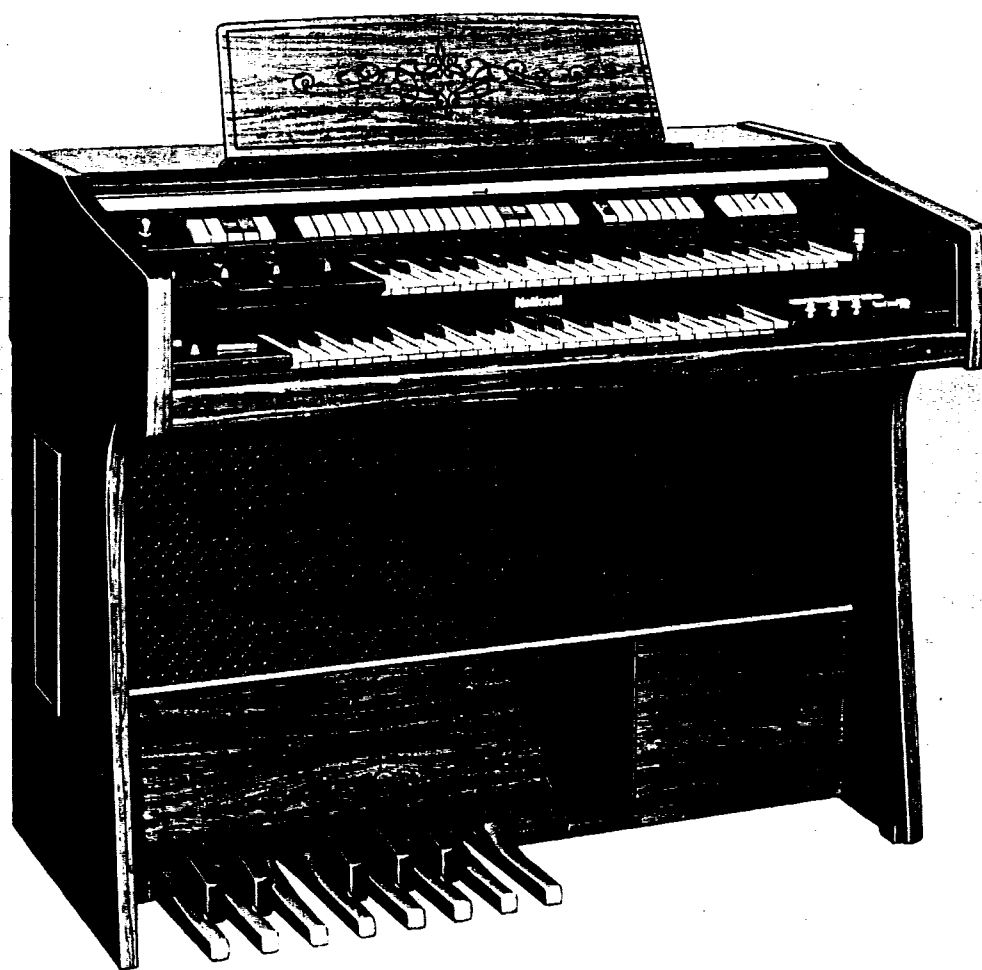


# Operating Instructions

**National**

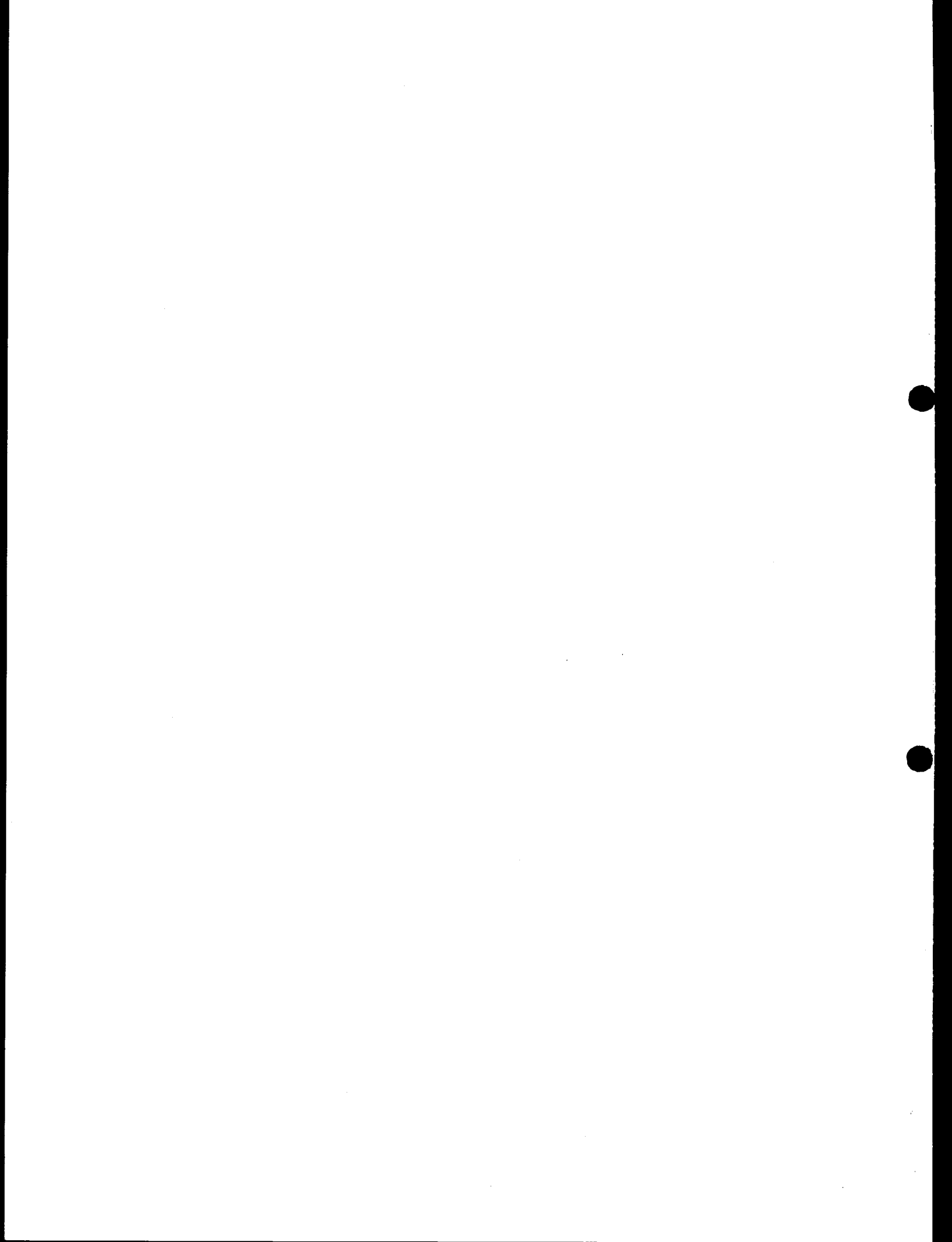
ELECTRONIC ORGAN

**National**



MODEL **SX-5000R**

Before operating this set, please read these instructions completely



# THE NATIONAL ELECTRONIC ORGAN OPERATING INSTRUCTIONS

We are sure that you will get many years of pleasure from your new National Electronic Organ. This organ is a unique musical instrument designed for performance of the simplest and the most complicated music, and can be easily played by anyone, from the beginner to the most competent musician.

Read this booklet carefully for the proper use of your National Electronic Organ.

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# INTRODUCTION TO THE ELECTRONIC ORGAN



You will understand the detailed operation of these controls by reading the following pages, but first arrange these controls as shown on this page with reference to the next page. With such an arrangement, your Electronic Organ will readily produce musical sounds.

