ARP

2600 Patch Book

The ◊ARP 2600 Patch Book

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Welcome

Welcome to the ARP 2600 Patch Book. These instrumental timbres, sound effects, natural sounds and rhythms are the result of over three years of experimentation by many people, both amateur and professional, who are deeply involved with electronic music synthesis. A large number of these patches have already been used in commercial recording; you might already have heard them on the radio, TV, movie soundtracks and record albums. We'd like to share them with you.

You'll progress more rapidly and derive more satisfaction from this book if you take these thoughts into account:

* A patch chart is only a *guide*, not a precise configuration of sliders. Be flexible - the patch charts are.

* Every individual synthesizer has its own slight idiosyncracies. Slider positions on your 2600 might vary slightly from the norm set by the patch charts, so if you don't get exactly the sound you want, make minor corrections in control settings. Follow your ear.

* And every set of eardrums also has its idiosyncracies. If you like your flutes mellower, your monsters creepier, or your drums kickier, experiment a little.

* To get full enjoyment from synthesizing these sounds, blow them through a good speaker system. The speakers on the front of the 2600 are there for reference; you should be playing through an amp and speaker system with a full-range response.

* We don't have to tell you that it's fun to experiment with your own ideas; that's expected of electronic musicians. Many of these patches can be set up simultaneously: try the String Sweetener with the Auto-pan, for example. You will undoubtedly come up with some great patches of your own and will want to write them down. Blank 2600 Patch Pads are available from the factory at $1.00 each.

ARP would like to thank these people for getting it together in this 2600 Patch Book: Dave Fredericks, Roger Dumas, David Friend, Bruce McLendon, Phil Dodds, Alan R. Pearlman, Tom Piggott, Mike Brigida, Rick Parent, Bernie Klocko, Dan Hakala, John Shykun, Bill Wentz, Edgar Winter, Margaret Shepherd, and a couple of anonymous folks who sent in some dynamite patches.

Heed These Hints:

1. Be certain that all sliders and switches not indicated on the patches are in the *left* or *down* positions.
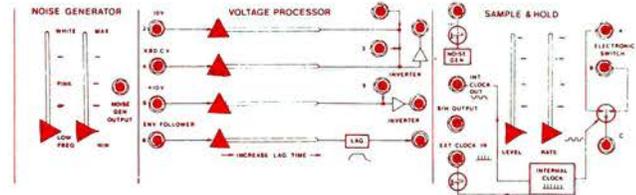
2. *Arrows* indicate the positions to which sliders should be moved *after tuning* or *during performance*.
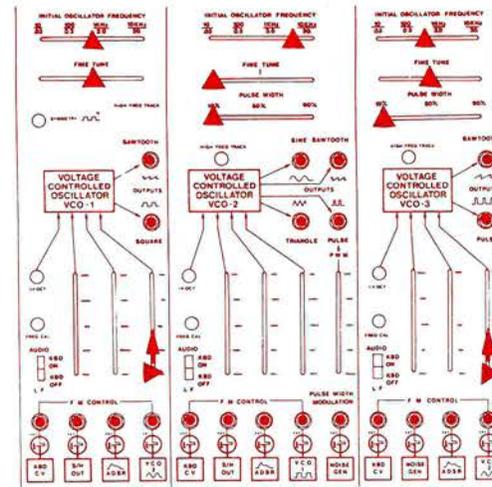
3. Shut the speakers off while you're setting the patch up. It's easy to get distracted by unripe sounds.

4. Pay special attention to the information located in the corners on most of the patches. There you will discover how many patchcords and dummy plugs are needed, how the portamento and tuning knobs are to be used, and where to play on the keyboard.

5. Set aside the number of patchcords you'll need for the patch before you plug anything in. Otherwise, the patch may be missing a patch-cord and you won't notice it right away.

6. *Phrasing* is most important on the instrumental patches. If you can play the keyboard with the idea that you are pausing to take breaths on a flute or trumpet, or bowing back and forth on a violin, you'll have more success synthesizing those instruments.

7. VCO Pitch Tuning: The keyboard diagrams over each patch indicate the pitch tunings for the VCOs and occasionally the VCF. For instance, this diagram means "Play Key C3 & tune VCO 3 to middle C." (Of course, if you don't have a tuning source such as a piano or a pitchpipe, you can tune the oscillators approximately.)

VCO TUNING

VCO 3

8. Several patches will ask you to precisely tune two or three oscillators to unison or octave intervals. Tune one oscillator to the frequency range indicated on the patch chart and compare the other oscillators to it individually. When two oscillators are close to a harmonic interval, (in this case, a unison, octave, fifth or a fourth), you will hear 'beats.' Beats sound like a combination of tremelo and phaseshifting: the frequencies of the two oscillators are so close that they tend to cancel each other out periodically. This can more easily be heard if you run the oscillators through the Ring Mod.

Play a note and fine-tune the oscillator you are comparing to the basic pitch until the beats slow down to less than one every three seconds. This is easiest at unison, harder at an octave, and requires practice for perfect fourths and fifths. The best way to check for a precise tuning is to play higher notes than the one used for tuning. The beats will be faster at higher frequencies.

Interval Tuning Example: Patch No. 35, Marimba Chords & Lead

1. Raise VCO 3 ᴧ into VCF. Play Key C1 and tune VCO 3 to a low, recognizable pitch.

2. Play Key G3, still listening to VCO 3. This is the pitch to which you will tune VCO 2.

3. Close VCO 3 ᴧ at the VCF and raise VCO 2 ᴨ Play C1 and tune VCO 2 to the pitch you heard at step 2.

4. To check for proper tuning, go back and forth: Play G3---listen to VCO 3. Play C1---listen to VCO 2.

5. Try this procedure in tuning VCO 1 at three octaves and a minor third above VCO 3 (Key Eflat4).

6. Raise all three VCOs into VCF and play the bottom octave.

VCO TUNING

Listen to VCO 2   Listen to VCO 3

VCO TUNING

Listen to VCO 1   Listen to VCO 3
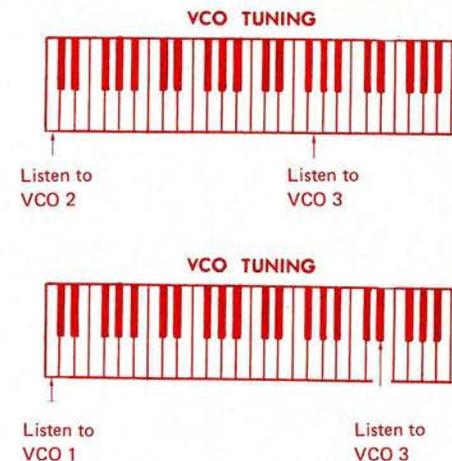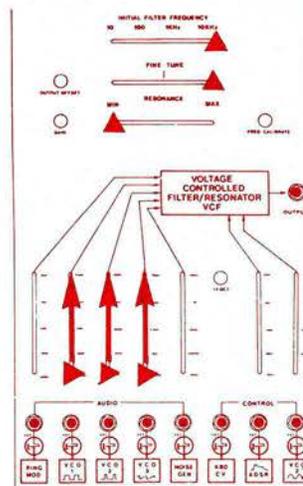
Don't be discouraged if the sound you want doesn't automatically appear like a candy bar out of a vending machine. Chances are good that you've forgotten to switch on the S/H Gate, the Oscillator Frequency Switches, or the power. Another possibility might be that one of the patchcords isn't plugged in fully. With practice, you'll be able to trouble-shoot any problem encountered with any patch. They all work when set up properly.

Basic Instruments

VCO TUNING

VCO 2   octave roll

MODEL 2600 SYNTHESIZER
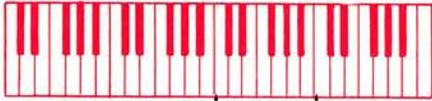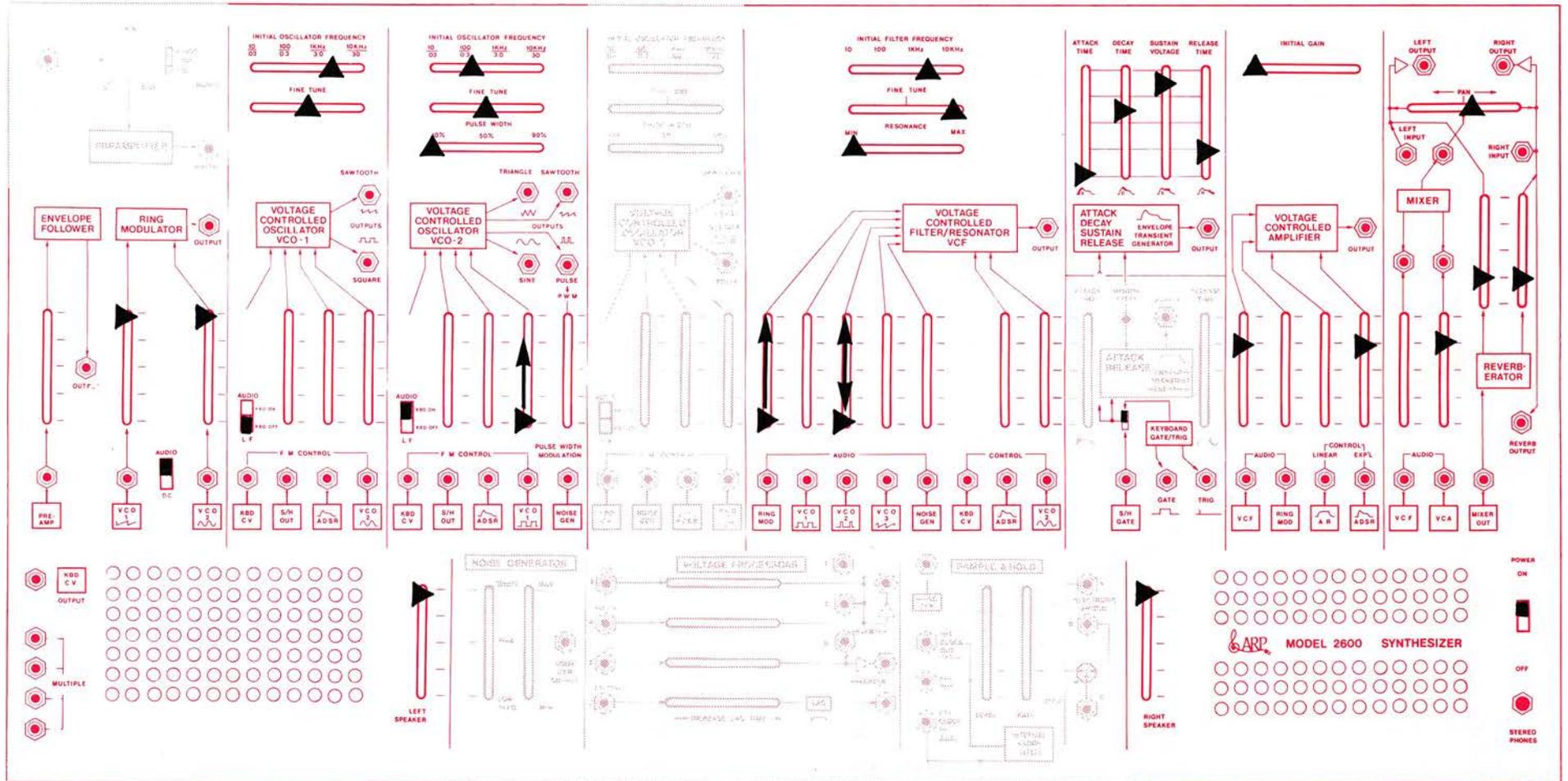
1. Raise VCO 2 ↕ into VCF and tune to middle C.
2. Close VCO 2 at VCF ↕ and raise Ring Mod slider ↕ into VCF.
3. Adjust VCO 1 frequency ↔ for speed of roll.
4. Raise VCO 1 ∿ ↕ into VCO 2. Tune for octave roll.

Marimba Roll

1.

VCO TUNING

VCO 3

1. Open VCF → and tune VCO 3 to middle C.
2. Close VCF ← and adjust ADSR slider ↕ into VCF for trumpet or French horn.

1 PATCHCORD

Trumpet & French Horn

2.

VCO TUNING

VCO 2

INITIAL OSCILLATOR FREQUENCY

10 100 1KHz 10KHz
03 0 30 30

FINE TUNE

PULSE WIDTH

10% 50% 90%

INITIAL FILTER FREQUENCY

10 100 1KHz 10KHz
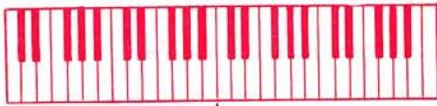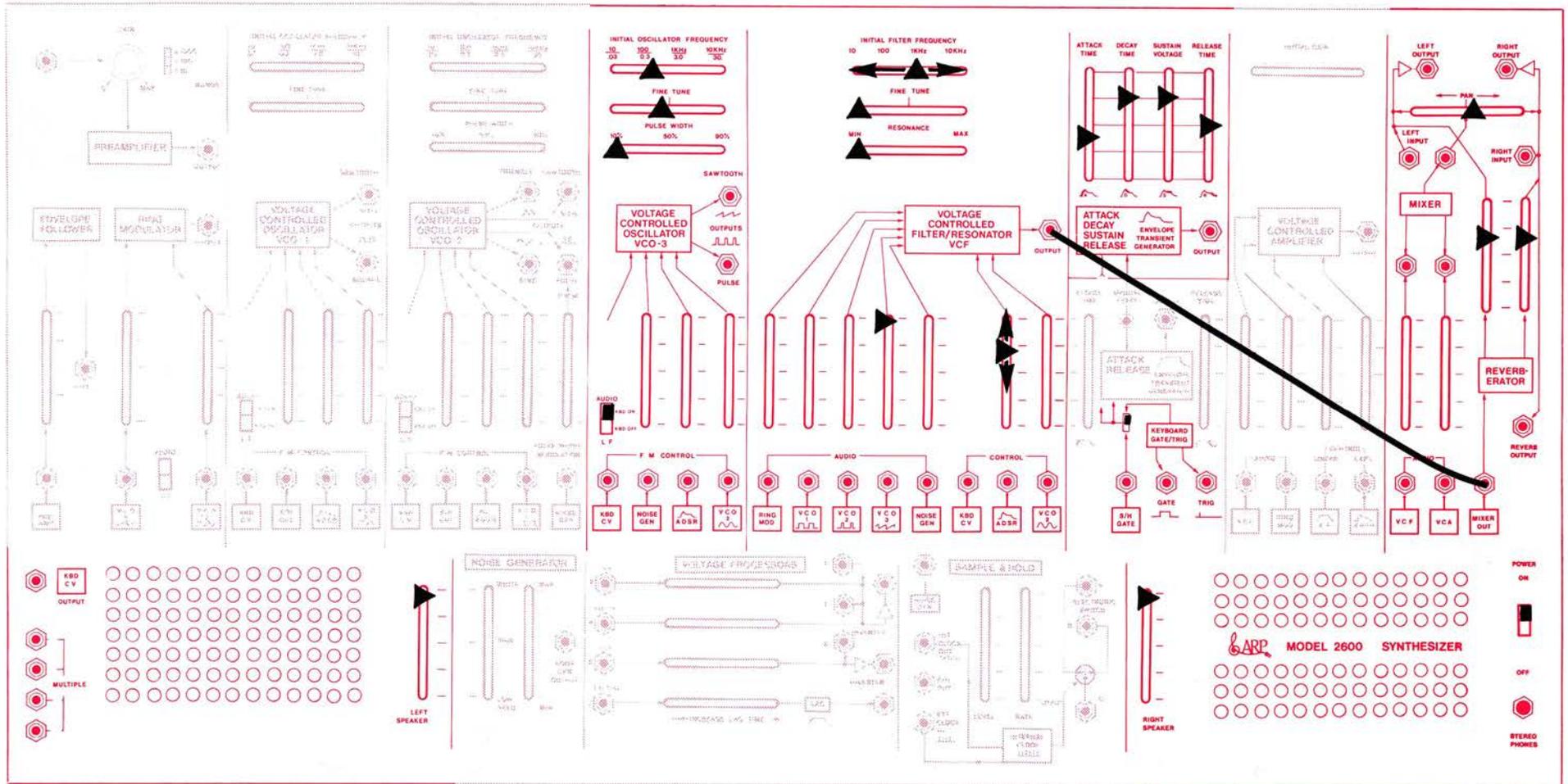
FINE TUNE

MIN RESONANCE MAX

ATTACK TIME DECAY TIME SUSTAIN VOLTAGE RELEASE TIME

LEFT OUTPUT RIGHT OUTPUT

PAN

LEFT INPUT RIGHT INPUT

TRIANGLE SAWTOOTH

VOLTAGE CONTROLLED OSCILLATOR VCO-2

OUTPUTS

SINE PULSE PWM

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

OUTPUT

ATTACK DECAY SUSTAIN RELEASE

ENVELOPE TRANSIENT GENERATOR

OUTPUT

VOLTAGE CONTROLLED AMPLIFIER

MIXER

REVERB-ERATOR

REVERB OUTPUT

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL PULSE WIDTH MODULATION

KBD CV S/H OUT ADSR VCO 2 NOISE GEN

AUDIO CONTROL

RING MOD VCO 1 VCO 2 VCO 3 NOISE GEN KBD CV ADSR VCO 1

ATTACK RELEASE

KEYBOARD GATE/TRIG

S/H GATE GATE TRIG

AUDIO

VCF VCA MIXER OUT

KBD CV OUTPUT

MULTIPLE

NOISE GENERATOR

VOLTAGE PROCESSORS

SAMPLE & HOLD

LEFT SPEAKER

RIGHT SPEAKER

POWER
ON
OFF
STEREO PHONES

ARP MODEL 2600 SYNTHESIZER

Trucker Bass

3.

KEYBOARD RANGE: BOTTOM 2 OCTAVES

VCO TUNING

VCO 2

INITIAL OSCILLATOR FREQUENCY

INITIAL FILTER FREQUENCY

ATTACK TIME   DECAY TIME   SUSTAIN VOLTAGE   RELEASE TIME

FINE TUNE

PULSE WIDTH

TRIANGLE   SAWTOOTH

OUTPUTS

SINE   PULSE

PWM

VOLTAGE CONTROLLED OSCILLATOR VCO-2

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

OUTPUT

ATTACK DECAY SUSTAIN RELEASE   ENVELOPE TRANSIENT GENERATOR

OUTPUT

MIXER

REVERB-ERATOR

LEFT OUTPUT   RIGHT OUTPUT

PAN

LEFT INPUT   RIGHT INPUT

AUDIO   ON   OFF

L F

F M CONTROL   PULSE WIDTH MODULATION

AUDIO   CONTROL

KEYBOARD GATE/TRIG

GATE   TRIG

REVERB OUTPUT

KBD CV   S/H OUT   ADSR   VCO   NOISE GEN

RING MOD   VCO 1   VCO   VCO 3   NOISE GEN   KBD CV   ADSR   VCO 2

S/H GATE

VCF   VCA   MIXER OUT

KBD CV OUTPUT

NOISE GENERATOR   VOLTAGE PROCESSORS   SAMPLE & HOLD

MULTIPLE

LEFT SPEAKER

RIGHT SPEAKER

POWER   ON

ARP MODEL 2600 SYNTHESIZER

OFF

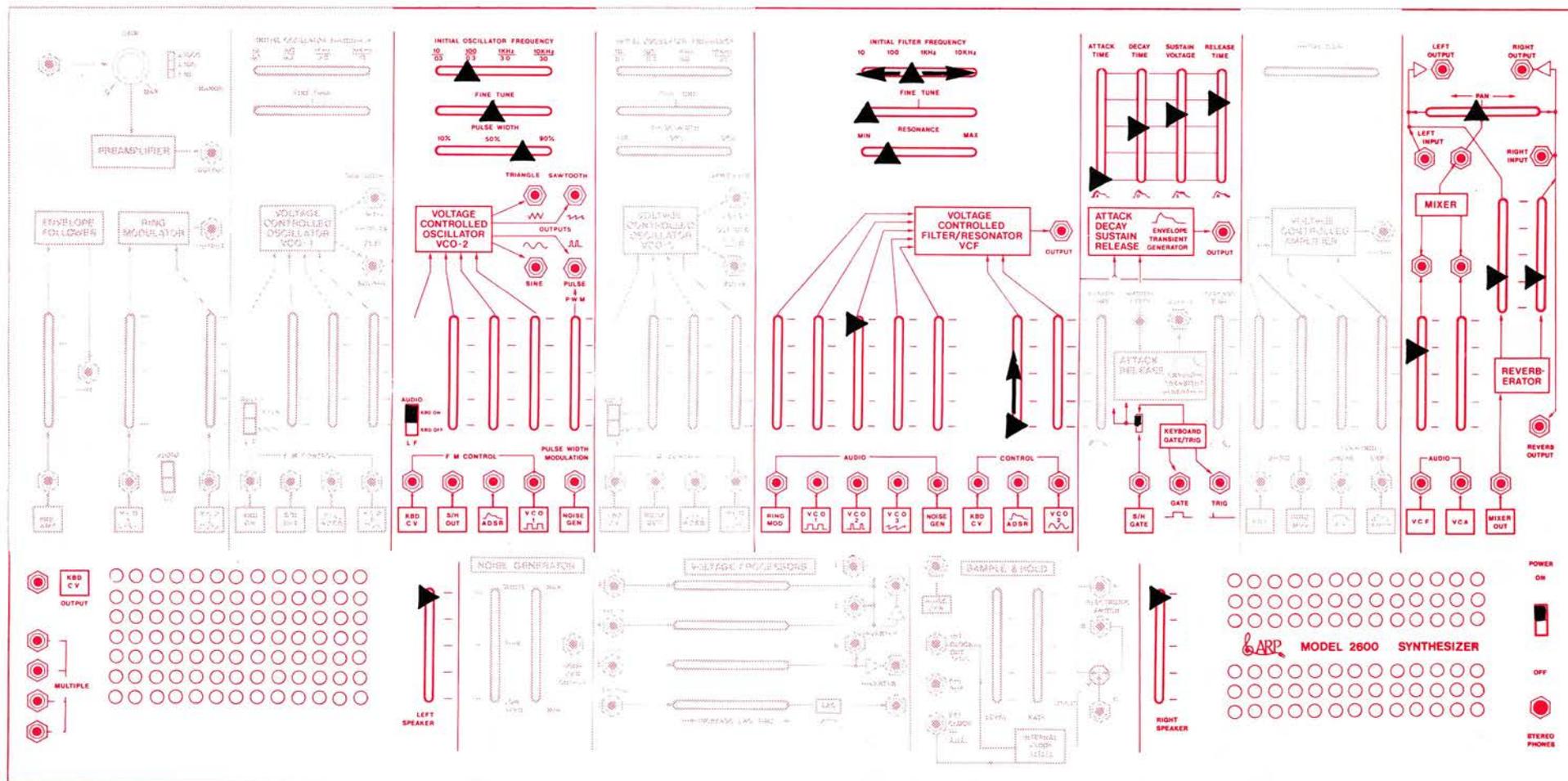STEREO PHONES

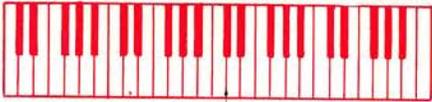1. Open VCF → and tune VCO 2 to 1octave below middle C.
2. Close VCF ← and raise ADSR ↑ into VCF for brightness.

Octabass

4.

VCO TUNING
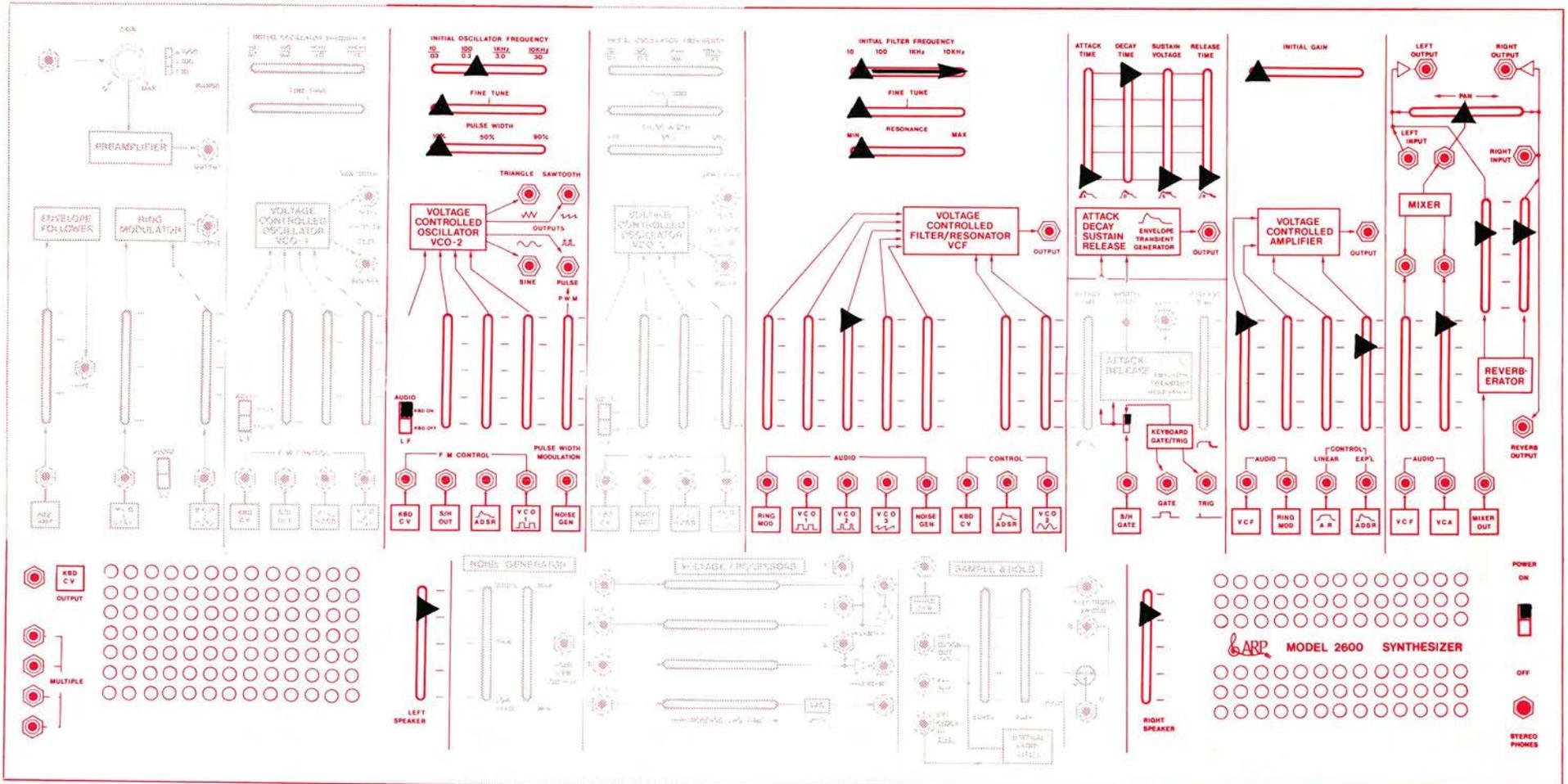
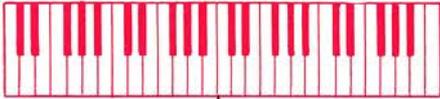VCO 2

ATTACK TIME   DECAY TIME   SUSTAIN VOLTAGE   RELEASE TIME

INITIAL OSCILLATOR FREQUENCY

INITIAL FILTER FREQUENCY

INITIAL GAIN

LEFT OUTPUT   RIGHT OUTPUT

FINE TUNE

PULSE WIDTH

RESONANCE

MIXER

VOLTAGE CONTROLLED OSCILLATOR VCO-2

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

ATTACK DECAY SUSTAIN RELEASE

VOLTAGE CONTROLLED AMPLIFIER

REVERBERATOR

ARP   MODEL 2600   SYNTHESIZER

1. Adjust VCF → for brightness.
2. Tune VCO 2 to middle C.

Wonder Clavinet

5.

VCO TUNING

VCO 1+3

INITIAL OSCILLATOR FREQUENCY

VOLTAGE CONTROLLED OSCILLATOR VCO-1

VOLTAGE CONTROLLED OSCILLATOR VCO-2

VOLTAGE CONTROLLED OSCILLATOR VCO-3

VOLTAGE CONTROLLED FILTER/RESONATOR VCF
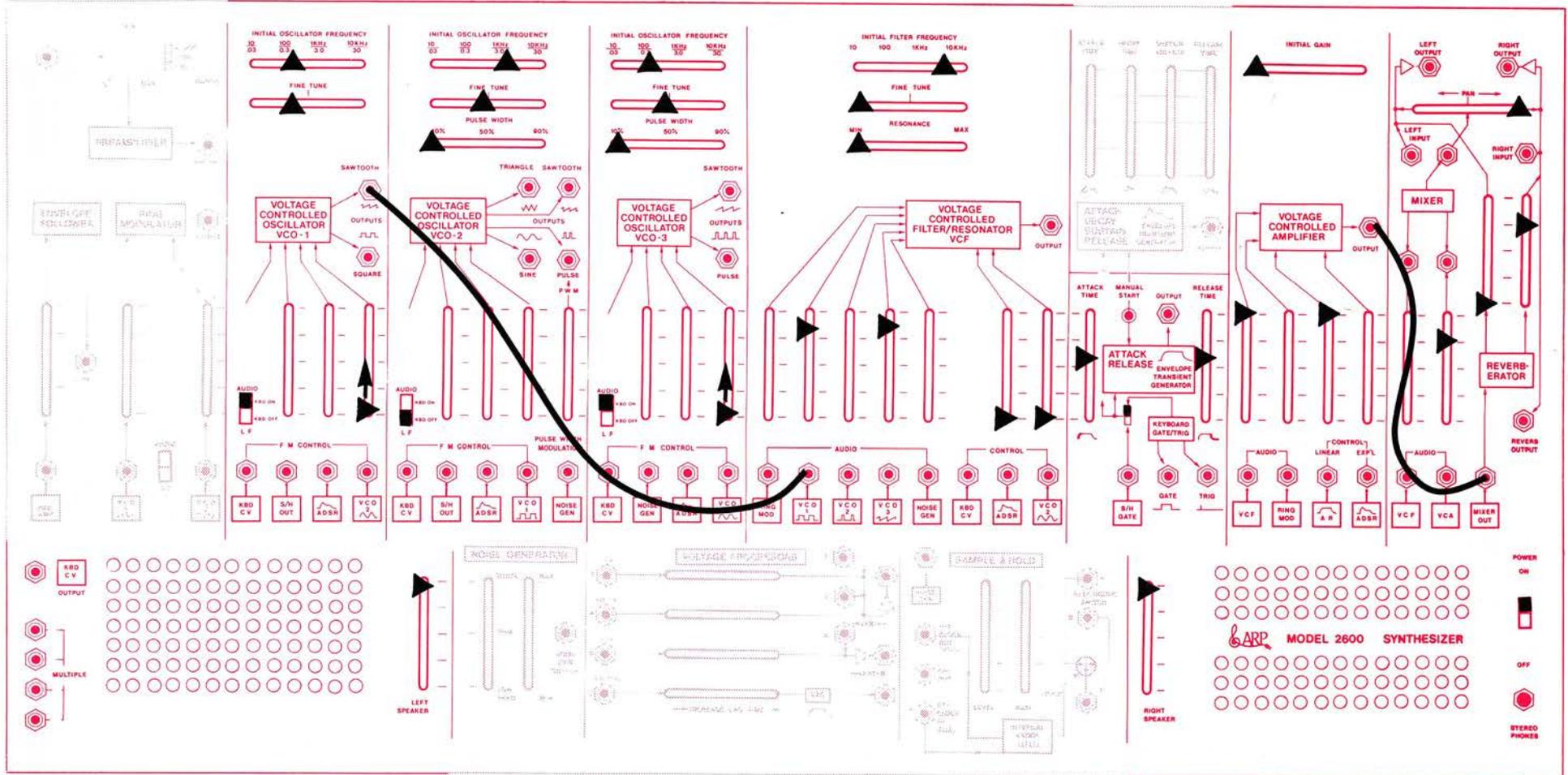
VOLTAGE CONTROLLED AMPLIFIER
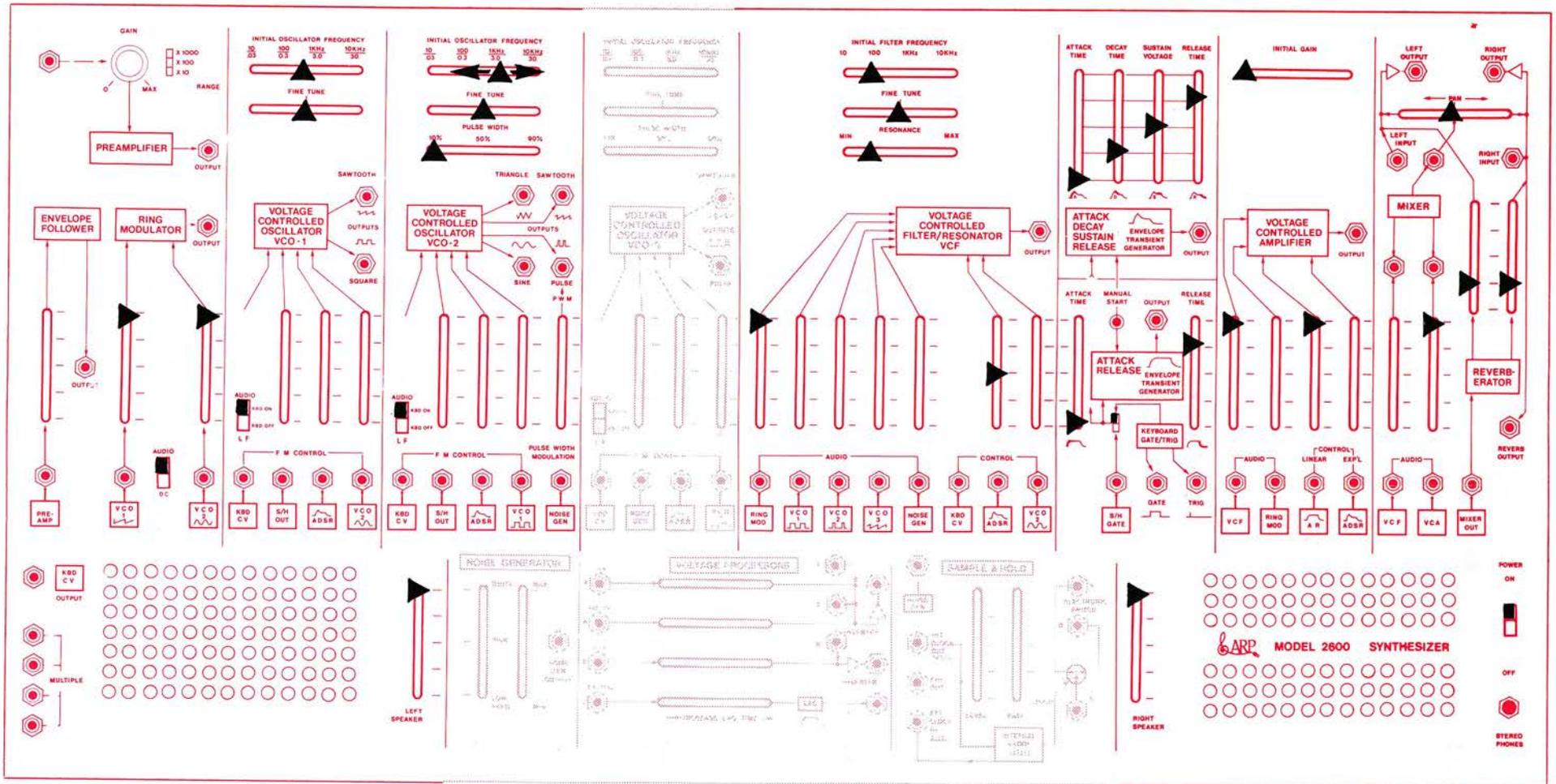
MIXER

REVERB-ERATOR

ARP MODEL 2600 SYNTHESIZER

1. Tune VCO 3 to middle C.
2. Tune VCO 1 several beats off VCO 3.
3. Raise VCO 2 ↑ into VCO 1+3 for vibrato.
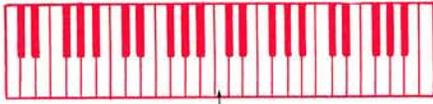4. Adjust VCO 2 frequency for vibrato speed.

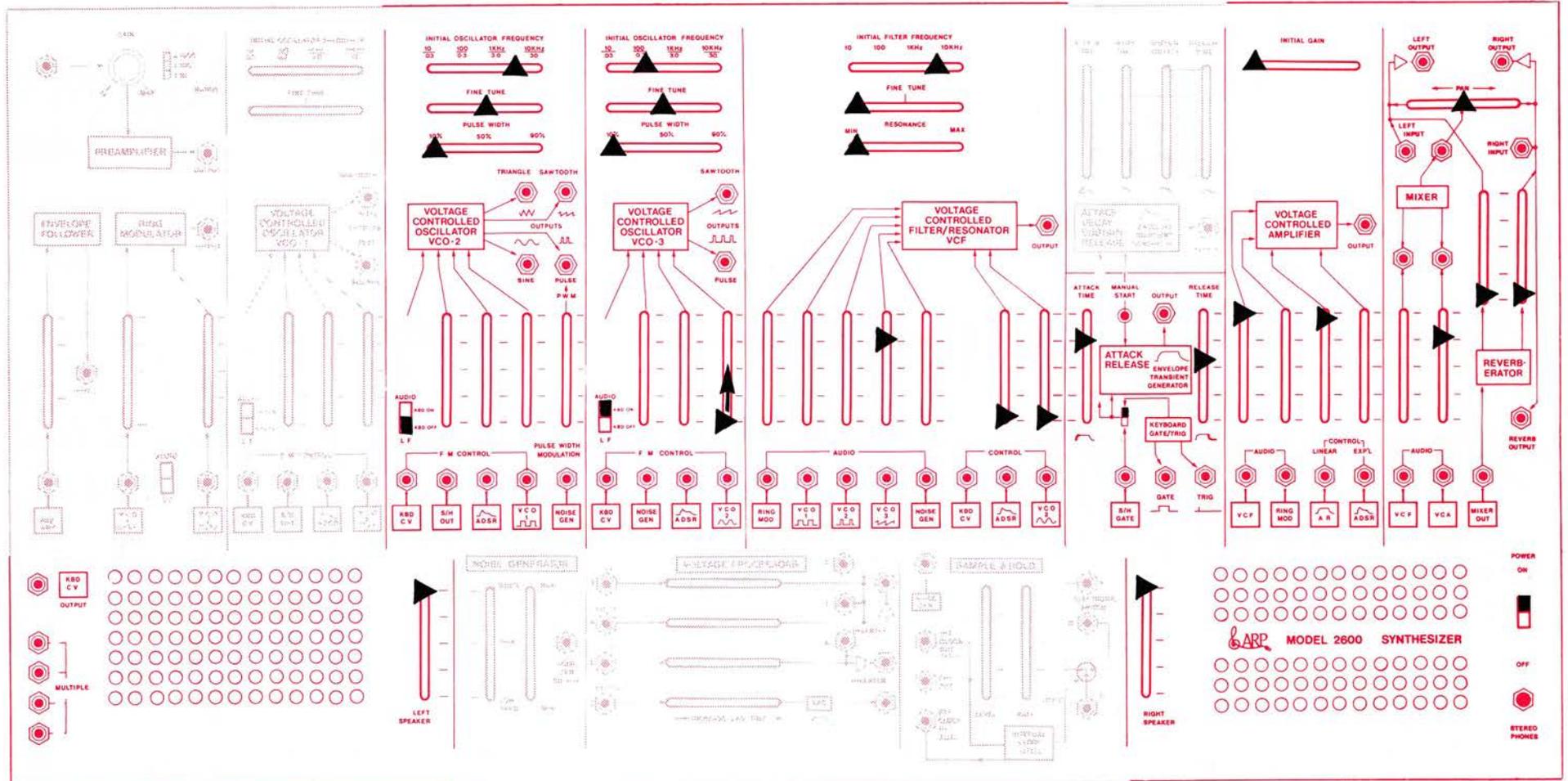2 PATCHCORDS

String Sweetener

6.

Adjust VCO 2 frequency for different bell effects.

Tubular Chimes

7.

VCO 3

Portamento

1. Tune VCO 3 to middle C.
2. Raise VCO 2 ↑ into VCO 3 for vibrato.
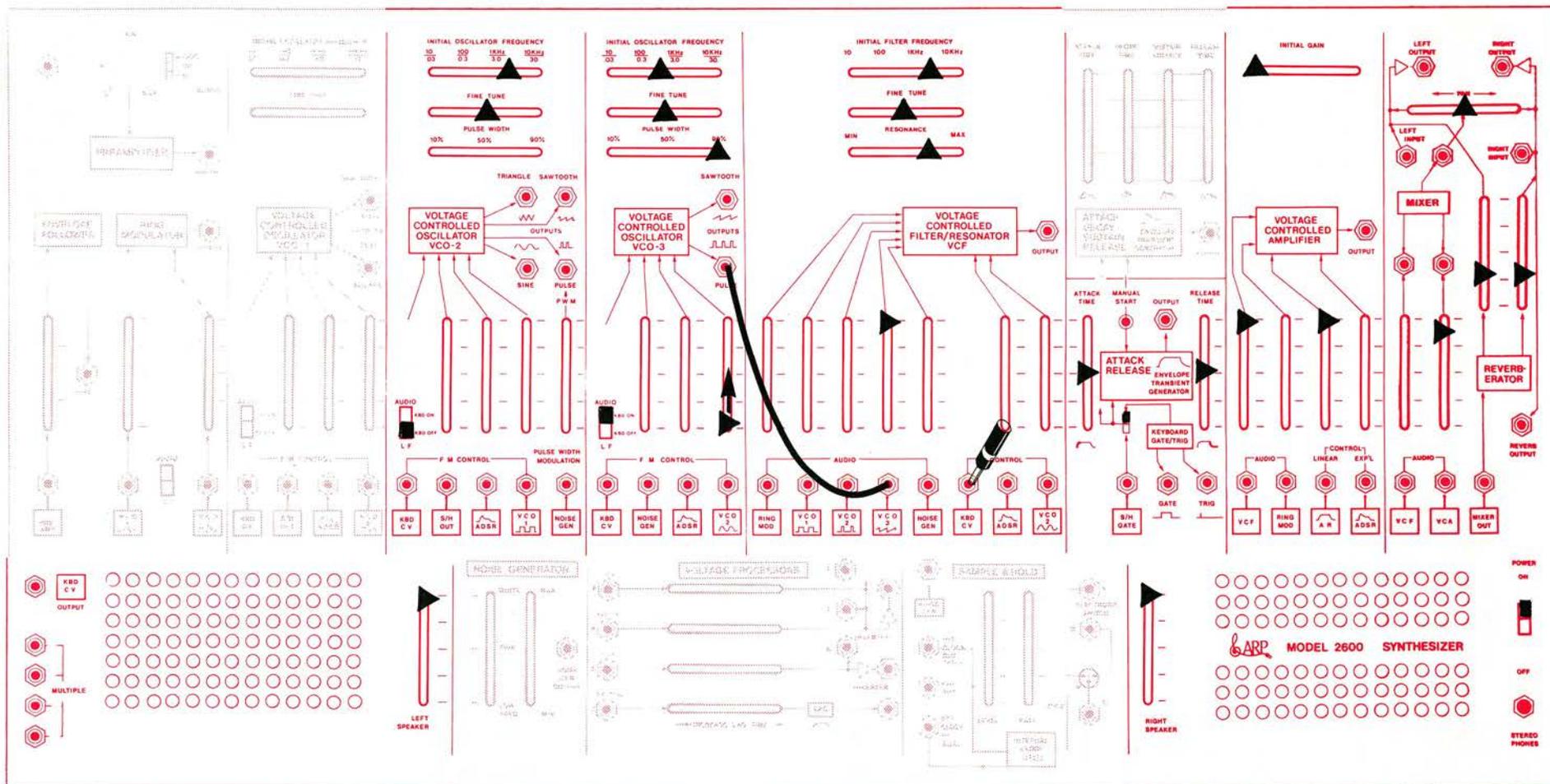3. Adjust VCO 2 frequency for vibrato speed.
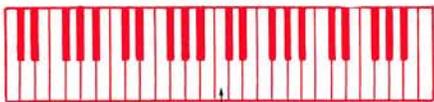
Violin

8.

VCO TUNING

VCO 3

1. Tune VCO 3 to middle C.
2. Raise VCO 2 〰 into VCO 3 for vibrato.
3. Adjust VCO 2 frequency for vibrato speed.

1 PATCHCORD
1 DUMMY PLUG

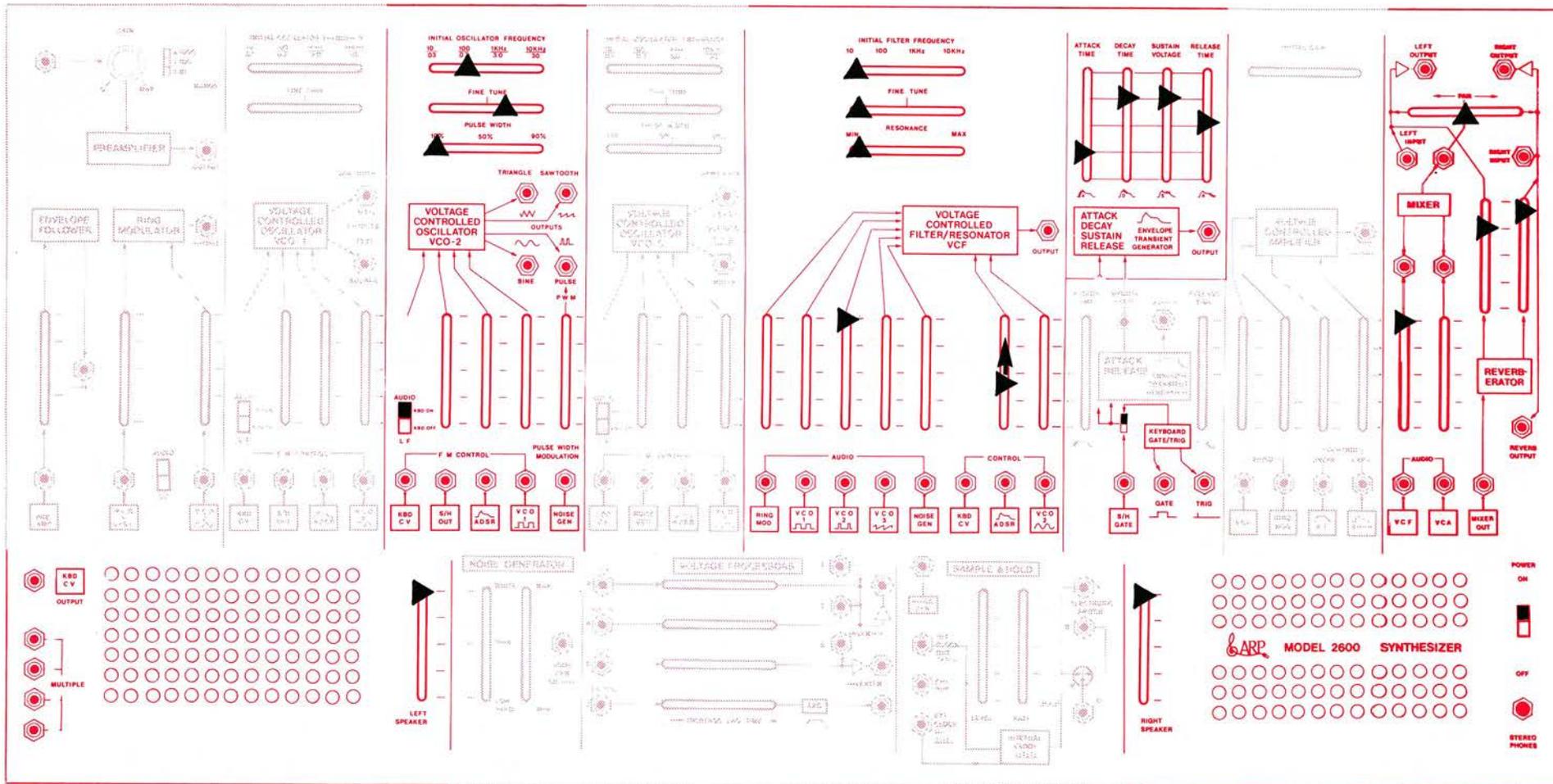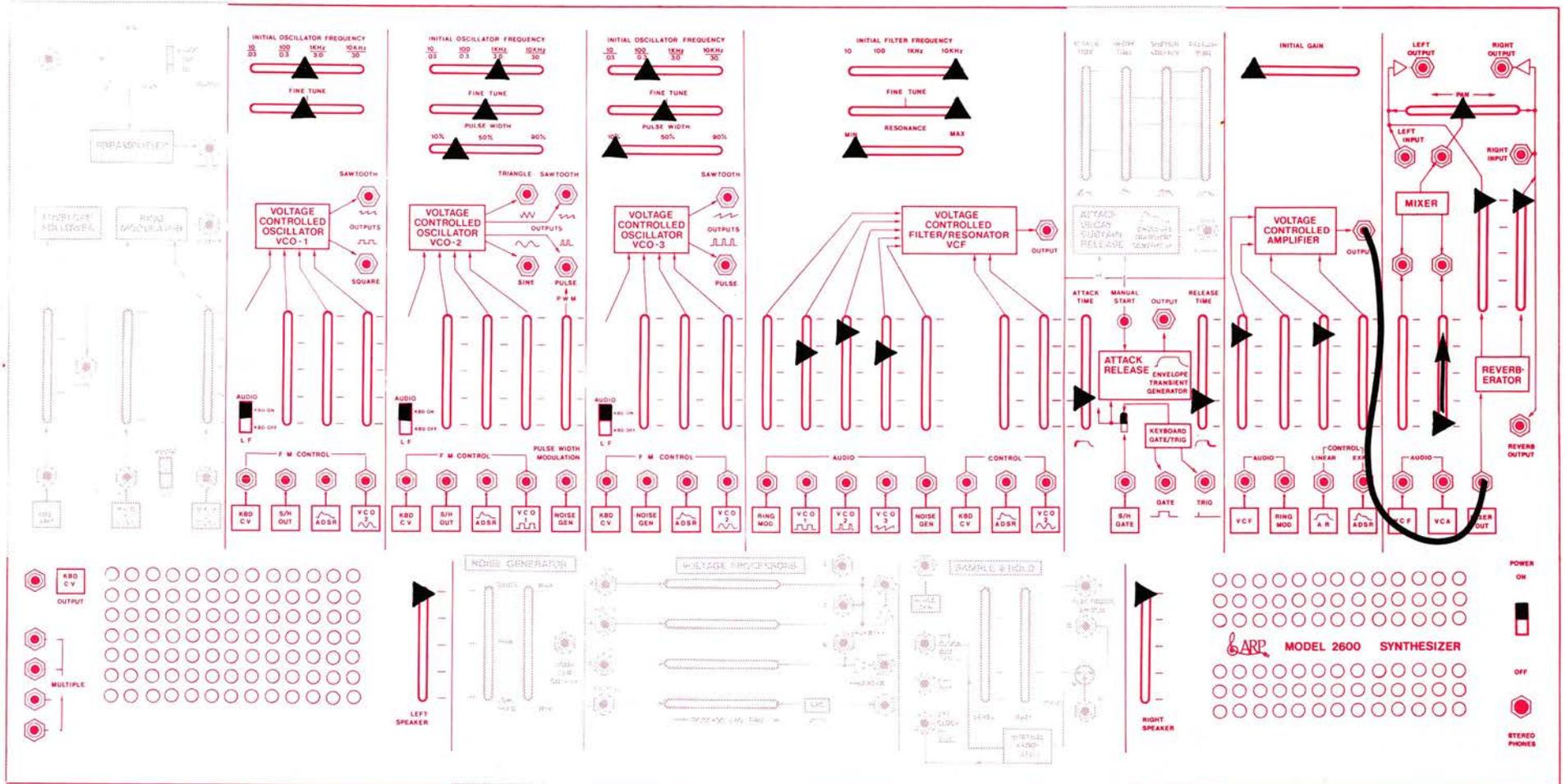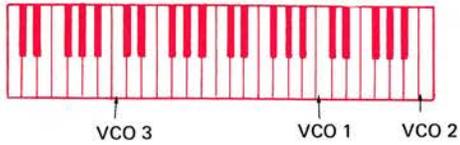# English Horn/Oboe

9.

