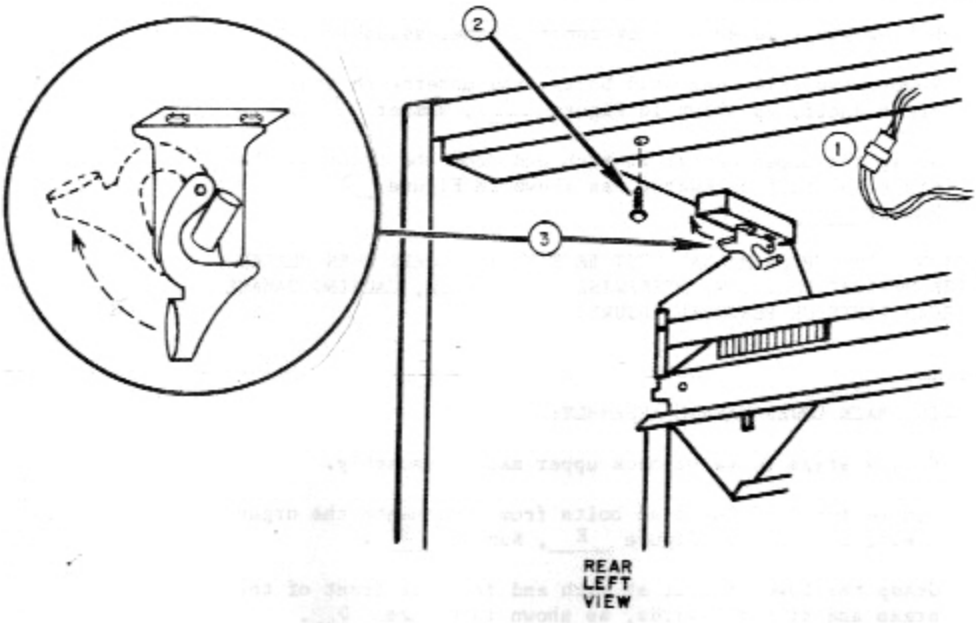


FIGURE B

TO SWING BACK CONTROL PANEL ASSEMBLY:

1) Follow steps to swing back rhythm unit.

2) Remove two 1/4" hex head screws from right and left side brackets, as shown in Figure D, Number 1.

3) Grasp the control panel at each end from the front of the organ and tilt backwards, as shown in Figure D, Number 2.

CAUTION: THE CONTROL PANEL MUST BE FIRMLY SECURED WHEN PLACED IN THE UPRIGHT POSITION, OTHERWISE IT MAY FALL, CAUSING DAMAGE TO ORGAN PARTS OR PERSONAL INJURY.

TO SWING BACK UPPER MANUAL ASSEMBLY:

1) Follow steps to swing back control panel assembly.

2) Remove two 7/16" hex head bolts from underneath the organ shelf, as shown in Figure E, Number 1.

3) Grasp the upper manual at each end from the front of the organ and tilt backwards, as shown in Figure D, Number 3.

CAUTION: THE UPPER MANUAL MUST BE FIRMLY SECURED WHEN PLACED IN THE UPRIGHT POSITION, OTHERWISE IT MAY FALL, CAUSING DAMAGE TO ORGAN PARTS OR PERSONAL INJURY.

TO SWING BACK LOWER MANUAL ASSEMBLY:

1) Follow steps to swing back upper manual assembly.

2) Remove two 3/8" hex head bolts from underneath the organ shelf, as shown in Figure E, Number 2.

3) Grasp the lower manual at each end from the front of the organ and tilt backwards, as shown in Figure D, Number 4.

CAUTION: THE LOWER MANUAL MUST BE FIRMLY SECURED WHEN PLACED IN THE UPRIGHT POSITION, OTHERWISE IT MAY FALL, CAUSING DAMAGE TO ORGAN PARTS OR PERSONAL INJURY.

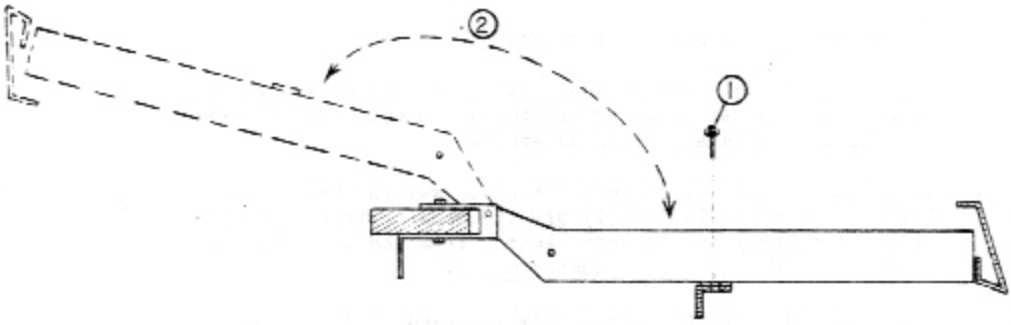


FIGURE C

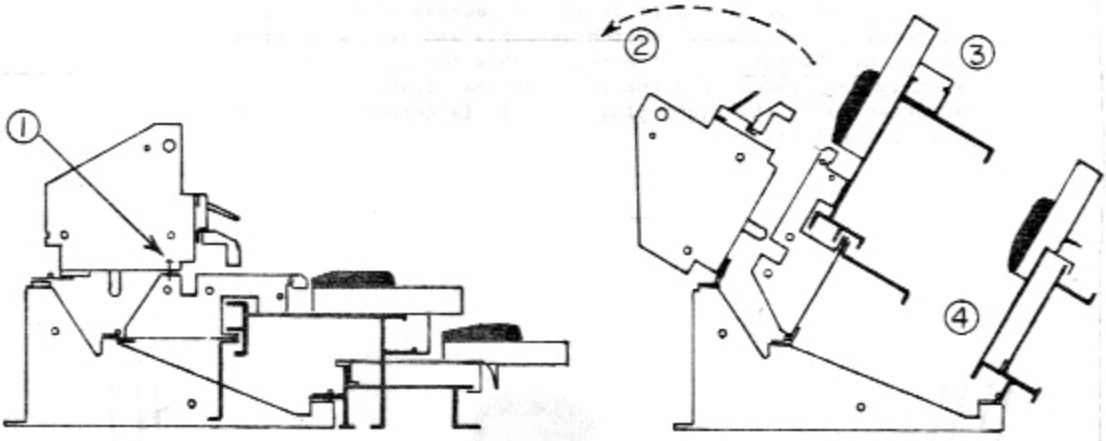


FIGURE D

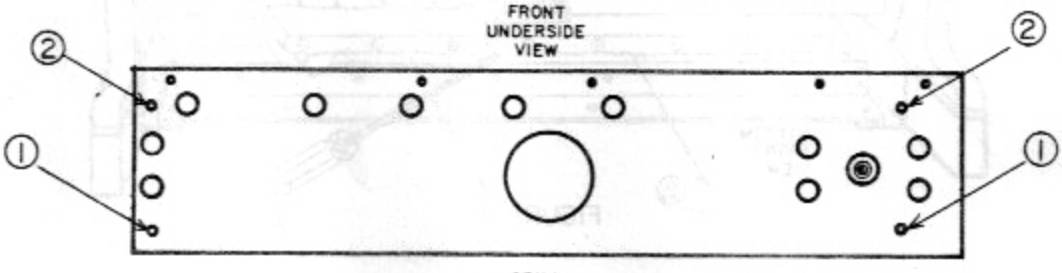


FIGURE E

TO REMOVE PEDAL SWITCH ASSEMBLY:

1) Follow steps to remove rear cover.

2) Loosen pedal cable and unplug pedal switch chassis ground wire from terminal strip to provide slack necessary for the removal of the pedal switch assembly.

3) Insert a screwdriver between the pedal switch chassis and bottom support rail. Gently pry the pedal switch upward to unlock the studs on the pedal switch from the support rail, as shown in Figure F, Number 1.

4) When the pedal switch assembly is unlocked from the support rail, grasp the assembly and carefully pull it away from the organ, releasing the pedal switch studs from the rear locks on the support rail, as shown in Figure F, Number 2.

5) To service the pedal switch it may be necessary to unplug the pedal cable from the switch assembly and remove it from the organ. To reconnect the pedal cable to the switch assembly, as viewed from the front of the organ, plug P552 is connected to the right plug and P553 is connected to the plug on the left.

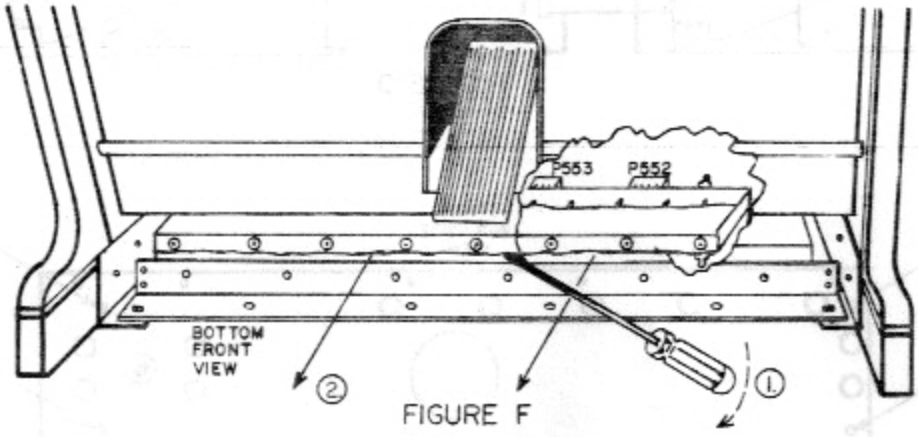
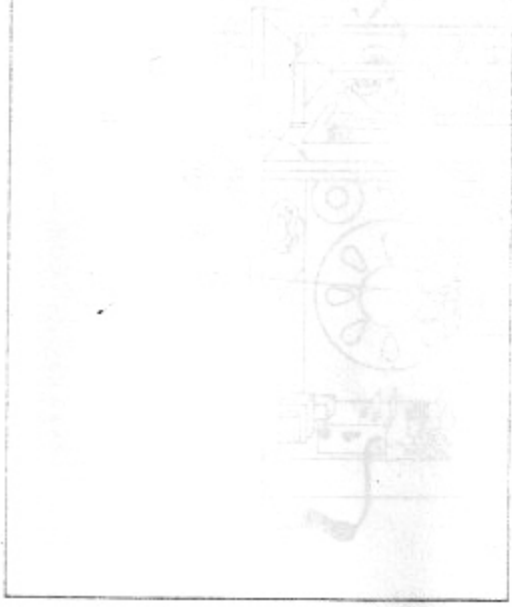
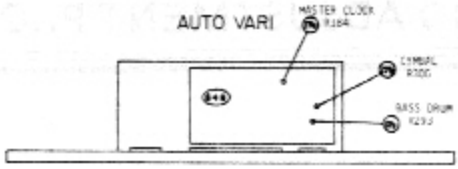
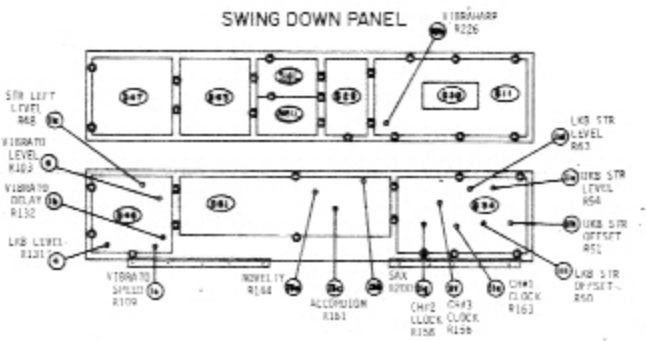


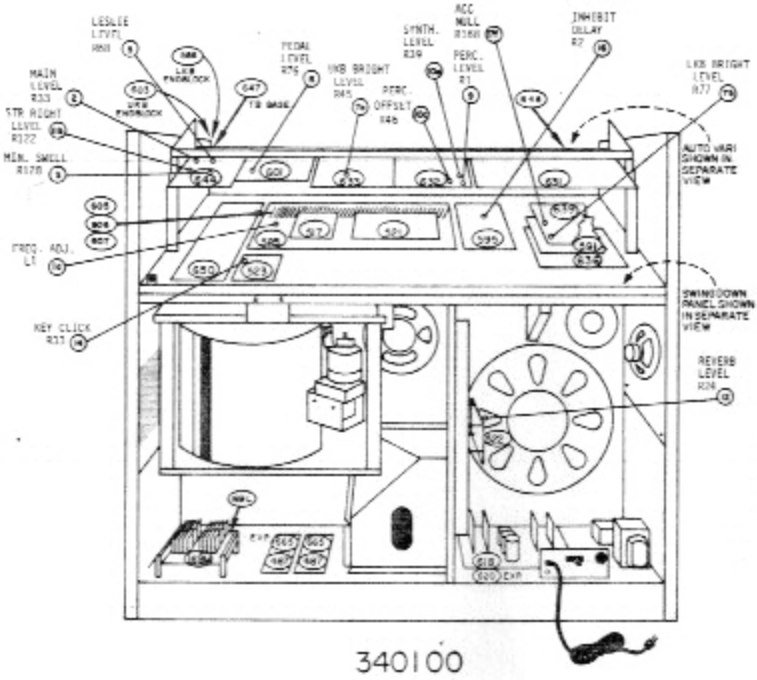
FIGURE F

SECTION IV
TEST AND ADJUSTMENT PROCEDURE




AUTO VARI
MASTER CLOCK R184
CYMBAL R200
BASS DRUM R293


SWING DOWN PANEL
VIBRAHARP R226
STR LEFT LEVEL R68
VIBRATO LEVEL R103
VIBRATO DELAY R132
LKB LEVEL R131
VIBRATO SPEED R109
NOVELTY R164
ACCORDION R161
SAX R200
CH#2 CLOCK R158
CH#3 CLOCK R156
CH#1 CLOCK R163
LKB STR LEVEL R63
UKB STR LEVEL R64
UKB STR OFFSET R61
LKB STR OFFSET R60


LESLIE LEVEL RR1
MAIN LEVEL R33
STR RIGHT LEVEL R122
MIN. SWELL R178
FREQ. ADJ. LT
KEY CLICK R37
LKB INTERLOCK
UKB INTERLOCK
TB BASE
PEDAL LEVEL R76
LKB BRIGHT LEVEL R45
PERC. OFFSET R46
SYNTH. LEVEL R39
ACC. ROLL R180
PERC. LEVEL R1
INHIBIT DELAY R2
LKB BRIGHT LEVEL R77
AUTO VARI SHOWN IN SEPARATE VIEW
SWING DOWN PANEL SHOWN IN SEPARATE VIEW
REVERB LEVEL R24

340100

TEST AND ADJUSTMENT PROCEDURE

MODEL 340100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
1	Vibrato & Freq. Adj.	a) None		a) Freq. Counter	a) J543-4 124-517	a) Tuning Coil 124-538	a) 3136 ± 4Hz
		b) Delayed Vibrato	b) UKB Any Key	b) Scope .2s/Div	b) Emitter Q1 124-645	b) R132 124-645	b) .8 sec. 90% of Full Vibrato
		c) Vibrato ON		c) Freq Counter	c) J536-10	c) R108 124-645	e) 152 ms
2	Main Level	Maximum Sw. Pedal UKB TB's 008808008 Brilliance	UKB 25,29,32	RMS VM 10V	Main Speaker	R33 124-644	3.5V RMS
3	Minimum Swell	UKB TB's 008808008 Brilliance	UKB 25,29,32	RMS VM 300mV	Main Speaker	R128 124-644	110 mV RMS
4	LKB Level	LKB TB's 008808008 Brilliance	LKB 25,29,32	RMS VM 10V	Main Speaker	R131 124-645	3.5RMS
5	Leslie Level	Max Swell Pedal UKB TB's 008808008 Brilliance	UKB 25,29,32	RMS VM 10V	Leslie Speaker	R68 124-644	5.0V RMS
6	Vibrato Level	UKB TB's 008808008 Brilliance Vibrato On	UKB 25,29,32	RMS VM 10V	Main Speaker	R103 124-645	3.5V RMS
7	Bright Voices	a) UKB A# PR Tuba Post Horn Kinura Diapason Violin	a) UKB 25,29,32		a) Main Speaker	a) R45 124-633	a) 3.0V RMS
		b) LKB A# PR Diapason Horn Violina	b) LKB 25,29,32			b) R77 124-639	b) 2.2V RMS
8	Pedal Level	Pedal TB's 16' and 8'	Pedal 13	RMS VM 10V	Main Speaker	R76 124-601	8.0V RMS

TEST AND ADJUSTMENT PROCEDURE

MODEL 340100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
9	Percussion Level	Piano Solo Perc Volume Pot at Maximum	UKB 25	Scope 5V/Div	Main Speaker	R1 124-632	24V P-P
10	Synthesis Perc Levels	Repeat Repeat Pot at Max					
		a) 2nd Harmonic	a) UKB 25	a) RMS VM 3V	a) Main Speaker	a) R39 124-632	a) 2.1V RMS
		b) Vibraharp		b) Scope 50 ms/Div	b) J770-10	b) R226 124-611	b) 222 ms
		c) 8th Harmonic Perc fast tab	c) UKB 61 in slow stacatto manner			c) R46 124-632	c) Adjust for Minimum thump
11	Philharmonic Strings	a) UKB 8' String UKB Volume Pot at maximum Brilliance	a,b,c) UKB 25,29,32	a,b,c,d) RMS VM 1V	a) Main Speaker	a) R54 124-634	a) 1V RMS
		b) Same as "a"			b) Spkr above the sw pedal	b) R122 124-644	b) 1V RMS
		c) Same as "a"			c) Spkr on the left side of the console	c) R48 124-645	c) 1V RMS
		d) LKB 8' String LKB Volume pot at maximum	d) LKB 25,29,32		d) Main Speaker	d) R63 124-634	d) 1V RMS
		e,f,g) None	e,f,g) None	e,f,g) Scope 2 us/div	e) IC9 Pin 2	e) R163 124-634	e) 6 us
					f) IC7 Pin 2	f) R156 124-634	f) 6 us
					g) IC 11 Pin 2	g) R141 124-634	g) 6 us
		h) UKB 4' String Attack Pot at min position	h) UKB 61 rapidly	h,i) None		h) R51 124-634	h) Adj. for minimum thump
		i) LKB 4' String Attack pot at min. position	i) LKB 61 rapidly			i) R50 124-634	i) Adj. for minimum thump

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
12	Reverb	UKB TB's 000607080 Les Upper Reverb pot at Max Brilliance	UKB 25,26,27 28,29	RMS VM 3V	Main Speaker	R24 124-522	1.5V RMS
13	Melody	Melody Maker Volume pot at maximum					
		a) Novelty	a) UKB 37	a) Scope	a-k) Main Speaker	a) Bias R144 124-561	a) Adjust for resonance. This point is defined as the point of purest flute-like tone (no harmonics and maximum output voltage
		b) Saxophone	b) UKB 25,29,32	b) RMS VM 3V		b) R200 124-561	b) 2.8V RMS
		c) Accordion		c) Scope .2s/div		c) R161 124-561	c) Adjust if necessary for 90% max amplitude in 100 ms Attack Time.
		d) Clarinet	d-k) UKB 25,29,32	d-k) RMS VM			d) 1.43 - 2.97V RMS
		e) Trombone					e) 2.28 - 4.78V RMS
		f) Oboe					f) 0.98 - 2.03V RMS
		g) Trumpet					g) 2.08 - 4.32V RMS
		h) Accordion					g) 2.08 - 4.32V RMS
	Melody Maker	i) Hawaiian Guitar					i) 1.43 - 2.97V RMS
		j) Do-Wah					j) 1.63 - 3.38V RMS
		k) Novelty					k) 1.04 - 2.16V RMS
14	Key Click	Key Click tab ON Connect -14V to J536-13 and -14V to the positive side of C11 on the 124-523 PCB. Draw any TB out to Position 1	UKB - Any key repeatedly	Scope 2V/Div	Main Speaker	R33 124-523	4V P-P

TEST AND ADJUSTMENT PROCEDURE

MODEL 340100

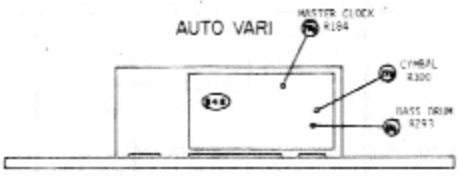
STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
15	Fascinating Fingers	Fascinating Fingers volume pot at maximum. Rhythm Unit tempo at maximum. Strum button ON.					
		a) Piano	a,b,c)	a,b,c)	a,b,c)		a) 3.9 - 8.1V RMS
		b) Zither	LKB 13	RMS VM	Main Speaker		b) 0.39 - 0.81V RMS
		c) Banjo					c) 0.65 - 1.35V RMS
16	Feedthrough Adjustment	Blue tab #5	UKB 25			R2 124-595	Adjust R2 for purest tone
17	Rhythm Unit	MASTER CLOCK					
		a) Unplug J57 Connect jumper from the collector of Q30 to the right side of C30 (as viewed from front of organ)	a) None	a) Freq Counter	a) Main Speaker	a) R184 in Rhythm Unit	a) 2708Hz
		Rhythm Unit Volume Pot at maximum.					
		b) Cymbal	b,c) Any Pedal	b,c) Scope 5V/Div	b,c) Main Speaker	b) R300 in Rhythm Unit	b) 20V P-P
		c) Bass Drum				c) R293 in Rhythm Unit	c) 45V P-P
		d) Snare Drum	d,e) Any LKB				d) Note the Snare Drum sound
		e) Brush					e) Note proper Brush sound
		f) Silent/Sound				f) R168	f) Adjust for minimum audible thump

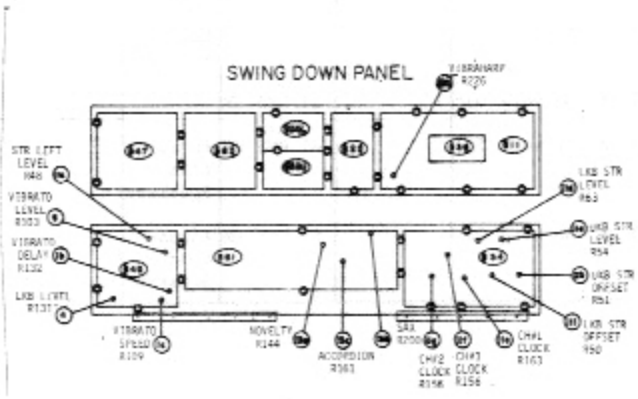
TEST AND ADJUSTMENT PROCEDURE

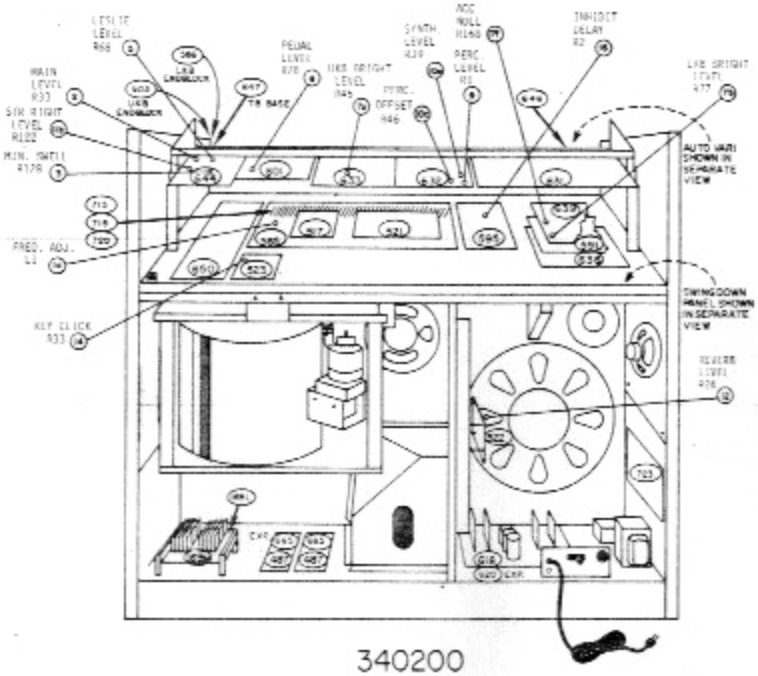
MODEL 340100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
18	Hum & Noise	Leslie Chorale					
		a) "A" Network In		a) RMS VM	Main Speaker		a) 5mV Min Swell 10mV Max Swell
		b) "A" Network Out		b) RMS VM	Main Speaker		b) 25mV Max Swell
		c) "A" Network In		c) RMS VM	Leslie Speaker		c) 5mV Min Swell 10mV Max Swell
		d) "A" Network Out		d) RMS VM			d) 15mV Max Swell
		e) "A" Network In		e) RMS VM	Animation Speakers		e) 5mV Min Swell 5mV Max Swell
		f) "A" Network Out		f) RMS VM	Animation Speakers		f) 15mV Max Swell

Refer to Model: 340100 page 4-3



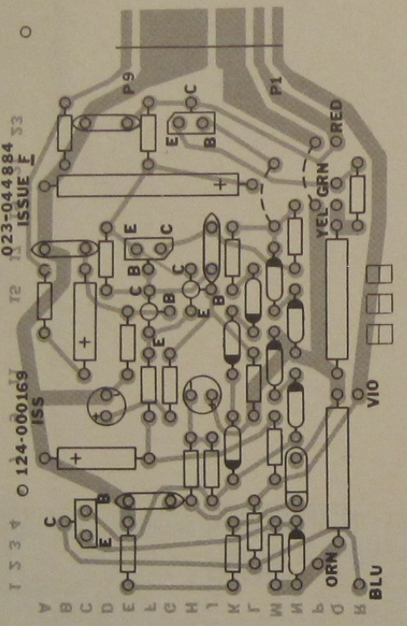


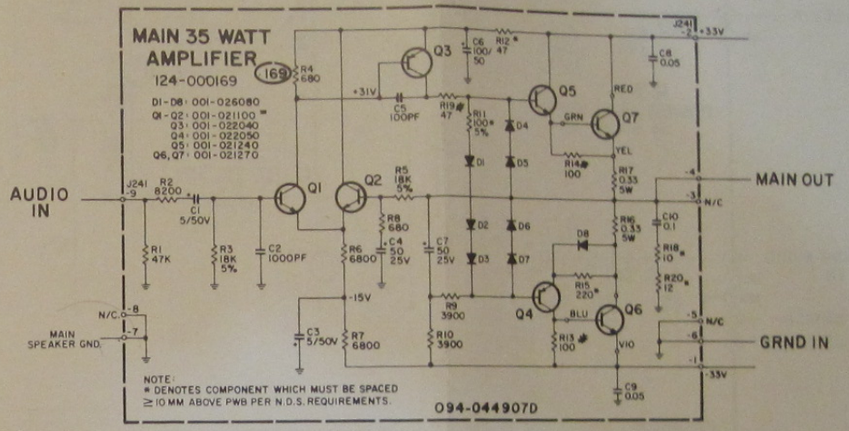


340200

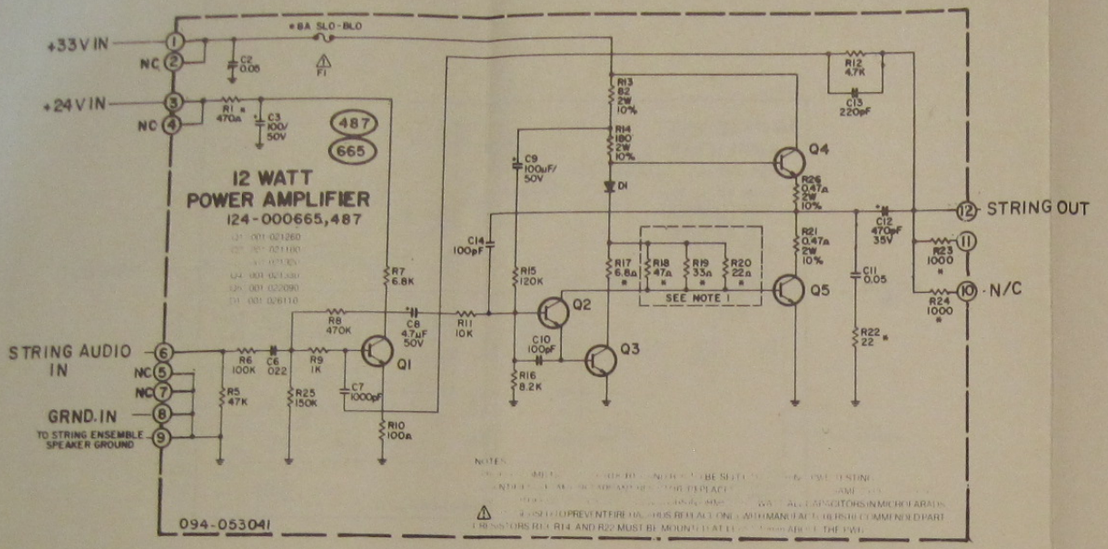
SECTION V
PWB SCHEMATICS AND LAYOUTS

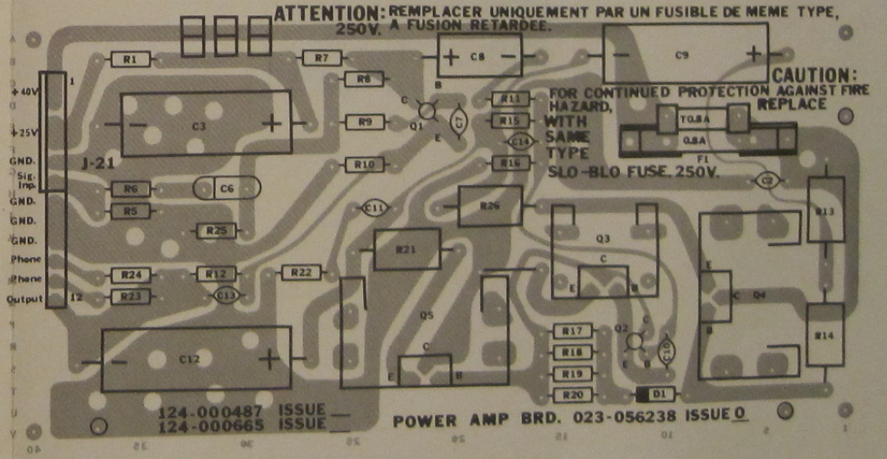
TABLE OF CONTENTS



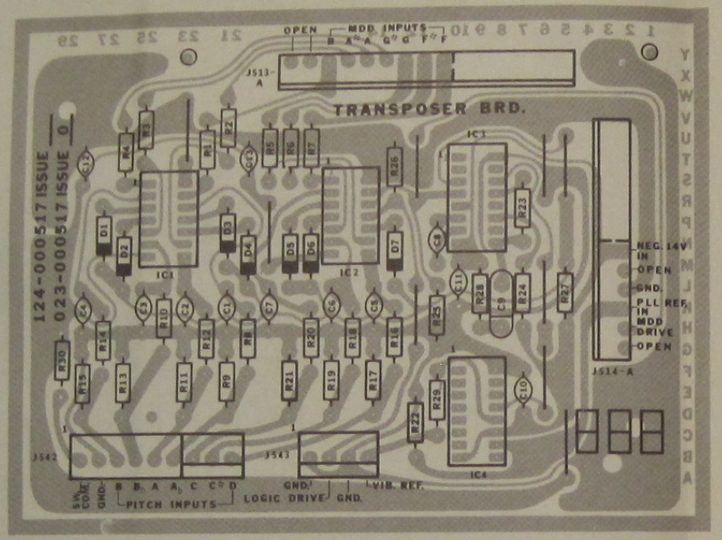


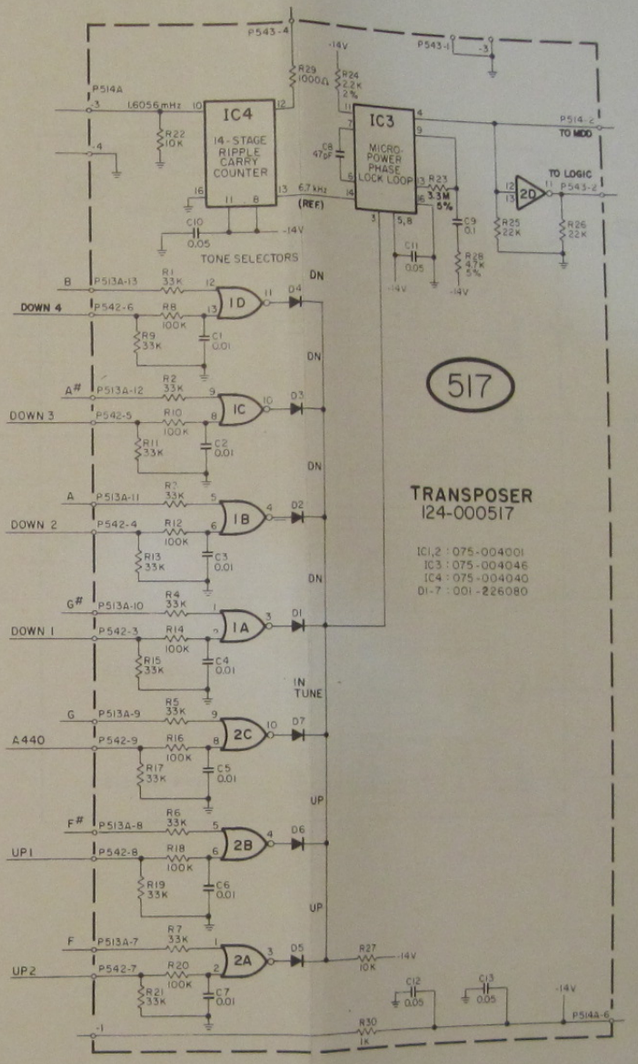
35 WATT POWER AMP
SCHEMATIC
COPPER & LEGEND
124-000169