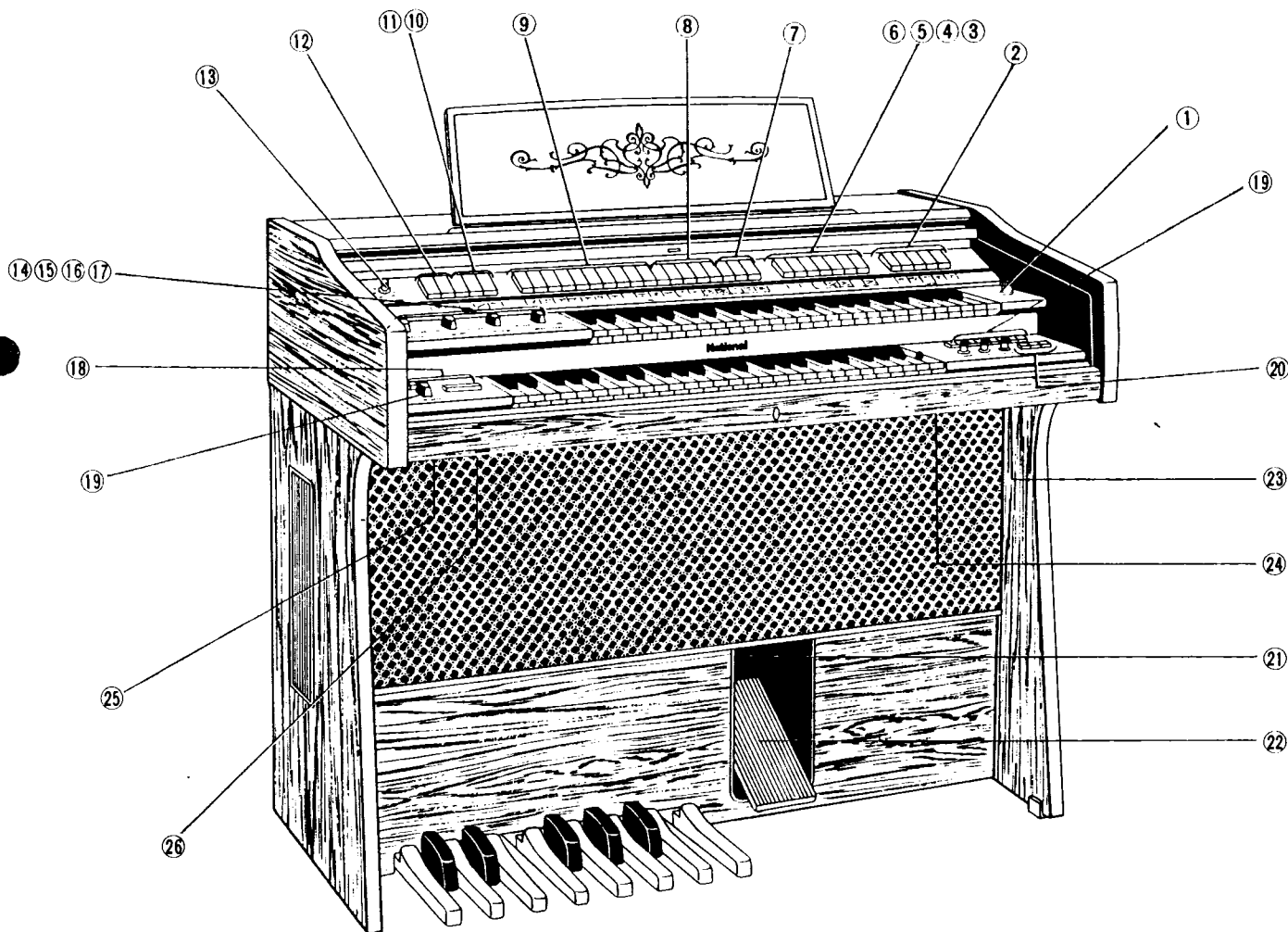
If you have any knowledge of music and can perhaps play the piano or the electronic organ even moderately well, you will immediately be able to play the National Electronic Organ in its simplest form. Even if you have no musical knowledge, you will become a good player after referring to the following pages which explain, step by step, how to play the Electronic Organ with its special musical effect.

1. Power Switch & Volume Control  
This is turned to the right (clockwise) and set with the pointer upright.
2. Lower Manual Tone Tabs  
The tab marked FLUTE 8' is depressed at the bottom.
3. Deley Tabs.....These are not depressed.
4. Multi-Tremolo Tabs  
The tab marked ON is depressed at the bottom.
5. Electronic Chorus Tab.....This is not depressed.
6. Vibrato Tab.....This is not depressed.
7. Pre-Set Sound Tabs.....These are not depressed.
8. Percussive Tone Tabs.....These are not depressed.
9. Upper Manual Tone Tabs  
The tab marked FLUTE 8' is depressed at the bottom.
10. Pedal Attack Tab.....This is not depressed.
11. Pedal Sustain Tabs.....The tab marked ON is depressed at the bottom.
12. Pedal Tone Tabs.....The tab marked BASS 8' is depressed at the bottom.
13. Pedal Volume Knob  
This is turned to the right (clockwise) and set with the pointer upright.
14. Manual Balance Lever.....This is set to the center point.
15. Reverberation Select Lever.....This is set to the center point.
16. Reverberation Lever.....This is set to the "3rd" position.
17. Brilliance Lever.....This is set to the center point.
18. Automatic Rhythm Start Switches.....These are left as they are.
19. Automatic Rhythm Section.....These are left as they are.
20. Auto-Play-Chord Buttons.....These are left as they are.
21. Glide Control Switch.....This is left as it is.
22. Expression Pedal.....This is depressed forward with the toe of the right foot.

