

GUIDE
TO YOUR
YAMAHA
ELECTONE
MODEL E-3



NIPPON GAKKI CO., LTD.
Hamamatsu, Japan

SINCE 1887

ELECTONE E-3 PLAYING GUIDE

CONTENTS

	Page
Introduction	2
Here is your Yamaha Electone E-3	4
Keyboards	6
Tone levers	8
Voice presets	13
Effect levers	15
Effect controls	17
Effect selectors	19
Sound in motion	20
Percussion section	22
Touch vibrato.....	24
Pistons.....	25
Other controls	26
To fully enjoy your Electone	27
A word about Yamaha's new exclusive natural sound speaker	29
Care of your Electone	30
Do not be alarmed if	31
Specifications of model E-3	32
Playing the Yamaha Electone E-3	33
Posture	34
Technique	36

Introduction

We of Yamaha wish to thank you for selecting the E-3 Electone. We feel sure that you will realize many happy years of playing enjoyment with this instrument. Please read this guidebook for more complete enjoyment of all of the E-3's special characteristics. We would suggest that you occasionally re-read it from time to time as you progress.



The purchase of an organ of the caliber of the Yamaha Electone model E-3 is not a step to be taken lightly. You owe it to yourself to investigate what others can offer—and at what outlay. We feel that only by familiarizing yourself with all the facts will you be as sure as you should be that Yamaha's Electone E-3 is the organ for you.

We can, with perfect truth, say that the convenient tone controls and wealth of rich coupler effects mean that even a beginner can get the full, rich organ sound from the very first. But it would be no less honest to point out that to realize the fullest potential of this great deluxe console requires a solid grounding in organ musicianship.

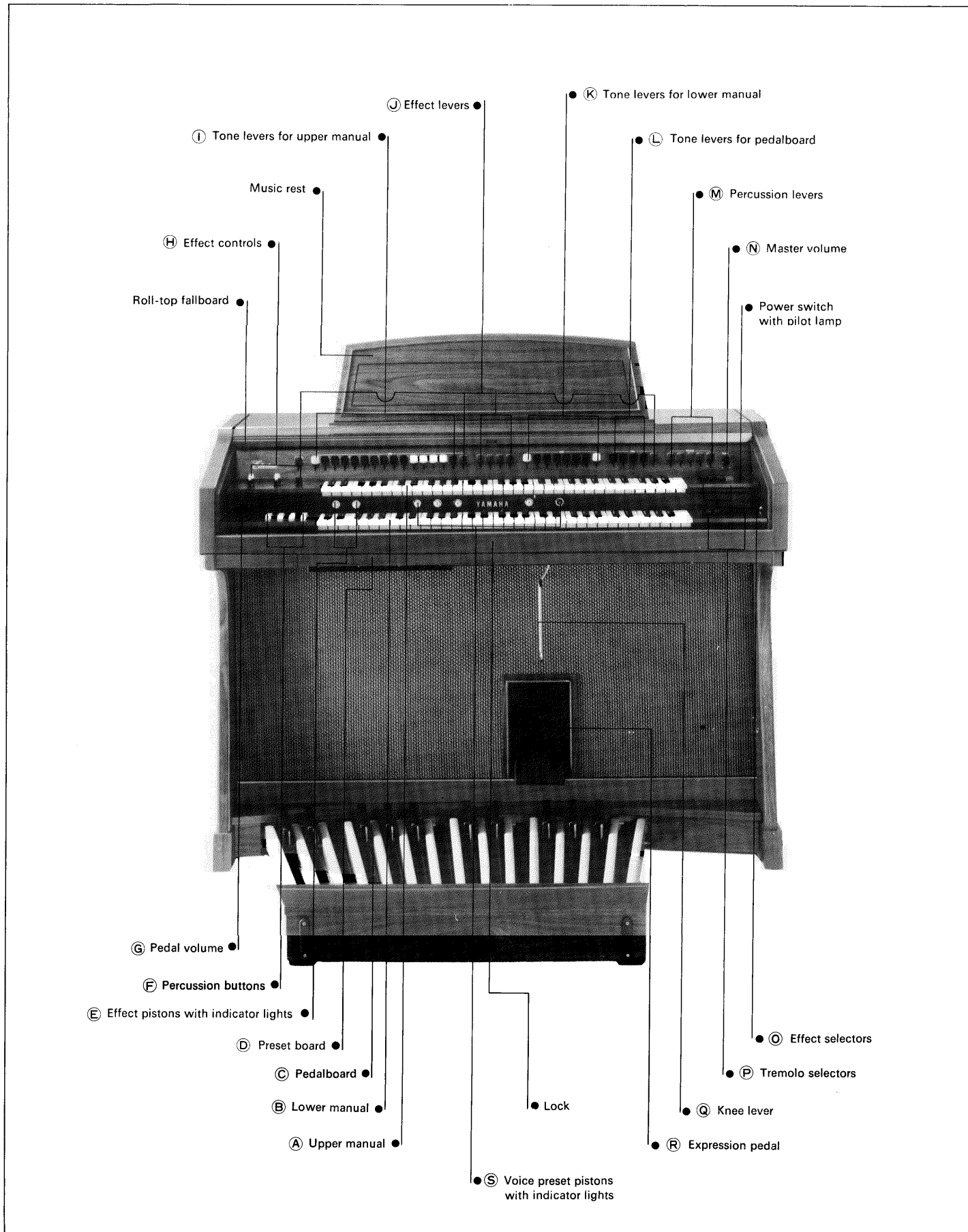
We will describe in detail the great range of voices, the two types of vibrato, the tremolo and chorus feature, the virtually unlimited variety of percussive effects and many more features, some of them Yamaha exclusives. But we assure the inspired musician that the E-3 goes far beyond even this rich scope. We want to point out the electronic advances in tone generator circuitry, and the two amplifiers providing tremendous tonal richness and power. But we realize that the creative musician wants more than just to sound like a stereo set.

For all these reasons, we feel it is most meaningful to emphasize the unique total experience which comes when you sit at the console of the Yamaha Electone model E-3. This total experience may be described in terms of three factors: a sound system that enhances your own creativity; a range of

voices that supplies your every want in versatility of interpretation; and controls which leave the instrument exquisitely responsive to a developed technique. We would therefore like to describe how, in providing so much more in each of these fields, Yamaha is able to bring to you, in the E-3, a deluxe console organ of unsurpassed versatility, which will satisfy the most demanding professional, while providing a continuing challenge and encouragement to the coming musician.



Here is your Yamaha Electone E-3

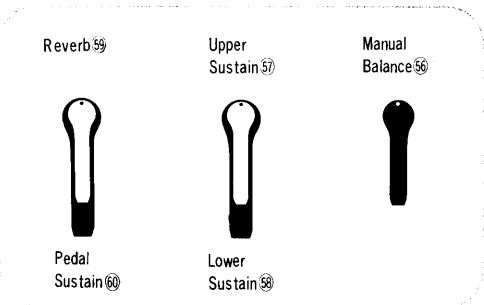


- ① Brilliance ●
- ② Flute 16' ●
- ③ Flute 8' ●
- ④ Diapason 8' ●
- ⑤ Clarinet 8' ●
- ⑥ Brass 8' ●
- ⑦ Oboe 8' ●
- ⑧ Kinura 8' ●
- ⑨ String 8' ●
- ⑩ Flute 4' ●
- ⑪ String 4' ●
- ⑫ Flute 2 2/3' ●
- ⑬ Flute 2' ●
- ⑭ Flute 1 1/2' ●
- ⑮ Flute 1' ●
- ⑯ Chimes ●
- ⑰ Coupler ●
- ⑱ Repeat ●
- ⑲ Repeat speed ●
- ⑳ Vibrato ●
- ㉑ Vibrato speed ●
- ㉒ Wood 16' ●
- ㉓ Wood 8' ●
- ㉔ Diapason 8' ●
- ㉕ Horn 8' ●
- ㉖ Cello 8' ●
- ㉗ Wood 4' ●
- ㉘ Cello 4' ●
- ㉙ Wood 2 2/3' ●
- ㉚ Bass 16' ●
- ㉛ Bass 8' ●
- ㉜ Tuba 8' ●
- ㉝ Bass 4' ●
- ㉞ Pedal attack ●
- ㉟ Lower I ●
- ㊱ Lower II ●
- ㊲ Pedal ●
- ㊳ Button I ●
- ㊴ Button II ●
- Master volume
- Power switch

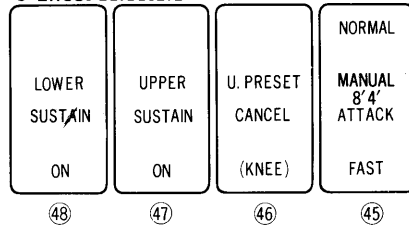


- ㉟ Preset cancel
- ㊱ Preset No. 4
- ㊲ Preset No. 3
- ㊳ Preset No. 2
- ㊴ Preset No. 1
- ㊵ Touch vibrato
- ㊶ Pedal solo
- Percussion buttons
- ㊷ Pitch control
- ㊸ Touch vibrato control
- Voice preset board
- Pedal volume

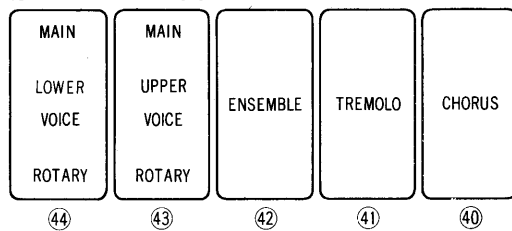
● Effect controls



● Effect selectors



● Tremolo selectors



Note: The circled numbers refer to explanatory sections in the text to follow.