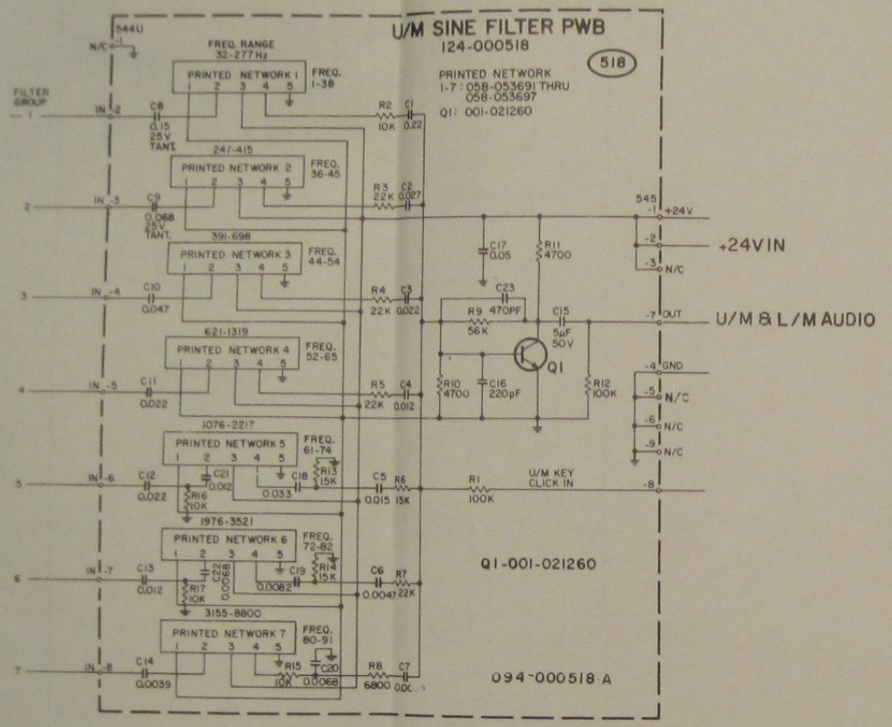


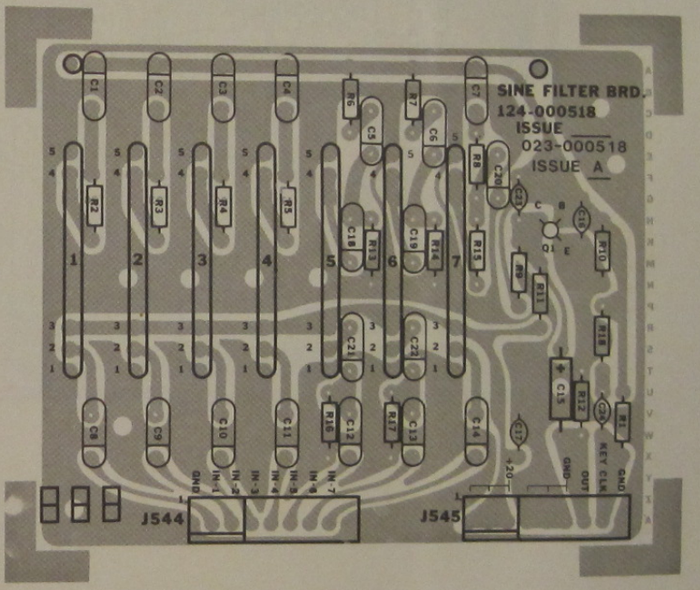
12 WATT POWER AMP PWB
SCHEMATIC
COPPER & LEGEND
124-000485, 124-000665



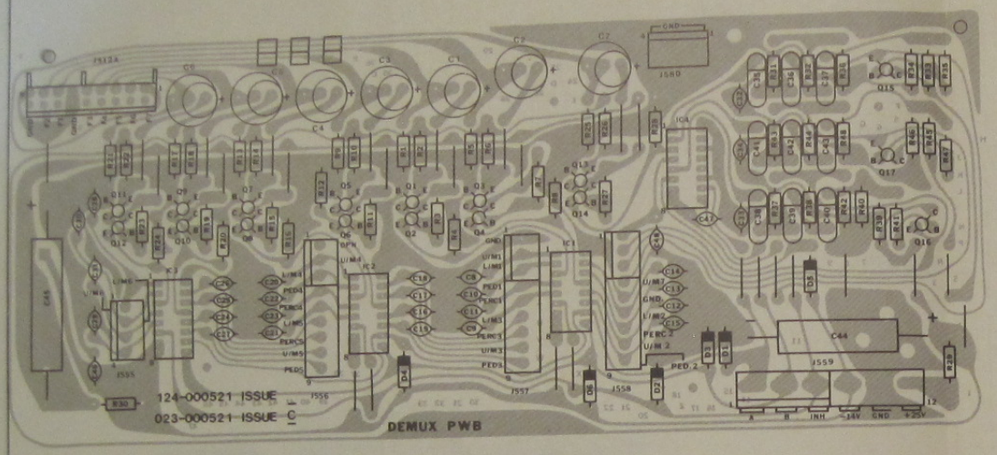


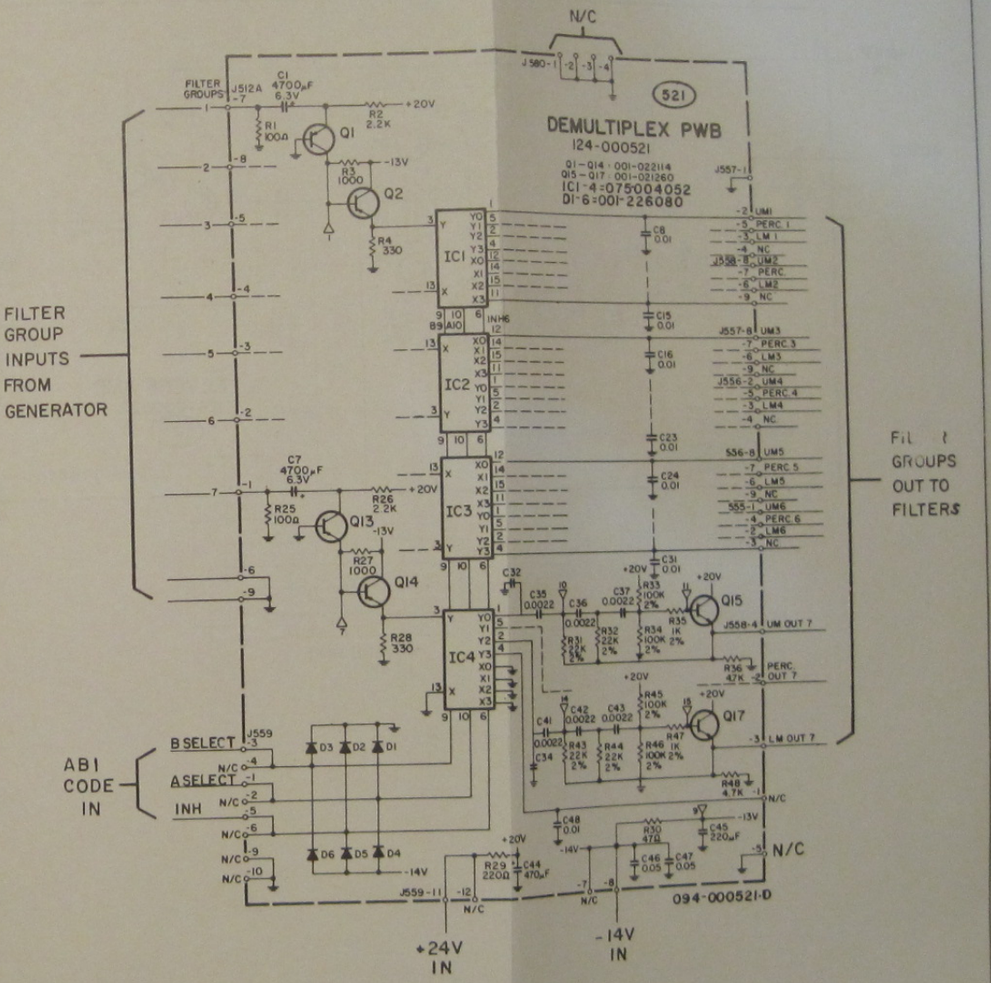
TRANSPOSER PWB
SCHEMATIC
COPPER & LEGEND
124-000517



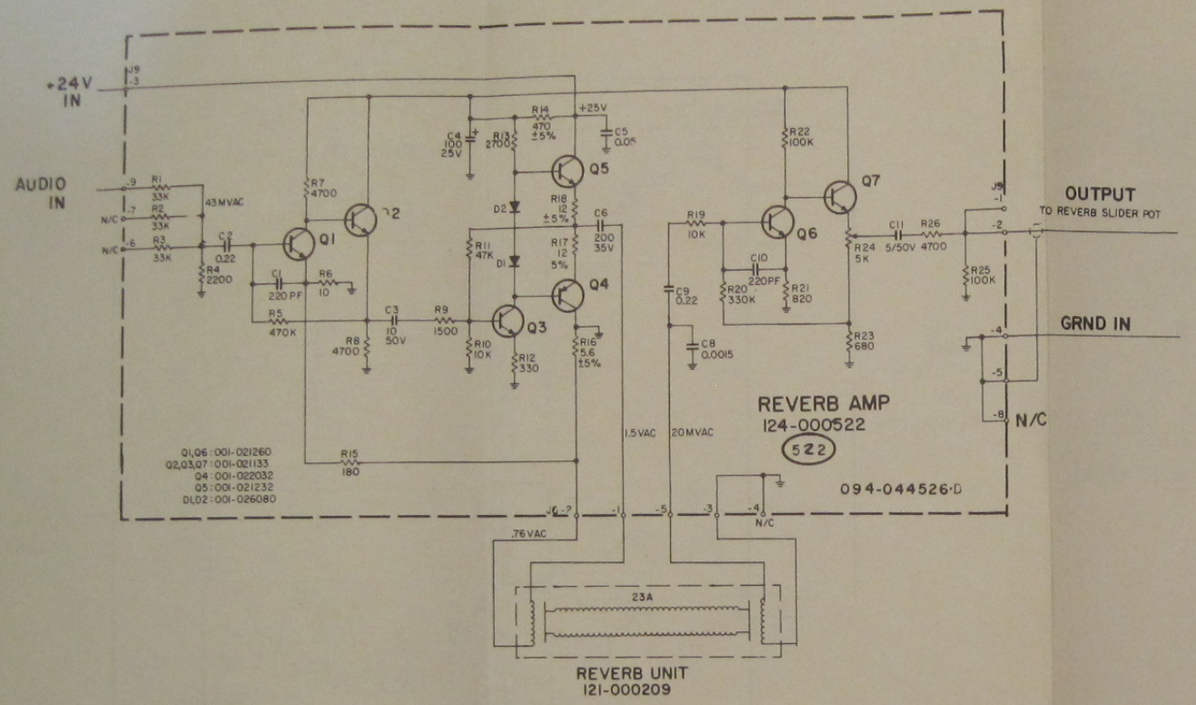


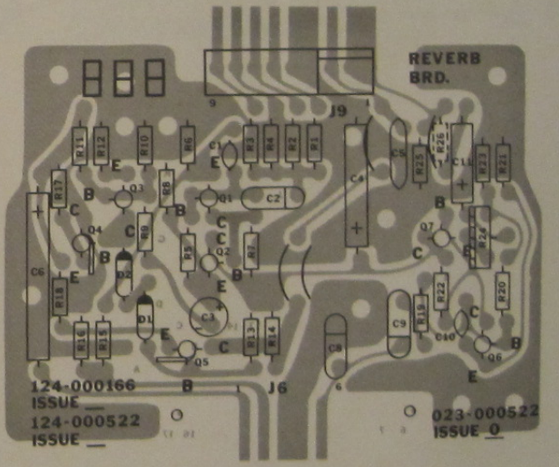
SINE FILTER PWB
SCHEMATIC
COPPER & LEGEND
124-000518



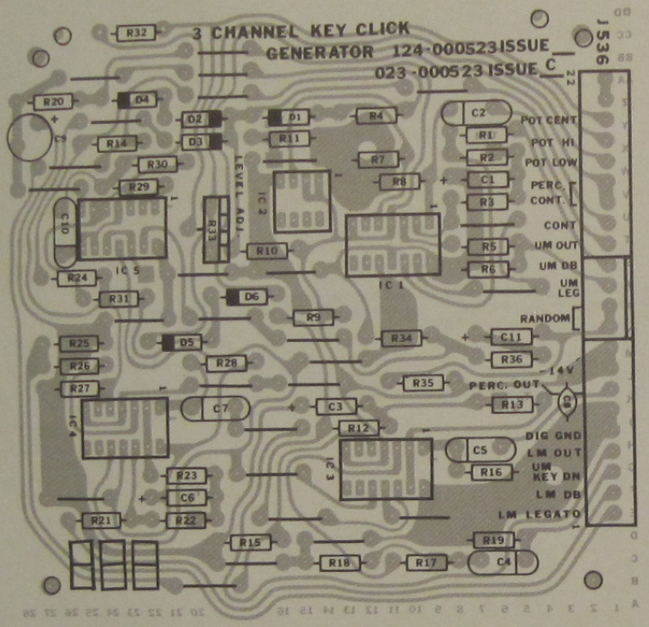


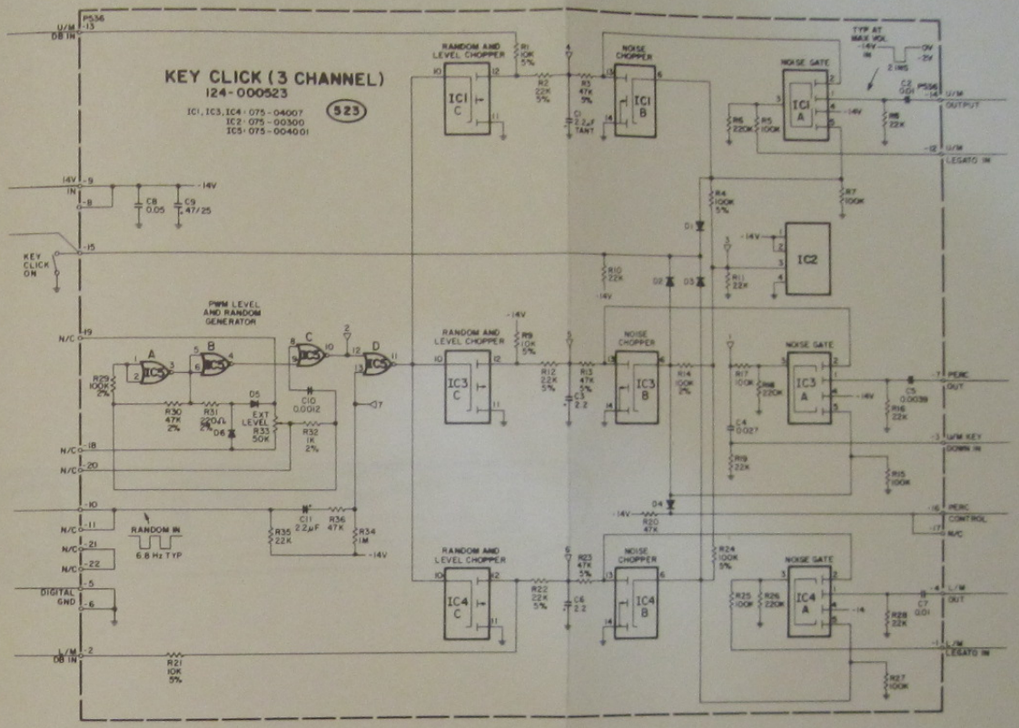
DEMUX PWB
SCHEMATIC
COPPER & LEGEND
124-000521





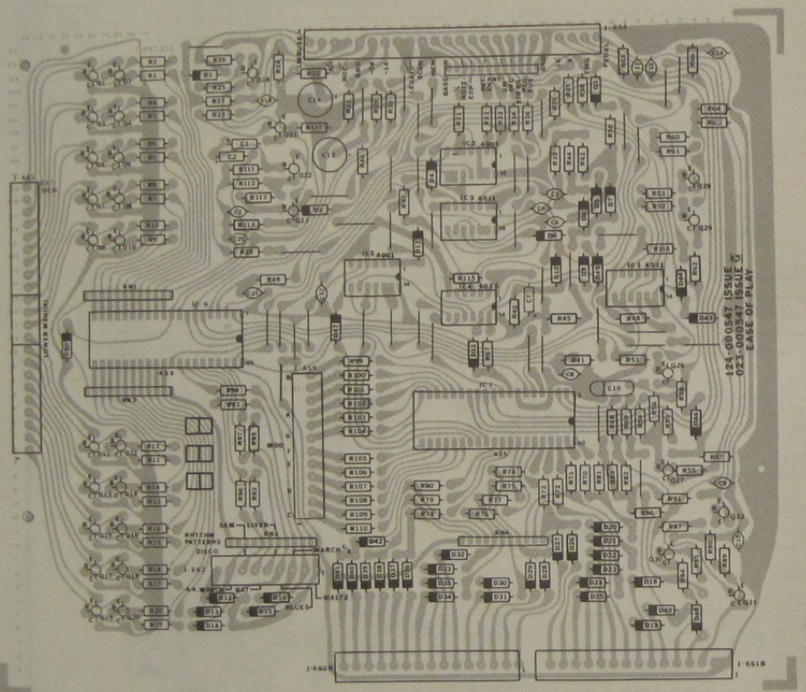
REVERB AMP PWB
SCHEMATIC
COPPER & LEGEND
124-000522

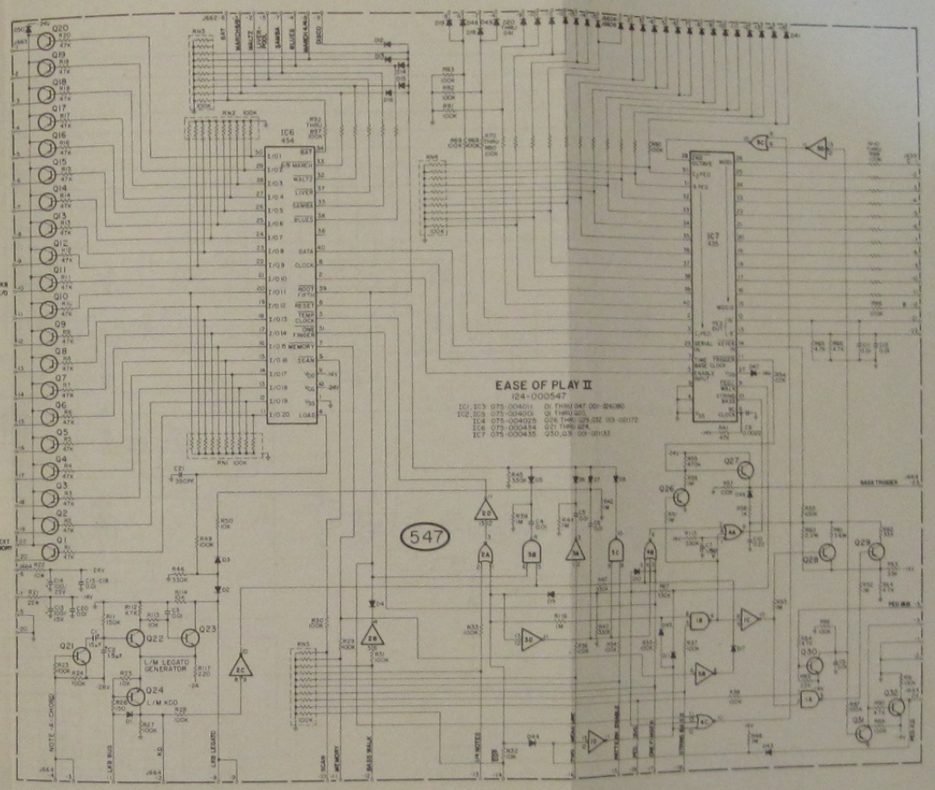




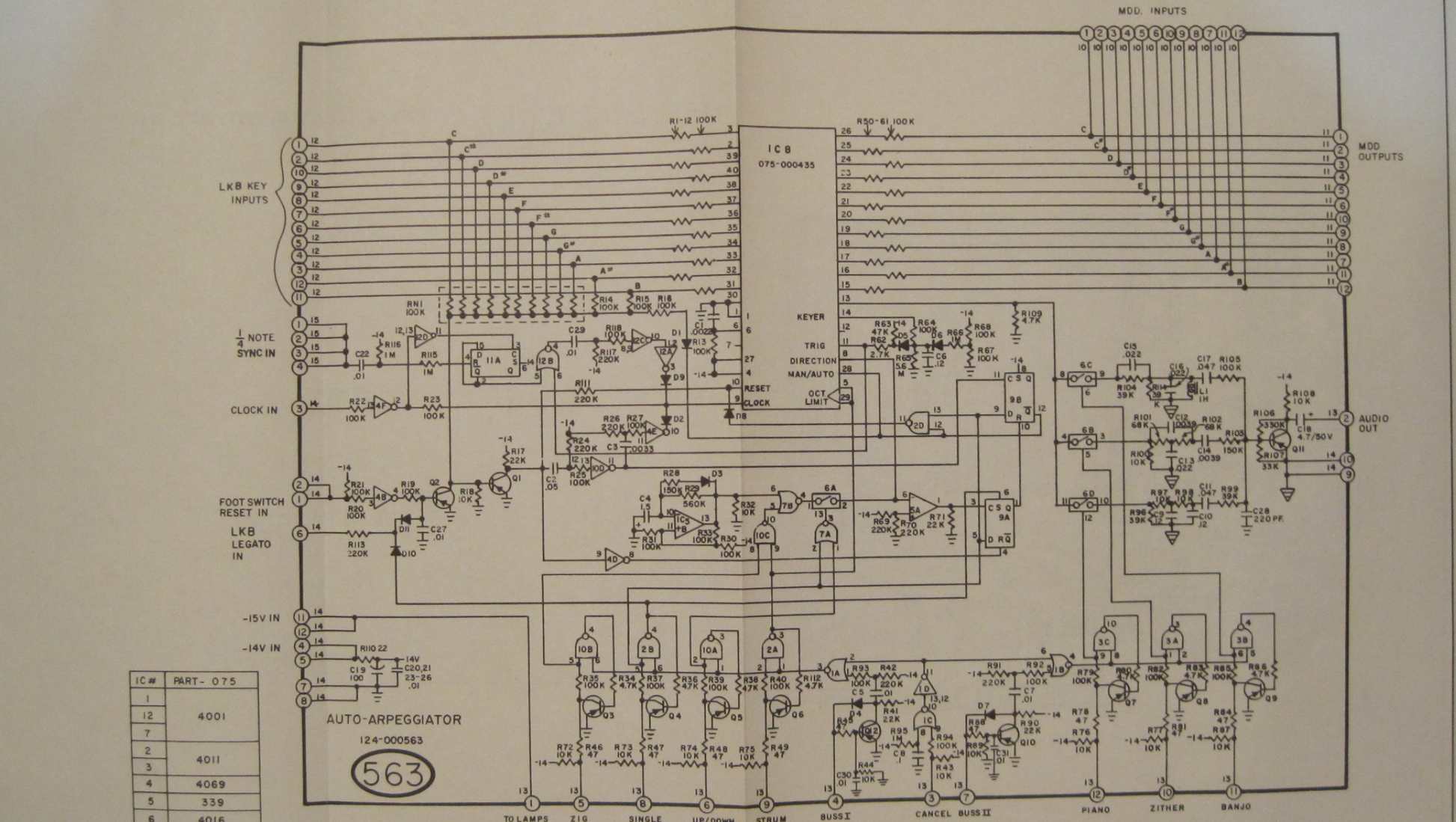
KEY CLICK PWB
SCHEMATIC
COPPER & LEGEND
124-000523

PISTON SWITCH PWB ASSY.
COPPER PATTERN
008-055605





EASE OF PLAY #2 PWB
SCHEMATIC
COPPER & LEGEND
124-000547



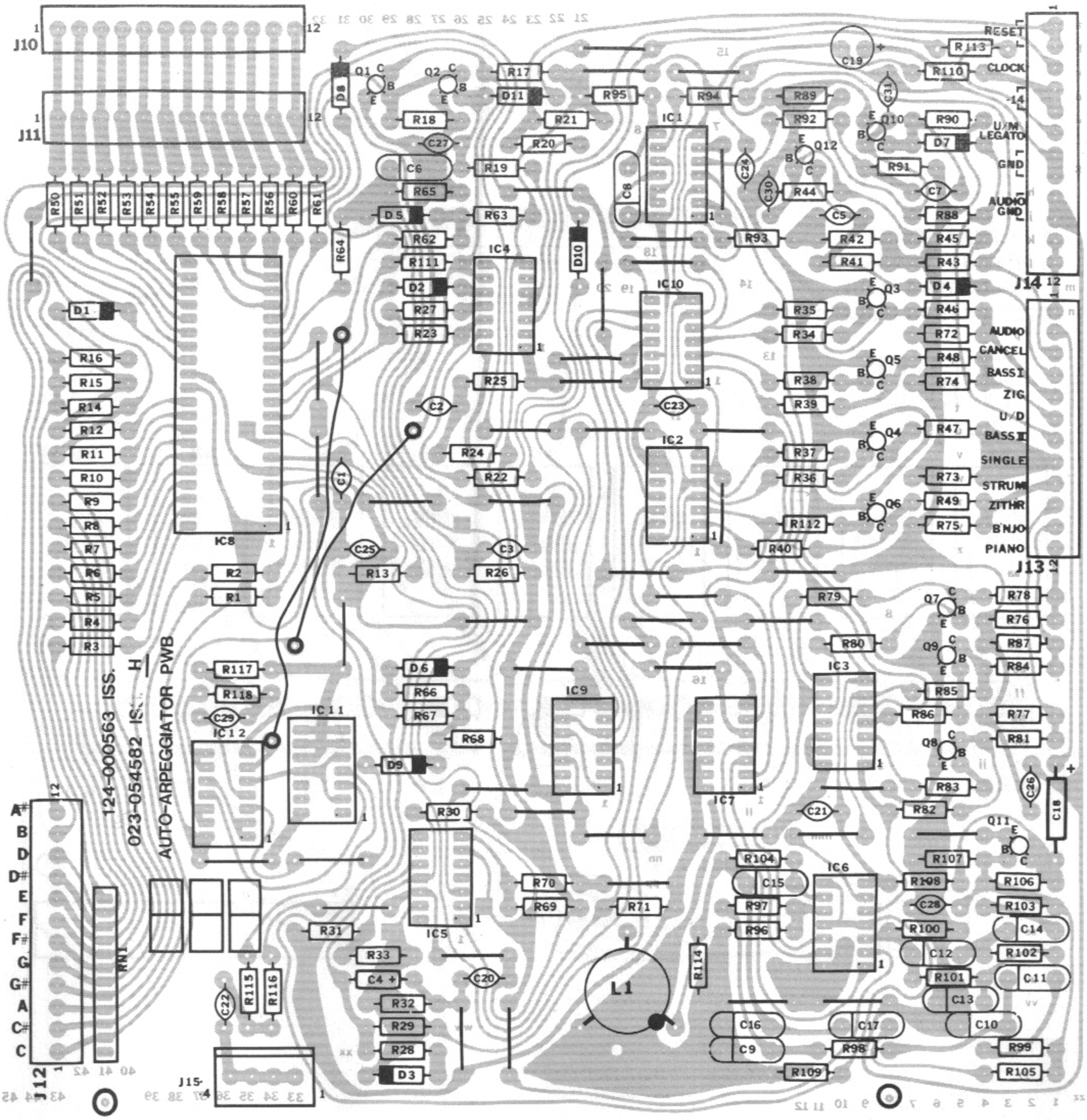
IC #	PART- 075
1	4001
12	
7	
2	4011
3	
4	4069
5	339
6	4016
8	435
9	4013
11	
10	4093