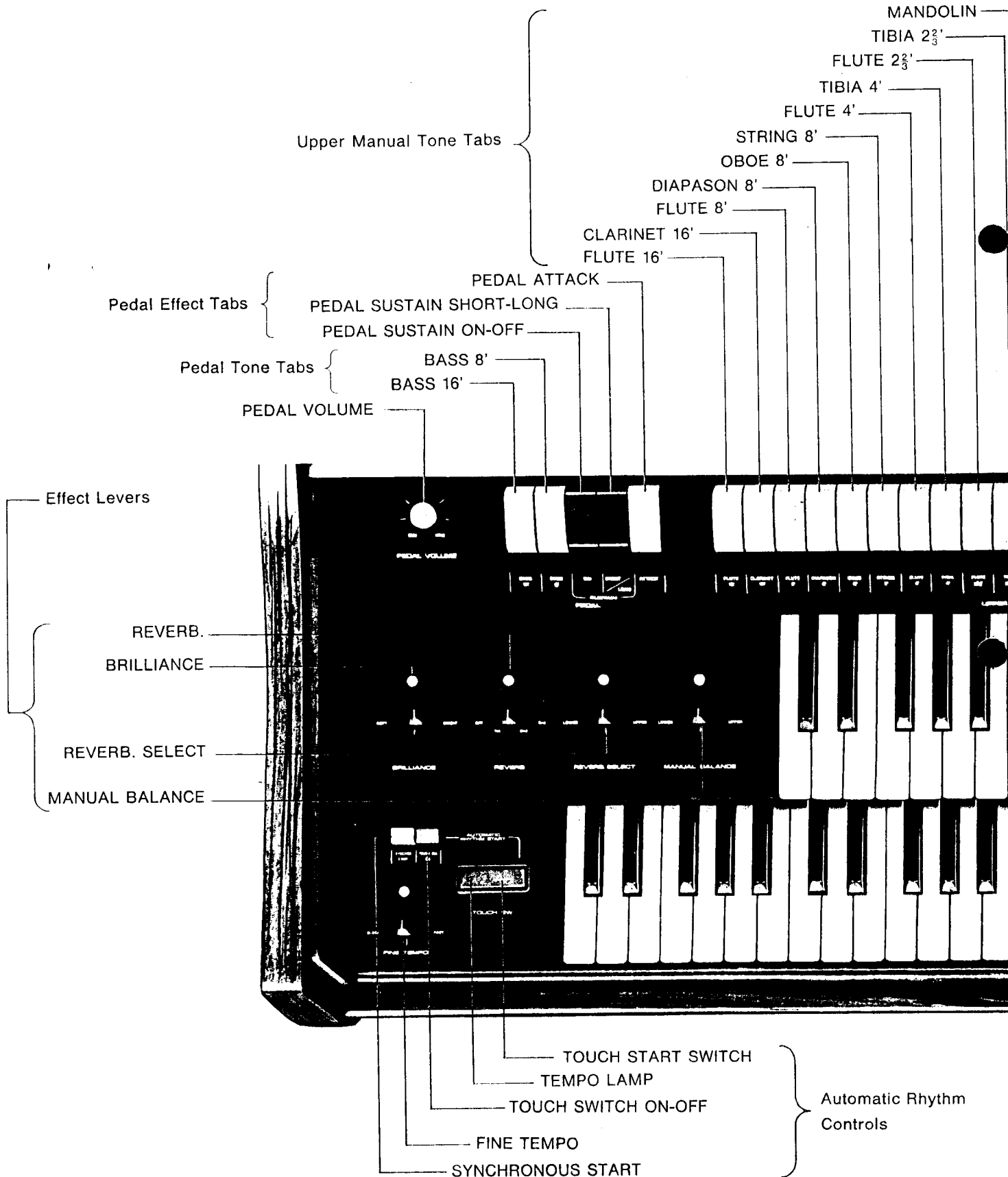
# NAMES OF PARTS

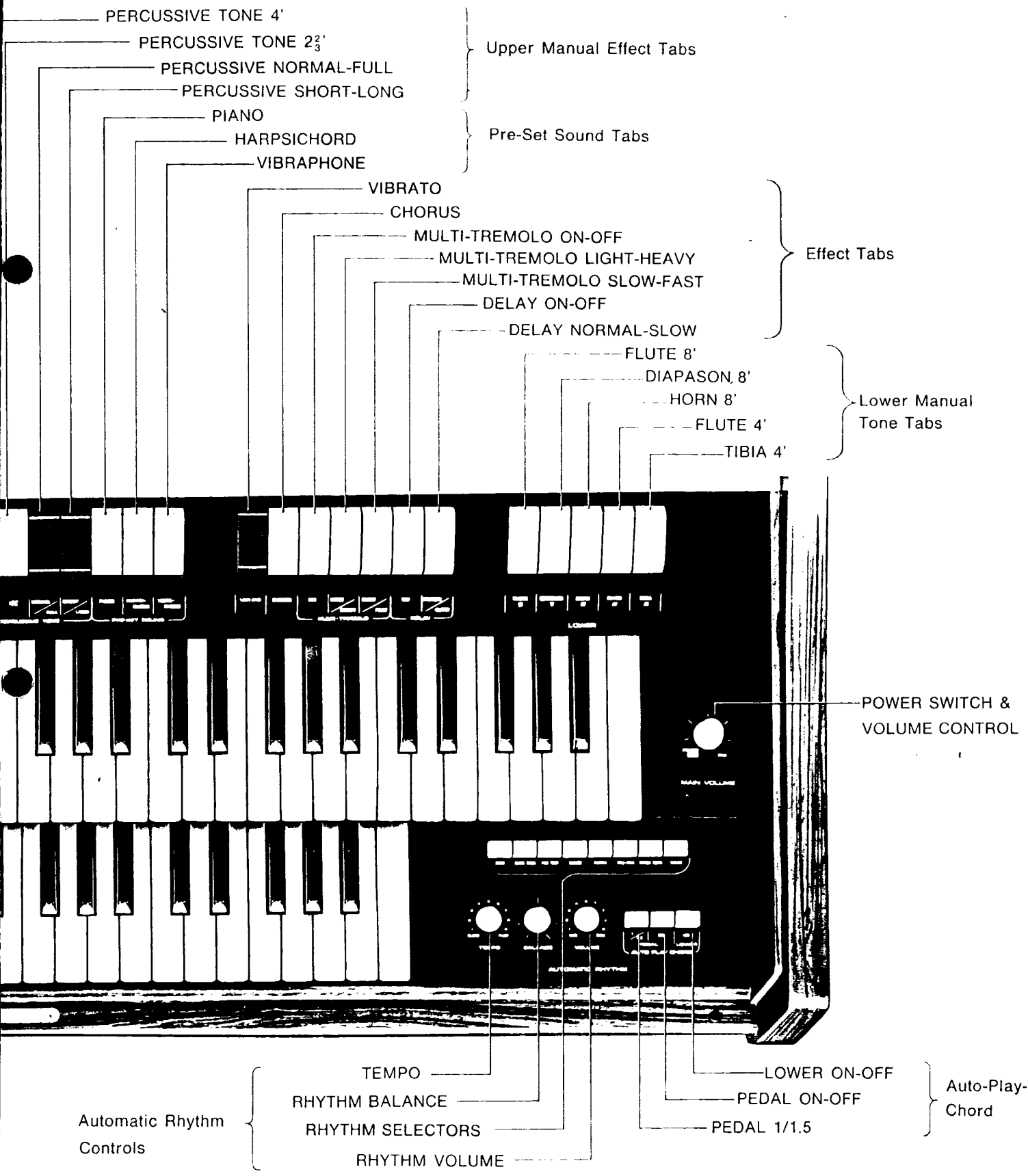


- |                                  |   |
|----------------------------------|---|
| 1. POWER SWITCH & VOLUME CONTROL | 15. REVERBERATION SELECT LEVER                            |
| 2. LOWER MANUAL TONE TABS        | 16. REVERBERATION LEVER                                   |
| 3. DELAY TABS                    | 17. BRILLIANCE LEVER                                      |
| 4. MULTI-TREMOLO TABS            | 18. AUTOMATIC RHYTHM START SWITCHES                       |
| 5. ELECTRONIC CHORUS TAB         | 19. AUTOMATIC RHYTHM SECTION                              |
| 6. VIBRATO TAB                   | 20. AUTO-PLAY-CHORD BUTTONS                               |
| 7. PRE-SET SOUND TABS            | 21. GLIDE CONTROL SWITCH<br>(inside the expression pedal) |
| 8. PERCUSSIVE TONE TABS          | 22. EXPRESSION PEDAL                                      |
| 9. UPPER MANUAL TONE TABS        | 23. OUTPUT TERMINAL (under the keyboard)                  |
| 10. PEDAL ATTACK TAB             | 24. HEADPHONE JACK (under the keyboard)                   |
| 11. PEDAL SUSTAIN TABS           | 25. MICROPHONE TERMINAL<br>(under the keyboard)           |
| 12. PEDAL TONE TABS              | 26. INPUT TERMINAL (under the keyboard)                   |
| 13. PEDAL VOLUME KNOB            |   |
| 14. MANUAL BALANCE LEVER         |   |



# NAMES OF CONTROLS





## MAIN FEATURES



### **Pre-Set Sound**

These are simple-to-operate tablets for producing the tones of a piano, harpsichord or vibraphone, separately or mixed, by means of the upper keyboard.

Normally, it is difficult to produce these tones by setting up a combination of sounds through the standard tone tablets. Pre-set tablets are designed to permit the production of soothingly reverberated piano tone, transparent and delicate harpsichord tone and trembling and reverberated vibraphone sound. They are ideal even for the beginner.

When one or more of the pre-set tablets are pressed in, all of the standard tablet sounds are cancelled from operation on the upper keyboard, but they become operative as soon as the pre-set tablets are released. Pre-set and standard sounds can therefore be alternatingly used for contrasting instrumentals, giving versatile and creative performances.

### **Auto-Play-Chord**

The Auto-Play-Chord is a new function which makes the rhythm accompaniment by the left hand and left foot much easier and automatic. This elementary step in playing has been considered very difficult. The organist can play the melody on the upper manual and the rhythm accompaniment can be automatically played with a selected rhythm, such as Rumba or Rock, by simply pressing the accompanying chord, which corresponds to that melody, on the lower manual and the pedal keyboard. If the organist becomes very proficient, he can have automatic play using only the lower manual or only the pedal keyboard.

Regarding the pedal keyboard, the bass accompaniment of only the sound from the depressed key can be automatically played or the sound from the depressed key and its 5-th tone above (for example, the tone G for the sound C) can be automatically played without moving your foot.

### **Electronic Multi-Tremolo Effect**

Due to the "Multi-Tremolo" effect, sounds have a tremolo effect plus spread three-dimensionally, making the sound very rich. Tremolo is ordinarily created by rotating a baffle before the speaker. "Multi-Tremolo" is, however, a new electronic method developed by National and has more clear and beautiful sounds than a conventional tremolo. Because a motor is not used, no noise is produced and the reliability is higher. This "Multi-Tremolo" can change the depth and speed of sound with one touch. There is also an "Electronic Chorus" effect in addition to the "Multi-Tremolo" effect. This effect creates a rotational effect in slower sounds and is very useful for church music and special effects for light music.

### **Delay Effect**

The delay effect is that effect created when some other effect is applied after pressing the keys. This delay effect can be used for the Multi-Tremolo, and the Vibrato effects, permitting the creation of an effect as fine and delicate as that of the stringed instruments. And, because National has created the Multi-Tremolo electronically, the delay effect can now be applied to the tremolo effect for the first time in the world, thus greatly enlarging the possible playing spectrum.



# KEYBOARDS & COMPASS CHART



## Keyboards

There are three keyboards—UPPER MANUAL, LOWER MANUAL and PEDAL KEYBOARD.

The UPPER MANUAL keys are depressed (with the right fingers) mainly for melodies; the LOWER MANUAL keys (with the left fingers) mainly for accompaniments; and the PEDAL keys (with the toe of the left foot) mainly for basses.