VCO TUNING

VCO 2

1. Tune VCO 2 to middle C.
2. Raise ADSR ↑ into VCF Control for brightness.

Fanfare Trumpet

10.

VCO TUNING

VCO 3   VCO 1   VCO 2

INITIAL OSCILLATOR FREQUENCY

INITIAL FILTER FREQUENCY

INITIAL GAIN

LEFT OUTPUT   RIGHT OUTPUT

MIXER

REVERB-ERATOR

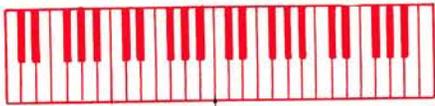ARP MODEL 2600 SYNTHESIZER

1.   Tune: VCO 1 to one octave above middle C.
             VCO 2 to two octaves above middle C.
             VCO 3 to one octave below middle C.
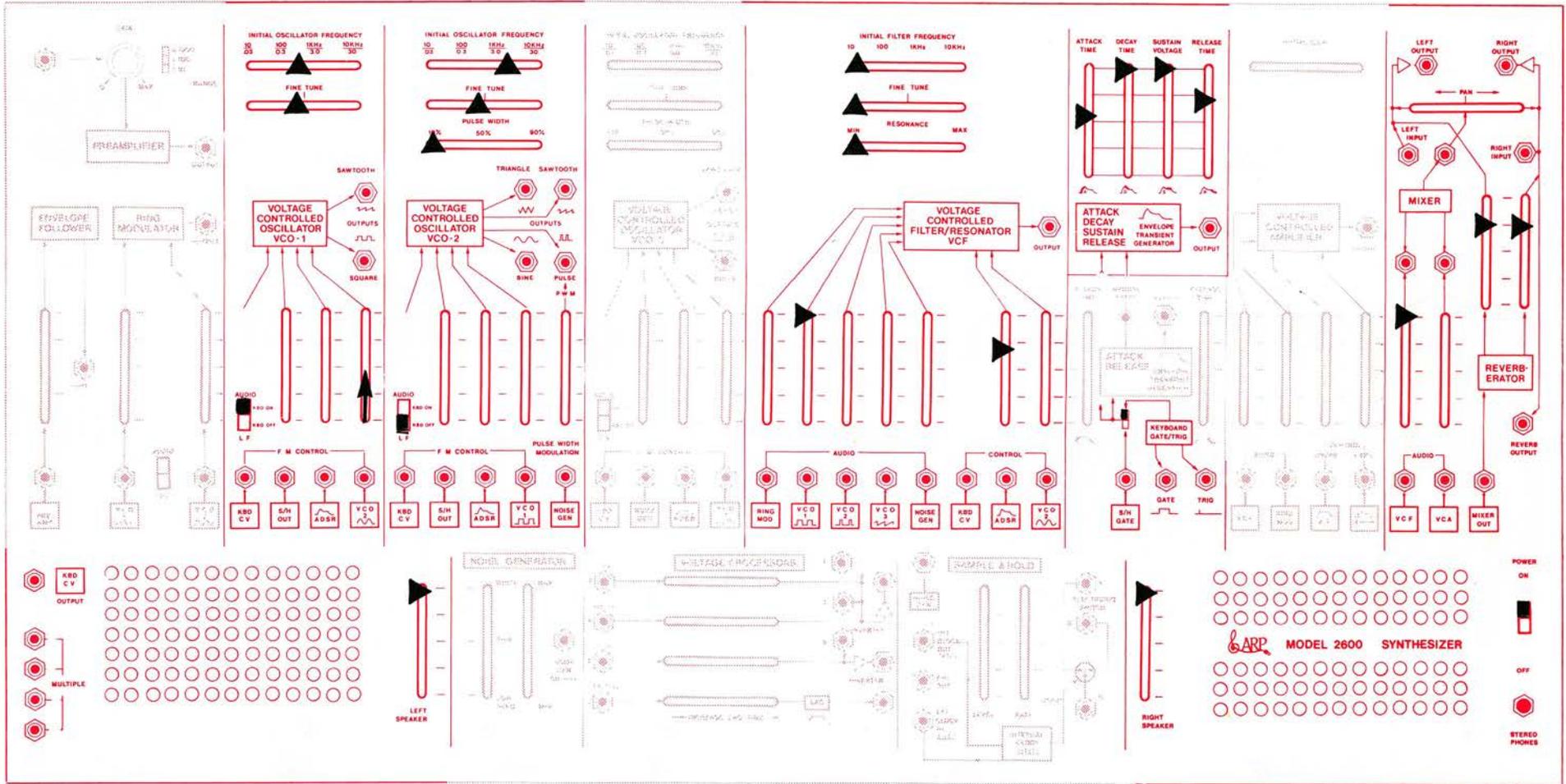2.   Raise VCA ↑ into Mixer for brilliance.

1 PATCHCORD

Monster Organ

11.

VCO1
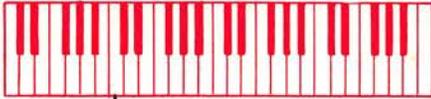
INITIAL OSCILLATOR FREQUENCY
10 100 1KHz 10KHz

FINE TUNE

VOLTAGE CONTROLLED OSCILLATOR VCO-1

SAWTOOTH
OUTPUTS
SQUARE

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL
KBD CV | S/H OUT | ADSR | VCO

INITIAL OSCILLATOR FREQUENCY
10 100 1KHz 10KHz

FINE TUNE

PULSE WIDTH
10% 50% 90%

VOLTAGE CONTROLLED OSCILLATOR VCO-2

TRIANGLE SAWTOOTH
OUTPUTS
SINE PULSE PWM

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL
KBD CV | S/H OUT | ADSR | VCO | PULSE WIDTH MODULATION | NOISE GEN

INITIAL FILTER FREQUENCY
10 100 1KHz 10KHz

FINE TUNE

MIN RESONANCE MAX

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

OUTPUT

AUDIO
RING MOD | VCO | VCO 2 | VCO 3 | NOISE GEN

CONTROL
KBD CV | ADSR | VCO

ATTACK TIME | DECAY TIME | SUSTAIN VOLTAGE | RELEASE TIME

ATTACK DECAY SUSTAIN RELEASE

ENVELOPE TRANSIENT GENERATOR

OUTPUT

ATTACK RELEASE

KEYBOARD GATE/TRIG

S/H GATE | GATE | TRIG

LEFT OUTPUT | RIGHT OUTPUT

PAN

LEFT INPUT | RIGHT INPUT

MIXER

REVERB-ERATOR

REVERB OUTPUT

AUDIO
VCF | VCA | MIXER OUT

PREAMPLIFIER

ENVELOPE FOLLOWER | RING MODULATOR

KBD CV
OUTPUT

MULTIPLE

NOISE GENERATOR

VOLTAGE PROCESSOR

SAMPLE & HOLD

LEFT SPEAKER

RIGHT SPEAKER

POWER
ON
OFF
STEREO PHONES

ARP MODEL 2600 SYNTHESIZER

Portamento

1. Tune VCO 1 to middle C.
2. Raise VCO 2 into VCO 1 and adjust VCO 2 frequency for vibrato speed.

Thereminovox

12.

VCO 1+3

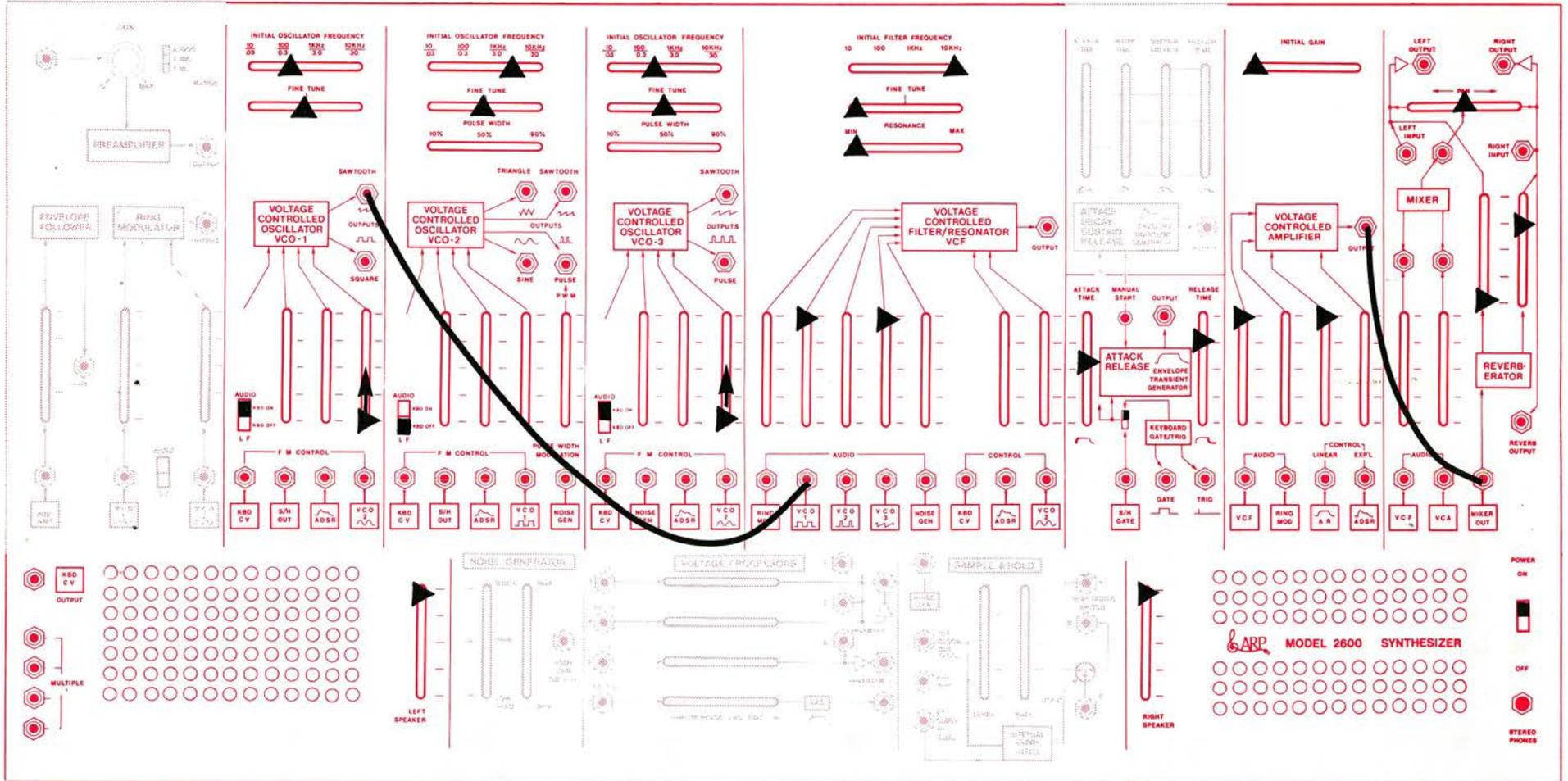INITIAL OSCILLATOR FREQUENCY

10   100   1KHz   10KHz
.03   .03   3.0   30

FINE TUNE

INITIAL OSCILLATOR FREQUENCY

10   100   1KHz   10KHz
.03   .03   3.0   30

FINE TUNE

PULSE WIDTH

10%   50%   90%

INITIAL OSCILLATOR FREQUENCY

10   100   1KHz   10KHz
.03   .03   3.0   30

FINE TUNE

PULSE WIDTH

10%   50%   90%

INITIAL FILTER FREQUENCY

10   100   1KHz   10KHz

FINE TUNE

MIN   RESONANCE   MAX

INITIAL GAIN

LEFT OUTPUT   RIGHT OUTPUT

SAWTOOTH

PREAMPLIFIER

VOLTAGE CONTROLLED OSCILLATOR VCO-1

OUTPUTS

SQUARE

ENVELOPE FOLLOWER   RING MODULATOR

TRIANGLE SAWTOOTH

VOLTAGE CONTROLLED OSCILLATOR VCO-2

OUTPUTS

SINE   PULSE + PWM

SAWTOOTH

VOLTAGE CONTROLLED OSCILLATOR VCO-3

OUTPUTS

PULSE

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

OUTPUT

ATTACK DECAY SUSTAIN RELEASE

ATTACK TIME   MANUAL START   OUTPUT   RELEASE TIME

ATTACK RELEASE

ENVELOPE TRANSIENT GENERATOR

KEYBOARD GATE/TRIG

GATE   TRIG

VOLTAGE CONTROLLED AMPLIFIER

OUTPUT

LEFT INPUT

RIGHT INPUT

MIXER

REVERB-ERATOR

REVERB OUTPUT

AUDIO
KBD ON
KBD OFF
L F

AUDIO
KBD ON
KBD OFF
L F

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL

PULSE WIDTH MODULATION

F M CONTROL

F M CONTROL

AUDIO

CONTROL

AUDIO

CONTROL
LINEAR   EXP'L

AUDIO

KBD CV   S/H OUT   ADSR   VCO

KBD CV   S/H OUT   ADSR   VCO   NOISE GEN

KBD CV   NOISE   ADSR   VCO 2

RING MOD   VCO 1   VCO 2   VCO 3   NOISE GEN   KBD CV   ADSR   VCO

S/H GATE

VCF   RING MOD   A R   ADSR

VCF   VCA   MIXER OUT

KBD CV OUTPUT

MULTIPLE

NOISE GENERATOR

VOLTAGE PROCESSORS

SAMPLE & HOLD

LEFT SPEAKER

POWER
ON

OFF

STEREO PHONES

ARP MODEL 2600 SYNTHESIZER

RIGHT SPEAKER

Portamento

1. Tune VCO 1 and 3 to one octave below middle C
2. Listening to each oscillator individually, raise VCO 2 ↑
    into each for vibrato and adjust VCO 2 frequency for speed.

2 PATCHCORDS

Cello Section

13.
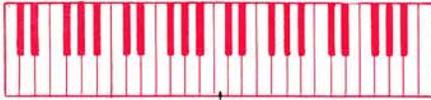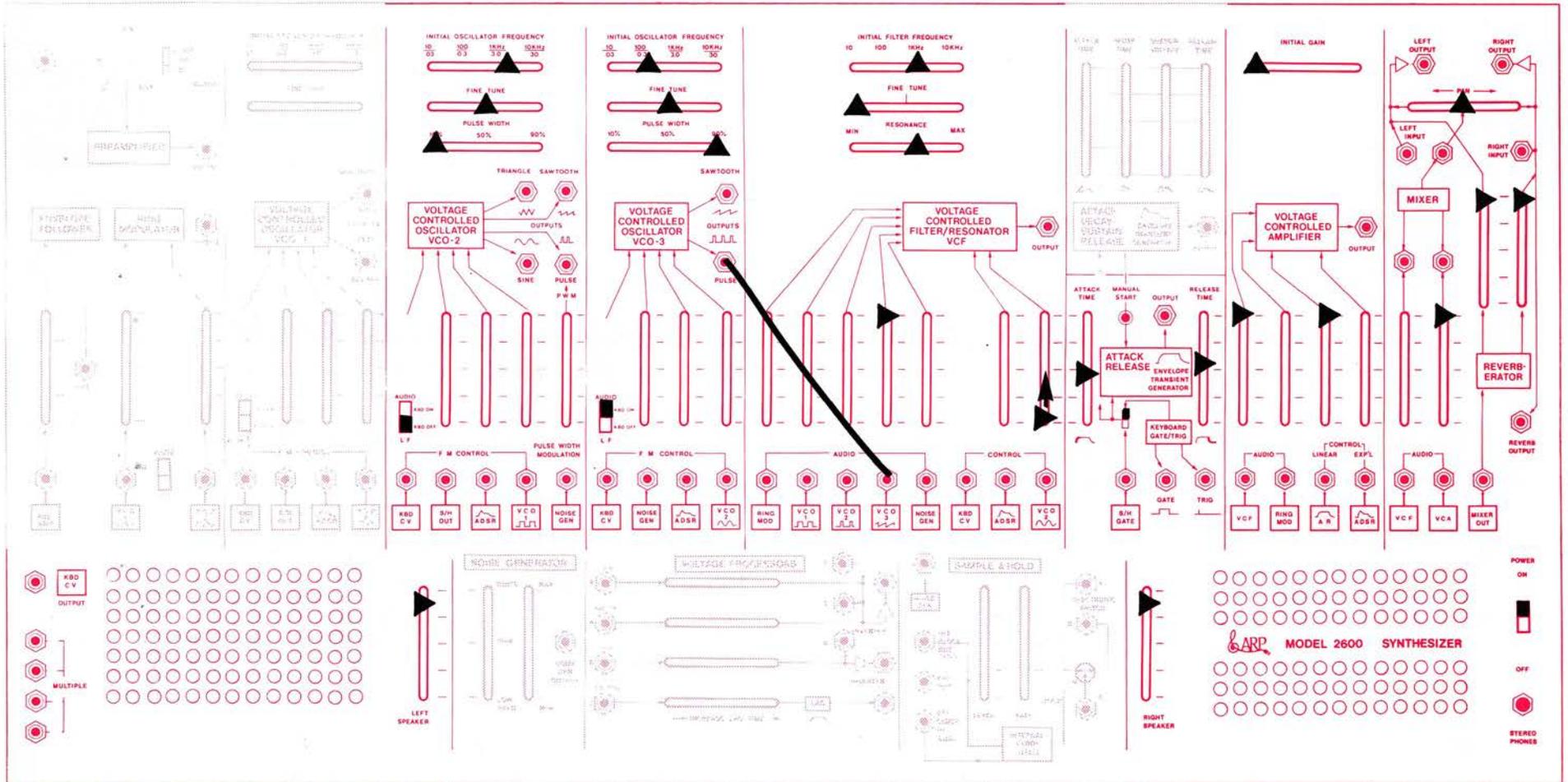
VCO TUNING

VCO 3

1. Tune VCO 3 to middle C.
2. Raise VCO 2 ↑ into VCF and adjust VCO 2 frequency
   for tremelo speed.

1 PATCHCORD

Cowboy Harmonica

14.

VCO 2   VCO 1+3

INITIAL OSCILLATOR FREQUENCY

10	100	1KHz	10KHz
0.3	0.3	3.0	30

FINE TUNE

VOLTAGE
CONTROLLED
OSCILLATOR
VCO-1

SAWTOOTH

OUTPUTS

SQUARE

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL

| KBD C V | S/H OUT | ADSR | VCO 2 |

INITIAL OSCILLATOR FREQUENCY

10	100	1KHz	10KHz
0.3	0.3	3.0	30

FINE TUNE

PULSE WIDTH

| 10% | 50% | 90% |

VOLTAGE
CONTROLLED
OSCILLATOR
VCO-2

TRIANGLE SAWTOOTH

OUTPUTS

SINE   PULSE
P W M

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL   PULSE WIDTH
MODULATION

| KBD C V | S/H OUT | ADSR | VCO 2 | NOISE GEN |

INITIAL OSCILLATOR FREQUENCY

10	100	1KHz	10KHz
0.3	0.3	3.0	30

FINE TUNE

PULSE WIDTH

| 10% | 50% | 90% |

VOLTAGE
CONTROLLED
OSCILLATOR
VCO-3

SAWTOOTH

OUTPUTS

PULSE

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL

| KBD C V | NOISE GEN | ADSR | VCO 2 |

INITIAL FILTER FREQUENCY

| 10 | 100 | 1KHz | 10KHz |

FINE TUNE

MIN   RESONANCE   MAX

VOLTAGE
CONTROLLED
FILTER/RESONATOR
VCF

OUTPUT

AUDIO   CONTROL

| RING MOD | VCO 1 | VCO 2 | VCO 3 | NOISE GEN | KBD C V | ADSR | VCO 2 |

ATTACK   DECAY   SUSTAIN   RELEASE
TIME   TIME   VOLTAGE   TIME

ATTACK
DECAY
SUSTAIN
RELEASE

ENVELOPE
TRANSIENT
GENERATOR

OUTPUT

ATTACK
RELEASE

KEYBOARD
GATE/TRIG

S/H
GATE

GATE   TRIG

INITIAL GAIN

VOLTAGE
CONTROLLED
AMPLIFIER

AUDIO

| VCF | VCA | MIXER OUT |

LEFT
OUTPUT

RIGHT
OUTPUT

PAN

LEFT
INPUT

RIGHT
INPUT

MIXER

REVERB-
ERATOR

REVERB
OUTPUT

PREAMPLIFIER

INVERTER

RING
MODULATOR

KBD
C V

OUTPUT

MULTIPLE

NOISE GENERATOR

WHITE   PINK

LEFT
SPEAKER

VOLTAGE PROCESSORS

SAMPLE & HOLD

RIGHT
SPEAKER

MODEL 2600   SYNTHESIZER

POWER
ON

OFF

STEREO
PHONES

Portamento

Tune: VCO 1 to middle C.
         VCO 2 to one octave below middle C.
         VCO 3 to middle C.

Classic ARP 2600 Patch

15.
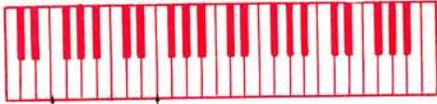
VCO TUNING

VCO 1+3   VCO 2
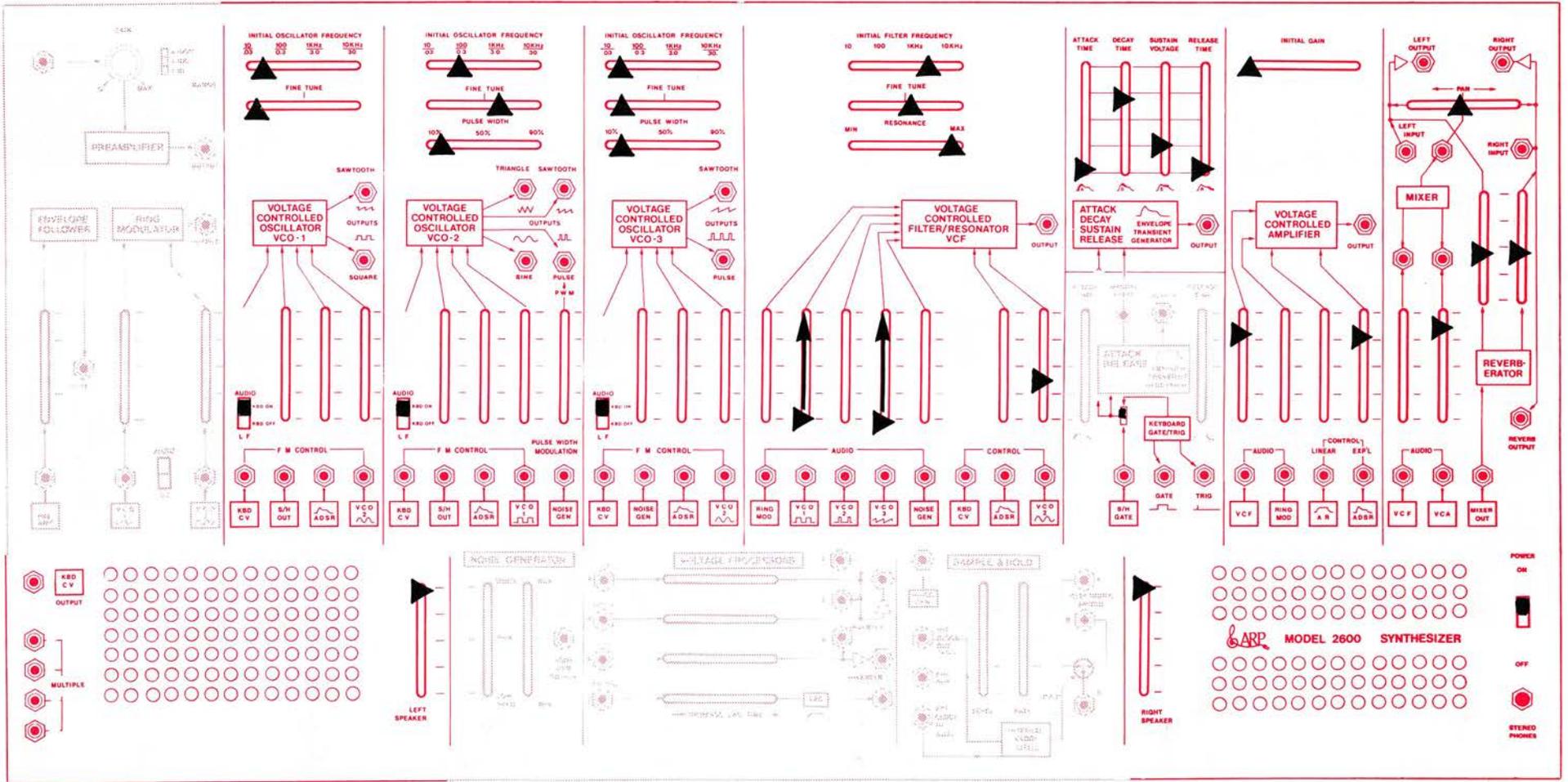
OPTION: Raise VCO 1 ↑ or VCO 3 ↑ into VCF.
Tune to one octave below VCO 2

Electric Mouth-harp

16.
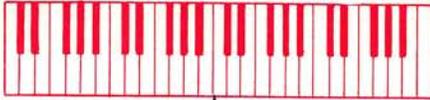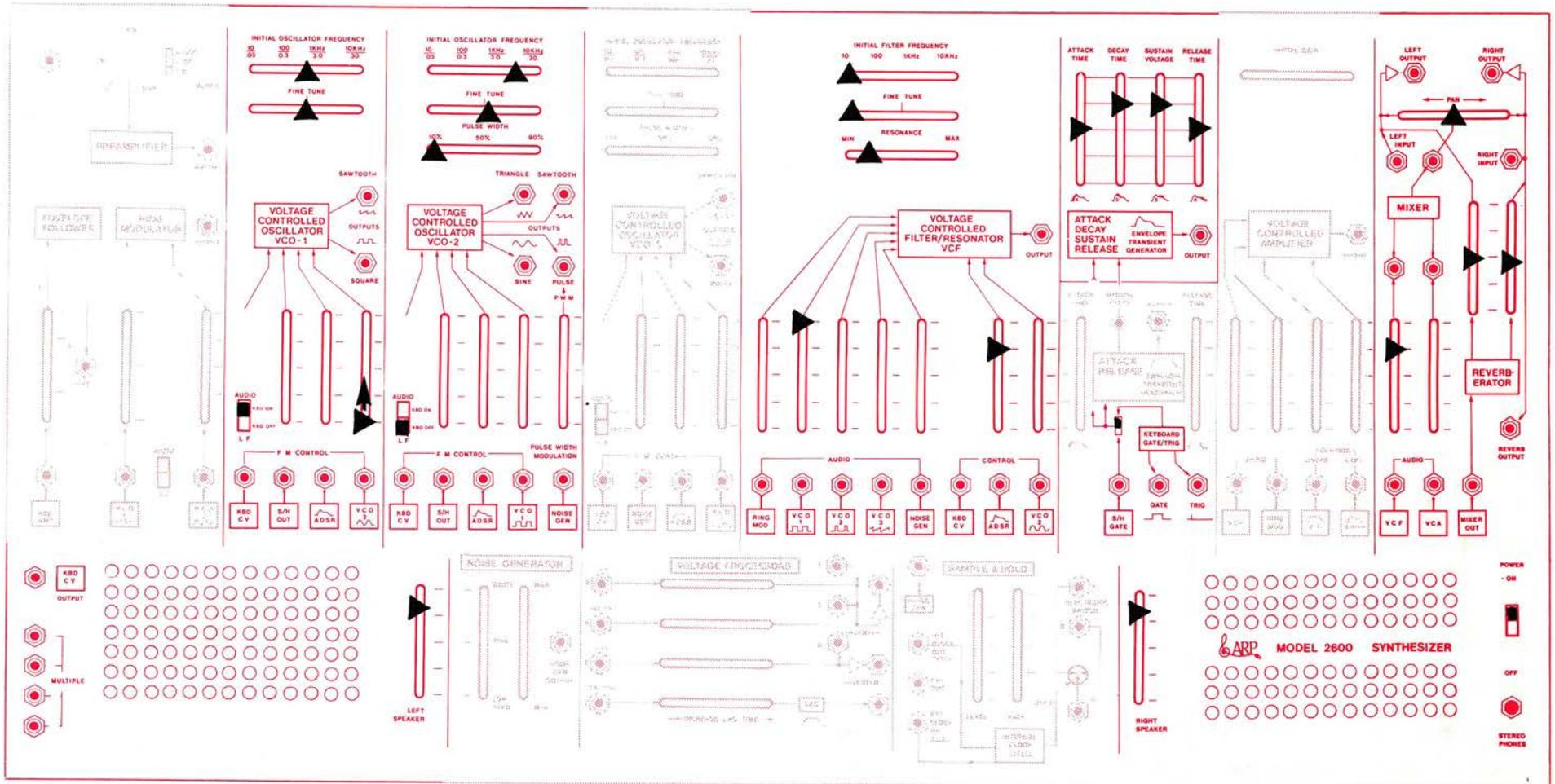
1. Tune VCO 1 to middle C.
2. Raise VCO 2 ↑ into VCO 1 for vibrato.
3. Adjust VCO 2 frequency for vibrato speed.

Licorice Schtück

Big Bass Drum

18.

1 PATCHCHORD

VCO TUNING

VCO 3

VOLTAGE CONTROLLED OSCILLATOR VCO-3

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

ATTACK DECAY SUSTAIN RELEASE

VOLTAGE CONTROLLED AMPLIFIER

MIXER

REVERB-ERATOR

INITIAL OSCILLATOR FREQUENCY
FINE TUNE
PULSE WIDTH

INITIAL FILTER FREQUENCY
FINE TUNE
RESONANCE

ATTACK TIME   DECAY TIME   SUSTAIN VOLTAGE   RELEASE TIME

LEFT OUTPUT   RIGHT OUTPUT
LEFT INPUT   RIGHT INPUT
PAN

SAWTOOTH
OUTPUTS
PULSE

POWER
ON
OFF
STEREO PHONES

MODEL 2600 SYNTHESIZER

Portamento

Tune VCO 3 to one octave below middle C.
Switch Portamento on for trombone slides.

Trombone / Tuba

19.

VCO TUNING

VCO 3

INITIAL OSCILLATOR FREQUENCY

INITIAL OSCILLATOR FREQUENCY

INITIAL FILTER FREQUENCY

ATTACK TIME DECAY TIME SUSTAIN VOLTAGE RELEASE TIME

LEFT OUTPUT RIGHT OUTPUT

FINE TUNE

FINE TUNE

FINE TUNE

PAN

PULSE WIDTH

PULSE WIDTH

RESONANCE

LEFT INPUT RIGHT INPUT

TRIANGLE SAWTOOTH

SAWTOOTH

MIXER

VOLTAGE CONTROLLED OSCILLATOR VCO-2

OUTPUTS

VOLTAGE CONTROLLED OSCILLATOR VCO-3

OUTPUTS

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

OUTPUT

ATTACK DECAY SUSTAIN RELEASE

ENVELOPE TRANSIENT GENERATOR

OUTPUT

REVERB-ERATOR

SINE PULSE PWM

PULSE

KEYBOARD GATE/TRIG

REVERB OUTPUT

AUDIO

AUDIO

GATE TRIG

L F

L F

F M CONTROL

PULSE WIDTH MODULATION

F M CONTROL

AUDIO

CONTROL

AUDIO

KBD CV S/H OUT ADSR VCO 2 NOISE GEN

KBD CV NOISE GEN ADSR VCO 3

RING MOD VCO 2 VCO 3 VCO 3 NOISE GEN KBD CV ADSR VCO 3

S/H GATE

GATE TRIG

VCF VCA MIXER OUT

KBD CV OUTPUT

MULTIPLE

LEFT SPEAKER

RIGHT SPEAKER

POWER ON

OFF

STEREO PHONES

ARP MODEL 2600 SYNTHESIZER

1. Open VCF → and tune VCO 3 to one octave above middle C.
2. Close VCF ← and raise ADSR ↑ into VCF for brightness.
3. Raise VCO 2 ↑ into VCF for tremelo.
4. Adjust VCO 2 frequency for tremelo speed.

1 PATCHCORD

Flute

20.

VCO TUNING

VCO 3

INITIAL OSCILLATOR FREQUENCY

VOLTAGE CONTROLLED OSCILLATOR VCO-2

VOLTAGE CONTROLLED OSCILLATOR VCO-3

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

ATTACK DECAY SUSTAIN RELEASE

VOLTAGE CONTROLLED AMPLIFIER

MIXER

REVERB-ERATOR

ℓARP MODEL 2600 SYNTHESIZER
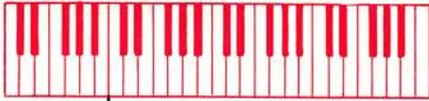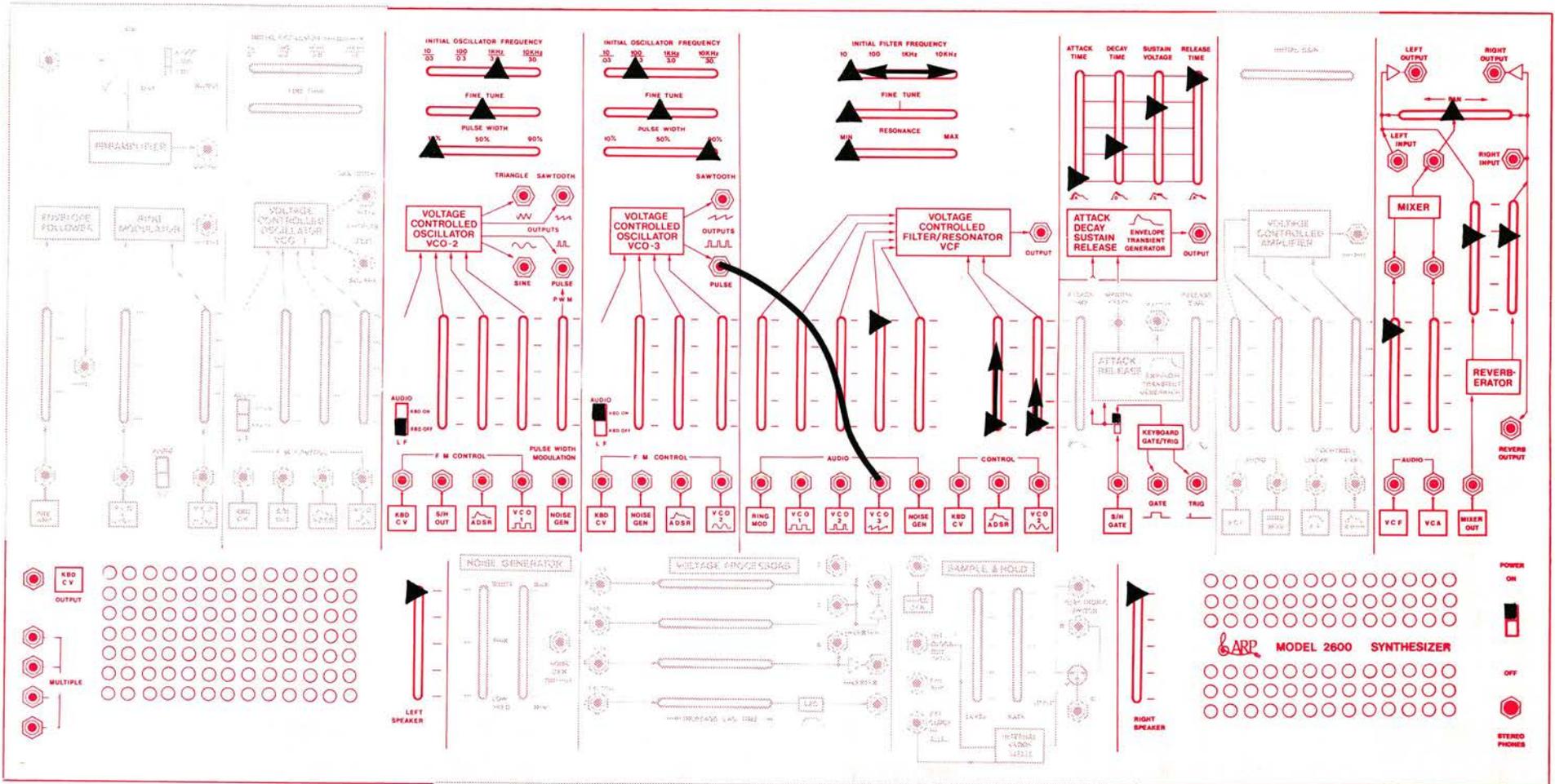
1. Open VCF ⟶ and tune VCO 3 to one octave below middle C.
2. Close VCF ⟵ and raise ADSR and VCO 2 ↑ into VCF.
3. Adjust VCO2 frequency for tremelo speed.

1 PATCHCORD

Okie Guitar

21.

VCO TUNING

VCO 2

INITIAL OSCILLATOR FREQUENCY
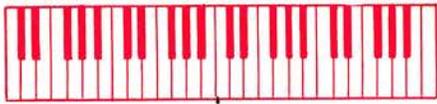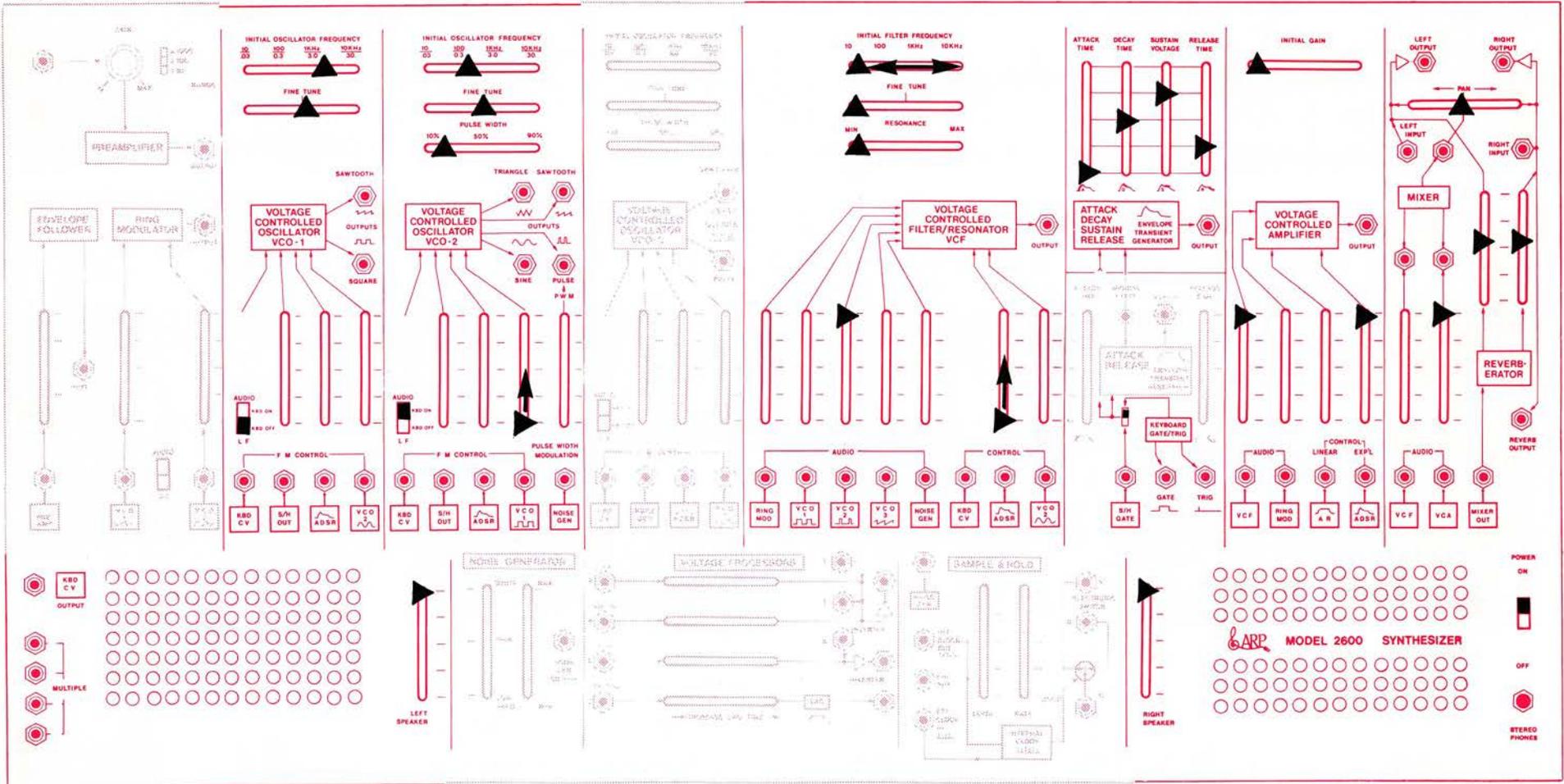
1. Open VCF → and tune VCO 2 to middle C.
2. Close VCF ← and raise ADSR ↑ into VCF.
3. Raise VCO 1 ↑ into VCO 2 and adjust VCO 1
   frequency for trill speed.
4. Bring VCO 1 ↑ in and out of VCO 2 during performance
   for trills.

Jazz Guitar

22.

Advanced Instruments
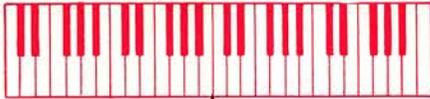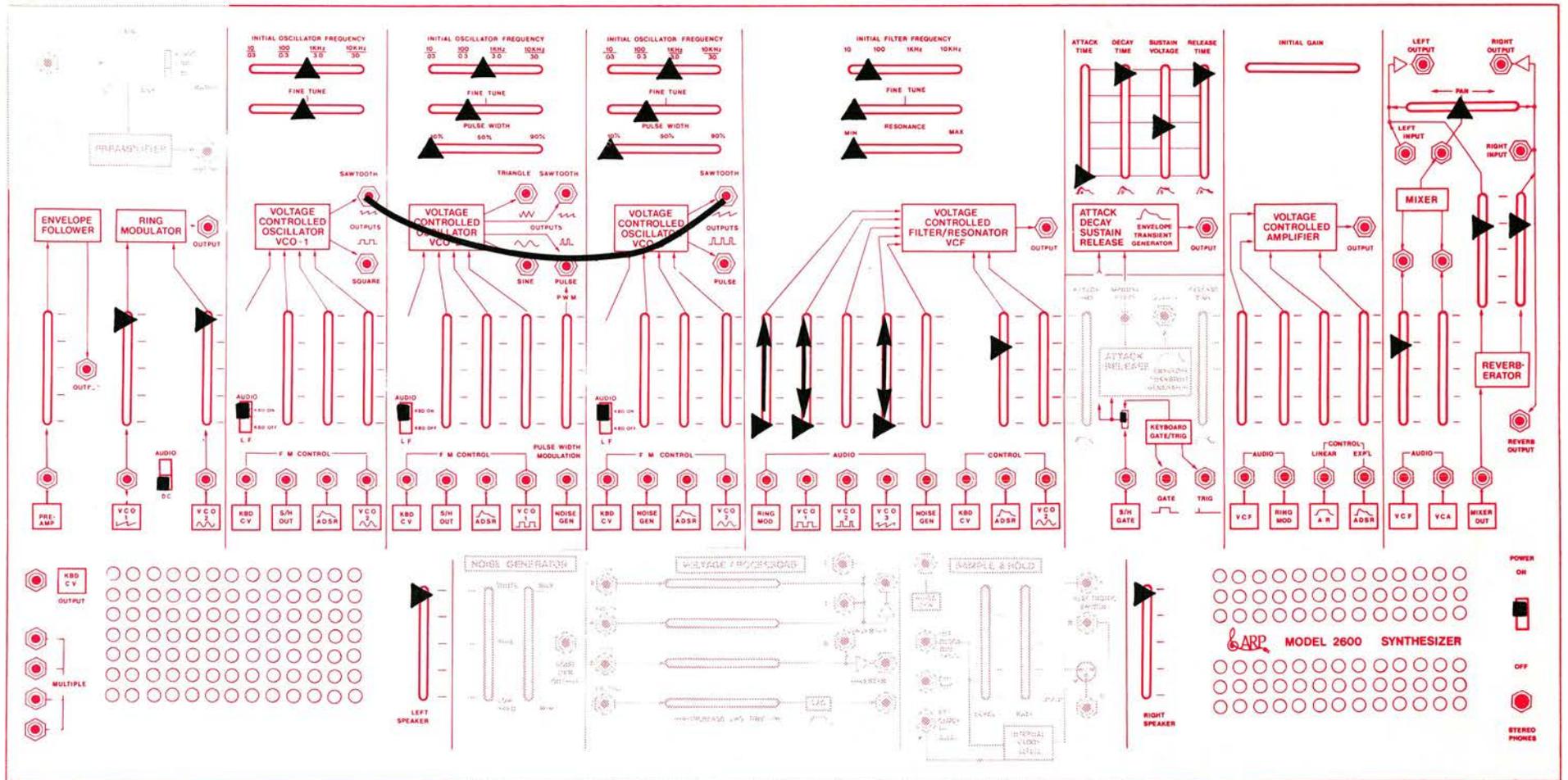
1. Raise VCO 1 and 3 ↑ into VCF.
2. Tune VCO 1 and 3 to middle C.
3. Detune VCO 3 by a few beats.
4. Close VCO 1 and 3 ↓ and raise Ring Mod ↑ into VCF.
5. Adjust VCO 2 frequency for different effects.

1 PATCHCORD

Ceremonial Gong

23.

VCO 2   VCO 3

INITIAL OSCILLATOR FREQUENCY

INITIAL OSCILLATOR FREQUENCY

INITIAL FILTER FREQUENCY

ATTACK TIME   DECAY TIME   SUSTAIN VOLTAGE   RELEASE TIME

INITIAL GAIN

LEFT OUTPUT   RIGHT OUTPUT

VOLTAGE CONTROLLED OSCILLATOR VCO-2

VOLTAGE CONTROLLED OSCILLATOR VCO-3

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

ATTACK DECAY SUSTAIN RELEASE

VOLTAGE CONTROLLED AMPLIFIER

MIXER

REVERB-ERATOR

ARP MODEL 2600 SYNTHESIZER

Tuning

(Pitch Bender)

1. Play Key C3 and tune VCO 3 to an octave above VCO 2, which is tuned as shown.
2. Raise VCO 2 ↑ fully into VCO 3.
3. Raise ADSR ↑ into VCO 3 until a solid tone without beats is heard.

