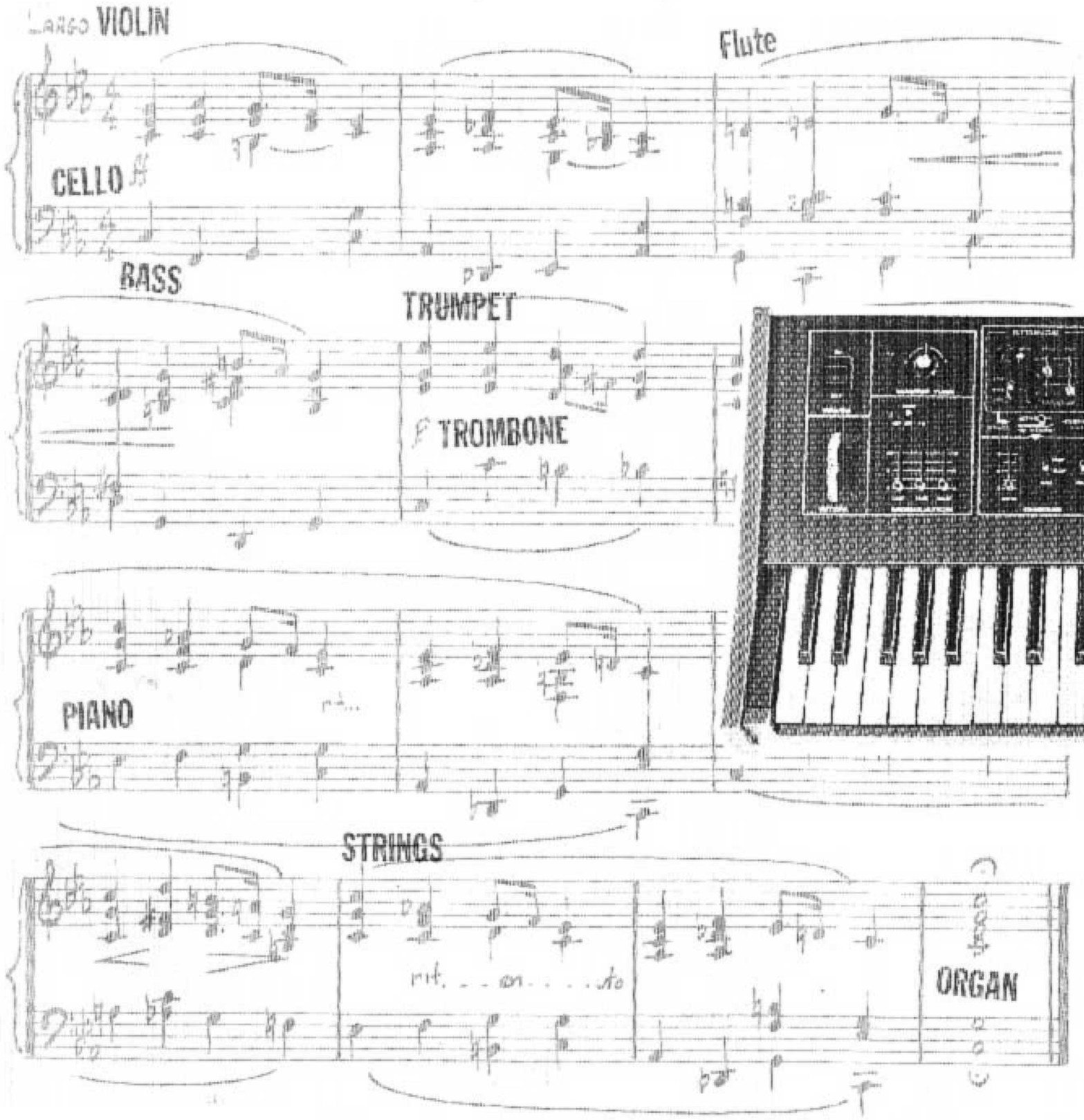
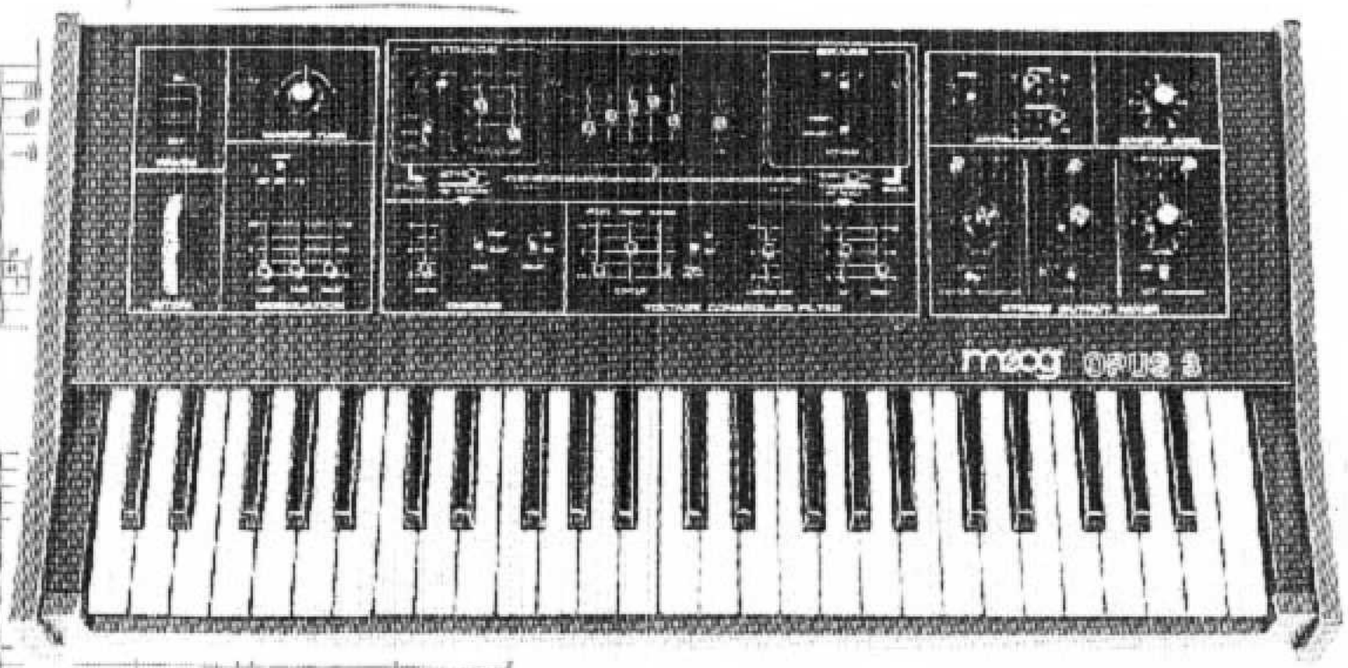
OPUS 3 by MOOG




moog®

# OPUS 3

# OWNER'S MANUAL

by Herb Deutsch

# INTRODUCTION

Welcome to OPUS 3 and to the world of Moog! OPUS 3 is an exciting new addition to the family of Moog instruments that have led the field of electronic music since 1964.

