

Operating Instructions

National
ELECTRONIC ORGAN
National



MODEL **SX-3300R**

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.

CONTENTS

INTRODUCTION TO THE ELECTRONIC ORGAN	2
NAMES OF PARTS	3
NAMES OF CONTROLS	4
MAIN FEATURES	5
KEYBOARDS	6
TONE TABS	6
EFFECT TABS AND LEVERS	9
EFFECT BUTTONS	11
AUTOMATIC RHYTHM CONTROLS	12
AUTO-PLAY-CHORD CONTROLS	14
OTHER CONTROLS	16
SOME TYPICAL REGISTRATIONS	17
MAINTENANCE	20
SPECIFICATIONS.....	20

INTRODUCTION TO THE ELECTRONIC ORGAN

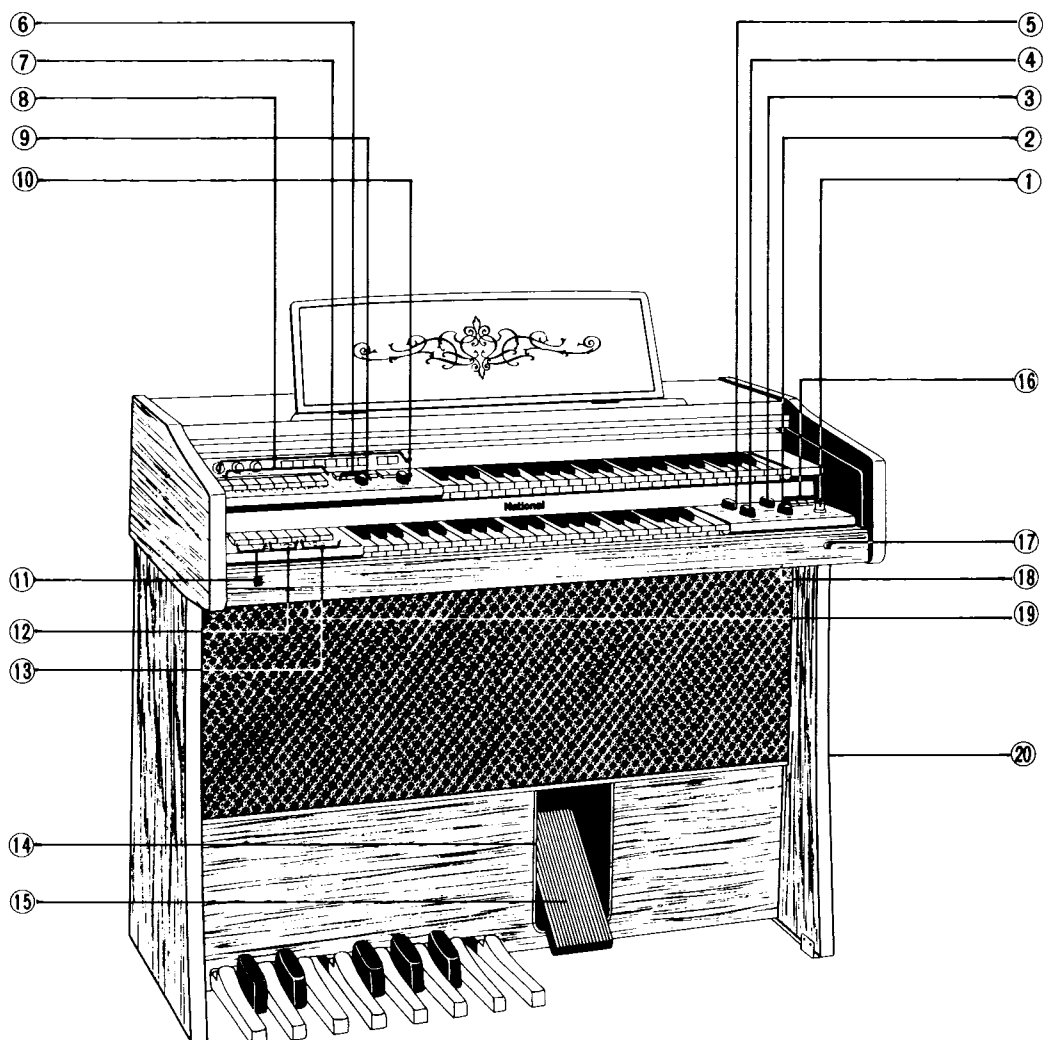
The diagram on the opposite page will help you to identify the various controls of the National Electronic Organ. The controls are fully explained in the following pages, but you set them as shown. This will enable you at once to produce musical sounds from the Electronic Organ.

If you have any knowledge of music and can perhaps play the piano even moderately well, it is possible for you to play the National Electronic Organ in its simplest form. Even if, on the other hand, 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 in its special musical effects.