2 PATCHCORDS

Heavy Metal Fuzz Lead

24.
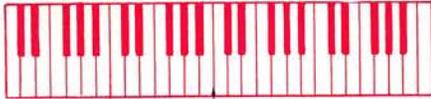
VCO TUNING

VCO 2+3
VCO 1
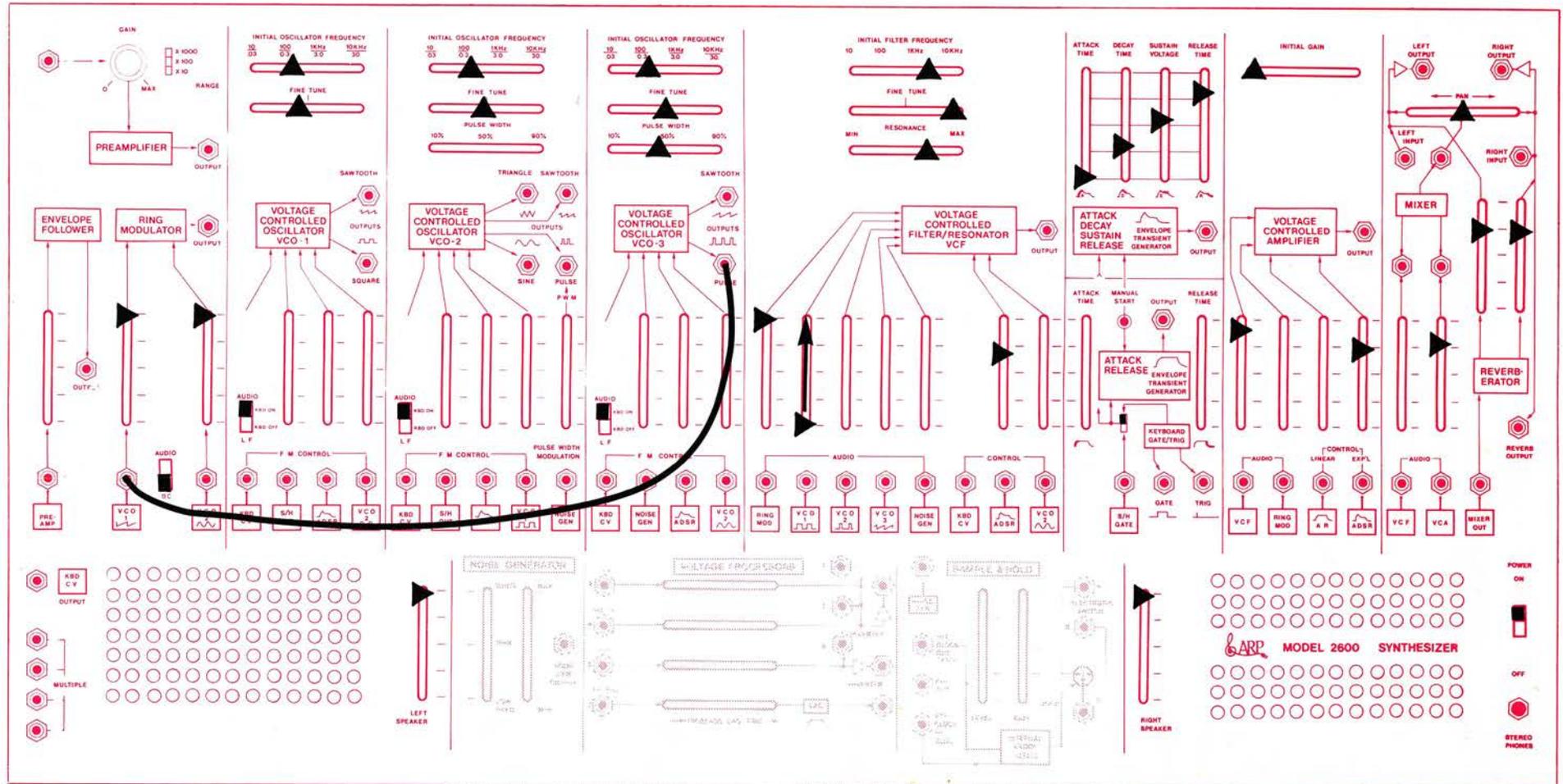
1. Tune VCO 2 and 3 to middle C.
2. Raise VCO 1 ↑ into VCF and tune a few beats off.

1 PATCHCORD

65¢ Piano

25.

ARP MODEL 2600 SYNTHESIZER
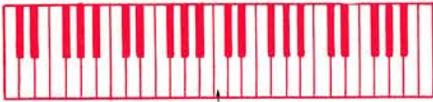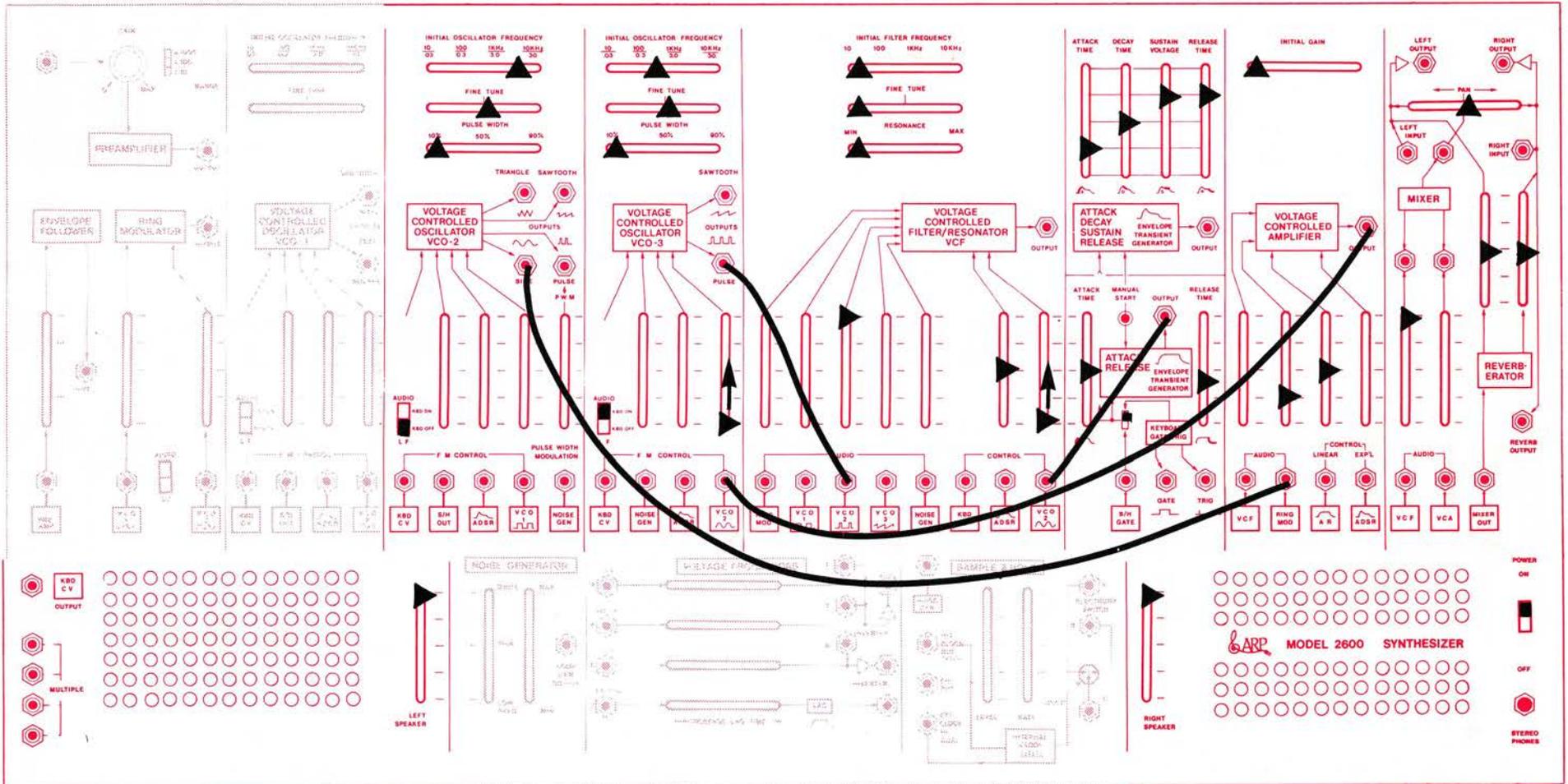
1. Tune VCO 3 to middle C.
2. Raise ↑ into VCO 3 and adjust VCO 2 frequency for vibrato speed.
3. Raise ↑ into VCF for delayed brilliance.

4 PATCHCORDS

Doc Trumpet

26.

VCO TUNING

VCO 2   VCO 3   VCO 1
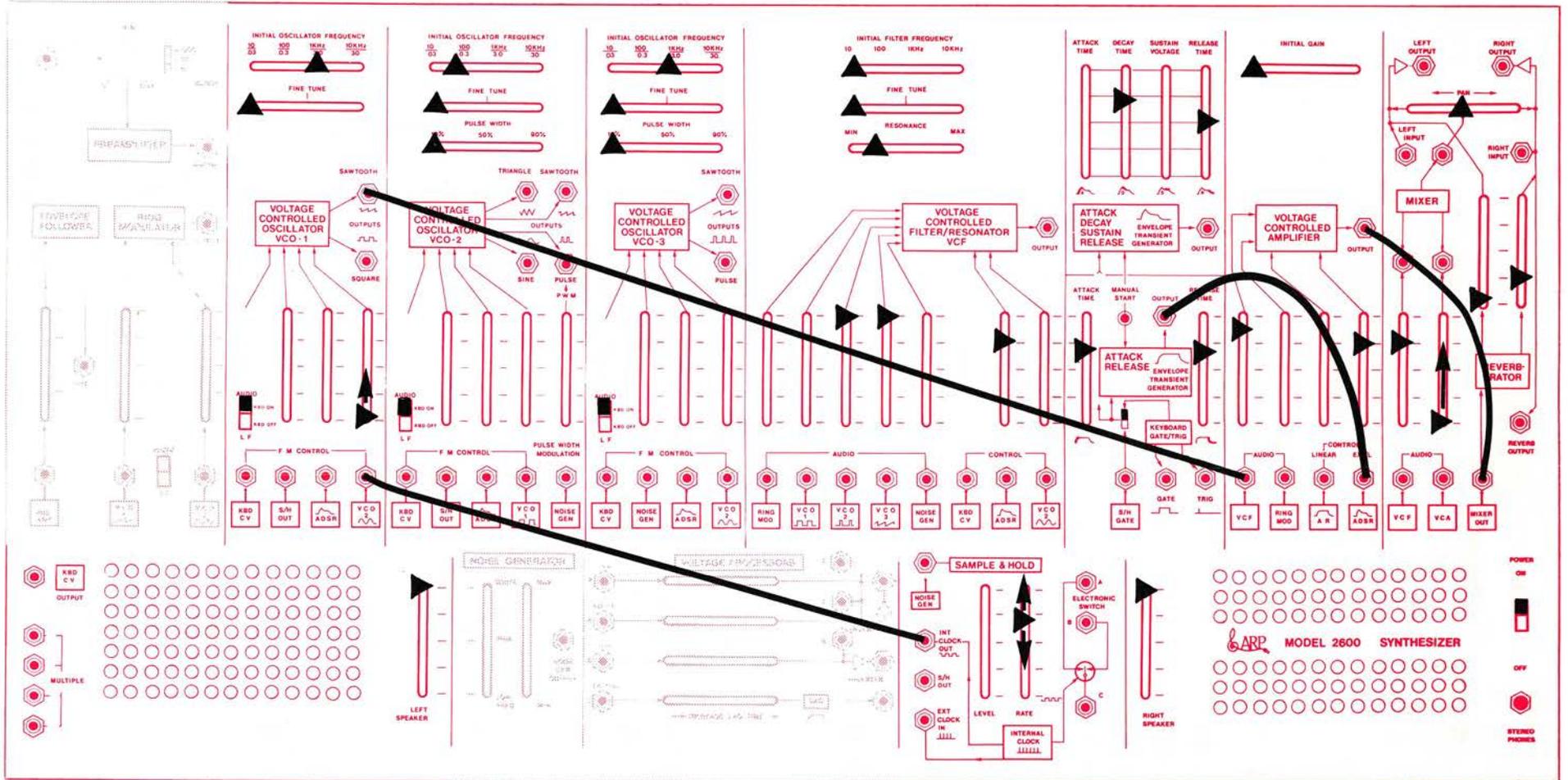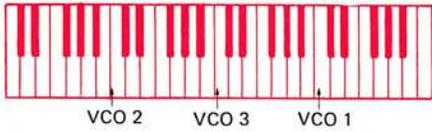
1. Tune: VCO 3 to middle C.
            VCO 2 to one octave below middle C.
            VCO 1 to one octave above middle C.
2. Raise ↑ into VCO 1 and adjust S/H Rate for vibrato speed.
3. Raise VCA ↑ into Mixer for violin presence.

4 PATCHCORDS

Stereo Bass & Delayed Violin

27.

VCO TUNING

VCO 1+3
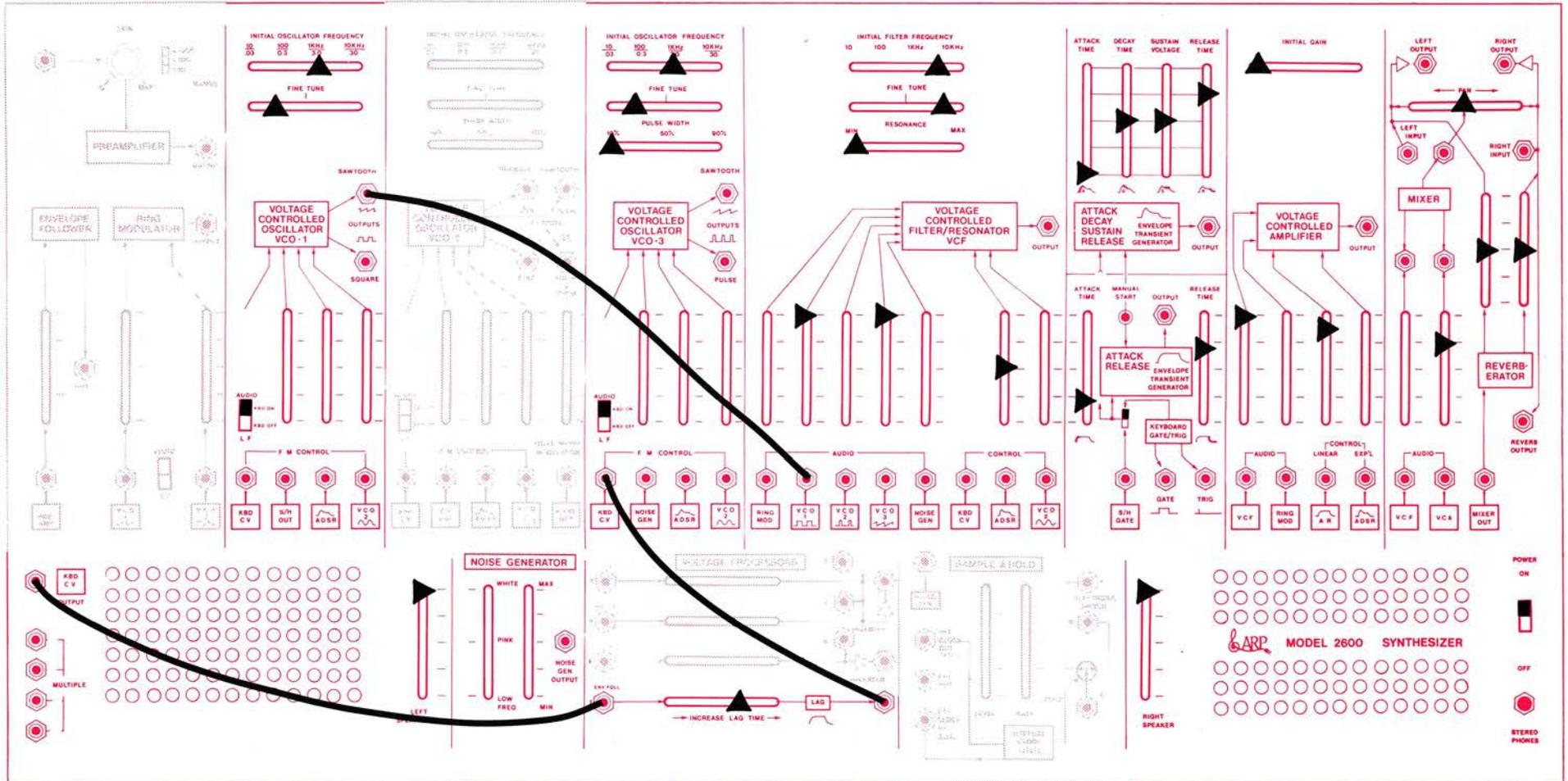
Portamento

1. Tune VCO 1 and 3 to an octave above middle C.
2. Adjust Lag ⟶ for desired keyboard delay.

3 PATCHCORDS

Oriental String Duo

28.

VCO TUNING

VCO 1   VCO 3

INITIAL OSCILLATOR FREQUENCY
10   100   1KHz   10KHz
0.3 0.3   3.0   30

FINE TUNE

VOLTAGE CONTROLLED OSCILLATOR VCO-1

SAWTOOTH
OUTPUTS
SQUARE

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL

KBD CV   S/H OUT   ADSR   VCO

INITIAL OSCILLATOR FREQUENCY
10   100   1KHz   10KHz
0.3 0.3   3.0   30

FINE TUNE

PULSE WIDTH
10%   50%   90%

VOLTAGE CONTROLLED OSCILLATOR VCO-3

SAWTOOTH
OUTPUTS
PULSE

AUDIO
KBD ON
KBD OFF
L F

F M CONTROL

KBD CV   NOISE GEN   ADSR   VCO

INITIAL FILTER FREQUENCY
10   100   1KHz   10KHz

FINE TUNE

MIN   RESONANCE   MAX

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

OUTPUT

AUDIO

RING MOD   VCO 1   VCO 2   VCO 3   NOISE GEN

CONTROL

KBD CV   ADSR   VCO

ATTACK TIME   DECAY TIME   SUSTAIN VOLTAGE   RELEASE TIME

ATTACK DECAY SUSTAIN RELEASE

ENVELOPE TRANSIENT GENERATOR

OUTPUT

ATTACK TIME   MANUAL START   OUTPUT   RELEASE TIME

ATTACK RELEASE

ENVELOPE TRANSIENT GENERATOR

KEYBOARD GATE/TRIG

S/H GATE   GATE   TRIG

INITIAL GAIN

VOLTAGE CONTROLLED AMPLIFIER

OUTPUT

CONTROL
LINEAR   EXP'L

AUDIO

VCF   RING MOD   A R   ADSR

LEFT OUTPUT   RIGHT OUTPUT

PAN

LEFT INPUT   RIGHT INPUT

MIXER

REVERBERATOR

REVERB OUTPUT

AUDIO

VCF   VCA   MIXER OUT

KBD CV
OUTPUT

MULTIPLE

NOISE GENERATOR

VOLTAGE PROCESSORS

SAMPLE & HOLD

LEFT SPEAKER

RIGHT SPEAKER

ARP   MODEL 2600   SYNTHESIZER

POWER
ON
OFF
STEREO PHONES

1.   Tune :   VCO 3 to middle C.
              VCO 1 to an octave below middle C.
2.   Raise VCO 1 ↑ into VCF for depth.
3.   Adjust VCF frequency for brightness.

2 PATCHCORDS

Pianoforte

29.
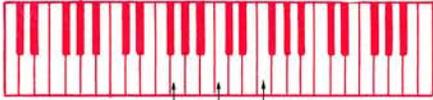
VCO 1   VCO 3   VCO 2
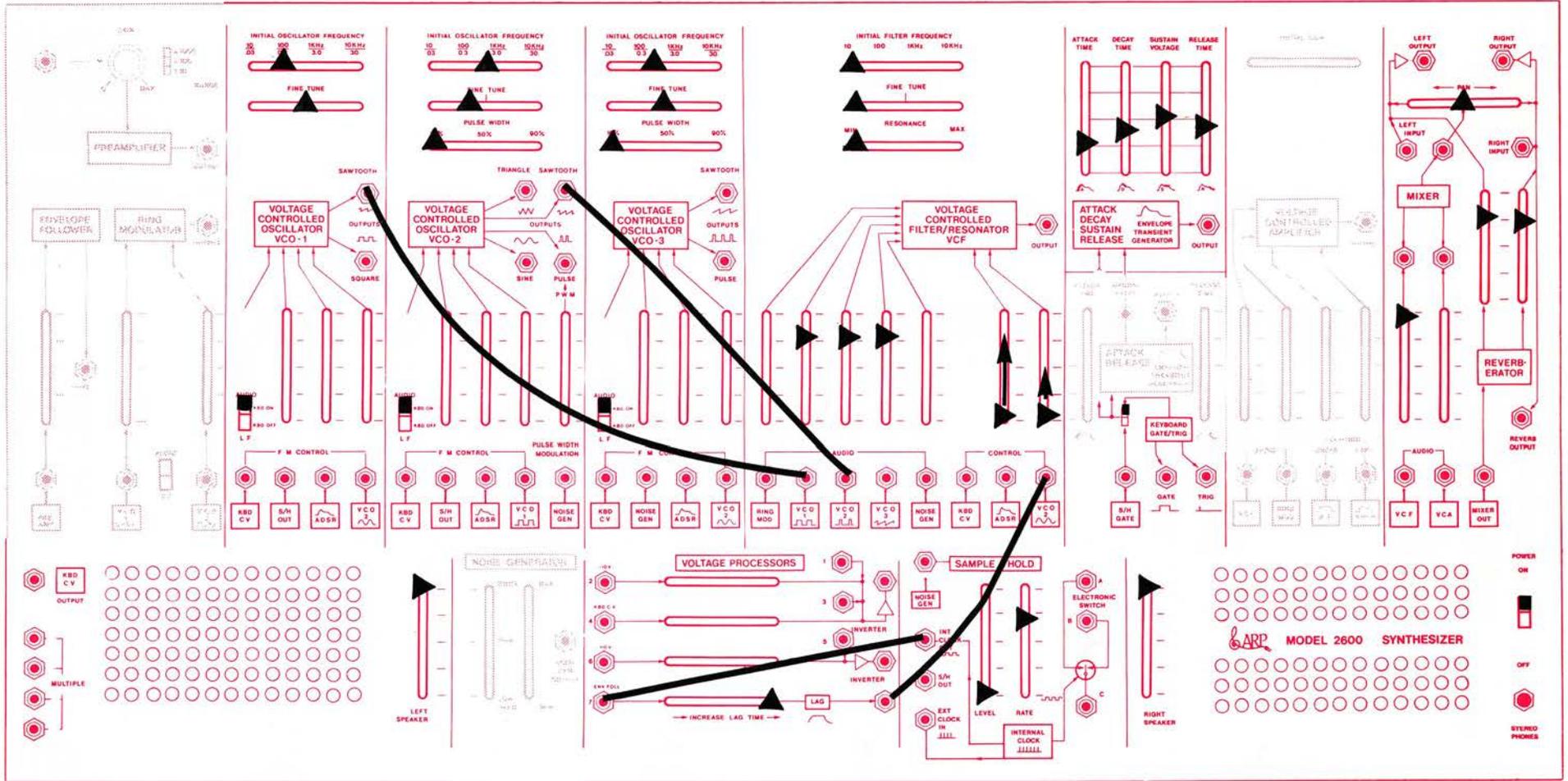
1. Tune: VCO 3 to middle C.
            VCO 2 to a fourth above middle C (to F).
            VCO 1 to a fourth below middle C (to G).
2. Raise ADSR ↑ into VCF for brightness.
3. Raise ↑ into VCF and adjust S/H Rate for tremelo speed.

4 PATCHCORDS

Big Band Brass

30.
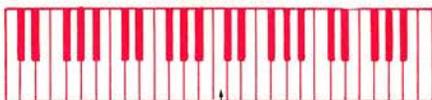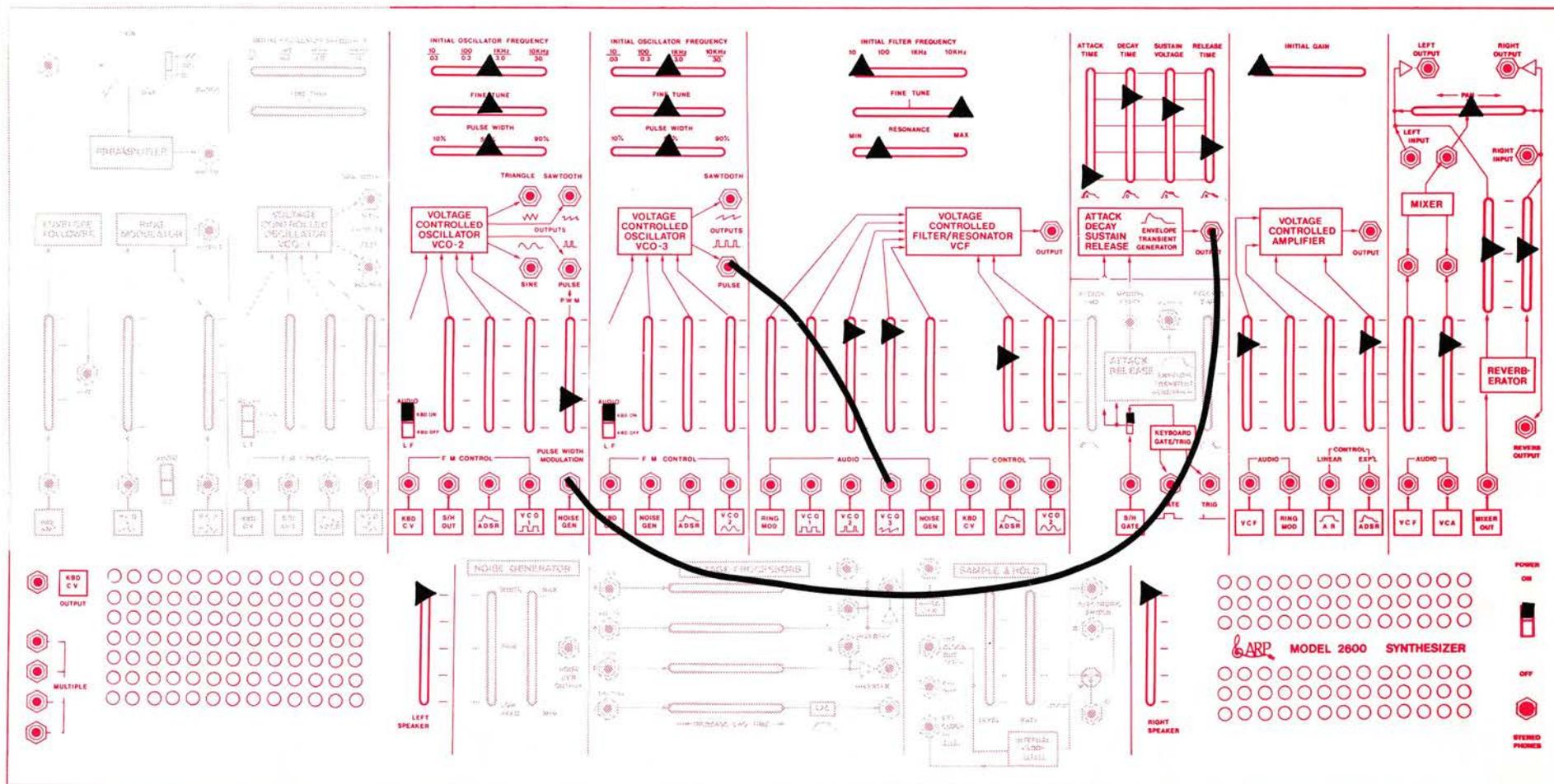
Tune VCO 2 and 3 to middle C.
Pulse Widths must be 50%.

2 PATCHCORDS

Electronic Piano

31.

VCO 2   VCO 1   VCF

INITIAL OSCILLATOR FREQUENCY

INITIAL OSCILLATOR FREQUENCY

INITIAL FILTER FREQUENCY

VOLTAGE CONTROLLED OSCILLATOR VCO-1

VOLTAGE CONTROLLED OSCILLATOR VCO-2

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

ATTACK DECAY SUSTAIN RELEASE

VOLTAGE CONTROLLED AMPLIFIER

MIXER

REVERBERATOR

MODEL 2600 SYNTHESIZER
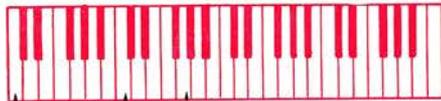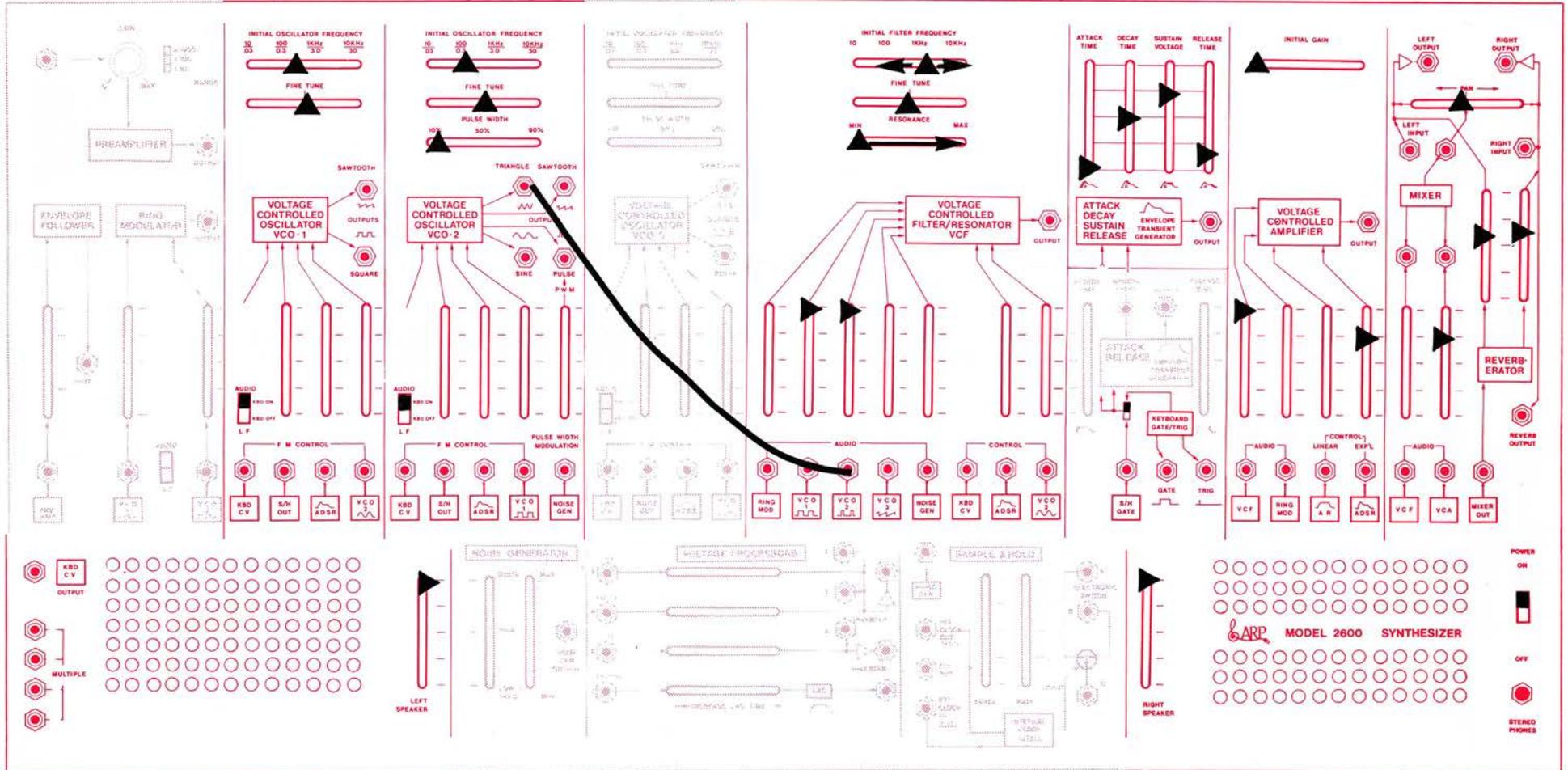
1 PATCHCORD

1. Open VCF → and tune VCO 1 to one octave below middle C.   Tune VCO 2 to two octaves below middle C.
2. Open Resonance → and tune VCF ← to a fifth above VCO 1.

Zombie Organ

32.

VCO 2   VCO 3
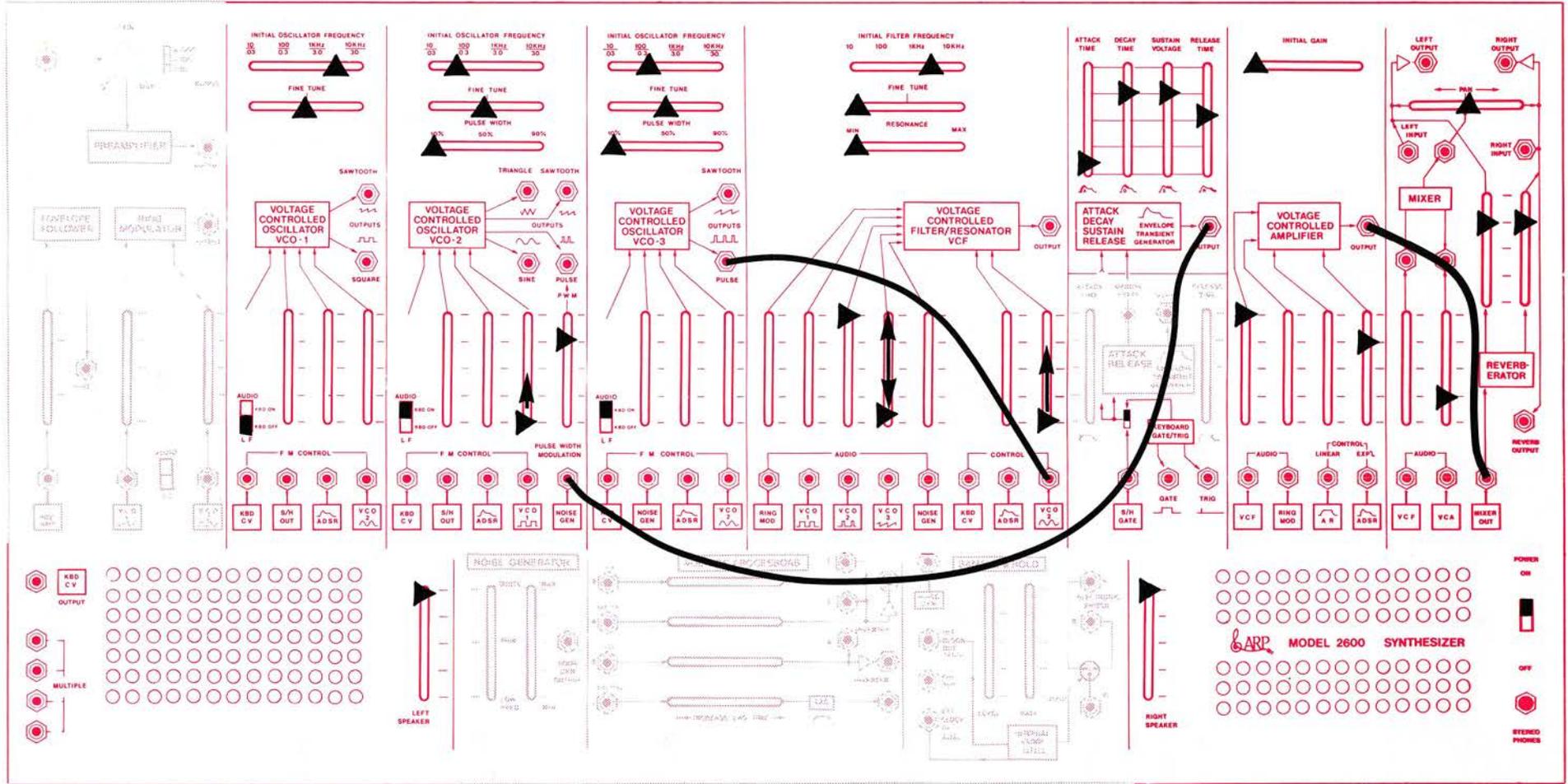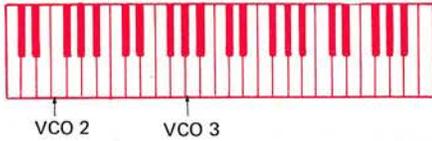
Tuning

(Pitch Bender)

1. Tune VCO 2 as shown.
2. Raise VCO 3 ～ ↑ into VCF and tune VCO 3 to an octave and a major third above VCO 2. (See intro.)
3. Close VCO 3 ↓ at VCF and raise ↑ into VCF Control to level shown.

4. Raise VCO 1 ～ ↑ into VCO 2 and adjust VCO 1 frequency for vibrato speed.
5. Bring VCO 1 ～ ↑ in and out of VCO 2 for vibrato during performance.

3 PATCHCORDS

Glitter Guitar

33.
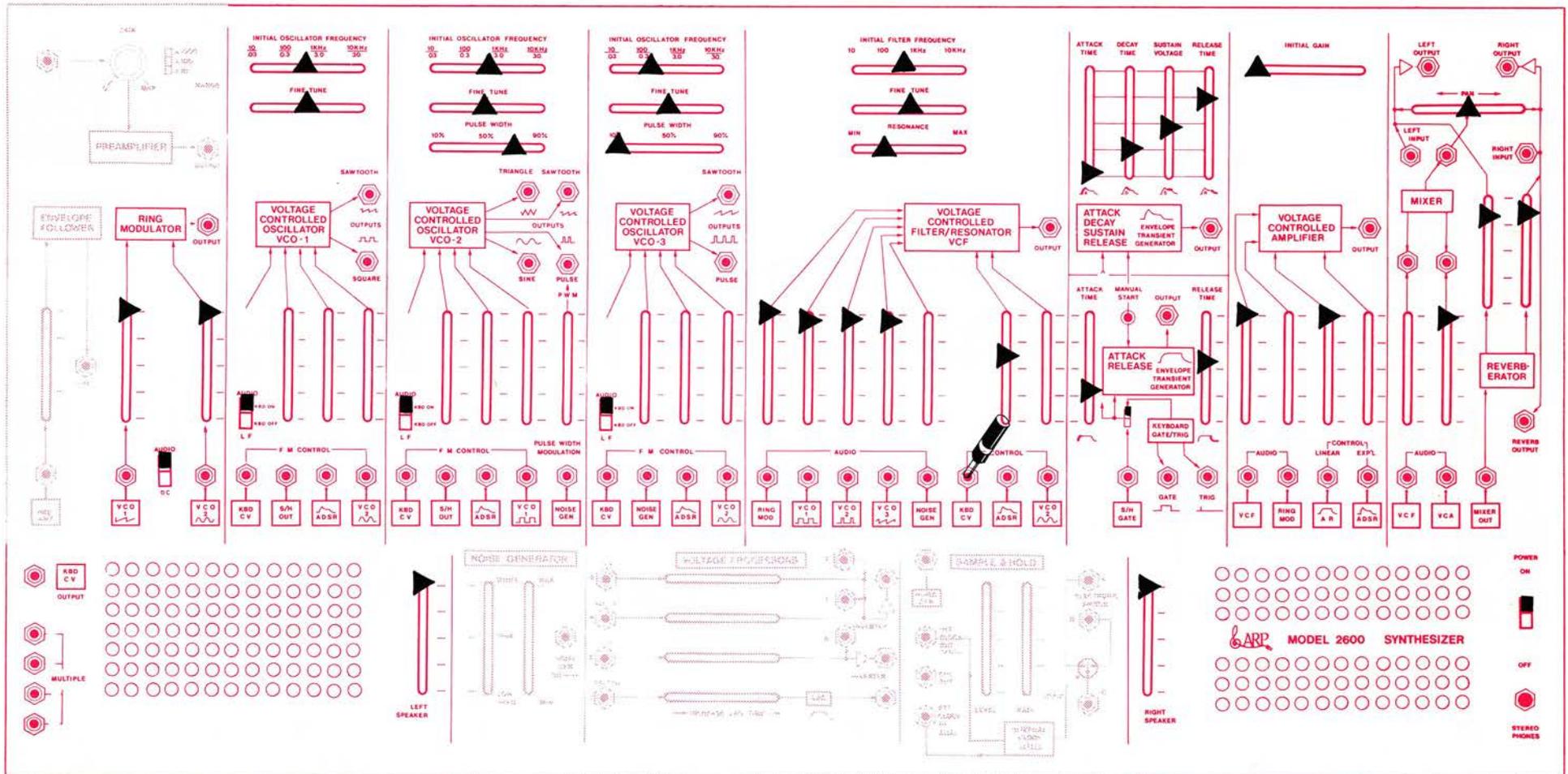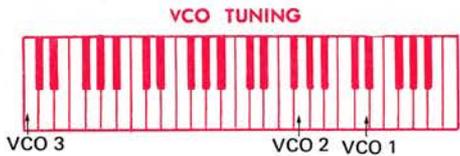
Follow tuning instructions detailed in the Introduction.

Lead lines are to be played on the top keys.

Minor chords can be heard on the bottom keys.

1 DUMMY PLUG

Marimba: Chords & Lead

34.

VCO TUNING

VCO 3   VCO 1
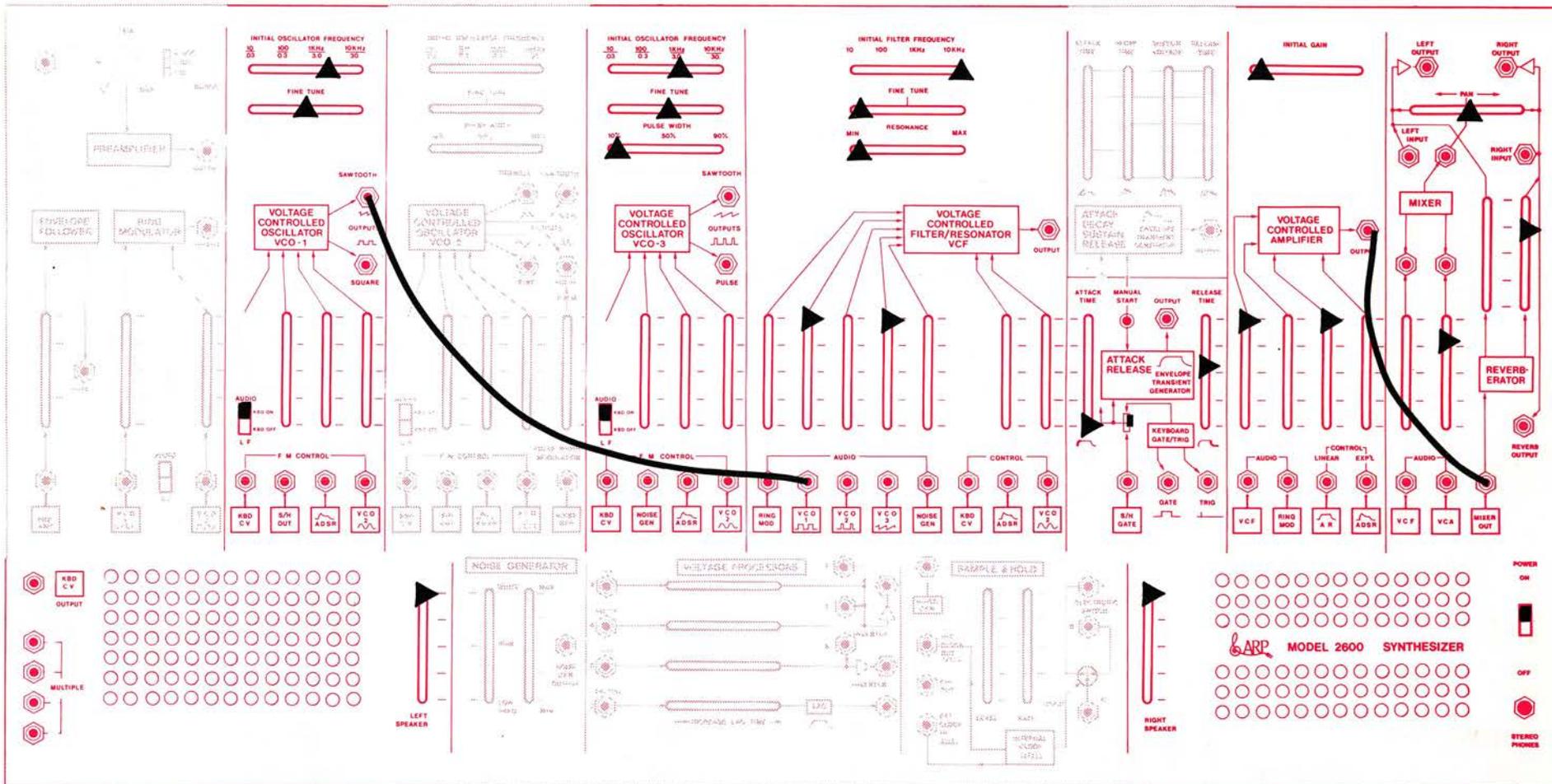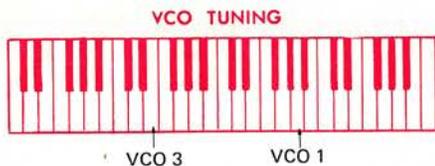
1. Tune: VCO 3 as shown.
            VCO 1 to one octave and a fourth above VCO 3.
2. Play in short rapid bursts.

2 PATCHCORDS

Handbells

35.
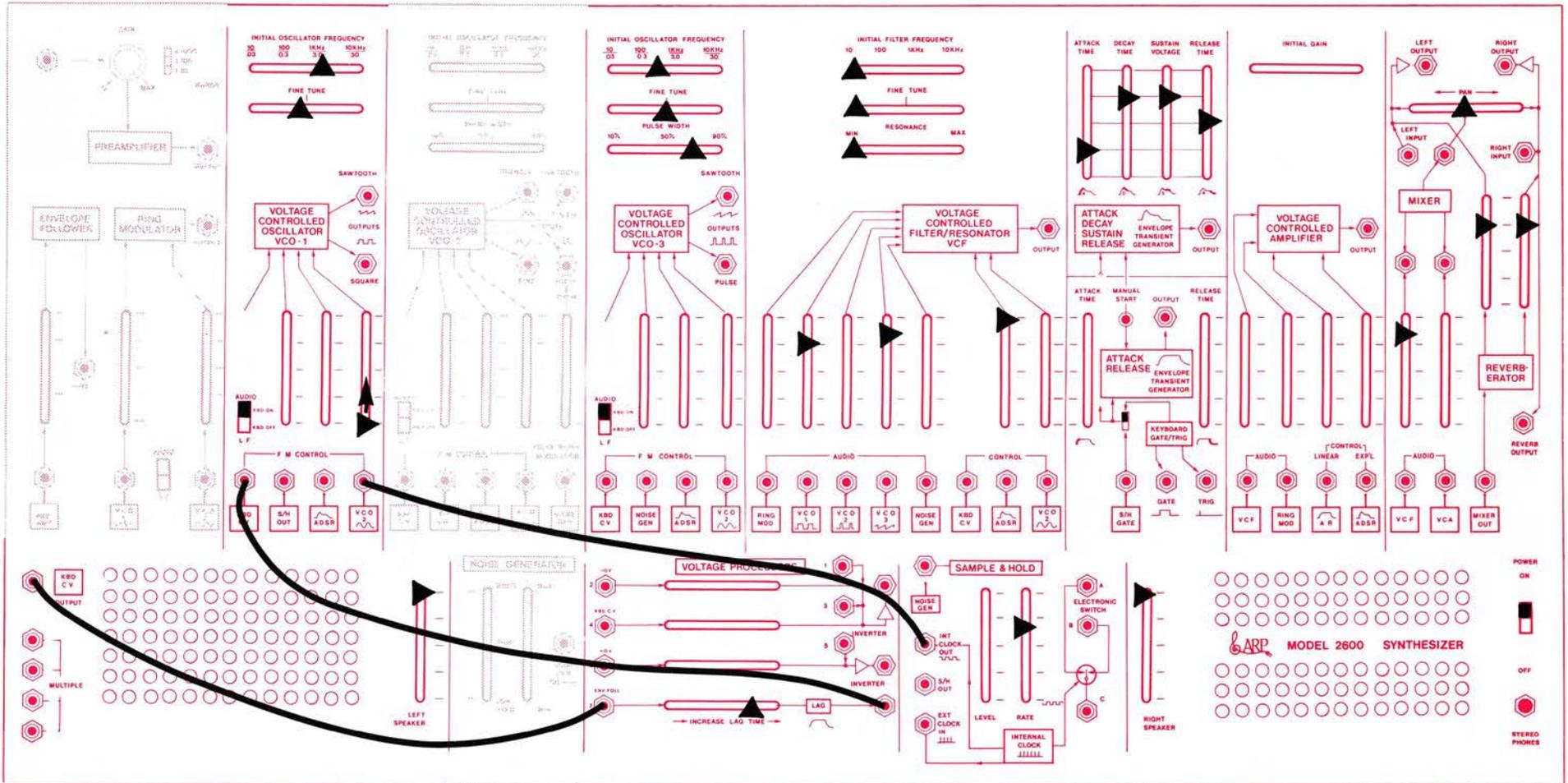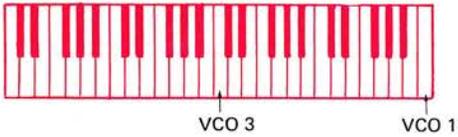
1. Tune   VCO 3 to middle C.
          VCO 1 to two octaves above middle C.
2. Raise   ⌐ into VCO 1 and adjust S/H Rate for vibrato speed.
3. Note: Whistle will have vibrato and glide; Trumpet is straight.