Your OPUS 3 has been musically engineered to produce the sounds of today. It is a polyphonic synthesizer capable of easily producing strings, organ, brass and a vast number of combined and layered voices.

This manual has been prepared to take you through the instrument in a step-by-step manner. Every sound chart in the book will take you closer to realizing the full potential of your instrument.

It is advisable, therefore, that you simply begin at the beginning and follow the text to the end. Set up every sound. Play and experiment with each.

By the time you have completed the manual, you will be discovering the pleasures of your own explorations with OPUS 3.

Enjoy!

Herbert A. Deutsch
Director of Marketing

MOOG MUSIC INC.

## INITIAL SET UP

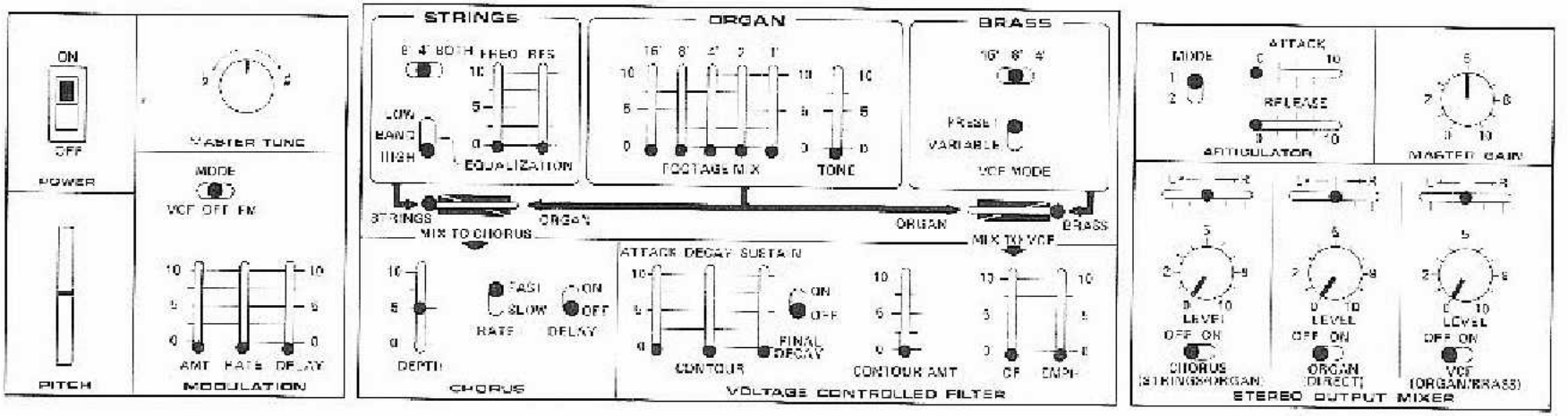
To set up, plug the power cord into the rear of OPUS 3 and into any grounded A.C. outlet. Using a 1/4" patchcord, connect the MONO output to your monitoring system or amplifier. Detailed instruction on the use of the STEREO OUTPUTS is included further on in this manual.

Save your shipping carton for repacking your OPUS 3 for long distance transport, if required.

## SOUND CHARTS

Sound charts are pictures of your OPUS 3 control panel. They are used throughout the manual. When duplicating the settings indicated on these charts, be careful to place sliders and rotary knobs *exactly* as they are pictured.

## STARTING POSITION




This chart provides a starting point for using the OPUS 3 owner's manual. Set all controls in this position. Note the location of the STRING, ORGAN and BRASS voice sections and the color-coding in the STEREO OUTPUT MIXER. No sound will be heard in this setting!

## THE BASIC VOICES OF OPUS 3

OPUS 3 begins with three basic voice sources:

STRINGS

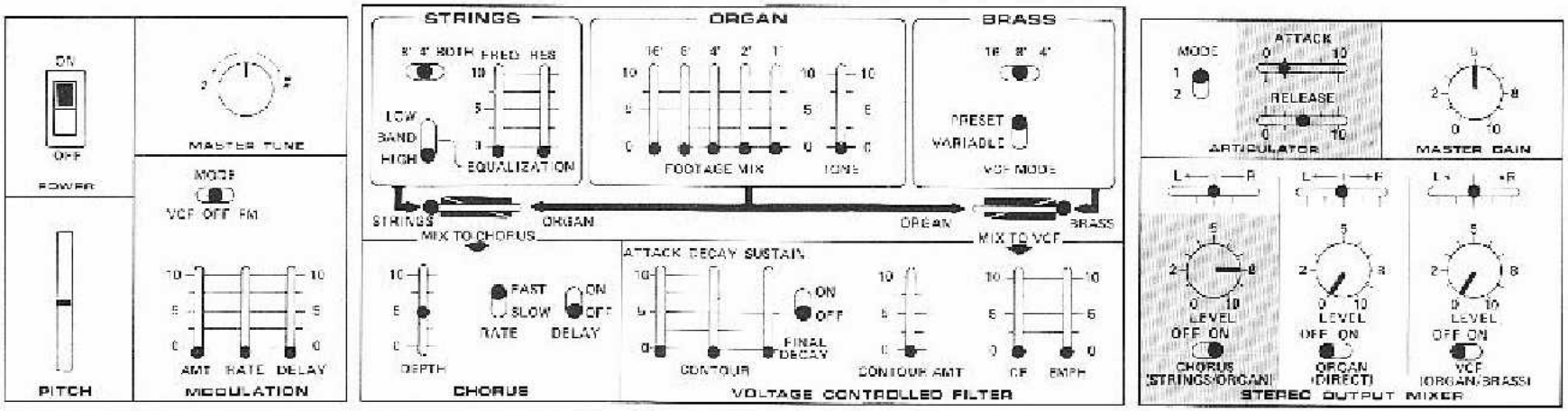
ORGAN

BRASS

Each voice appears at a separate output in the STEREO OUTPUT MIXER at the lower right portion of the panel.