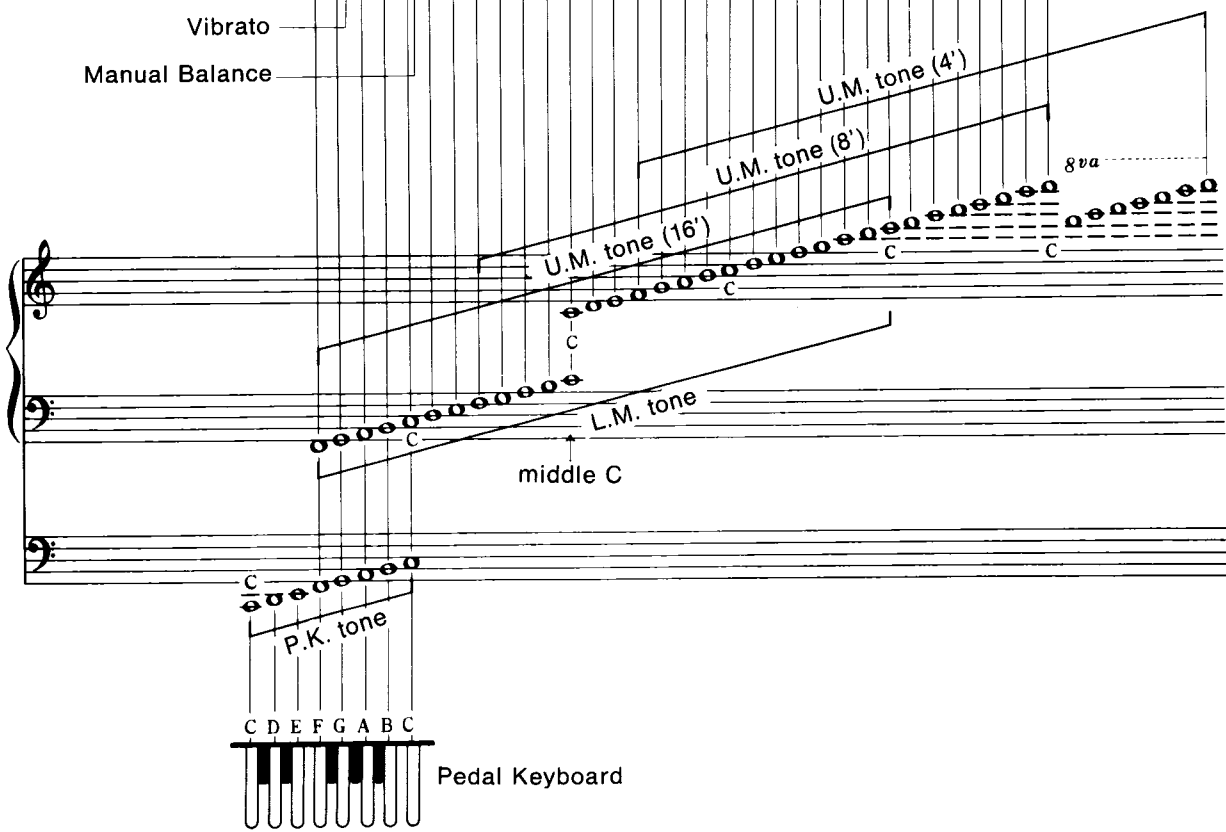
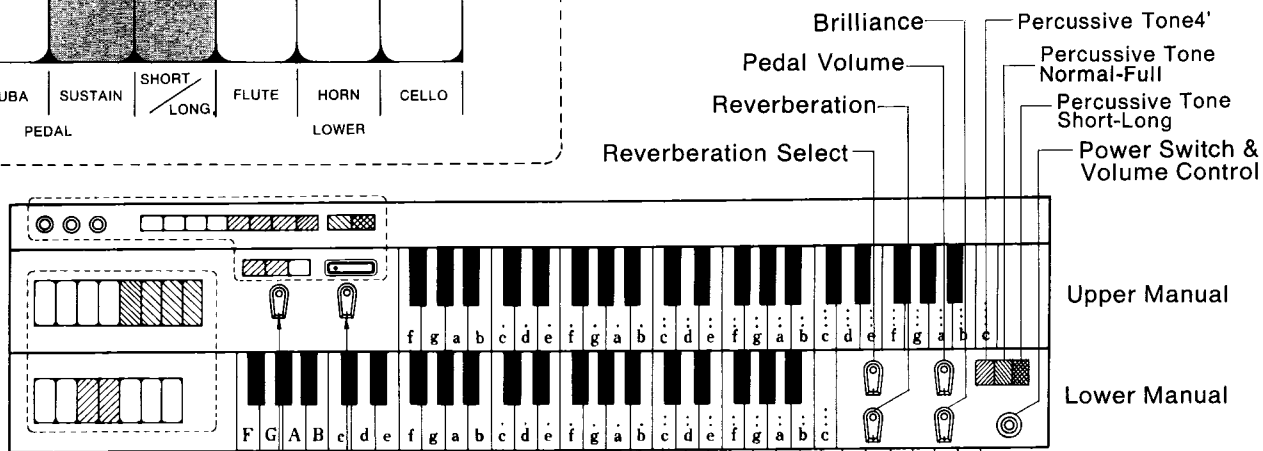
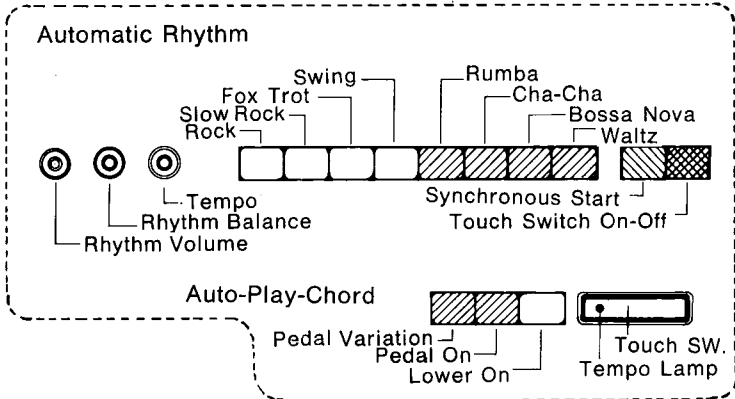
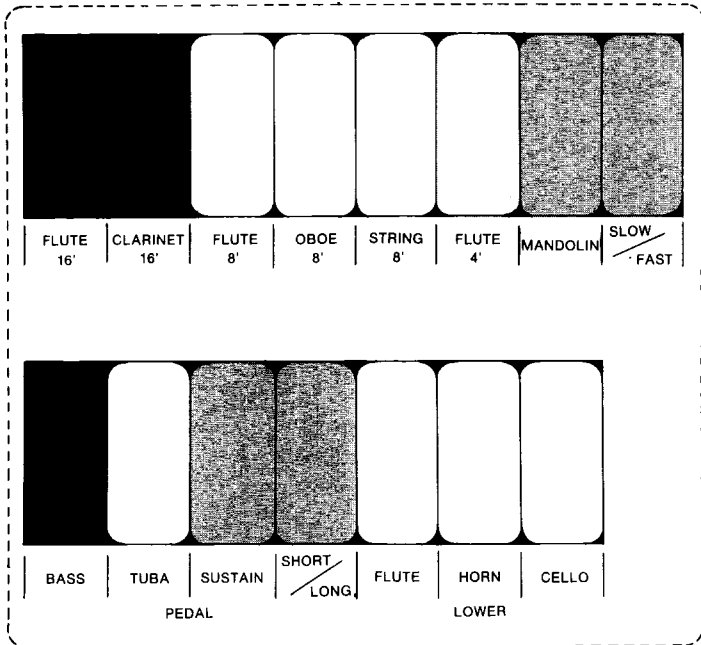
1. Power Switch & Volume Control
This is turned to the right (clockwise) and set with the pointer upright.
2. Brilliance Lever
This is set to the center point.
3. Pedal Volume Lever
This is set to the "2nd" position.
4. Reverberation Lever
This is set to the "3rd" position.
5. Reverberation Select Lever
This is set to the center point.
6. Auto-Play-Chord Buttons
These are left as they are. (Instructions on the following pages will explain how to use them.)
7. Automatic Rhythm Controls
These are left as they are. (Instructions on the following pages will explain how to use them.)
8. Upper Manual Tone Tabs
The tab marked FLUTE 8' is depressed at the bottom.
9. Vibrato Lever
This is set to the "3rd" position.
10. Manual Balance Lever
This is set to the center point.
11. Pedal Keyboard Tone Tabs
The tab marked BASS is depressed at the bottom.
12. Pedal Sustain Tabs
The tab marked ON is depressed at the bottom.
13. Lower Manual Tone Tabs
The tab marked FLUTE is depressed at the bottom.
14. Glide Control Switch
This is left as it is. (Instructions on the following pages will explain how to use it.)
15. Expression Pedal
This is depressed forward with the toe of the right foot. (Instructions on the following pages will explain how to use it.)
16. Percussive Tone Buttons
These are not depressed.