Q1→11:001-021173

AUTJ ARP PWB SCHEMATIC

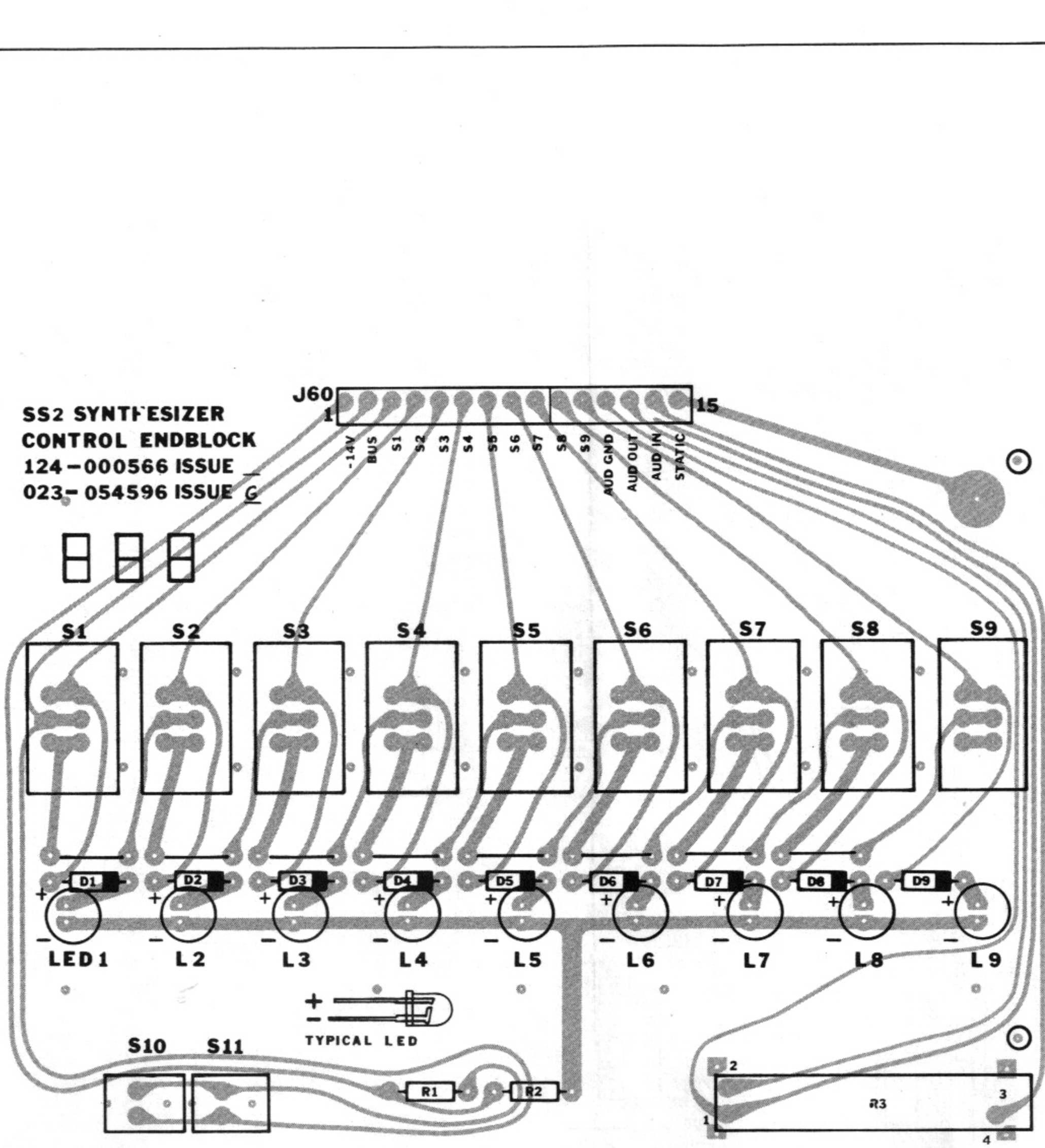
124-000563

5-12 340000



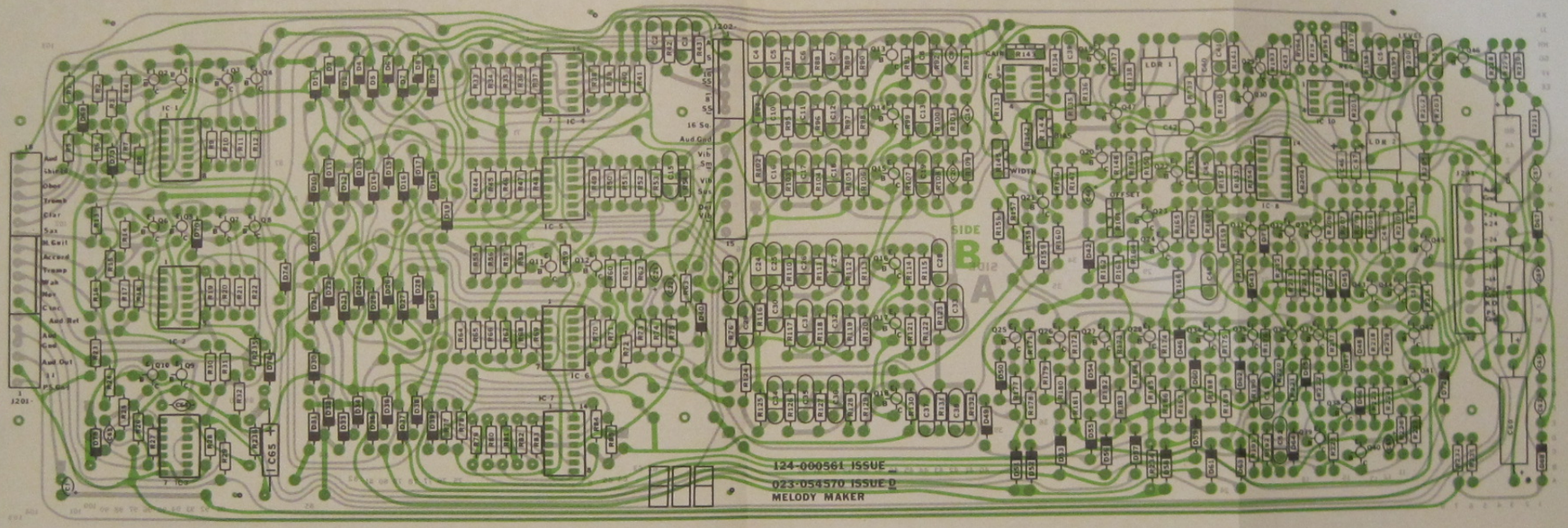
AUTO ARP PWB
COPPER & LEGEND

124-000563



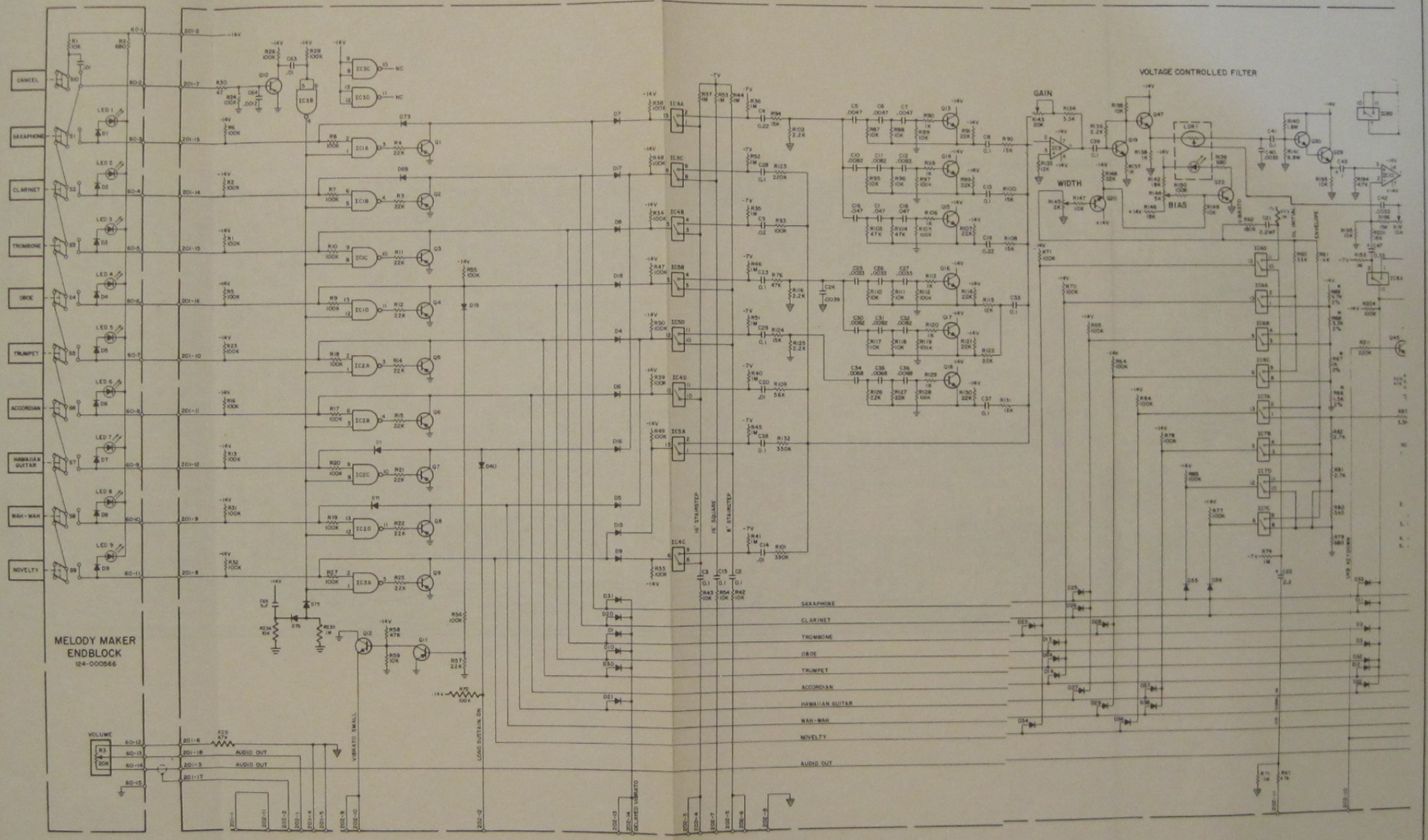
MELODY MAKER SS2 PWB
COPPER & LEGEND

124-000566

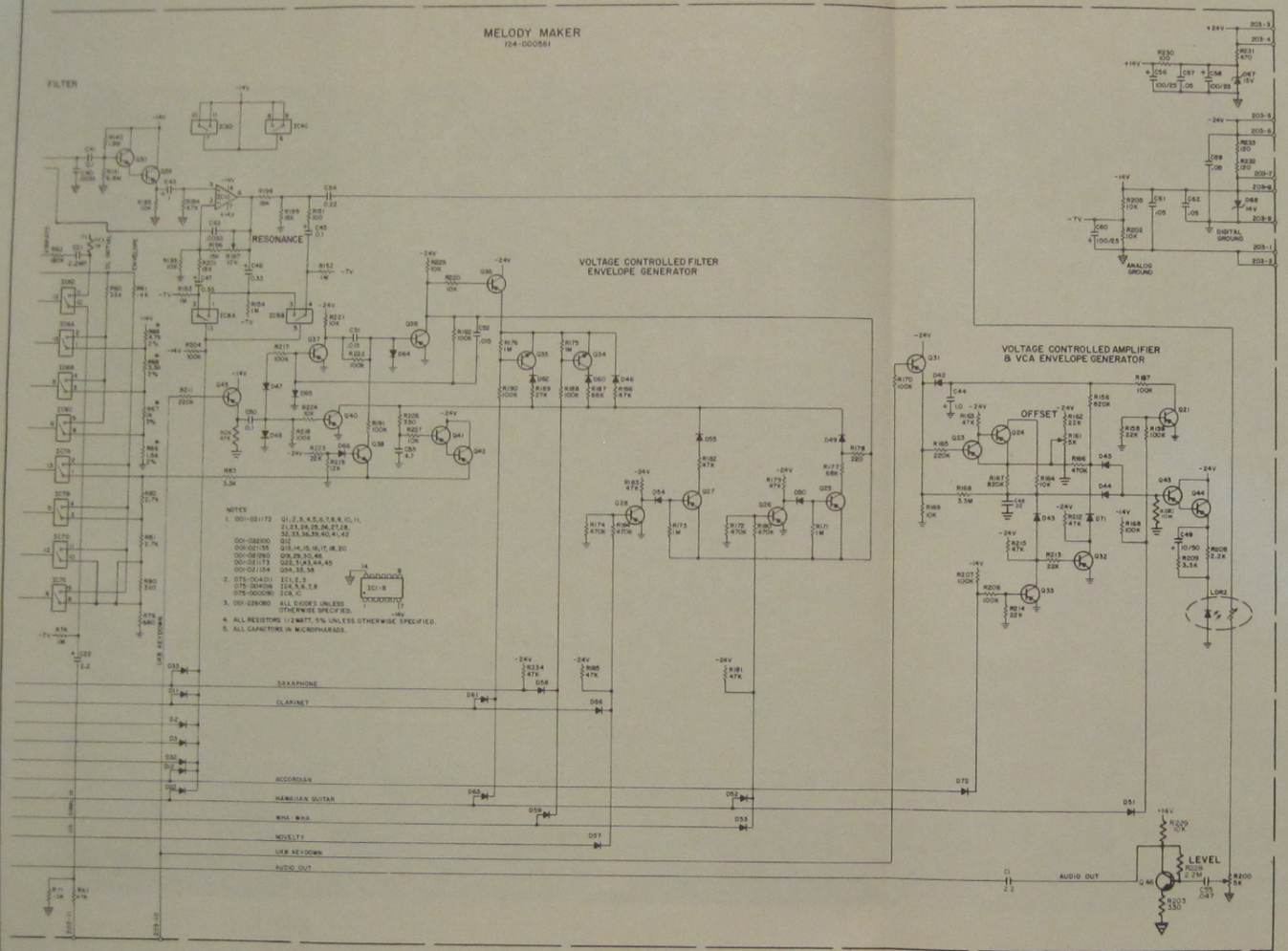


MELODY MAKER PW3
COPPER & LEGEND

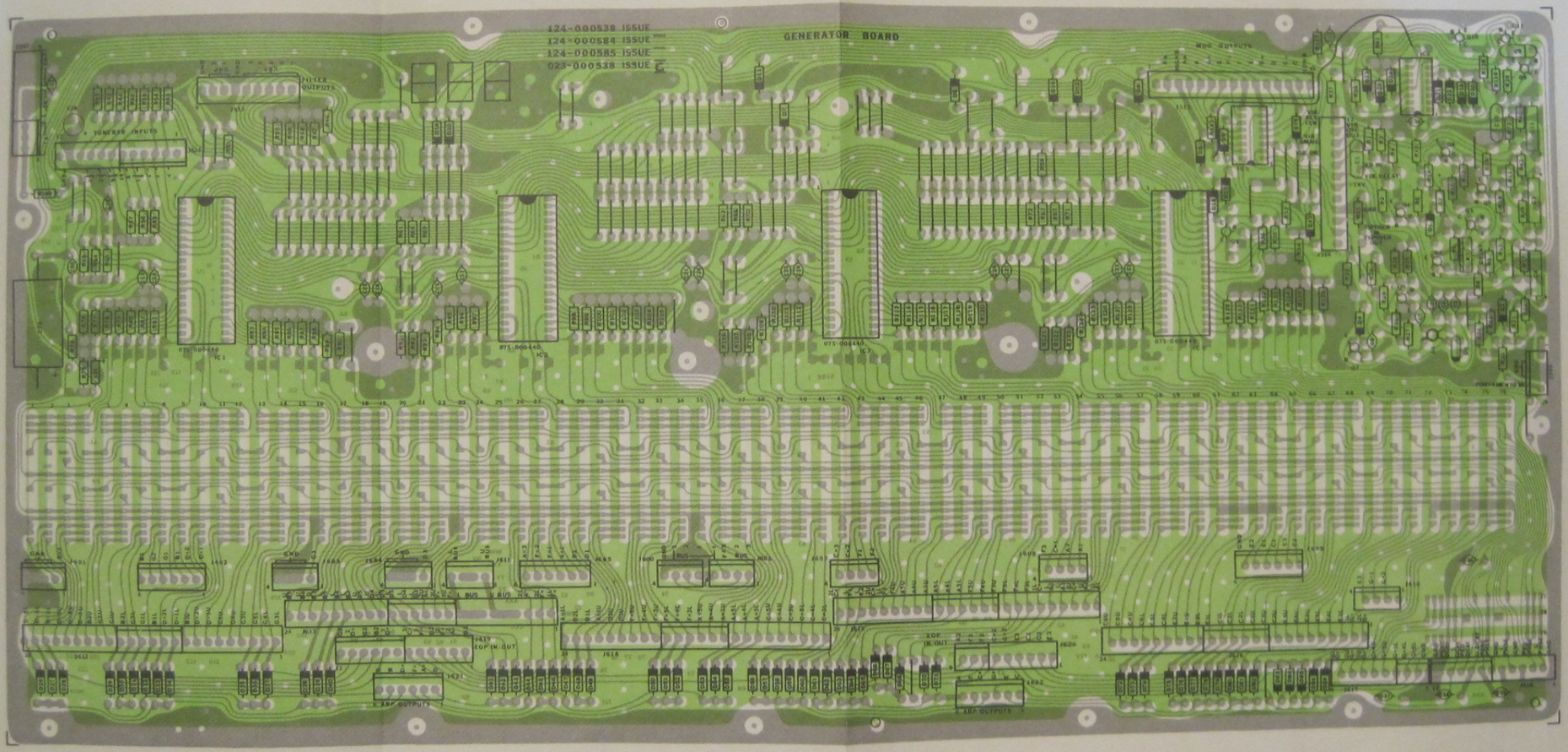
124-000561



MELODY MAKER PWB
MELODY MAKER SS2 PWB
SCHEMATICS
124-000561 124-000566

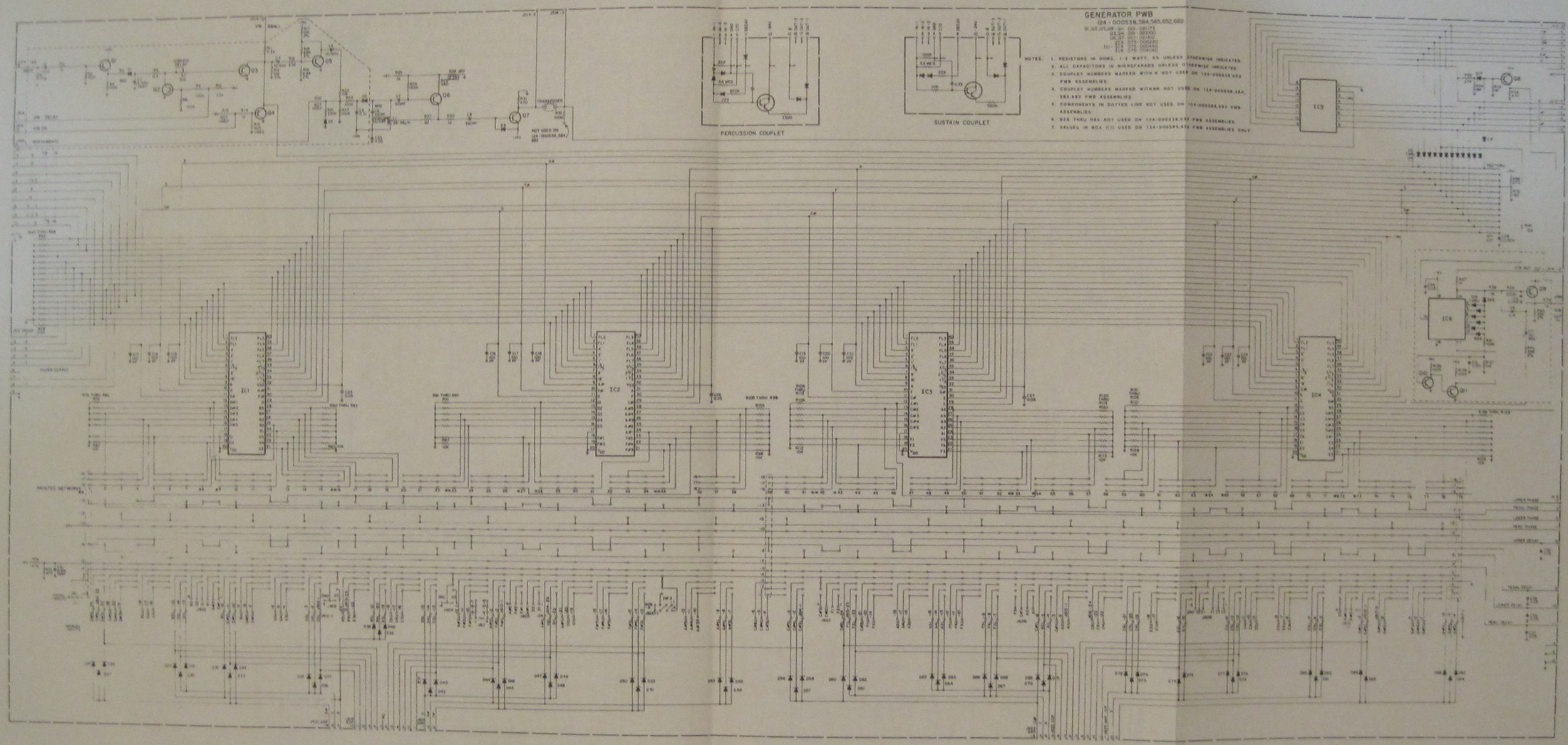


MELODY MAKER PWB
MELODY MAKER SS2 PWB
SCHEMATICS
124-000561 124-000566



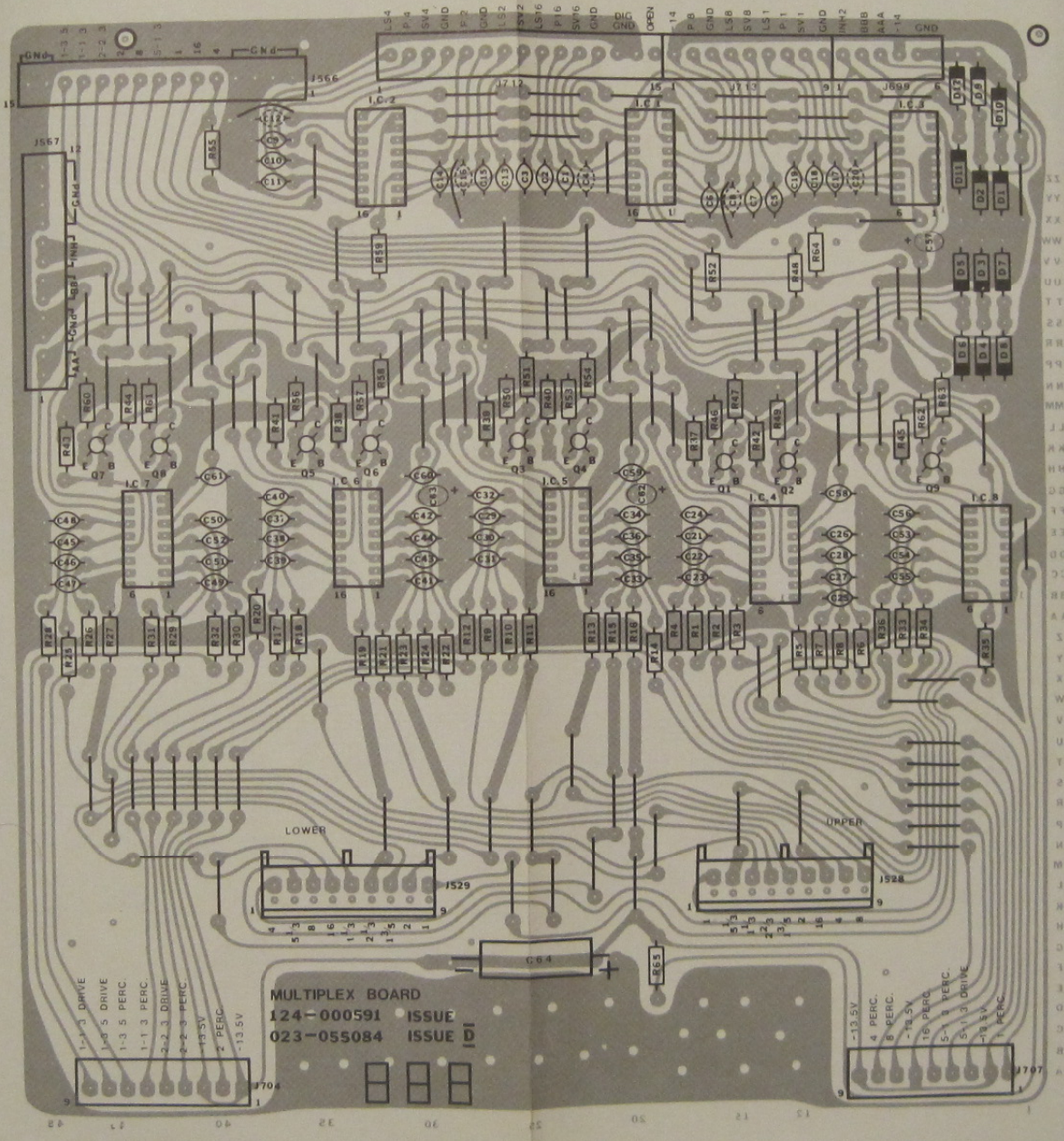
GENERATOR PWB
COPPER & LEGEND

124-000585

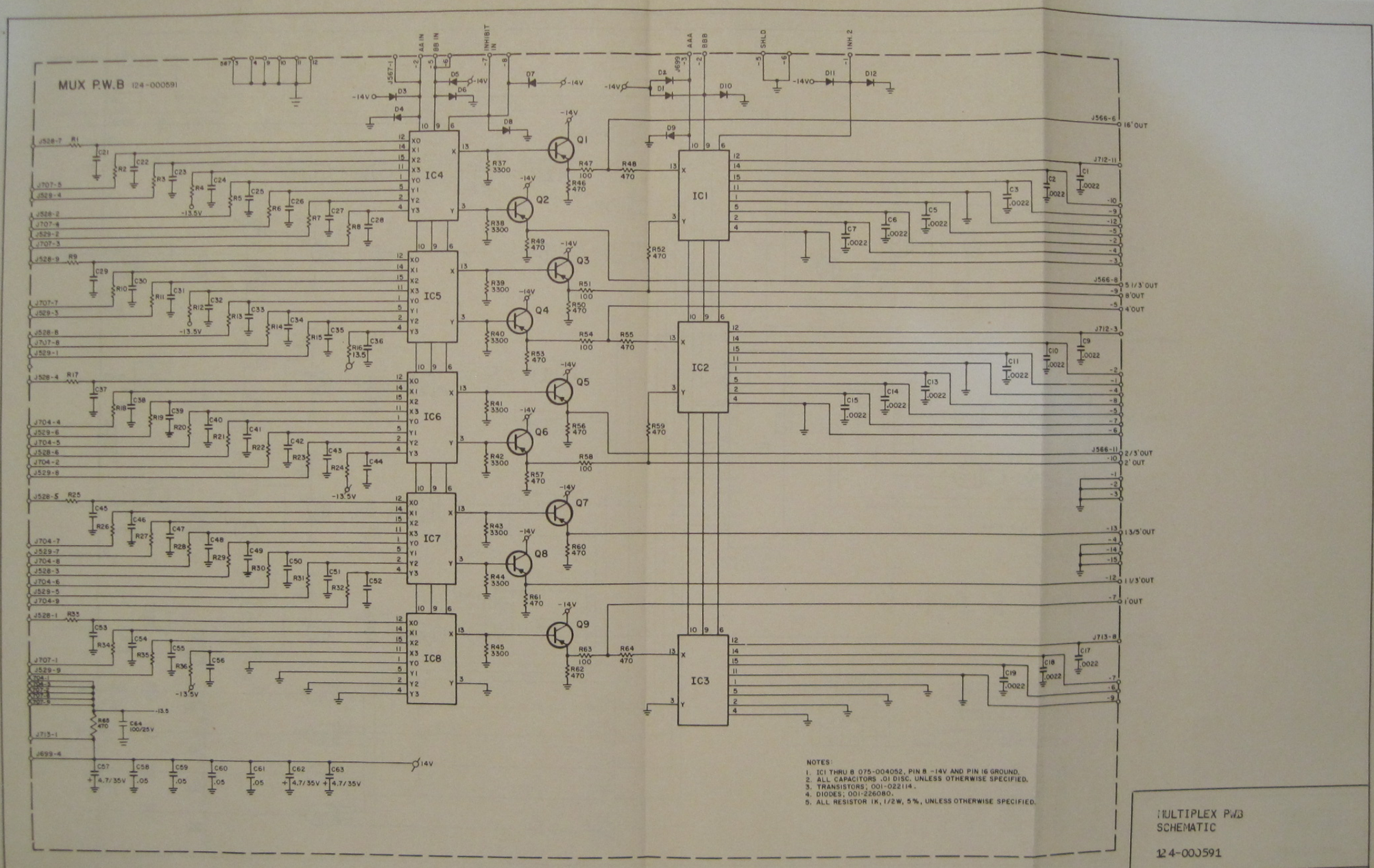


GENERATOR PWB
SCHEMATIC

124-000585

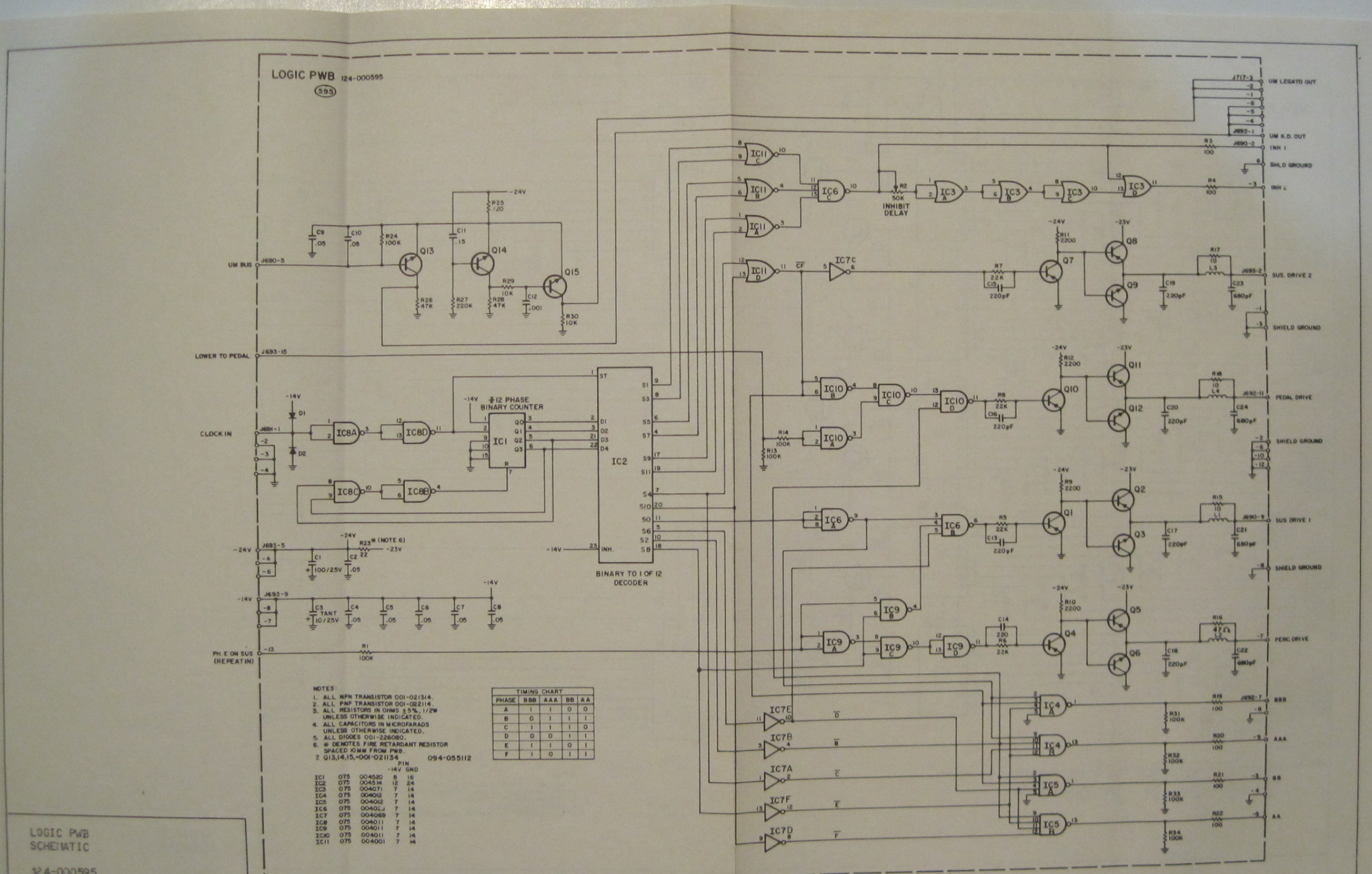


MULTIPLEX PWB
COPPER & LEGEND
124-000591



MULTIPLEX P.W.B
SCHEMATIC

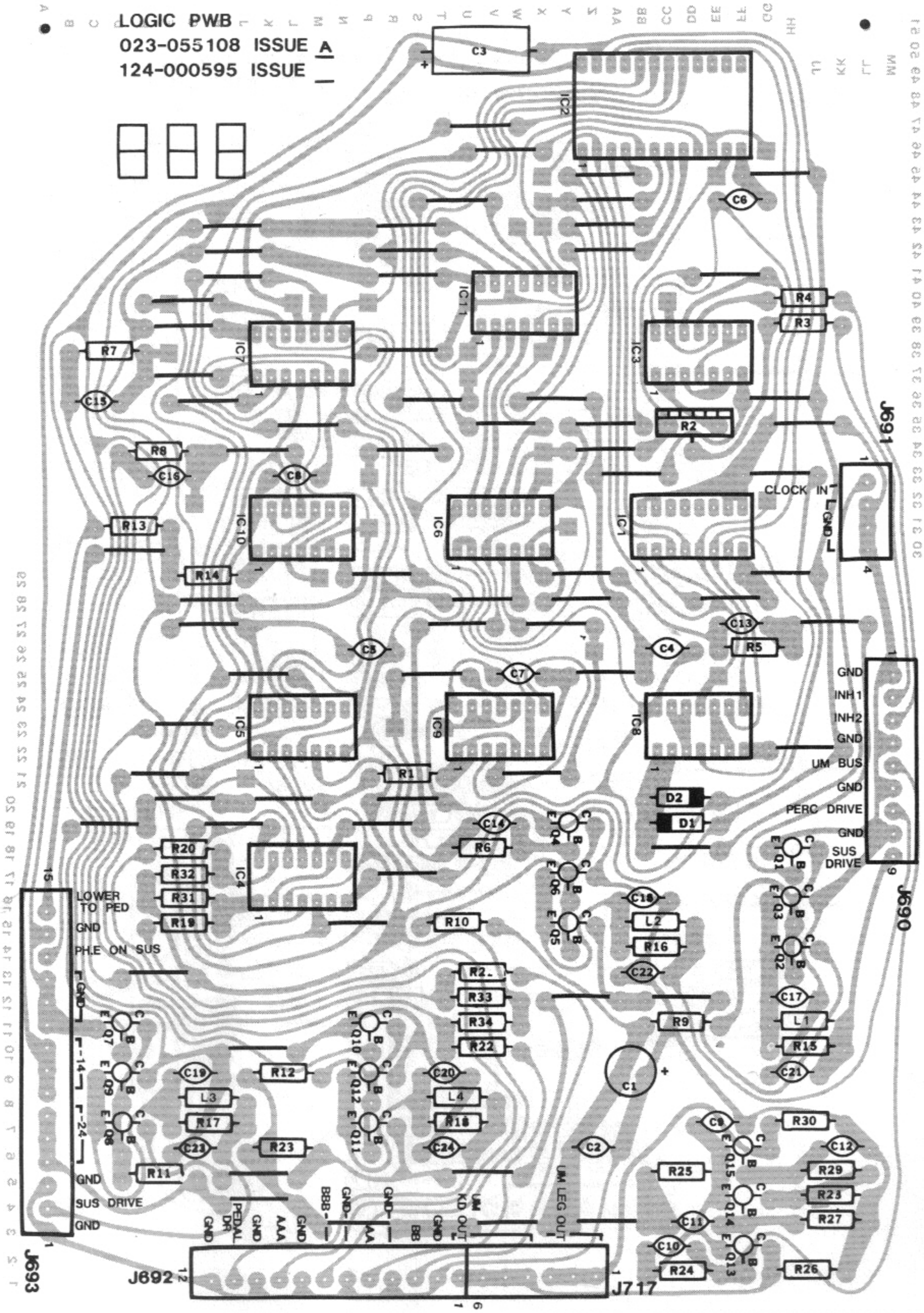
124-000591



LOGIC PWB
SCHEMATIC

124-000595

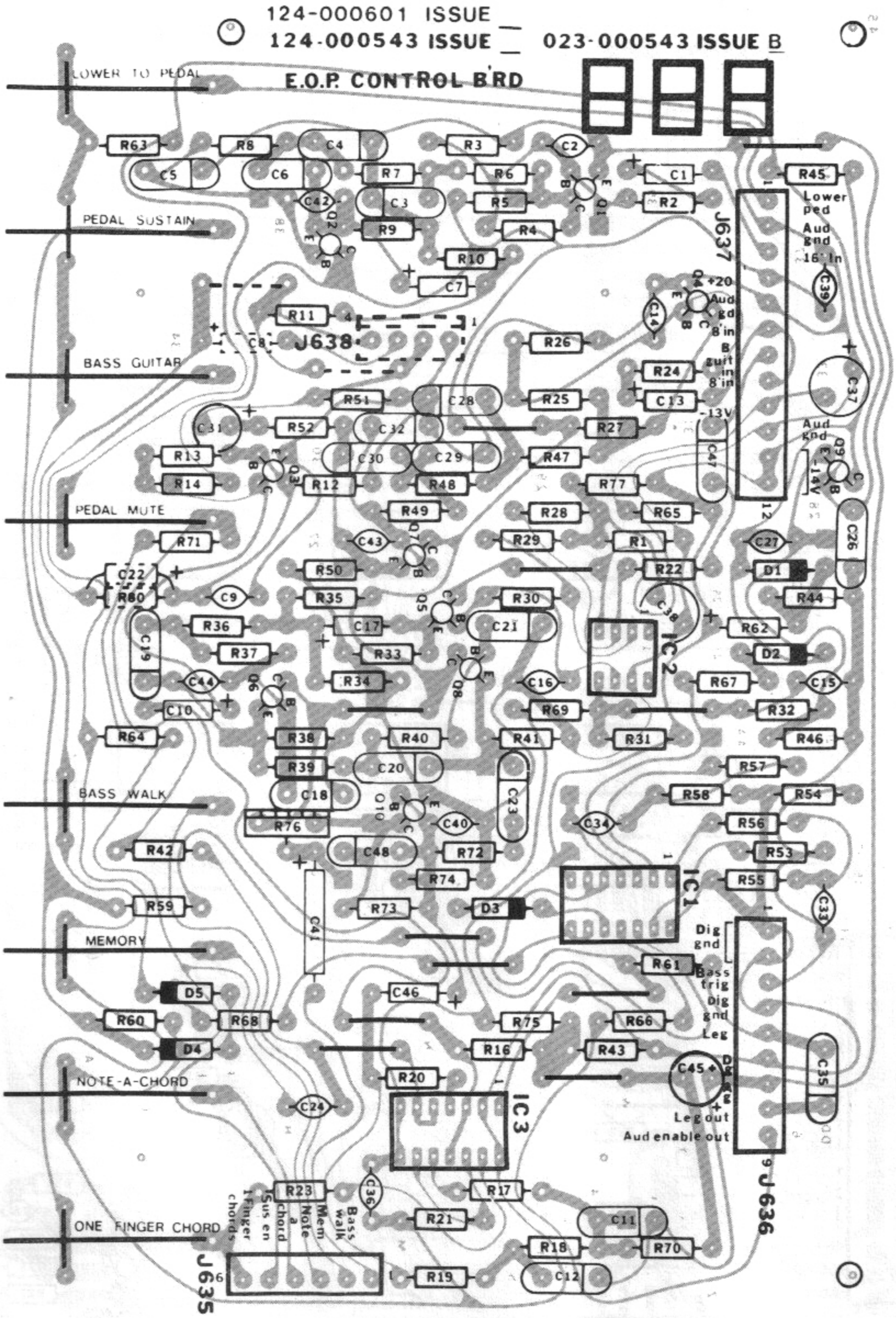
LOGIC PWB
023-055108 ISSUE A
124-000595 ISSUE —



LOGIC PWB
COPPER & LEGEND

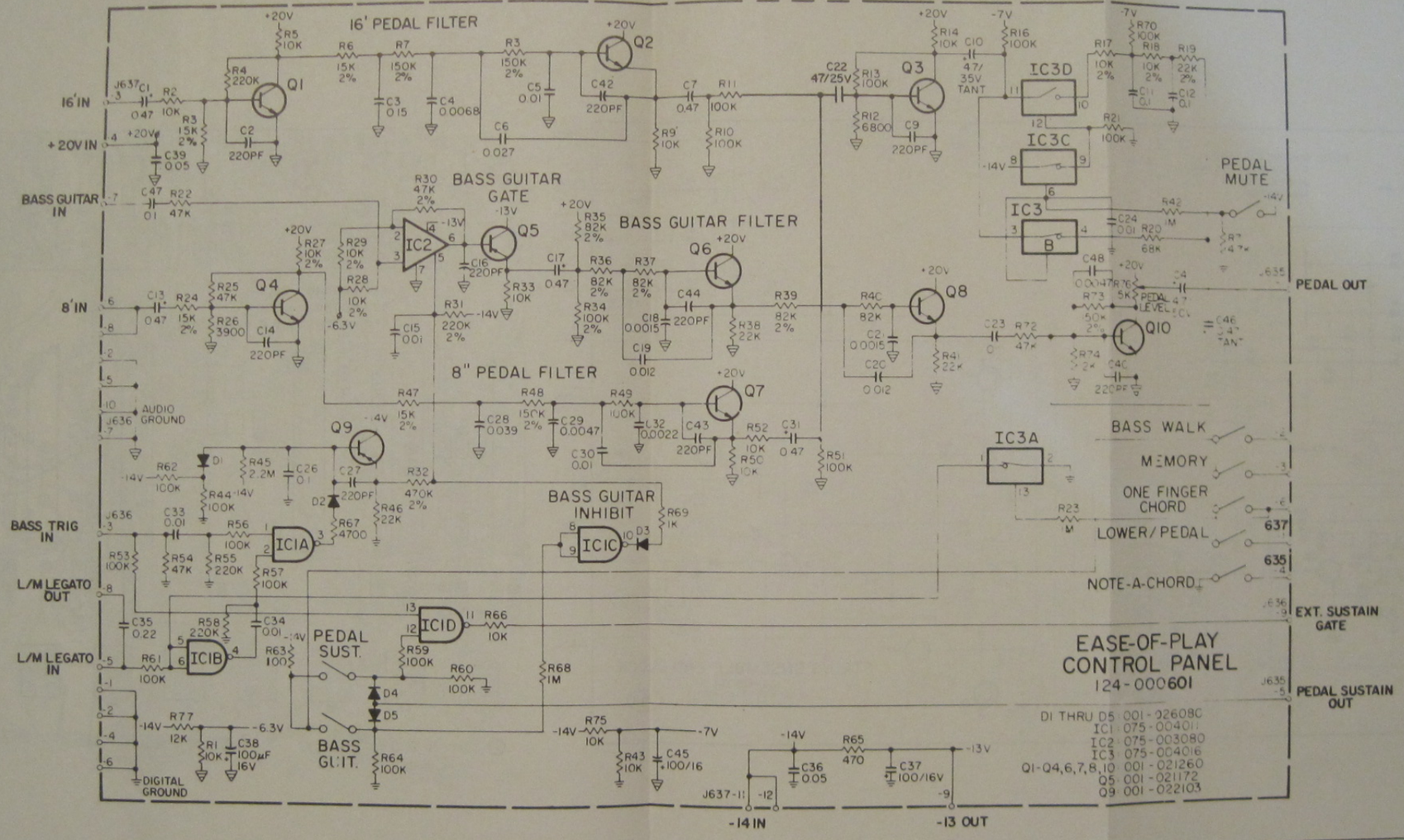
124-000595

124-000601 ISSUE _
124-000543 ISSUE _ 023-000543 ISSUE B