Keyboards

The Yamaha Electone Model E-3 has three keyboards.

They are: Upper Manual Ⓐ 61 keys C - c₄ (5 octaves)

Lower Manual Ⓑ 61 keys C - c₄ (5 octaves)

Pedalboard Ⓒ 25 keys C₁ - c (2 octaves)

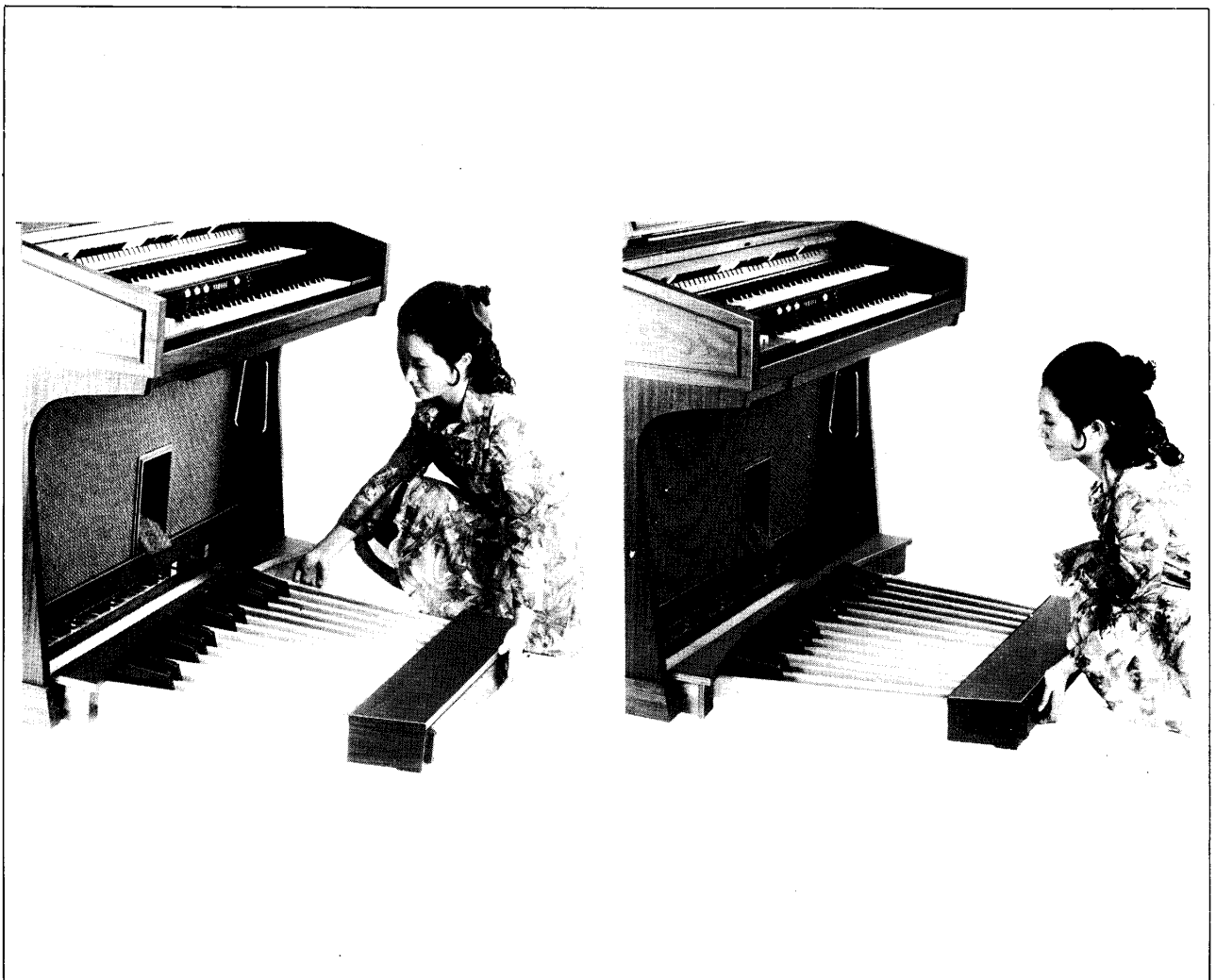
The keys of the two manuals are made of durable material and, in both touch and appearance, are designed for maximum ease of playing.

The pedalboard is of the 'radial arc' design, and pedal length is ample to allow 'heel-and-toe' playing. The pedalboard of the E-3 can be detached as required. Detach or replace according to the following procedure.

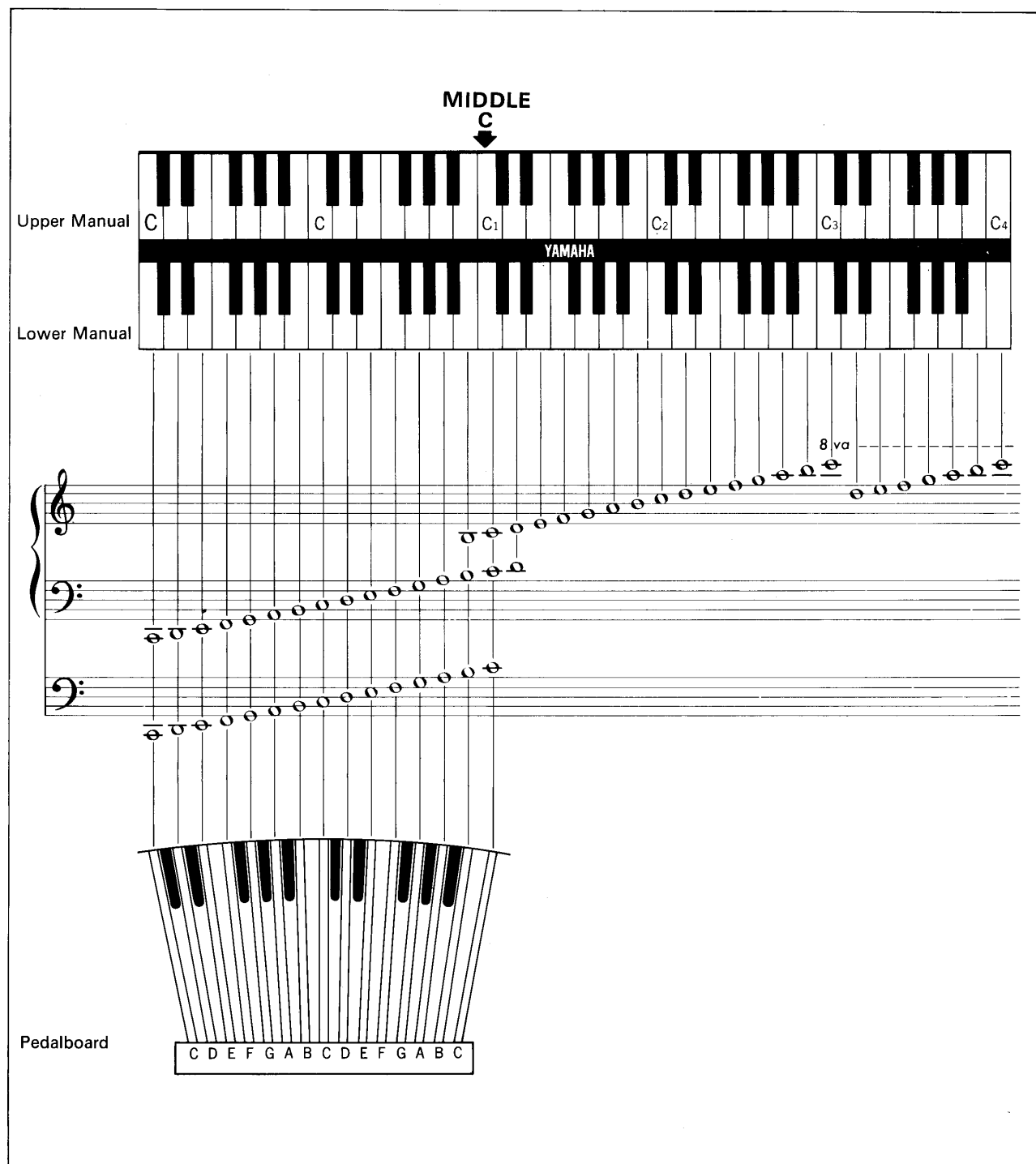
* To attach the pedalboard, fit the right and left sides into the round apertures on the right and left sides of the Electone cabinet and slide gently until the metal fasteners snap to. Make sure the fasteners are tight, in order to insure that the pedalboard remains firmly fixed to the cabinet in playing.

* To detach, lift the attached section of the pedalboard until it is free of the fasteners and draw it gently towards you.

The bench should be placed so that the foot rest faces the pedalboard (*see Posture, page 34*).