NAMES OF PARTS

- | | |
|----------------------------------|-----------------------------------------------------------|
| 1. POWER SWITCH & VOLUME CONTROL | 12. PEDAL SUSTAIN TABS |
| 2. BRILLIANCE LEVER | 13. LOWER MANUAL TONE TABS |
| 3. PEDAL VOLUME LEVER | 14. GLIDE CONTROL SWITCH
(inside the expression pedal) |
| 4. REVERBERATION LEVER | 15. EXPRESSION PEDAL |
| 5. REVERBERATION SELECT LEVER | 16. PERCUSSIVE TONE BUTTONS |
| 6. AUTO-PLAY-CHORD BUTTONS | 17. PILOT LAMP |
| 7. AUTOMATIC RHYTHM CONTROLS | 18. HEADPHONE JACK (under the keyboard) |
| 8. UPPER MANUAL TONE TABS | 19. INPUT TERMINAL (under the keyboard) |
| 9. VIBRATO LEVER | 20. OUTPUT TERMINAL (at the rear) |
| 10. MANUAL BALANCE LEVER | |
| 11. PEDAL KEYBOARD TONE TABS | |



NAMES OF CONTROLS



MAIN FEATURES

Auto-Play-Chord

The Auto-Play-Chord is a new function which makes the rhythm accompaniment with the bass by the left hand 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. The bass sound of this Auto-Play-Chord is automatically played without using the pedal keyboard. Moreover, because there is variation which permits the bass sound to be shifted, even beginners can enjoy using it.

Automatic Rhythm

The Automatic Rhythm offers several types of rhythm, such as Rock and Bossa Nova with the sounds of many music instruments, such as cymbals and maracas. Eight types of rhythm can be selected, and using two or more rhythm buttons or by using the rhythm balance lever, many different rhythms can be created.