3 PATCHCORDS

Pennywhistle & Trumpet

36.
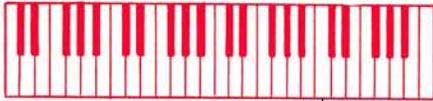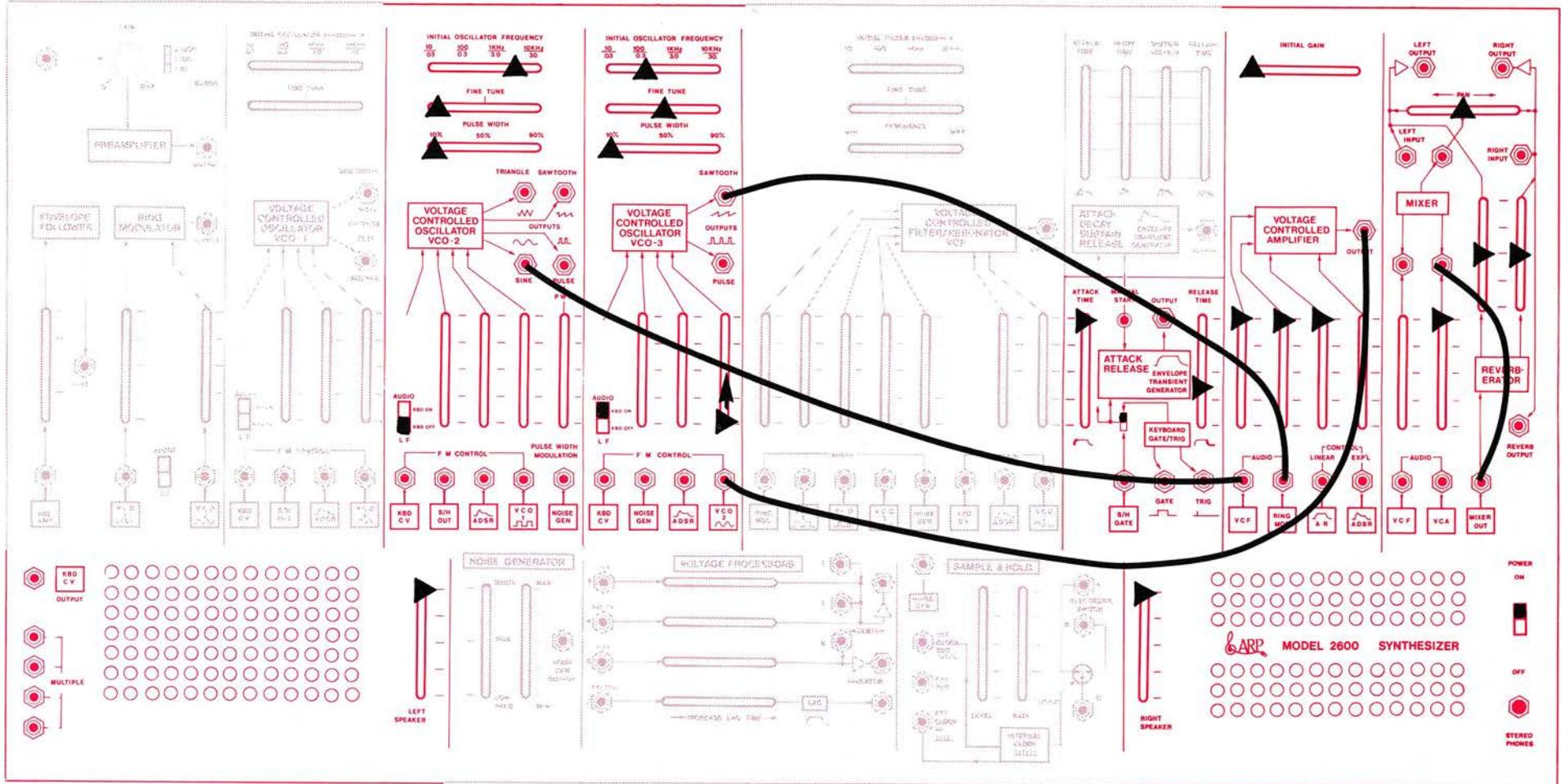
1. Tune VCO 3 to an octave above middle C.
2. Raise VCO 2 $\sim\!\!\!\backslash$ ↑ into VCO 3 and adjust VCO 2
frequency for vibrato speed.

Note: Play legato for vibrato; play staccato for no vibrato.

4 PATCHCORDS

Violin with Delayed Vibrato

37.

Rhythms
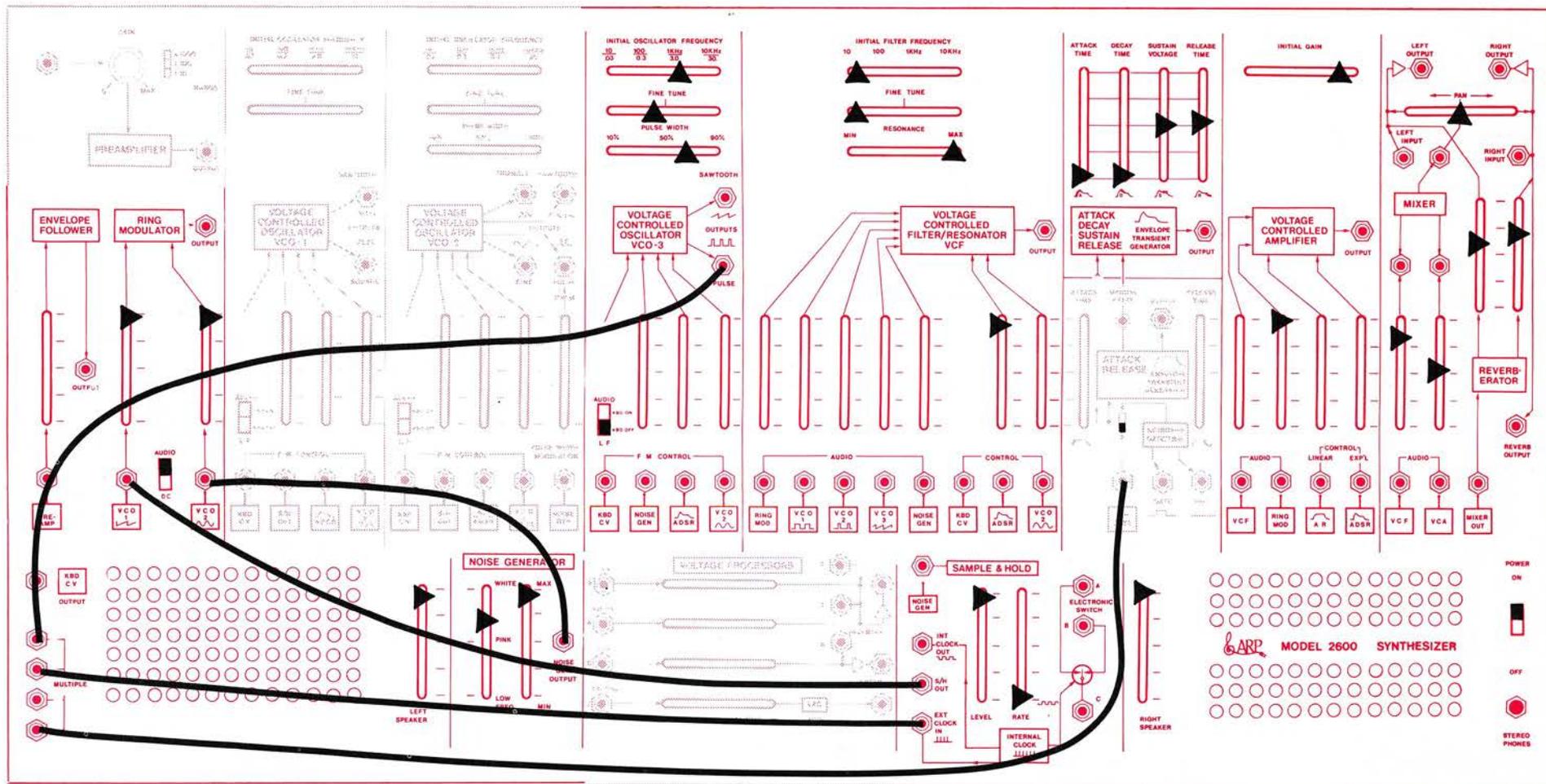
Adjust: VCO 3 frequency for tempo.
ADSR into VCF for BASS Drum timbre.

5 PATCHCORDS

Swing Traps: Hi-Hat & Bass Drum

38.
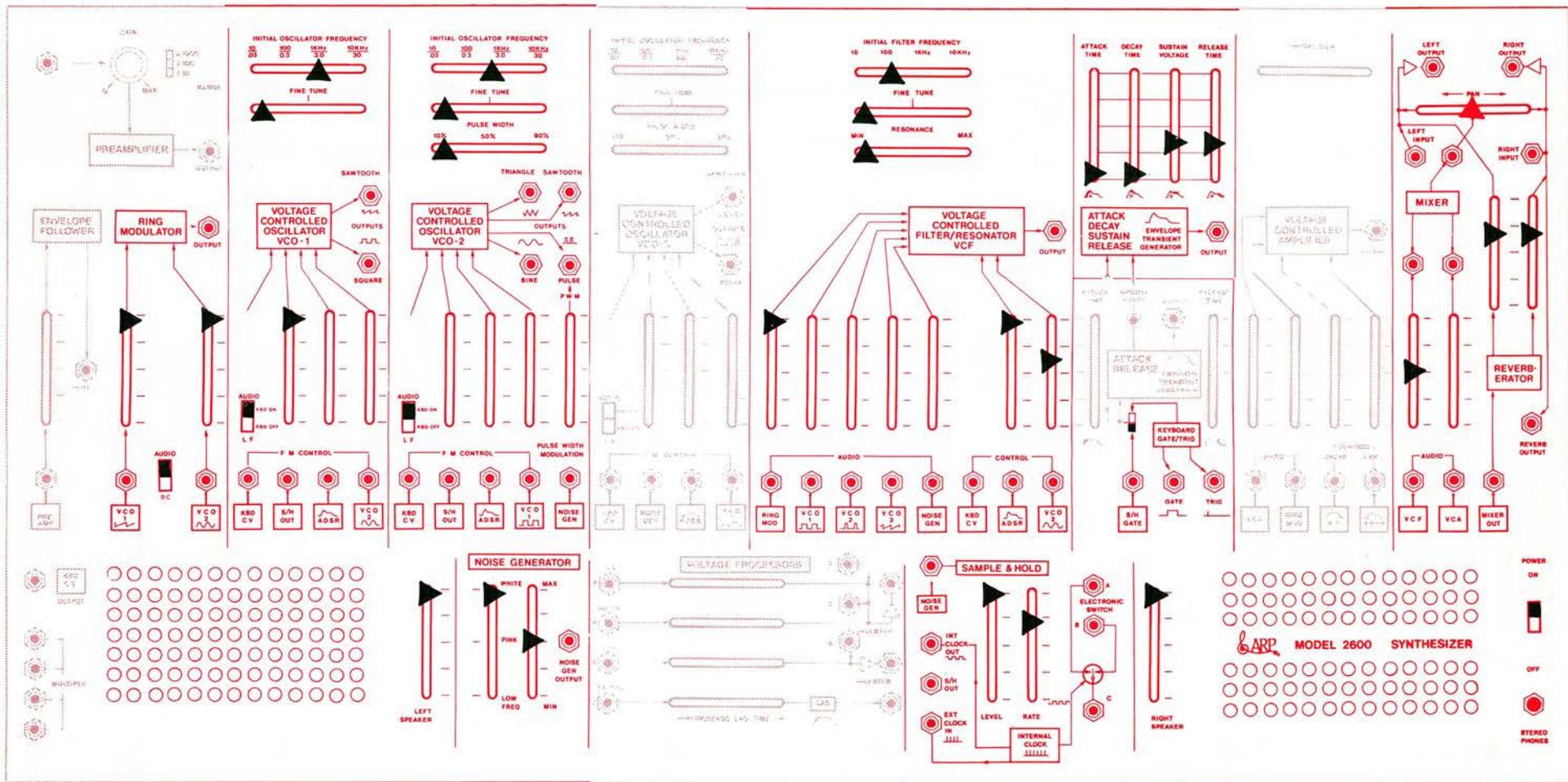
Tune VCO 1 and 2 for different timbres.

Metallic Thunks
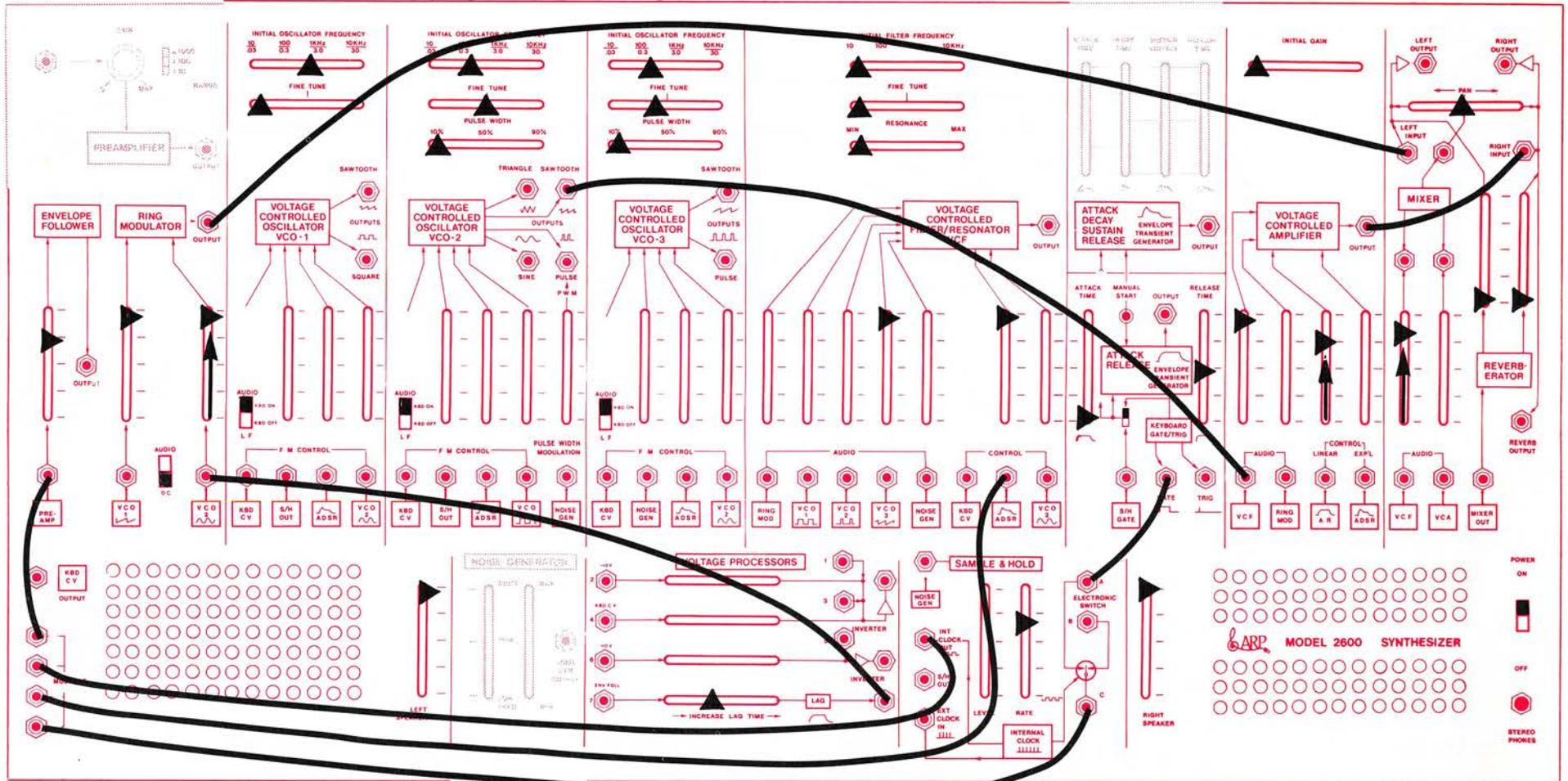
Tune VCO 1, 2, and 3 as desired.

3 separate volume controls: ↑ at Ring Mod, AR at VCA, VCF at Mixer.

9 PATCHCORDS

Triple Timings

40.
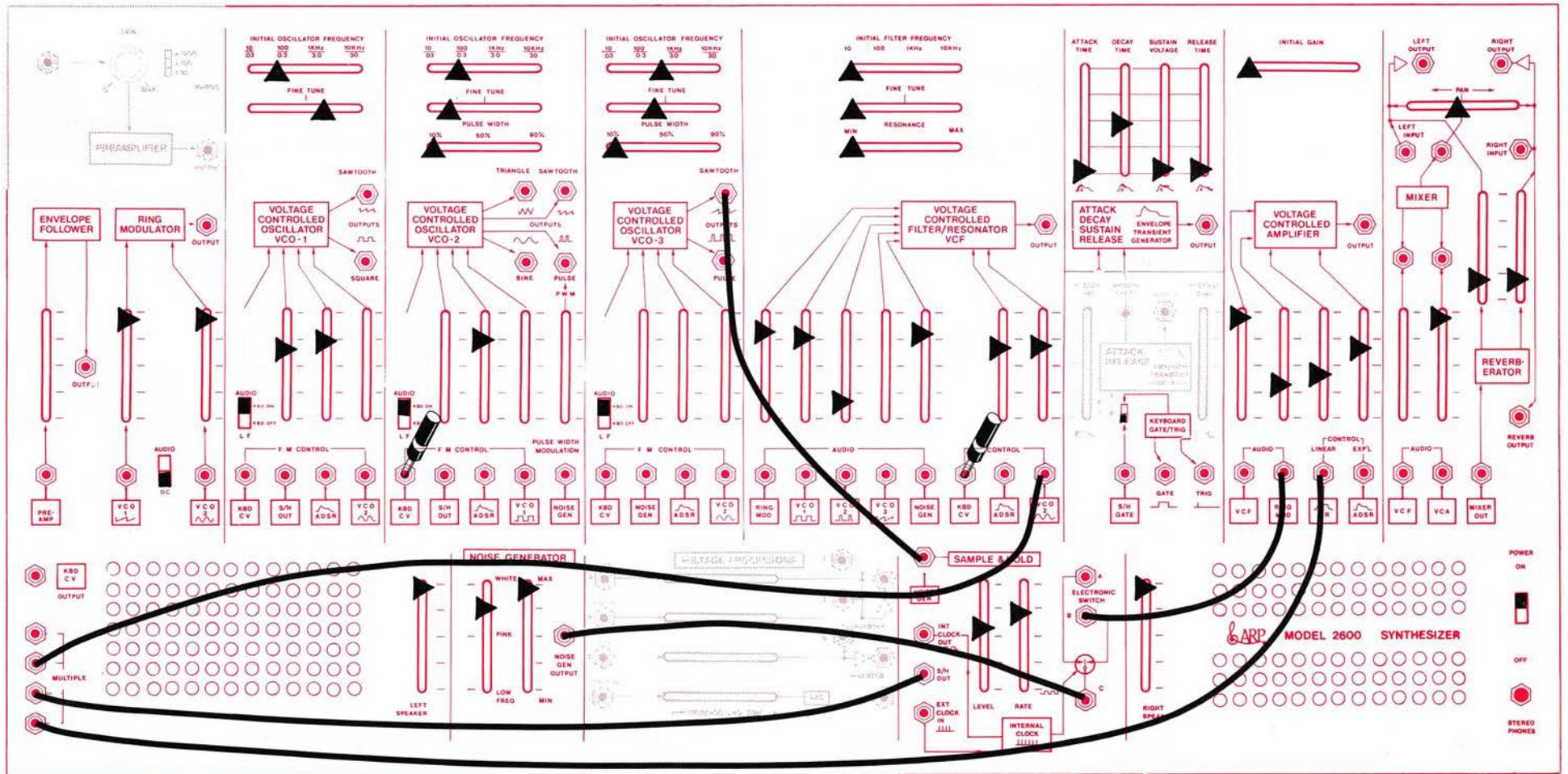
Adjust S/H Rate for tempo.

6 PATCHCORDS
2 DUMMY PLUGS

Tom & Hi-hat Duet

41.
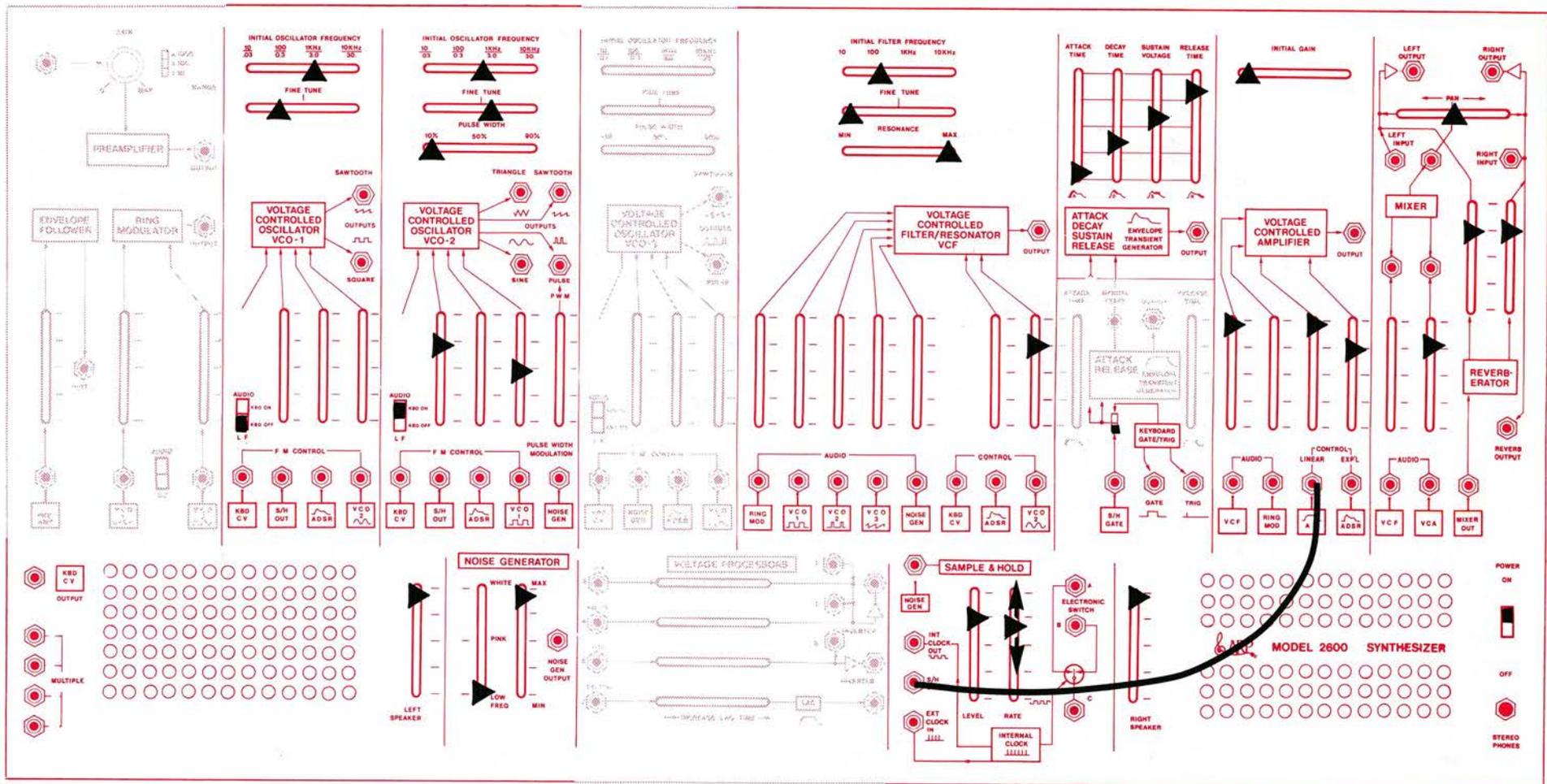
Adjust S/H Rate for tempo.
Play up and down keyboard for different metallic effects.
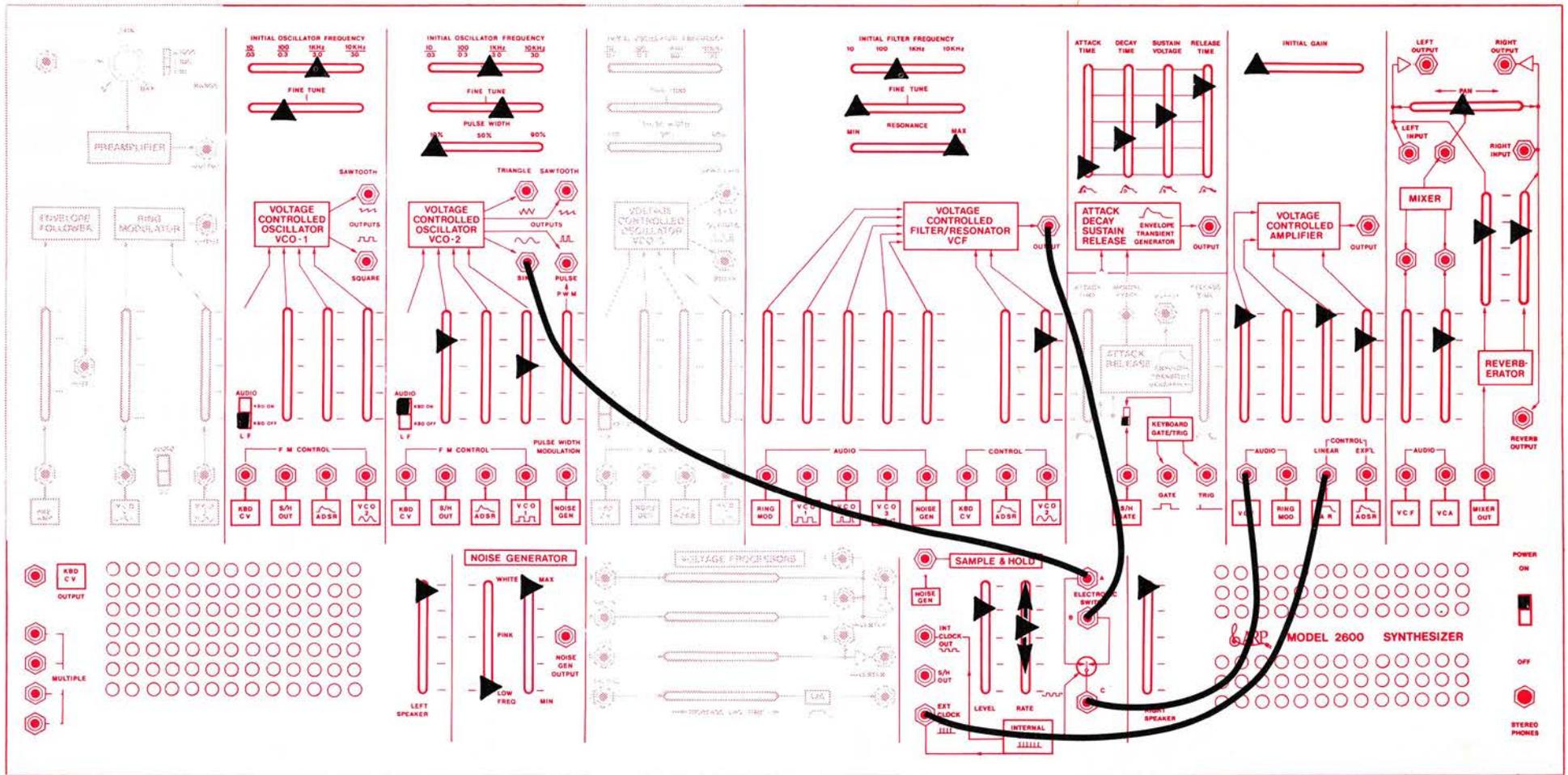
Steel Drum Corps

Adjust S/H Rate for tempo.
Play up and down keyboard for different timbres.

4 PATCHCORDS

Advanced Steel Drum Corps

43.
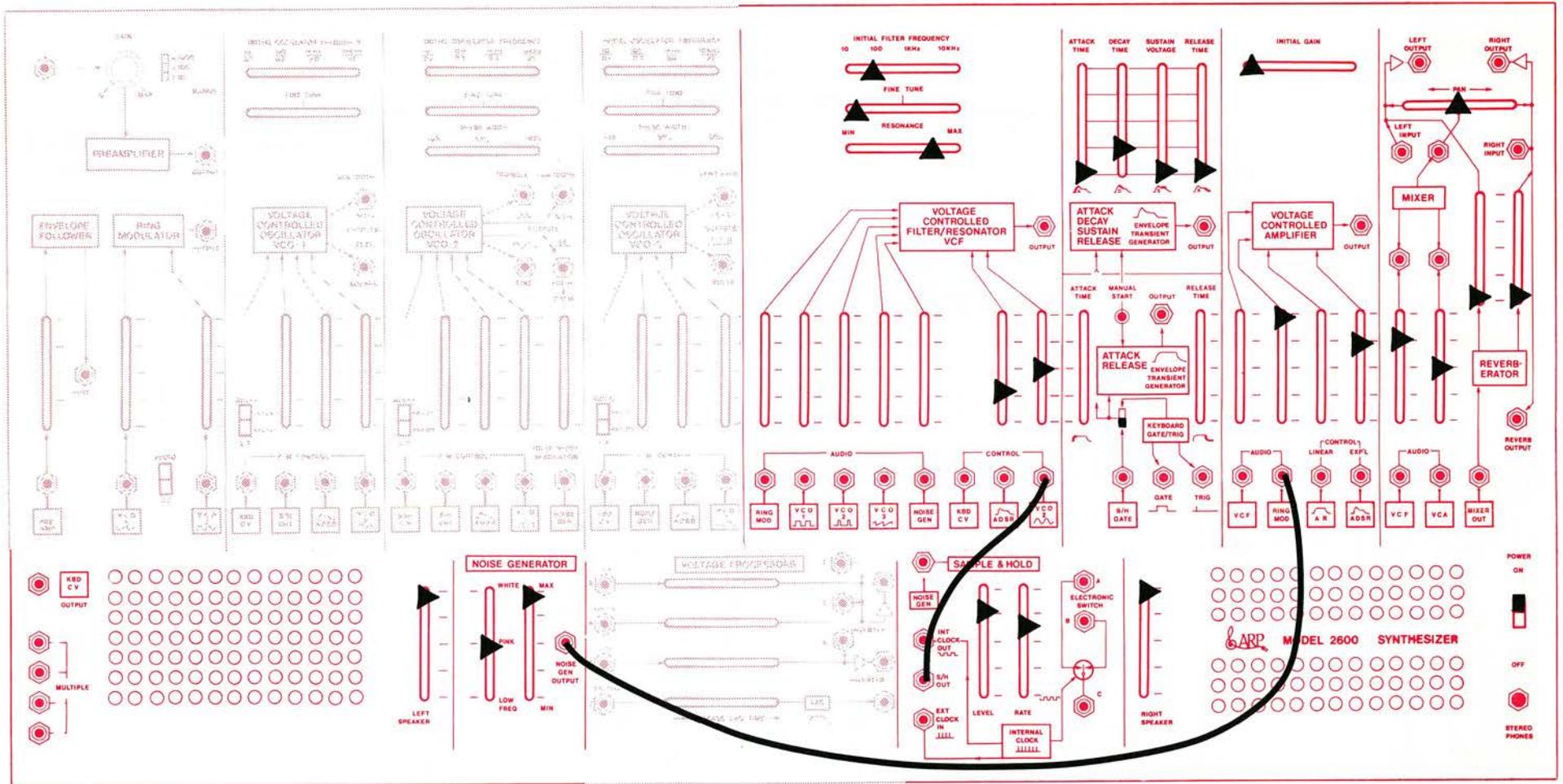
Adjust S/H Rate for tempo.

2 PATCHCORDS

Random ARP Drum Solo

44.
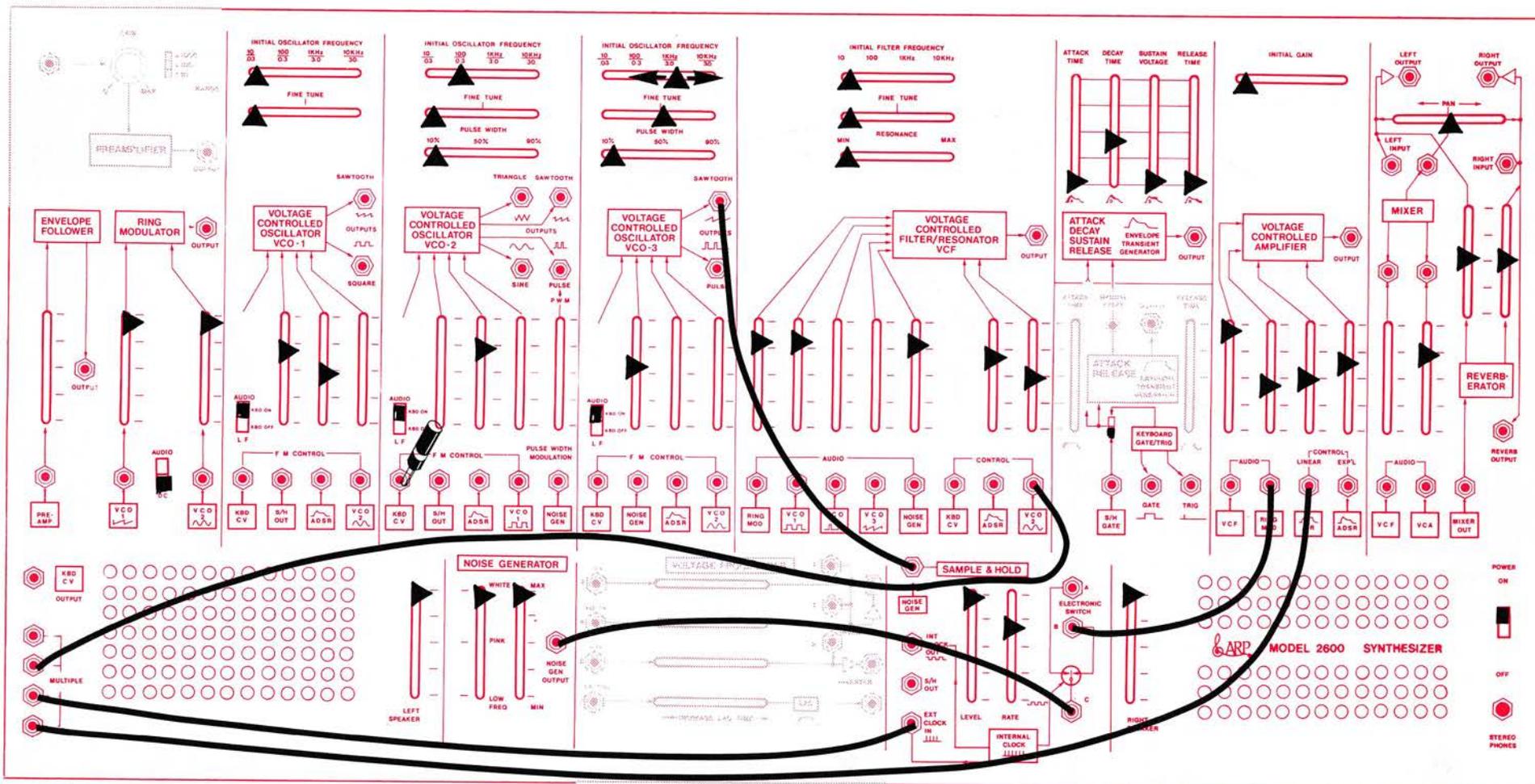
Hit Key C1 for proper range.
Adjust VCO 3 frequency for different patterns.
Adjust S/H Rate for tempo.

6 PATCHCORDS
1 DUMMY PLUG

Back-beat: Bass Drum, Hi-hat & Tom 45.
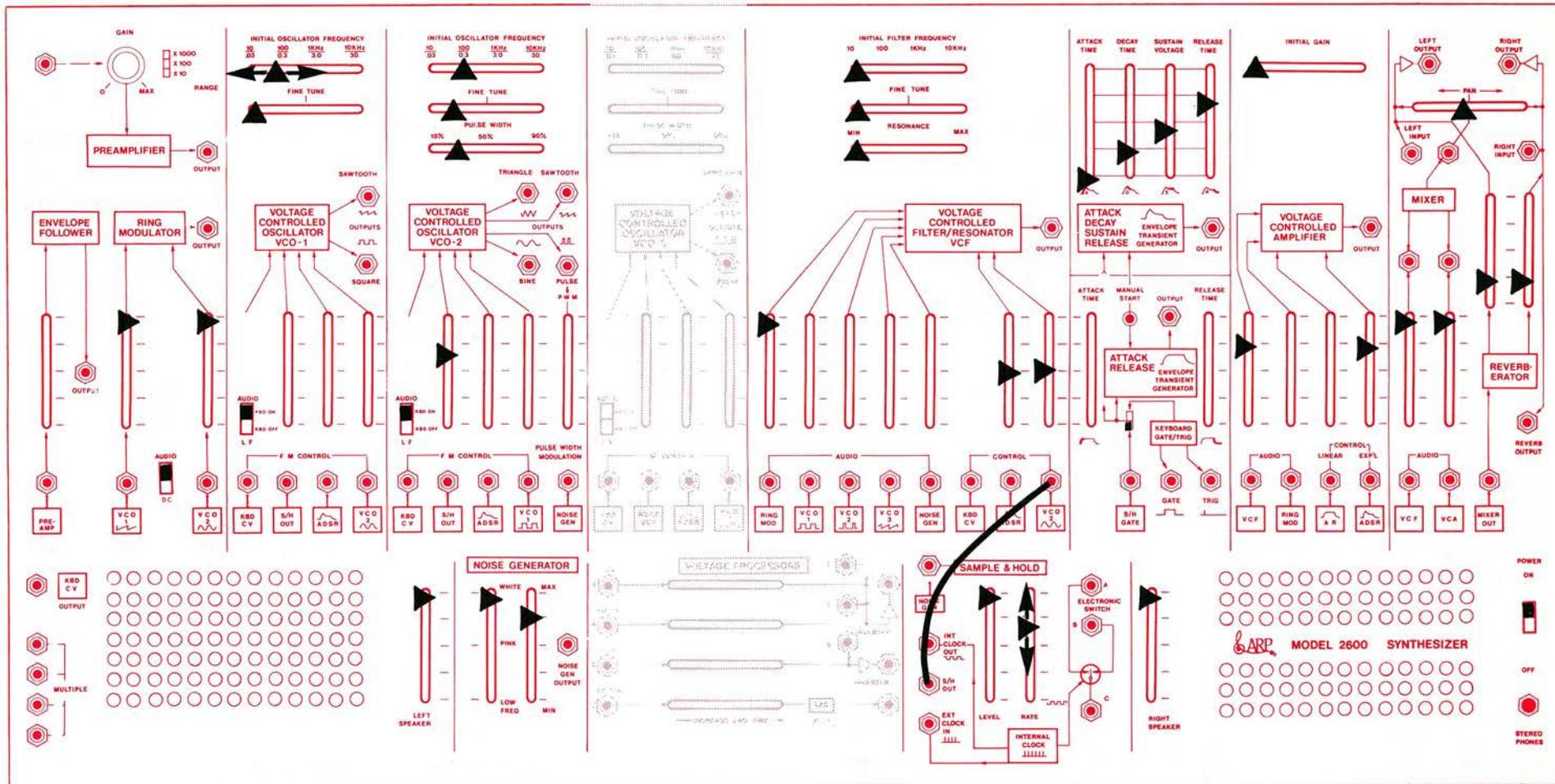
Adjust: VCO 1 frequency for pitch.
S/H Rate for tempo.

PLAY KEY C2

1 PATCHCORD

Cookin' Conga

46.
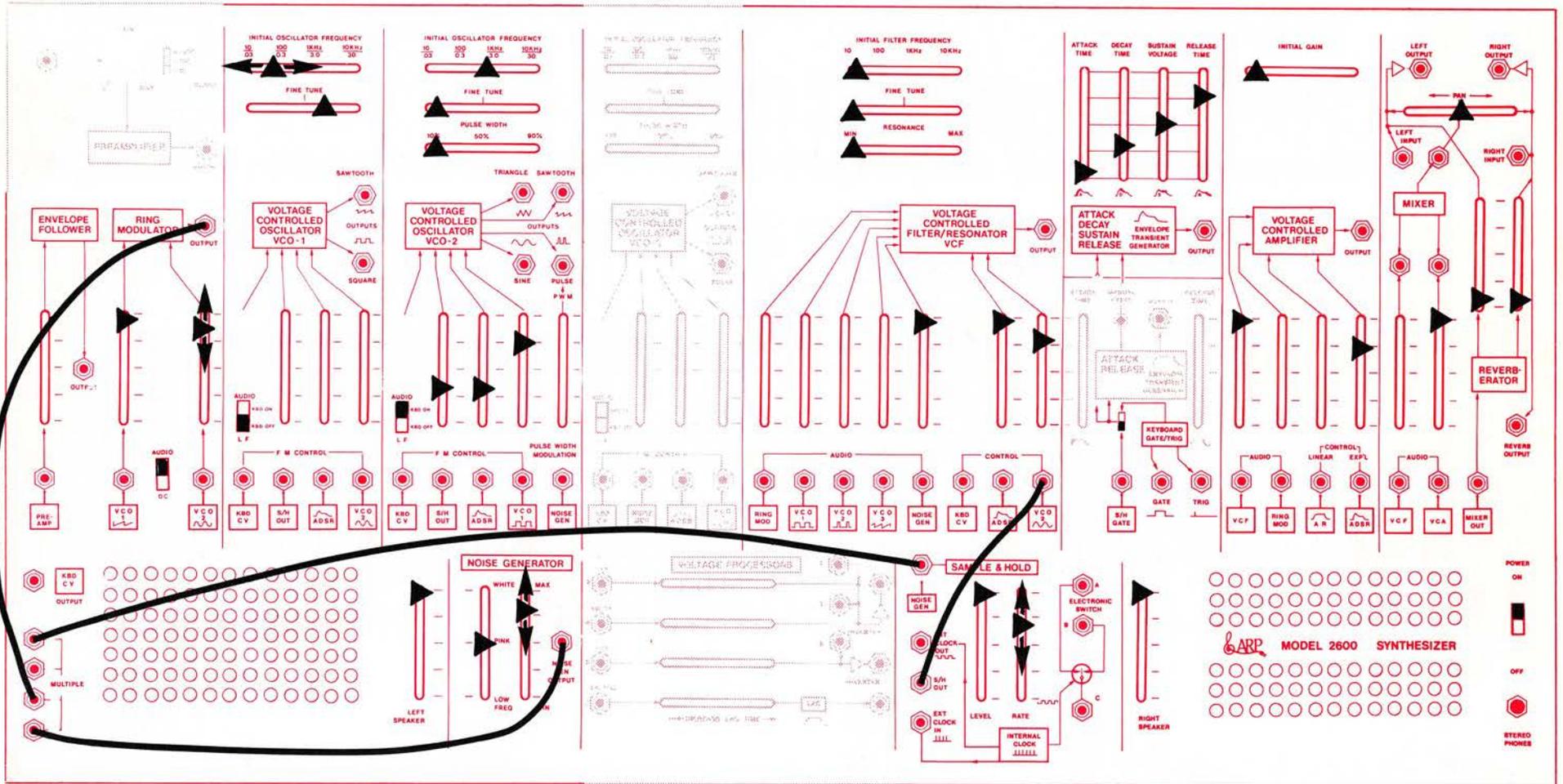
Adjust: VCO 1 frequency for 'solo' length.
VCO 2 ∿ ↑ at Ring Mod for Conga volume.
Noise Max-Min Slider for snare volume.
S/H Rate for tempo.

PLAY KEY C1

4 PATCHCORDS

Conga & Snare Duet

47.

Natural Sounds
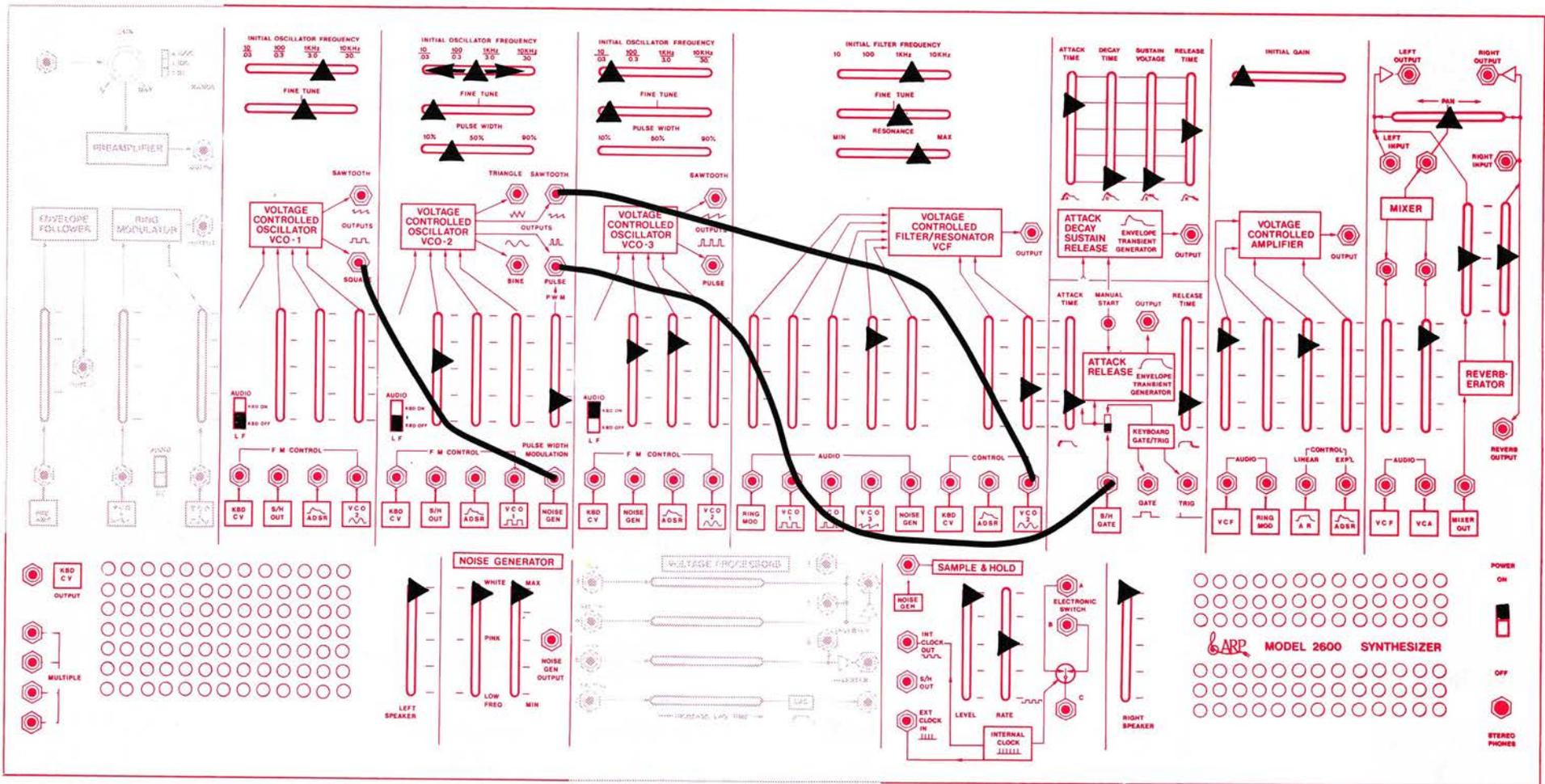
Adjust VCO 2 frequency for different croak speeds.

3 PATCHCORDS

Frog Bog

48.
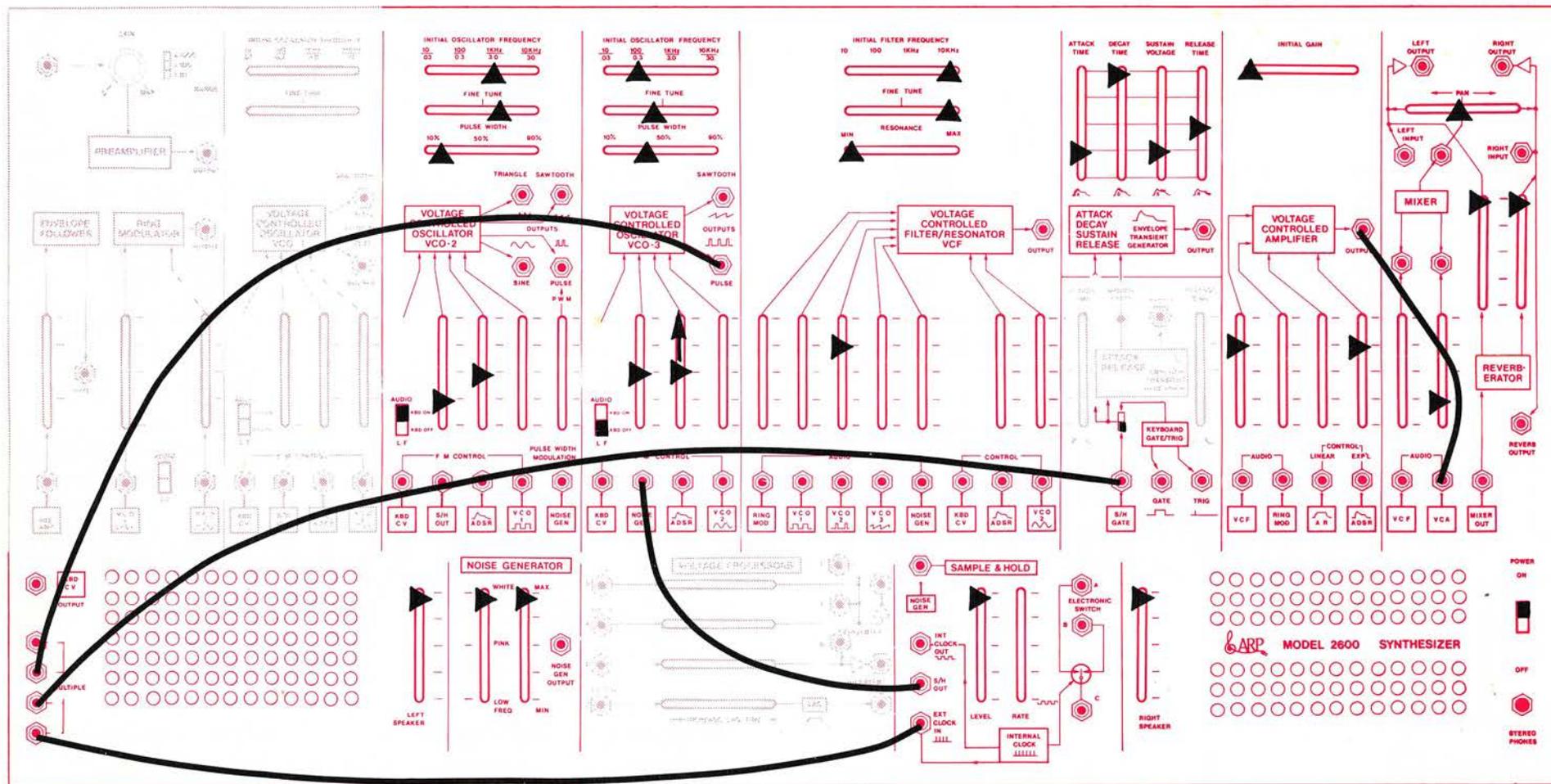
Note: VCO 3 Pulse Width determines final decay time.
Raising ADSR into VCO 3 induces a state of
confusion in seagulls.
Use any note on keyboard for 'tuning' of birds.