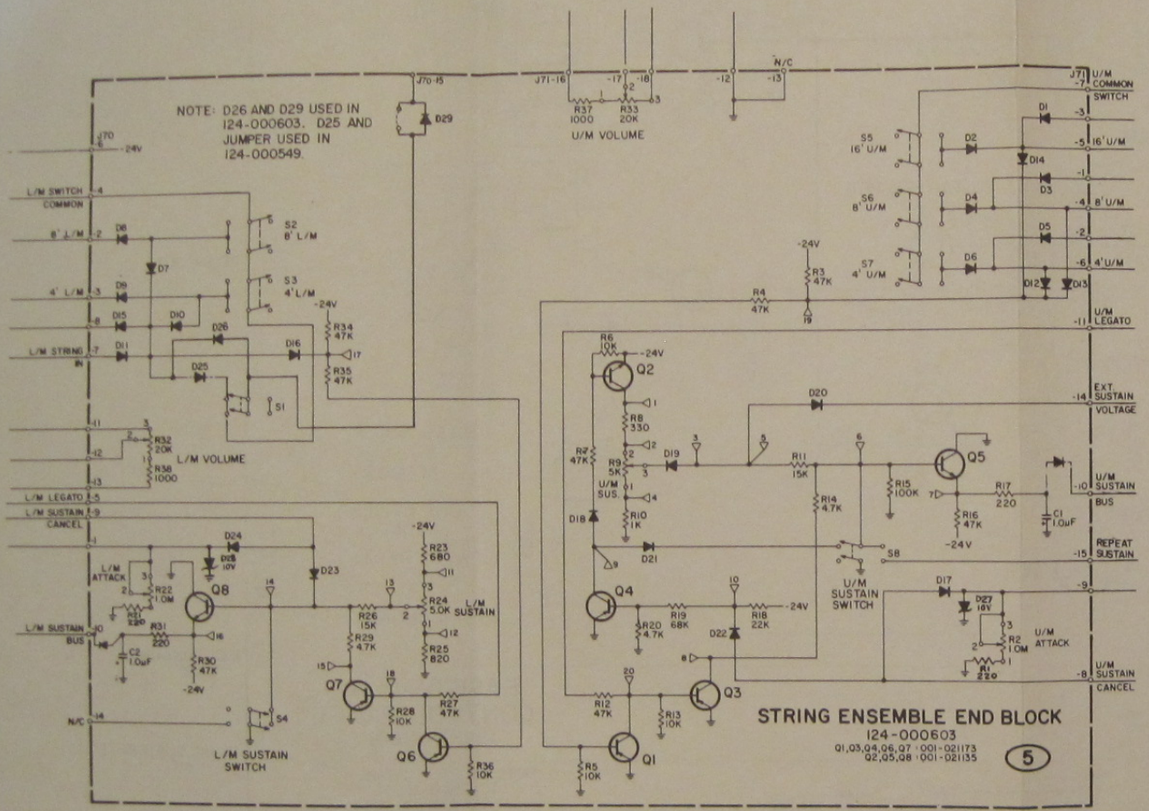
EASE OF PLAY CONTROL PANEL PWB
COPPER & LEGEND

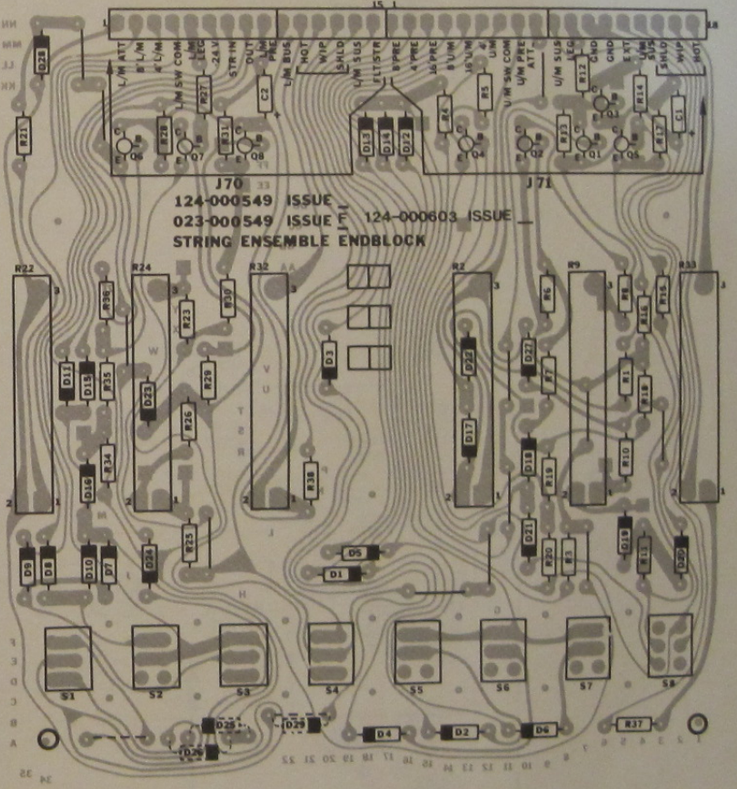
124-000601



EASE OF PLAY CONTROL PANEL PWB SCHEMATIC

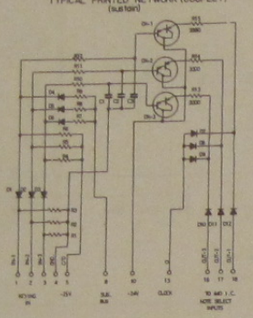
124-000601



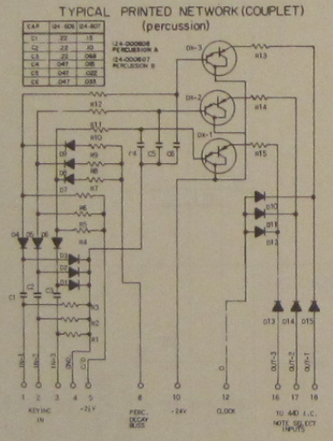


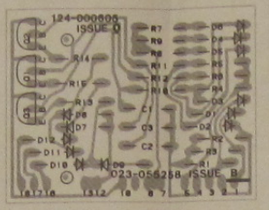
STRING ENSEMBLE ENDBLOCK PWB
SCHEMATIC
COPPER & LEGEND
124-000603

TYPICAL PRINTED NETWORK (COUPLET)
(sustain)



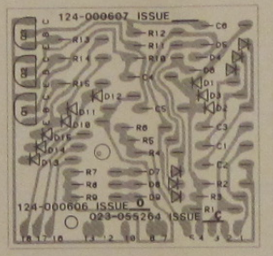
TYPICAL PRINTED NETWORK (COUPLET)
(percussion)





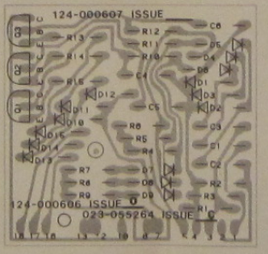
124-000605 SUSTAIN COUPLATE PWB
(REPLACES 058-054315)

Q1-Q3	TRANSISTOR	001-022103
D1-D12	SIG DIODE	001-226080
C1-C3	CAP .22 MFD	438-210292



124-000606 PERC A COUPLATE PWB
(REPLACES 058-054320)

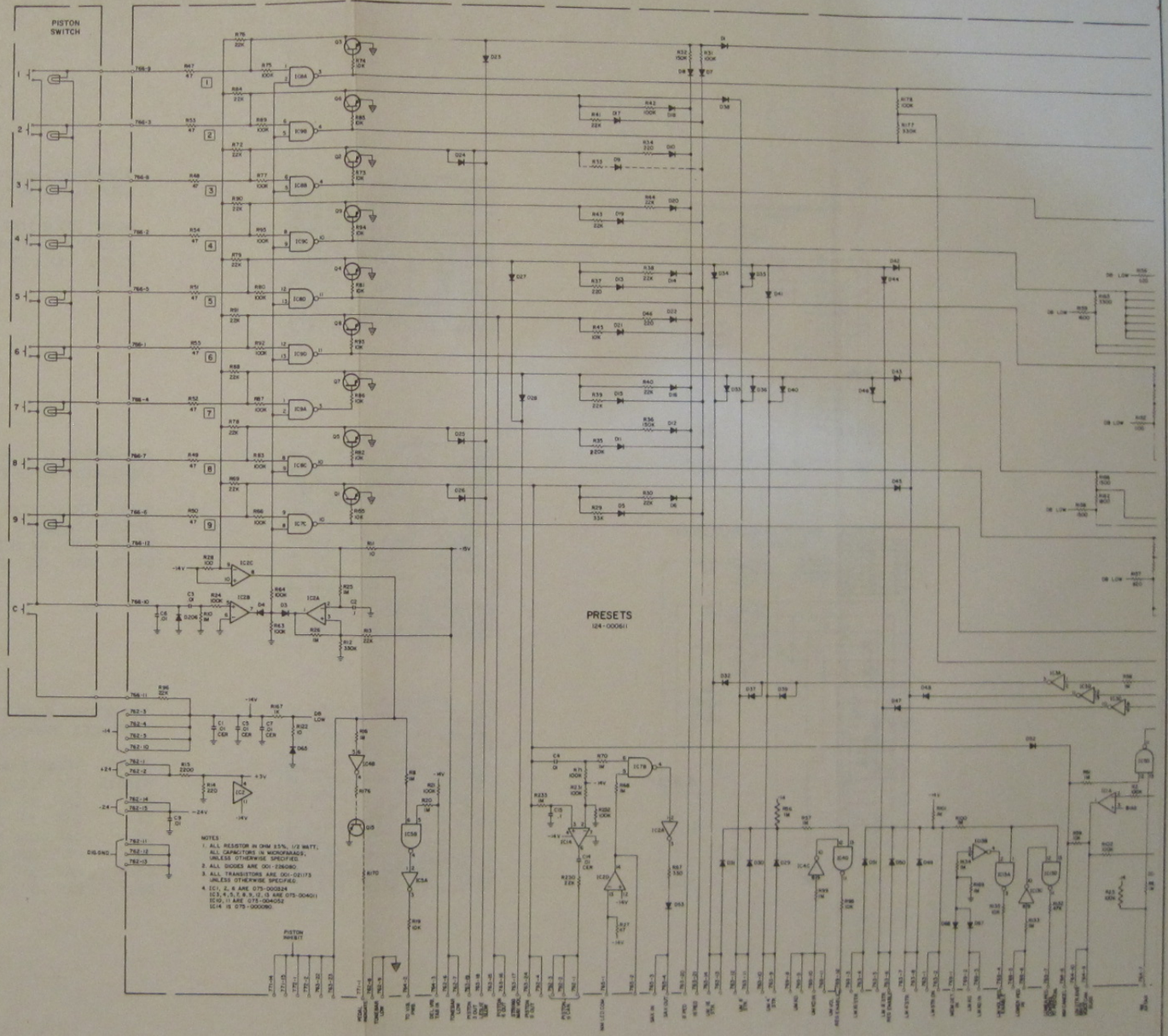
Q1-Q3	TRANSISTOR	001-022103
D1-D15	SIG DIODE	001-226080
C1-C3	CAP .22 MFD	438-210292
C4-C6	CAP .047 MFD	438-210212



124-000607 PERC B COUPLATE PWB
(REPLACES 058-054319)

Q1-A3	TRANSISTOR	001-022103
D1-D15	SIG DIODE	001-226080
C1	CAP .15 MFD	438-210272
C2	CAP .10 MFD	438-210252
C3	CAP .068 MFD	438-210232
C4	CAP .015 MFD	438-210152
C5	CAP .022 MFD	438-210172
C6	CAP .033 MFD	438-210192