The Automatic Rhythm can be used together with the Auto-Play-Chord, and by using the synchronous start and the touch start switches to start the rhythm, a full variety of rhythm play can be easily obtained.

Coupler Effect

The coupler effect is a sound effect of a keyboard type musical instrument which produces a combination of several tones sounding simultaneously when a single key is depressed. A mixture of these tones produces a very impressive sound.

The National Electronic Organ can produce the coupler sounds of 16', 8' and 4'. 8' tones have the same pitches as those of the notes written as the fundamental tones in a music score, 16' tones are one octave lower than written, 4' tone is one octave higher than written. By pressing these tone tabs, you can mix the diverse pitches corresponding to 16', 8', and 4' tones to provide variety in tone color.

Percussive Tone

The percussive tone is particularly effective to obtain strikingly clear beginning sounds, or strong accents to the sounds. There is one percussive tone; 4' tone. Of course, the strength and speed of diminishment can be varied.

Glide Control Effect

With a switch inside the expression pedal, the tone of the keyboard glides down a half-tone. And when the switch is turned off, portamento is added and the sound is returned to normal. This effect produces an effect like a steel guitar and the portamento produces an effect like a trombone.

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 accompaniment; and the PEDAL keys (with the toe of the left foot) mainly for bass.

Range

UPPER MANUAL	Extends from f to $\overset{\cdot\cdot\cdot}{c}$ 44 keys, $3\frac{1}{2}$ octaves (medium to high-pitched tones)
LOWER MANUAL	Extends from F to $\overset{\cdot\cdot}{c}$ 44 keys, $3\frac{1}{2}$ octaves (low to medium-pitched tones)
PEDAL KEYBOARD	Extends from C to c 13 keys, 1 octave (bass tones)

Touch

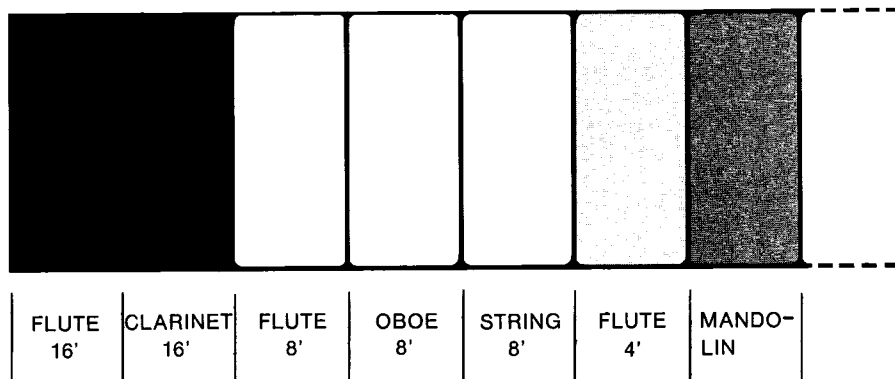
Unlike the piano, the touch on the Electronic Organ keys does not change the volume or quality of sounds produced. You do not need to change your touch nor to learn a difficult finger technique, you may play the keys with a minimum of pressure.

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, three 8' tones, one 4' tone and one special effect tone; FLUTE 16', CLARINET 16', FLUTE 8', OBOE 8', STRING 8', FLUTE 4', and MANDOLIN. Their combinations produce many other beautiful tone colors.



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.

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'

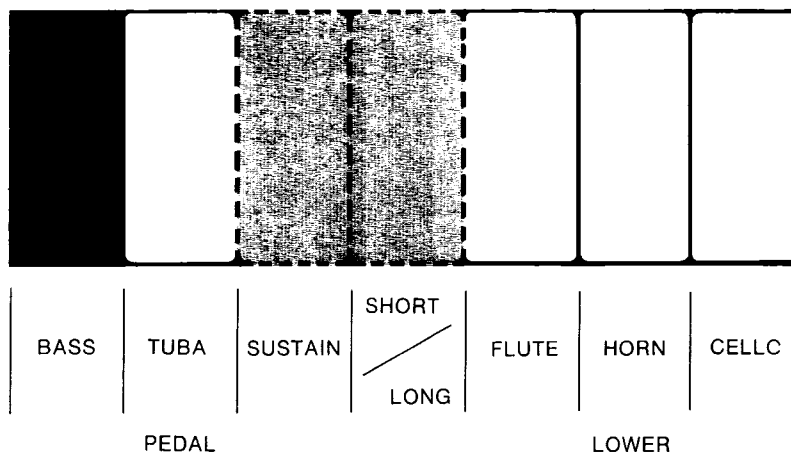
The FLUTE 4' tone is the same quality as that of the Flute 16' tone but its tone pitch is higher by one octave than written.

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.

Lower Manual Tone Tabs

The Lower Manual provides three tones; FLUTE, HORN and CELLO. Their combinations produce many other beautiful tone colors.



FLUTE

The FLUTE tone is round, soft and mellow and has a quality similar to that of the FLUTE 8' tone of the upper manual. It is suitable for playing melodies.

HORN

The HORN 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.