5 PATCHCORDS

Johnathan Synthesized Seagull

49.
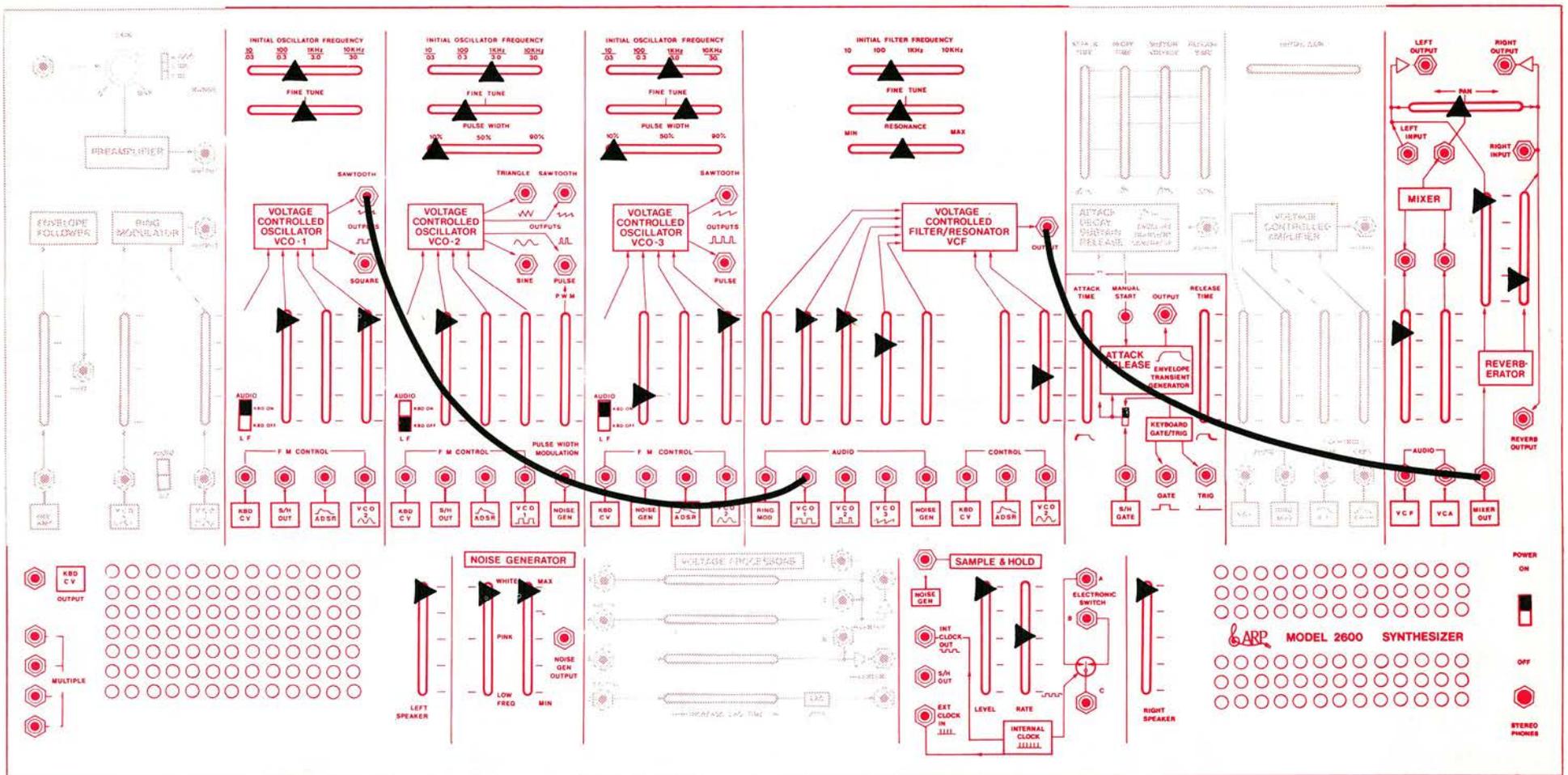
Change the 'pitch' of the patch by moving up and down the keyboard.

Fiddle with the filter settings.

2 PATCHCORDS

Primeval Forest
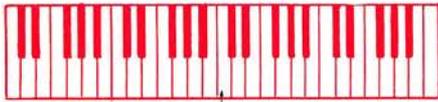
VCO TUNING

VCO 1
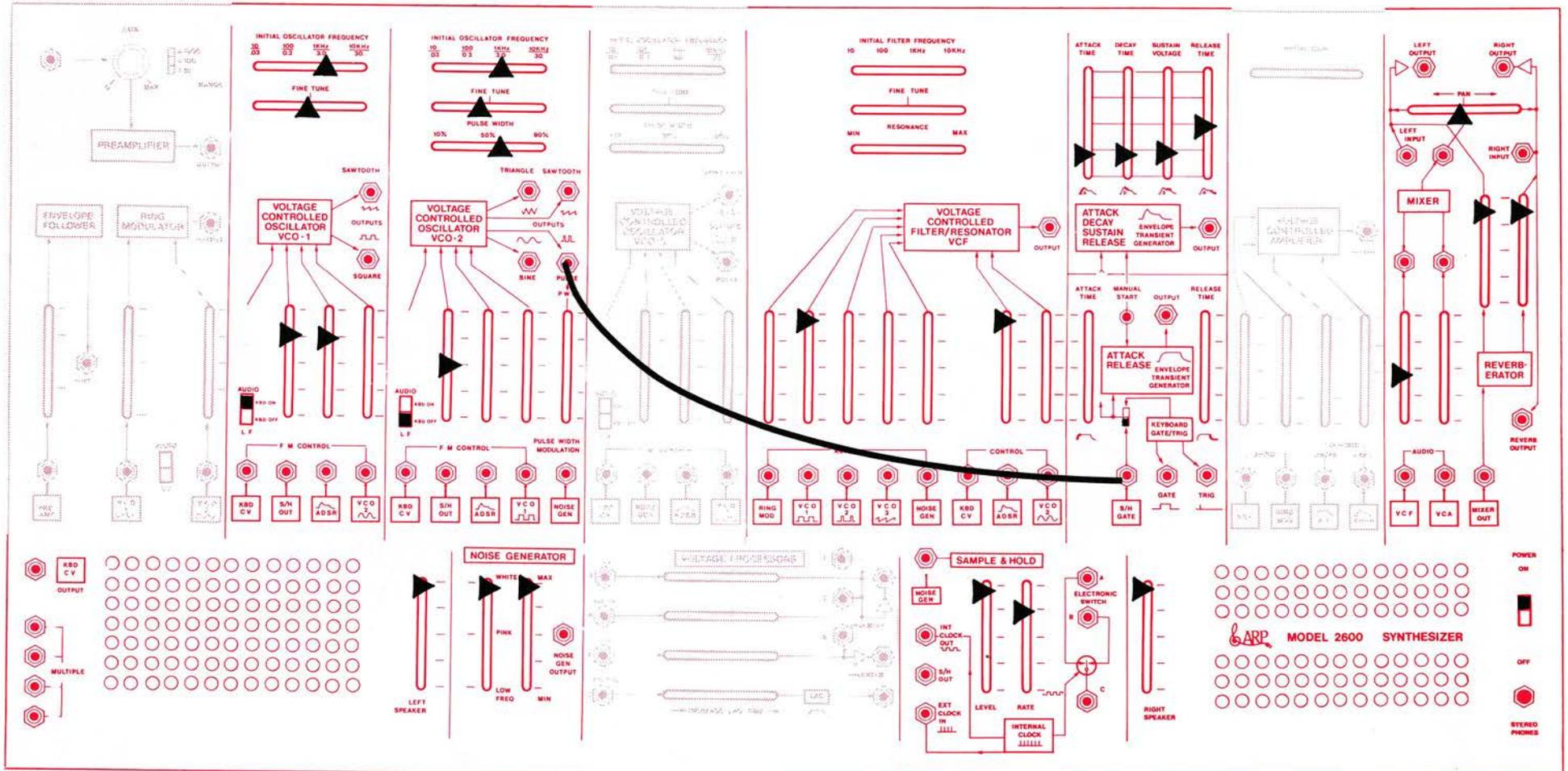
1 PATCHCORD

Arboretum

51.
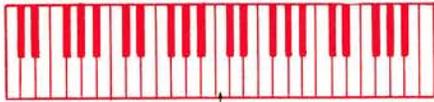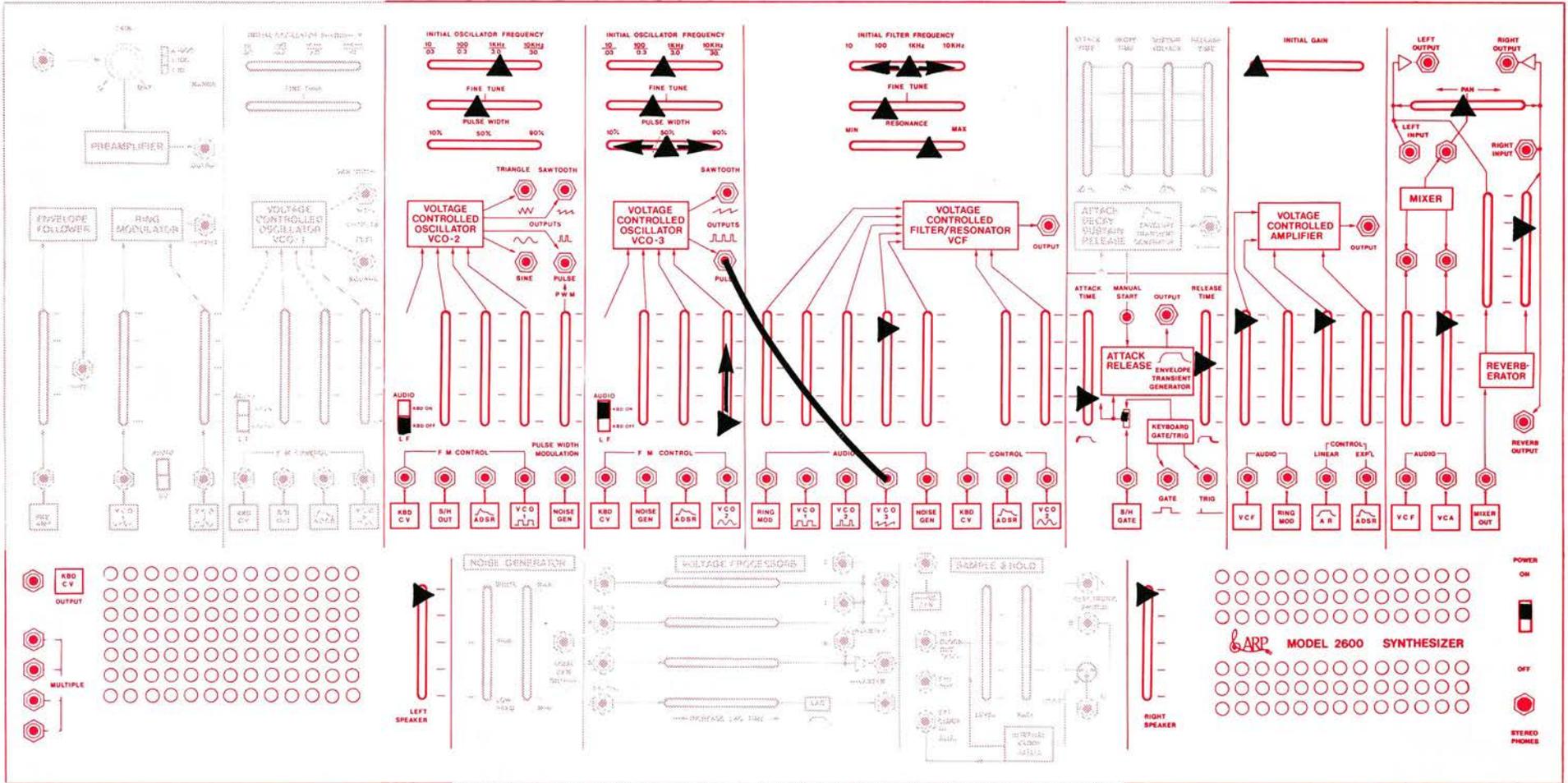
1. Tune VCO 3 to middle C.
2. Raise VCO 2 ∿ ↑ into VCO 3 and adjust VCO 2 frequency for tremelo speed.
3. Adjust VCO 3 Pulse Width and VCF frequency for desired timbre.

1 PATCHCORD

Soprano

52.
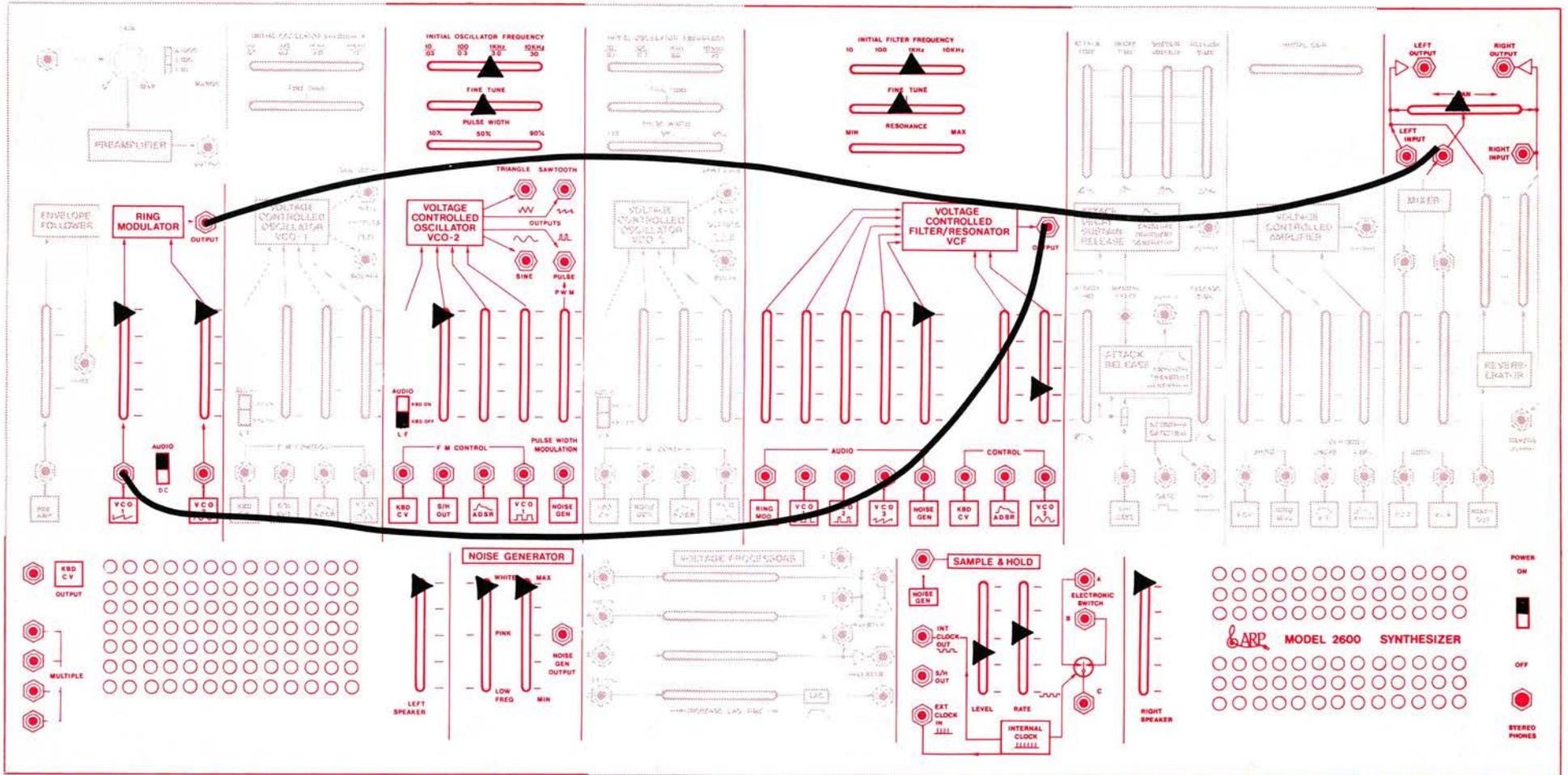
Sporadic Heavy Breathing

53.

2 PATCHCORDS

PLAY KEY C5

Cricket Colony

54.
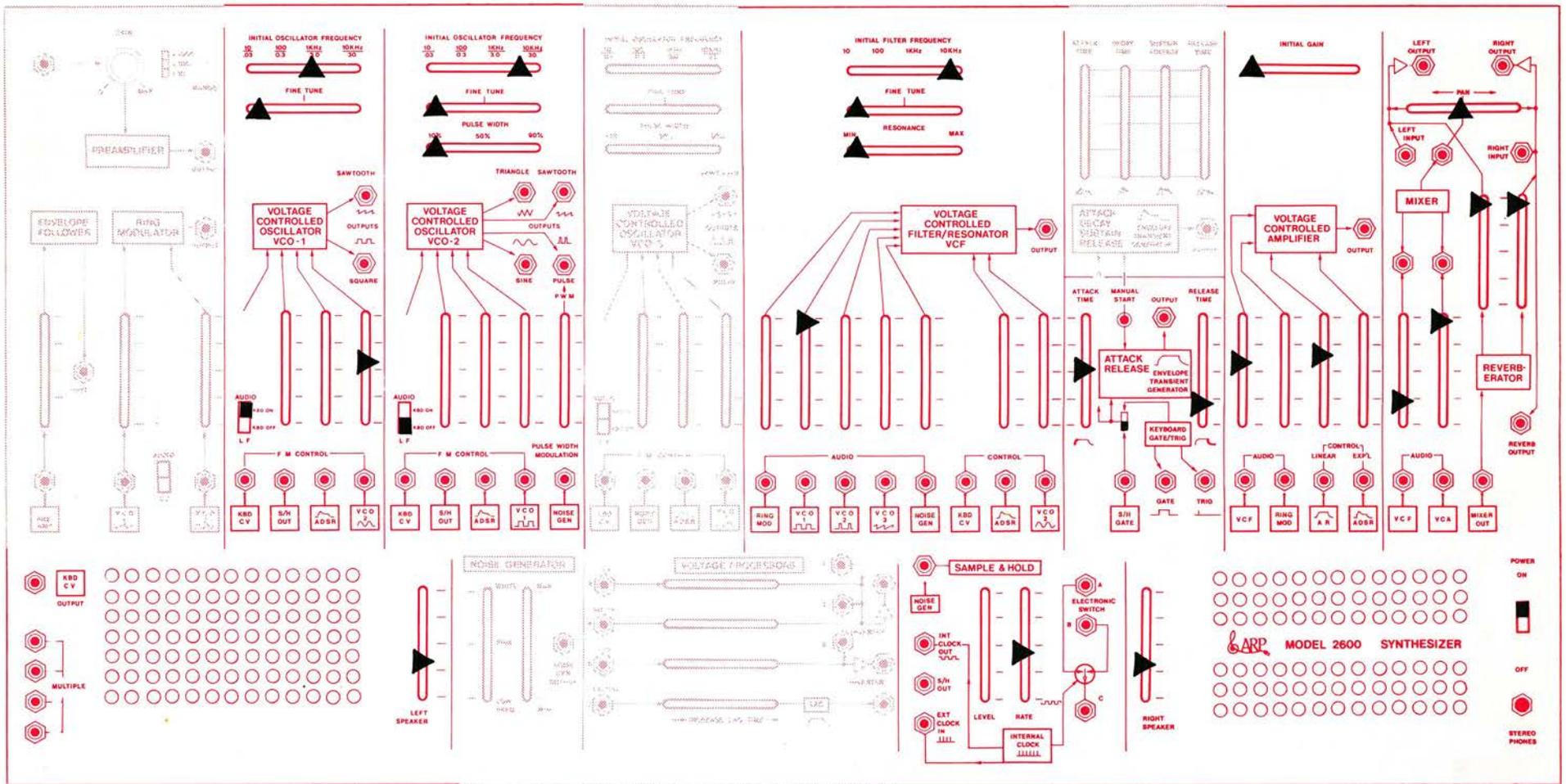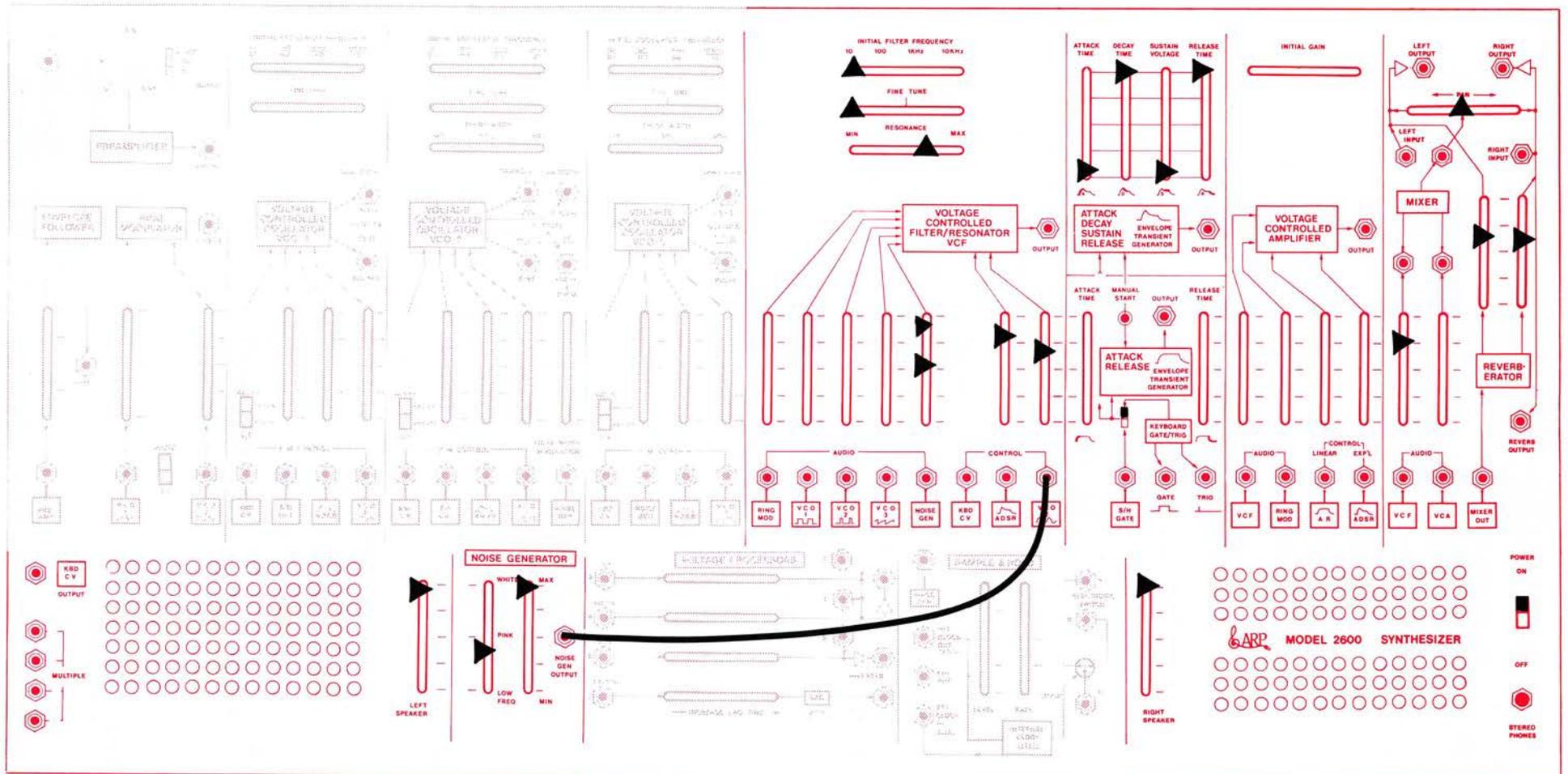
PLAY KEY C5

1 PATCHCORD

Clapping Thunder

55.
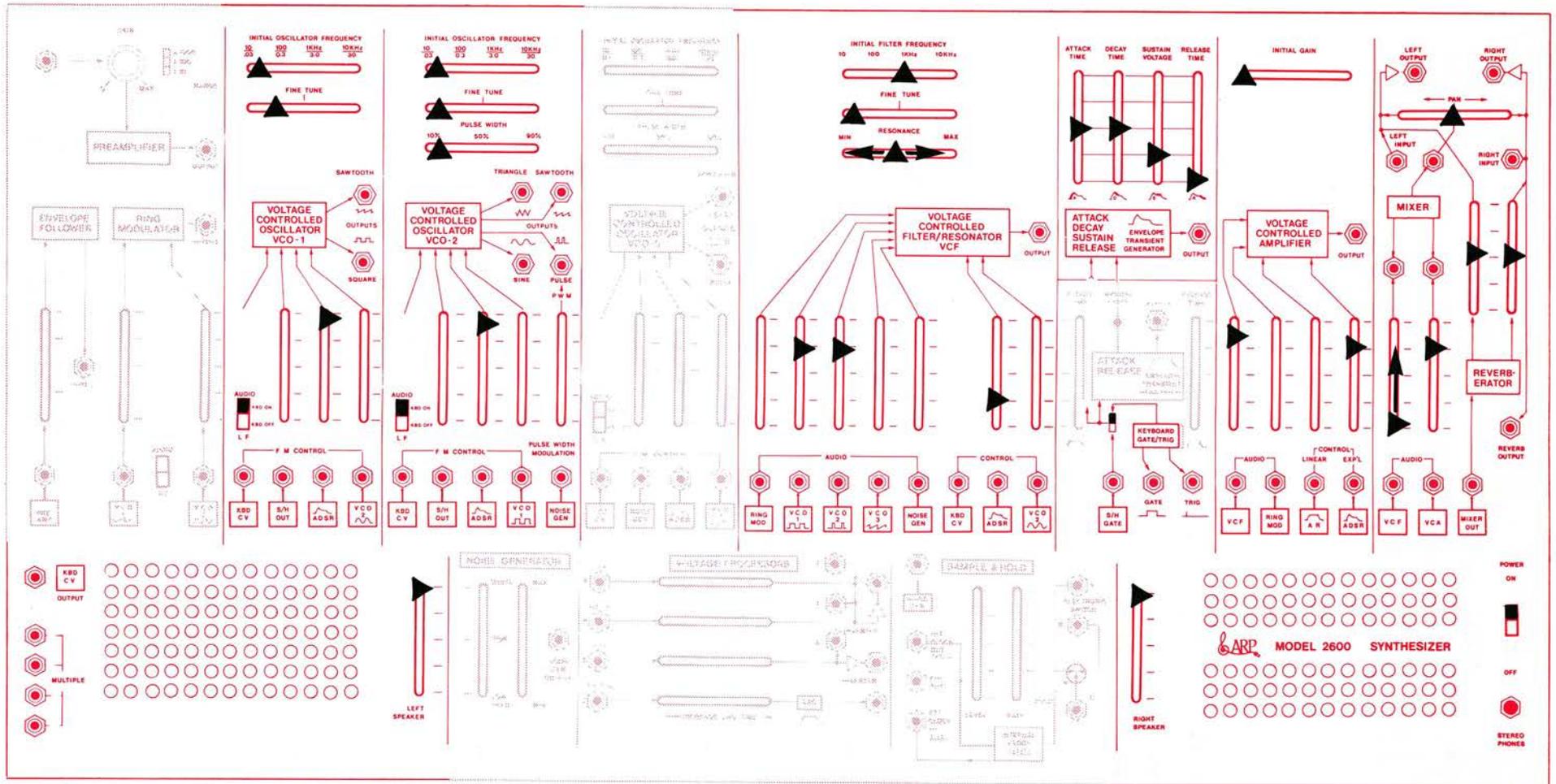
Note: Best barks can be heard around Key C2
          Raise VCF into Mixer for growl.

Small Barking Mutt
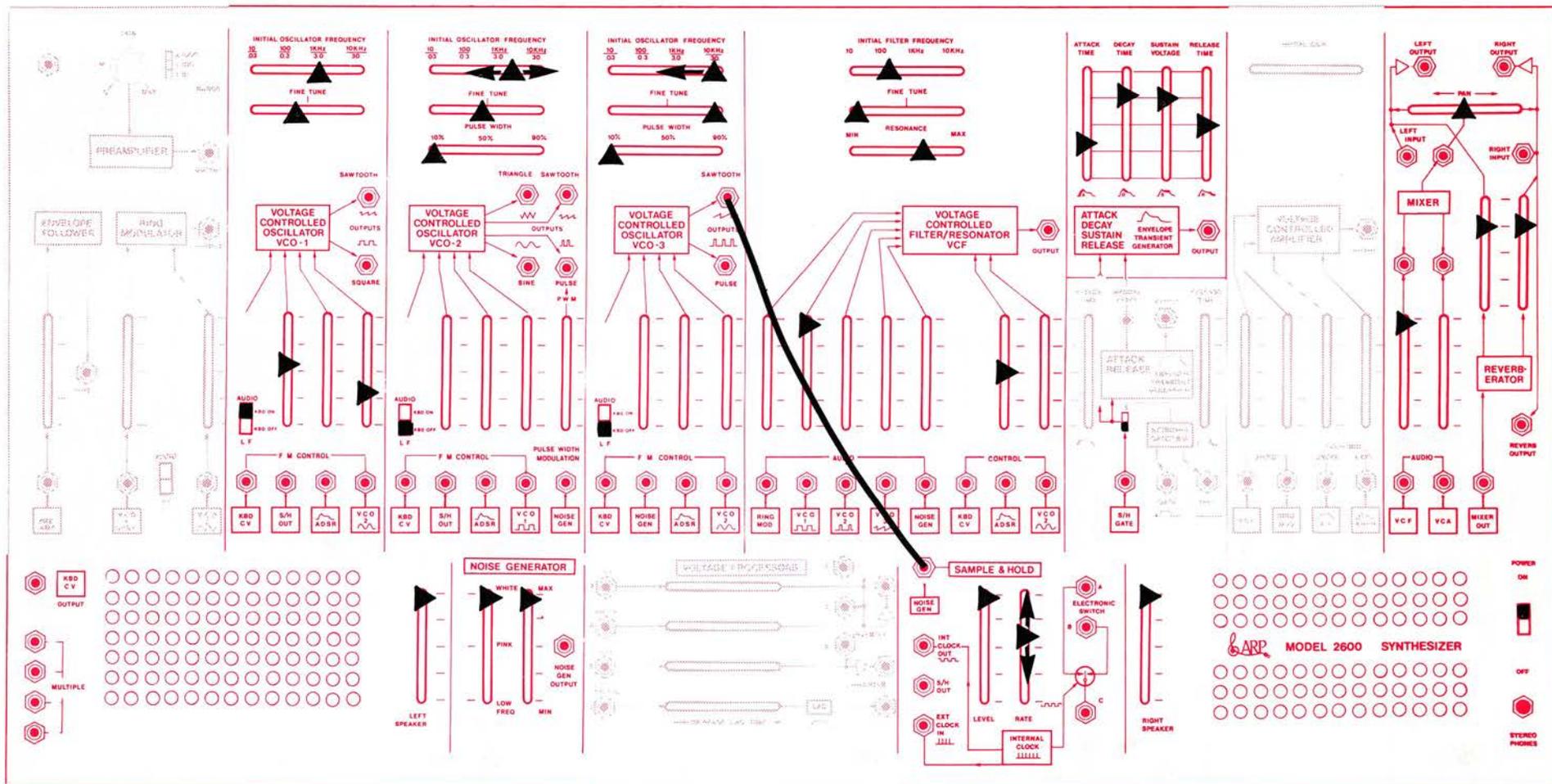
Adjust: VCO 3 frequency for patterns
           VCO 2 frequency for vibrato speed
           S/H Rate for whistle speed

PLAY KEY C2

1 PATCHCORD

Random Whistler

57.

Mother Whistler

58.

INITIAL OSCILLATOR FREQUENCY
INITIAL OSCILLATOR FREQUENCY
INITIAL OSCILLATOR FREQUENCY
INITIAL FILTER FREQUENCY

FINE TUNE
FINE TUNE
FINE TUNE
FINE TUNE

PULSE WIDTH
PULSE WIDTH
RESONANCE

ATTACK TIME   DECAY TIME   SUSTAIN VOLTAGE   RELEASE TIME

INITIAL GAIN

LEFT OUTPUT   RIGHT OUTPUT

PAN

LEFT INPUT   RIGHT INPUT

MIXER

SAWTOOTH
TRIANGLE   SAWTOOTH
SAWTOOTH

VOLTAGE CONTROLLED OSCILLATOR VCO-1
VOLTAGE CONTROLLED OSCILLATOR VCO-2
VOLTAGE CONTROLLED OSCILLATOR VCO-3
VOLTAGE CONTROLLED FILTER/RESONATOR VCF

ATTACK DECAY SUSTAIN RELEASE
ENVELOPE TRANSIENT GENERATOR

VOLTAGE CONTROLLED AMPLIFIER

OUTPUTS
OUTPUTS
OUTPUTS
OUTPUT   OUTPUT   OUTPUT

SQUARE   SINE   PULSE PWM   PULSE

PREAMPLIFIER

ENVELOPE FOLLOWER   RING MODULATOR

REVERB-ERATOR

ATTACK TIME   MANUAL START   OUTPUT   RELEASE TIME

ATTACK RELEASE   ENVELOPE TRANSIENT GENERATOR

KEYBOARD GATE/TRIG

REVERB OUTPUT

AUDIO   KBD ON   KBD OFF   L F
AUDIO   KBD ON   KBD OFF   L F
AUDIO   KBD ON   KBD OFF   L F

PULSE WIDTH MODULATION

F M CONTROL   F M CONTROL   F M CONTROL   AUDIO   CONTROL

AUDIO   LINEAR   EXPL   AUDIO

KBD CV   S/H OUT   ADSR   VCO 2
KBD CV   S/H OUT   ADSR   VCO 1   NOISE GEN
KBD CV   NOISE GEN   VCO 2   RING MOD   VCO 1   VCO 2   VCO 3   NOISE GEN   KBD CV   ADSR   VCO
S/H GATE   GATE   TRIG
VCF   RING MOD   A R   ADSR   VCF   VCA   MIXER OUT

KBD CV OUTPUT
MULTIPLE

NOISE GENERATOR
WHITE   MAX
PINK
LOW FREQ   MIN
NOISE GEN OUTPUT
LEFT SPEAKER

VOLTAGE PROCESSORS

SAMPLE & HOLD
NOISE GEN
INT CLOCK OUT
S/H OUT
EXT CLOCK IN
LEVEL   RATE
ELECTRONIC SWITCH
A   B   C
INTERNAL CLOCK

RIGHT SPEAKER

ARP   MODEL 2600   SYNTHESIZER

POWER   ON   OFF   STEREO PHONES

Playing different keys will produce different timbres.

ARP Jungle
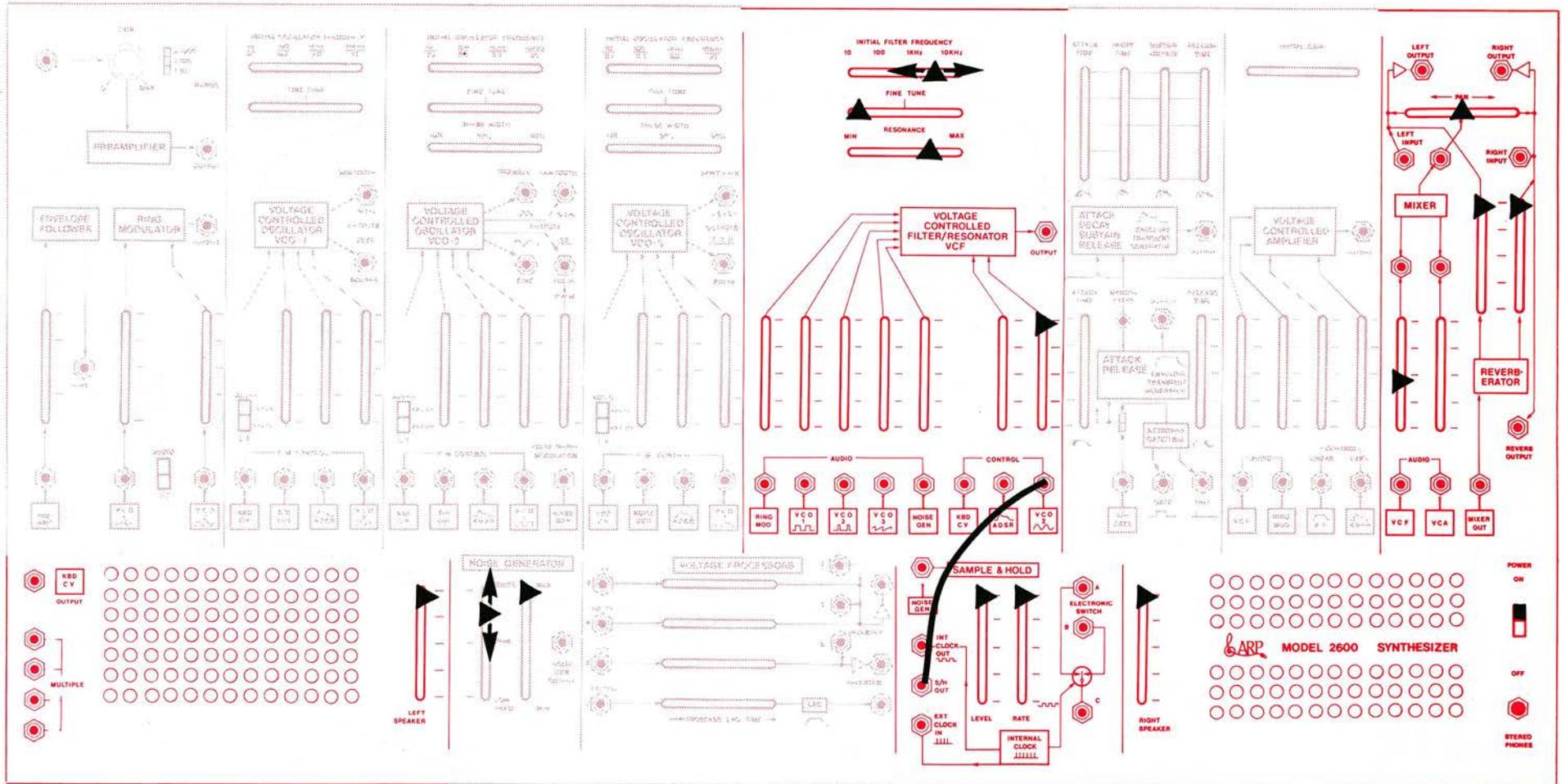
Adjust: VCF frequency and Noise color for desired effect.

1 PATCHCORD

Water Drops

60.
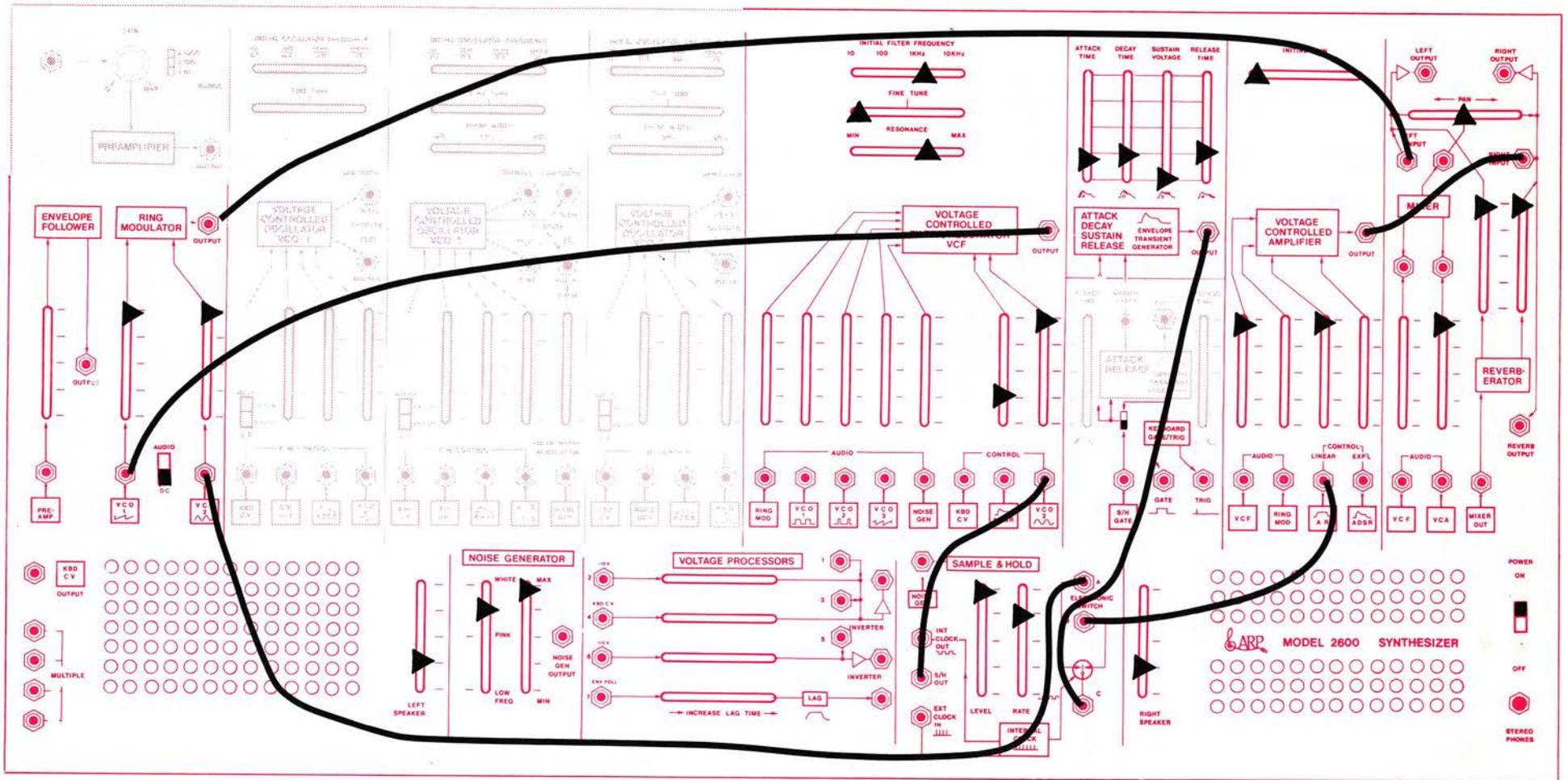
Stereo Chickadee Conversation

61.
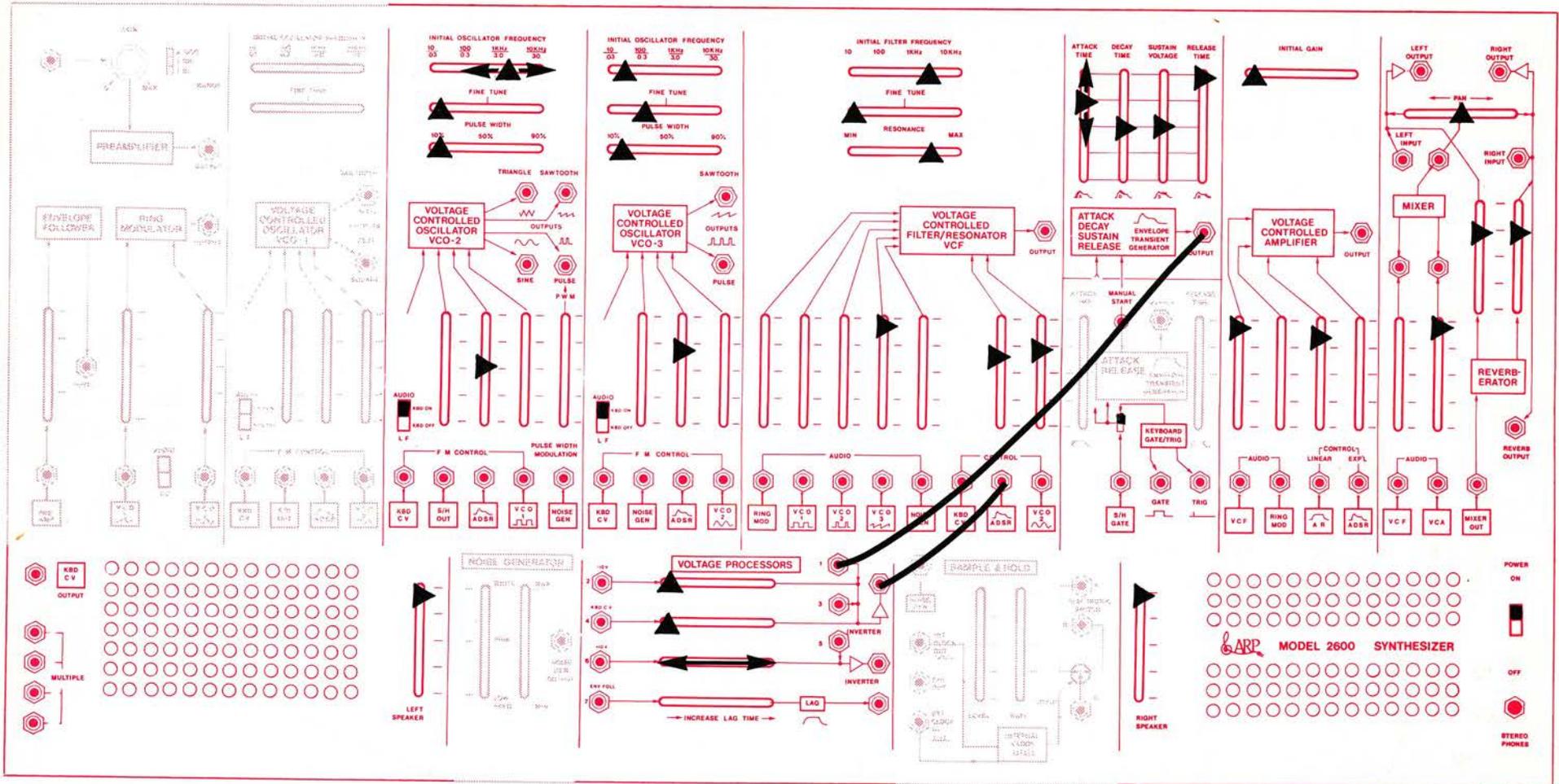
7 PATCHCORDS

Adjust: ADSR into VCF.
VCO 2 ～ ↑ into VCF for 'voice-like' texture.
VCO 2 frequency for different vowels.
Resonance.
Attack time on ADSR.

2 PATCHCORDS

"Oh Yeah!"

62.

Arpeggios, Chords & Sequences
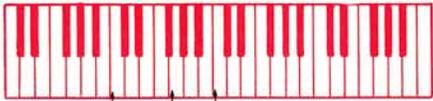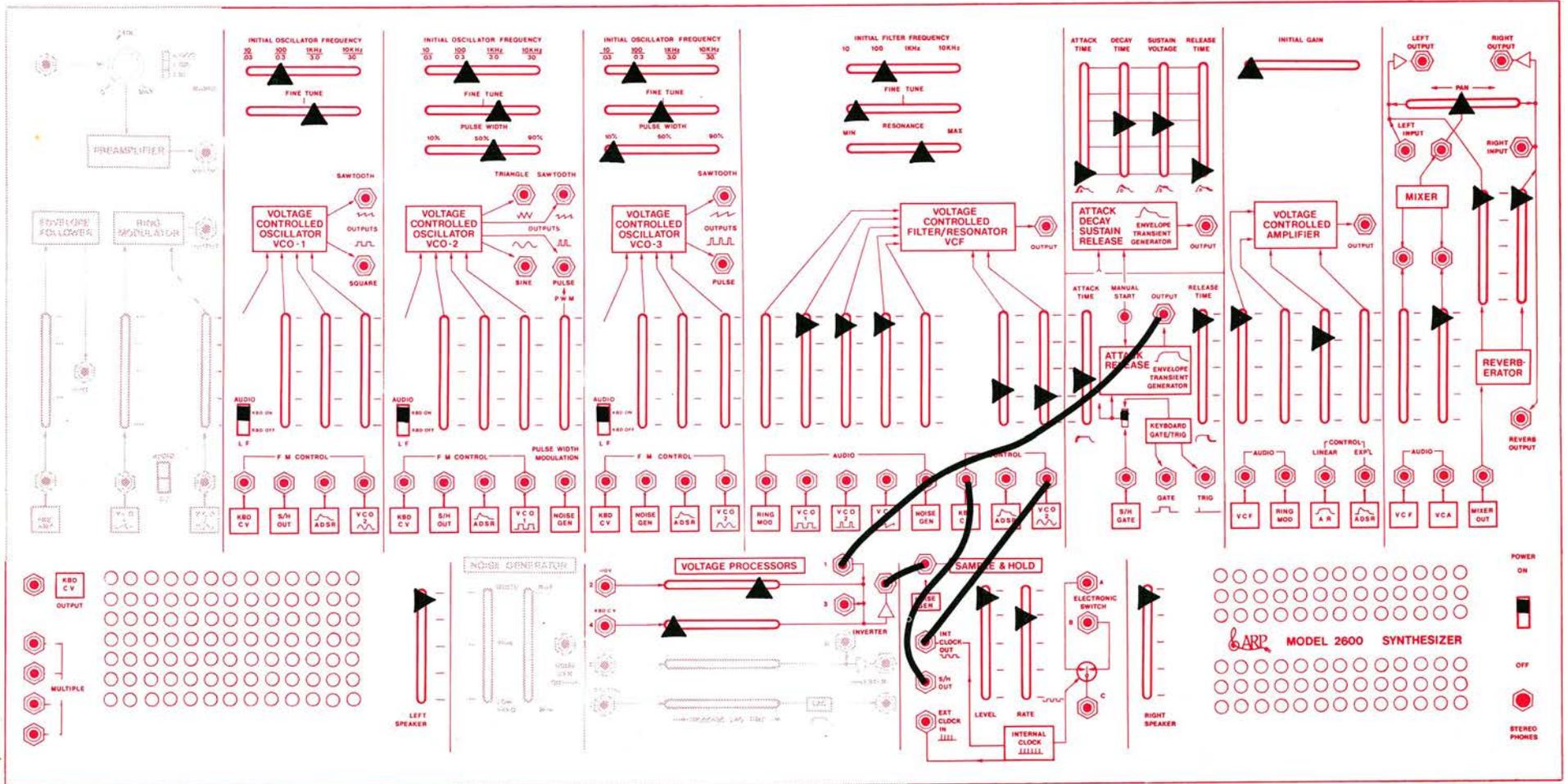
Tune: VCO 1 to one octave below middle C.
VCO 2 to middle C.
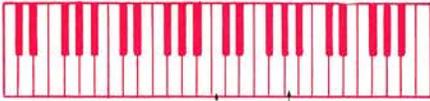VCO 3 to a fourth below middle C.