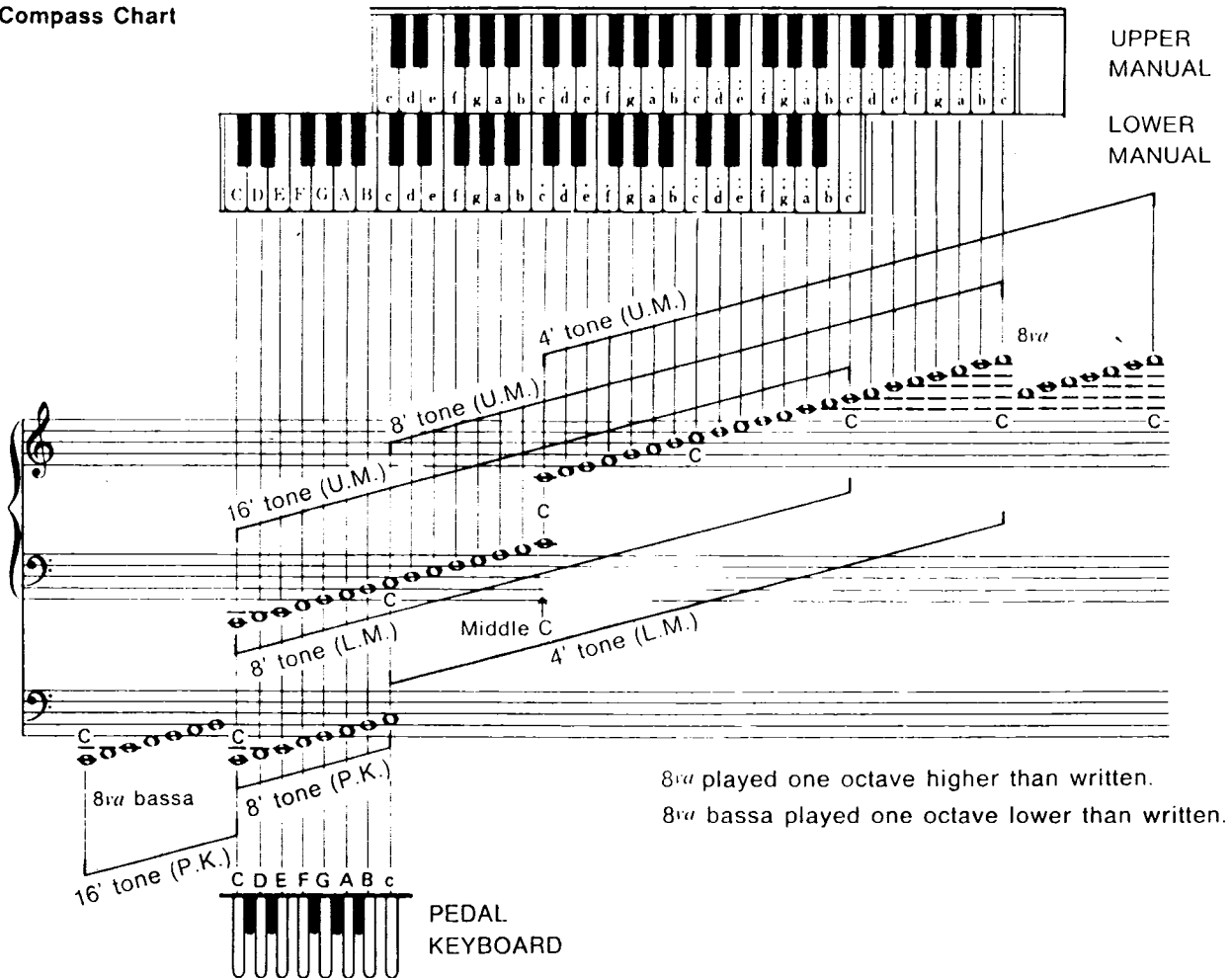
## RANGE

UPPER MANUAL	Extends from c to ċ: (medium to high-pitched tones)	49 keys, 4 octaves
LOWER MANUAL	Extends from C to ċ: (low to medium-pitched tones)	49 keys, 4 octaves
PEDAL KEYBOARD	Extends from C to c: (bass tones)	13 keys, 1 octave

## TOUCH

Unlike the piano, the touch on the Electronic Organ keys does not change the volume or quality of sounds produced. You do not need to change your touch nor to learn a difficult finger technique, you may play the keys with a minimum of pressure.

## Compass Chart



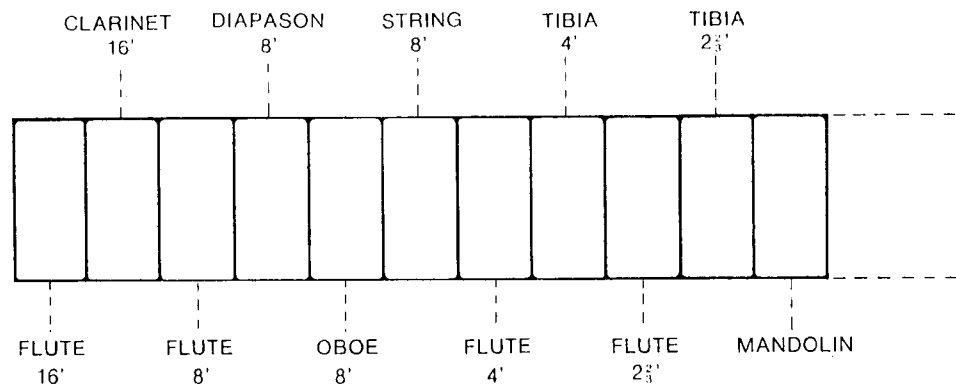
# TONE TABS



The tone tabs produce individual sounds when depressed at the bottom and stop the sounds when depressed at the top.

## Upper Manual Tone Tabs

The Upper Manual provides two 16' tones, four 8' tones, two 4' tones, two 2 $\frac{2}{3}$ ' tones and one special effect tone. Their combinations produce many other beautiful tone colors.



## UPPER

### FLUTE 16'

The FLUTE 16' tone has the simplest harmonics, and its tone quality is soft and mellow, like an orchestral flute, and is suitable for playing melodies. Its pitch is lower by one octave than written on a music score.

### CLARINET 16'

The CLARINET 16' tone has a smooth and hollow tone quality, like an orchestral clarinet, and is especially suitable for playing melodies. Its pitch is lower by one octave than written on a music score.

### FLUTE 8'

The FLUTE 8' tone is the same quality as that of the Flute 16' tone, but its tone pitch is the same as written on a music score.

### DIAPASON 8'

The DIAPASON 8' tone has the foundation tone quality found in no other instrument than a pipe organ and has a special personality in tone color. It is slightly heavy and dull, rather than brilliant in tone quality, and is suitable for playing chords. It has the same pitch as written.

### OBOE 8'

The OBOE 8' tone has a strong personality, characterized by heavy upper harmonics, and its tone quality is rather reedy and more brilliant than any other tone. It has the same pitch as written.

**STRING 8'**

The STRING 8' tone is a rather bright tone, like an orchestral violin, its tone quality is characterized by especially intense upper harmonics, and is suitable for playing melodies and chords. It has the same pitch as written.

**FLUTE 4'**

The FLUTE 4' tone is the same quality as that of the Flute 16' tone, but its tone pitch is higher by one octave than written.

**TIBIA 4'**

The TIBIA 4' tone is the sound of woodwind instruments, soft, but still slightly harder than that of the flute. Its tone pitch is higher by one octave than written.

**FLUTE 2 $\frac{2}{3}$ '**

The FLUTE 2 $\frac{2}{3}$ ' tone is the same quality as that of the Flute 8' tone, but its tone pitch is higher by a twelfth than written. This Flute 2 $\frac{2}{3}$ ' tone is used combined with the fundamental tone, sounding simultaneously when a single key is depressed.

**TIBIA 2 $\frac{2}{3}$ '**

The TIBIA 2 $\frac{2}{3}$ ' tone is similar to that of the Tibia 4, but the former is a fifth higher than the latter. By adding this to the fundamental tone, rich and steady sounds can be obtained.

**MANDOLIN**

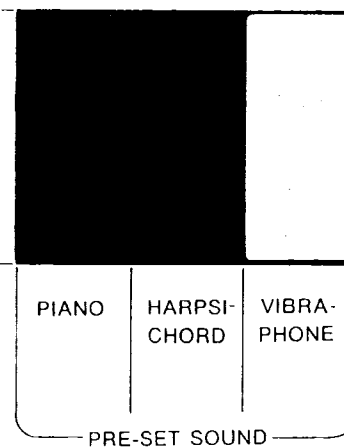
The MANDOLIN tone is a repeated percussive tone, like a mandolin, and has a brighter tone quality. It is suitable for playing melodies, and it can be used as special effects in tone color.

**Pre-Set Sound**

These are simple-to-operate tablets for producing the tones of a piano, harpsichord or vibraphone, separately or mixed, by means of the upper keyboard.

Normally, it is difficult to produce these tones by setting up a combination of sounds through the standard tone tablets. Pre-set tablets are designed to permit the production of soothingly reverberated piano tone, transparent and delicate harpsichord tone and trembling and reverberated vibraphone tone. They are ideal even for the beginner.

When one or more of the pre-set tablets are pressed in, all of the standard tablet sounds are cancelled from operation on the upper keyboard, but they become operative as soon as the pre-set tablets are released. Pre-set and standard sounds can therefore be alternatingly used for contrasting instrumentals, giving versatile and creative performances.



**PIANO**

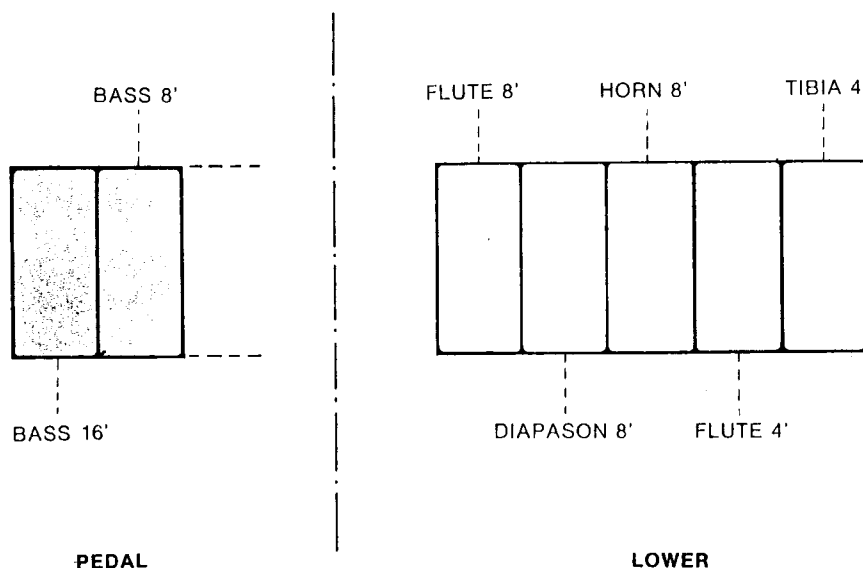
This tablet produces a tone similar to that of an electric piano. When a key is held down for a long moment, the sound volume decreases; when the key is lifted, the reverberated sound is immediately cut off.