CELLO

The CELLO tone is rather brighter than other tones of the lower manual, and has a full and rich tone which imparts strength to any combination of tone color tabs. It is suitable for playing melodies and chords.

Pedal Keyboard Tone Tabs

The Pedal Keyboard provides two tones: BASS and TUBA. Their combination produces rich tone color for bass sound.

BASS

The BASS 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.

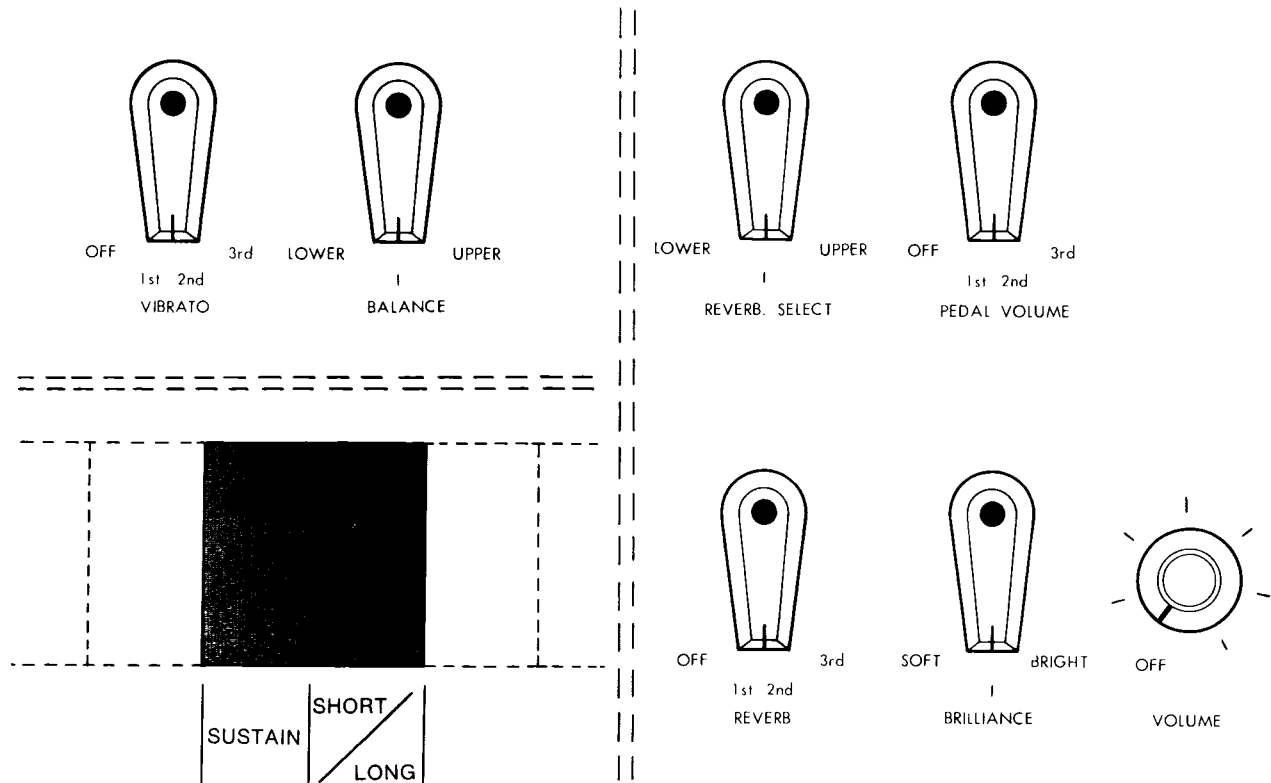
TUBA

The TUBA tone has a hollow and rather reedy tone quality, like an orchestral tuba.

These tone 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 tones.

EFFECT TABS AND LEVERS

Each of the Effect Tabs and Levers can be set to various tonal effects to the music.



Pedal Sustain Tabs

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.

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.

Vibrato Lever

The VIBRATO lever can change the depth of the vibrato effect from OFF to 3rd degree. Although any degree of vibrato effect can be obtained at the discretion of the player, some music is more effective without it.

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 with the lever turned to the LOWER position.

Brilliance Lever

The BRILLIANCE lever is similar to the brilliance knob or the tone control knob on a good highfidelity 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 and the Oboe tone more brilliant.

Pedal Volume Lever

The PEDAL VOLUME lever can control the volume of the sounds of the Pedal Keyboard from OFF to 3rd degree. Set the Pedal Volume lever to the proper position to balance the sound volume of the Pedal Keyboard with those of the Upper and Lower Manuals.

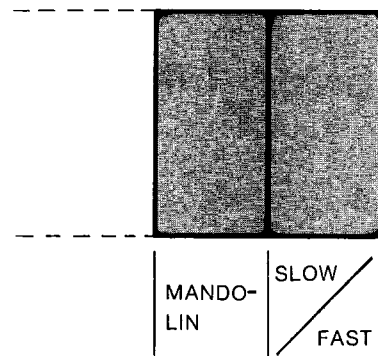
Power Switch & Volume Control

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.

Mandolin Speed Tab

The MANDOLIN SLOW-FAST tab can change the repeat speed of the Mandolin tone. By depressing the tab at the bottom or at the top, you can obtain fast or slow mandolin tone.