SUSTAIN KEYER COUPLATE PWB
PERC KEYER COUPLATE PWB
SCHEMATICS
COPPERS & LEGENDS
124-000605,606,607

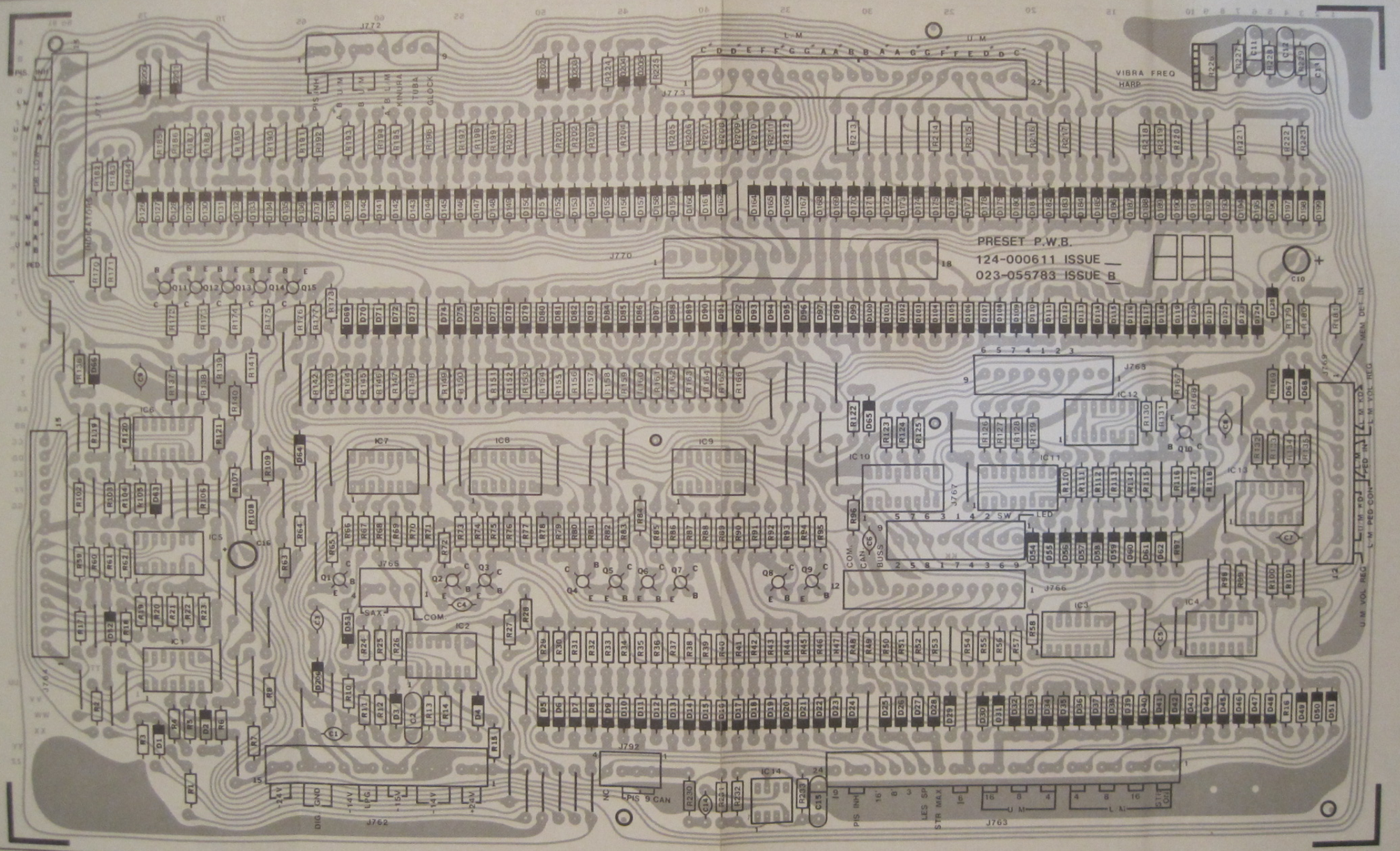


PRESETS PWB
SCHEMATIC

124-000611

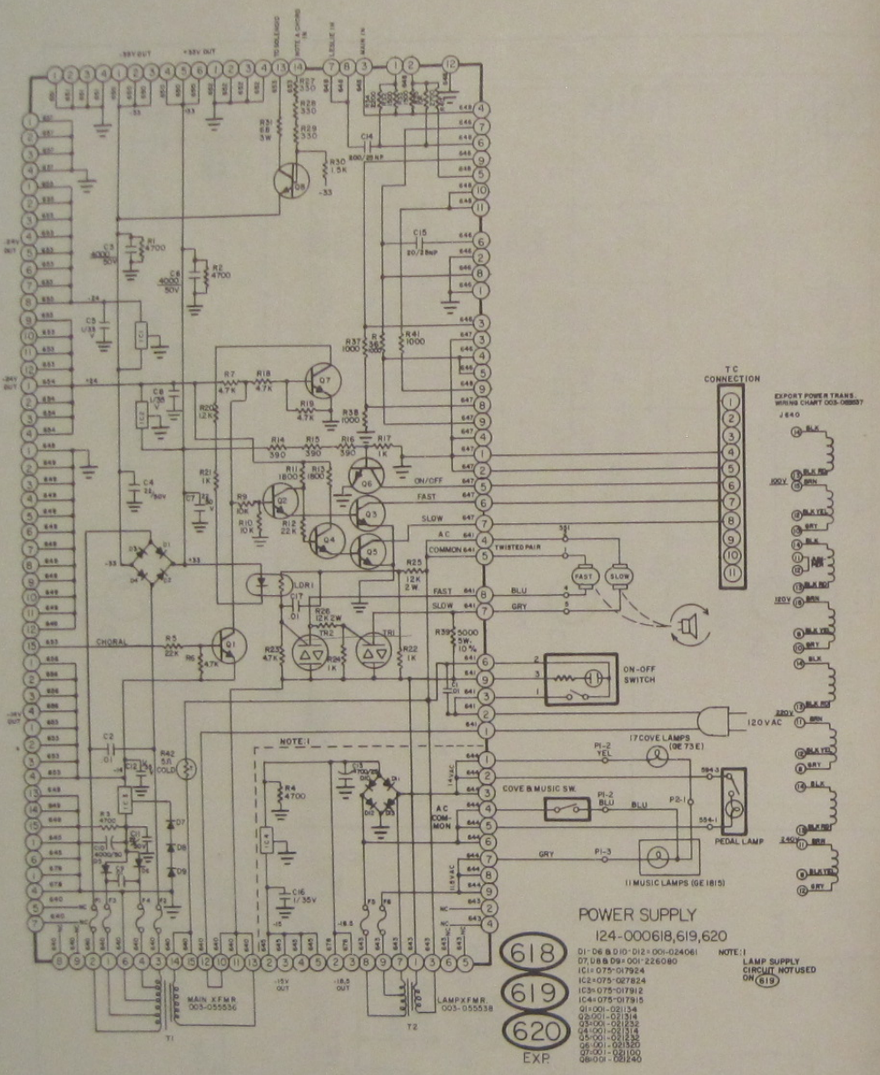
PRESETS PWB
SCHEMATIC

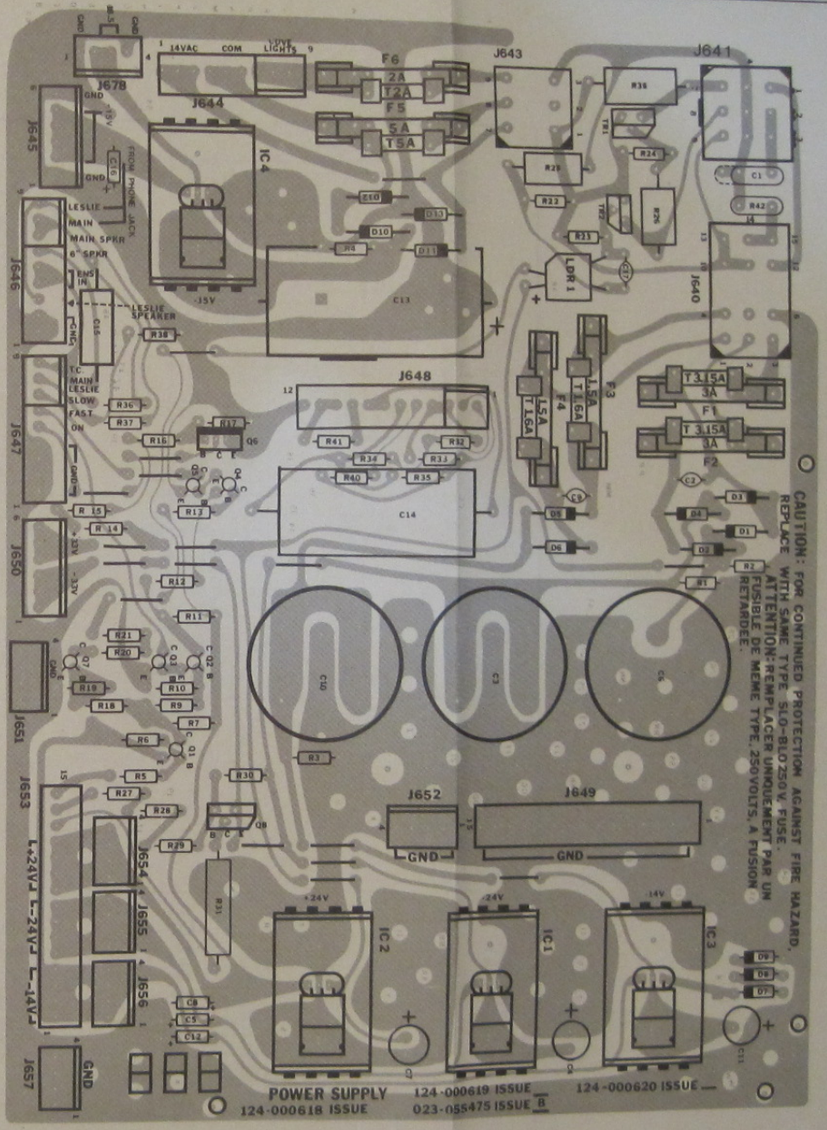
124-000611



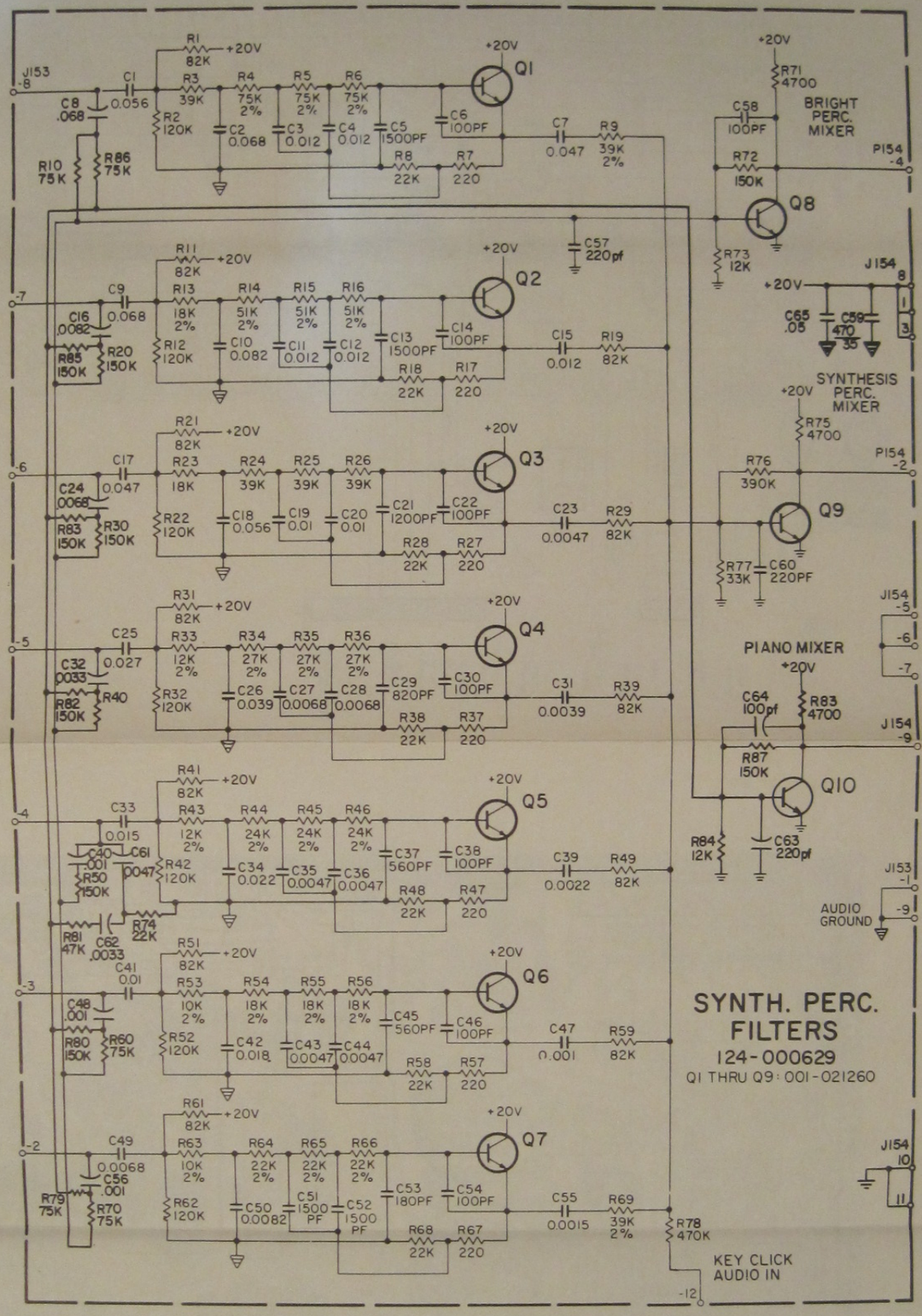
PRESETS PWB
COPPER & LEGEND

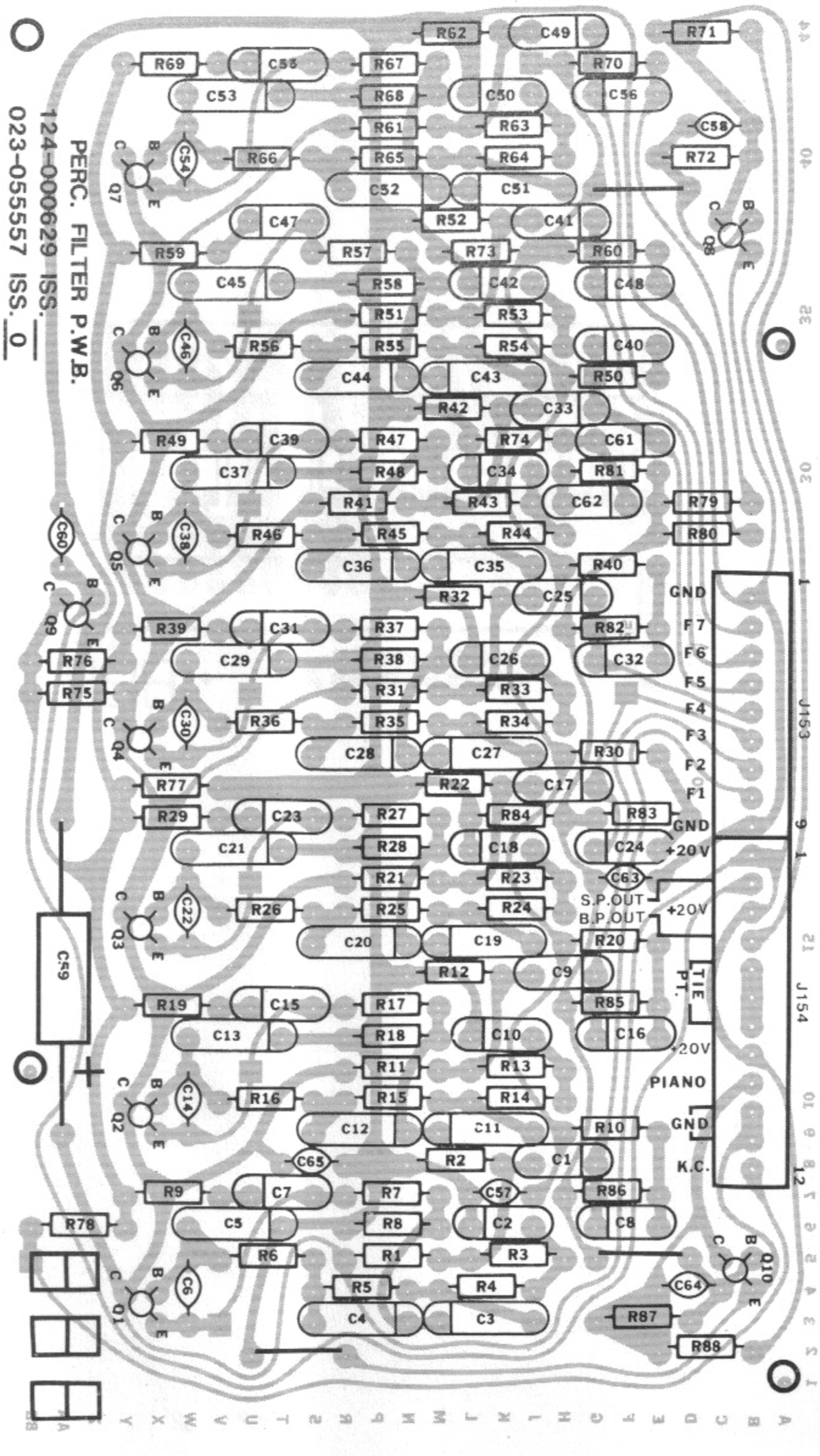
124-000611





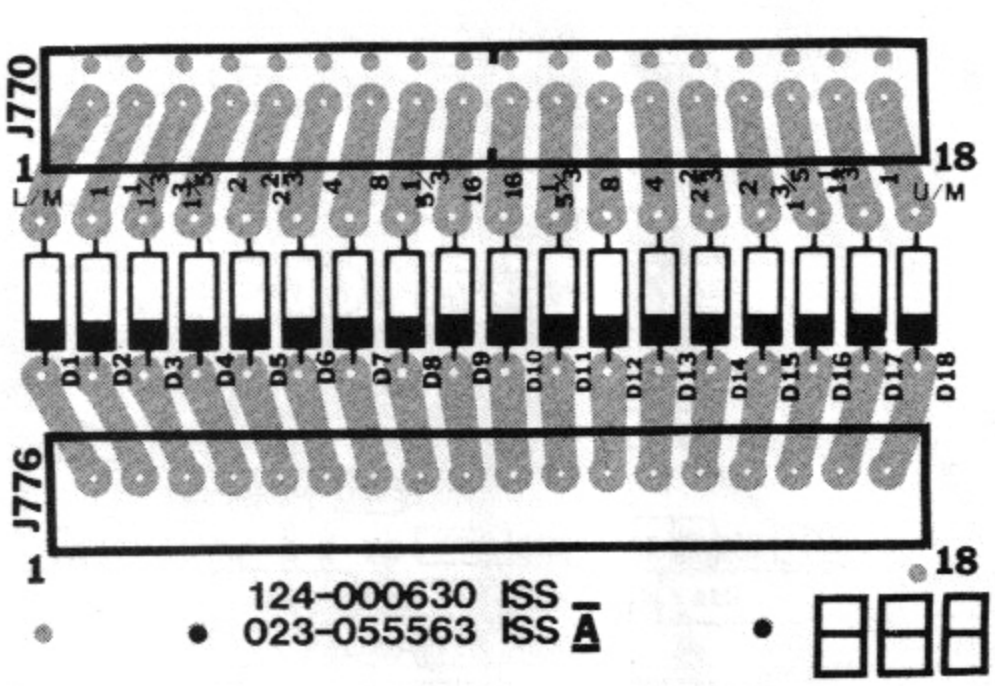
POWER SUPPLY PWB
SCHEMATIC
COPPER & LEGEND
124-000618


J153
-8
C1
0.056
C8
.068
R1
82K
+20V
R3
39K
R4
75K
2%
R5
75K
2%
R6
75K
2%
R2
120K
C2
0.068
C3
0.012
C4
0.012
C5
1500PF
C6
100PF
Q1
C7
0.047
R9
39K
2%
R8
22K
R7
220
R10
75K
R86
75K
+20V
R71
4700
BRIGHT
PERC.
MIXER
C58
100PF
R72
150K
P154
-4
Q8
R73
12K
C57
220pf
J154
8
+20V
C65
.05
C59
470
35
1
3
R11
82K
+20V
Q2
-7
C9
0.068
R13
18K
2%
R14
51K
2%
R15
51K
2%
R16
51K
2%
C16
.0082
R85
150K
R20
150K
R12
120K
C10
0.082
C11
0.012
C12
0.012
C13
1500PF
C14
100PF
C15
0.012
R19
82K
R18
22K
R17
220
SYNTHESIS
PERC.
MIXER
+20V
R75
4700
P154
-2
R21
82K
+20V
Q3
-6
C17
0.047
R23
18K
R24
39K
R25
39K
R26
39K
C24
.0068
R83
150K
R30
150K
R22
120K
C18
0.056
C19
0.01
C20
0.01
C21
1200PF
C22
100PF
C23
0.0047
R29
82K
R28
22K
R27
220
R76
390K
Q9
R77
33K
C60
220PF
J154
-5
-6
-7
PIANO MIXER
+20V
R31
82K
+20V
Q4
-5
C25
0.027
R33
12K
2%
R34
27K
2%
R35
27K
2%
R36
27K
2%
C32
0033
R82
150K
R40
R32
120K
C26
0.039
C27
0.0068
C28
0.0068
C29
820PF
C30
100PF
C31
0.0039
R39
82K
R38
22K
R37
220
C64
100pf
R83
4700
J154
-9
R87
150K
Q10
R84
12K
C63
220pf
R41
82K
+20V
Q5
-4
C33
0.015
R43
12K
2%
R44
24K
2%
R45
24K
2%
R46
24K
2%
C40
.001
C61
.047
R50
150K
R42
120K
C34
0.022
C35
0.0047
C36
0.0047
C37
560PF
C38
100PF
C39
0.0022
R49
82K
R48
22K
R47
220
J153
-1
-9
AUDIO
GROUND
R81
47K
C62
.0033
R74
22K
R51
82K
+20V
Q6
-3
C41
0.01
R53
10K
2%
R54
18K
2%
R55
18K
2%
R56
18K
2%
C48
.001
R80
150K
R60
75K
R52
120K
C42
0.018
C43
0.0047
C44
0.0047
C45
560PF
C46
100PF
C47
0.001
R59
82K
R58
22K
R57
220
SYNTH. PERC.
FILTERS
124-000629
Q1 THRU Q9: 001-021260
R61
82K
+20V
Q7
-2
C49
0.0068
R63
10K
2%
R64
22K
2%
R65
22K
2%
R66
22K
2%
C56
.001
R79
75K
R70
75K
R62
120K
C50
0.0082
C51
1500
PF
C52
1500
PF
C53
180PF
C54
100PF
C55
0.0015
R69
39K
2%
R78
470K
R68
22K
R67
220
J154
10
11
KEY CLICK
AUDIO IN
-12
SYN PERC FILTER PWB
SCHEMATIC
124-000629
5-32
340000