The Compass of the Electone E-3

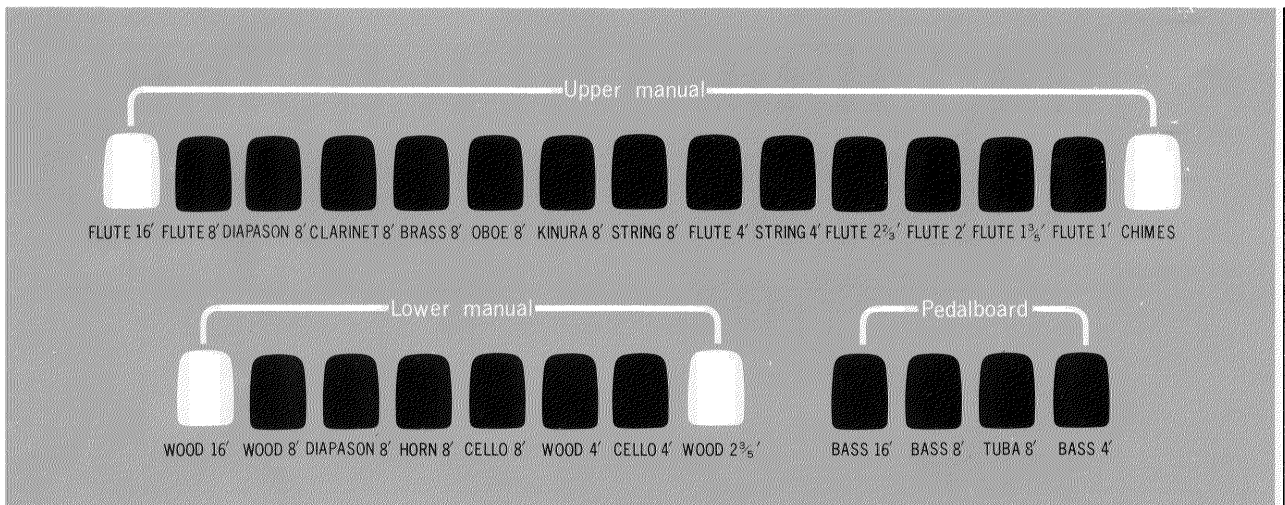


- Note:**
1. The notes shown in this chart are those obtained using the fundamental tone levers; i.e., the 8' tone levers on the manuals and the 16' levers on the pedals.
 2. The pedalboard notation is one octave higher than the actual notes.
 3. The use of tone levers in other than the 8' range will result in broadening the compass. (see *Harmonics*, page 9).

Tone Levers

On the control panel above the Upper Manual of the Electone are arrayed the tone levers. They are divided into three groups :

- (1) Upper Manual Tone Levers ① : 15 voices
- (2) Lower Manual Tone Levers ② : 8 voices
- (3) Pedalboard Tone Levers ③ : 4 voices

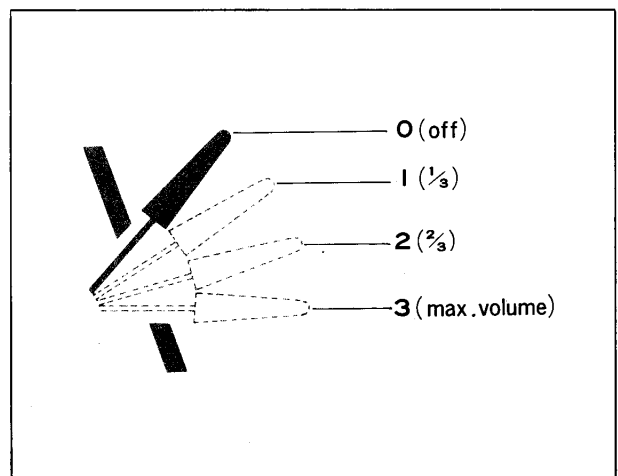


Yamaha's Exclusive Tone Lever System

Each tone lever serves to impart a distinctive tonal quality to each note played. However instead of the usual simple on-off action of other systems, the Yamaha tone lever offers the unique advantage of continuously variable control. This means that even the finest shadings of volume control can be obtained from each and every lever, surely an amazing advantage in breadth of expression and ease of playing. A further aid to precision is also provided : As the tone lever is depressed, two 'click-stop' positions are felt, where the lever catches slightly. These indicate $\frac{1}{3}$ and $\frac{2}{3}$ of the maximum setting attained when the lever is fully depressed.

This exclusive Yamaha tone lever system allows the combination of these tones giving a virtually limitless range of tone, with a full spectrum of rich harmonics. The Electone E-3 is thus able to satisfy even the most demanding professional organist.

The most important point in developing technique is thus the early and complete mastery of the possibilities offered by these tone levers.



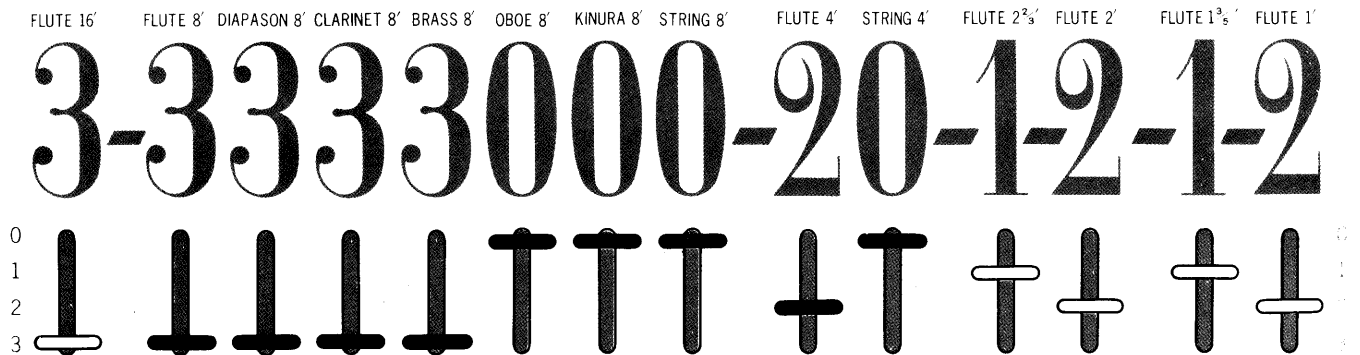
Therefore, make it a practice to always listen to good music and build your "taste" for sounds so that you can, playing as outlined above and freely using the Tone Levers, experiment in the creation of your own beautiful tone colors.

This use of the tone levers for volume control is also useful in adjusting the balance among the three keyboards.

Tone Lever Registration

Tone lever registration is given by numerical indications which show the click-stop position of each lever, as illustrated above. The indications are in

the order in which the levers appear on the control panel, with hyphens separating harmonic groups.



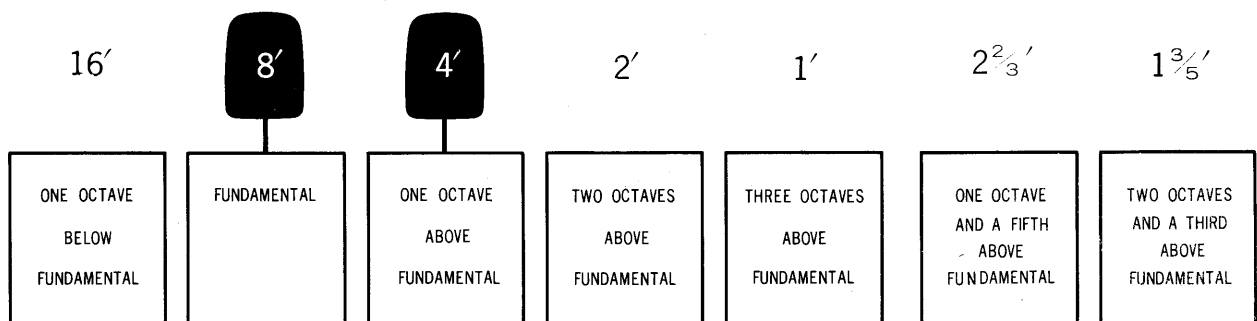
Harmonics

Tone levers are of several varieties: 8', 16', 2 $\frac{2}{3}$ ', etc., each variety having a different pitch. The 8' tone levers are 'fundamentals', that is, they have the same pitch as the written note (see the *Compass chart*, page 7). The others, called 'harmonics' are pitched

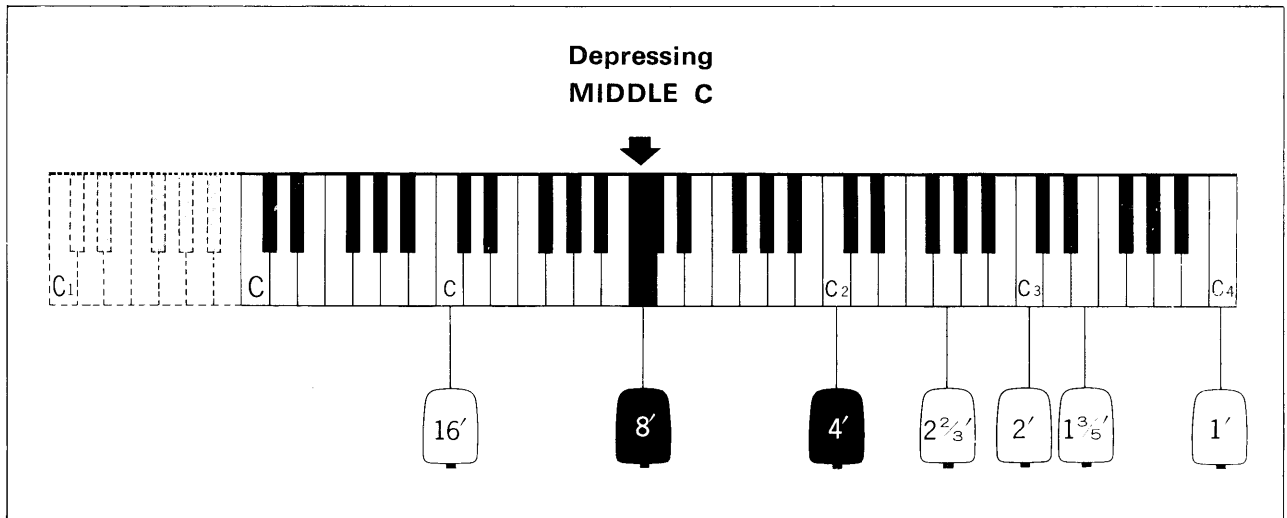
a certain interval above or below the fundamental. Harmonics can be further subdivided into consonants, at octave intervals from the fundamental and dissonants, separated by a third or a fifth from the fundamental.