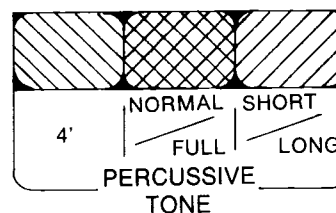
When depressed to the "Fast" position, tone become a little bit brighter than in case of the "Slow" position. Note the Mandolin Slow-Fast tab operate only when the Mandolin tone tab is in the On position.



EFFECT BUTTONS

Percussive Tone Buttons

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 this button is pressed to set it to the ON position (lower position), 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, set to the OFF position by pressing it once again.

PERCUSSIVE TONE NORMAL-FULL

This button is for varying the strength of the percussive tone. When set to the "FULL" position, by pressing it downward, a stronger percussive tone is obtained, and when set to the "NORMAL" position, by pressing it once again, a weaker percussive tone is obtained. Neither this button nor the Percussive Short-Long button (described next) will operate unless the Percussive Tone 4' is depressed.

PERCUSSIVE TONE SHORT-LONG

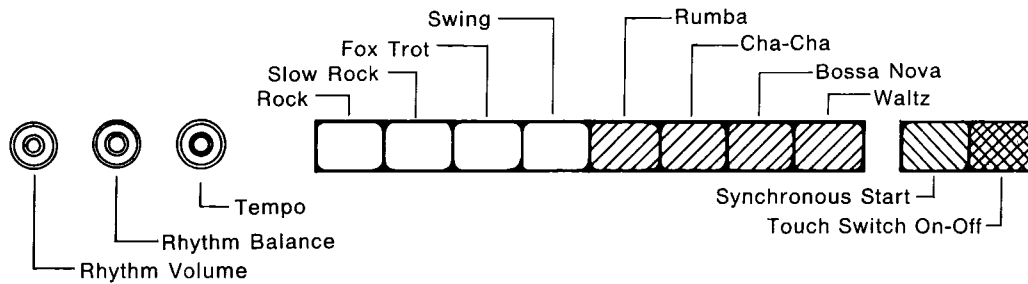
This button is used to change the duration of the percussive tones. When set to the "LONG" position, by pressing it downward, a prolonged decreasing percussive tone is obtained, and when set to the "SHORT" position, by pressing it once again, a shorter decreasing percussive tone is obtained. Note that the percussive tone is obtained while the key is depressed, and disappears when released, even while decreasinga feature very convenient when playing in legato because it is applied only to the beginning sound.

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.

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. These rhythm controls are located on the front of the tablet switches for the upper manual keyboard.



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.

Rhythm Start Switches

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

SYNCHRONOUS START BUTTON

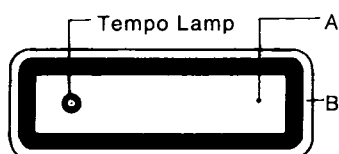
If the SYNCHRONOUS START button is pushed beforehand (in the condition where the button is depressed), the rhythm will start when either the lower manual or the pedal keyboard is played. In this manner, it is very convenient. Using the Touch Start Switch, you can stop the rhythm.

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.



TOUCH SWITCH ON-OFF BUTTON

This button is to prevent mistaken operation of the Touch Start Switch, located on the control panel. 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.

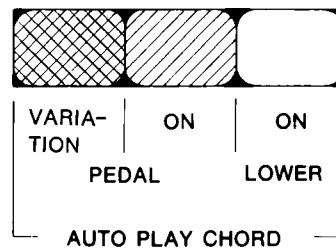
AUTO-PLAY-CHORD CONTROLS

The Auto-Play-Chord is a new function which makes the rhythm accompaniment with the bass by the left hand 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 and bass 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.

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. Note that, when using this Auto-Play-Chord, both the lower manual and pedal keyboard can be automatically played by simply pressing the chord of the lower manual, and, in addition, the pedal keyboard can be set for normal play even though the lower manual is set for automatic play. This is especially useful for practice on the pedal keyboard.

Moreover, because there is variation which permits the bass sound to be shifted, even beginners can enjoy using it.



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.

At this time, if the Auto-Play-Chord Pedal On-Off button, which is explained below, is also set to the ON position, the appropriate bass sound for the chord is automatically emitted without using the pedal keyboard. And, if this Pedal On-Off button is set to the OFF position, the pedal keyboard can be freely used in the same way as for normal play.

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

Auto-Play-Chord Pedal On-Off Button

If this button is pushed to the ON position (lower position), a bass sound which is 1 octave lower than the lowest sound of the chords on the lower manual can be automatically obtained. Note, however, that no sound will be emitted at this time if the pedal keyboard is depressed.

Note that, if the Auto-Play-Chord Lower On-Off button, which was explained above, is set to the OFF position, the lower manual can be played in the normal way, but, as concerns the pedal keyboard, the bass sound is automatically emitted only while the lower manual is pressed. If using together with the Auto-Play-Chord of the lower manual, the rhythm accompaniment may be played by simply pressing the lower manual. 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 Variation Button

This button is used to automatically shift the bass sound of the Auto-Play-Chord. The bass sound is emitted, even though the foot is not being used, just as if you were using your foot. Thus, even beginners can enjoy this wonderful feature. If this button is set to the ON position (lower position) by pushing it, as many as four bass sounds are selected according to the pressed chord on the lower manual and depending upon the kind of automatic rhythm selected, and they shift in order automatically.