**HARPSICHORD**

The subtle tones of the harpsichord, highly popular during the 17th and 18th centuries, can be produced when this tablet is pressed in.

**VIBRAPHONE**

When the vibraphone tablet is pressed in, a trembling tone rises then dies down to give the effect of an echo. When the key is lifted, the trembling sound is immediately cut off.

**Lower Manual Tone Tabs**

The Lower Manual provides three 8' tones and two 4' tones. Their combinations produce many other beautiful tones.

**FLUTE 8'**

The FLUTE 8' tone is round, soft and mellow, and is the same quality as that of the Flute 8' tone of the upper manual, it is suitable for playing melodies.

**DIAPASON 8'**

The DIAPASON 8' tone is slightly heavy and dull, and is the same quality as that of the Diapason 8' tone of the upper manual. It is suitable for playing chords.

**HORN 8'**

The HORN 8' tone is a solo tone having a particular personality of harmonics, and is suitable for playing melodies. This tone can be compared to the Oboe 8' tone of the upper manual.

**FLUTE 4'**

The FLUTE 4' tone is the same quality as that of the Flute 16' tone, but its tone pitch is higher by one octave than written.

**TIBIA 4'**

The TIBIA 4' tone is the sound of woodwind instruments, soft, but still slightly harder than that of the flute. Its tone pitch is higher by one octave than written.

**Pedal Keyboard Tone Tabs**

The Pedal Keyboard provides one 16' tone and one 8' tone. Their combination produces other rich tone for bass sounds.

**BASS 16'**

The BASS 16' tone is the lowest pitch tone obtained by the organ, and produces a deep and rich bass tone. Its pitch is lower by one octave than written.

**BASS 8'**

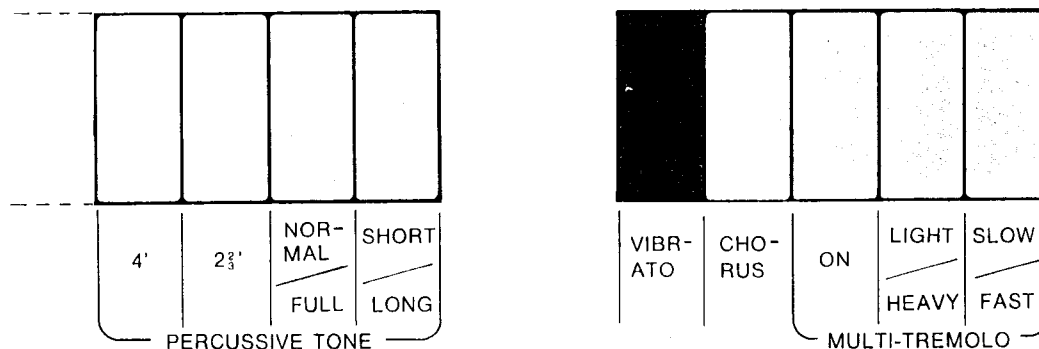
The BASS 8' tone has the foundation of characteristics of the flute tone and the richness of the string tone. It is a round, mellow and heavy tone which is suitable for playing bass solo or accompaniment. It has the same pitch as written.

These tone color tabs of the upper manual, lower manual and pedal keyboard can be used either separately or in any combination. The sound comes more fully as you use more tone tabs. By combining the various tone tabs, you can obtain infinite variations of tone color.

## EFFECT TABS



Each of the effect tabs gives various tonal effects to the music when depressed at the bottom and stop the sounds when depressed at the top.



### Electronic Multi-Tremolo Tabs

The three Multi-Tremolo tabs give a new tremolo effect and change the depth and speed of tremolo.

#### MULTI-TREMOMO ON-OFF

The MULTI-TREMOMO ON-OFF tab gives tremolo to the music when depressed at the bottom, and eliminates it when depressed at the top. The other two tabs (Light-Heavy & Slow-Fast) can change the degree of tremolo. When you adjust the degree of tremolo to suit the tune to be played, you can produce or eliminate the tremolo effect instantly by operating the Multi-Tremolo On-Off tab even while playing.

#### MULTI-TREMOMO LIGHT-HEAVY

The MULTI-TREMOMO LIGHT-HEAVY tab can change the depth of tremolo by making tremolo heavier (when depressed at the bottom) or lighter (when depressed at the top).

Note that Multi-Tremolo Light-Heavy & Slow-Fast tabs operate only when the Multi-Tremolo On-Off tab is in the On position.

#### MULTI-TREMOMO SLOW-FAST

The MULTI-TREMOMO SLOW-FAST tab can change the speed of tremolo by making tremolo faster (when depressed at the bottom) or slower (when depressed at the top).

### Electronic Chorus Tab

The CHORUS tab provides a slower rotational effect for the music when depressed at the bottom. But if you use it together with the Multi-Tremolo tab, the chorus effect is eliminated automatically.

### Vibrato Tab

The VIBRATO tab gives vibrato to the music when depressed at the bottom, and eliminates it when depressed at the top. When you want to change the degree of vibrato speed, use the Slow-Fast tab of the Multi-Tremolo.

### Percussive Tone Tabs

The Percussive Tone is the effect, when the upper manual keys are pressed, the sounds gradually diminish. It is generally used with the fundamental tone tabs. It is particularly effective to obtain strikingly clear beginning sounds, or a performance which is very clear and crisp. The strength and speed of diminishment can be varied.

#### PERCUSSIVE TONE 4'

When the bottom of the tab is depressed, a percussive tone which is 4' (one octave higher than the music score) is added to the upper manual. If this effect is not to be used, the top of the tab should be depressed to turn it off.

#### PERCUSSIVE TONE 2 $\frac{2}{3}$ '

When the bottom of the tab is depressed, a percussive tone which is 2 $\frac{2}{3}$ ' is added to the upper manual. This tab can, of course, be used with the Percussive Tone 4'.

#### PERCUSSIVE TONE NORMAL-FULL

This tab is for varying the strength of the percussive tone. The bottom of the tab can be depressed to obtain a strong tone, "FULL", and a weaker tone can be obtained by depressing the top of the tab, "NORMAL". Neither this tab nor the Percussive Short-Long tab described next will operate unless either the Percussive Tone 4' or Percussive Tone 2 $\frac{2}{3}$ ' is depressed.

#### PERCUSSIVE TONE SHORT-LONG

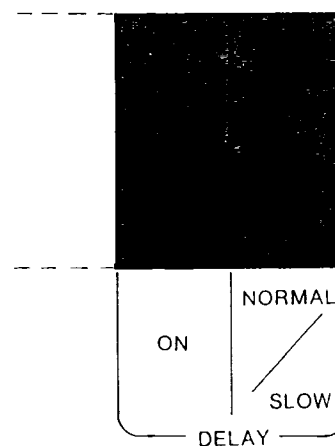
The bottom of this tab can be depressed to obtain a prolonged decreasing percussive tone, "LONG", and the top can be depressed to obtain a shorter decreasing percussive tone, "SHORT". Note that the percussive tone is obtained while the key is depressed, and disappears when released, even while decreasing.....a feature very convenient when playing in legato because it is applied only to the beginning sound.

### Delay Tabs

The delay effect means that a certain effect begins slightly after the keys are pressed. This delay can be used for the Vibrato and the Multi-Tremolo effects, permitting the creation of an effect as fine and delicate as that of the stringed instruments. Note that this delay effect is applied every time the key is released. When playing in legato, there is no delay and there is no change made.

#### DELAY ON-OFF

When the DELAY ON-OFF tab is depressed at the bottom, the Vibrato or the Multi-Tremolo effect is applied slightly after the key is pressed. Note that this delay effect is applied only when the original effect (Vibrato or Multi-Tremolo) tablet is set to the on position.



### DELAY NORMAL-SLOW

The DELAY NORMAL-SLOW tab can change the length of the delay time. By depressing the tab at the bottom or at the top, you can obtain slow or normal delay effect. This tab is not operate unless the Delay On-Off tab is depressed.