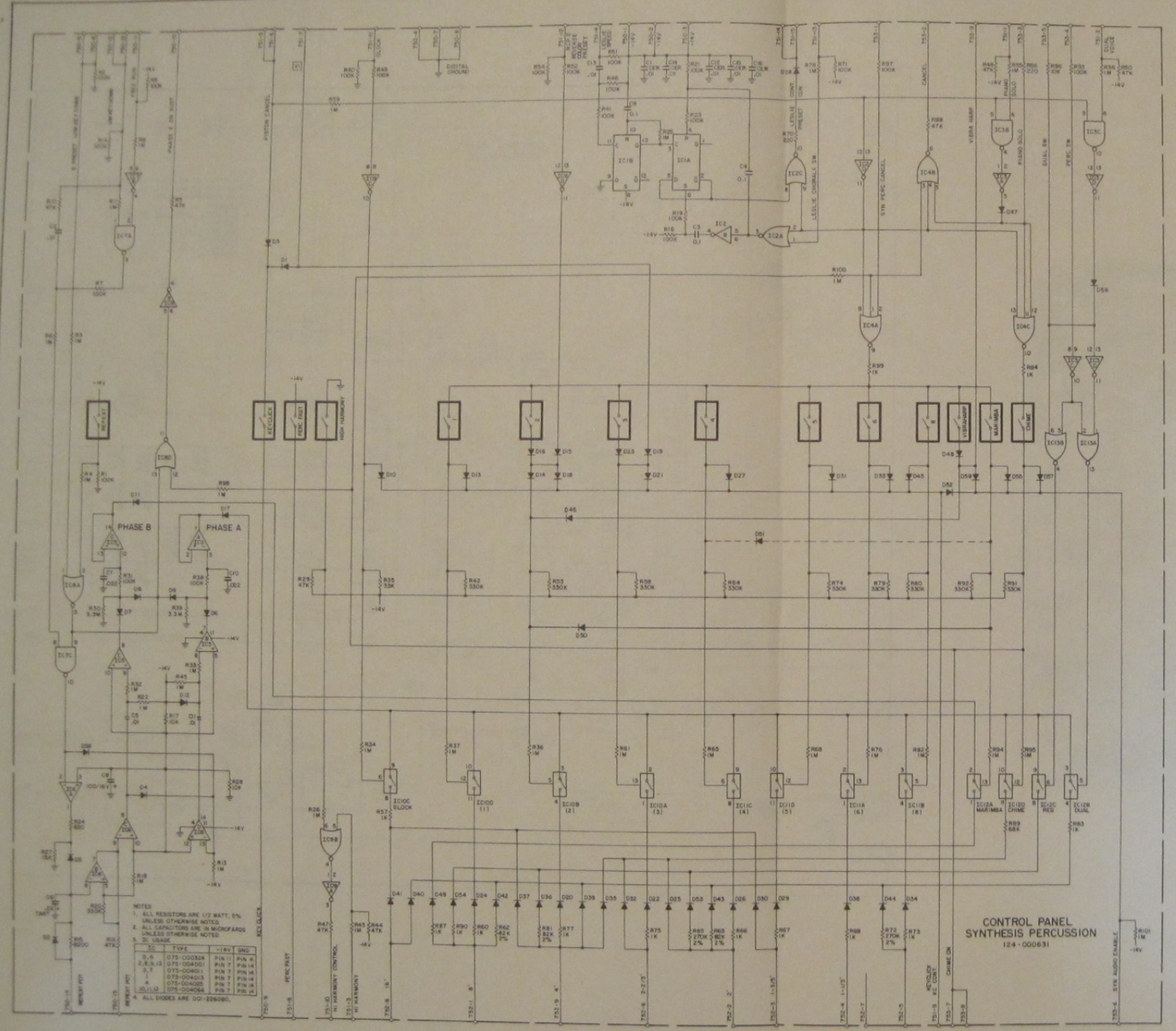
SYN PERC FILTER PWB
COPPER & LEGEND

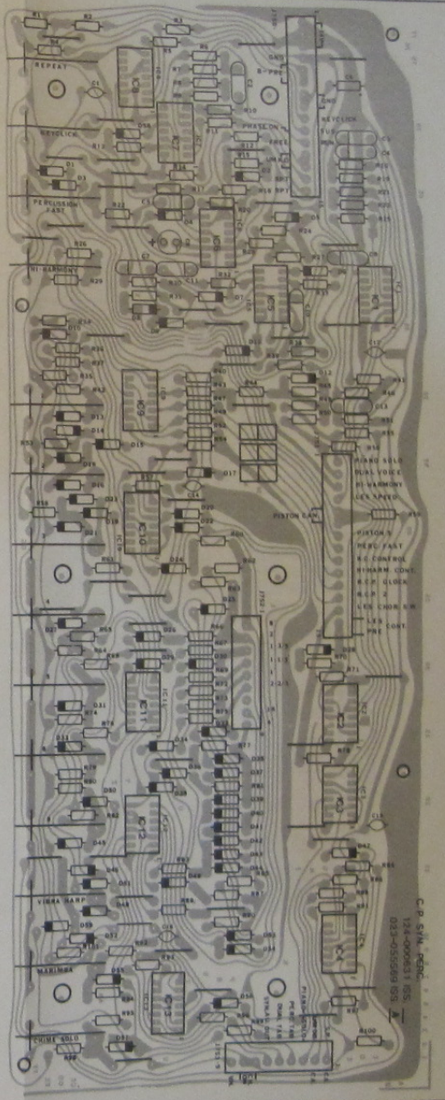
124-000629



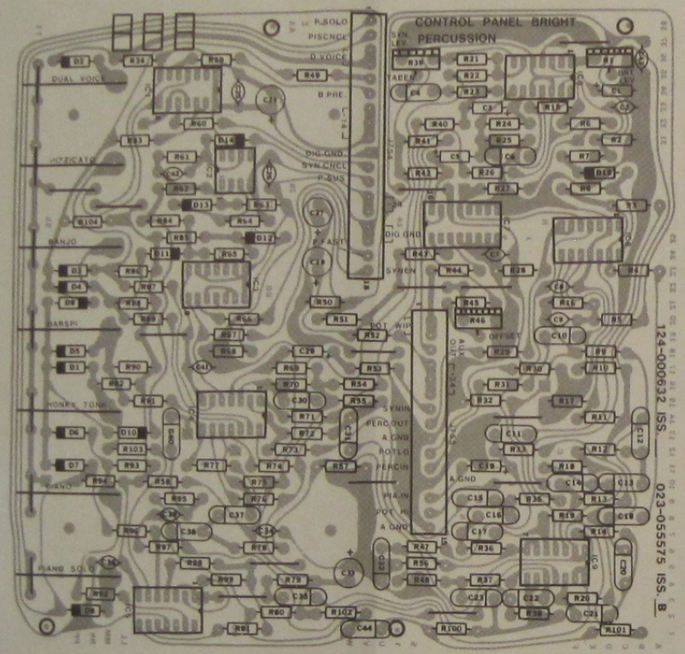
PRESET DIODE PWB
COPPER & LEGEND

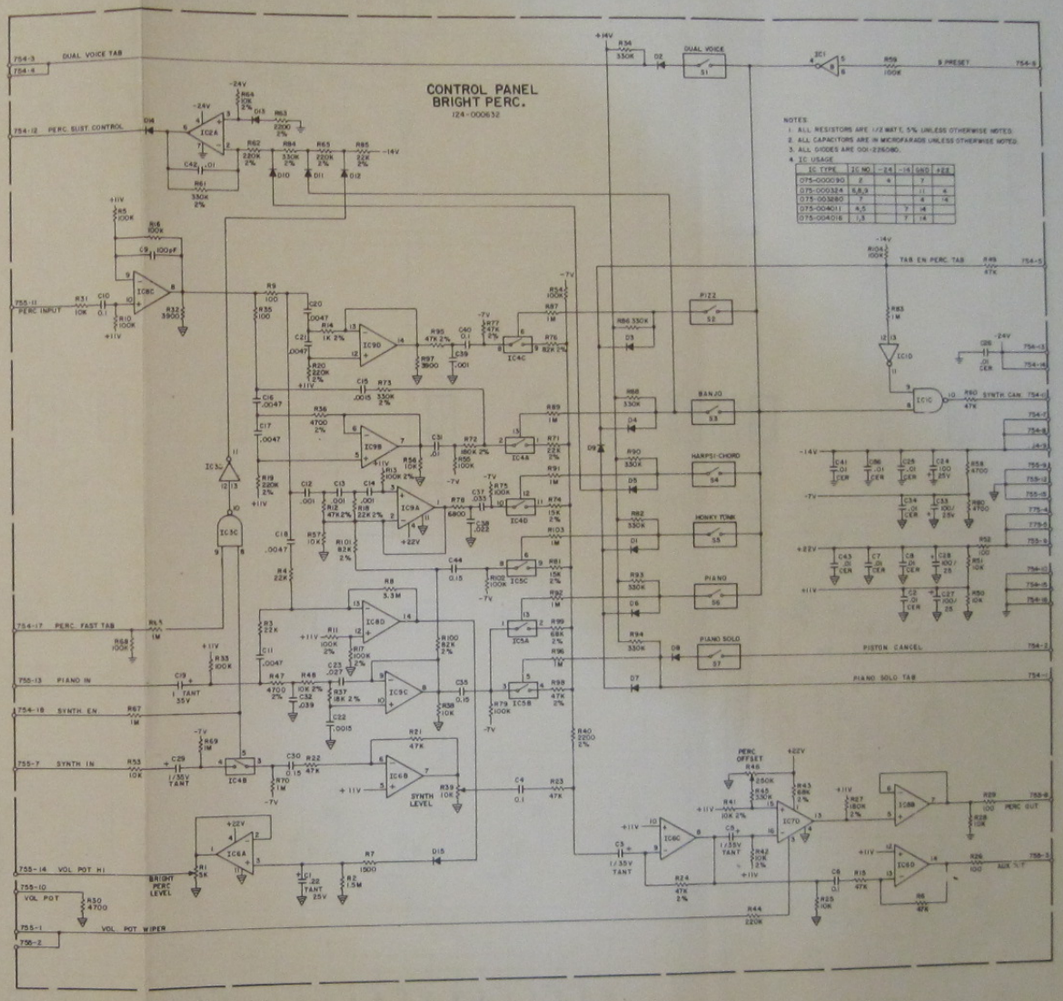
124-000630



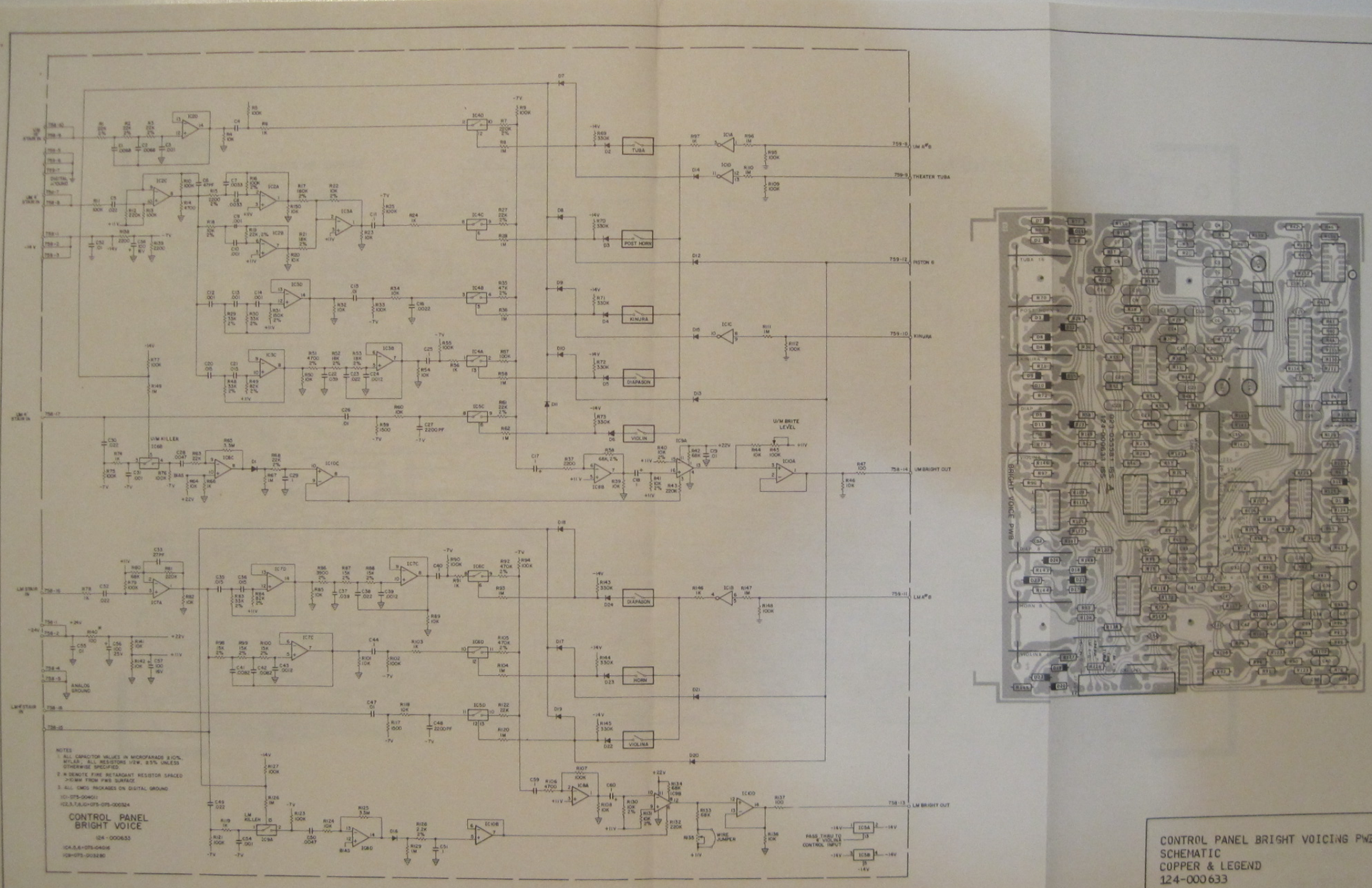


CONTROL PANEL SYN PERC PWB
SCHEMATIC
CUPPER & LEGEND
124-000631

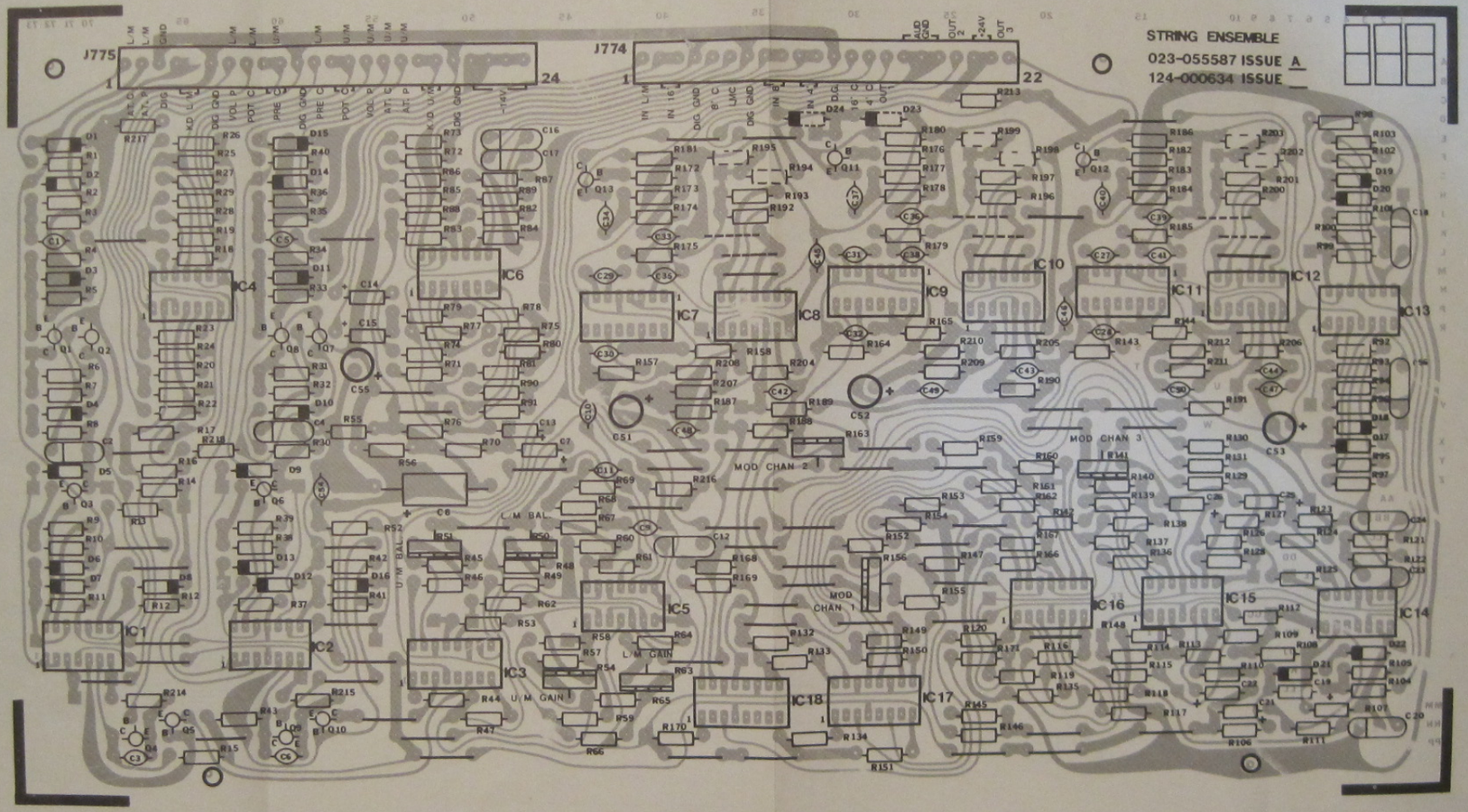




CONTROL PANEL BRIGHT PERC PWB
SCHEMATIC
COPPER & LEGEND
124-000632

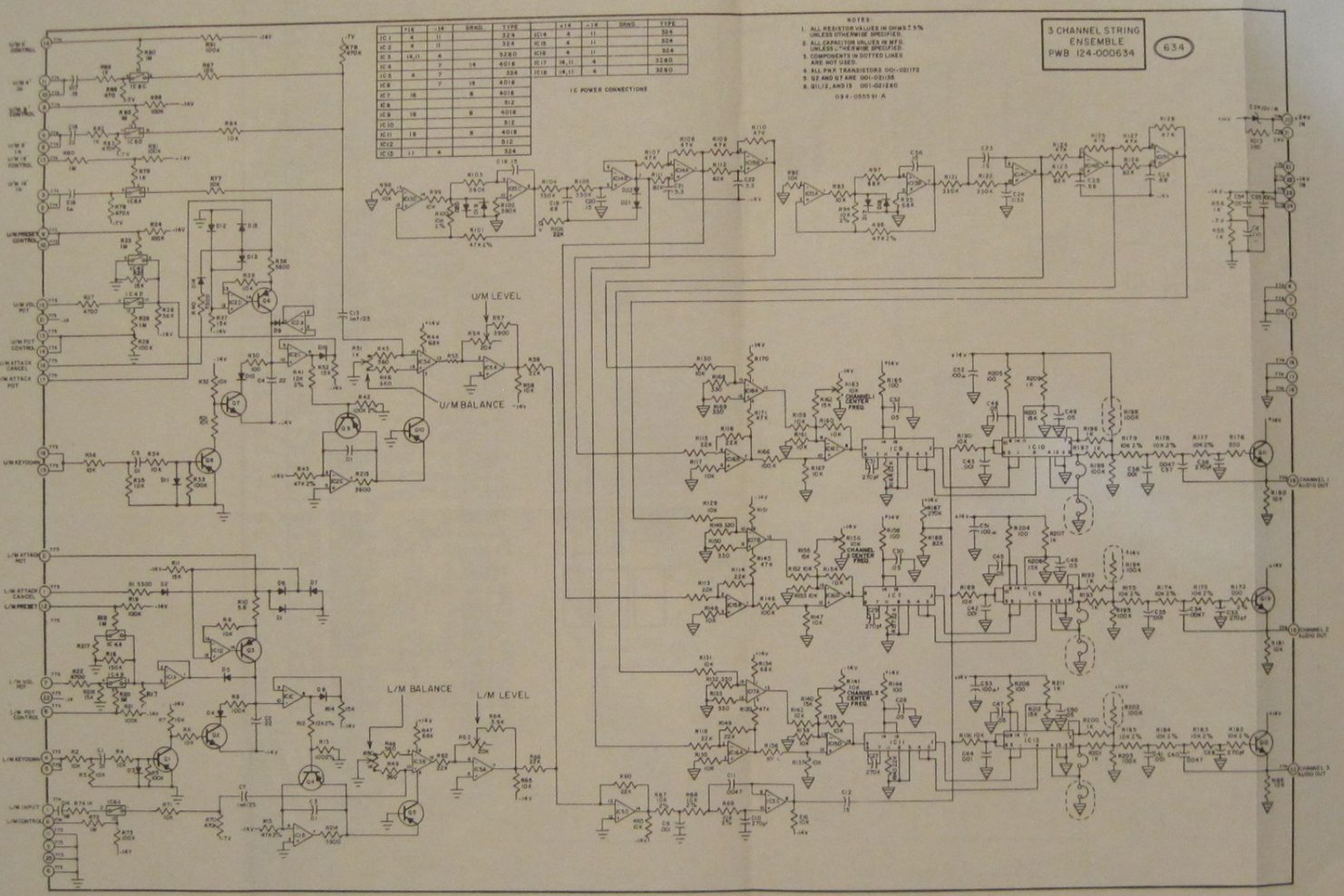


CONTROL PANEL BRIGHT VOICING PWB
SCHEMATIC
COPPER & LEGEND
124-000633



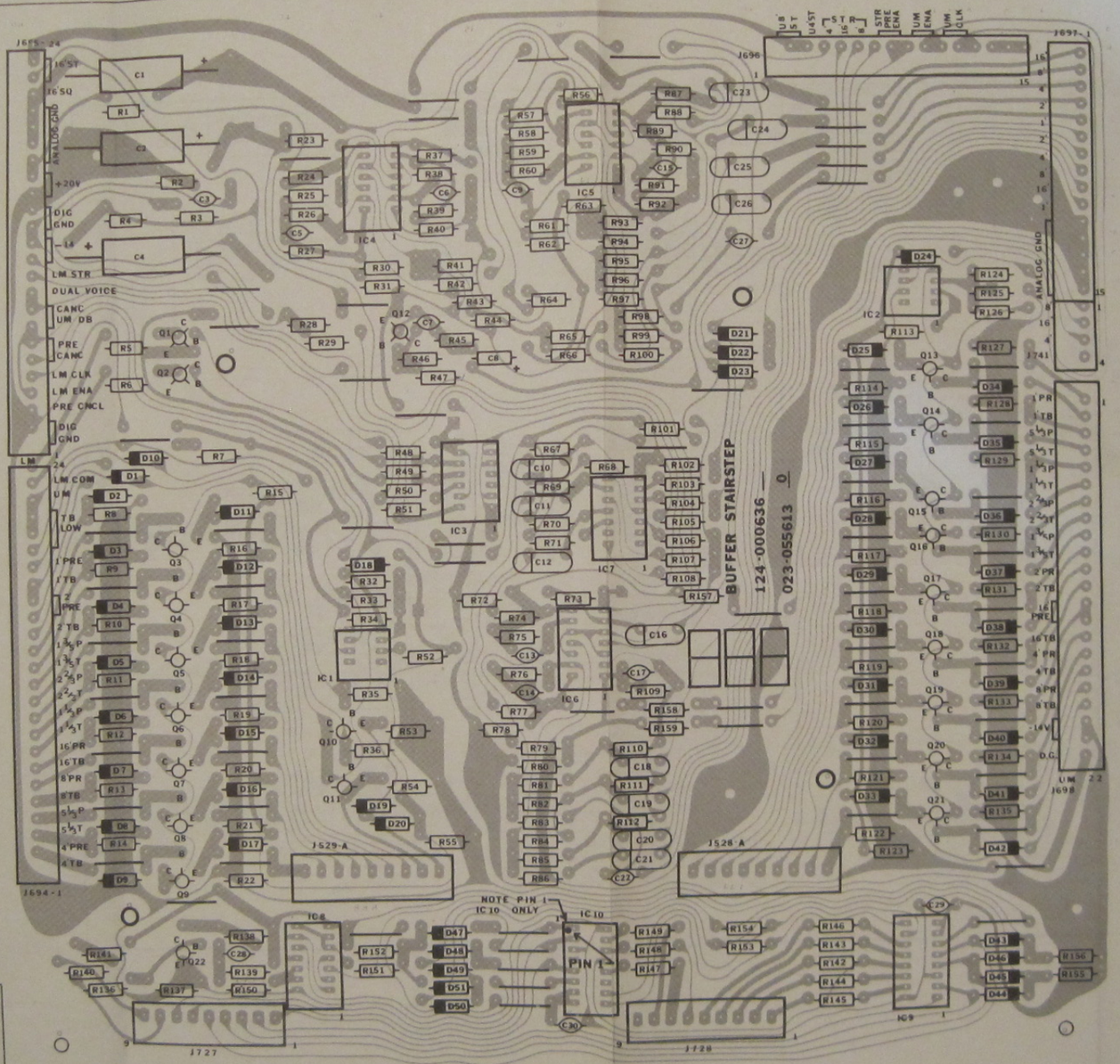
STRING ENSEMBLE PWB
COPPER & LEGEND

124-000634



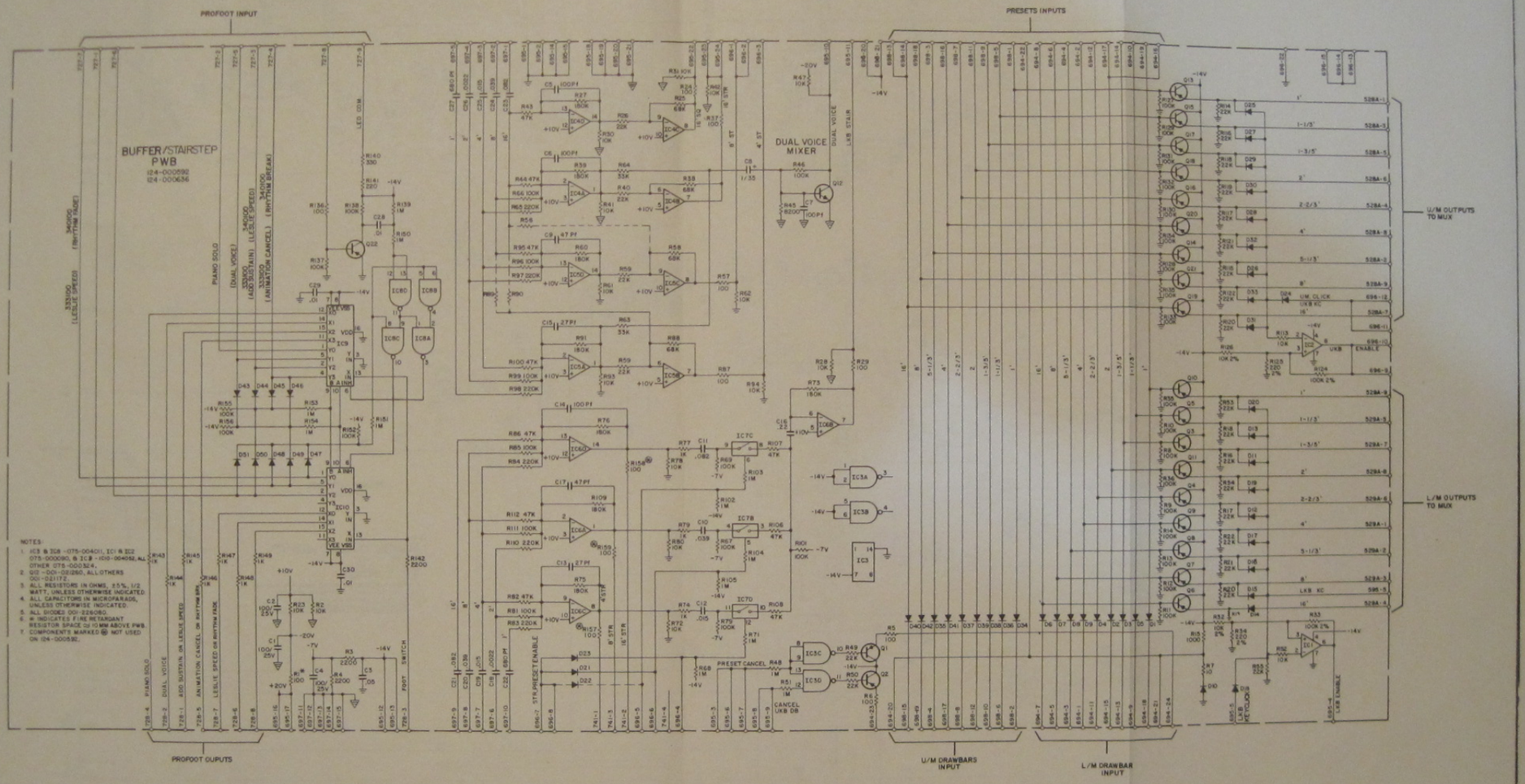
STRING ENSEMBLE PWB
SCHEMATIC

124-000634



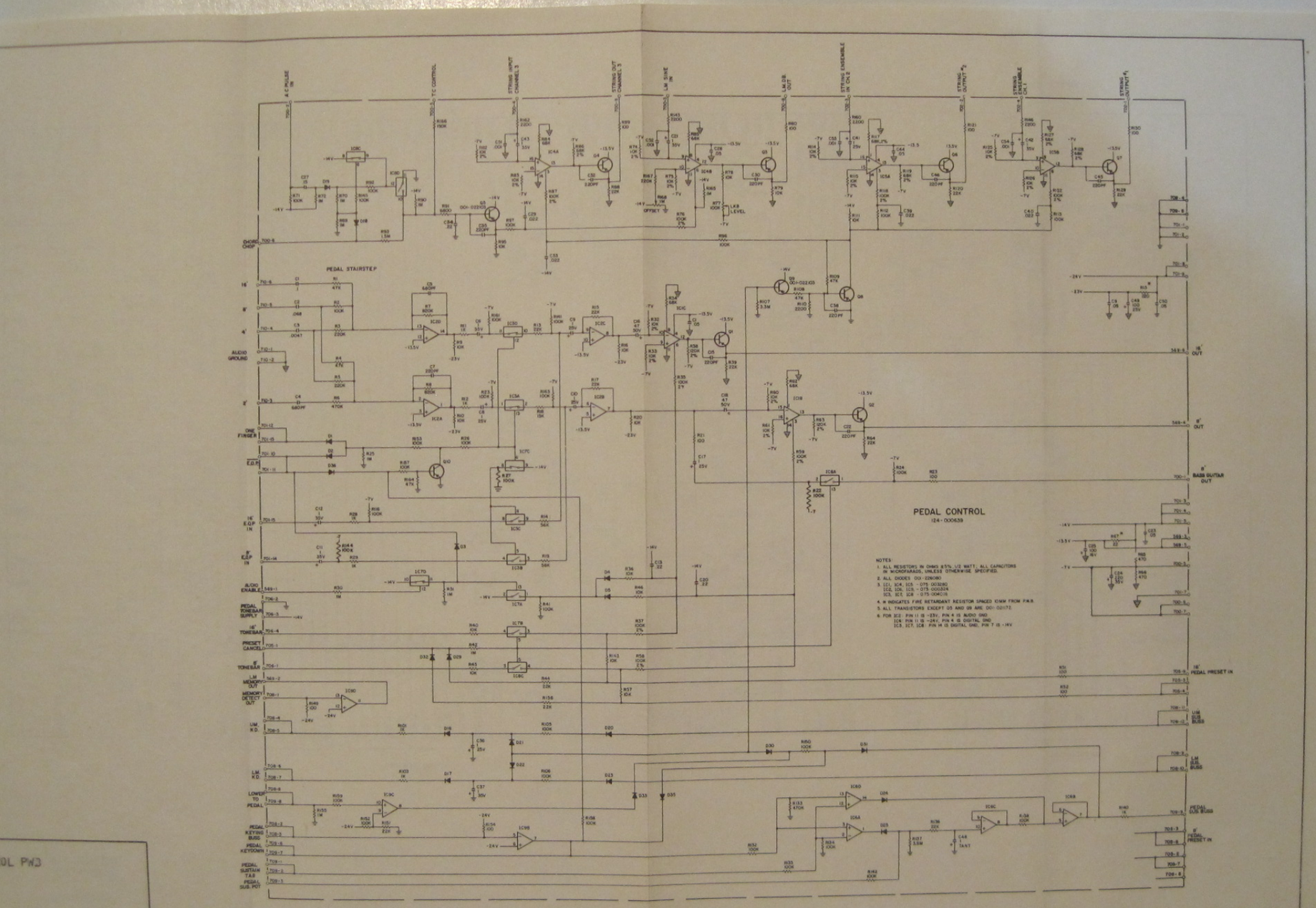
BUFFER STAIRSTEP PWB
COPPER & LEGEND

124-000636



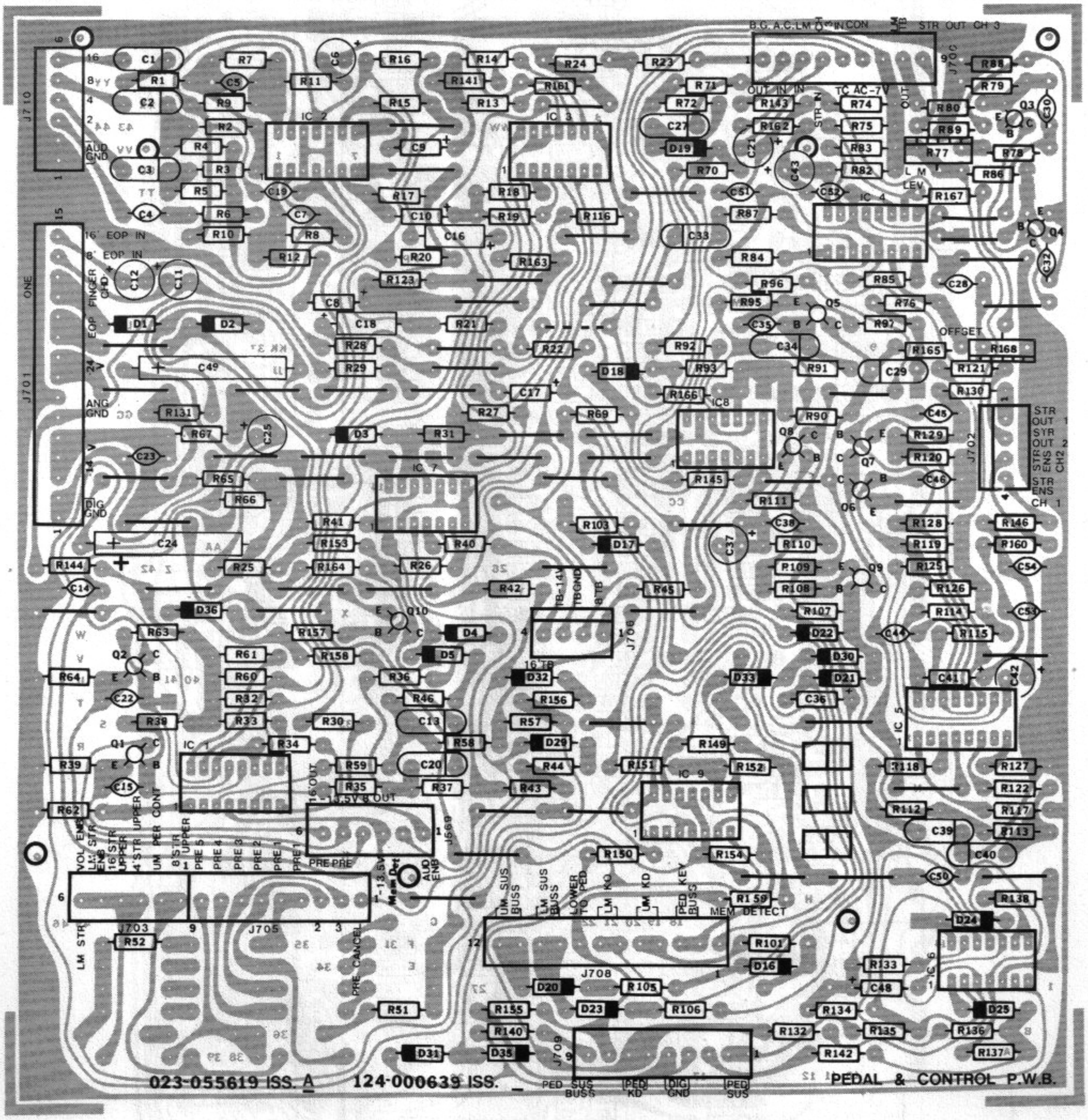
BUFFER STAIRSTEP PWB
SCHEMATIC

124-000636



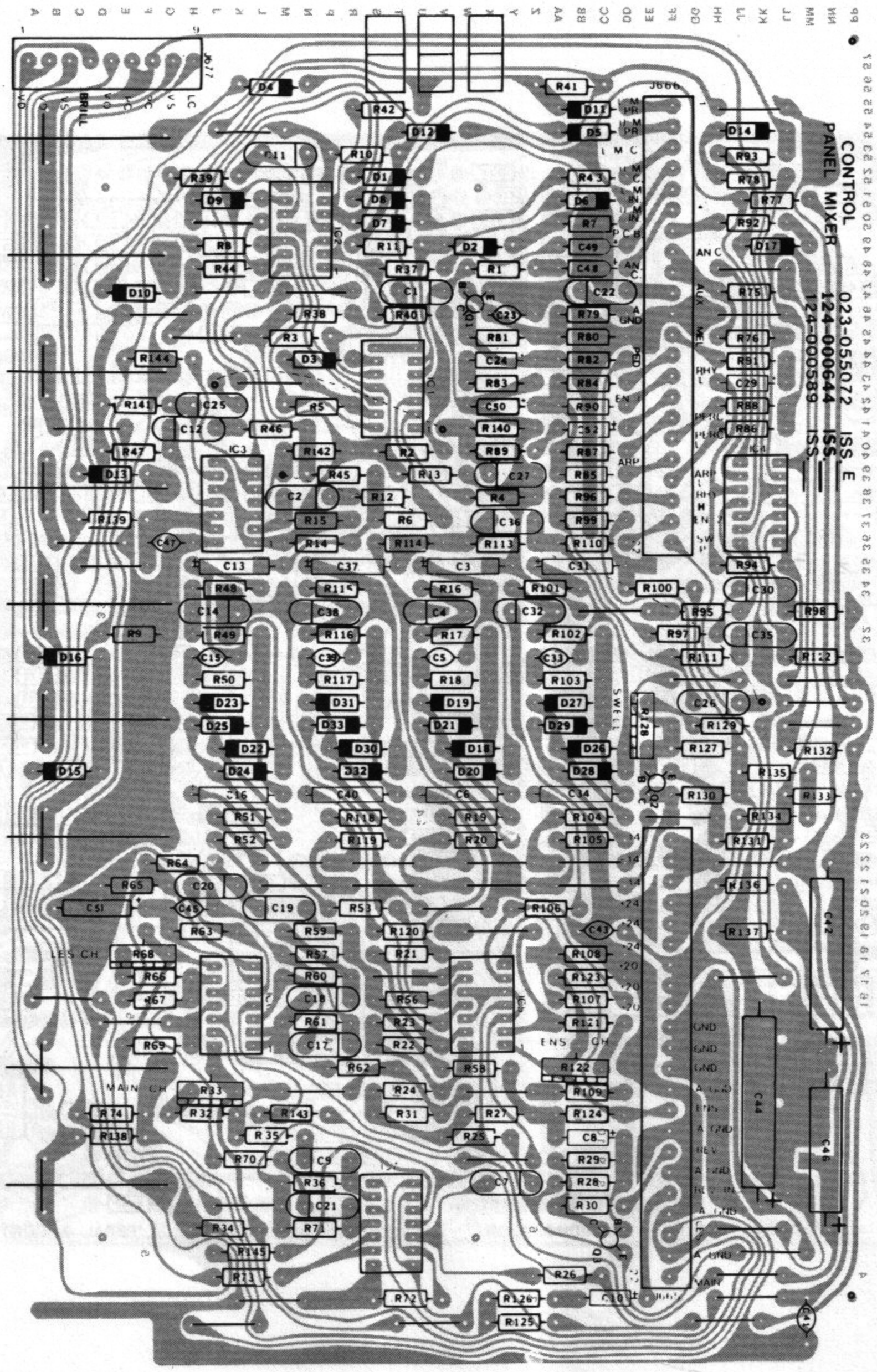
PEDAL CONTROL PW3
SCHEMATIC

124-000639



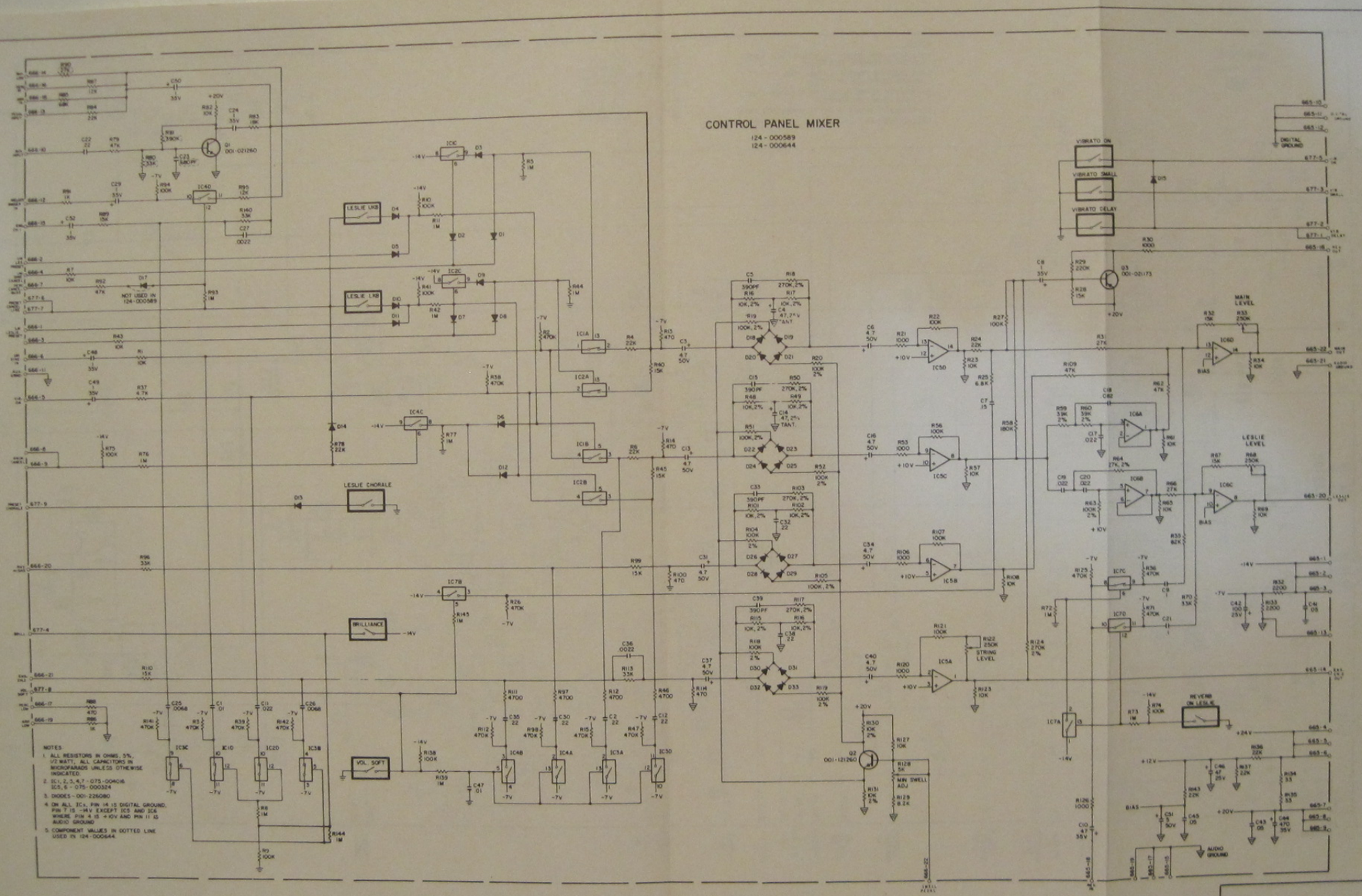
PEDAL CONTROL PWB
COPPER & LEGEND

124-000639



CONTROL PANEL MIXER PWB
COPPER & LEGEND

124-000644



CONTROL PANEL MIXER PWB
SCHEMATIC

124-000644

VIBRATO

124-000645

645

NOTES:

1. ALL CAPACITOR VALUES IN MICROFARADS, ±10% UNLESS OTHERWISE SPECIFIED.
2. ALL RESISTOR VALUES IN OHMS ±5% UNLESS OTHERWISE SPECIFIED.
3. * DENOTES FLAME RETARDANT RESISTOR SPACED 10MM FROM PWB SURFACE.
4. COMPONENTS SHOWN IN DOTTED LINES NOT USED.
5. ALL DIODES ARE 001-026080 EXCEPT D6 = 001-023028