Consonant Harmonics

Dissonant Harmonics



As an example of what this means when you play, let us see which note can be produced by using one of the tone levers and pressing the key of middle C (c_1). Pressing middle C and using the 4' tone lever, for example, will result in the same note as would be produced by pressing c_2 (using the 8' tone lever, i.e., its Fundamental).



It can thus be seen that the use of these harmonic levers actually results in increasing the Electone E-3's compass above and below that which is indicated by the keys and pedals alone.

The use of the $16'$ lever, for example, will extend the manuals down a further octave to C_1 . (see dotted line above). Similarly the $1'$ lever raises the tone three octaves but, in actual practice, the highest note on the E-3 is b_5 . Thus when a scale is continued upward beyond b_2 , the previous octave is repeated. This is no cause for alarm (see page 31). It is inherent

in the design of the E-3 and will cause you no inconvenience whatever when playing.

The major use of the harmonic levers, however is to increase the richness of tone—they are the spices that, when applied to the fundamental, will make a rich and savory performance. Let your ear be your guide to the creation of good music, always remembering not to overuse this effect and thus weaken its effectiveness.... using it primarily only for special effect.

Helpful hints

Flute $1'$ This sharp tone will increase brilliance, and is particularly effective when used with $8'$ tones on the upper manual.

Wood $2\frac{2}{3}'$ The strength of this tone can be varied in passages employing the Wood $8'$ or Horn $8'$ lever to attain a shifting pattern of tone color.

Kinura $8'$

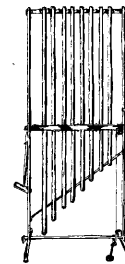
When VIBRATO is set to "O" and, using SUSTAIN, is used together with this lever, you can produce an amusing tone color.



Chimes ⑩

One of the upper manual tone levers which is neither a fundamental nor a harmonic. This green Chimes lever has two settings—on and off. When the lever is turned ON, and a key depressed, the nostalgic sound of real chimes is heard through the natural sound speaker. The effect of any tone levers in use when the Chimes are applied is temporarily cancelled, and reappears when the chimes are turned off.

One of the features of the E-3 is the wide three-octave span of this effect, which gives ample scope for its use. The range spanned by the chime effect is indicated by lines on the control panel above the upper manual.



Coupler ⑪

The E-3's Coupler lever really belongs with the effect levers to be described later but, because it is used with the tone levers, and has a very important influence on tone, it will be explained here.

The Coupler lever, like the Chimes lever, has a simple ON-OFF control, and performs the important and convenient function of increasing the voices of the upper manual. Specifically, when the coupler is used with 8' and 4' upper manual voices, it adds three consonant harmonics of the same voice.

These are:

Tone lever	Harmonics coupled
8'	16', 4', 2',
4'	8', 2', 1'

The use of the coupler lever produces instant augmentation of tonal depth and resonance and it absolutely essential to tone lever registration. For a more detailed explanation, see *Effect levers, page 15*.

Some Suggested Tone Lever Registrations

Of course the final choice in tone lever selection depends on the preference of the organist as to the tonal effects most suitable to the piece being played. However we have tried to set out some suggestions which may be found helpful in realizing the specific characteristics of the Electone E-3. The figure in brackets () indicates the applicable click-stop position.

1. Full Organ

Upper Manual: Flute 16'(3), Flute 8'(3), Diapason 8'(3) Clarinet 8'(3), Brass 8'(3),

Flute 4'(2) Flute 2 $\frac{2}{3}$ '(1), Flute 2'(2), Flute 1 $\frac{3}{5}$ '(1), Flute 1'(2)

Lower Manual: Wood 16'(3), Wood 8'(3), Diapason 8'(3), Horn 8'(2), Wood 4'(3), Wood 2 $\frac{2}{3}$ '(2)

Pedalboard: Bass 16'(3), Bass 8'(3), Bass 4'(1)

2. Registrations for the Upper Manual

1. Flute 16'(2), Flute 8'(1), Flute 4'(1), Flute 2 $\frac{2}{3}$ '(1),
Flute 2'(2), Flute 1 $\frac{3}{5}$ '(2), Flute 1'(3)
2. Flute 16', Flute 8', Flute 4', Flute 2', Flute 1'
3. Flute 16' Flute 2 $\frac{2}{3}$ ' Flute 1 $\frac{3}{5}$ '
4. Flute 8' Flute 2 $\frac{2}{3}$ ' Flute 1 $\frac{3}{5}$ '
5. Flute 8' Flute 2 $\frac{2}{3}$ ' Flute 1'
6. Flute 4' Flute 2 $\frac{2}{3}$ ' Flute 1 $\frac{3}{5}$ '
7. Flute 16' Flute 1'
8. String 8', Flute 4', Flute 2 $\frac{2}{3}$ ', Flute 1 $\frac{3}{5}$ ', plus Coupler
9. Kinura 8' plus Coupler (using vibrato or sustain or tremolo
speaker, Bril 3)
10. Kinura 8', String 8', String 4', plus Coupler (Bril 3)
11. Kinura 8' using sustain (Vib. O)
12. Chimes (plus Coupler) using Chorus effect

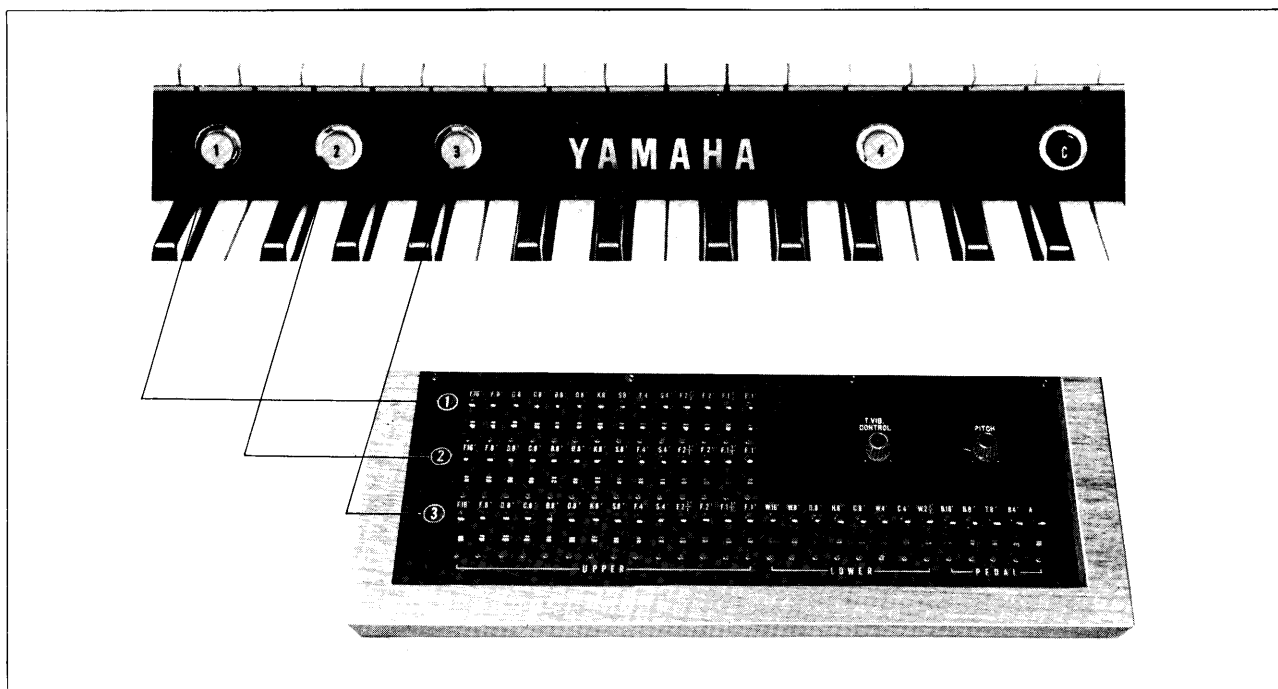


3. Registrations for the Lower Manual

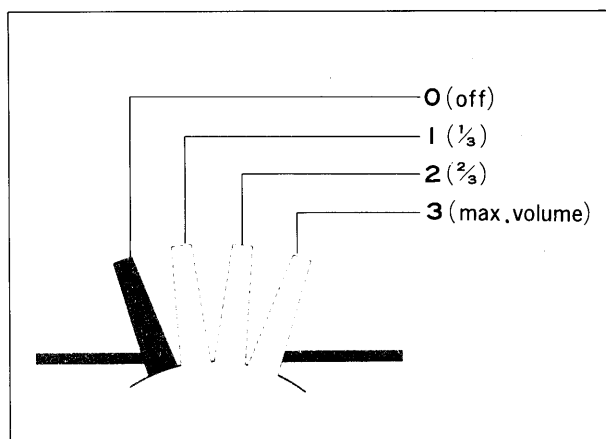
1. Horn 8'(3), Wood 2 $\frac{2}{3}$ ' (1 or 2) for counter-back
2. Example 1. plus Cello 8', Cello 4' for block chord



Voice Presets



This photograph shows the drawer type Voice Preset Board ① below the lower manual to the left. The numbers ①, ② and ③ indicate the three rows of miniature tone levers which allow the presetting of three voices. These miniature levers are also continuously variable like the control panel levers duplicating that unique feature, and are arranged in exactly the same order for convenience in setting except for the absence of a Chimes lever. The letters above each preset lever indicates the voice; F for Flute and so on.



These pistons are used to preset upper manual voices.