4 PATCHCORDS

Inverted ADSR Harmonic Arpeggio

63.

VCO TUNING
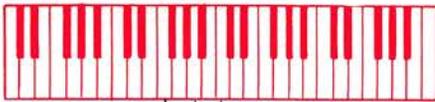
VCO 3
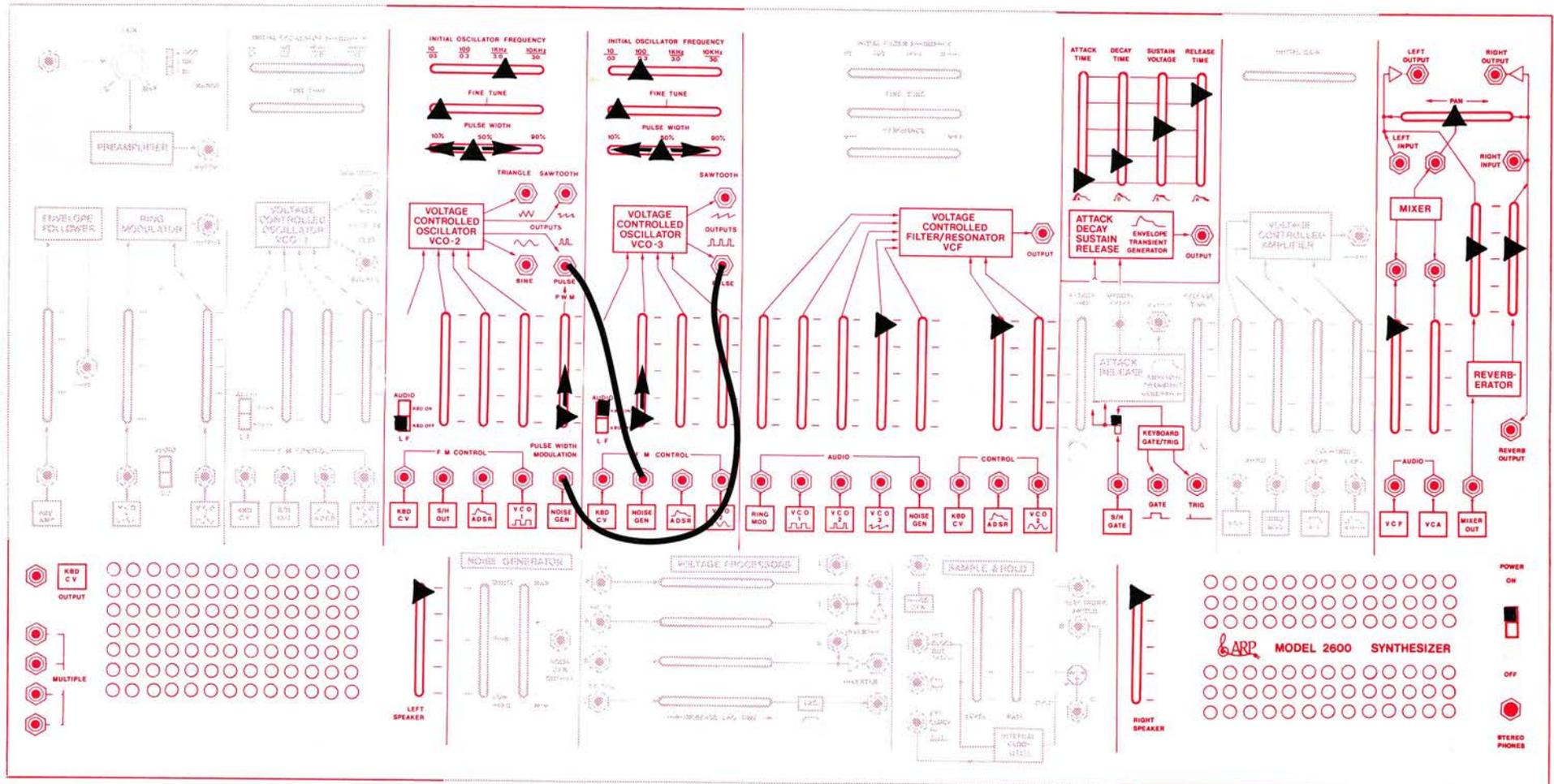
1. Raise ↑ into VCO 3, tuning interval to a fifth.
2. Raise ↑ into VCO 2 for appearance of middle pitch.
3. Adjust VCO 2 Pulse Width for desired rhythm.
4. Tune middle note to a major third above bottom pitch with VCO 3 Pulse Width slider.

2 PATCHCORDS

Three-note Tunable Sequence

64.

VCO 2   VCO 3
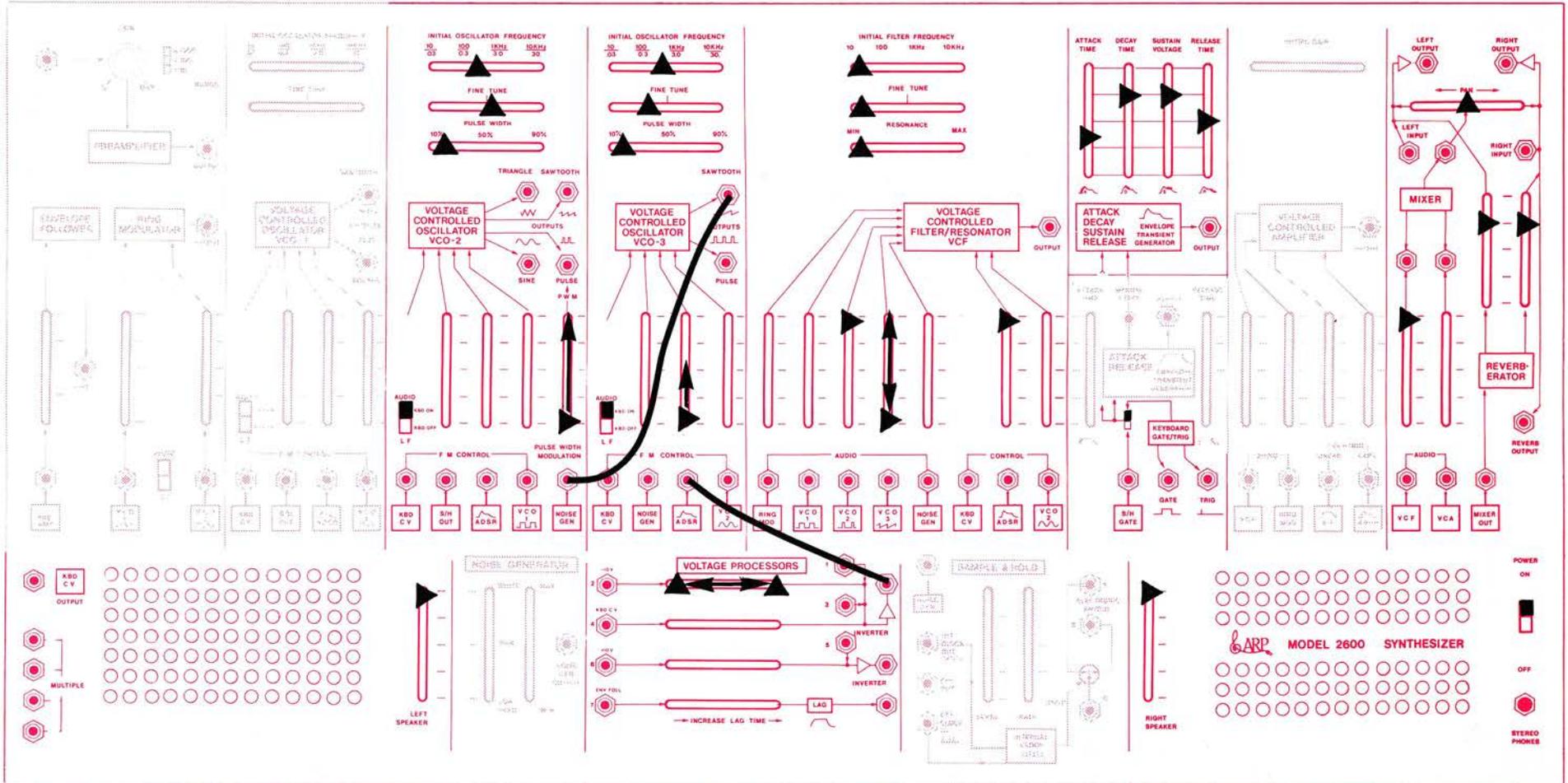
TONIC CHORD (I):

1. Tune VCO 2 to middle C.
2. Raise VCO 3 ∿↑ into VCF and tune to a minor 6th above VCO 2 (C-A).
3. Close VCO 3 ∿↓ and raise Pulse Width Mod slider fully into VCO 2.

SUBDOMINANT CHORD (IV):

4. Move Inverter slider fully to the right.
5. Raise ↑ into VCO 3 until a new chord is heard.
6. Moving Inverter slider back and forth produces either I or IV chord.

2 PATCHCORDS

Three-note Chord from Two VCOs

65.
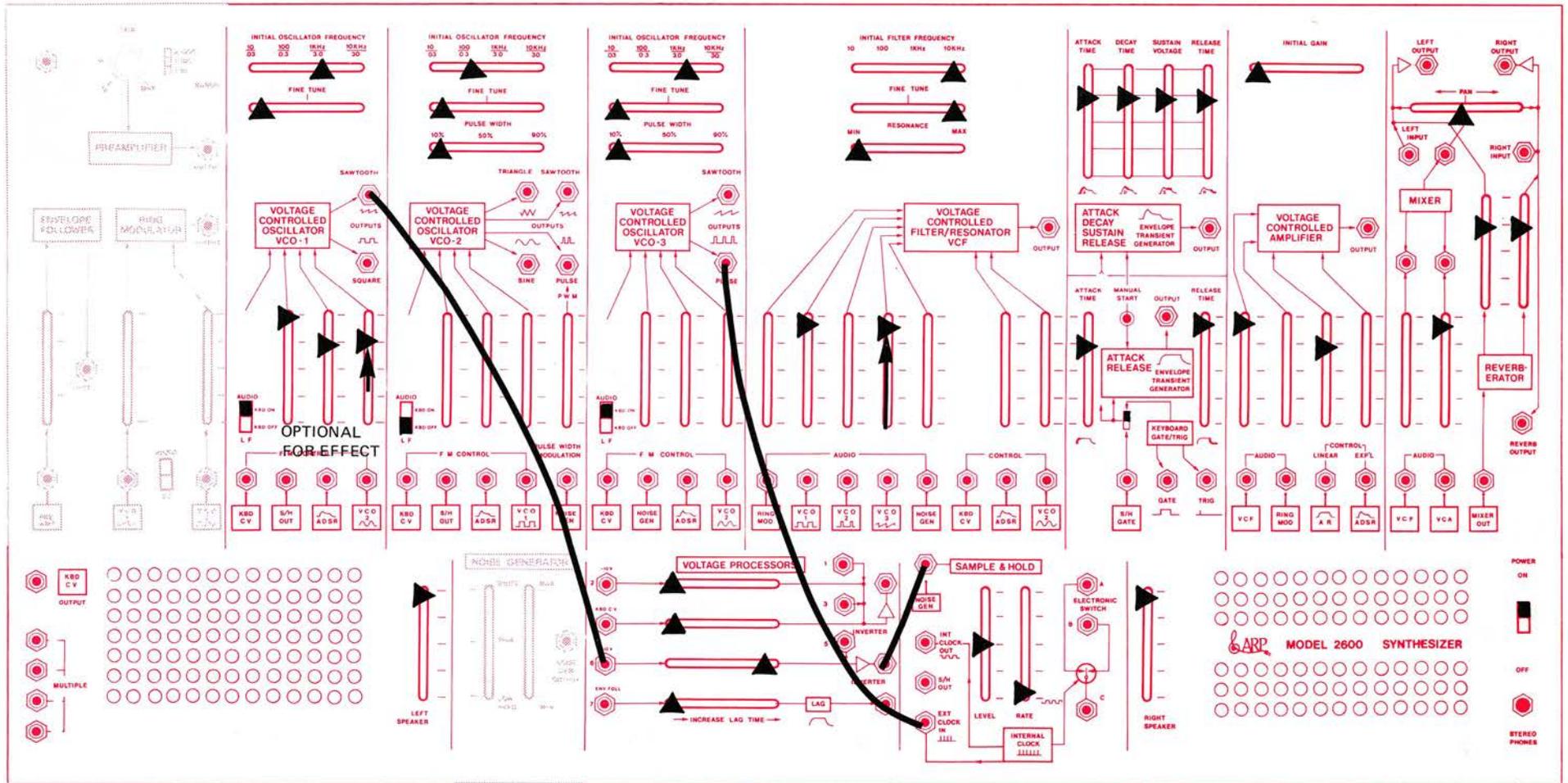
Be certain that the frequency of VCO 3 is above that of VCO 1

3 PATCHCORDS

Inharmonic Sequencing

66.

VCO 1 with dummy plug   without dummy plug
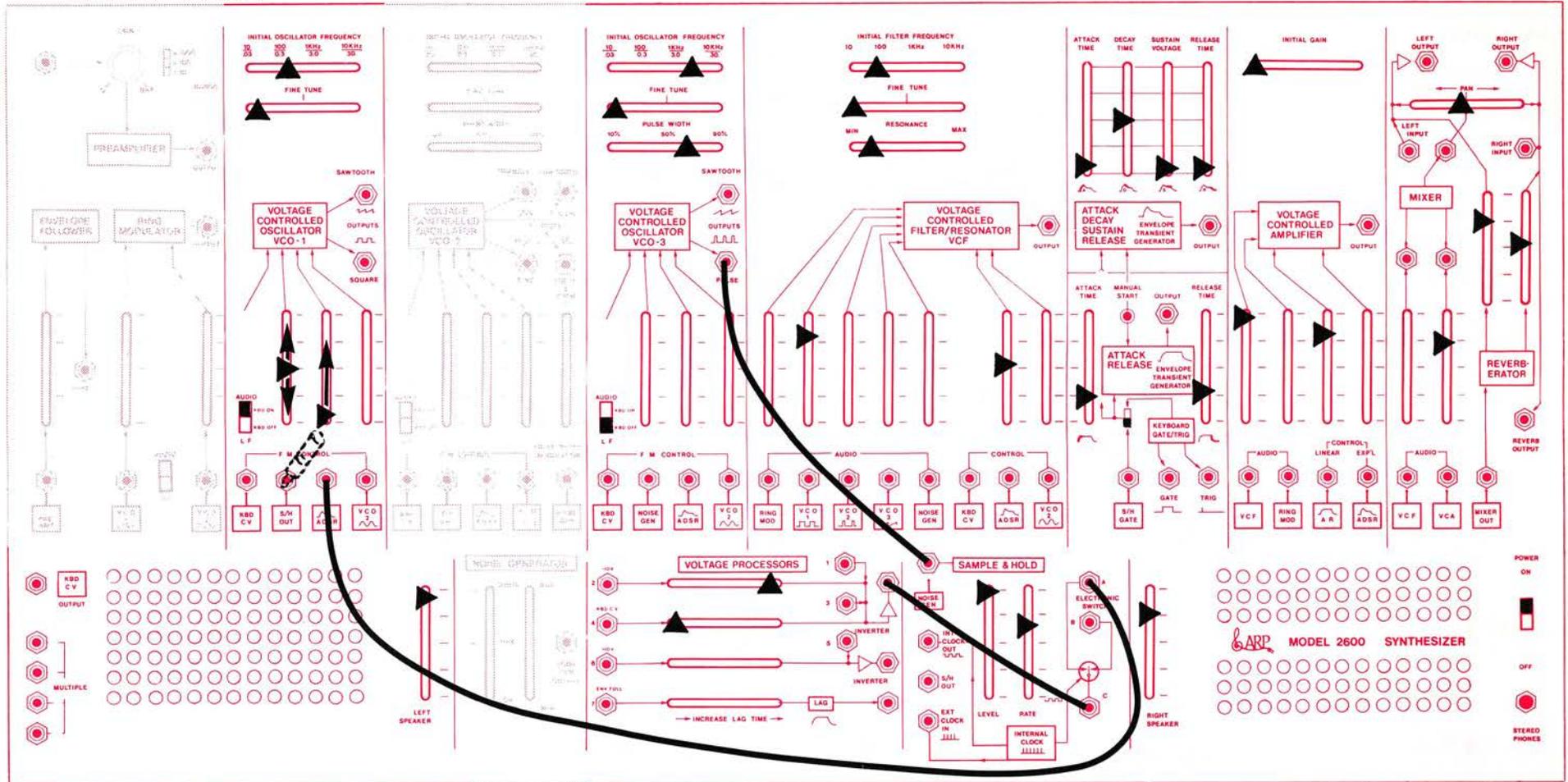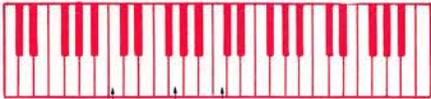
Tuning:
1. Tune S/H into VCO 1 to an octave interval.
2. Insert dummy plug into S/H jack at VCO 1 and raise ADSR ↑, tuning to a fifth.
3. Remove dummy plug.

3 PATCHCORDS

Random Select:
Four-note Tunable Arpeggio

67.
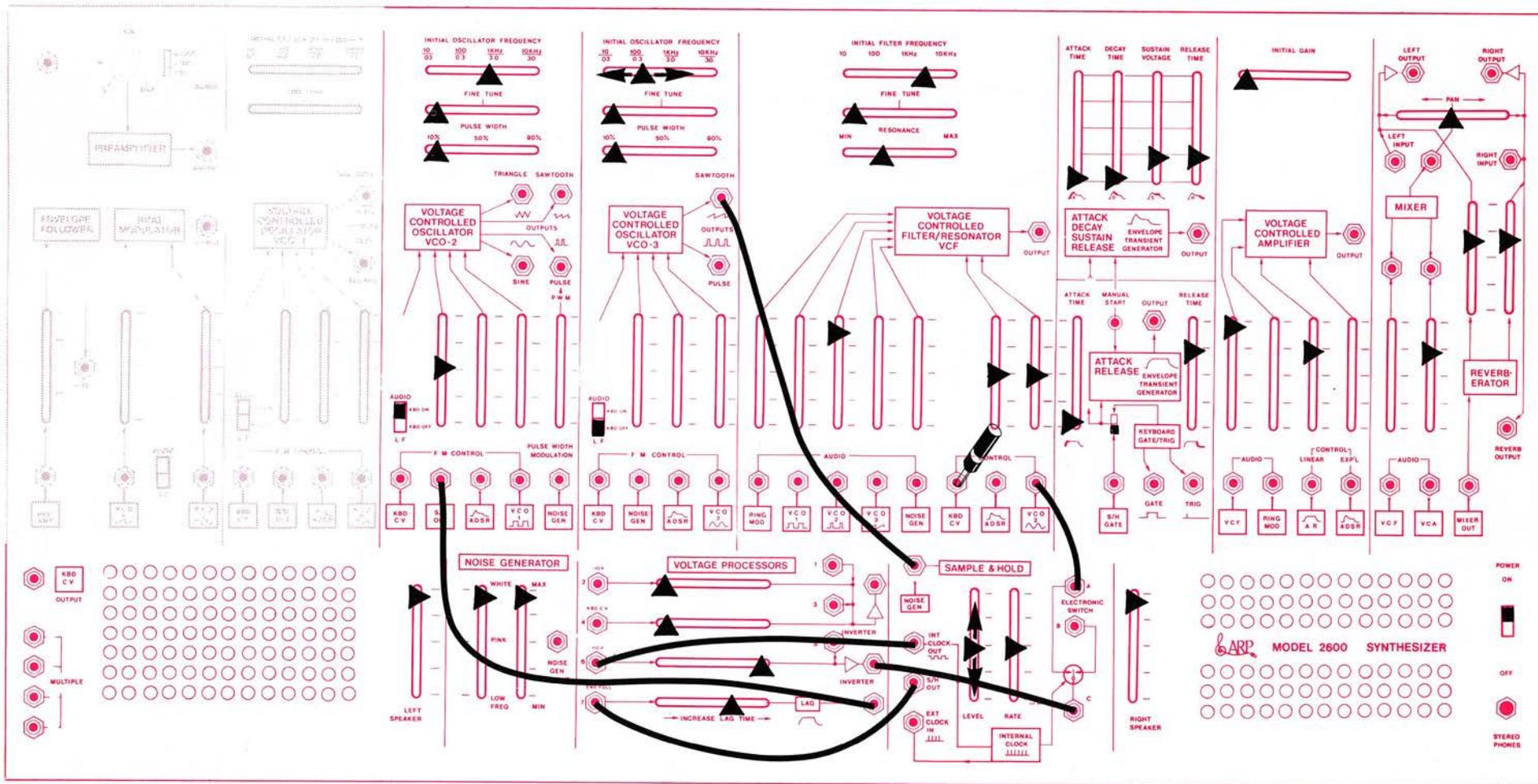
Tune: VCO 3 for desired pattern.
         S/H level for desired interval.

6 PATCHCORDS

1 DUMMY PLUG

Gliding Intervals

68.

Sound Effects
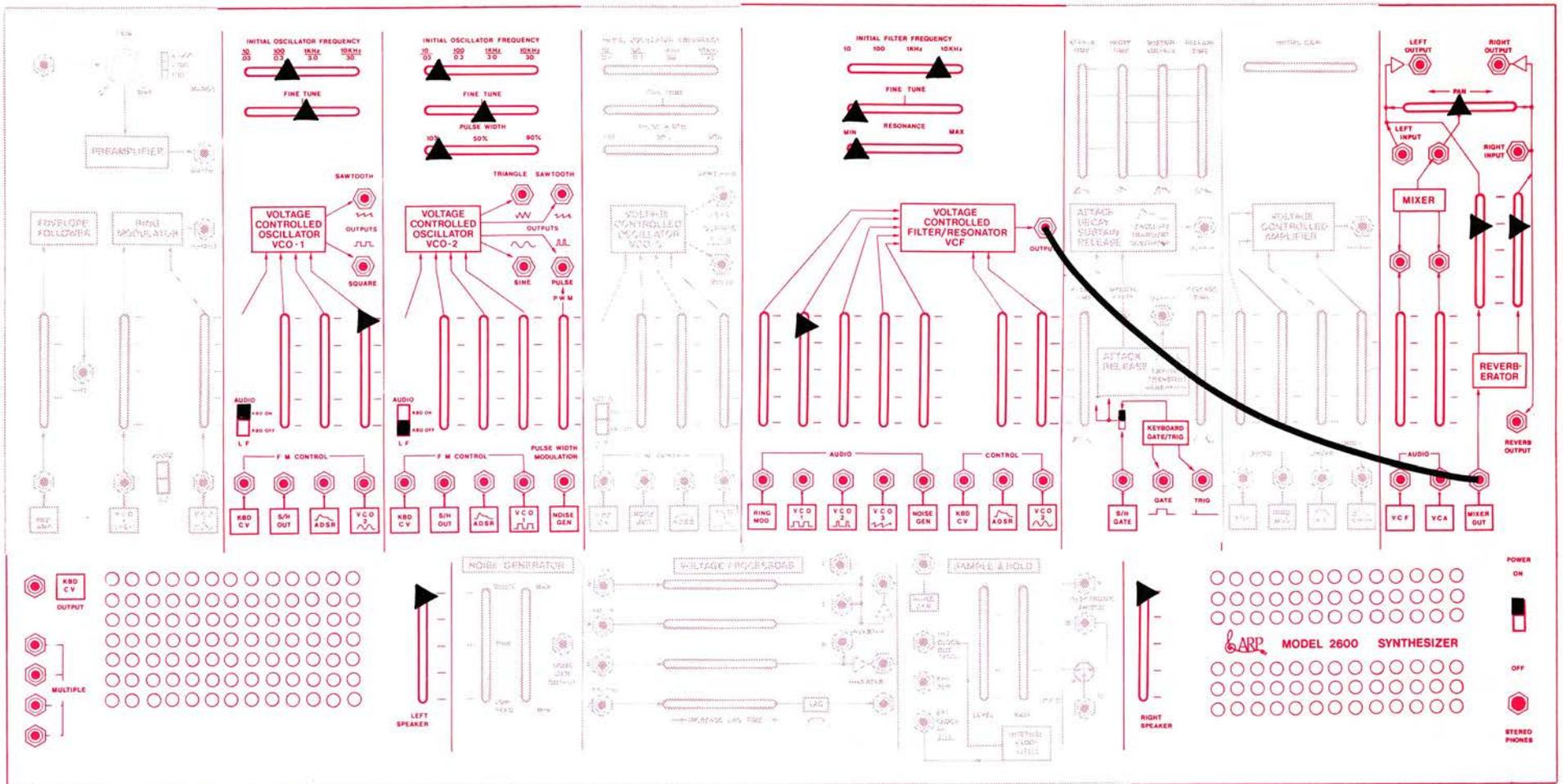
Switch VCO 2 Keyboard Switch on and off for horn blast.

1 PATCHCORD

PLAY KEY G3

Firetruck Siren with Horn Blast

69.
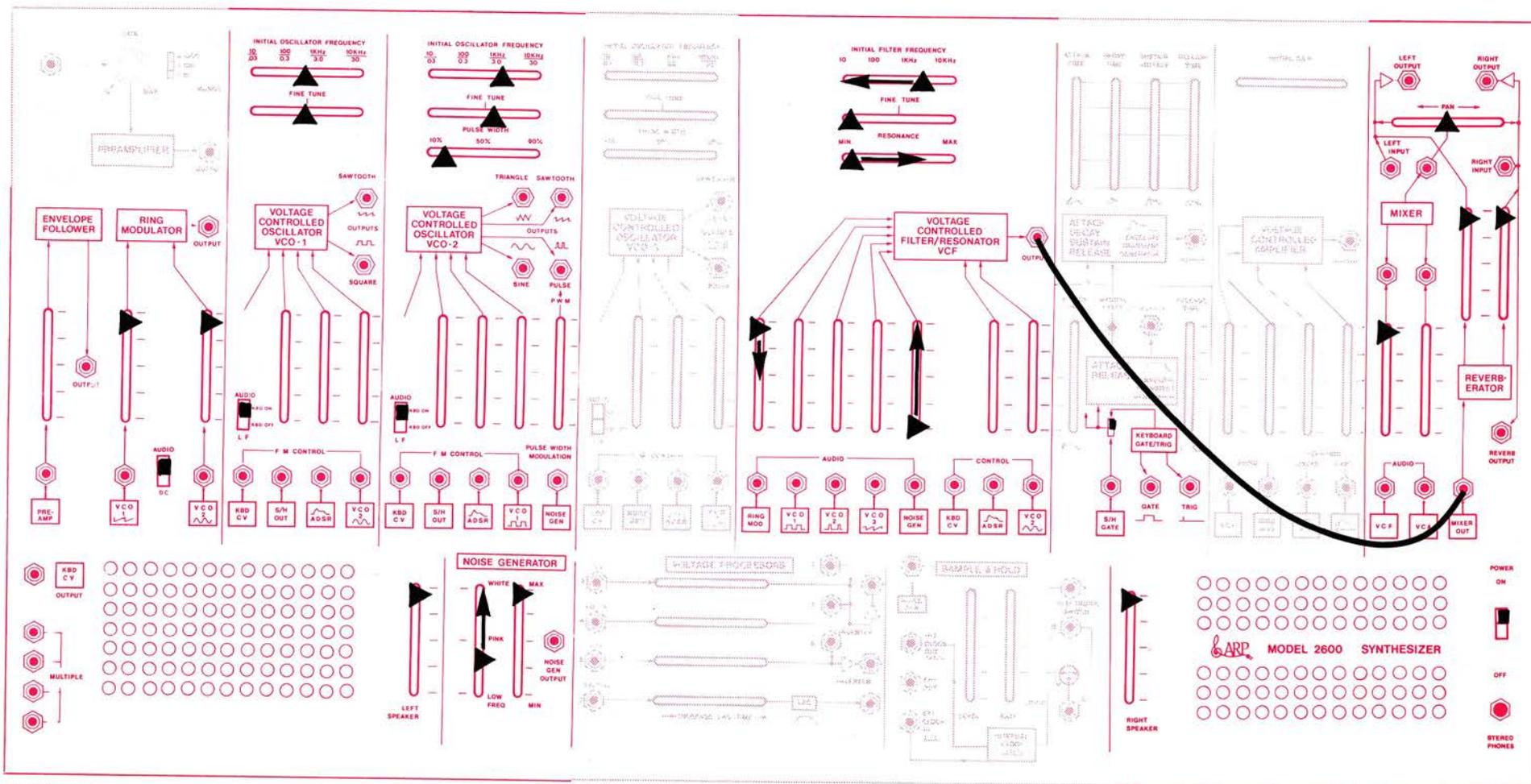
Portamento

Procedure:
1. Play Key C1, glide to C5.
2. Raise Noise into VCF.
3. Lower Ring Mod at VCF as shown.
4. Raise Noise color---Pink to White.
5. Simultaneously, move VCF frequency to left and move Resonance to right.

1 PATCHCORD

727 Starting Up, Taxiing & Taking Off 70.
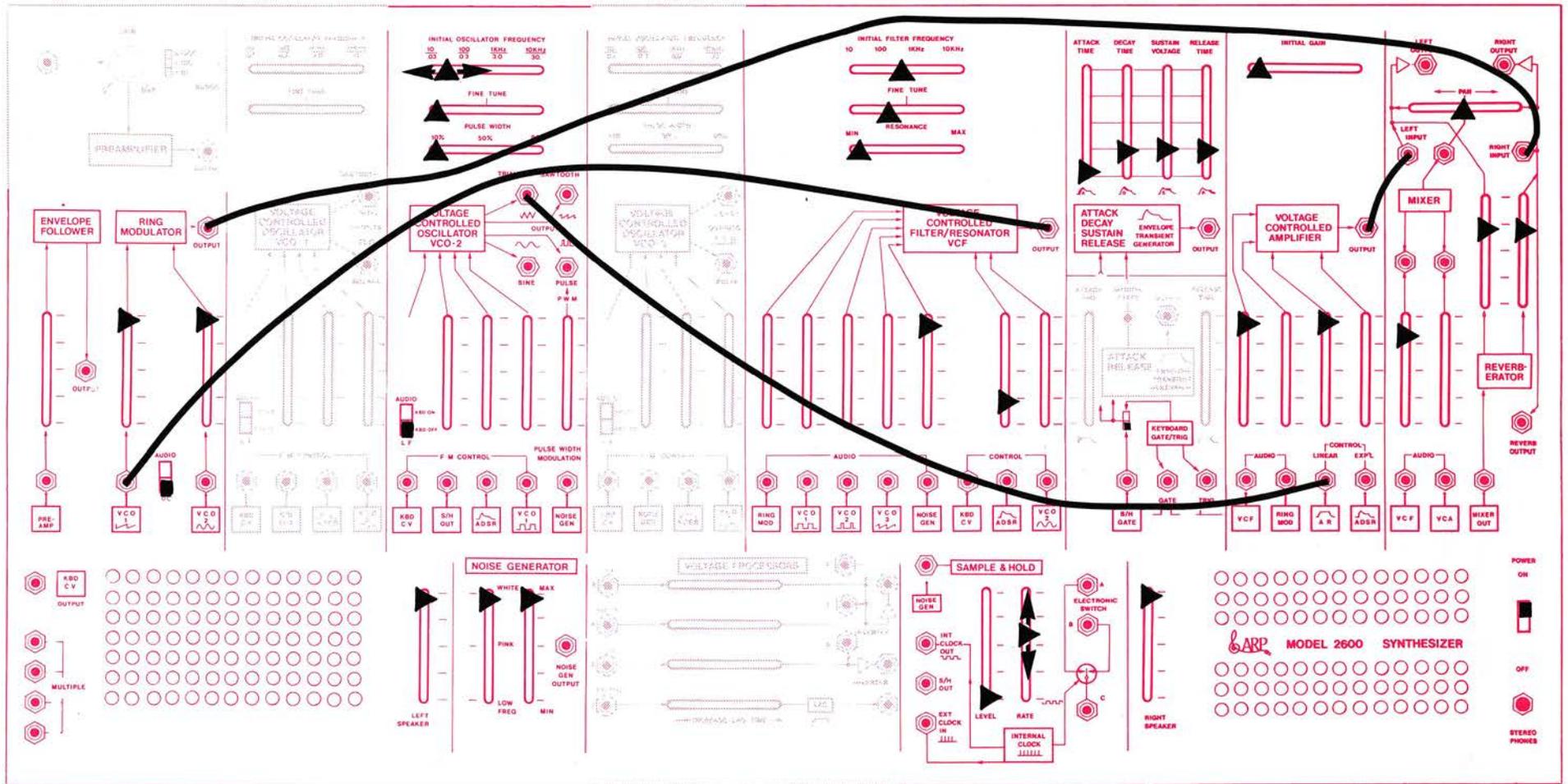
Adjust: VCO 2 frequency for pan speed.
            S/H Rate for train 'chugga' speed.

PLAY KEY C4

4 PATCHCORDS

Panning Freight Train

71.
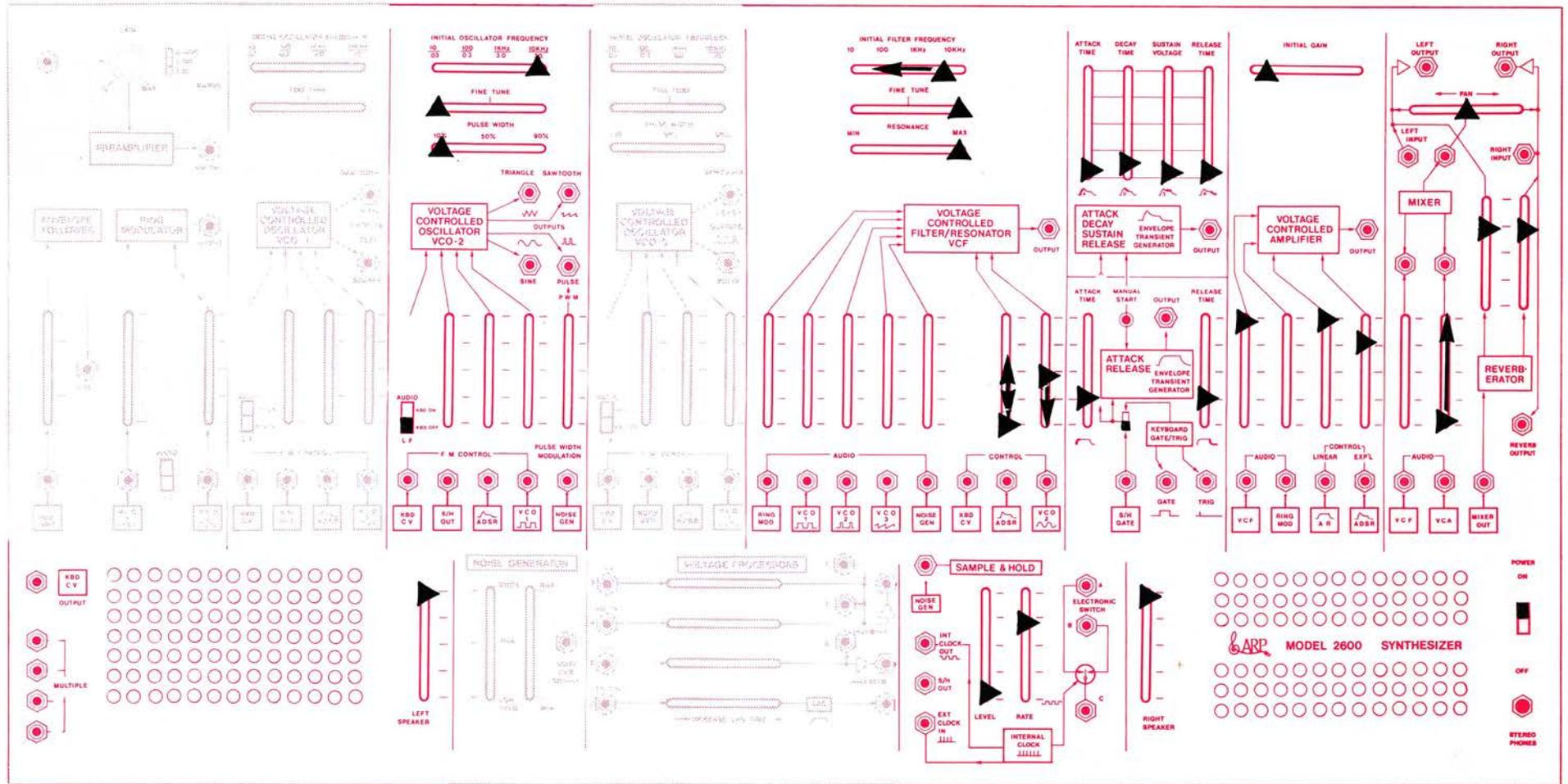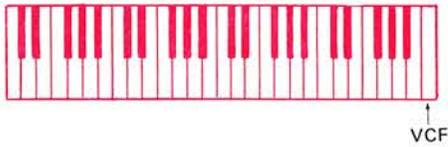
SEQUENCE:
1. Raise VCA into Mixer.
2. Move VCF frequency from 10K to 100 slowly.
3. Lower VCO 2 ∿ ↓ at VCF and jerk ADSR slider
   into VCF up and down in time to the drum solo.

Edgar Winter's "Frankenstein"

72.
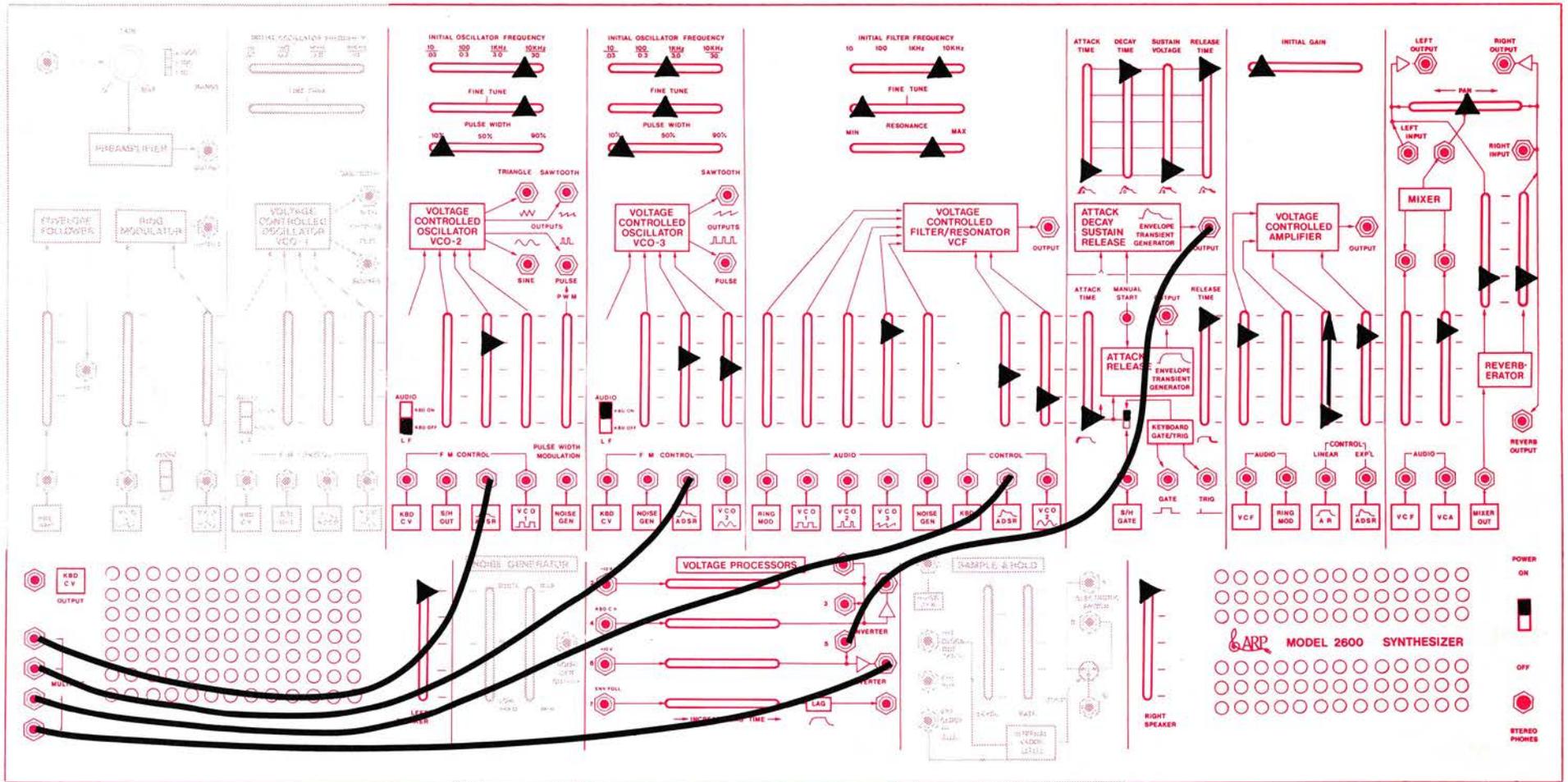
Raise AR into VCA for longer Boing.

5 PATCHCORDS

Boing!
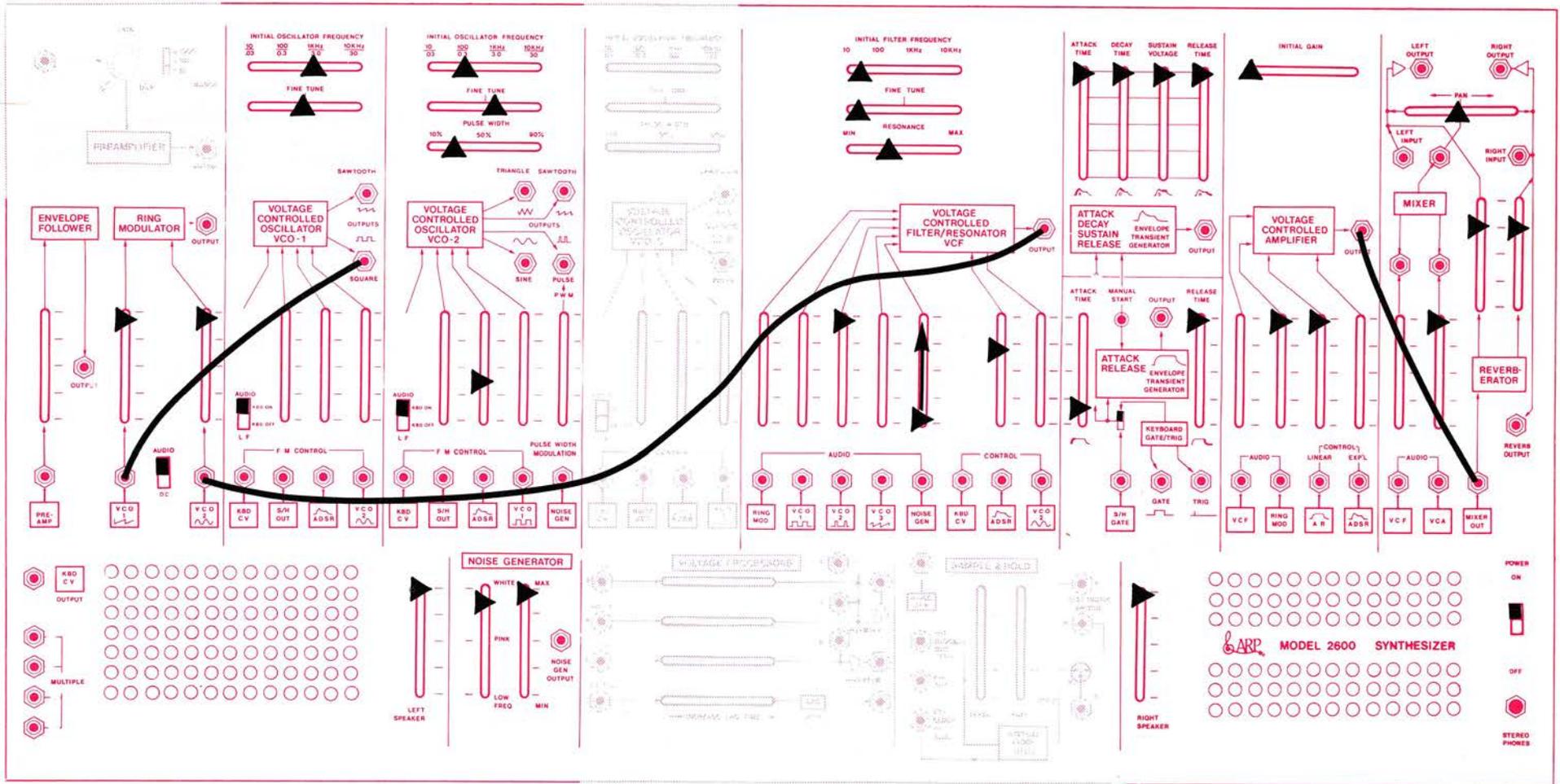
Raise Noise into VCF for special effects.

PLAY KEY Eflat3

3 PATCHCORDS

Wampus Monster
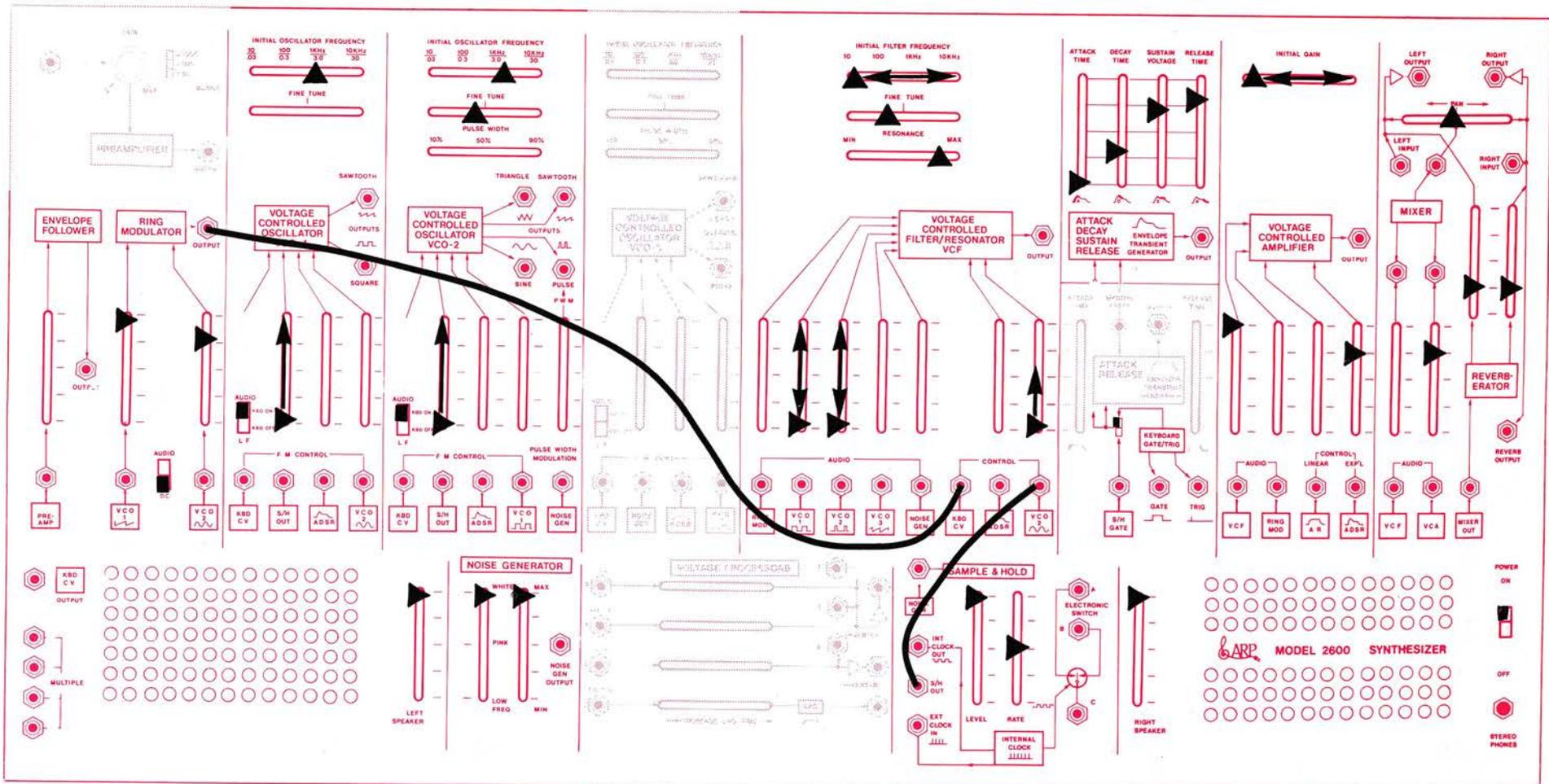
1. Open VCF and VCA →
2. Raise VCO 1 and 2 ↑ into VCF and Tune to unison.
3. Close VCF and VCA. Close VCO 1 and 2 at VCF ↓
4. Raise: S/H into VCO 1 and 2 fully.
   Control slider at VCF as shown.
5. Switch to S/H GATE.