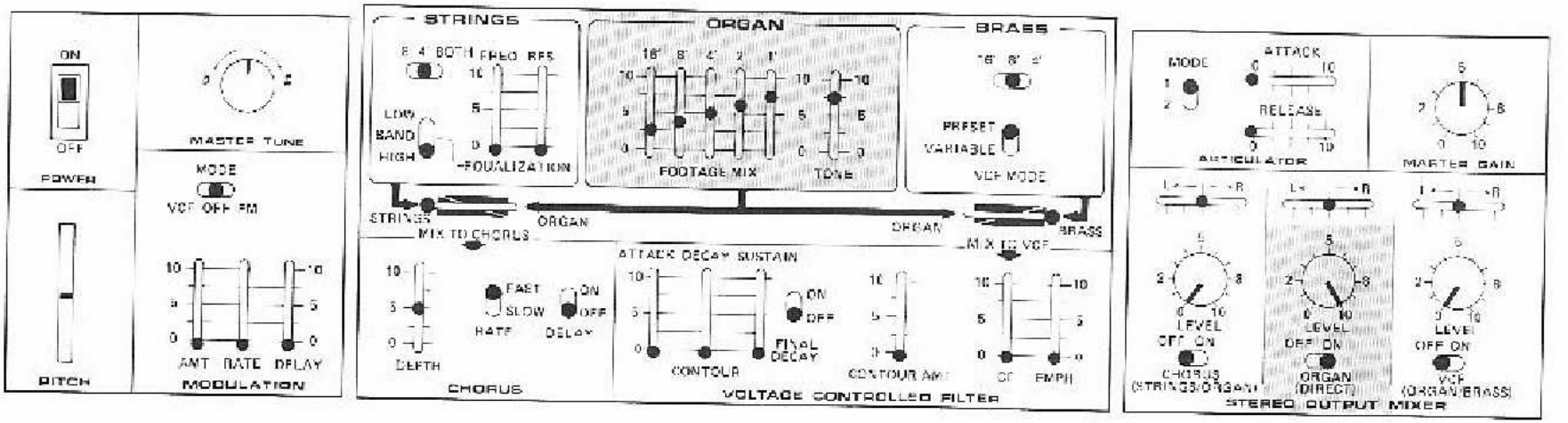
Each of the following sound charts represents a typical setting for producing the basic voices.

### STRINGS (Violin)

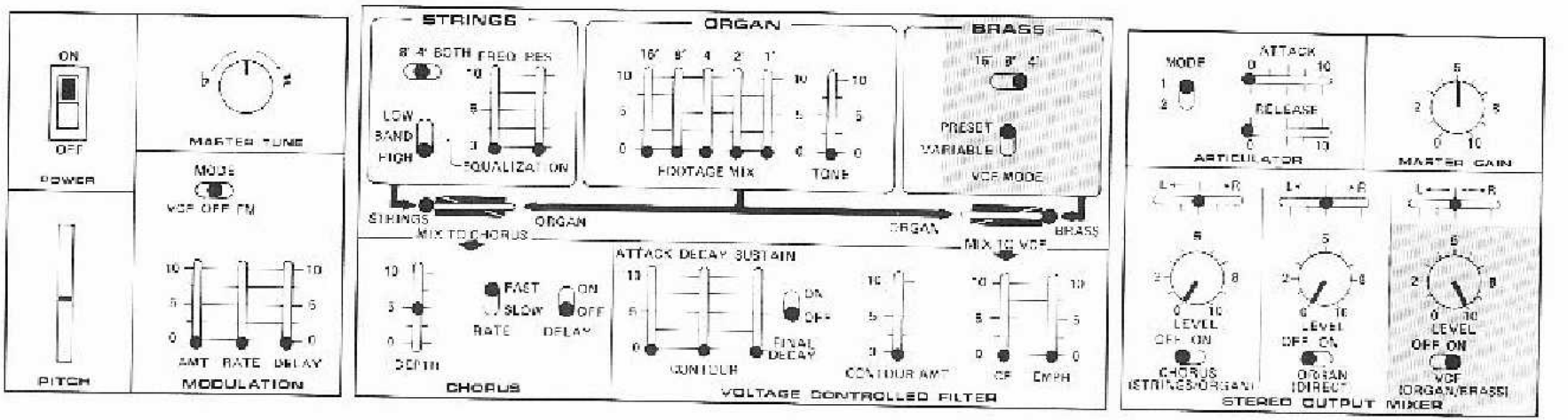



This shading appears on some of the following sound charts to indicate where a change from starting position has been made.