This piston serves to preset all voices on upper and lower manuals and on the pedalboard, as well as the Pedal Attack effect lever (see *Pedal Attack*, page 16). Each of these preset combinations is linked to a correspondingly numbered piston, so that by simply pushing the appropriate piston, you can select the desired preset combination instantly. Identification of the combination in use can be made at a glance, since each piston has a built-in indicator lamp which lights when it is pushed. When a second piston is pushed, the indicator light for the first piston will go off and the light for the second will go on.



This is a factory set combination scientifically composed to bring out fully the Electone E-3's characteristics. There are thus no corresponding levers on the Preset Board.



Pushing this piston returns the organ to the settings made on the main control panel, and extinguishes the indicator light in the previously used preset piston.

In addition to these four preset combinations, the Yamaha Electone E-3 also features an Upper Preset Cancel Tablet ⁴⁵ which, by allowing free changeover between the preset voices and the tone lever control, gives the varied choice of five voice settings. For more about this important feature, see *Upper Preset Cancel*, page 19.

Helpful hints

In order to prevent sudden changes in organ volume when instantaneous changeover is made with the Preset Pistons, the miniature preset levers should be positioned so as to line up the acoustic levels (①, ②, ③ and ④). As a guide, it is a good idea to try to keep the numerical total of each row of miniature tone levers the same as the numerical total of the click stop positions for the respective Manual's control panel levers. Each total then, for example, of the first two rows (and the Upper Manual portion of the third row) should ideally equal the total of the settings on the Upper Manual control panel; the same is true for the Lower Manual portion of the third row and the Lower Manual control panel, etc.

Some Suggested Preset Registrations

Brackets () indicate click-stop positions.

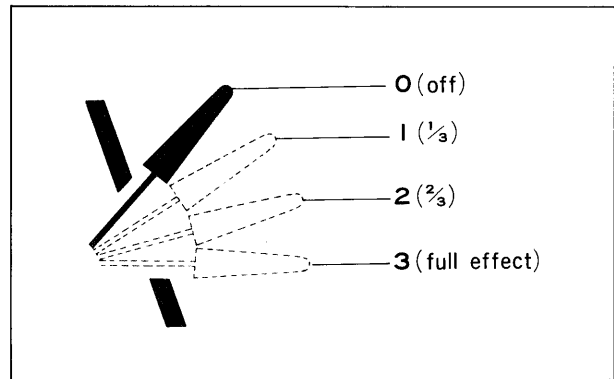
- ① Upper: Flute 16'(1), Flute 8'(1), Flute 2²/₃'(1), Flute 2'(2), Flute 1³/₅'(2), Flute 1'(3)
- ② Upper: Flute 16'(3), Flute 2²/₃'(3), Flute 1³/₅'(3)
- ③ Upper: Flute 8'(3), Flute 4'(2), Flute 2²/₃'(3), Flute 2'(2), Flute 1³/₅'(3)
Flute 1'(3)
- Lower: Wood 8'(1), Horn 8'(2), Wood 4'(2), Wood 2²/₃'(3)
- Pedals: Bass 16'(2), Bass 8'(2), Bass 4'(1)

In addition, free use may be made of the Tone Lever Registrations suggested on page 12, sections 1 and 2 (1)-(8). Always keep in mind, however, that balance must be maintained among the various preset combinations.



Effect Levers

The effect levers ④ of the Electone E-3 provide a wide range of tonal effects which add to the breadth and variety of possible interpretations. These levers have the same operation as the tone levers and allow the organist to vary the depth or speed of their effects according to their stop positions, as illustrated.



Brilliance ①

This is the lever used to obtain the difference in mood necessary in the performance of quiet, sombre works or in the production of brighter, richer tonal effects. When this lever is set to off, a softer, more mellow tone is imparted, reminiscent of muted violins. An example of a work suited to this type of tonal treatment would be Sarasate's 'Zigeunerweisen'. The effect can also resemble the

distant sound of a flute played pianissimo. On the other hand, depressing this lever produces a progressively richer, brighter tonal quality. When applied to 8' voices with coupled harmonics, the brilliance lever provides the possibility of a light and dazzling treatment both of a single melodic line, and of chords.

Coupler ⑱

Alone of the Effect Levers, this one has only on and off settings. It serves to augment the 8' and 4' voices of the upper manual, adding to them three consonant harmonics in the same voice, as shown in the table below.

An important auxiliary function of this coupler lever is in concert with the Manual Sustain, which usually affects only the voices controlled by black (8' and 4') tone levers. Thus, when the 8' and/or 4' tone levers are used with the coupler lever, the sustain effect will extend to all of the harmonics produced by the coupler lever at that tone lever setting (see *Sustain*, page 18).

Tone lever	Harmonics coupled
8'	16', 4', 2'
4'	8', 2', 1'

This means that when sustain is applied to a setting of 8' and 4' voices plus Coupler, it affects 16', 8', 4', 2' and 1' tones.

When, for example, the Coupler is applied with the Clarinet 8' voice, it gives Clarinet 16', Clarinet 4' and Clarinet 2' harmonics which cannot be obtained using the tone levers alone. Similarly when more than one tone lever is used, the harmonics are applied in each of the voices. It can thus be seen that this lever gives unparalleled convenience in achieving complex tonal combinations with a single setting. For specific examples of usage, see *Tone Lever Registrations on page 12*.

Tone levers in use	Sustained notes
Coupler not in use	8', 4'
8' tone levers+Coupler	16',8',4',2'
4' tone levers+Coupler	8',4',2',1'
8',4' tone levers+Coupler	16',8',4',2',1'

This means that in contrast to the conventionally weak sound of electronic organ sustain, the E-3 offers a new depth and richness of sustain effect which is unique.

Repeat ⑱

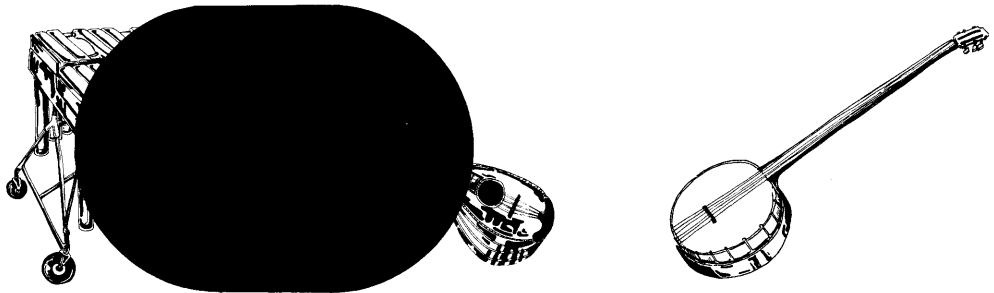
Everyone will enjoy the fun of the many thrilling and exciting sounds that are possible with repeat percussion. Use of this lever 'chops up', so to speak, notes played on the upper manual, deriving a double-strummed effect similar in sound to the mandolin. The lever gives a continuous spectrum of strength adjustment.

Repeat Speed ⑲

Used with the Repeat lever, it controls the speed of the strumming effect, which increases as the lever is depressed. The variable speed control permits authentic reproduction of a banjo's 'plunk-plunk-plunk,' the exciting sound of the mandolin, the roll of the marimba mallets. If used with different degrees of vibratos and sustains, an unusual variety of effects is yours to enjoy.

Helpful hints

1. When using the repeat speed lever at regular speed, the tremolo effect may be used at the same time. When using repeat speed lever in full however, the rotary speaker should not be used.
2. The sound of the vibraphone can be simulated with the Flute 8' voice by applying the fastest repeat speed, setting the repeat lever at 1—1.5 and using sustain.

**Vibrato** ⑳

The use of vibrato increases the emotional quality of the tone and adds a brisk and lively air to passages of relative simplicity. Its depth is controlled by this lever. The sensational Touch Vibrato, a Yamaha exclusive, is a considerably more sophisticated effect and is dealt with separately on page 24.

Vibrato Speed ㉑

Used in concert with the Vibrato lever, it controls the oscillating speed of the vibrato, which increases as it is pulled down.

Helpful hints

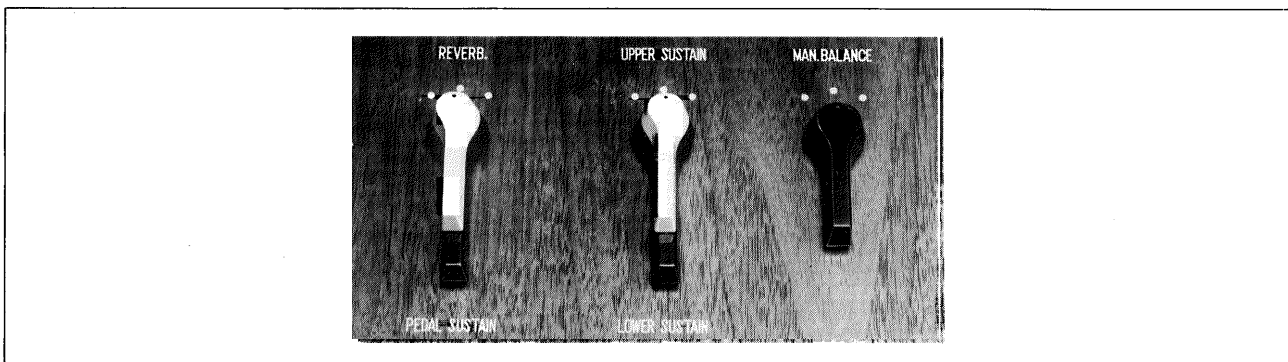
1. The Vibrato lever can normally be left at the second click-stop position, and speed adjusted from that basis.
2. A setting of Vibrato (2) and Vibrato Speed (0) is particularly effective in works of slower tempo.

Pedal Attcak ㉒

By accenting the initial portion of each note, this lever provides an effective rhythmical element, reminiscent of the string bass played pizzicato. This effect is particularly effective in rhythmic works. Depressing the lever gradually increases the strength of the effect.