2 PATCHCORDS

Assorted Splats & Sproings

75.
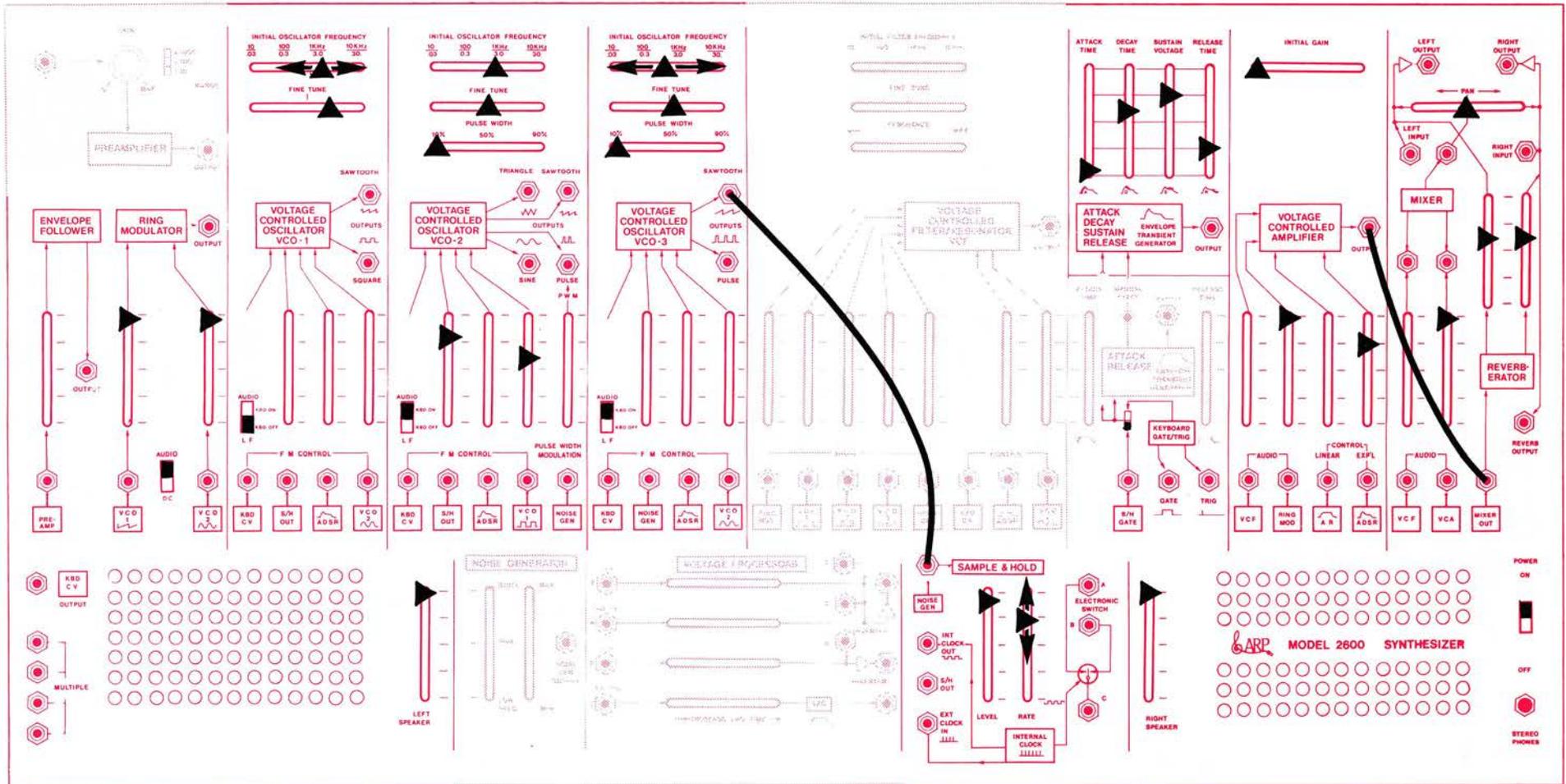
Adjust: VCO 1 frequency for speed of pattern.
         VCO 3 frequency for different patterns.
         S/H Rate for speed of drops.

2 PATCHCORDS

Prancing Raindrops

1. Open VCA → .
2. Adjust VCO 3 gain into VCA for minimum volume.
3. Close VCA ← .
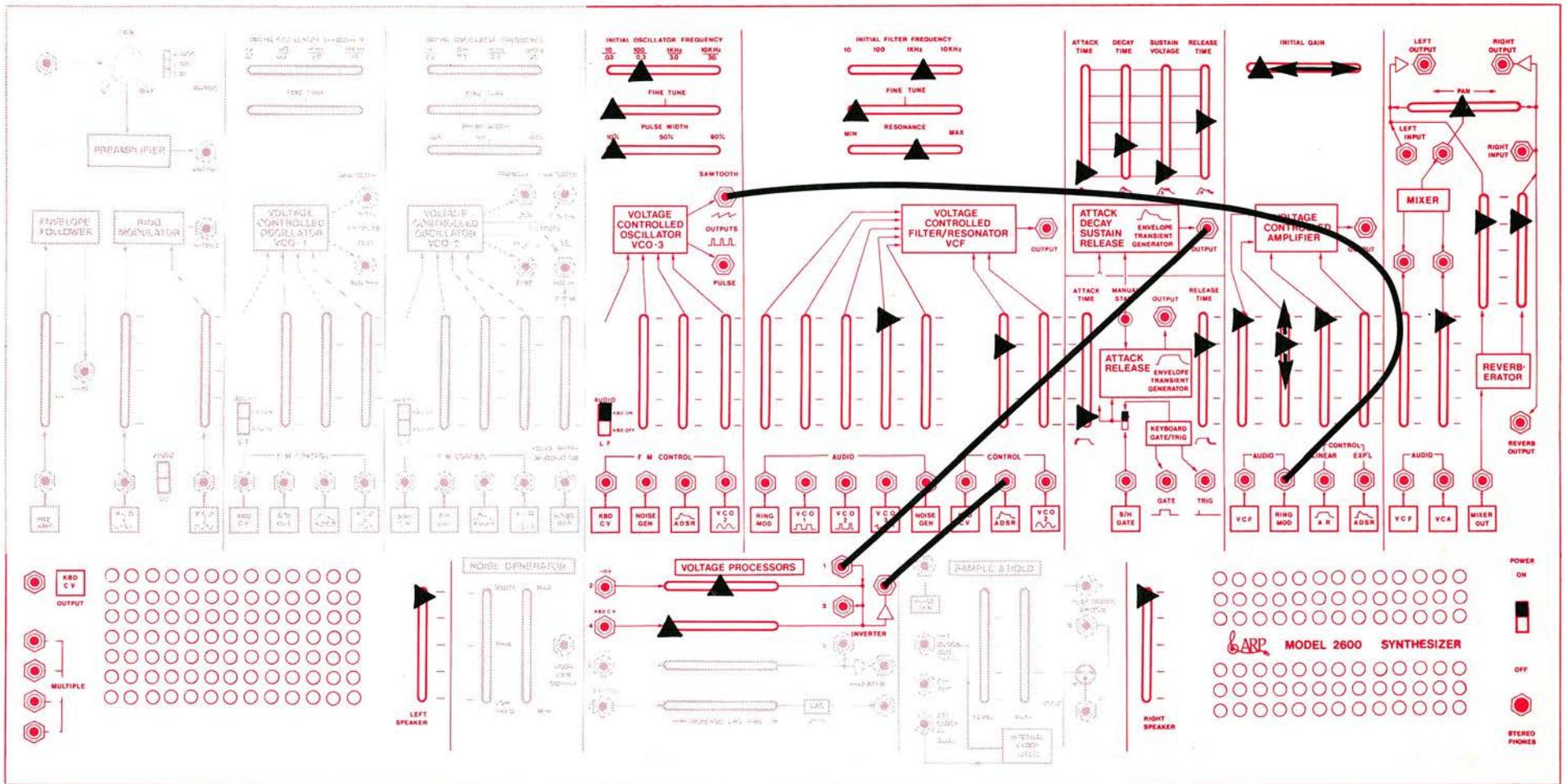
3 PATCHCORDS

"Pwee" or Synthesized High-pass Filter 77.
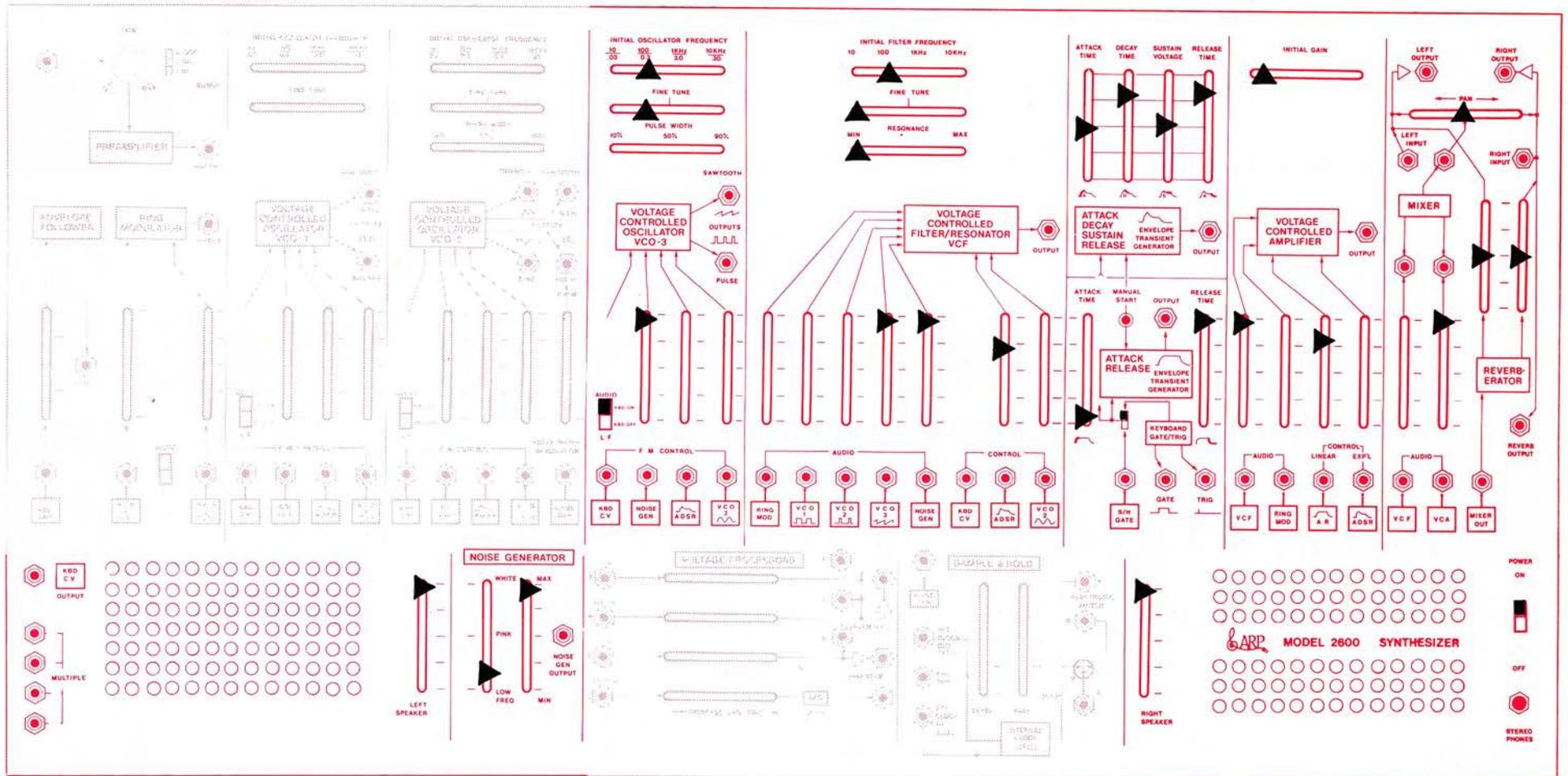
Explosion

78.

Advanced Applications
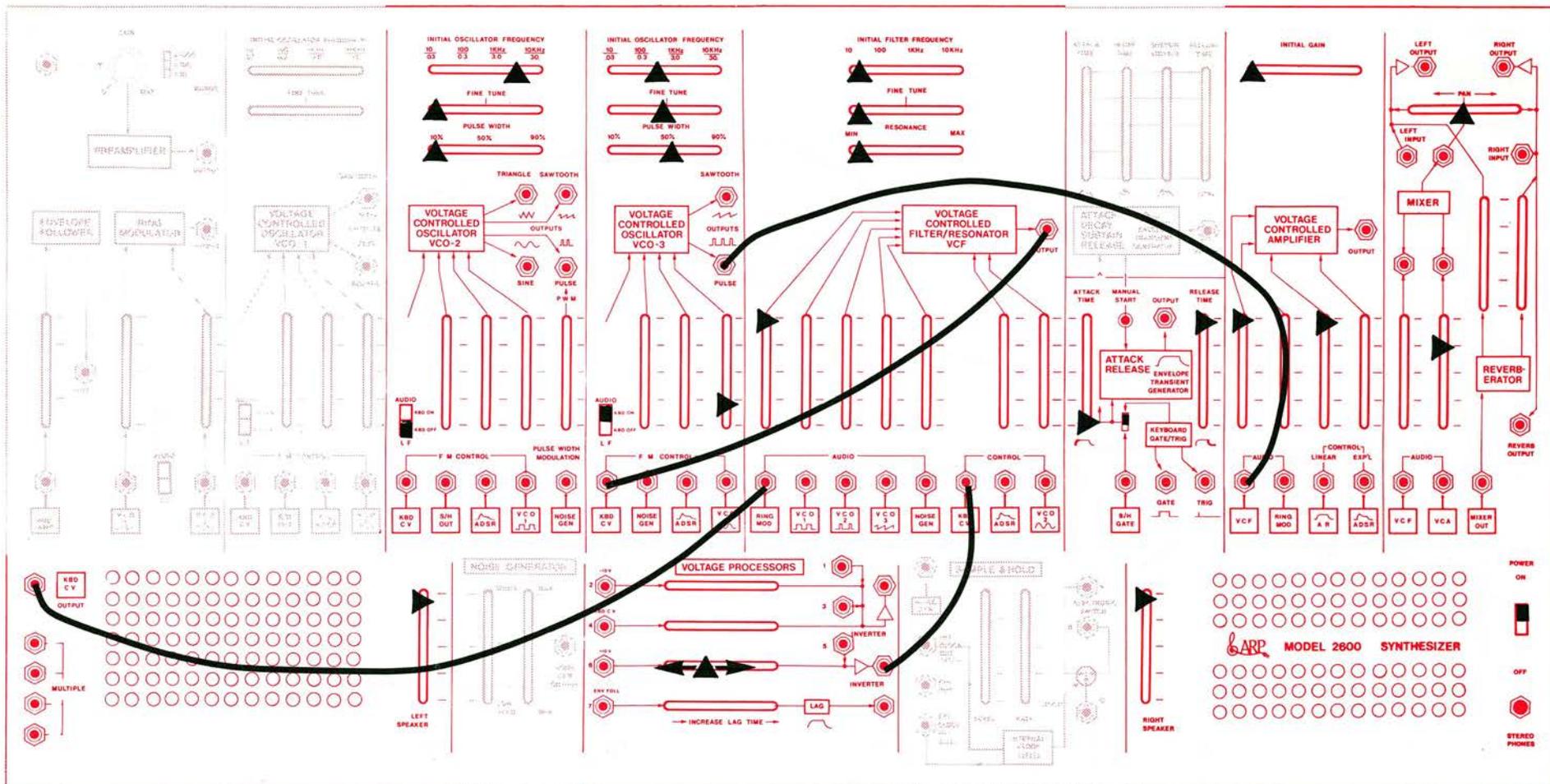
Adjust Inverter for 'glide time'.

4 PATCHCORDS

Ultraglide with Release Memory

79.
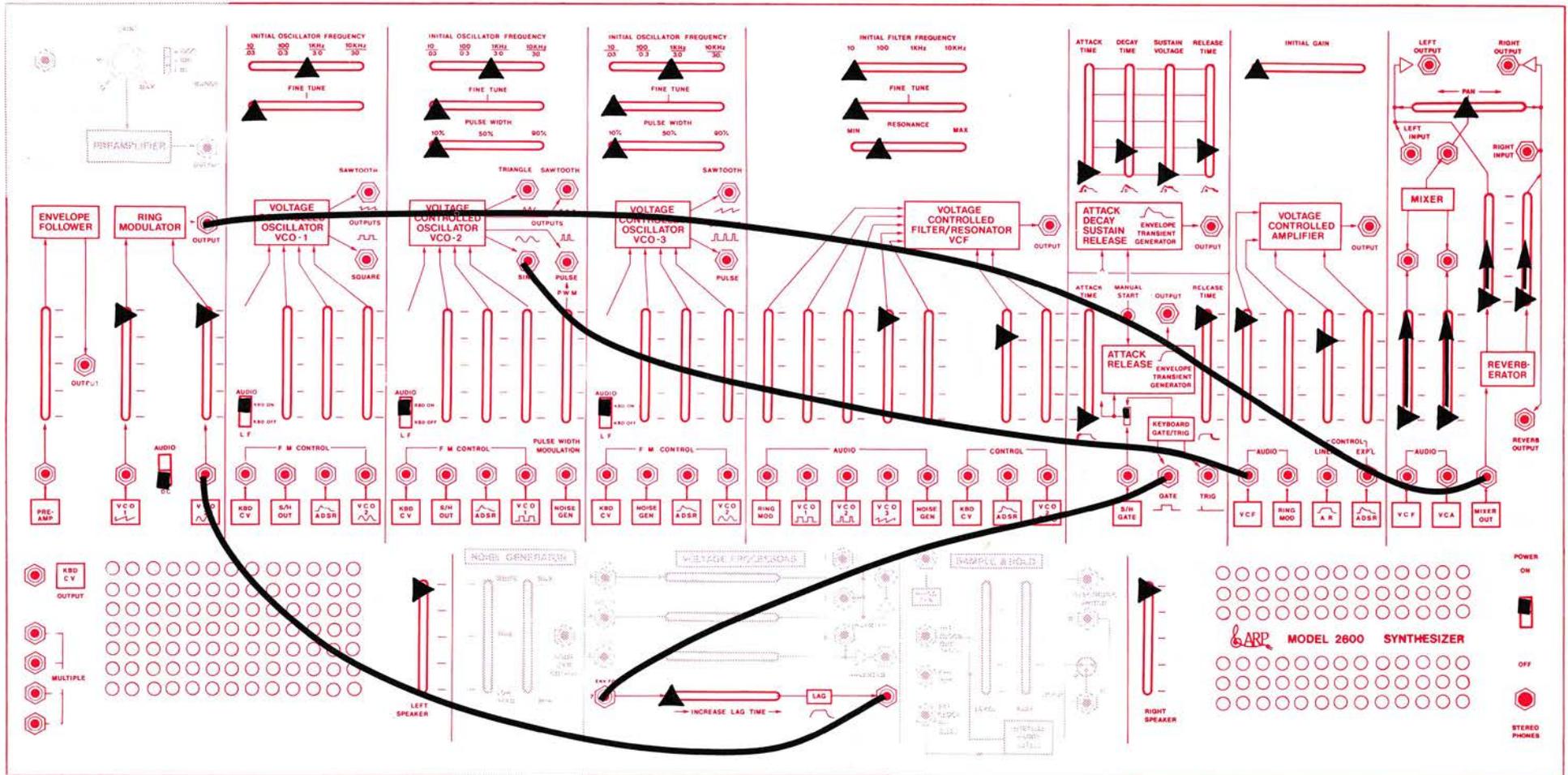
Tune Oscillators as desired.

Balance volume at arrows.

Trio:
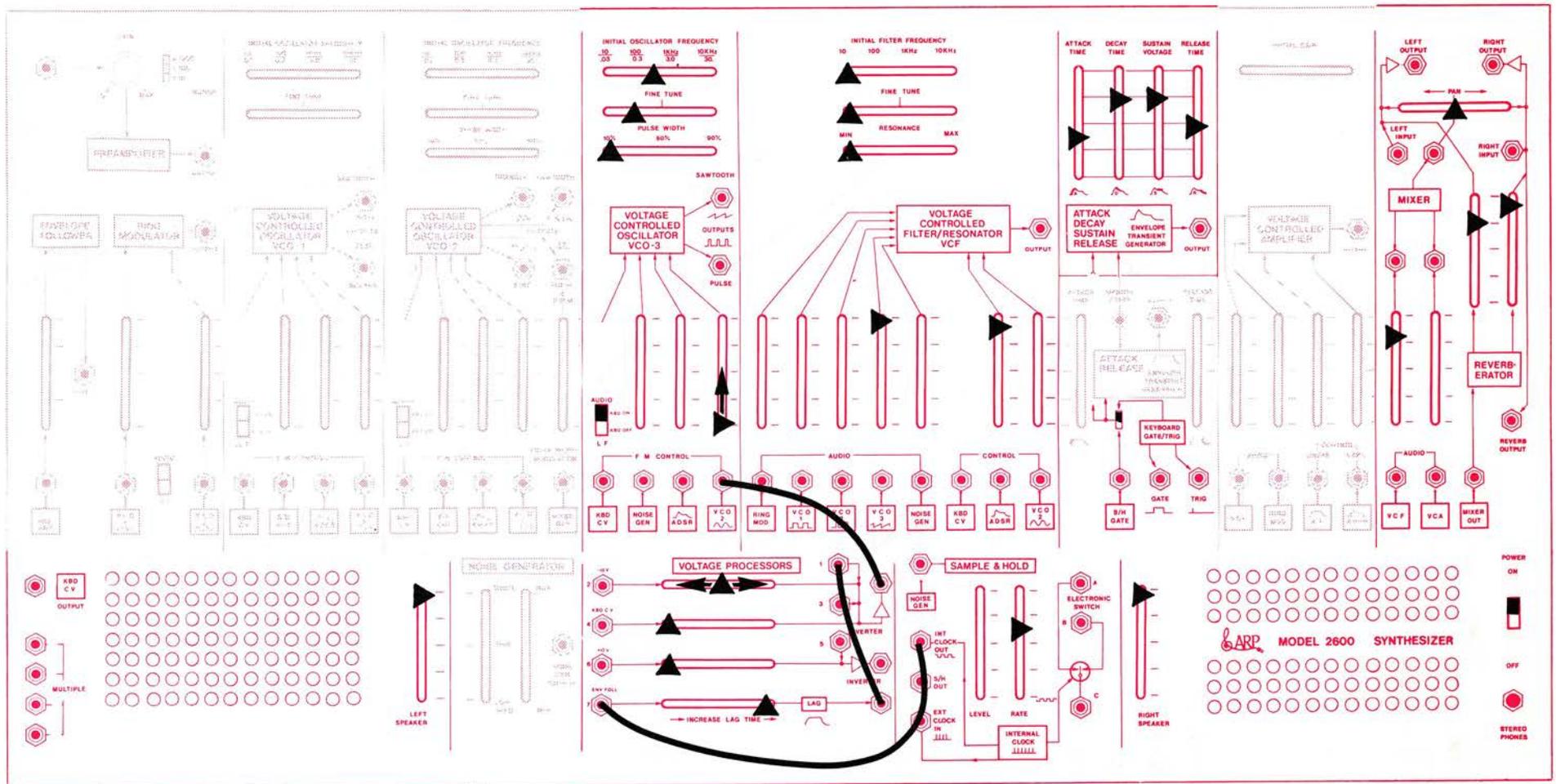# Three Separate Envelopes & Timbres 80.
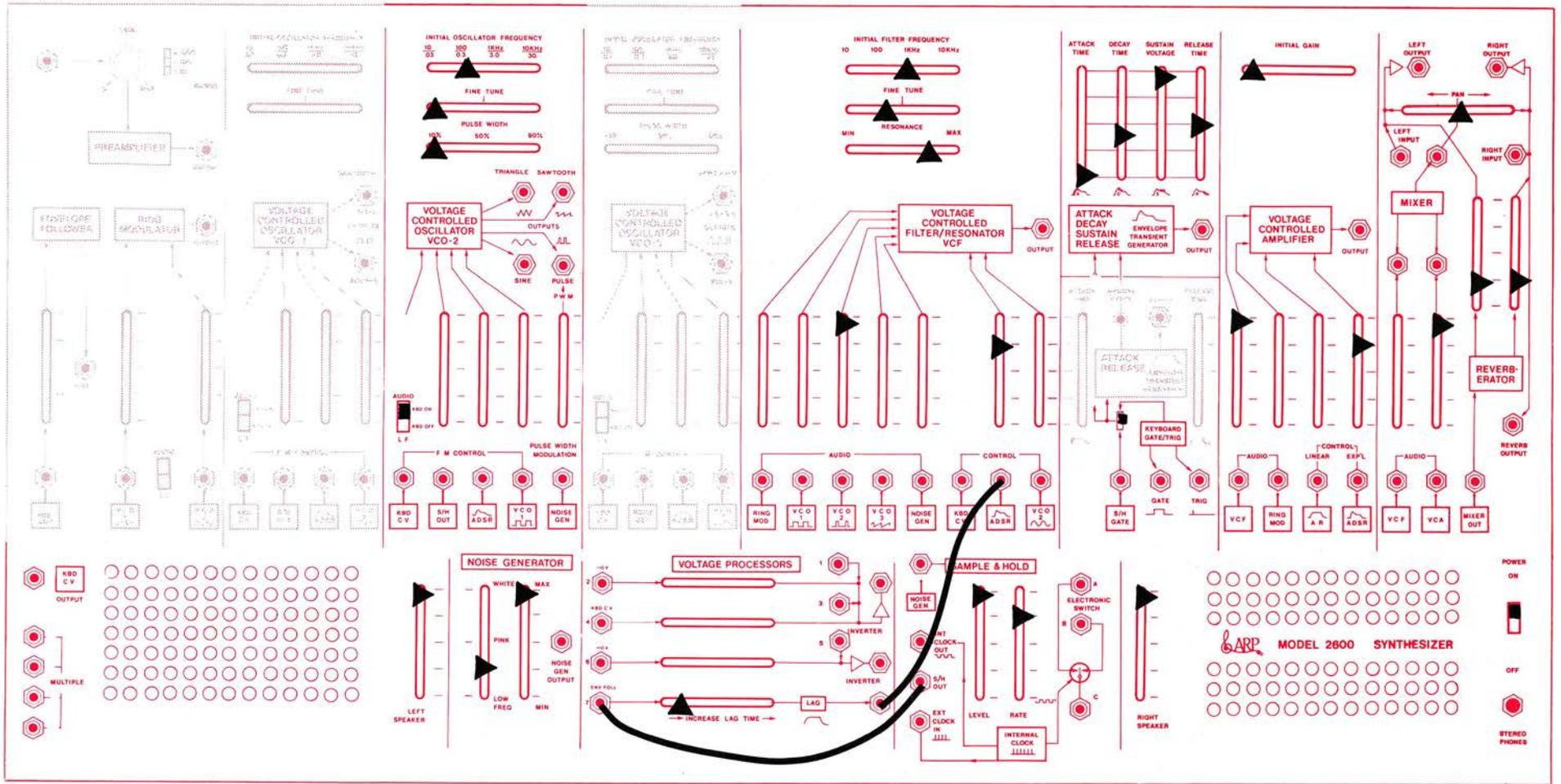
Lagged S/H to Filter
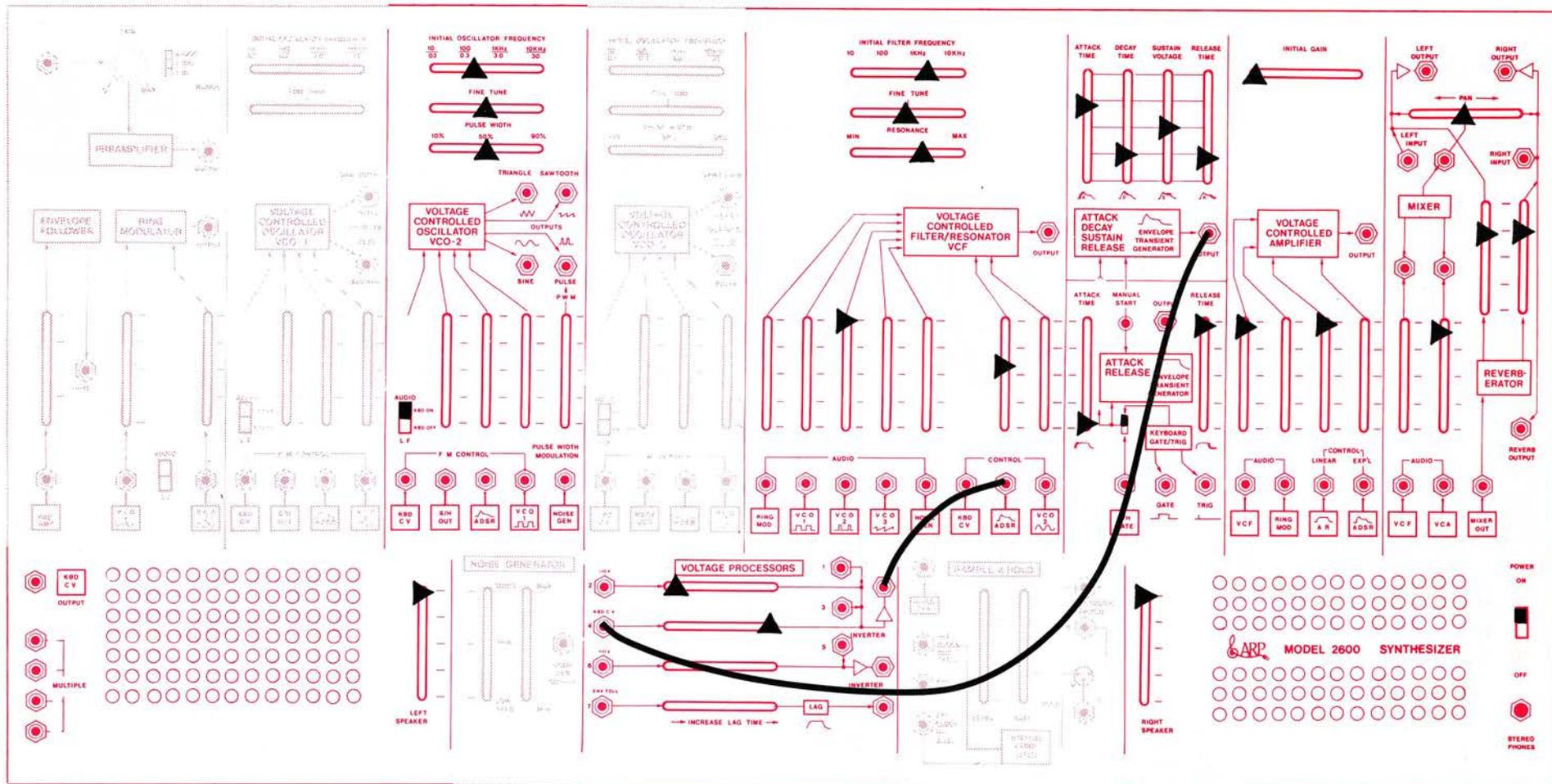
2 PATCHCORDS

Adjust VCF frequency for desired 'owwa';
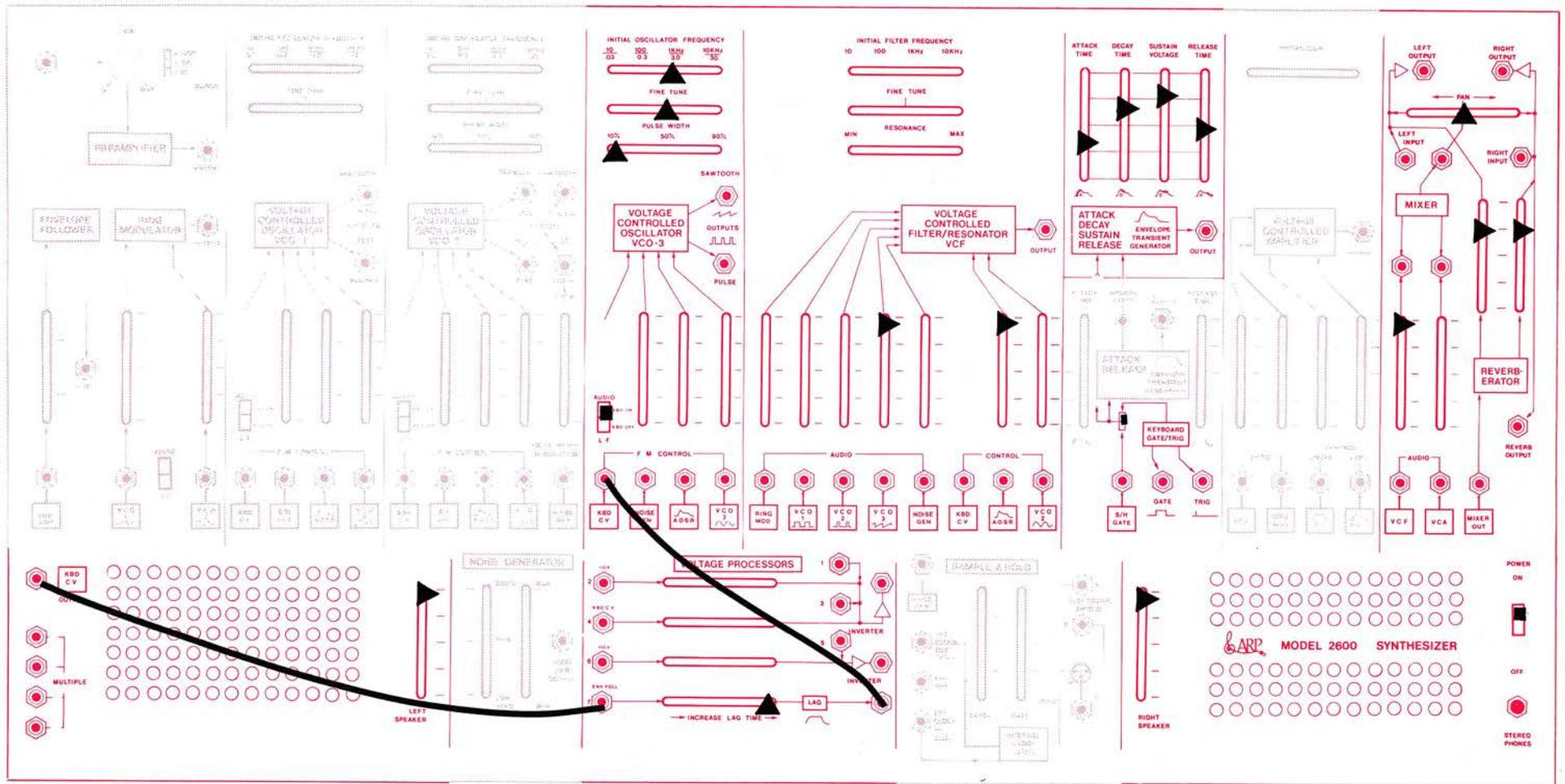
2 PATCHCORDS

"Owwa" or Inverted ADSR to VCF

82.

Adjust: Inverter into VCO 3 for fine tuning and vibrato depth.
                 S/H Rate for vibrato speed.
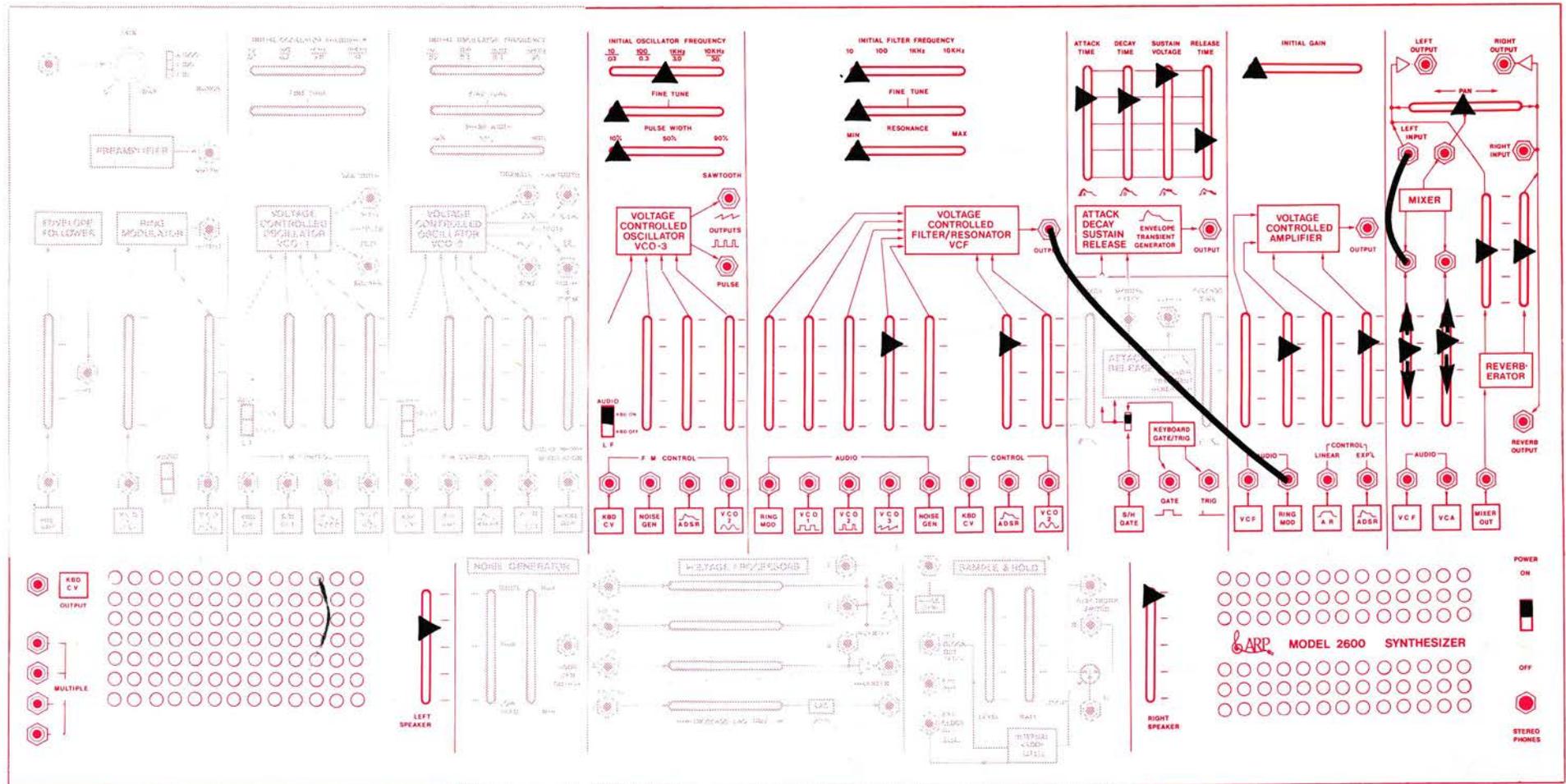
3 PATCHCORDS

Basic Vibrato from Internal Oscillator   **83.**

Lagged Keyboard Voltage

84.

2 PATCHCORDS

INITIAL OSCILLATOR FREQUENCY

INITIAL FILTER FREQUENCY

ATTACK DECAY SUSTAIN RELEASE
TIME TIME VOLTAGE TIME

INITIAL GAIN

LEFT OUTPUT   RIGHT OUTPUT

FINE TUNE

PULSE WIDTH

FINE TUNE

MIN   RESONANCE   MAX

PAN

LEFT INPUT   RIGHT INPUT

SAWTOOTH

VOLTAGE CONTROLLED OSCILLATOR VCO-3

OUTPUTS

PULSE

VOLTAGE CONTROLLED FILTER/RESONATOR VCF

OUTPUT

ATTACK DECAY SUSTAIN RELEASE

ENVELOPE TRANSIENT GENERATOR   OUTPUT

VOLTAGE CONTROLLED AMPLIFIER   OUTPUT

MIXER

REVERB-ERATOR

REVERB OUTPUT

AUDIO   KBD ON   KBD OFF   L F

F M CONTROL   AUDIO   CONTROL

KEYBOARD GATE/TRIG

GATE   TRIG

CONTROL
LINEAR   EXP'L

AUDIO   AUDIO

KBD CV   NOISE GEN   ADSR   VCO 2   RING MOD   VCO 1   VCO 2   VCO 3   NOISE GEN   KBD CV   ADSR   VCO 3   S/H GATE   VCF   RING MOD   A R   ADSR   VCF   VCA   MIXER OUT

POWER

ON

OFF

STEREO PHONES

ARP   MODEL 2600   SYNTHESIZER

NOISE GENERATOR   VOLTAGE PROCESSORS   SAMPLE & HOLD

KBD CV

OUTPUT

MULTIPLE

LEFT SPEAKER

RIGHT SPEAKER

2 PATCHCORDS

1.   Hold down any key.
2.   Adjust VCF and VCA Mixer sliders for minimum volume
     in left speaker.
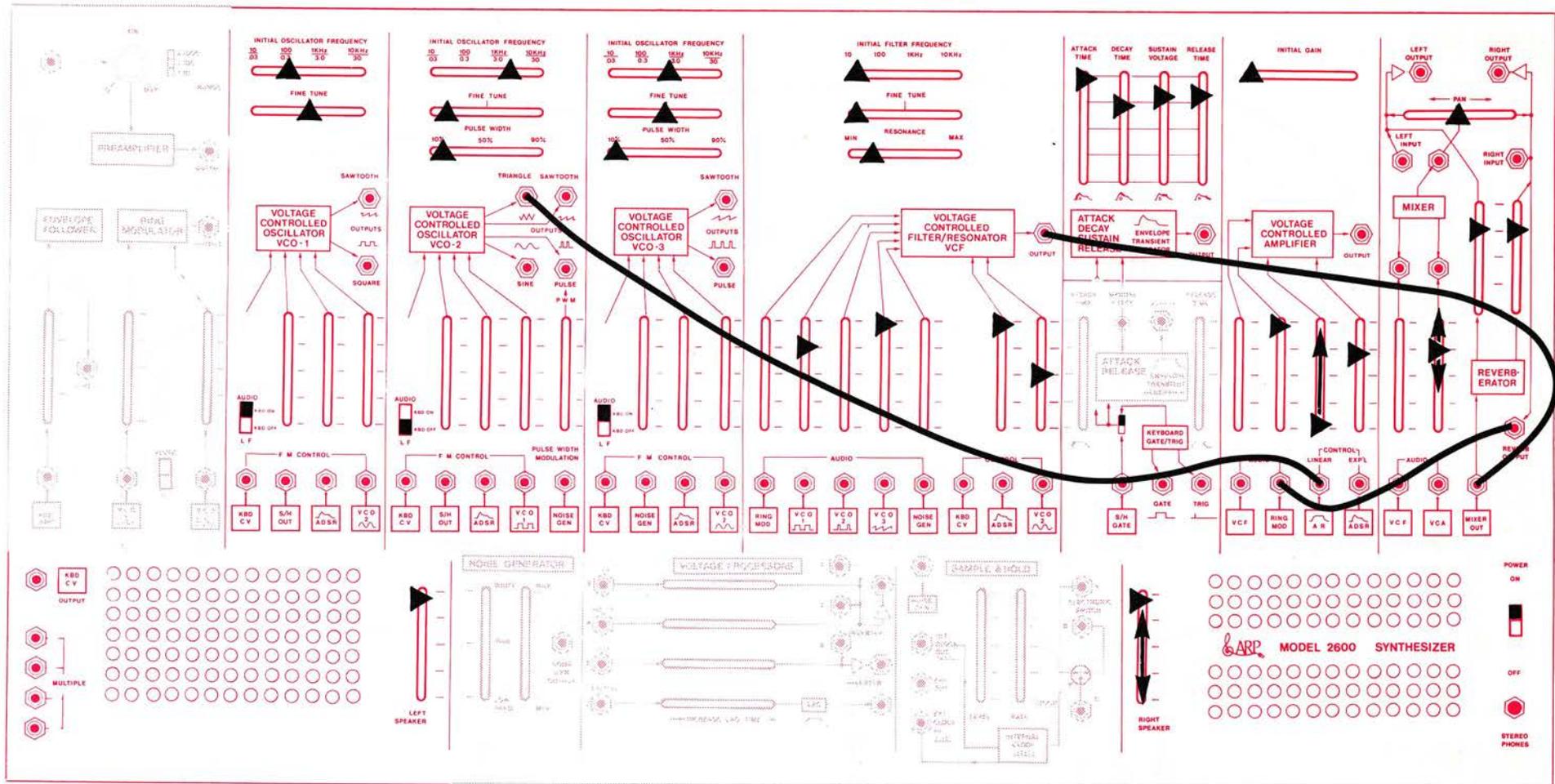3.   Adjust ADSR sliders for speed and position of pan.
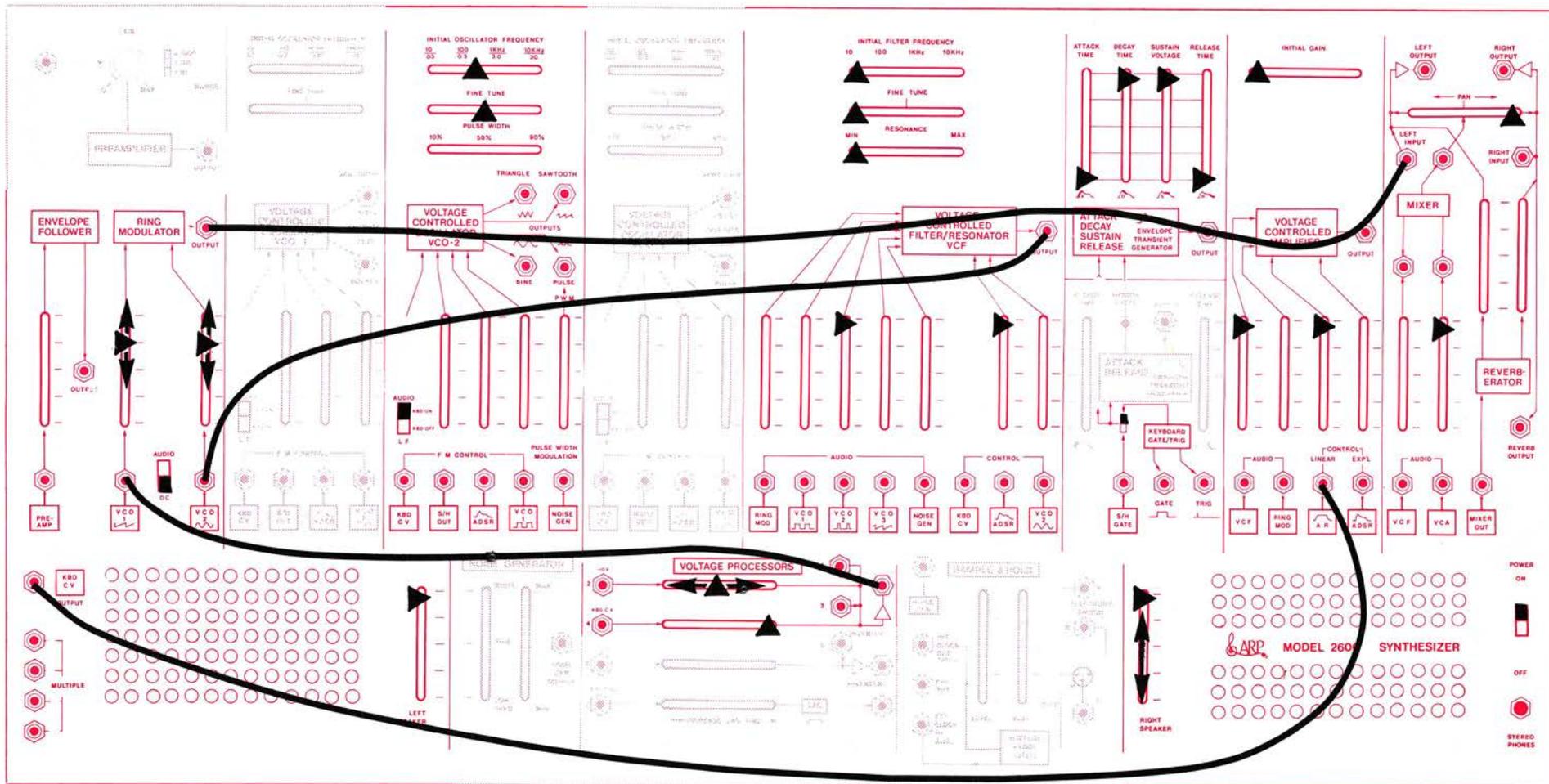
ADSR Pan

85.
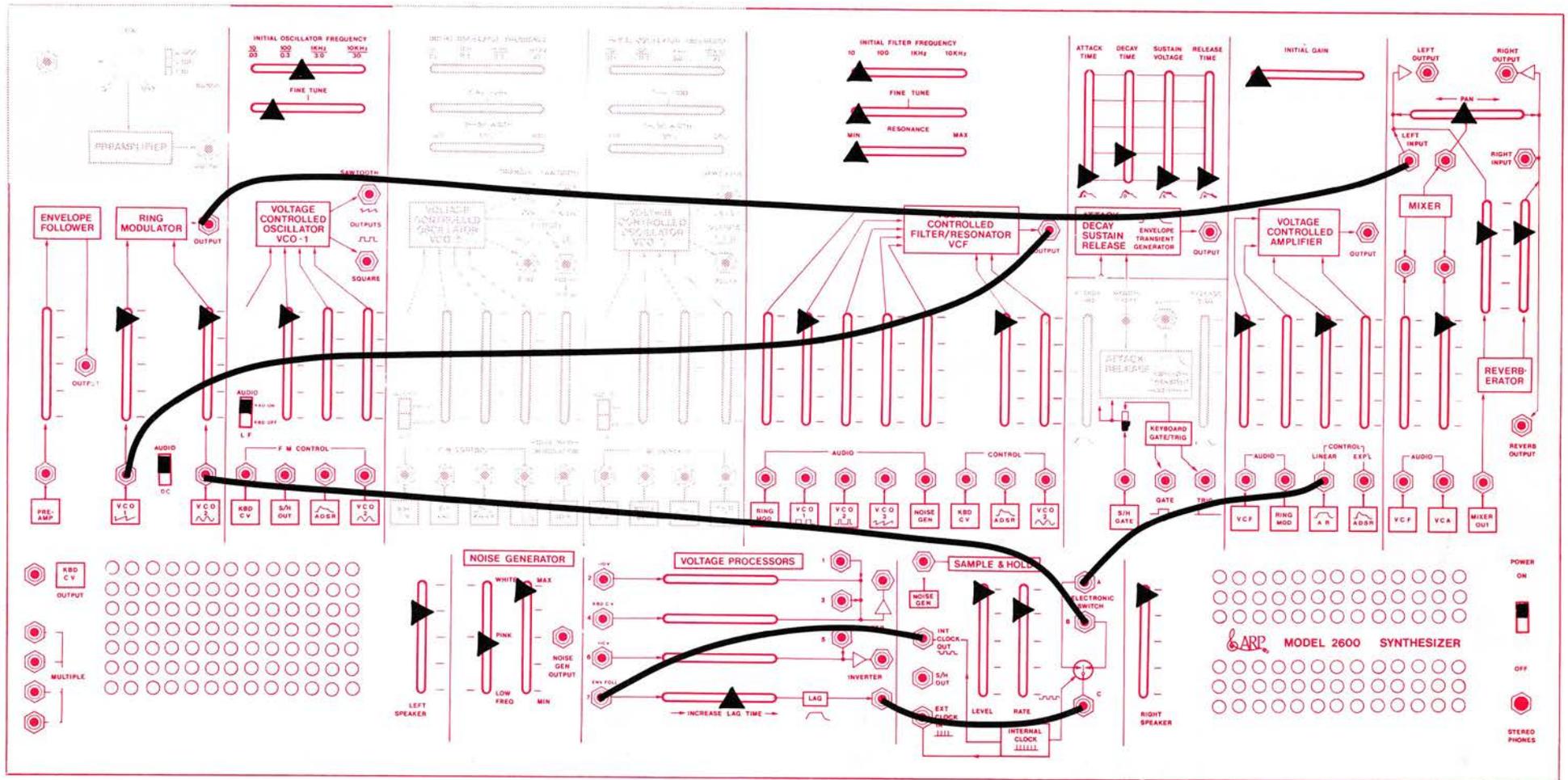
Auto-pan on S/H

6 PATCHCORDS

86.