## ORGAN (Pipe Organ)

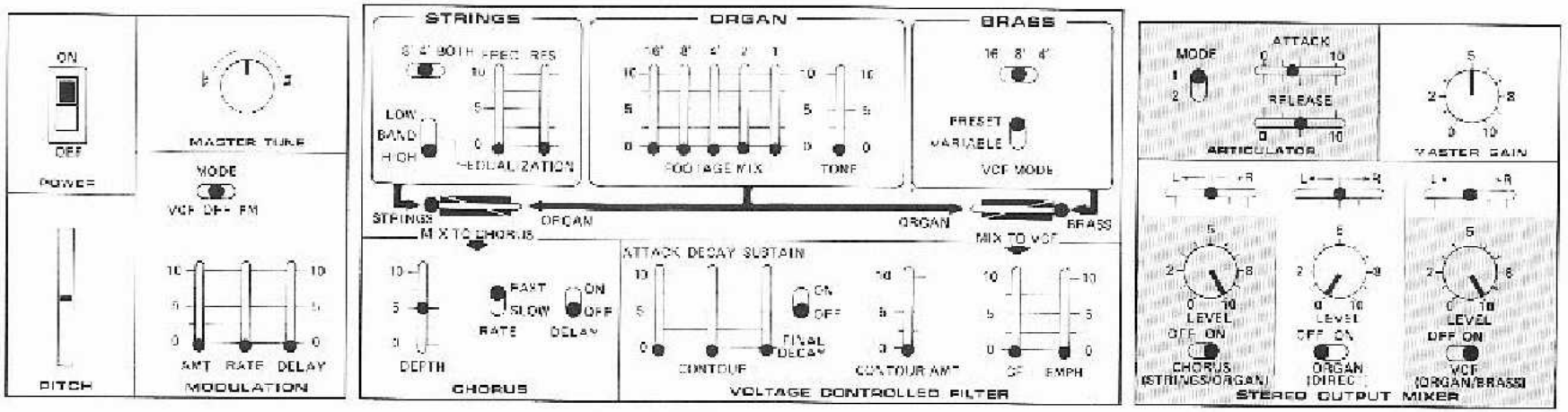



## BRASS (Trumpets)

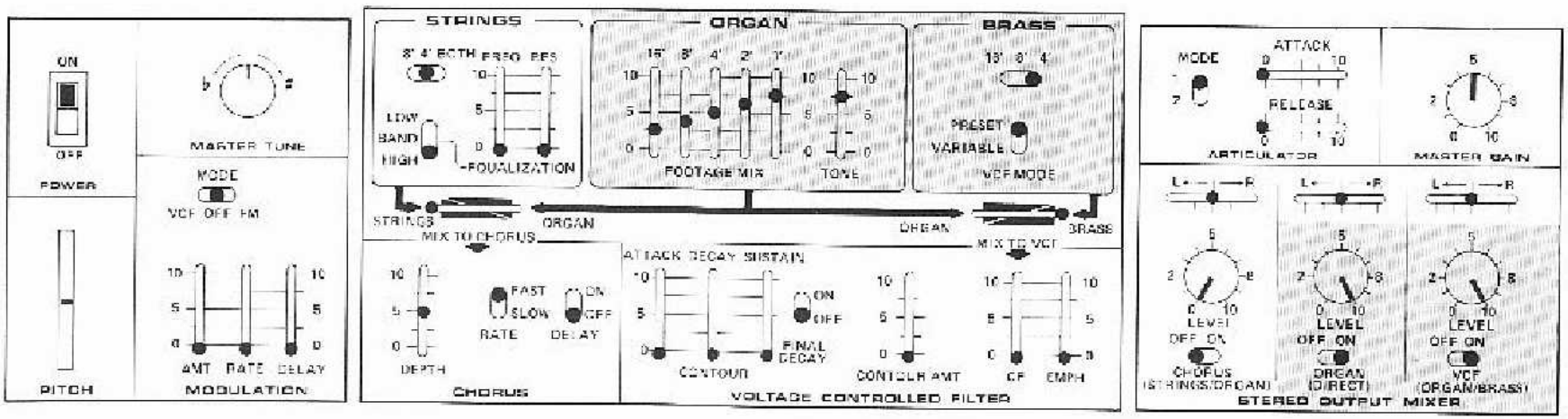


The STEREO OUTPUT MIXER provides the opportunity to combine the basic voices in a number of ways. In the following sound charts four such possibilities are shown.

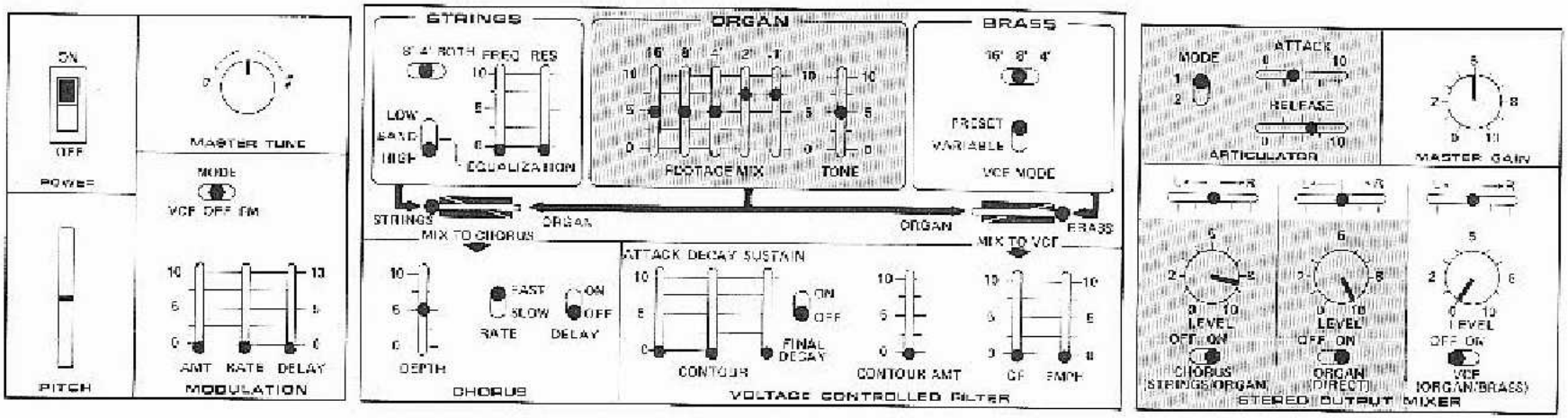
## BRASS AND STRINGS (Trombones and Sustaining Violins)