And, if this button is turned off by pushing it again, only a bass sound which is 1 octave lower than the lowest sound of the chords pressed on the lower manual is emitted.

Note that this button functions only when the Auto-Play-Chord Pedal On-Off button is on; if it is off, this pedal variation button has no effect.

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 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 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.

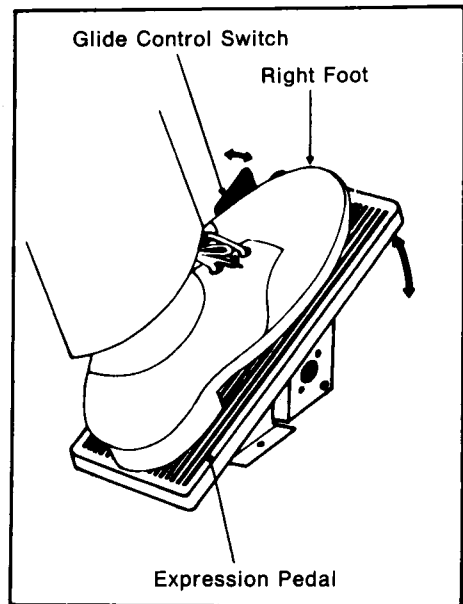
[Bossa Nova]

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

OTHER CONTROLS

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.



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.

Output Terminal

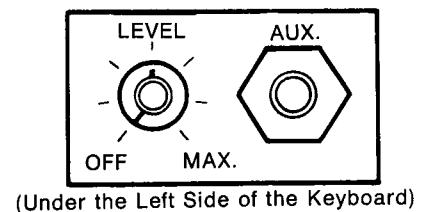
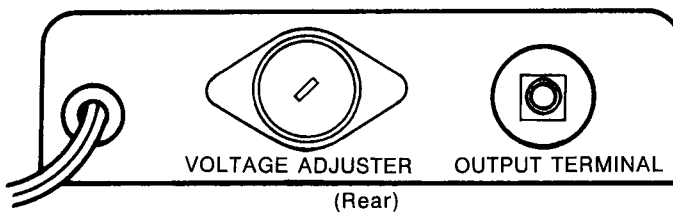
The OUTPUT TERMINAL can be connected with an external amplifier or tape recorder when you use this Electronic Organ in a large hall or to record the music of this organ without outside noises (output level 360 mV 600 Ω).

Input Terminal (AUX.)

The INPUT TERMINAL can be connected with a tape recorder etc., for the purpose of reproducing their sounds. It is located on the lower side of the Keyboard (input level 25 mV 20K Ω).

Input Volume Control (LEVEL)

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.



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.

Flute

Upper: FLUTE 8'

Lower: HORN

Pedal: BASS

AU CLAIR DE LUNE

Andantino con grazia

Oboe

Upper: OBOE 8'

Lower: CELLO

Pedal: BASS
SUSTAIN On-Short

SCENE
The Swan Lake, ballet suite

Moderato ed espressivo

Violin

Upper: STRING 8'

Lower: FLUTE

Pedal: BASS
SUSTAIN On-Long

ZIGEUNERWEISEN

Lento

Mandolin

Upper: MANDOLIN-Fast

Lower: HORN

Pedal: BASS, TUBA
SUSTAIN On-Long

Andantino

SANTA LUCIA

Cello

Upper: FLUTE 8'

Lower: CELLO

Pedal: BASS
SUSTAIN On-Long

Andante con moto

GREEN SLEEVES

Sleigh Bells

Upper: OBOE 8'

Lower: FLUTE

Pedal: BASS

TROIKA

Allegro

Organ Tone

Upper: FLUTE 16' FLUTE 8' FLUTE 4'

Lower: FLUTE, HORN

Pedal: BASS
SUSTAIN On-Long

Andante

SILENT NIGHT

Chimes

Upper: FLUTE 4'

Lower:

Pedal:

THE CHIMES OF WESTMINSTER

Grave

French Horn

Upper:

Lower: HORN

Pedal: BASS

DER FREISCHÜTZ

Adagio

English Horn

Upper: FLUTE 8' OBOE 8'