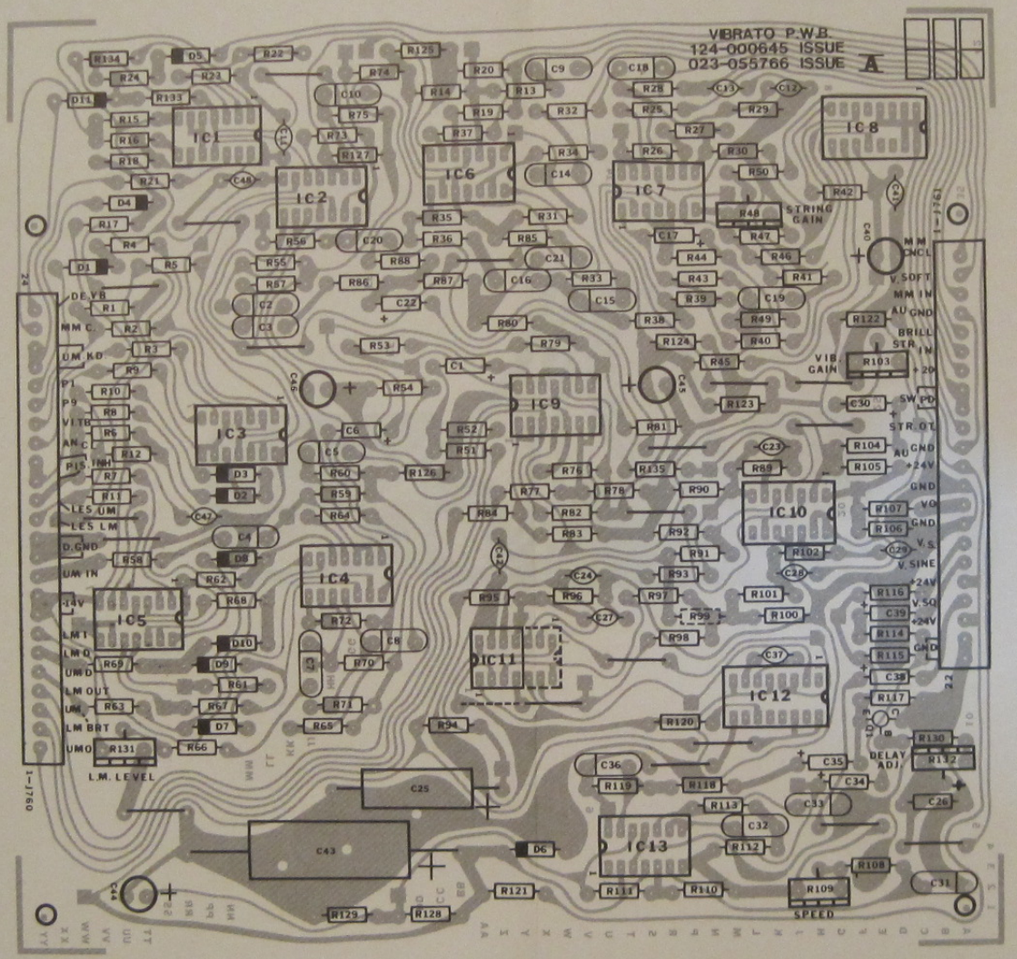
IC 1,3	075-004011
IC 2,4,6	075-004016
IC 7,9,10,13	075-000324
IC 5	075-004001
IC 8	075-003280
IC 11	075-000512
IC 12	075-004046
Q1	001-022100

MM CANCEL 761-1
MM AUDIO IN 761-3
LM DB IN 760-7, 761-4
LM DISABLE 760-6
UM DB IN 760-10
UM DISABLE 760-5
LM BRT IN 760-2
UM BRT IN 760-3
+24V 761-12, 761-18, 761-20
-14V 760-8, 760-9
ANALOG GROUND 761-11, 761-13, 761-15, 761-21
VIBRATO GROUND 761-22
DIGITAL GROUND 760-11, 760-12
ANIMATION CANCEL 760-17
PISTON 9 760-19
VIBRATO TAB 760-18
LESLIE SWITCH UM 760-14
LESLIE SWITCH LM 760-13
MM DELAY VIB 760-23
PISTON 1 760-20
PISTON INH. 760-15, 760-16
BRILL. IN 761-5
STRING IN 761-6
VOL. SOFT +20 IN 761-2, 761-7
SWELL PEDAL 761-8, 761-9
DELAY ON 760-24
LM NON VIB OUT 760-4
VIB SMALL 761-16
MM SINE OUT 761-17
UM NON VIB OUT 760-1
UM KD. IN 760-21, 760-22
KEYCLICK OUT 761-19
STRING CHANNEL 4 OUTPUT 761-10
VIB AUDIO OUT 761-14

VIBRATO PWB SCHEMATIC

124-000645

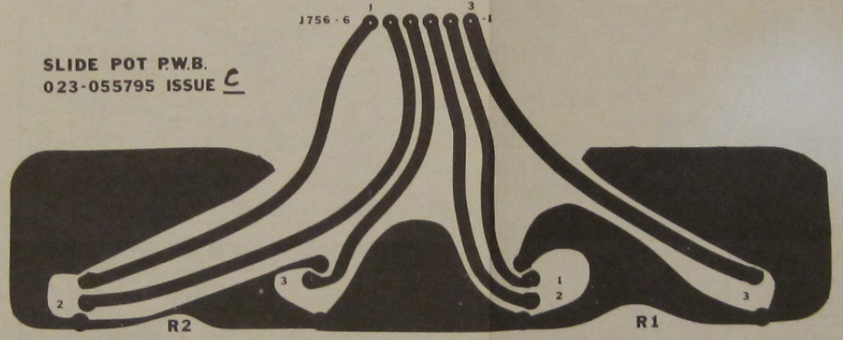
5-46 340000



VIBRATO P.W.B.
COPPER & LEGEND

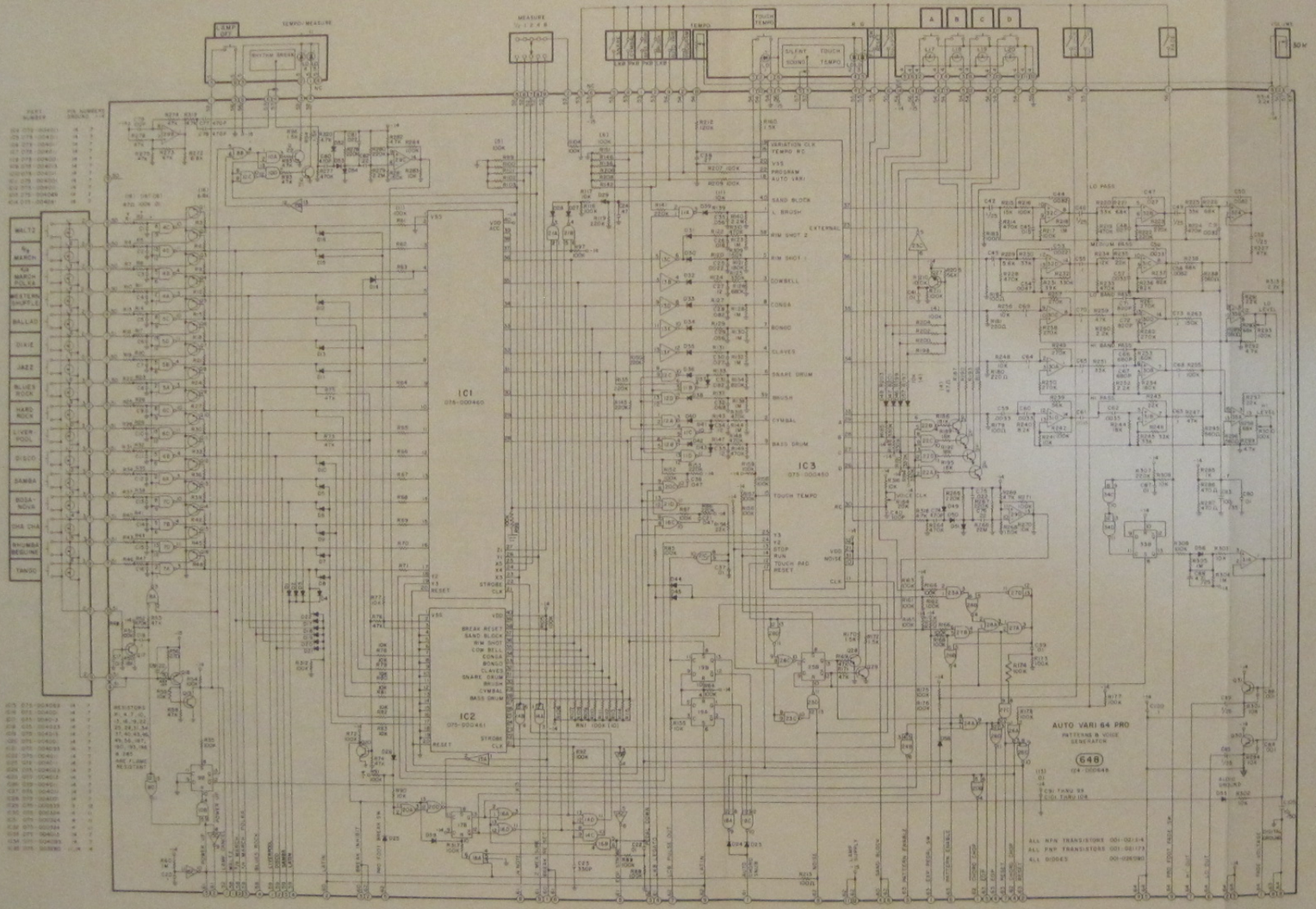
124-000645

SLIDE POT P.W.B.
023-055795 ISSUE C



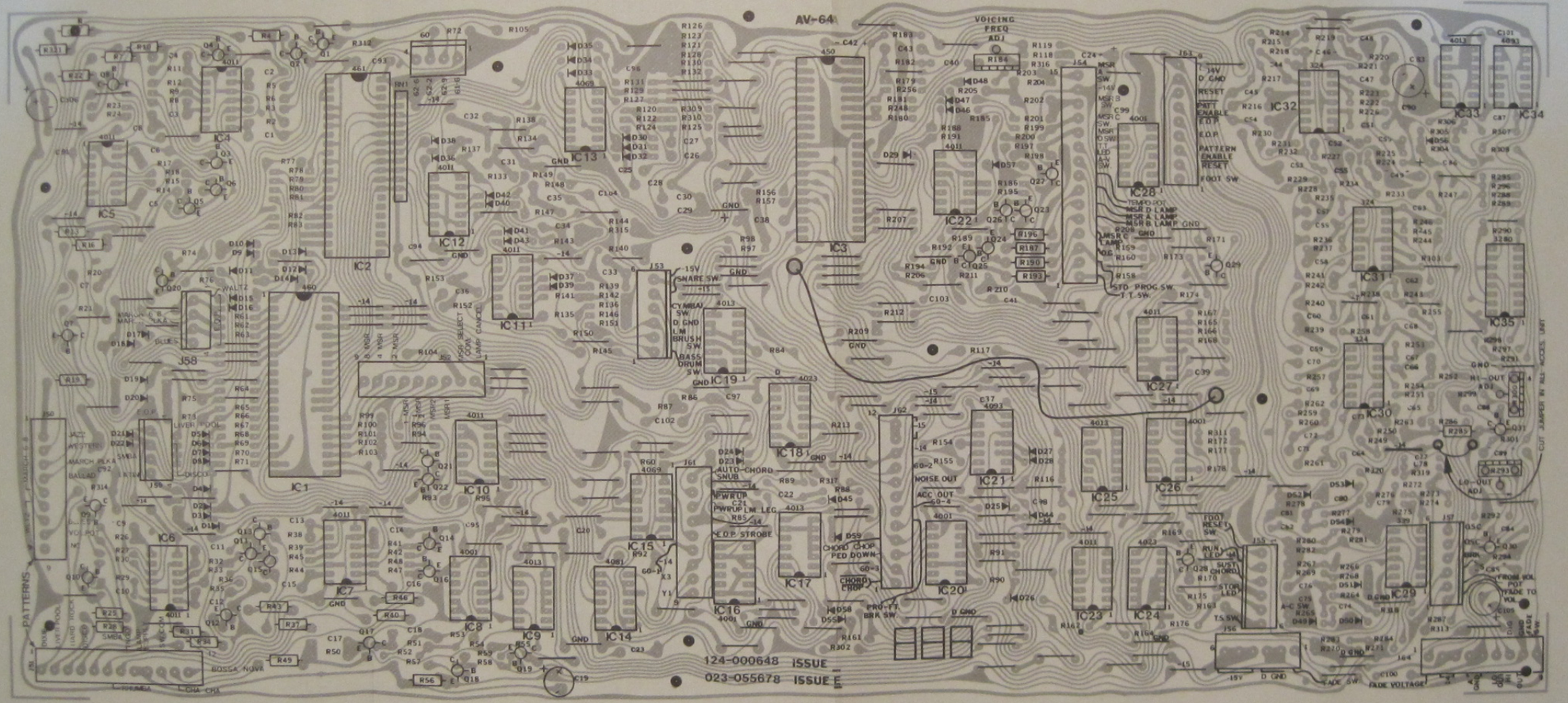
SLIDE POT P.W.B
COPPER PATTERN
024-000646
024-000647

5-48 340000



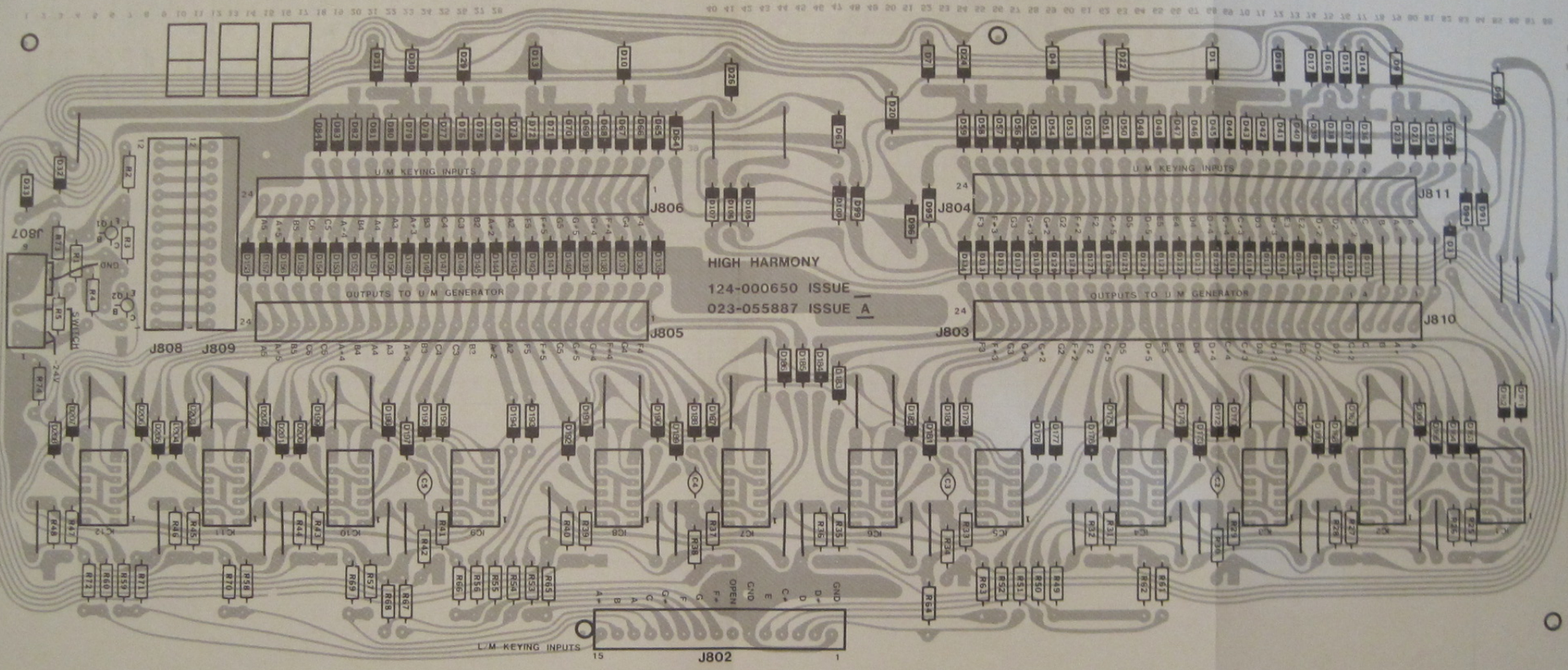
AUTO VARI 64 PW3
SCHEMATIC

124-000648



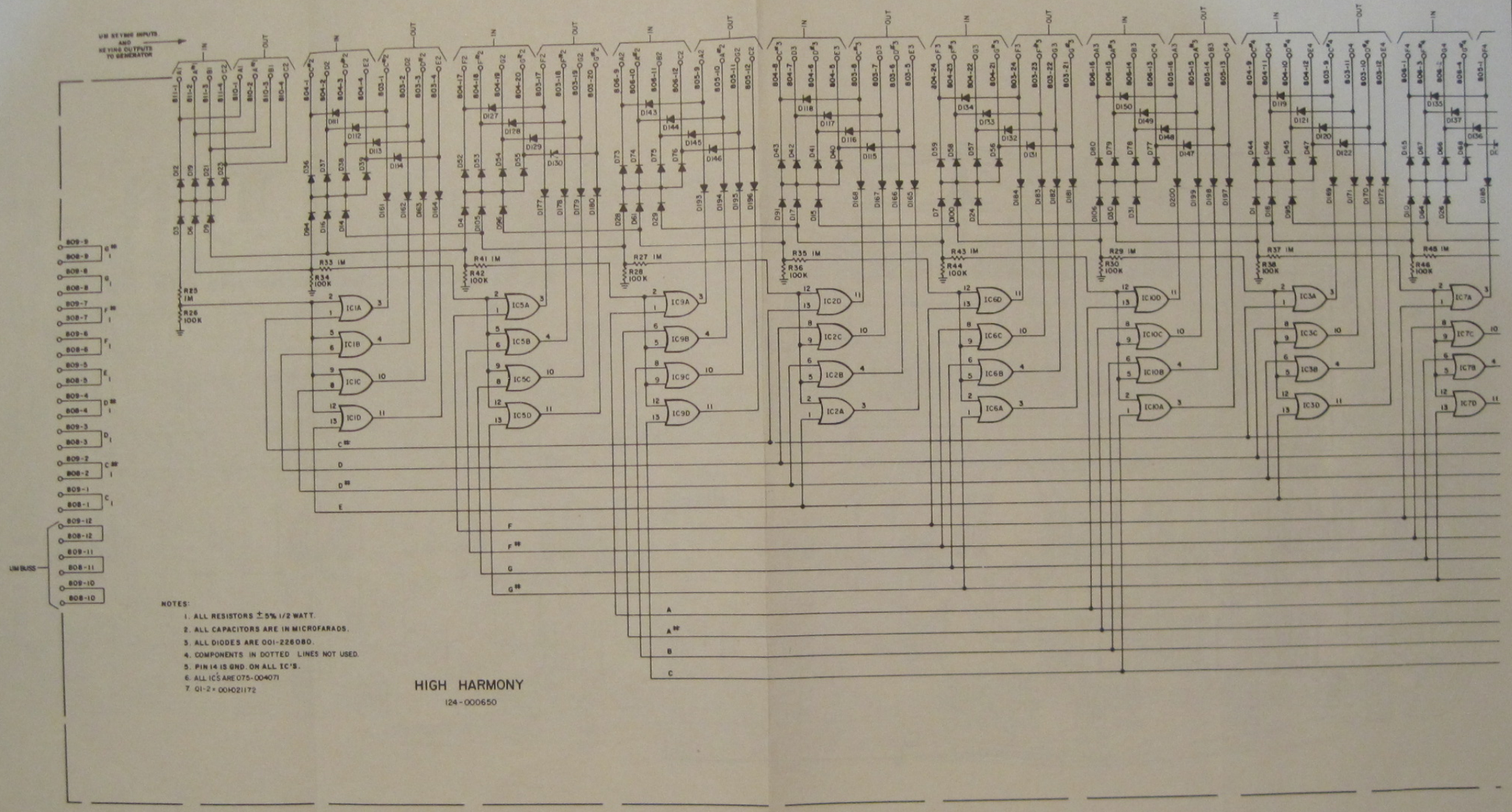
AUTO VARI 64 PW3
COPPER & LEGEND

124-000648



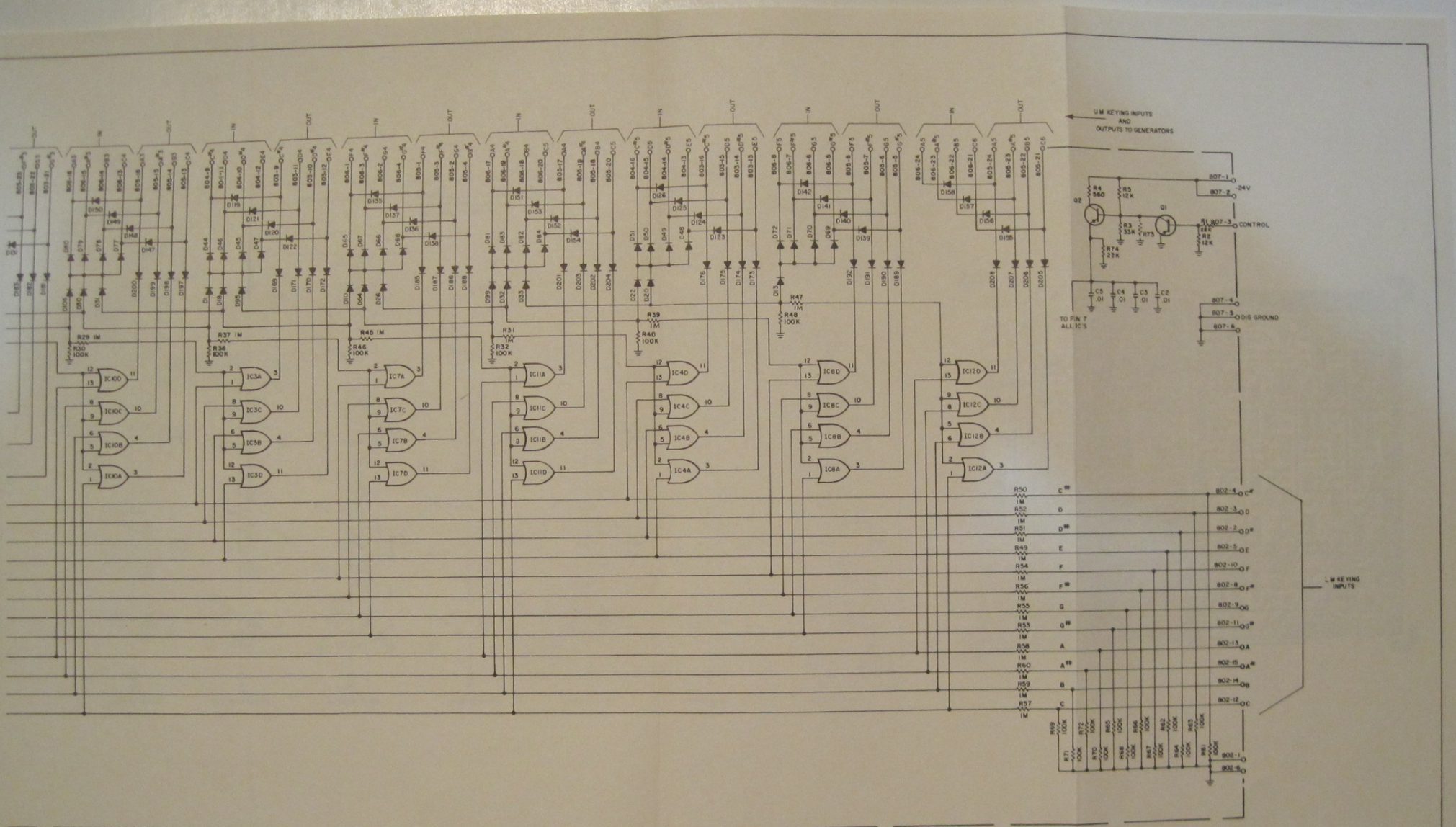
HIGH HARMONY PWB
COPPER & LEGEND

124-000 650



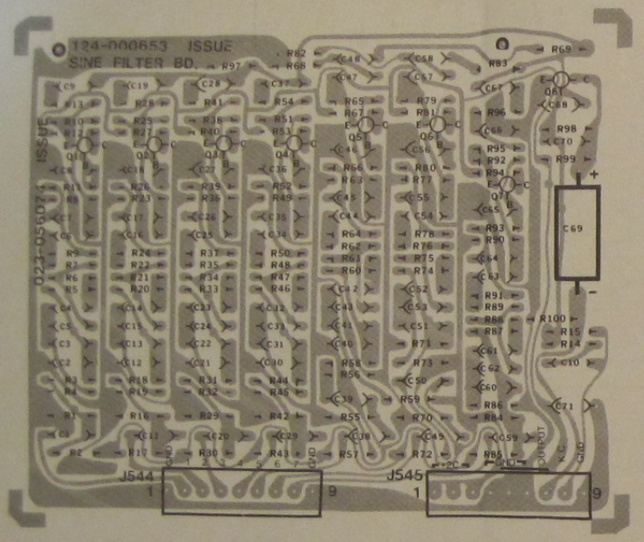
HIGH HARMONY PWB
SCHEMATIC

124-000650

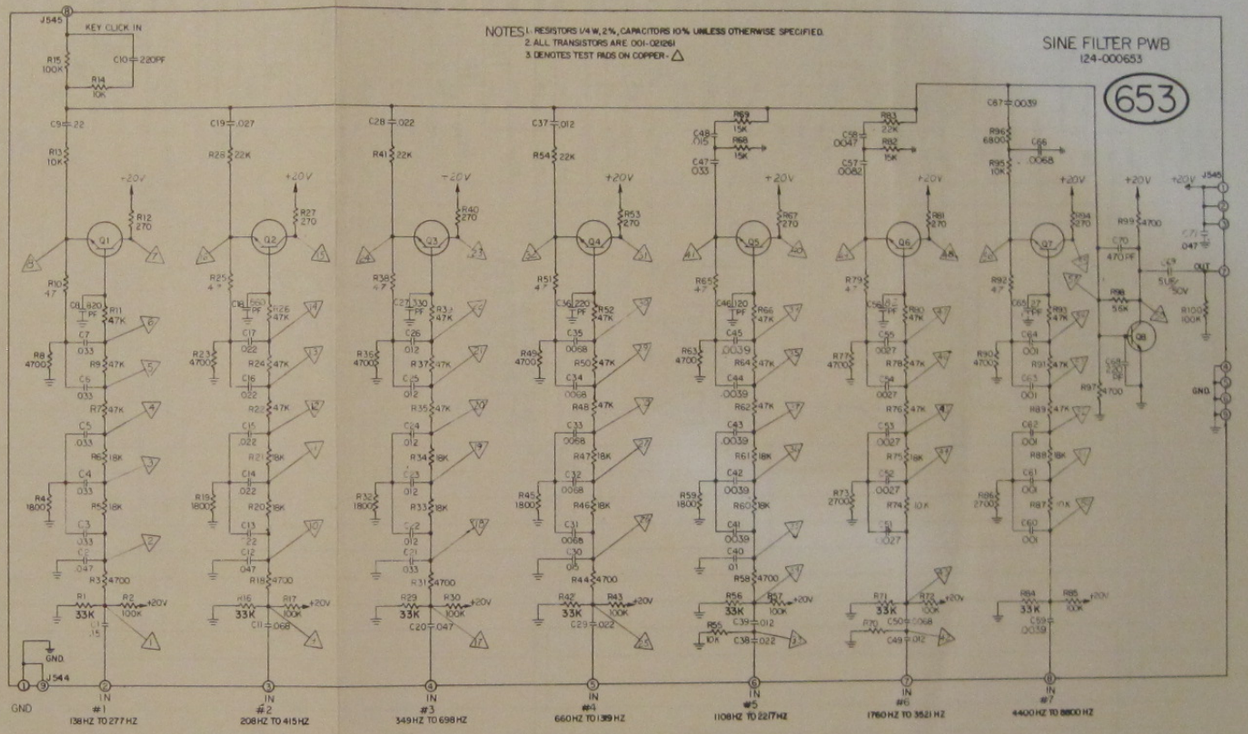


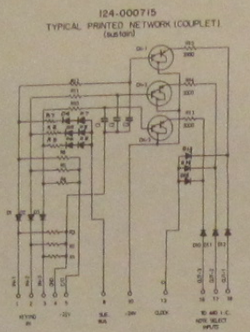
HIGH HARMONY PWB
SCHEMATIC

124-000650



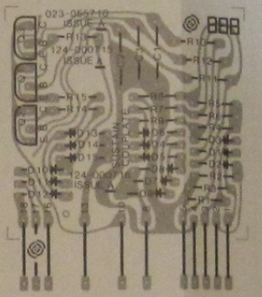
SINE FILTER PWB
SCHEMATIC
COPPER & LEGEND
124-000653

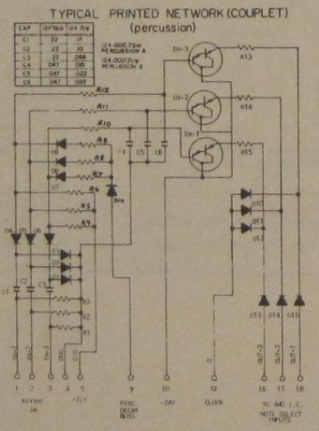




124-000715 SUSTAIN COUPLATE PWB
(REPLACES 124-000605 OR 054-054315 COUPLATES)

Q1-Q3	TRANSISTOR	001-022103
D1-D15	SIG DIODE	001-226080
C1-C3	CAP .22 MFD	438-210292



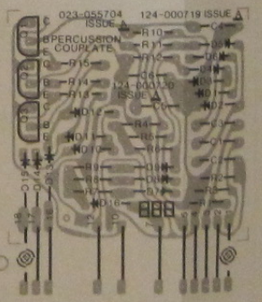


124-000719 PERC B COUPLATE PWB
(REPALCES 124-000607 OR 058-054319 COUPLATES)

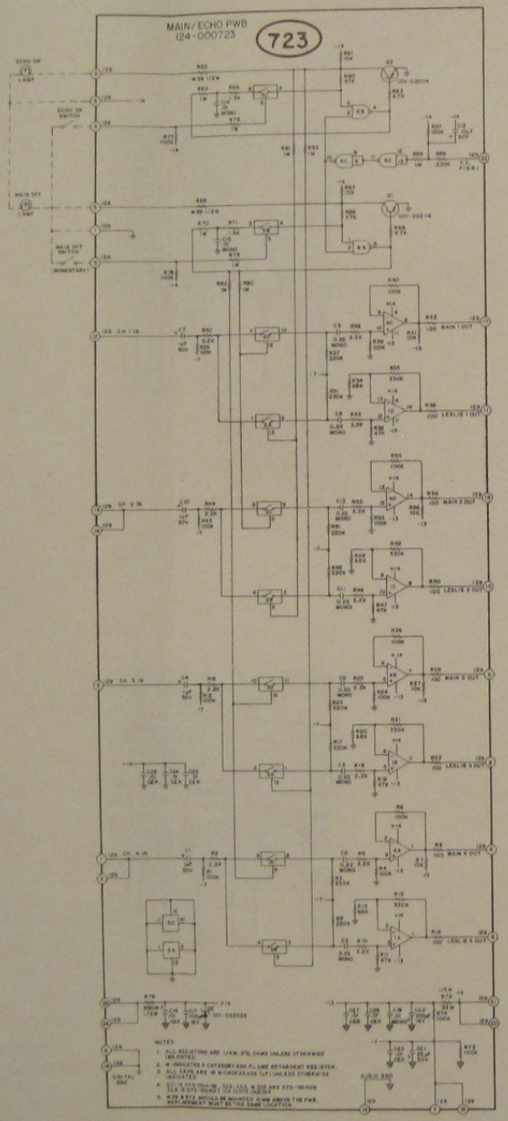
Q1-Q3	TRANSISTOR	001-022103
D1-D16	SIG DIODE	001-226080
C1	CAP .15 MFD	438-210272
C2	CAP .10 MFD	438-210252
C3	CAP .068 MFD	438-210232
C4	CAP .015 MFD	438-210152
C5	CAP .022 MFD	438-210172
C6	CAP .033 MFD	438-210192