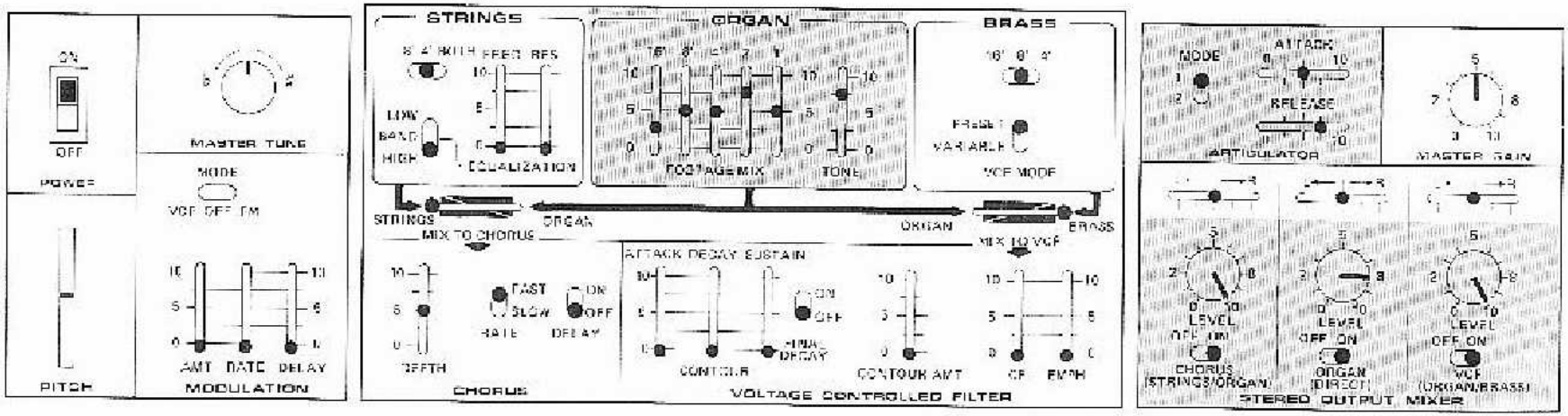

## BRASS AND ORGAN (Trumpets and Pipe Organ)



## STRINGS AND ORGAN (Electric Organ, Violins with Crescendo)




## STRINGS, ORGAN AND BRASS



## VARYING THE BASIC VOICES

Every performer will wish to satisfy personal esthetic tastes, and Moog has designed a widely variable musical instrument in OPUS 3. The basic voices can be altered, modified and literally sculpted to fit the requirements of each performance or the tastes of each player.

## FOOTAGES

The STRING and ORGAN sections each have extensive variability. With each voice it is possible to change or combine octaves (footages) and to modify the tone color through filtering.

The term "footages" goes back hundreds of years in music, originally referring to the actual length of organ pipes. To understand footage as it is used today, it is necessary only to realize that 8' (eight foot) should be taken to mean that the note played on the keyboard should sound the identical pitch as the same note played on a piano. From that reference point 4' refers to the same note sounding one octave higher, 16' sounding one octave lower, and so forth.

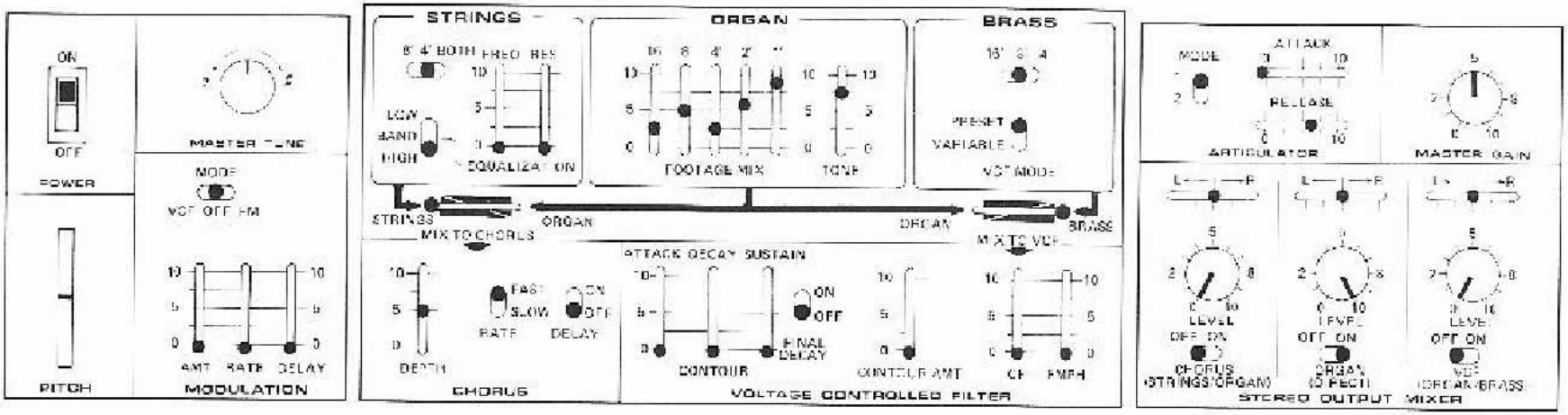
In the STRING voice, footage changes can be used to create violins (4') or violas and cellos (8'). The selector switch also enables you to combine both ranges for full string section effects.

At this point, go back to the STRINGS (Violin) sound chart on page 3. Experiment with footage changes available on the STRING voice. Note the effects of playing at different registers (high and low) on the keyboard when using the different footages.

In the ORGAN voice, five footages are available ranging from 16' to 1'. This will enable you to create both rich pipe organ effects and contemporary electronic organ sounds.

The following sound chart is intended to serve as a starting point for the exploration of ORGAN footages. First, set up the sound as indicated, then experiment with various footage settings.