Lower: FLUTE, HORN

Pedal: Bass

THE ORIENTAL

Andantino

Light Music Tone

Upper: FLUTE 16' Perc. 4'-FULL-Short

Lower: FLUTE, HORN

Pedal: BASS, TUBA
SUSTAIN On-Long

WHEN THE SAINTS GO MARCHING IN

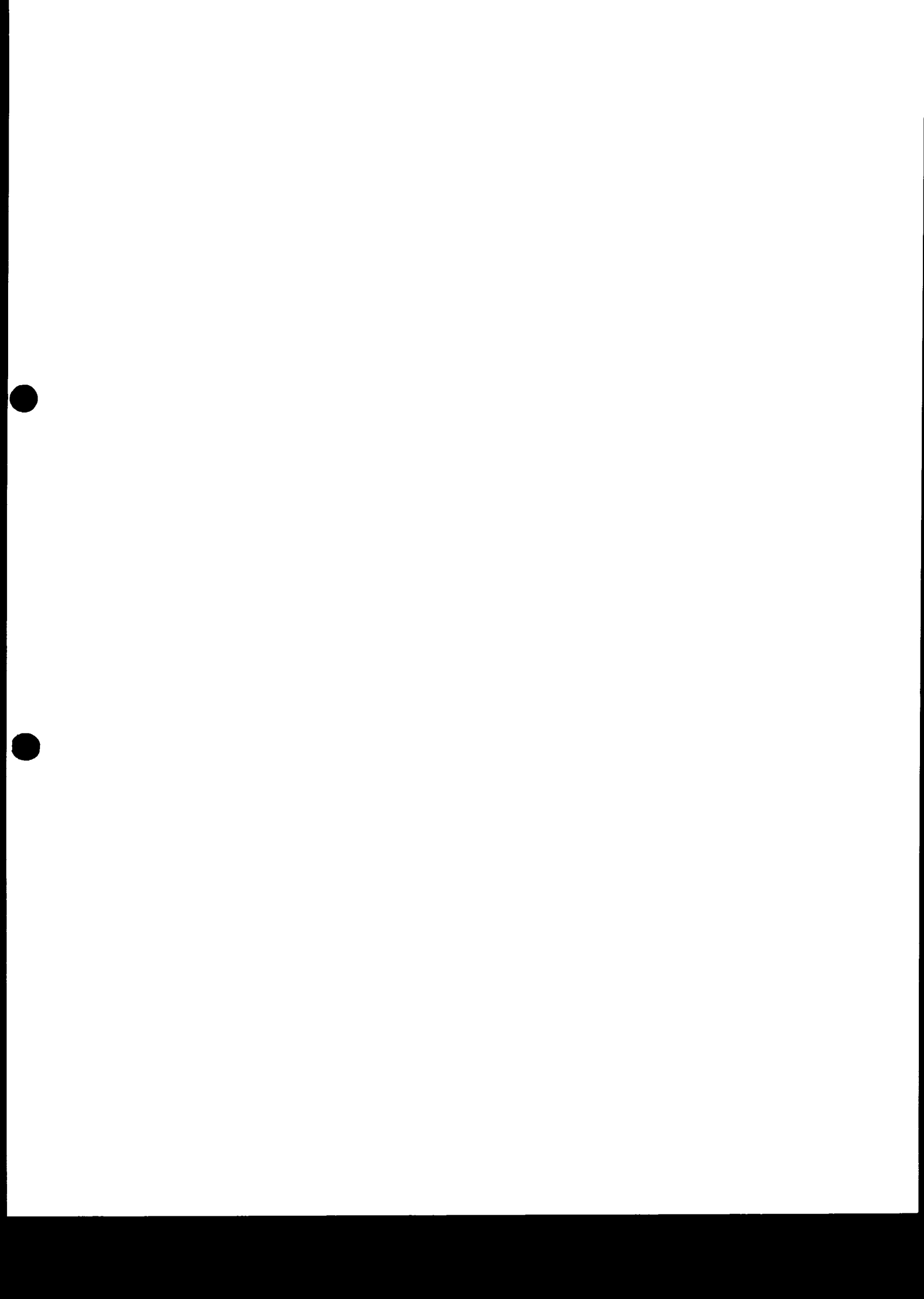
Brightly
No Chord (C)

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	44 keys	f-c	(3½ octaves)
	Lower Manual	44 keys	F-c	(3½ octaves)
	Pedal Keyboard	13 keys	C-c	(1 octave)
Tones:	Upper Manual	Flute 16', Clarinet 16', Flute 8', Oboe 8' String 8', Flute 4', Mandolin		
	Lower Manual	Flute, Horn, Cello		
	Pedal	Bass, Tuba		
	Effects:	Vibrato		
	Reverberation			
	Reverberation Select			
	Brilliance			
	Pedal Sustain.....On-Off, Short-Long			
	Pedal Volume			
	Manual Balance			
	Percussive Tone.....4', Normal-Full Short-Long,			
	Mandolin...Slow-Fast			
	Glide Control			
Automatic Rhythm:	Rhythm Selectors			
	Rock, Slow Rock, Fox Trot, Swing, Rumba, Cha-Cha, Bossa Nova, Waltz			
	Rhythm Volume	Rhythm Balance		
	Tempo Control	Tempo Lamp		
	Touch Start Switch	Synchronous Start		
	Touch Switch On			
Auto-Play-Chord:	Auto-Play-Chord Lower On			
	Auto-Play-Chord Pedal On			
	Auto-Play-Chord Pedal Variation			
Others:	Power Switch & Volume Control, Expression Pedal, Headphone Jack, Input Terminal (with Volume), Output Terminals, Pilot Lamp			
Output:	30W (Peak power)			
Speakers:	20 cm (8") x 2, 8 cm (3") x 1			
L.S.I.:	1			
IC's:	19			
Transistors:	178			
Diodes:	181			
Power Requirement:	50W AC 100/120/220/240V 50-60 Hz			
Cabinet:	Simulated Walnut			
Dimensions:	112 cm (43.7") [W] x 92.7 cm (36.6") [H] x 56.5 cm (22.4") [D]			
Net Weight:	64 kg (141 lbs.)			





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