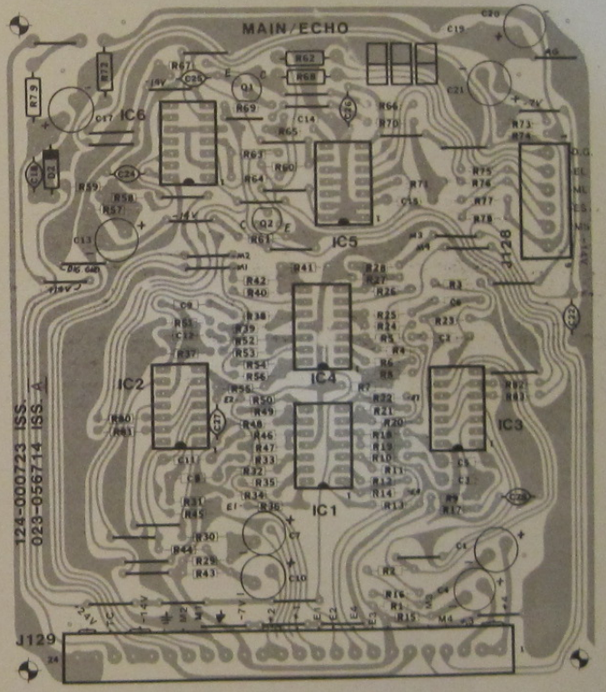
124-000720 PERC A COUPLATE PWB
(REPALCES 114-000606 OR 058-054320 COUPLATES)

Q1-Q3	TRANSISTOR	001-022103
D1-D16	SIG DIODE	001-226080
C1-C3	CAP .22 MFD	438-210292
C4-C6	CAP .047 MFD	438-210212



SUSTAIN KEYER COUPLATE PWB
PERC KEYER COUPLATE PWB
SCHEMATICS
COPPERS & LEGENDS
124-000715,719,720





MAIN/ECHO PWB
SCHEMATIC
COPPER & LEGEND
124-000723

28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

AUTO VARI 64 "PRO"
AV64

KEY CLICK
124-000523
523

CONTROL PANEL MIXER
124-000
644

522
REVERB AMPLIFIER
124-000822

SHOWN AT MIN. VOLUME MIN. LIGHT
0100

MAIN AMPLIFIER
169M
LESLIE AMPLIFIER
169L
STRING AMPLIFIER
487
STRING AMPLIFIER
487

SINE FILTER UKB
124-000519
518
SYN PERC
124-000523
629
SINE FILTER ULB
124-000518
518
DEMULTIPLEX
124-000821
521

CONTROL PANEL SYNTHESIS PERCUSSION
124-000651
631

CONTROL PANEL BRIGHT PERC.
124-000832
632

CONTROL PANEL BRIGHT VOICE
124-000833
633

POWER SUPPLY
124-000616
618

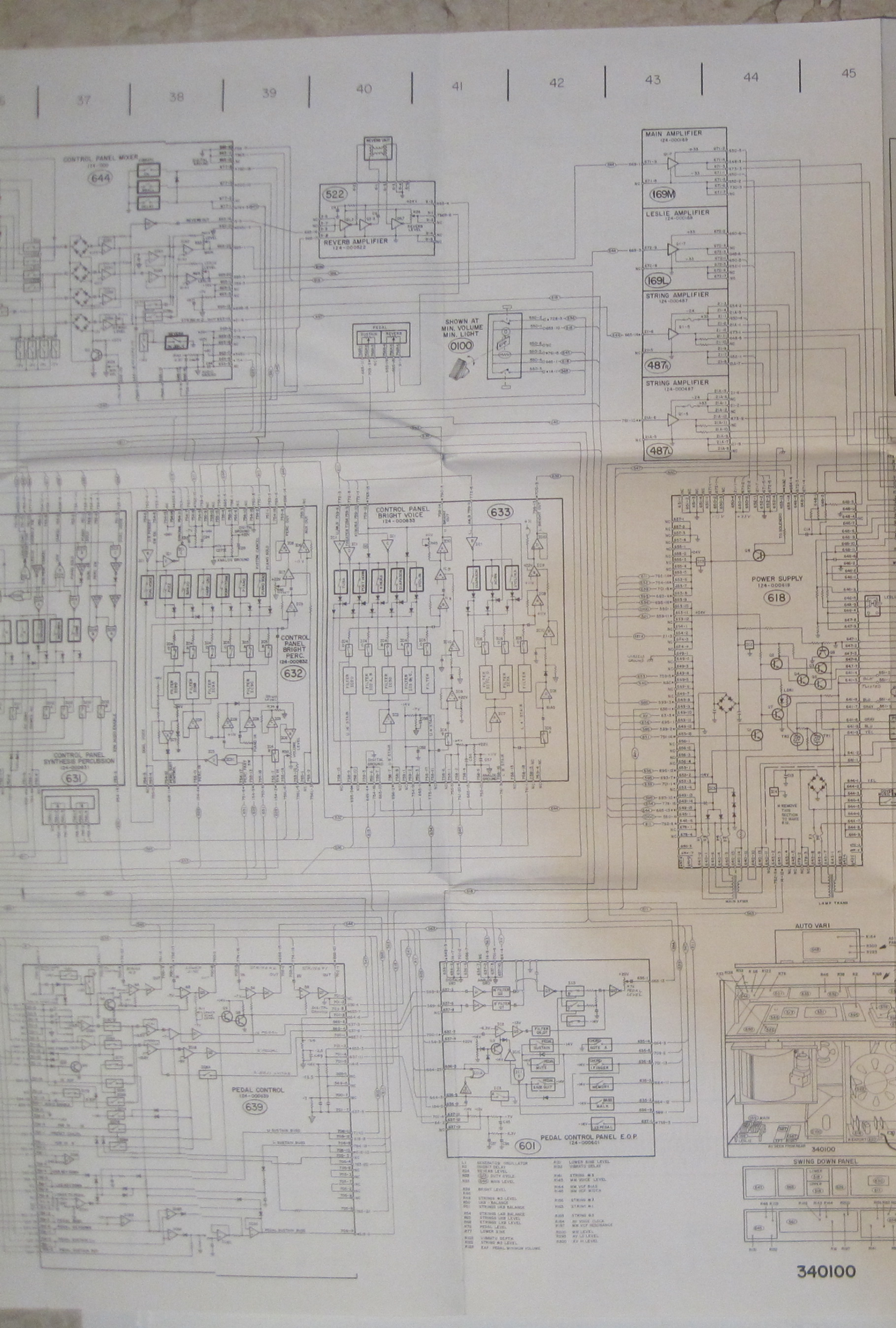
EASE OF PLAY II
124-000847
547

PEDAL CONTROL
124-000652
639

PEDAL CONTROL PANEL E.O.P.
124-000651
601

AUTO VARI
SWING DOWN PANEL

340100



PWB & ASSY LIST

169	AMPLIFIER MAIN
169	AMPLIFIER LESLIE
169	AMPLIFIER STRING RIGHT
169	AMPLIFIER STRING LEFT
169	TRANSFORMER
169	SINE FILTER UPPER
169	SINE FILTER LOWER
169	DEMULTIPLEX
169	AMPLIFIER REVERB
169	KEYLOCK
169	EASE OF PLAY
169	MELODY MARKER
169	AUTO EXPRESSIATOR
169	END BLOCK MELODY MAKER
169	GENERATOR
169	MULTIPLEX
169	LINK
169	CONTROL PANEL PEDAL FEEDP.
169	END BLOCK STRING END
169	FREQET
169	POWER SUPPLY
169	SYNTHESIS PERC. FILTER
169	TONEBAR INTERFACE
169	CONTROL PANEL SYN. PERC.
169	CONTROL PANEL BRIGHT PERC.
169	CONTROL PANEL BRIGHT VOICING
169	STRING ENSEMBLE
169	BUFFER STABISTED
169	PEDAL CONTROL
169	CONTROL PANEL MIXER
169	VIBRATO
169	HIGH HARMONY
169	UPPER KEYBOARD
169	LOWER KEYBOARD
169	PEDAL KEYBOARD
169	EXPRESSION CONTROL
169	AUTO VARI 64 PRO

1	Tuning	a) Main		a) 25Hz/s 124-137	a) Tuning Unit 124-136	a) 261.6 ± 4Hz
	Vibrato	b) Delayed Vibrato	a) 6/8 Amp Key	b) Main Unit 124-137	a) 8.33 124-643	b) 6 sec. min. of full vibrato
		c) Vibrato OK		c) 1038-32 1536-5252	c) 6008 124-643	c) 157 ms.
2	Main Level	Maximum No. Pedal G/M 19's 000860808 Brilliance	G/M 25,29,32	Main Speaker	523 124-644	3.59 KΩ
3	Minimum Small	G/M 15's 000860808 Brilliance	G/M 15,19,32	Main Speaker	8118 124-644	110 mV KΩ
4	G/M Level	G/M 19's 000860808 Brilliance	G/M 25,29,32	Main Speaker	8131 124-643	3.59 KΩ
5	Leslie Level	Max Swell Pedal G/M 15's 000860808 Brilliance	G/M 15,19,32	Leslie Speaker	568 124-644	5.09 KΩ
6	Vibrato Level	G/M 19's 000860808 Brilliance Vibrato On	G/M 25,29,32	Main Speaker	8101 124-643	3.59 KΩ
7	Bright Voices	a) G/M AF Preset Tuba Fort Bass Ricota Bugaboo Violin	a) G/M 25,29,32	a) Main Speaker	a) 643 124-633	a) 3.59 KΩ
		b) G/M AF Preset Bugaboo Bass Violins	b) G/M 25,29,32		b) 677 124-636	b) 2.55 KΩ
8	Pedal Level	Swell 25's Ped. 8's	Swell 25	Main Speaker	636 124-643	3.59 KΩ
9	Percussion Level	Piano Solo Perc Volume Set at Maximum	G/M 25	Main Speaker	82 124-632	220 KΩ (No. ohms at which curve the flat-tion of the waveform)
10	Synthesis Perc. Levels	Repeat a) 2nd Harmonic	a) G/M 25	a) Main Speaker	a) 839 124-636	a) 2.1 V 600
		b) Fifth/Sixth		b) 2770-55	b) 8135 124-611	b) Fifth
		c) 8th Harmonic Perc. Full Lvl	b) G/M 41 to slow staccato member		c) 866 124-632	c) Adjust for minimum Chime
11	Fullharmonic Strings	a) G/M 8' String G/M Volume Pot at maximum Brilliance	a,b,c) G/M 25,29,32	a) Main Speaker	a) 854 124-636	a) 1K 600
		b) Same as "a"		b) Spkr. above the ped pedal	b) 8132 124-644	b) 1K 600
		c) Same as "a"		c) Spkr. on the left side of the console	c) 868 124-643	c) 1K 600
		d) G/M 8' String G/M Volume Pot at maximum Brilliance	d) G/M 25,29,32	d) Main Spkr.	d) 869 124-636	d) 1K 600
		e,f,g) None		e) Spkr. on the left side of the console	e) 8163 124-636	e) Sus
				f) Spkr. Pin 2	f) 8135 124-636	f) Sus
		h) G/M 8' String attack Pot at min. position	h) G/M 25,29,32	g) 1K Ω Pin 2	g) 8163 124-636	g) Sus
12	Reverb	a) G/M 19's 000860808 Grey Upper Keyboard Pot at Max. Brilliance	G/M 25,29,32	Main Speaker	826 124-5102	3.59 KΩ
13	Melody Select	Melody Select Volume Pot at Max				
		a) Reverb	a) G/M 37	a) Main Spkr.	a) Rear Unit 124-561	a) Adjust for resonance Only point is defined as the point at which pedal flight time from Max. to Min. is equal to the flight time from Min. to Max.
		b) Saxophone	b) G/M 25,29,32		b) 8103 124-561	b) Adjust to appropriate Volt point as defined by the Min. to Max.
		c) Accordion			c) 8103 124-561	c) Adjust to appropriate Volt point as defined by the Min. to Max.
		d) Clarinet	d,e) None			d) 1.43 - 1.429
		e) Trumpet				e) 1.08 - 1.429
		f) Oboe				f) 1.43 - 1.429
		g) Trumpet				g) 1.08 - 1.429
		h) Accordion				h) 1.08 - 4.329
		i) Saxophone Guitar				i) 1.43 - 1.429
		j) Reverb				j) 1.08 - 1.429
		k) Melody				k) 1.08 - 1.429
14	Key Click	Key Click Can be Connect 1427 to 0.01-12 and 1214 to the position side of 527 to the 124-503 PCB. Then set TB out to Position 1.	G/M - Any key re-assembly	Main Speaker	822 124-563	47.0 Ω
15	Functioning Diagram	Functioning Diagram volume can be adjusted. Below Set range if desired. Slide bottom OK				
		a) Piano	a,b,c)	a,b,c)		a) 1.5 - 4.32
		b) Guitar	G/M 25	Main Speaker		b) 2.16 - 2.592
		c) Bass				c) 2.16 - 2.592
16	Control Relay Adjustment	Slow set #5	G/M 42		82 124-563	Adjust RV for correct time

PRESETS
(611)

TRANSPOSER
(517)

LOGIC
(595)

GENERATOR
(585)

TRANSPOSER END BLOCK
(593)

PROFOOT END BLOCK
(606)

BUFFER/ STAIRSTEP
(636)

MULTIPLEX
(591)

UKB TONEBARS B

LKB TONEBARS B

UKB TONEBARS A#

LKB TONEBARS A#

STRING ENSEMBLE END BLOCK
(611)

STRING ENSEMBLE
(634)

UPPER KEYBOARD
(UKB)

LOWER KEYBOARD
(LKB)

PEDAL KEYBOARD
(PKB)

9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

TRANSFER'S
517

LOGIC
124-000595
595

VIBRATO
124-000645
645

MELODY
MAKER
ENDBLOCK
124-000560
566

MELODY MAKER
124-000561
561

124-000563
563

GENERATOR
124-000585
585

MULTIPLEX
291

UPPER
KEYBOARD
UKB

LOWER
KEYBOARD
UKB

PEDAL
KEYBOARD
PKB

HIGH HARMONY
124-000650
650

28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

AUTO VARI 64 PRO
AV64

KEY CLICK
124-000653
523

CONTROL PANEL MIXER
124-000644
644

522
REVERB AMPLIFIER
124-000622

647
SLIDE POT
124-000647

SHOWN AT MIN. VOLUME MIN. LIGHT
EXP

M/E

723
MAIN / ECHO PWR
124-000723

MAIN AMPLIFIER
124-000697
169M

LESLIE AMPLIFIER
124-000698
169L

STRING AMPLIFIER
124-000697
487 665

STRING AMPLIFIER
124-000697
487 665

DEMULTIPLEX
124-000651
521

SINE FILTER UKB
124-000653
653U

BRIGHT PERC

SYN PERC
124-000623
629

SINE FILTER LKB
124-000653
653L

CONTROL PANEL SYNTHESIS PERCUSSION
124-000651
631

646
SLIDE POT
124-000646

CONTROL PANEL BRIGHT VOICE
124-000633
633

CONTROL PANEL BRIGHT PERC.
124-000632
632

POWER SUPPLY
124-000618, 620
618
620

EASE OF PLAY II
124-000647
547

PEDAL CONTROL
124-000639
639

PEDAL CONTROL PANEL E.O.P.
124-000601
601

AUTO VARI

SWING DOWN PANEL

36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46

A
B
C
D
E
F
G
H
I
J
K

CONTROL PANEL MIXER 124-000667 (644)

REVERB AMPLIFIER 124-000662 (522)

(647) SLIDE POT 124-000687

SHOWN AT MIN. VOLUME MIN. LIGHT (EXP)

MAIN / ECHO PWB 124-000789 (723)

MAIN AMPLIFIER 124-000669 (169M)

LESLIE AMPLIFIER 124-000669 (169L)

STRING AMPLIFIER 124-000487,665 (487, 665L)

STRING AMPLIFIER 124-000487,665 (487, 665R)

CONTROL PANEL BRIGHT VOICE 124-000653 (633)

CONTROL PANEL BRIGHT PERC. 124-000652 (632)

CONTROL PANEL SYNTHESIS PERCUSSION 124-000651 (631)

(646) SLIDE POT 124-000687

POWER SUPPLY 124-000618, 620 (618, 620)

PEDAL CONTROL 124-000650 (639)

PEDAL CONTROL PANEL E.O.P. 124-000601 (601)

AUTO VARI

SWING DOWN PANEL

TEST AND ADJUSTMENT PROCEDURE

MODEL 340212

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED / TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND TRIMMER	SPECIFICATION MINIMUM ACCEPTABLE DEVIATION
1	Vibrato & Freq. Adj.	a) None b) Adjust Vibrato c) Vibrato ON	a) USB b) Key Key	a) Freq. Counter b) Scope 5V/Div c) Freq. Counter	a) J.5A3-A 124-617 b) Emitter J1 124-641 c) J.5A-10	a) Tuning C611 124-528 b) R132 124-645 c) R106 124-645	a) 3236 ± 4Hz b) .8 osc. 40% of Full Vibrato c) 350 Hz
2	Main Level	Maximum 'on' Pedal USB 78's 3000B000B Brilliance	USB 25,29,32	MMV VM 10V	Main Speaker	R33 124-644	3.56 MMV
3	Minimum Level	USB 78's 3000B000B Brilliance	USB 25,29,32	MMV VM 800mV	Main Speaker	R139 124-644	150 mV MMV
4	LAB Level	LAB 78's 3000B000B Brilliance	LAB 25,29,32	MMV VM 10V	Main Speaker	R131 124-645	3.56MMV
5	Leslie Level	Max level Pedal USB 78's 3000B000B Brilliance	USB 25,29,32	MMV VM 10V	Leslie Speaker	R68 124-644	3.56 MMV
6	Vibrato Level	USB 78's 3000B000B Brilliance Vibrato On	USB 25,29,32	MMV VM 10V	Main Speaker	R103 124-645	3.56 MMV
7	Bright Voices	a) UKB A# PD Tuba Mute Horn Kinura Diapason Flutes b) LKB A# PD Diapason Horn Flutes	a) USB 25,29,32 b) LKB 25,29,32		a) Main Speaker b) Main Speaker	a) R65 124-633 b) R77 124-636	a) 3.04 MMV b) 3.04 MMV
8	Pedal Level	Pedal 78's 16' and 8'	Pedal 25	MMV VM 10V	Main Speaker	R78 124-643	8.04 MMV
9	Percussion Level	Piano Solo Perc 16' tone Pot at Maximum	USB 25	Scope 5V/Div	Main Speaker	R1 124-632	24V P-P
10	Synthesis Perc Levels	Repeat Repeat Pot at Min a) 2nd Harmonic b) Vibrasharp c) 8th Harmonic Perc Fast Sus	a) UKB 25 b) UKB 41 c) UKB 41 in slow staccato manner	a) MMV VM 1V b) Scope 50 mV/Div	a) Main Speaker b) Main Speaker	a) R39 124-632 b) R206 126-611 c) R60 124-632	a) 2.24 MMV b) 222 mV c) Adjust for Minimum Change
11	Multisaprano Attack	a) UKB A' String Attack Pot at Minimum Brilliance b) Same as "A" c) Same as "A" d) LKB A' String LKB Volume pot at min. position e,f,g) None	a,b,c) 41 rapidly d) LKB 41 rapidly e,f,g) None	a,b,c,d) MMV VM 1V e,f,g) Scope 2 mV/Div	a) Main Speaker b) Left Speaker c) Right Speaker d) Leslie Speaker e) HCR Pin 2 f) HCR Pin 2 g) HCR Pin 2	a) R58 124-634 b) R120 126-644 c) R60 124-643 d) R63 124-634 e) R183 124-634 f) R186 124-634 g) R186 124-634	a) 3V RMS b) 3V RMS c) 3V RMS d) 8 vb e) 3 V vb f) 3 V vb g) 3 V vb
12	Reverb	UKB 78's 3000B000B Brilliance Set Reverb pot at Max	USB 25,29,32	MMV VM 1V	Main Speaker	R24 124-622	1.8V RMS
13	Melody	Melody Maker Volume pot at maximum a) Novelty b) Saxophone c) Accordion d) Clarinet e) Trombone f) Oboe g) Trumpet	a) USB 37 b) LKB 25,29,32 c) 0-1 USB 25,29,32	a) Scope b) MMV VM 1V c) Scope 2V/Div 0-1 MMV VM	a) Main Speaker b) Main Speaker c) Main Speaker	a) R144 124-561 b) R200 124-561 c) R141 124-561	a) Adjust for reference. Only point is defined as the point of purest flute-like tone (no harmonic) and maximum output voltage b) 2.04 RMS c) Adjust if necessary for B28 max amplitude is 150 mV Attack Time. c) 1.43 - 2.574 RMS c) 2.15 - 4.284 RMS c) 3.08 - 6.424 RMS c) 4.06 - 4.424 RMS
	Melody Maker	a) Accordion b) Hawaiian Guitar c) Jo Wah d) Novelty					a) 3.08 - 6.424 RMS b) 1.43 - 2.574 RMS c) 1.43 - 3.102 RMS d) 1.04 - 2.102 RMS
14	Key Click	Key click tab ON (connect 149 to A540-11 and -14V to the positive side of the 100 uFD 124-615 PCB. Connect any 78 tab to Position 1	UKB - Any key re-pressed)	Scope 2V/Div	Main Speaker	R33 124-633	4V P-P
15	Fascinating Fingers	Fascinating Fingers volume pot at maximum. Rhythm unit tempo at maximum. Strum button ON. a) Piano b) Ukulele c) Banjo	a,b,c) a,b,c) a,b,c)	MMV VM	Main Speaker		a) 3.9 - 8.1V RMS b) 0.38 - 0.92V RMS c) 0.66 - 1.356 RMS
16	Passthrough Adjustment	Blue tab #5	USB 25			R6 124-595	Adjust AC for correct tone
17	Rhythm Unit	MASTER CLOCK a) Unplug J27 (connect jumper from the collector of Q30 to the right side of C35 (as viewed from front of organ) Rhythm Unit Volume Pot at maximum.	a) None	a) Freq. Counter	a) Main Speaker	a) R185 To Rhythm Unit	a) 276864
		a) Cymbal b) Tom Tom c) Tom Tom d) Knock e) Clicks/Sound	a,c) Any Preset b,d) Any Tab	b,d) Scope 5V/Div	a) Main Speaker b) Main Speaker c) Main Speaker	a) R189 To Rhythm Unit b) R193 To Rhythm Unit c) R197 To Rhythm Unit	a) 20V P-P b) 10V P-P c) 10V P-P d) Note the Tone Tom Tom should e) Note pressure Sound should f) Adjust for minimum audible Thump

	Main & Actual	Leslie Channels				
1		a) "A" Network In		a) 880 Hz	Main Speaker	a) 120 Vrms Small
		b) "A" Network Out		b) 880 Hz	Main Speaker	b) 1540 Vrms Small
2		c) "B" Network In		c) 880 Hz	Main Speaker	c) 120 Vrms Small
		d) "B" Network Out		d) 880 Hz	Main Speaker	d) 1540 Vrms Small
3		e) "C" Network In		e) 880 Hz	Main Speaker	e) 120 Vrms Small
		f) "C" Network Out		f) 880 Hz	Main Speaker	f) 1540 Vrms Small

Between Color Preamps — Between Amps — Using the chart given below, read each network point indicated with oscilloscope & measure VA regulation

(Chart should be an enlarge to take Tektronix Procedure & corresponding "A" VA regulation. Mark that points in numerals such as 1A and 8 Transfer for 1/16 & 1/8.)

Channel Output	Tonal Division	Upper Manual	Lower Manual	Pedal
		1 thru 8, tab on	1 thru 8, tab on	1 thru 8, tab on
		16 Tibia, Flute Harm. Perc. Tab on at maximum	16 Tibia, Flute Harm. Perc. Tab on at maximum	16 Tibia, Flute Harm. Perc. Tab on at maximum
		A128	A128	A128
1	Voicebuss Mod. Controls Gen Bldg.	TB's 3000A000B	16' TB 8' TB 4 5	
2	8' String (Approx. 1/2 mix) 16's (Approx. 1/3 Quantum)	TB's 3000A000B	8 5	
3	TB's 3000B000B Gen Harmonic Gen Bldg Keyclick Optional	TB's 3000A000B	8 5	
4	TB's 3000B000B Gen Perc	TB's 3000A000B	4 5	
5	TB's 4000A000A 8' Strings (Full Volume) Gen Perc	A's, 4' Strings (Full Volume) TB's 3000A000A Leslie	8 5	
6	TB's 4000B000B Leslie Perc Perc Mods Gen Bldg Flutes Optional	TB's 4000A000B Leslie Perc Mods Gen Bldg	5 5	
7	16', 8', 4' Strings (Full Volume)	8', 4' Strings TB's 3000A000A	8 5	
8	TB's 4000C000C Leslie Mods	TB's 4000A000C Leslie Mods	5 5	
9	Cancels controlling Strings Volume Mods (also is balanced, so that when Mods are selected, the Strings volume is reduced when Mods are selected)	TB's 4000A000A Leslie Mods Mods Gen Bldg Flutes Optional	5 5	
10	16', 8', 4' Strings (Full Volume)	8', 4' Strings TB's 3000A000A	8 5	
11	TB's 4000C000C Leslie Mods	TB's 4000A000C Leslie Mods	5 5	

Piston 7

12 Any Bright Perc tab	4-12 Any A/B Mod	4-12 Mods that Tones have no effect on the sound from the Pistons. Also that only Pedal Controls, Pedal Mods, Perc Volume, Leslie Speeds, Reverb Volume did not Pre Mod effect the sound from the Pistons. Unlinked Mod Pot is functioning Program controls	
13 Any Resonance Perc tab			
14 Any reverse tabs preset			
15 Any Accessories tab except Gen or Reverb			
16 Any Melody Maker tab			
17 Any Multisaprano tab			
18 1/16 TB's	16 Any A/B Mod		
19 1/16 TB's	17 Any Mods		
20 Pedal TB's			

HAMMOND Elegante

Logic & Control Wiring Diagram

340207

340212 Elegante

WMG-000137

PRESETS
124-000611
611

TRANSPOSER
124-000617
517

LOGIC
124-000599
595

GENERATOR
124-000585
585

TRANSPOSER ENDBLOCK
XPR

PROFOOT ENDBLOCK
PRO

BUFFER/ STAIRSTEP
124-000636
636

MULTIPLEX
124-000691
591

UKB TONEBARS B

LKB TONEBARS B

UKB TONEBARS A#

LKB TONEBARS A#

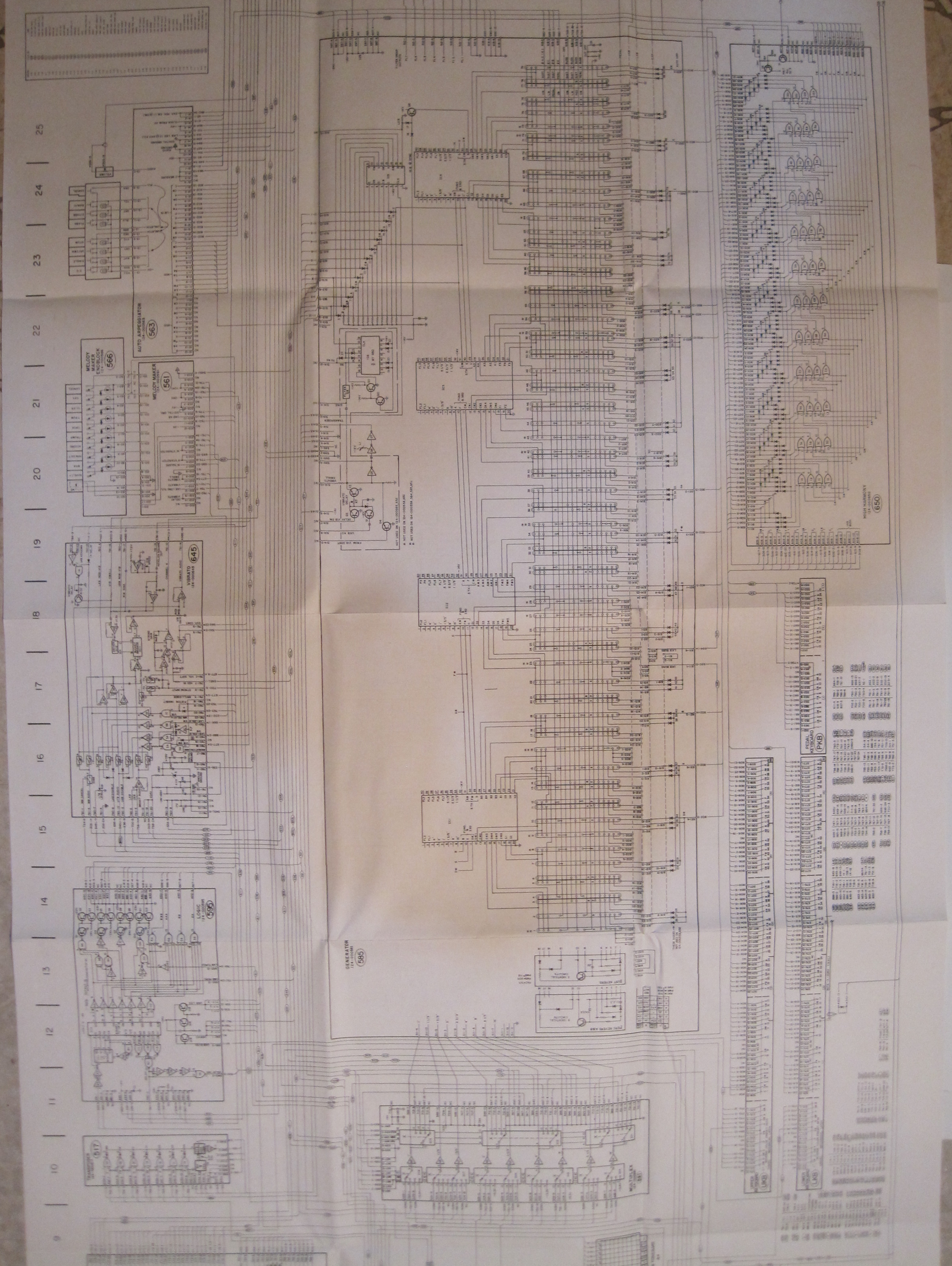
STRING ENSEMBLE END BLOCK
603

STRING ENSEMBLE
124-000684
634

UPPER KEYBOARD
UKB

LOWER KEYBOARD
LKB

PEDAL KEYBOARD
PKB


AUTO ARPEGGIATOR
563
MELODY MAKER
561
MELODY MAKER ENSEMBLE
566
VIBRATO
645
GENERATOR
595
HIGH HARMONY
650
PEDAL KEYBOARD
PKB
LKB
25
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