## CHIME ORGAN



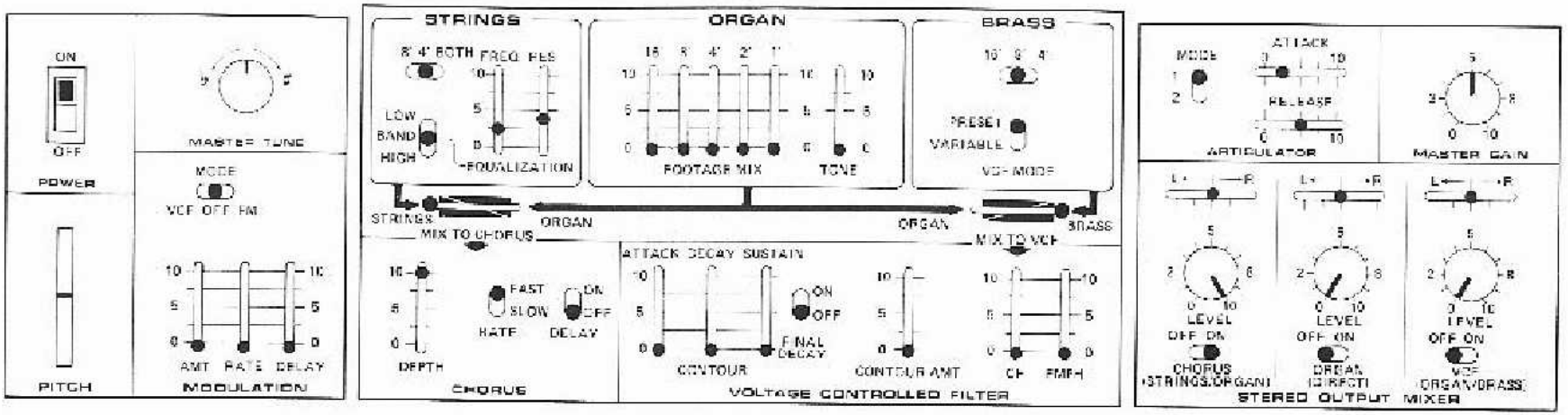

## FILTERING

Both the STRING and ORGAN sections of OPUS 3 are equipped with filters for modifying the tone color of the voice.

The filtering of the STRING section provides complex alteration of the basic tones in order to produce the many different string sounds desirable in today's music. This STRING filter may be switched to act as a low pass, band-pass, or high pass equalizer. In all three modes, the cutoff frequency and resonance may be altered by the sliders.

The following sound chart is intended to present a starting point in exploring the STRING filter.

MUTED VIOLINS




Notice the brightening effect when the FREQ slider is increased from 2.5 to 7.5. Gradually moving that slider back and forth gives an effect quite similar to that of a "phase shifter."

Change the filter mode to LOW. Note the effect created by moving the FREQ slider over its entire range. (It will close the filter altogether when set at 0.)

Change the filter mode to HIGH. Note the effect created by moving the FREQ slider over its entire range. (It will close the filter altogether when set at 10.)

Leaving the FREQ slider at 5, increase and decrease the RES (resonance). Note the effect.

The ORGAN filter is a simple tone control similar to that of a high fidelity amplifier system.

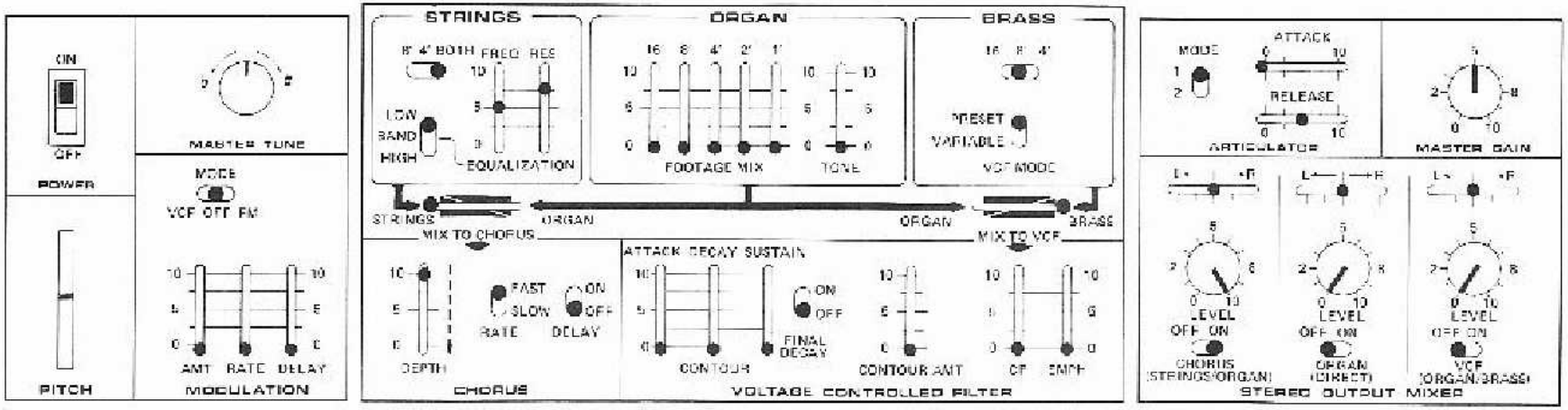
Set up any preceding ORGAN sound chart and notice the effect produced by varying the ORGAN TONE slider.

## CHORUS

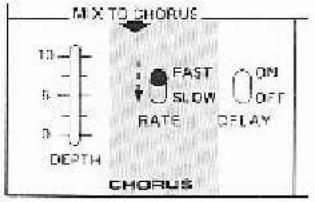
The CHORUS section of OPUS 3 produces a rich multiple-voice effect with varying depth. In addition, a sense of "ensemble" is created by a continually shifting movement of the voices. Both of these effects can be delayed so that they can increase in intensity gradually after the initial tones have begun.

The CHORUS DEPTH slider determines the amount of CHORUS effect that will be heard.

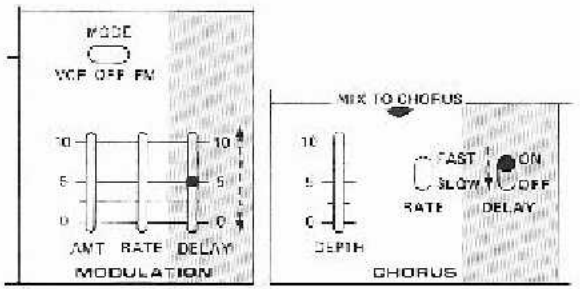
## FULL STRING CHORUS



The CHORUS RATE switch determines the overall speed of the shifting movements within the CHORUS effect.