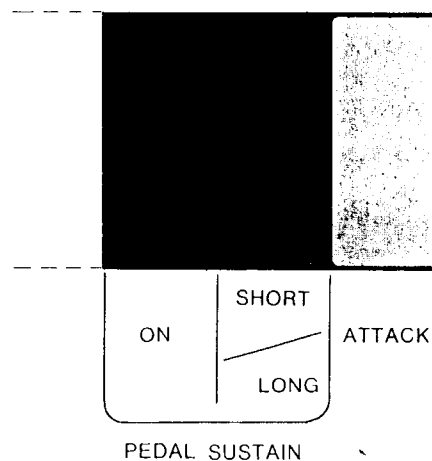
### Pedal Sustain Tabs

#### PEDAL SUSTAIN ON-OFF

The PEDAL SUSTAIN ON-OFF tab gives the pedal sustain effect to the pedal tones. The pedal sustain effect means that a bass tones produced by the pedal keyboard decays gradually after the depressed pedal is released. When this tab is on, you can obtain the pedal sustain effect.

#### PEDAL SUSTAIN SHORT-LONG

The PEDAL SUSTAIN SHORT-LONG tab can change the duration of the sustained bass tones. By depressing the tab at the bottom or at the top, you can obtain long or short pedal sustain effect.

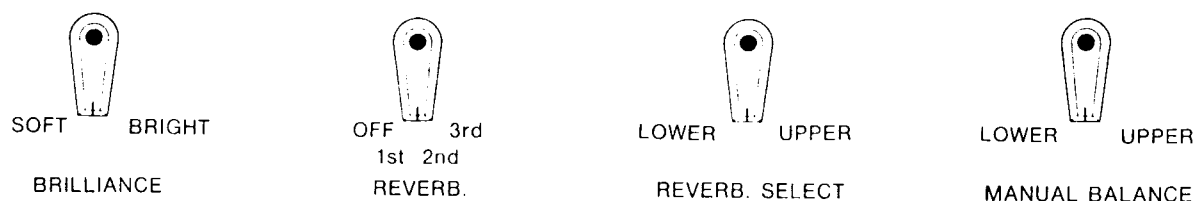


### Pedal Attack Tab

The Pedal Attack effect applies a strong accent to the pedal tone just at the moment the pedal is pressed, giving an effect of the pizzicato of the contrabass. The bottom of this tab may be pressed to set it to the ON position, in order to apply an accent to the pedal tone and to obtain clear sounds.



## EFFECT LEVERS



(The Left Side of the Upper Manual)

### Manual Balance Lever

The MANUAL BALANCE lever can control the volume balance between the Upper Manual and the Lower Manual at the discretion of the player. When this lever is set to the center point, the volume of both manuals becomes nearly equal. The lever set to the UPPER position causes the volume of the Upper Manual to exceed that of the Lower Manual, and vice versa with the lever set to the LOWER position.

### Reverberation Lever

The REVERBERATION lever can change the length of the reverberation effect, giving a spaciousness and warmth to the music from OFF to 3rd degree. By changing the degree of the reverberation effect, you can bring various special effects to the music.

### Reverberation Select Lever

The REVERBERATION SELECT lever can select the reverberation ratio of the Upper Manual tones and the Lower Manual tones. When you set this lever to the center point, the reverberation length of both manuals becomes equal. When this lever is turned to the Upper position, the reverberation of the Upper Manual tones exceeds that of the Lower Manual tones, and vice versa.

### Brilliance Lever

The BRILLIANCE lever is similar to the brilliance knob or the tone control knob on a good high fidelity amplifier system. It can control the upper harmonics of tones from SOFT to BRIGHT and its normal position is the center point. When turned to the BRIGHT position, the brilliance of tones of the manual keyboards is emphasized, and when turned to the SOFT position, the brilliance is reduced completely. This lever is particularly effective in making the String tone, the Oboe tone and the 4' tones more brilliant.

### Pedal Volume Knob

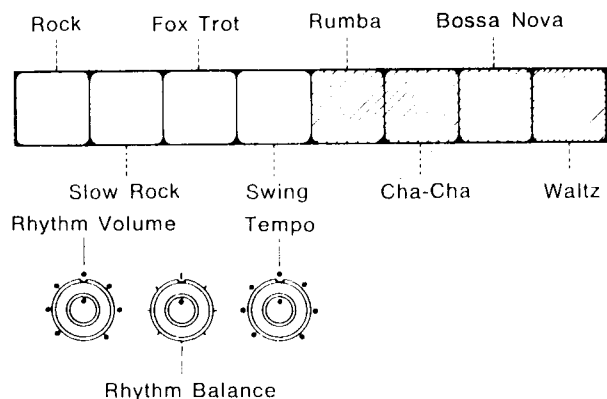
The PEDAL VOLUME knob can control the volume of the sounds of the Pedal Keyboard from Min. to Max. degree. Set the Pedal Volume knob to its proper position to balance the sound volume of the Pedal Keyboard with that of the Upper and Lower Manuals.



## AUTOMATIC RHYTHM CONTROLS



The automatic rhythm section has three rhythm control knobs, eight rhythm selector buttons, two rhythm start switches, one tempo lamp and touch start switch.



### Rhythm Selection Buttons

This rhythm section has eight rhythm selectors. They are Rock, Slow Rock, Fox Trot, Swing, Rumba, Cha-Cha, Bossa Nova and Waltz. Select your favorite and push the corresponding button.

This button switch turns on the rhythm when you push it. These are interlocking switches, so that when you push a rhythm selection, the previous rhythm turns off automatically.

If you push two or more rhythm selection buttons at the same time, a complex and interesting rhythm can be created.

### Rhythm Volume Knob

When the RHYTHM VOLUME knob is turned to the right (clockwise), the volume of the rhythm increases gradually. Adjust the volume of the rhythm according to the volume of the keyboard sounds.

It should be noted with caution that the main volume and expression pedal of the organ have some influence on the volume of the rhythm.

### Rhythm Balance Knob

If the knob is turned clockwise, the percussion instrument sound of the cymbals and the maracas becomes gradually louder, while the sound of the other percussion instruments becomes lower. If the knob is turned counterclockwise, the sound of the claves, the cowbell and the drums become louder and the sound of the cymbals and the maracas becomes lower. Thus, set it to the desired position. Also, if this knob is turned clockwise or counterclockwise until it stops, it can be used as a cancel effect, and in this way various rhythms can be created.

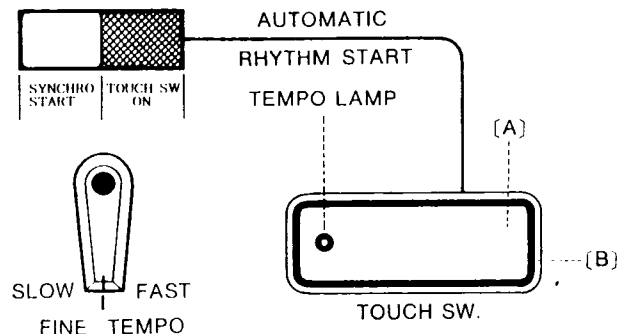
### Tempo Control Knob

If you turn the TEMPO CONTROL knob clockwise, the tempo of the rhythm increases. The tempo of the rhythm should be adjusted according to the music you play.

The Tempo Lamp in the touch start switch is designed to illuminate on the first beat. Therefore, you can easily adjust the tempo by watching the tempo lamp. If the synchronous start switch is turned to the on position, the tempo lamp indicates a beat interval even though the rhythm has not yet started. It is, therefore, possible to adjust the beat without emitting the percussion instrument sounds.

### Fine Tempo Lever

After pre-setting the tempo with the tempo control, this lever permits further and finer adjustment quickly. You can speed up a pre-established slow tempo by moving the lever to the right. When moved to the left, the tempo will become slower. However, no effect will occur if the tempo control is set at its maximum speed and the fine tempo control is moved to the FAST position or vice versa.



### Rhythm Start Switches

There are two starting methods for rhythm as shown below. In both cases, the rhythm begins with the first beat.

#### TOUCH SWITCH ON-OFF BUTTON

This button is to prevent mistaken operation of the Touch Start Switch, located on the right side of this button. When not using the rhythm, it should be set to the OFF position (upper position). When so set, the rhythm cannot be started even if the Touch Start switch is accidentally touched. To use the rhythm, press this button (lower position) and then use the touch start switch. The touch start switch can, however, be used to stop the rhythm no matter to which position this button (ON or OFF) is set.

#### SYNCHRONOUS START BUTTON

If the SYNCHRONOUS START button is pushed beforehand (in the condition where the button is depressed), the rhythm will start when either the lower manual or the pedal keyboard is played. In this manner, it is very convenient. Using the Touch Start switch, you can stop the rhythm.

If the performance is conducted without using the synchronous start button, this button should be pressed again to set it to the "OFF" position (in the condition where the button is not depressed). The rhythm will be turned off by pushing this button during performance.

#### TOUCH START SWITCH

This TOUCH START switch is especially convenient because on-off control of the rhythm can be quickly accomplished by simply gently touching it (when the Touch Switch button is set to the ON position). Note that, even when the Synchronous Start button is ON, that this Touch Start switch can be used to control on-off operation.

\*When using the touch start switch, be sure to touch the inside of the switch, part [A] and the outside, part [B], at the same time. Part [A] and [B] are designed to be touched simultaneously and, if only one part is touched, the start switch will not operate. Therefore, care should be exercised.