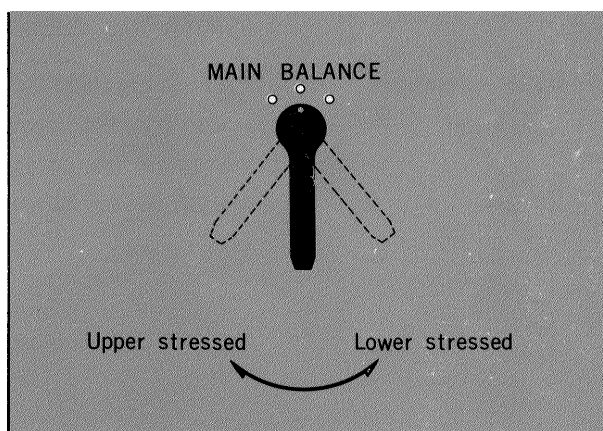
Effect Controls

The black and white knobs situated to the left of the upper manual are the effect controls ⑤. Of these, two are dual controls, governing reverb/pedal sustain, and upper/lower sustain. These five controls, shown below, are all continuously variable for the maximum in expressive freedom.



Manual Balance ⑤⑥

The manual balance control governs the relative strength of the upper and lower manuals, and is normally left in the center position. But when it is desired to strengthen one manual—for example, when the upper manual plays the melody and the lower its accompaniment—the knob may be turned (in this case to the right) to emphasize the upper manual. Similarly, the balance knob is turned to the left when a strongly played accompaniment is required or when the melody is played on the lower manual and requires greater emphasis.

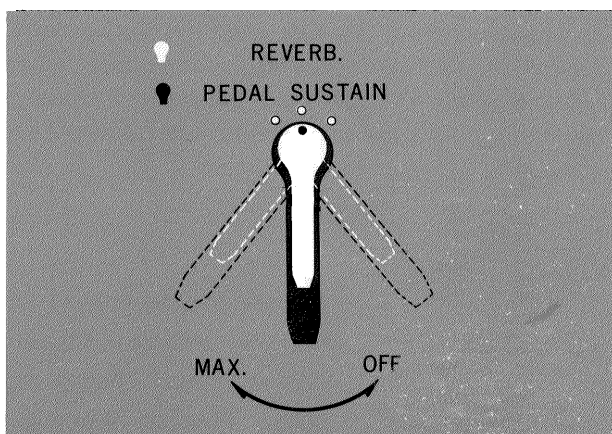


Reverb ⑤⑨

Reverberation is the quality that is imparted to musical sound as a result of the acoustical properties of a large auditorium or hall. The use of this effect, therefore, allows you to attain this grandeur at will, evoking the aura of professional performance in your own living room. The knob serves to regulate the strength of the reverberatory effect, softer or louder as the music requires.

Pedal Sustain ⑥⑩

The pedal sustain control provides a sustain effect for all the voices of the pedalboard, whether 16', 8' or 4'. The length of the effect can be controlled as illustrated. If used together with the pedal attack lever ④, it produces a real base tone played pizzicato.

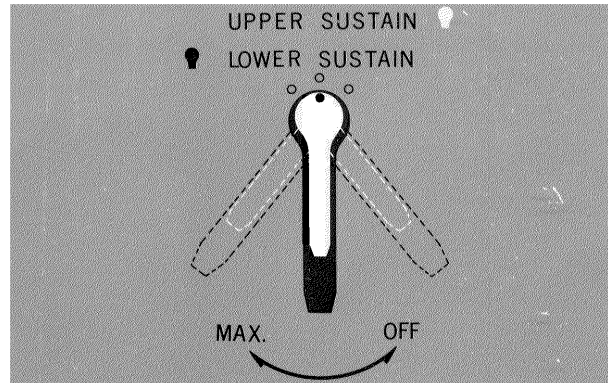


Manual Sustain

Since the Yamaha Electone E-3 incorporates separate sustain controls for the upper and lower manuals, it permits sharp tones to be produced simultaneously with smoother treatment, thereby further increasing the expressive range.

Each of the two manual sustain effects is in the form of a three-way control with the controls (57) and (58) linked to corresponding sustain selectors (47) and (48).

Their respective functions may be outlined as follows:



Sustain Controls

(57) (58)

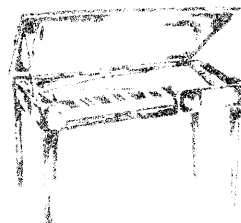
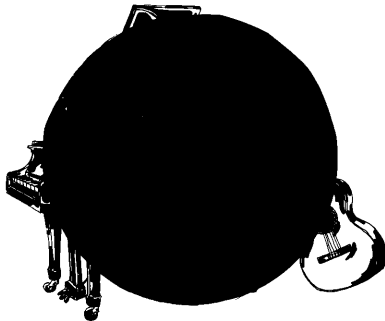
These controls are used to set the maximum possible sustain, and may be set before or during the performance. The controls are turned fully to the left for no sustain, and progressively to the right to lengthen the effect.

Sustain Selectors

(47) (48)

These tablets are used before or during the performance for instantaneous implementation or stop of the sustain effect preset by corresponding sustain control.

Manual sustain can be applied to all voices governed by black (8' and 4') tone levers, over the full 61-key range of both manuals.



A feature of the E-3 is that when the coupler lever (17) is used with these black tone levers, the sustain affects all of the coupled harmonics. Thus for example when the Flute 8' and coupler levers are combined, the Flute 16', Flute 8', Flute 4' and Flute 2' tones are all prolonged, giving a new depth and richness to the sustain effect. For more about this exciting feature, see *Coupler Lever, page 15*,

Helpful hints

Sustain may be applied selectively to only one manual at a time, or it may be applied to both manuals using different voices on each, for example:

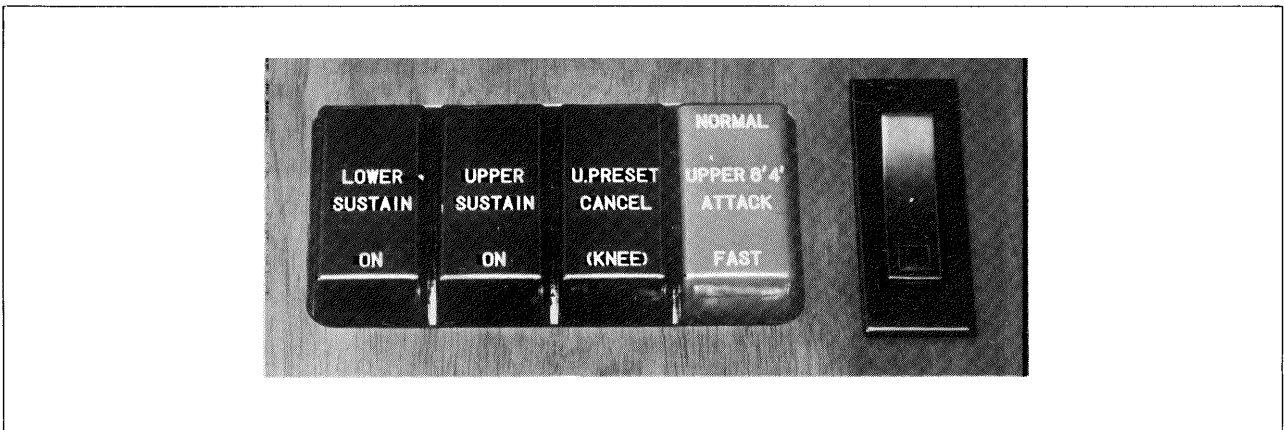
Upper Manual: String, oboe or kinura

Lower Manual: Wood or horn

This will give an exciting tonal variation and, if the coupler lever is used with the upper manual and the vibrato or tremolo effect added, the result is even more moving.

Effect Selectors

The tablet controls situated to the right of the upper manual are called Effect Selectors © . They are all of a two-position design for easy selection while playing.



Manual Attack ④

Controlled by the red tablet, this effect gives greater definition to the beginning and end of notes played on the 8' and 4' voices of both manuals, imparting new clarity and vigor to jazz and other lively pieces. Please note that this attack effect cannot be obtained when the manual sustain is on.



Upper Preset Cancel ⑥

This tablet works in a dual arrangement with the knee lever © to allow instantaneous switching during the performance from the preset combinations to those registered on the control panel tone levers. It thus gives the E-3 a range equivalent to that of a full three-manual organ, the only organ in its class with this advanced feature.

If the tablet is first set to on, changeover can be

made from preset (①~④ selected by piston) to control panel by increasing pressure on the knee lever, and vice versa by releasing the pressure. Thus by registering contrasting voice combinations on tone levers and preset board, you can achieve a dramatic 'conversation', just as if the E-3 were a full three-manual organ. (see *Voice Presets*, page 14).