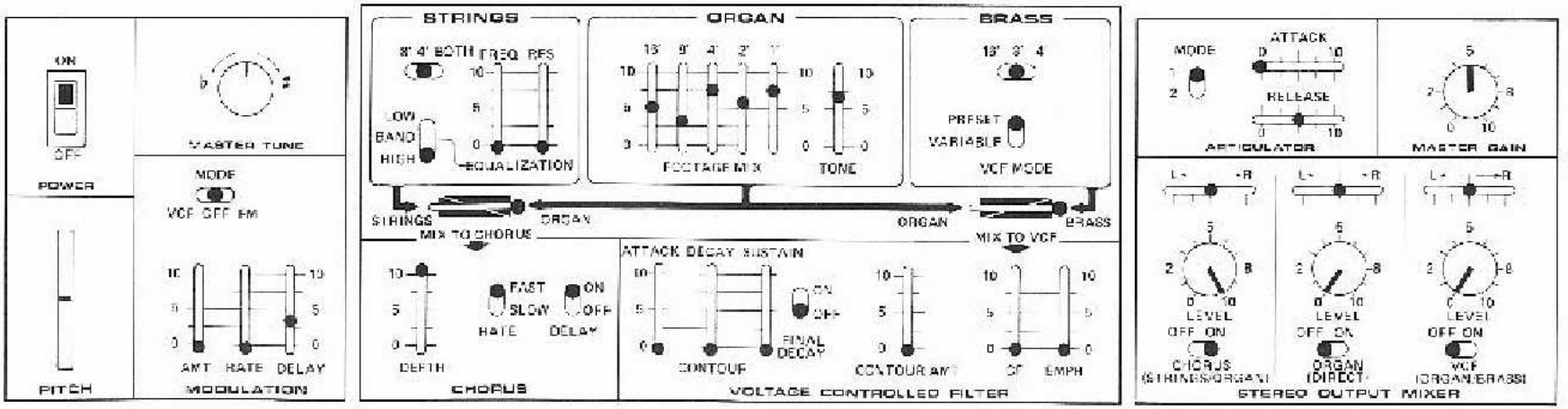



The CHORUS DELAY switch is used in conjunction with the DELAY TIME slider, found in the MODULATION section, to determine the CHORUS effect delay as desired.




The CHORUS section may be used with the ORGAN voice to produce many console organ sonorities.

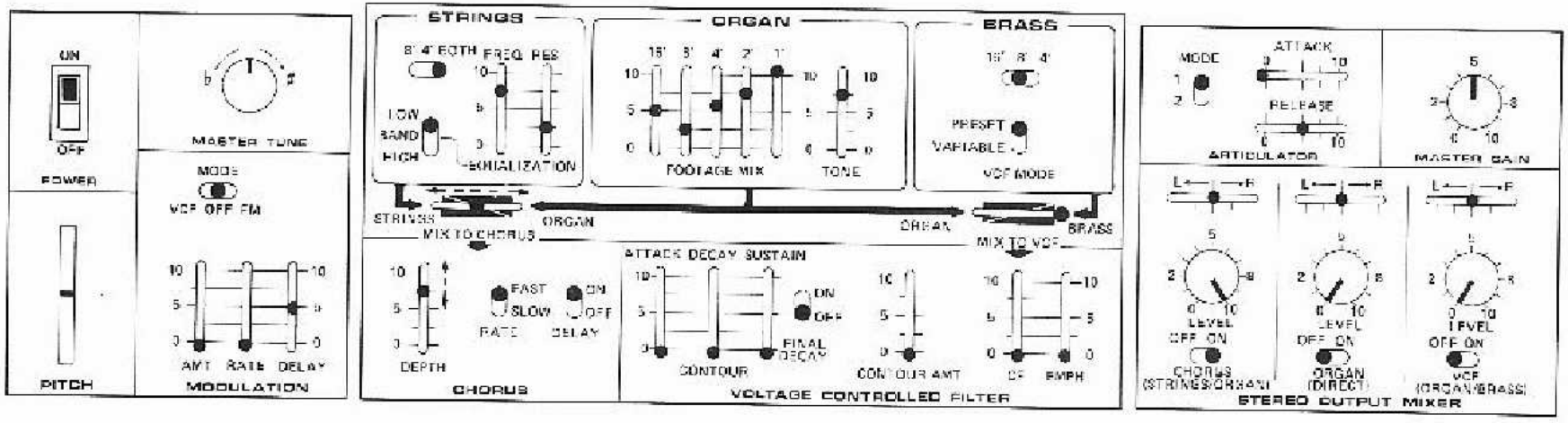
## CONSOLE ORGAN



The panning slider above the CHORUS section permits many additional voicings by combining the ORGAN and STRINGS through the CHORUS.

NOTE: When panning ORGAN into the CHORUS, the ORGAN *with CHORUS effect* appears at the CHORUS OUTPUT in the STEREO OUTPUT MIXER. It is also possible to add any amount of *direct* organ voice by increasing the ORGAN output level at the same time and turning "on" the ORGAN (direct) switch.

## THEATER ORGAN (with Strings)

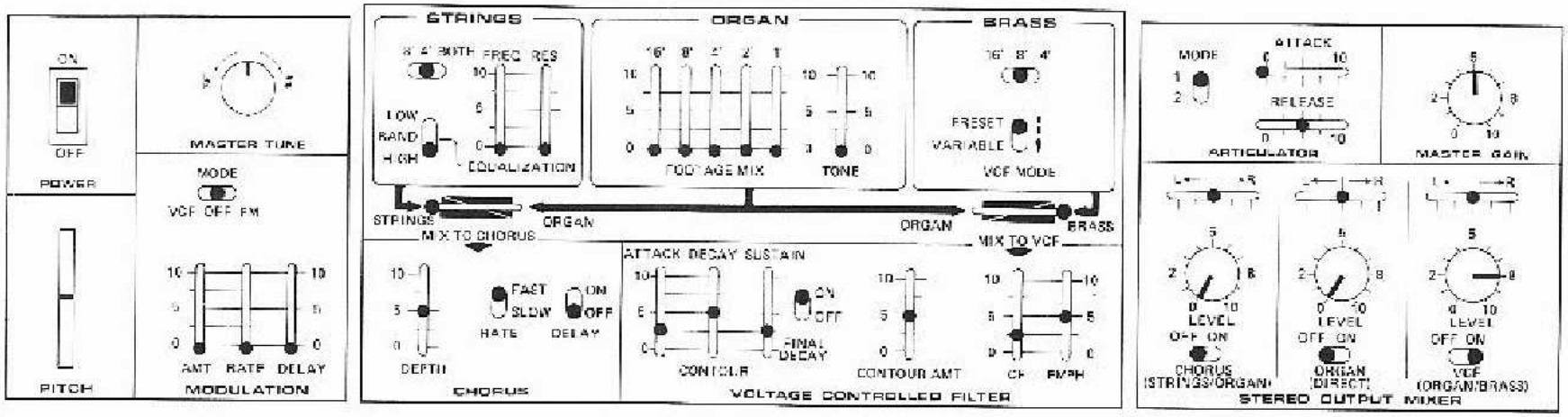


## VCF

Probably the most dynamic effects you will achieve on OPUS 3 are those using the famous Moog® VCF. This device, the VOLTAGE CONTROLLED FILTER, is a patented circuit which is the heart of the great Moog sound in all of our instruments.