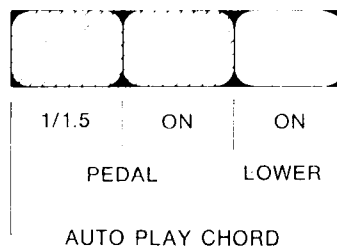
## AUTO-PLAY-CHORD CONTROLS



The Auto-Play-Chord is a new function which makes the rhythm accompaniment by the left hand and left foot much easier and automatic. This elementary step in playing has been considered very difficult. The organist can play the melody on the upper manual and the rhythm accompaniment can be automatically played with a selected rhythm, such as Rumba or Rock, by simply pressing the accompanying chord, which corresponds to that melody, on the lower manual and the pedal keyboard. Accordingly, even those who are just beginners can easily play the melody with the right hand while playing the accompaniment.

Because this Auto-Play-Chord is connected to the automatic rhythm, if one of the rhythm selection buttons is not pushed, the automatic accompaniment will not be obtained. In another words, only when the automatic rhythm is operating does the Auto-Play-Chord function. When you don't require the percussive instrument tones of the automatic rhythm, turn the "Rhythm Volume" knob completely counterclockwise (Min.) and only the lower manual and pedal tones will play the rhythm. Control the speed with the "Tempo" knob. The starting function of the Auto-Play-Chord is the same as that of the automatic rhythm.

Also, with this Auto-Play-Chord, automatic accompaniment using only the lower manual, only the pedal keyboard, or using both the lower manual and the pedal can be obtained. Accordingly, it is very convenient when practicing the lower manual and the pedal keyboard.



### Auto-Play-Chord Lower On-Off Button

By simply pushing this button to the ON position (lower position) and depressing the chord, which corresponds to the playing melody, with the lower manual, accompaniment by the lower manual at the selected rhythm can be automatically obtained.

When not using, please be sure to push this button again to set it to the OFF position (upper position).

### Auto-Play-Chord Pedal On-Off Button

Push this button to the ON position (lower position), push the root tone among the chord, which is played on the lower manual (C, if the chord is C, E, and G), at the pedal keyboard, and the bass sound at the selected rhythm will be automatically obtained. If using together with the Auto-Play-Chord of the lower manual, the rhythm accompaniment may be played by simply pressing the lower manual and the pedal keyboard. Thus, you are able to play very easily.

When not using this button, be sure to set it to the OFF position (upper position).

**Auto-Play-Chord Pedal 1/1 · 5 Button**

Automatically rhythm accompanying bass sound is accomplished by only the pressing pedal key tone when this button is set to the "1" position (upper position). If this button is set to the "1-5" position (lower position), the pressing pedal key tone and its fifth tone (G tone when the C key is pressed) will create a rhythm automatically without moving the foot.

Also, this effect is applicable to "Fox Trot", "Rumba", "Cha-Cha" and "Waltz". It is not applicable to other rhythms because it is not suitable.

When you select the Rumba rhythm with the Auto-Play-Chord, the sound from the lower manual and pedal are as follows:

The diagram shows two musical staves in 4/4 time. The top staff, labeled "Lower Manual Sound", contains a sequence of notes: a quarter rest, a quarter note, a quarter note, a quarter note, and a quarter note. The bottom staff, labeled "Pedal Sound", contains a sequence of notes: a quarter note, a quarter rest, a quarter note, a quarter note, and a quarter note.

The accompaniment is repeated according to the following rhythm pattern, when another rhythm is selected, by the same method.

[Rock]

Musical notation for Rock rhythm in 4/4 time, showing a sequence of notes and rests.

[Slow Rock]

Musical notation for Slow Rock rhythm in 2/4 time, featuring triplet markings over groups of notes.

[Fox Trot]

Musical notation for Fox Trot rhythm in 4/4 time, showing a sequence of notes and rests.

[Swing]

Musical notation for Swing rhythm in 4/4 time, showing a sequence of notes and rests.

[Cha-Cha]

Musical notation for Cha-Cha rhythm in 4/4 time, showing a sequence of notes and rests.

[Waltz]

Musical notation for Waltz rhythm in 3/4 time, showing a sequence of notes and rests.

[Bossa Nova]

Musical notation for Bossa Nova rhythm in 4/4 time, showing a sequence of notes and rests.

## OTHER CONTROLS

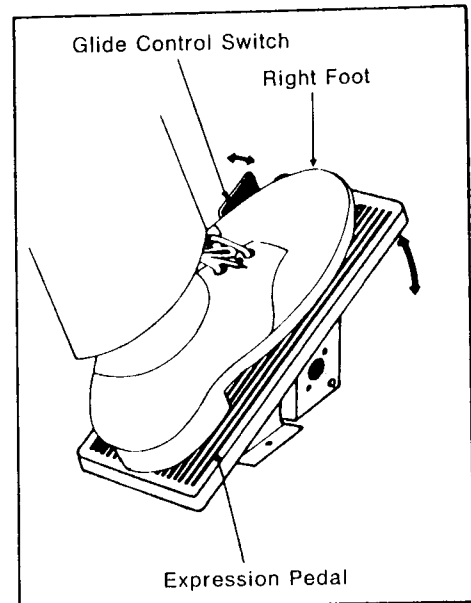


### Power Switch & Volume Control

The POWER SWITCH & VOLUME CONTROL is set to the maximum level of the organ when the Expression Pedal is used. If the Expression Pedal is not used, the Volume Control should be adjusted to the desired level. After playing the organ, the Volume Control is turned counterclockwise to a position at which the power is switched off.

### Glide Control Switch

The GLIDE CONTROL SWITCH is on the left of the expression pedal. (Refer to the figure at the right.) This switch is operated by the toe of the right foot. If this switch is pushed to the left, the sound glides down approximately one-half of a tone. When the switch is no longer operated, the sound will return to the original tone by portamento.

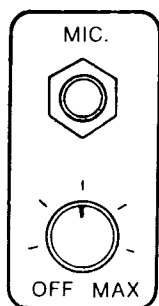


### Expression Pedal

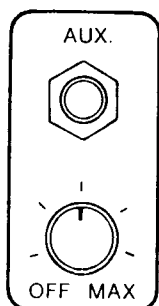
The EXPRESSION PEDAL is operated with the right foot. It changes the volume of the electronic organ to create musical expression. Pressing forward with your toe increases the volume, pressing back with your heel decreases it.

### Headphone Jack

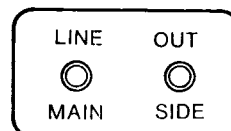
The HEADPHONE JACK is under the right side of the keyboard. Headphones (optional) are plugged into the Headphone Jack, and the amplifier is automatically switched off. Thus you may practice in a room where people are talking without disturbing others. Use stereo headphones, not monaural headphones. In this case, you can hear the Multi-Tremolo effect through the headphones.



(Under the Left Side of the Keyboard)



(Under the Right Side of the Keyboard)

**Output Terminals (MAIN, SIDE) (LINE OUT)**

The OUTPUT TERMINALS are under the right side of the keyboard. These can be connected with an external stereo amplifier or stereo tape recorder when you use this Electronic Organ in a large hall or to record the music of this organ without outside noises.

Connect the MAIN and SIDE output terminals of the organ to the RIGHT and LEFT input terminals of the external stereo amplifier or stereo tape recorder. Because the "Multi-Tremolo" effect is produced electronically by a 2-channel stereo system, beautiful "Multi-Tremolo" effects can be produced for performance in a large hall by using only an external stereo amplifier (output level 360mV 600 ).

**Input Terminal (AUX)**

The INPUT TERMINAL can be connected with a tape recorder or a electric guitar, etc., for the purpose of reproducing their sounds. It is located under the left side of the Keyboard. (input level 25mV, 20K $\Omega$ )

The INPUT VOLUME CONTROL sets the level of the input signal. Note that this volume control can not change the volume of the Electronic Organ.

**Microphone Terminal (MIC)**

The performer can, by connecting a microphone (separate purchase) to this jack, accompany his own performance vocally or act as master of ceremonies, etc. The microphone used should be a dynamic microphone (uni-directional). (input level of 5mV, 20K $\Omega$ )

The MICROPHONE VOLUME CONTROL sets the level of the microphone volume. When this knob is turned to the right (clockwise), the volume of the microphone increases.

# SOME TYPICAL REGISTRATIONS



Here are some examples of registrations which will help you find out effective tones of your performance. These registrations are only typical ones. You will be able to find many variations referring these examples.