1. Tune VCO 1 and 3 as desired.
2. Close right speaker ↓ .
3. Press any key and adjust VCA into Mixer for minimum volume in left speaker.
4. Open right speaker ↑ and raise Linear Control into VCA.
5. Adjust VCO 2 frequency for pan speed.
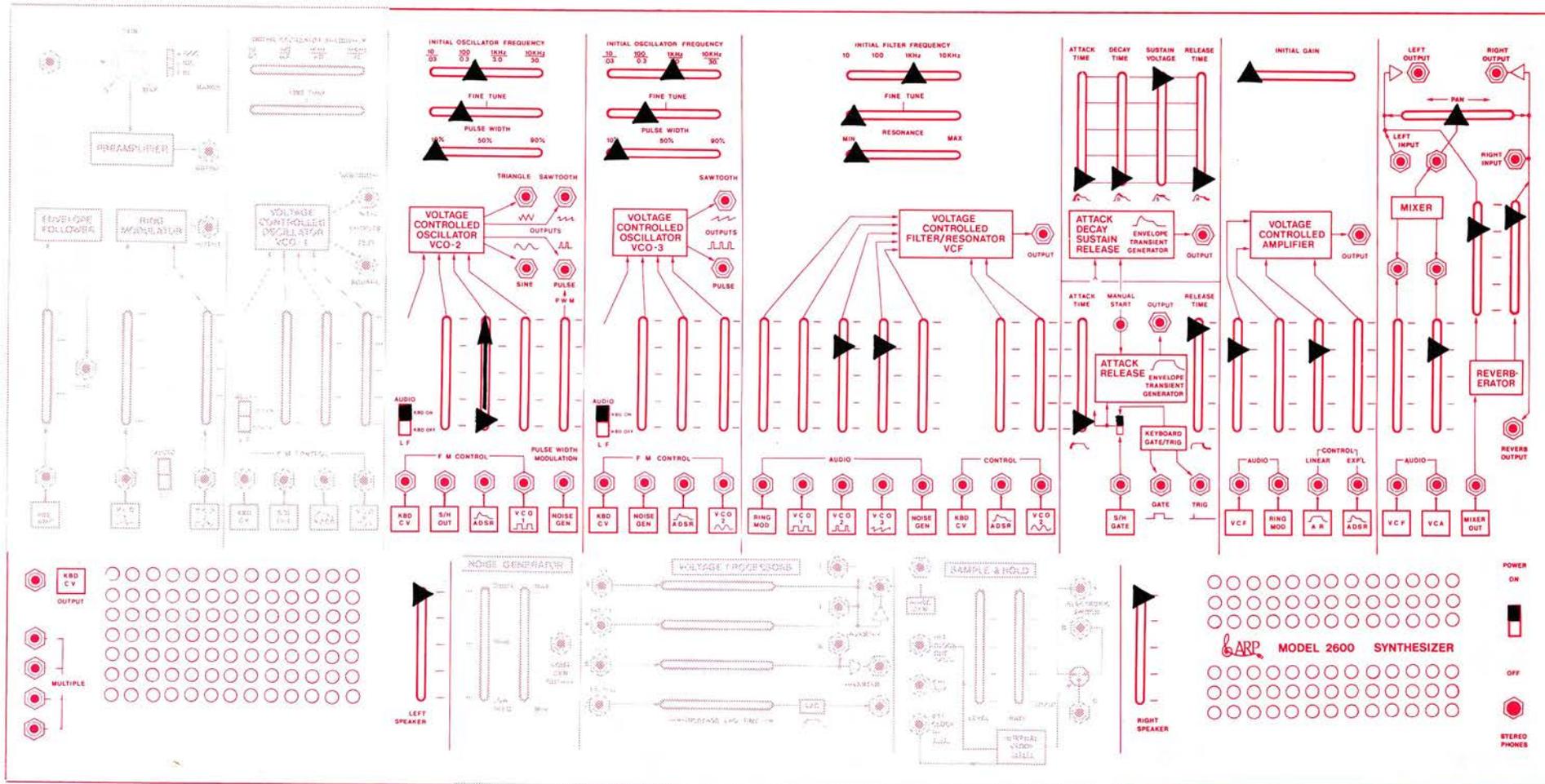
3 PATCHCORDS

Auto-pan with Reverb

87.

1. Close right speaker ↓
2. Press Key C5 and adjust Inverter slider to get minimum volume in left speaker.
3. Open right speaker. ↑
4. Adjust input sliders on Ring Modulator for balance while depressing Key C3.

4 PATCHCORDS

Keyboard-controlled Pan

88.

1. Tune VCO 2 and 3 to desired interval.
2. Raise ADSR into VCO 2.
3. Play staccato.

Release-follow

89.
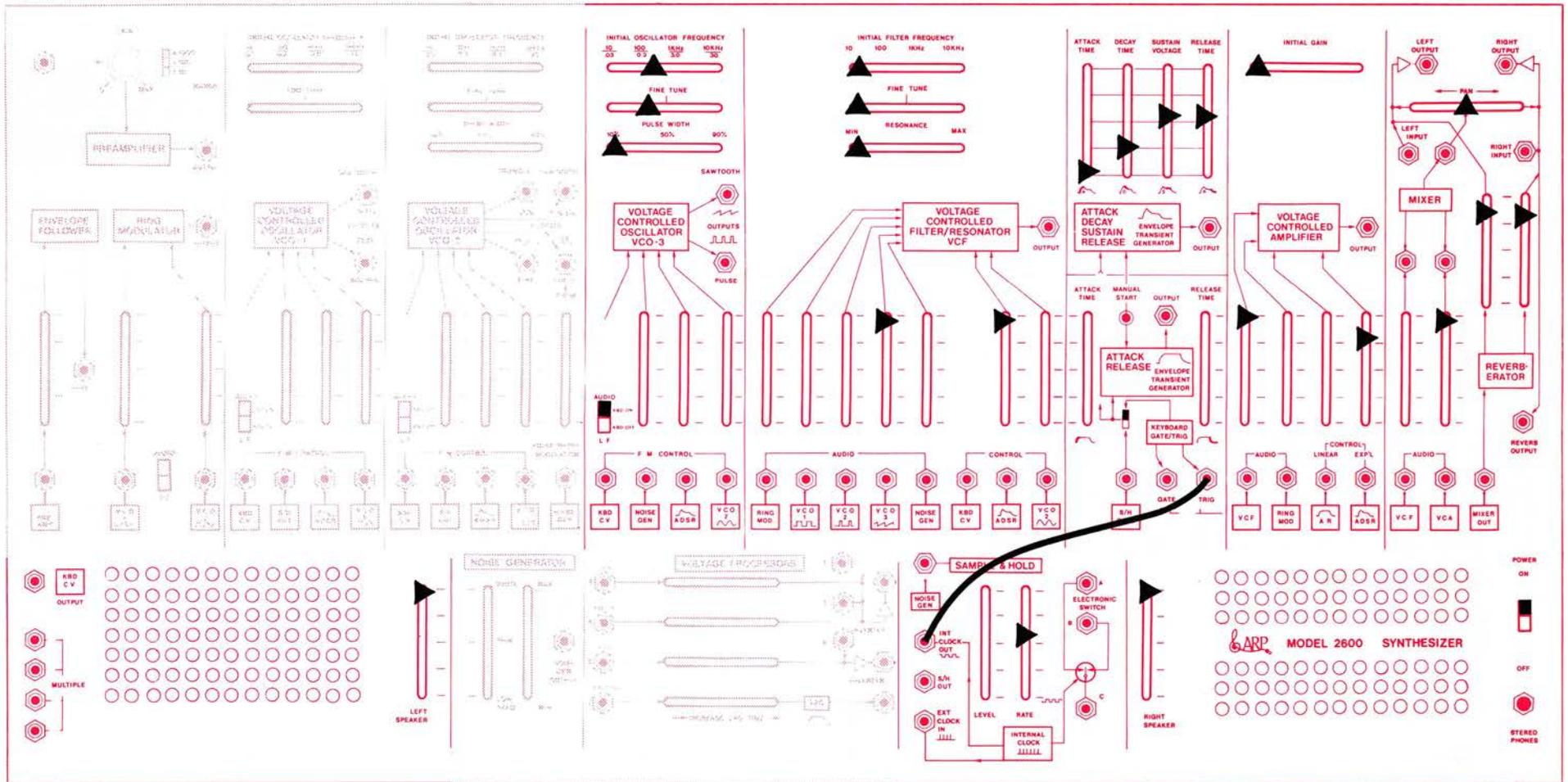
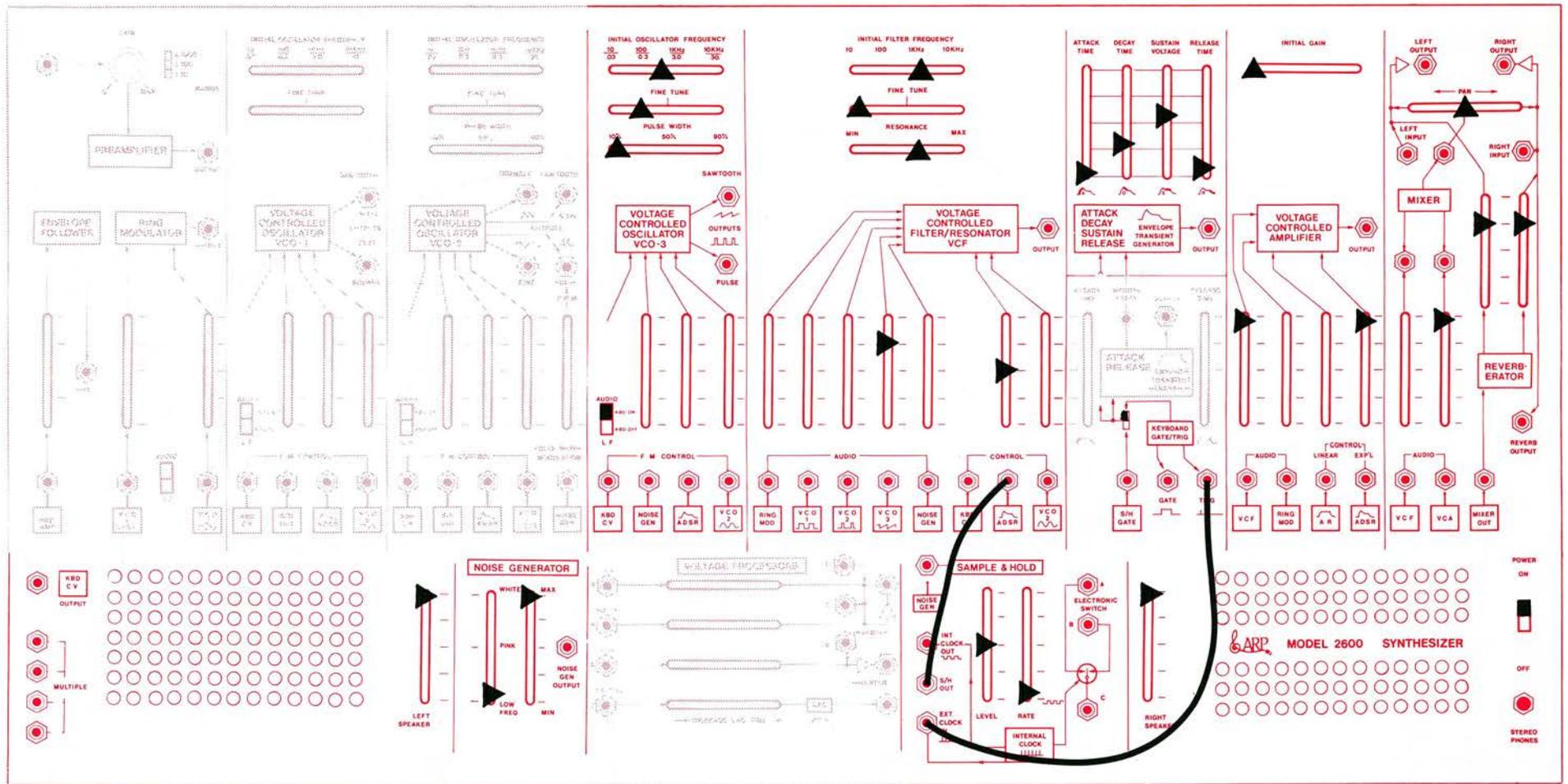Adjust S/H Rate for repeat speed.

1 PATCHCORD

Touch-repeat
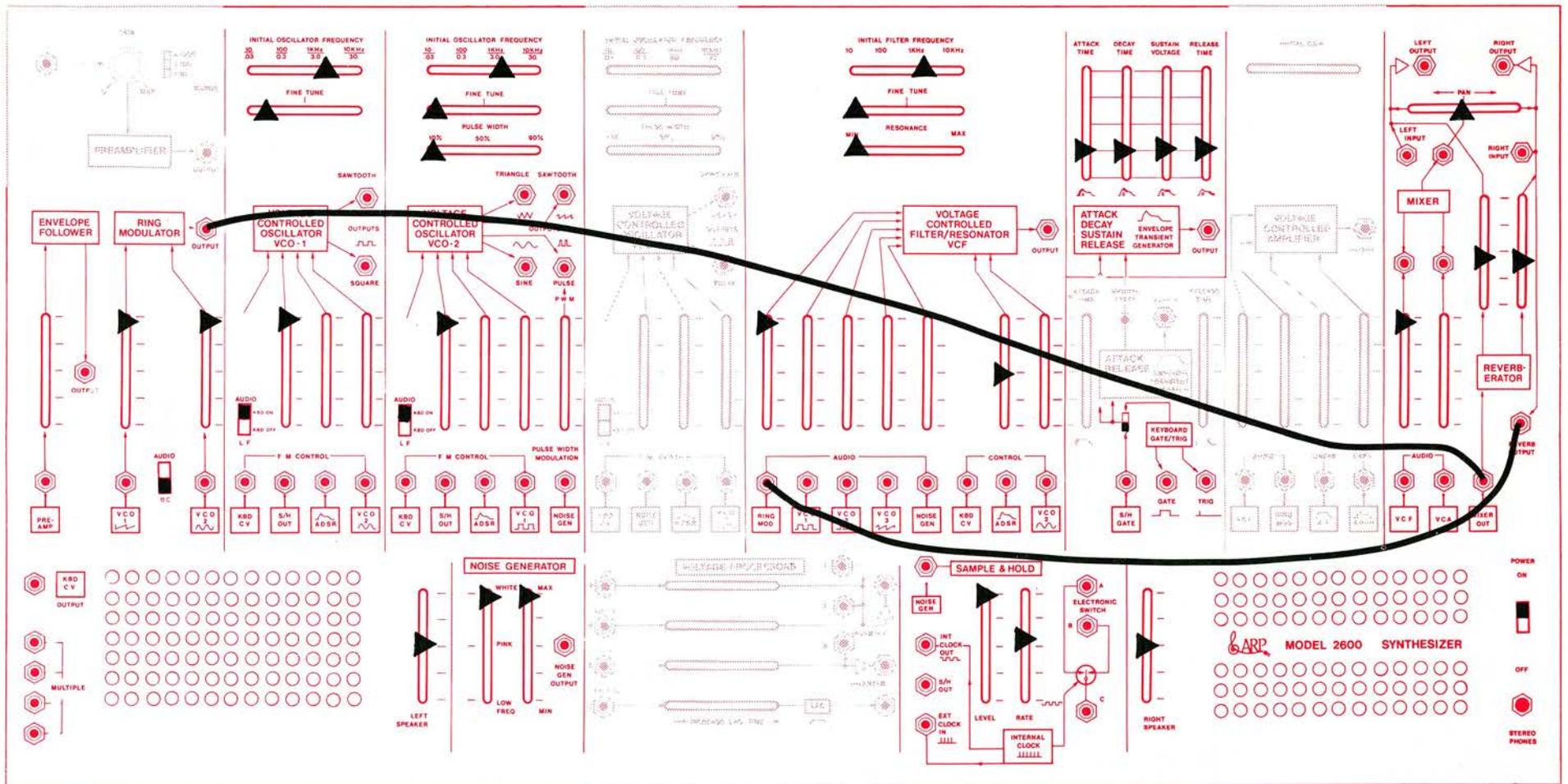
S/H Echo

2 PATCHCORDS

91.
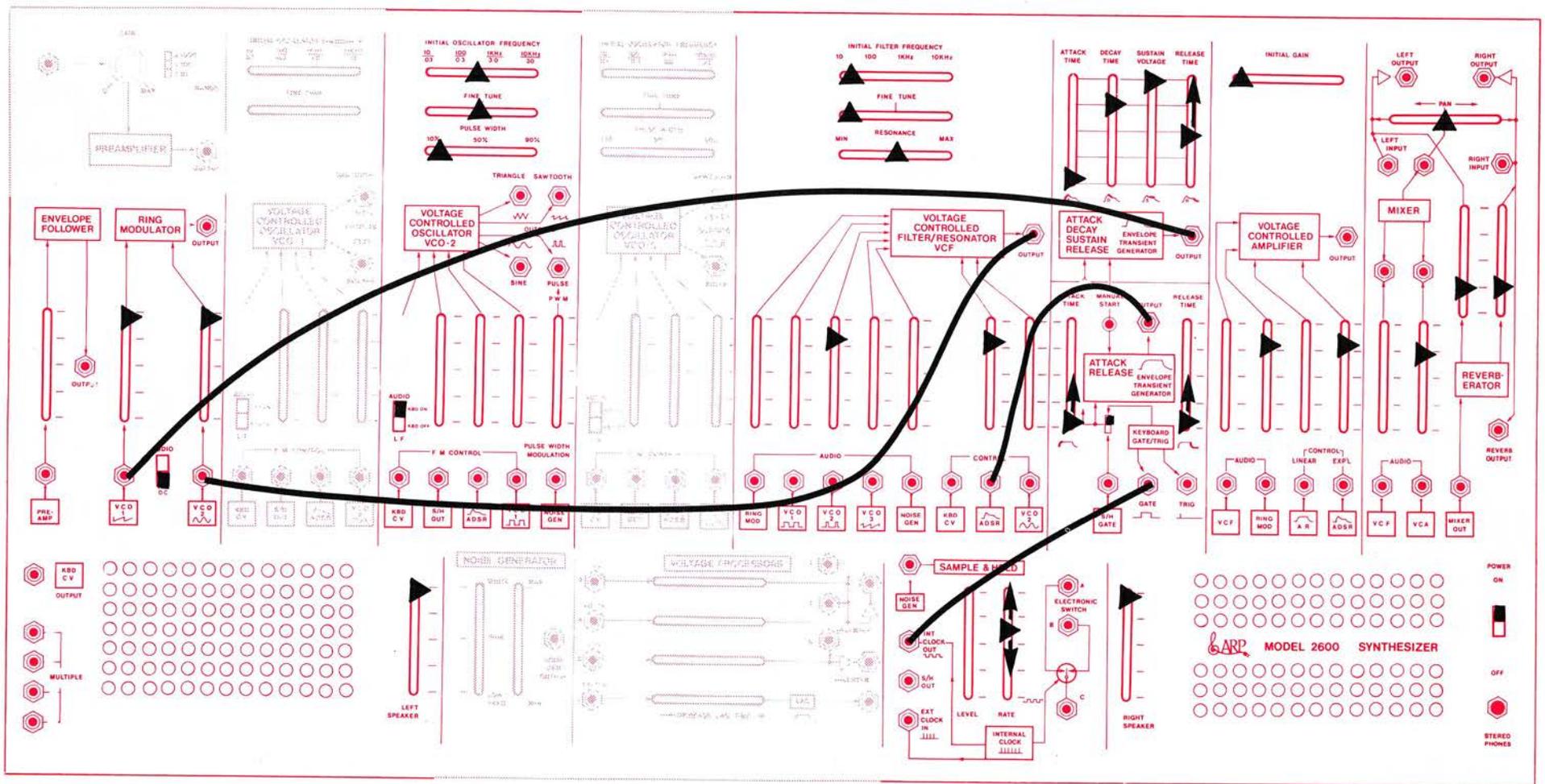
Note: ADSR release determines number of repeats.
Echo is used on single notes only---AR is repeating
envelope on fade-out.
AR can be altered for repeated 'wow' effect.
Adjust S/H Rate for repeat rate.
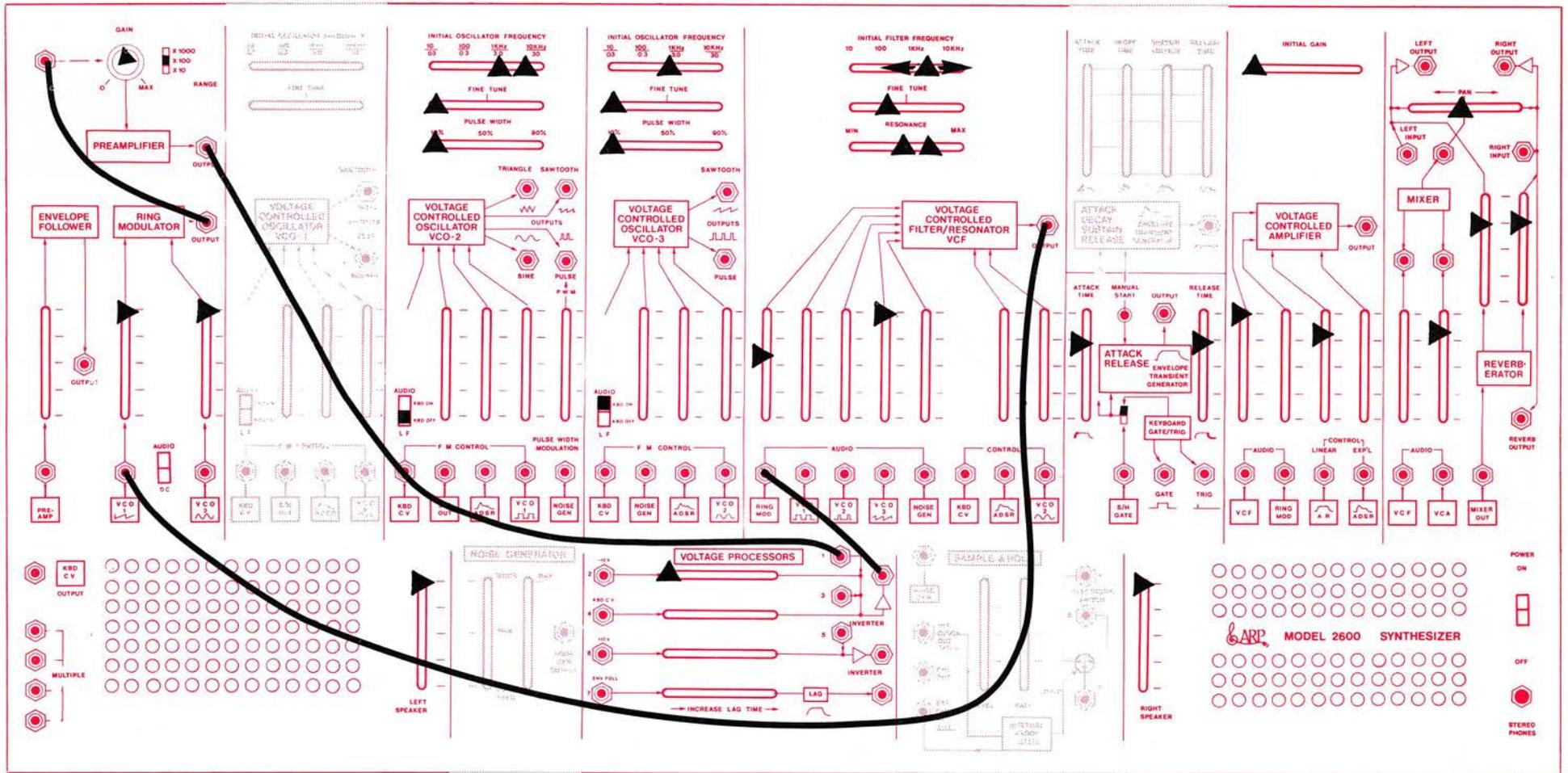
4 PATCHCORDS
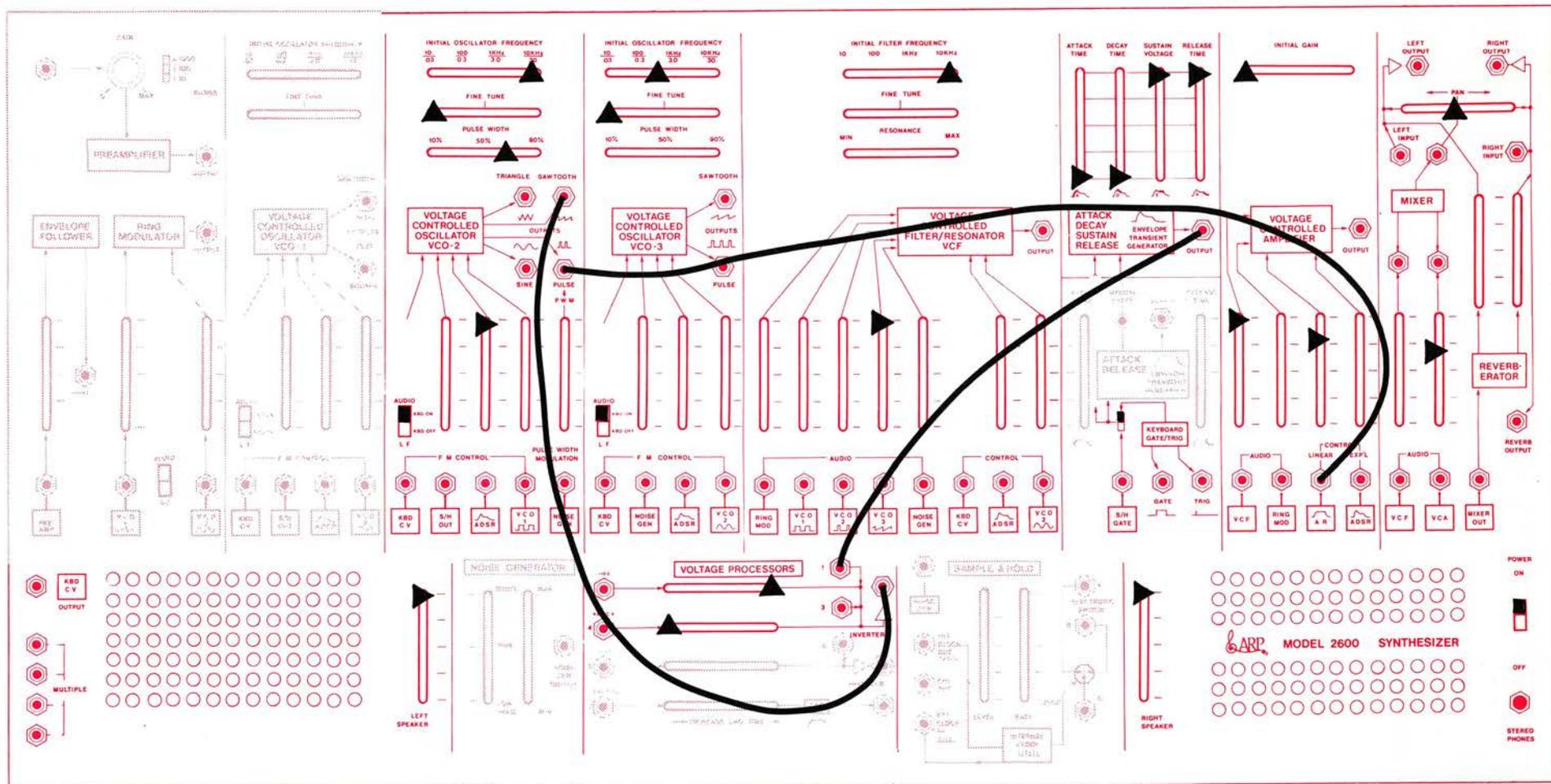
Echoperplex

92.

Random Filter Sample:
Keyboard Triggered

93.

Note: This patch will give you a basic pitch and a harmonic which fades in and out. Different harmonics may be selected by altering the VCF frequency.
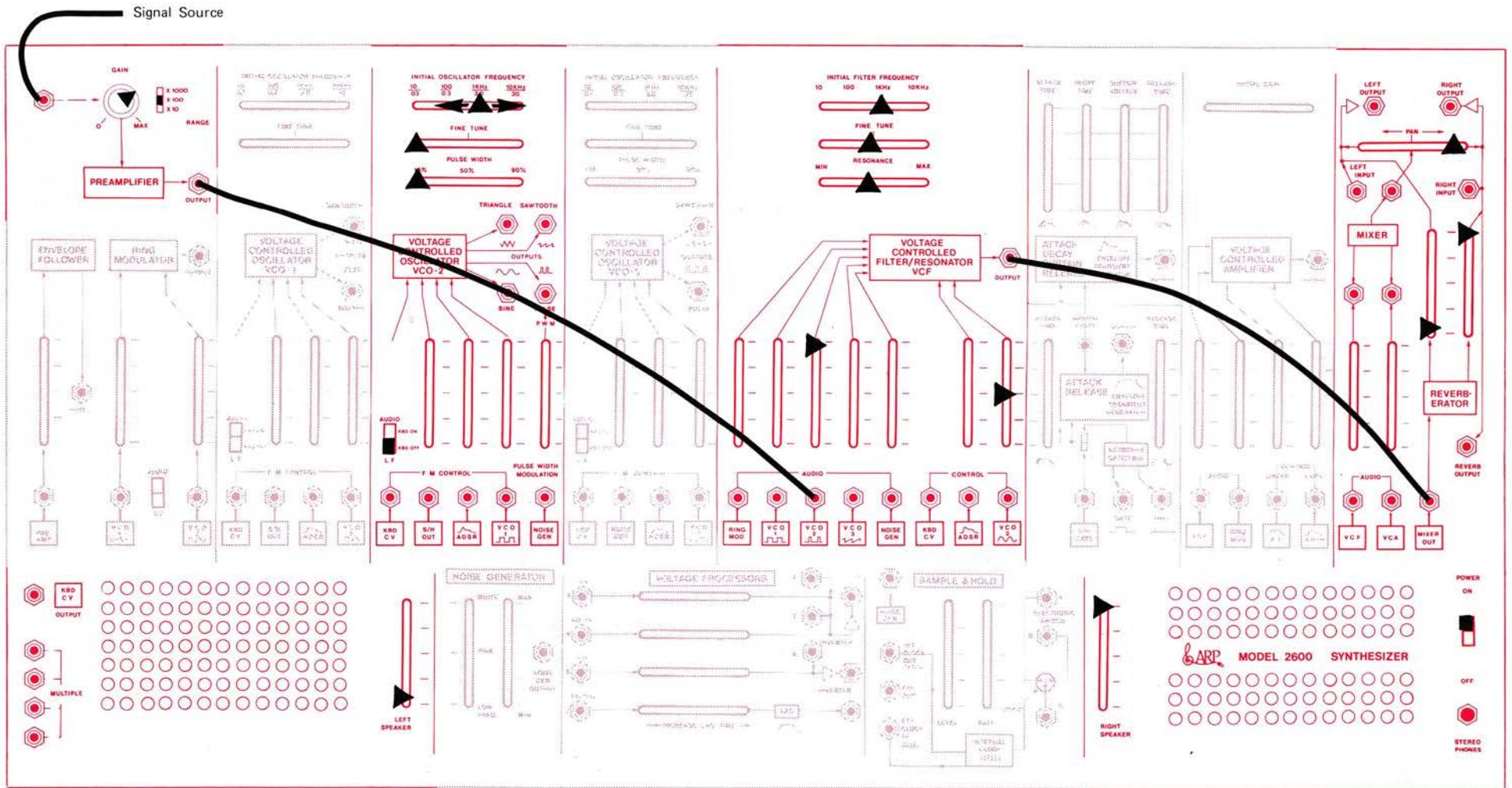
4 PATCHCORDS

Voltage-controlled Resonance

94.

Adjust VCO 2 Pulse Width for envelope length.
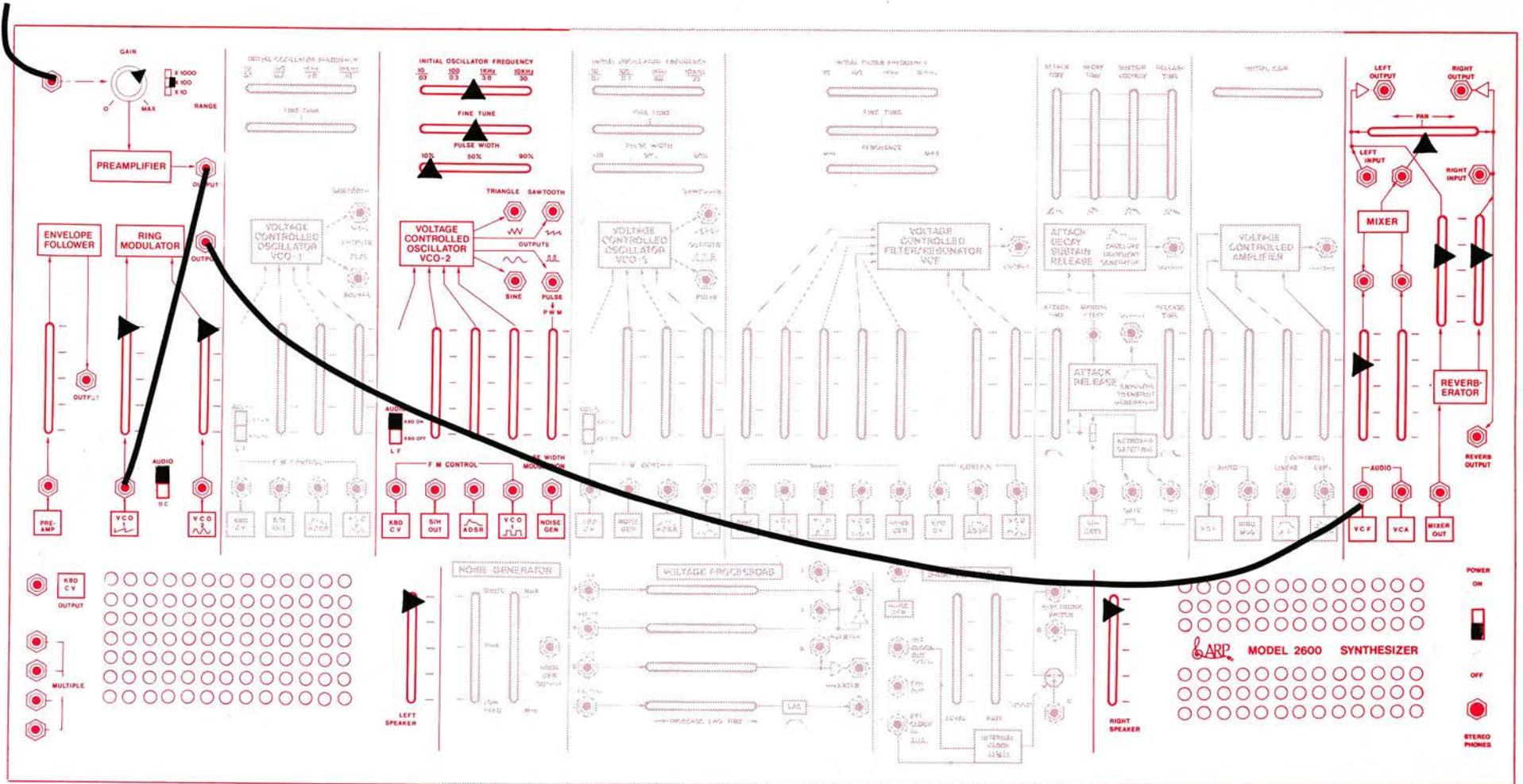
3 PATCHCORDS

Voltage-controlled On-time

Signal Source

Adjust: VCO 2 ∿ ↑ into VCF for phase.
VCO 2 frequency for phase-shifting speed.

2 PATCHCORDS

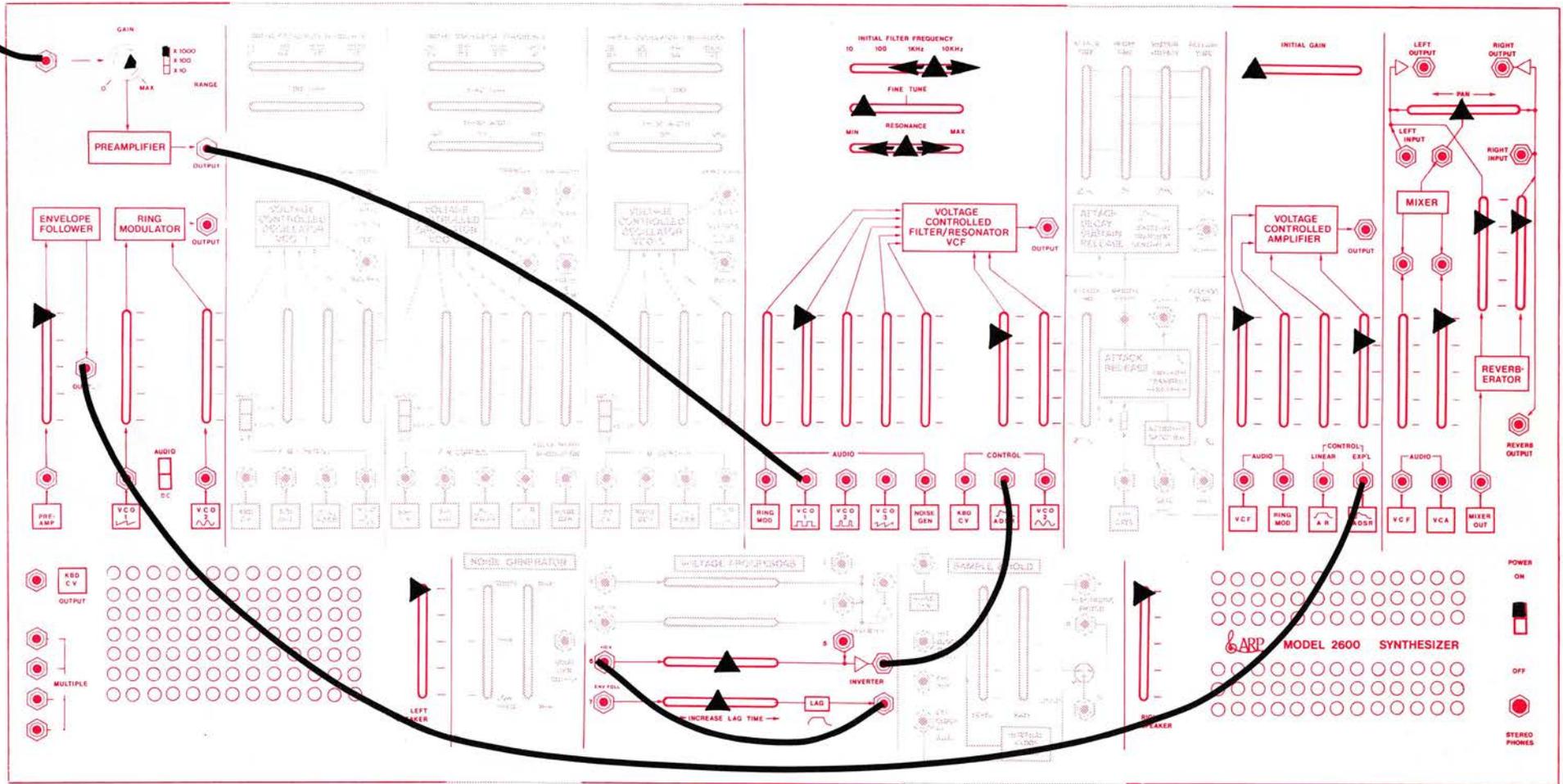# Ethereal Phase-shifting
on External Source

96.

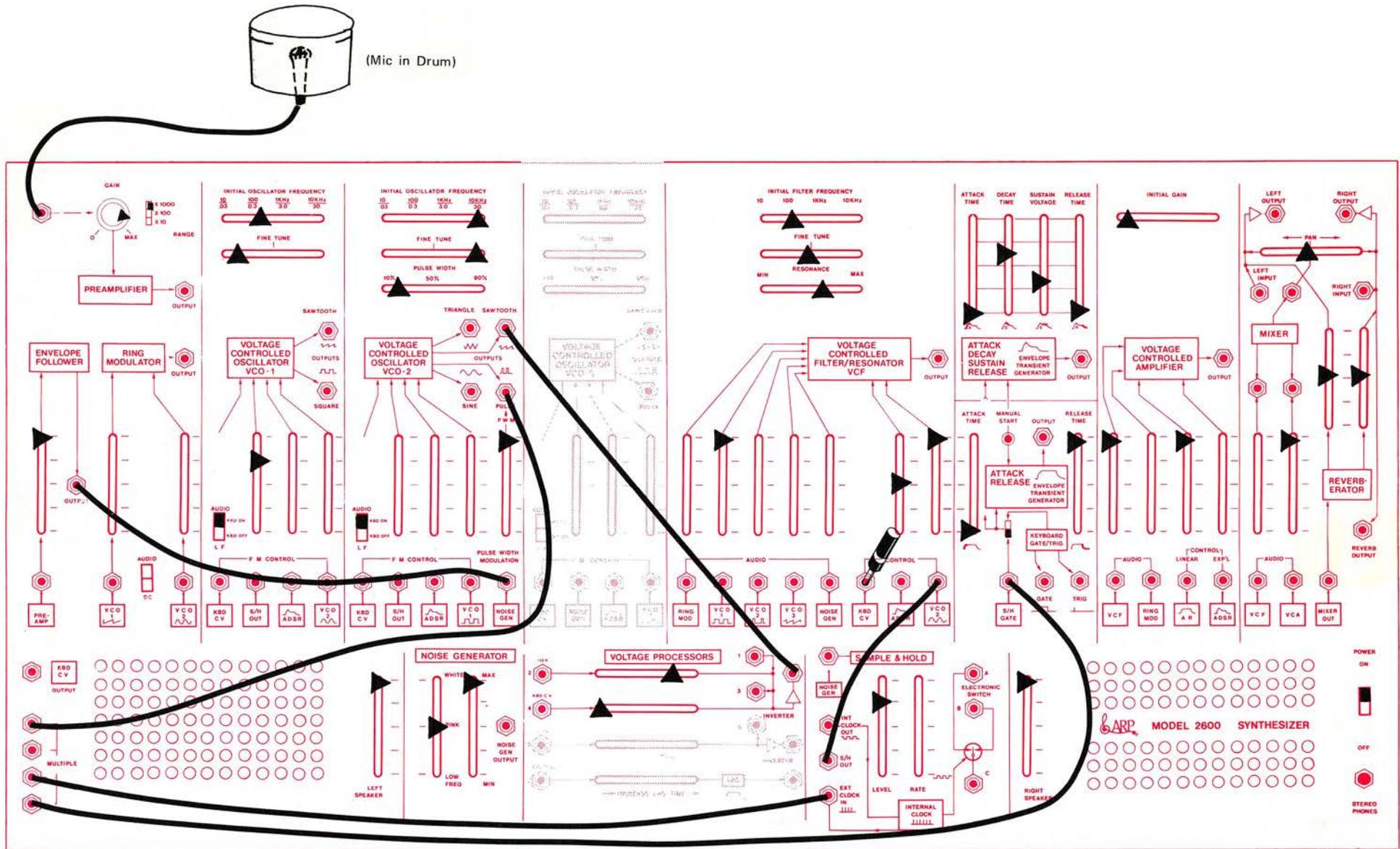Signal Source

2 PATCHCORDS

Modulated External Source

Signal Source

Adjust VCF frequency and Resonance as desired.

4 PATCHCORDS

"Ow" on External Source

(Mic in Drum)
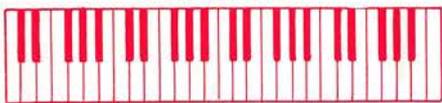
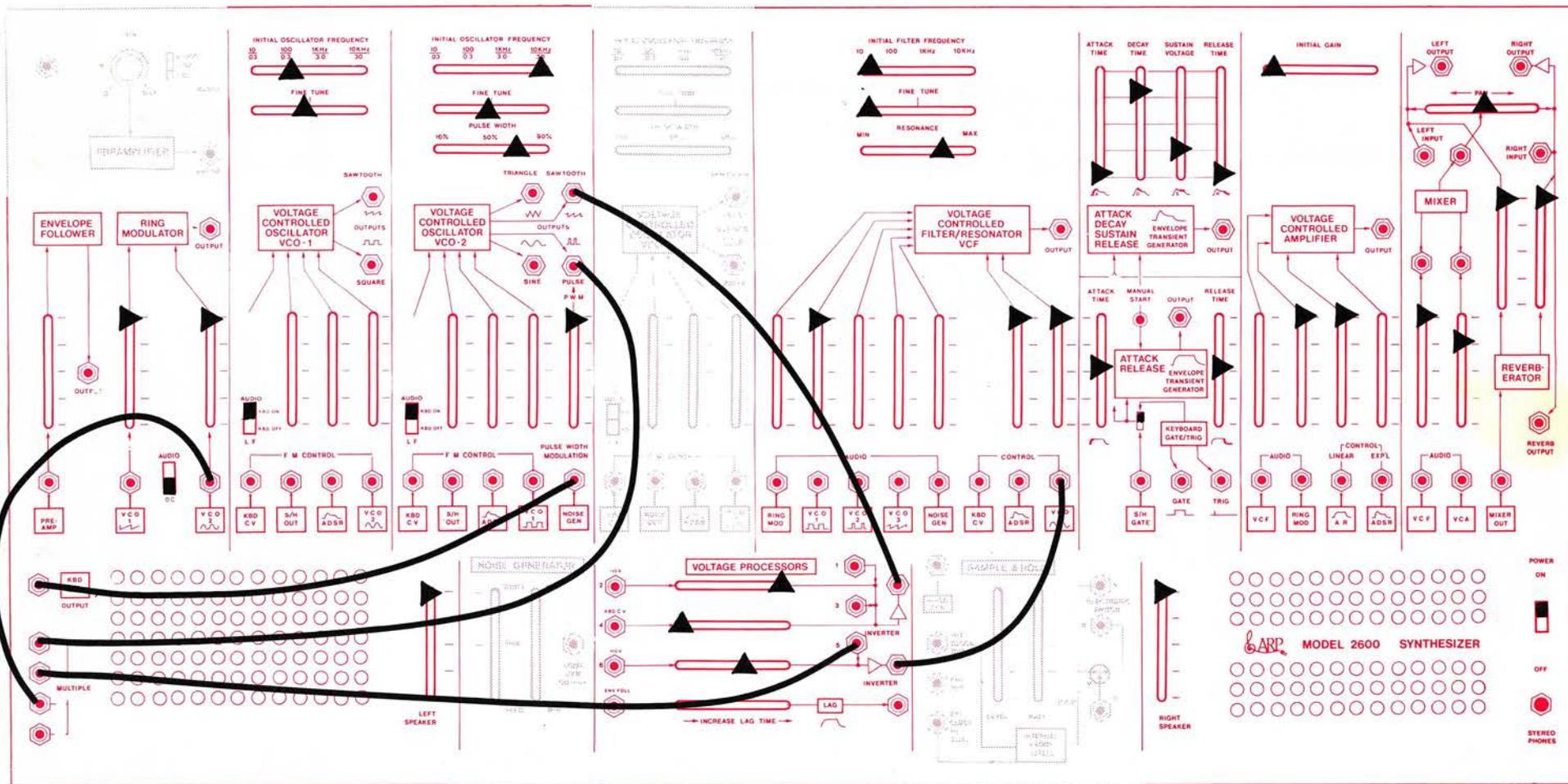Adjust Preamp Gain for Gate sensitivity.

6 PATCHCORDS

Drum-controlled ADSR and S/H

99.

VCO TUNING

OW ← | → VIOLIN

Split Keyboard Adjustments:

1. Adjust VCO 2 Pulse Width while playing Keys C3 and Csharp3 alternately. You are fine tuning the placement of the split so that a violin will be heard on Csharp 3 and an 'Ow' will be heard on C3.
2. Adjust the +10V inverter slider for desired filtering on 'Ow'.

6 PATCHCORDS

Split Keyboard: Bass "Ow" and Violin   100.