The following sound chart demonstrates the BRASS voice through the filter. Play your OPUS 3 first with the VCF mode switched to PRESET and again with the VCF mode on VARIABLE.

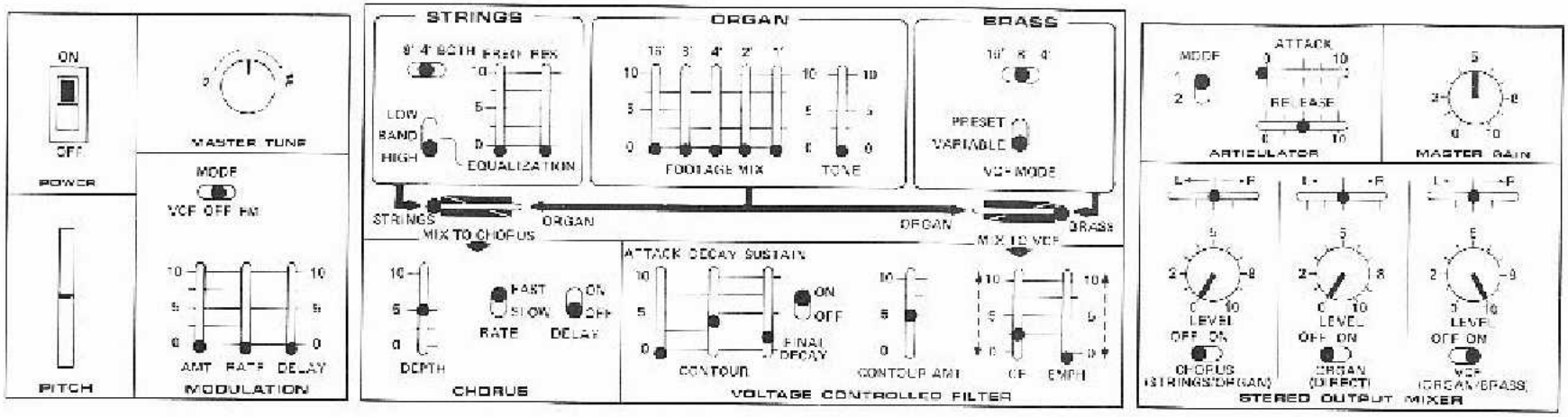
## SYNTH-HORN



Many alterations to the tone color can be made through the VCF. The most obvious is a shifting of the cutoff frequency (CF) which adds or removes high frequency partials of the tone.

The emphasis (EMPH) slider adds to the effect of the CF slider by making the filtering more resonant.

Set up the following sound chart:

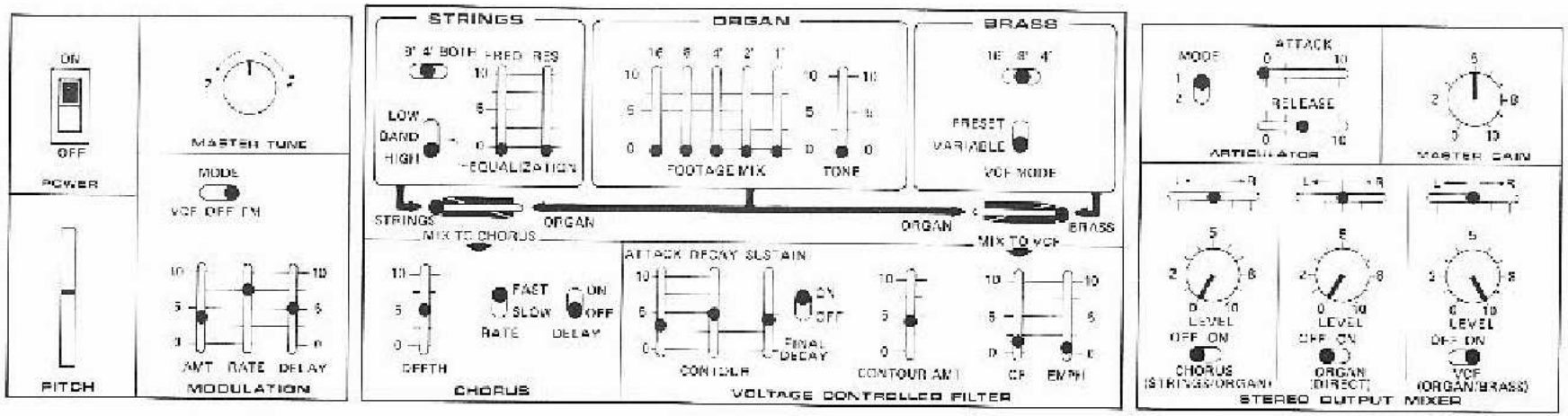



Now move the CF slider down to 0 and up to 10. Note the effect. Return the slider to 2.5. Raise the EMPH to 7.5 and repeat the same movements of the CF slider. Note the effect.

The three sliders in the left portion of the VCF constitute the CONTOUR GENERATOR. This CONTOUR is internally wired to control the cutoff frequency (CF) whenever the filter is in the VARIABLE mode. The CONTOUR AMT slider determines *how much* of the CONTOUR will actually affect the CF.

1. A CONTOUR is generated each time a key is depressed after the release of all other keys.
2. The amount of effectiveness of that CONTOUR is determined by the CONTOUR AMT.
3. The CF of the filter is shifted automatically by the CONTOUR.

## FRENCH HORNS




In this voice, the characteristic horn sound is obtained by delaying the ATTACK portion of the filter CONTOUR. An additional "warmth" is added to the tone by vibrato produced in the MODULATION section (see pages 18 and 19).

NOTE: Place the CONTOUR AMT slider down to 0. Notice the effect this has on the filtered sound.