## Violin

<b>Upper:</b> STRING 8'	Chorus	
<b>Lower:</b> FLUTE 8'	Vibrato	
<b>Pedal:</b> BASS 8'	Delay On-Normal	

ZIGEUNERWEISEN

Lento

## English Horn

<b>Upper:</b> FLUTE 2 $\frac{3}{4}$ '	Multi-Tremolo On-Light-Slow	
OBOE 8'		
<b>Lower:</b> HORN 8'		
<b>Pedal:</b> BASS 16', BASS 8'	SUSTAIN On-Short	

THE ORIENTAL

Andantino

## Organ Tone

<b>Upper:</b> FLUTE 16', FLUTE 8'	
FLUTE 4', FLUTE 2 $\frac{3}{4}$ '	
<b>Lower:</b> FLUTE 8', DIAPASON 8'	
FLUTE 4'	
<b>Pedal:</b> BASS 16', BASS 8'	

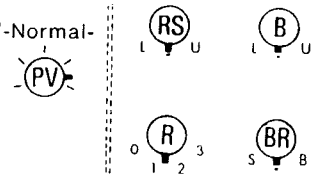
SILENT NIGHT

Andante



### Light Music Tone 1

**Upper:** FLUTE 16' Percussive 2 $\frac{2}{3}$ '-Normal-Short, Chorus.  
**Lower:** FLUTE 8' DIAPASON 8'  
**Pedal:** BASS 8' SUSTAIN On-Short

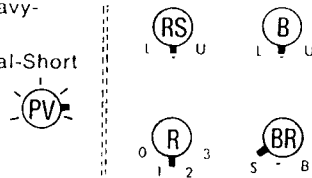


### WHEN THE SAINTS GO MARCHING IN

Brightly  
No Chord

### Light Music Tone 2

**Upper:** FLUTE 8' Multi-Tremolo On-Heavy-Slow  
**Lower:** FLUTE 8' Percussive 2 $\frac{2}{3}$ '-Normal-Short  
 FLUTE 4'  
**Pedal:** BASS 8' SUSTAIN On-Short  
 ATTACK

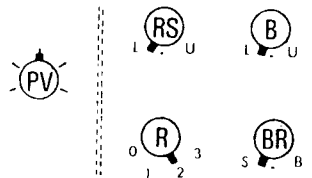


### SUMMERTIME IN VENICE

Medium

### French Horn

**Upper:**  
**Lower:** HORN  
**Pedal:** BASS 8'

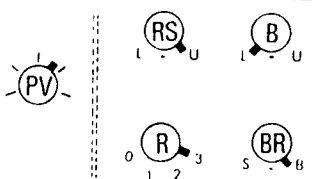


### DER FREISCHÜTZ

Adagio

### Cello

**Upper:** FLUTE 8' Vibrato Chorus  
**Lower:** DIAPASON 8'  
**Pedal:** BASS 8' SUSTAIN On-Long



### GREEN SLEEVES

Andante con moto

# MAINTENANCE & SPECIFICATIONS



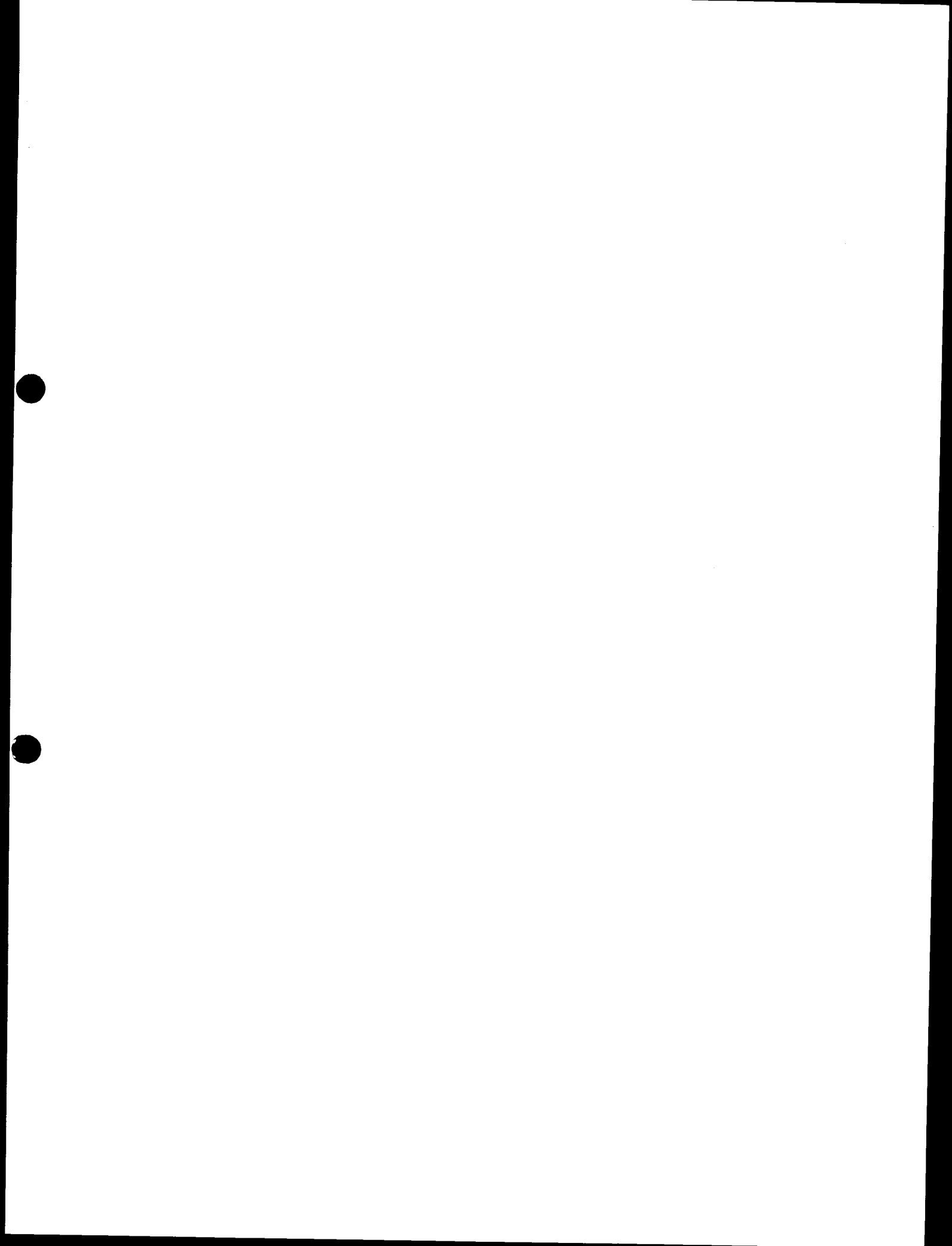
## Maintenance

- Be sure to turn the switch off after playing;
- Because the keys are plastic, do not use thinner, benzine or other petro-chemicals, but polish them with a dry, soft cloth.
- Never attempt to touch the inner parts of the unit. For service or repairs, contact the store where purchased. When replacing a fuse, be sure it is the correct rating.
- The National Electronic Organ creates sounds with IC's and transistors, so tuning is entirely unnecessary.

## Specifications

Keyboards:	Upper Manual	49 keys	c-ċ	(4 octaves)
	Lower Manual	49 keys	C-ċ	(4 octaves)
	Pedal Keyboard	13 keys	C-c	(1 octave)
Tones:	Upper Manual	Flute 16', Clarinet 16', Flute 8', Diapason 8', Oboe 8', String 8', Flute 4', Tibia 4', Flute 2 <sub>3</sub> ', Tibia 2 <sub>3</sub> ', Mandolin		
	Pre-Set Sound	Piano, Harpsichord, Vibraphone		
	Lower Manual	Flute 8', Diapason 8', Horn 8', Flute 4', Tibia 4'		
	Pedal	Bass 16', Bass 8',		
Effects:	Multi-Tremolo (On-Off, Light-Heavy, Slow-Fast), Chorus, Vibrato, Percussive Tone (4', 2 <sub>3</sub> ', Normal-Full, Short-Long), Delay (On-Off, Normal-Slow), Pedal Sustain (On-Off, Short-Long), Pedal Attack, Manual Balance, Reverberation, Reverberation Select, Brilliance, Pedal Volume, Glide Control,			
Automatic Rhythm:	Rhythm Selectors Rock, Slow Rock, Fox Trot, Swing, Rumba, Cha-Cha, Bossa Nova, Waltz, Rhythm Volume, Rhythm Balance, Tempo, Fine Tempo, Synchronous Start, Touch Start, Touch Switch On-Off, Tempo Lamp.			
Auto-Play-Chord:	Auto-Play-Chord Lower, Auto-Play-Chord Pedal, Auto-Play-Chord Pedal 1/1.5			
Others:	Power Switch & Volume Control, Expression Pedal, Headphone Jack, Input Terminal (with Volume), Microphone Terminal (with Volume), Output Terminals, Pilot Lamp			
Output:	50W (Peak power)			
Speakers:	30cm (12'') × 1, 20cm (8'') × 1, 8cm (3'') × 1			
L.S.I.:	1			
IC's:	15			
Transistors:	240			
Diodes:	170			
Power Requirement:	60W AC 100/120/220/240V 50-60 Hz			
Cabinet:	Simulated Rosewood			
Dimensions:	115cm(45.3'') [W] × 95cm(37.4'') [H] × 65cm(25.6'') [D]			
Net Weight:	82 kg. (180 lbs.)			

Specifications subject to change without notice





**MATSUSHITA ELECTRIC**  
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