Upper Sustain ⑦

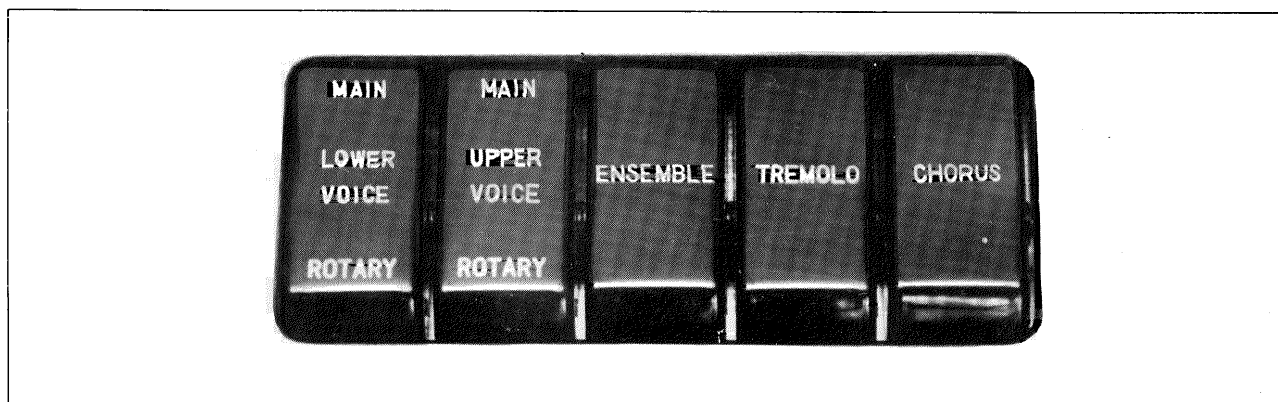
The explanation of this tablet is given under Manual sustain, page 13.

Lower Sustain ⑧

This tablet is similarly explained on page 18.

Sound in Motion

A rich, vibrant rush of sound that can only leave you wondering whether its source is really a single instrument! This is the tremolo which imparts a vibrancy subtly different from that of the vibrato to all notes played on the Yamaha E-3.

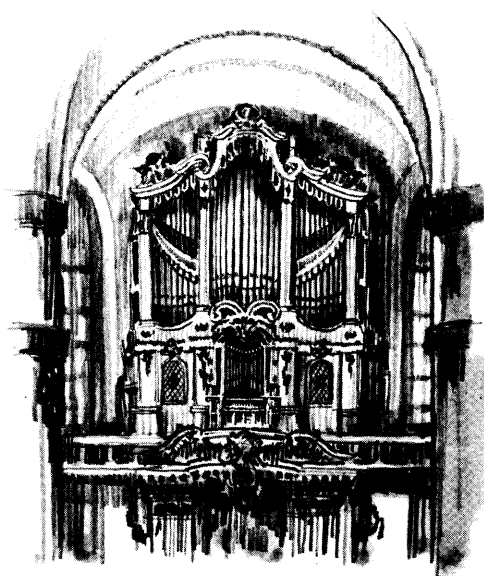


This tremolo is produced by a unique design which features a smaller version of Yamaha's unique *Natural Sound Speaker*, already well known for its revolutionary tonal realism.

The uniqueness of this construction is such that instead of the rotating acoustic reflector of conventional systems, a small Natural Sound Speaker itself rotates. Rotation at either one (Chorus) or seven (Tremolo) times per second is possible so that the use of this effect lends itself equally well to light popular music and to the grandeur and magnificence of religious compositions. The smooth, rich tones which originate from the Yamaha Electone E-3 create a circle of sound which fills any room to overflowing.

In addition, the Electone E-3 also has an Ensemble effect, and a control arrangement whereby any of the three effects—chorus, tremolo or ensemble—can be applied selectively to only one of the manuals.

The Tremolo selectors ② which accomplish this are the black tablets to the right of the lower manual. Each has a simple ON-OFF type action which allows quick operation while playing.



Lower Voice ④④ & Upper Voice ④③

These tablets channel the sound from the two manuals into the main speakers or the rotary speaker, as desired.

Ensemble ④②

The use of this tablet with the voice tablets above allows sound to flow from both rotary and main speakers simultaneously.

Tremolo ④①

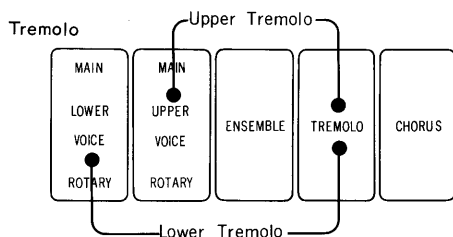
Turning this tablet on turns the rotary speaker at seven revolutions per second.

Chorus ④①

This tablet turns the rotary speaker at one revolution per second.

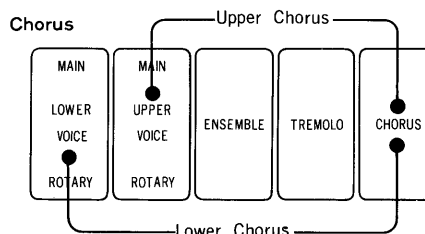
Producing the Tremolo Effect

The tablets are set as shown in the figure below (voice and tremolo tablets all on). The use of both voice tablets will apply the tremolo effect to the whole organ. Moving and natural pulsations of sound lend greater depth, fuller meaning to serious passages, and add a touch of genius to pieces which have perhaps lost some of their original freshness. This effect is especially useful for rich, tremulant work.



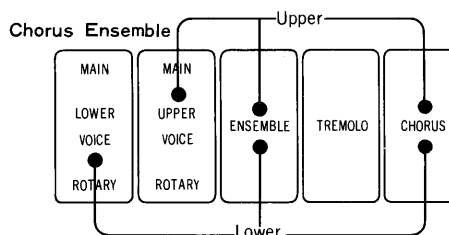
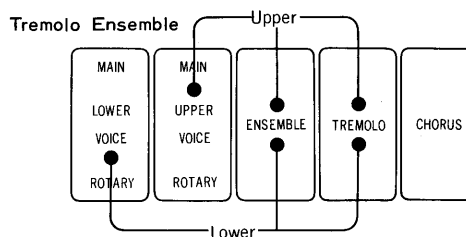
Producing the Chorus Effect

Voice and chorus tablets are employed as in the figure below. The use of both voice tablets will apply the Chorus effect to the whole organ, providing the dignity and solemnity of choral voices which is so effective in the performance of sacred music or other works of slow tempo.



Producing the Ensemble Effect

When the ensemble tablet is used in combination with either the Tremolo or Chorus setting, sound flows from both the rotary and main speakers in an 'ensemble' effect which not only enhances tonal richness, but also acts as a softer, medium strength Tremolo or Chorus.



Helpful hints

1. Slower pieces:

Play melody on the upper manual without tremolo.

Play chords on the lower manual with tremolo.

2. A softer treatment of slow pieces indicates the reverse:

Melody on the upper manual with tremolo.

Chords on the lower manual without tremolo.

3. In pieces of ordinary tempo:

Melody on the upper manual with tremolo.

Counter-back on the lower manual without tremolo.

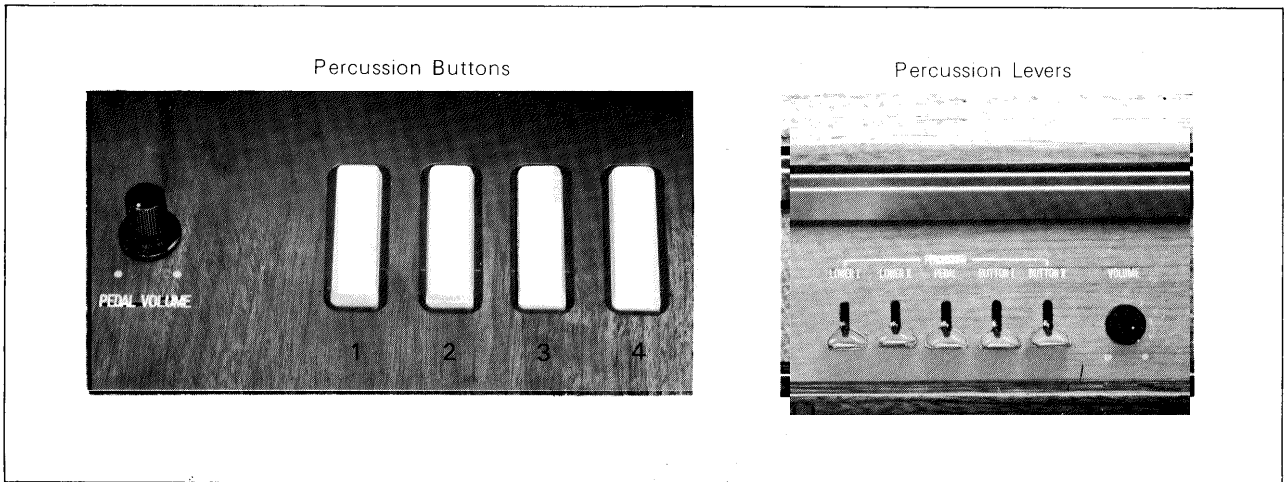
4. Up-tempo pieces:

Chop notes—i.e., *play with strong staccato*—or block chords on the upper manual with tremolo.

Rhythm and chords on the lower manual without tremolo.

Percussion Section

The E-3 presents the most varied range of percussion effects available to the Electone organist. The pedal percussion lever overlays notes on the pedals with a clear, stirring cymbal effect, while the Lower I and Lower II levers provide for pinched and brushed cymbal effects on lower manual notes. The two BUTTON (I & II) percussion levers can be used either individually or in combination and, as a result, the percussion buttons can be used to apply a wide range of instrumental and novelty effects, entirely independent of the manuals and pedals.



Percussion levers [Ⓜ]

- Lower I [Ⓢ]
- Lower II [Ⓢ]
- Pedal [Ⓢ]

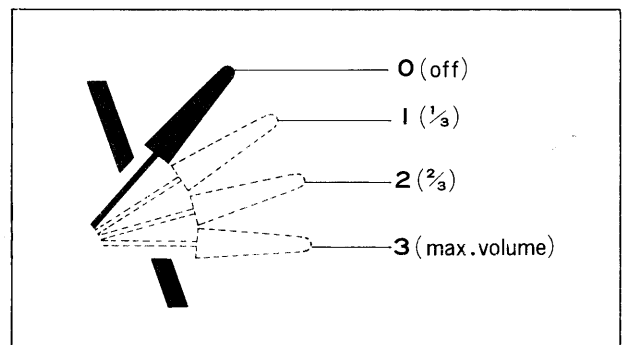
Percussive sounds

- Pinched cymbal (or maracas)
- Brush cymbal
- Pedal cymbal

	1	2	3	4
Button I [Ⓢ]	Conga	Bongo	.Claves	Brush snare
Button II [Ⓢ]	Crash cymbal	Triangle	Novelty I	Novelty II

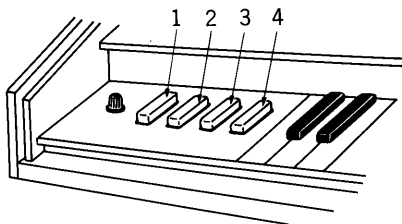
What is most useful is that the volume of the percussion effects can be varied independent of the melody according to the click-stop position of each lever, bringing a new dimension of realism to your interpretation.

It can easily be seen that in accenting martial music or in playing up-tempo jazz or Latin music, the presence of these percussion effects is essential to the achievement of a natural rendition.

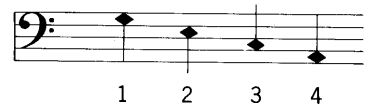


Helpful hints

The percussion buttons allow you to make and accentuate rhythms with the left hand by striking two or more buttons in sequence. This will mean that the left hand is unavailable for chording and, if only the bass sound is used, the harmony will be insufficient. The right hand is therefore used to compensate. When playing in an ensemble or accompanying other melodic instruments, use the left hand with the percussion buttons for rhythm and the right hand on the upper or lower manual for chords. The following are a few of the many possible effects which may be practiced to add to your musical enjoyment. The numbered references to the buttons follow the table on page 22.



- 1—fourth space
- 2—third space
- 3—second space
- 4—first space



Using the 'Button I' lever

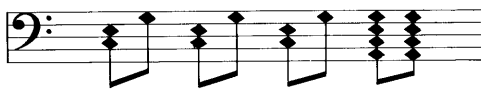
Beguine



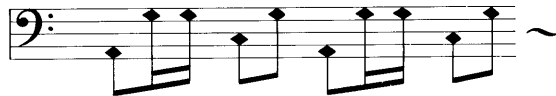
Rumba



Cha-cha or Mambo

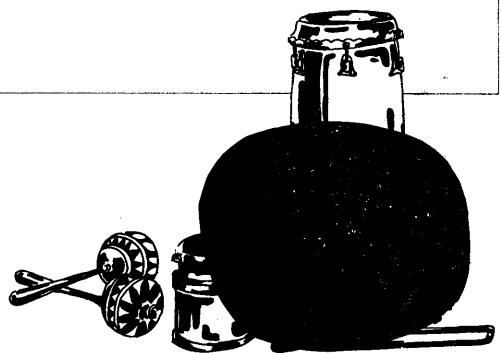
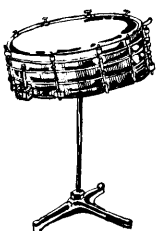


Baion



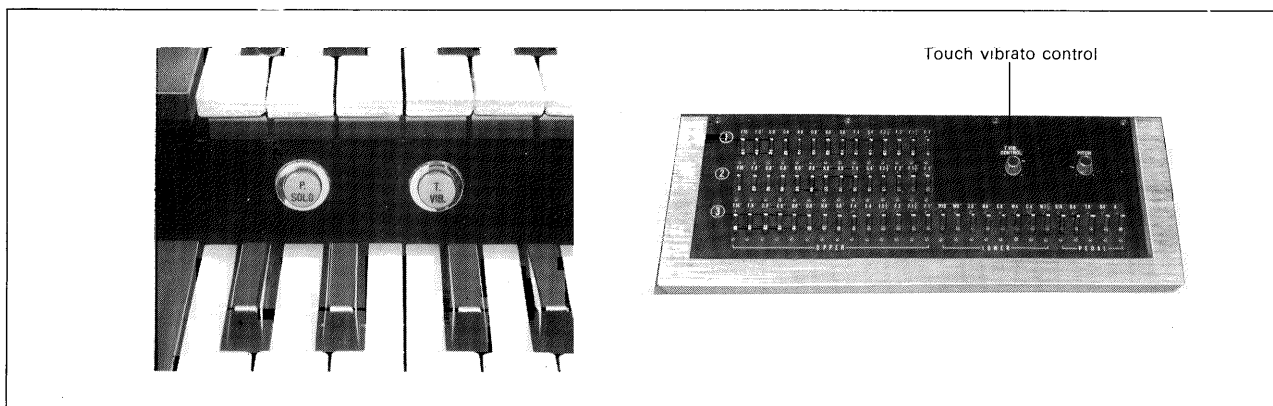
Using the 'Button II' lever

Samba or Bossa nova



Touch Vibrato

In the E-3, Yamaha offers what no one else can—true vibrato that will thrill you with its sheer magic; will enthral listeners with its vibrant life. No other electronic organ at any price can match this natural tonal beauty, because no other vibrato effect is produced by the lateral vibration of the hand, just as in the violin, cello or clarinet. This is the 'Touch Vibrato', the most revolutionary electronic triumph in organ history. Now are opened to you almost endless horizons of expression, all achieved with breathtaking authenticity.



The right one of the two effect pistons ⑤ shown in the photo is the Touch Vibrato piston.

When the piston ⑤ is turned on, it supersedes the Vibrato ⑳ and Vibrato Speed ㉑ levers on the control panel. Instead, vibrato can be applied to any upper manual key by the lateral vibration of the hand, and its speed will correspond exactly to the hand's vibration. This is the Touch Vibrato, a revolutionary effect which is exclusive in the Yamaha Electone E-3. Through it, the organist obtains the vital personal touch which has always been characteristic of the violinist, and can communicate emotional nuance to the audience as never before.

Using the Touch Vibrato Control ⑥ on the Preset Board, the player can adjust the Touch Vibrato to the desired strength.

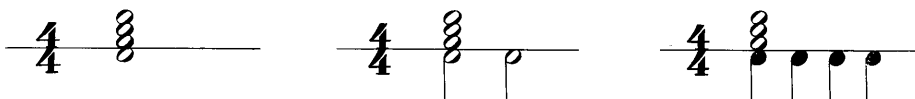
The touch vibrato is cancelled when you push the piston again. The touch vibrato can really shine in passages where a single note forms the melodic line.



Helpful hints

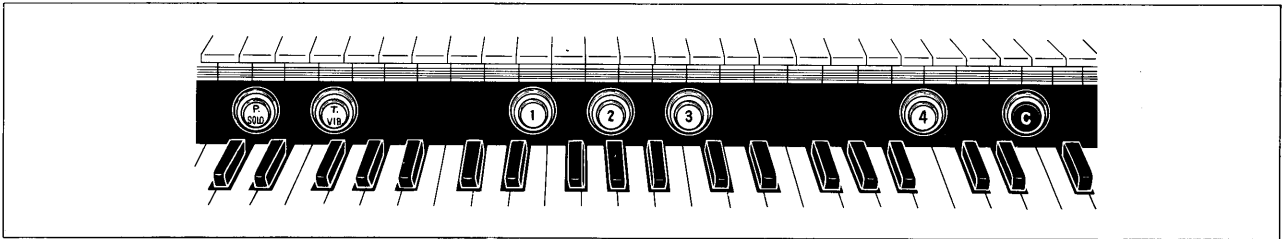
1. Too heavy a touch may cause fluctuation in the pitch of the note to which vibrato is applied. Try always for a light, natural fingering.
2. Touch vibrato playing will be easier if the rhythm from the left hand and foot is kept as simple as possible.

For example:



Pistons

The seven pistons, located along the vertical plate that separates the upper and lower manuals, are divided into two groups for control of Voice Presets (P), and Effects (E).



Voice Preset Pistons (P)

There are five of these, marked 1, 2, 3, 4, and C, and they serve to apply or cancel the voice combinations which are registered on the Preset Board (P). A more detailed explanation will be found under Voice Presets, page 13.

Effect Pistons (E)

There are two of them, marked T VIB and P SOLO. In each of them an indicating lamp lights when the piston is pushed and is extinguished when you push the piston again to release it.



Touch Vibrato 54

See the touch vibrato, page 24



Pedal Solo 55

In addition to providing rich depth of effect when desired, the pedals can be freed by the exclusive 'pedal solo' setting, to come into the limelight carrying the melody or providing countless other percussion or slap bass effects.

Another Electone exclusive...when the pedal solo piston is activated, the bass pedals become an independent organ division, governed by an independent volume adjustment (G). The expression pedal (R) controls the manuals separately, allowing unlimited possibilities and versatility for pedal solo playing.



Helpful hints

1. This feature is particularly useful when the piece requires highly spirited use of the expression pedal for the manuals.
2. Overuse, however, can become disadvantageous musically, so that this feature should only be used when a particularly noticeable effect is desired. For example, it is effective when playing four-beat bass, with counter-back on the lower manual and an *ad lib* upper manual.

Other Controls

Master Volume [Ⓝ]

This knob determines the maximum volume obtained from the Electone, and can be varied as desired.

Expression Pedal [Ⓝ]

Expressive shading within each piece and the accenting of individual notes can be achieved with this pedal, within the overall range set by the Master Volume Control. A full explanation appears on page 36.

Pedal Volume [Ⓝ]

This knob governs pedal volume only when the Pedal Solo piston is in use. (see *Pedal Solo*, page 25).

Pitch Control [Ⓝ]

This knob is to control the pitch of this organ; the mark **I** indicates standard (concert) pitch. You can tune the organ away from standard pitch for convenience in accompanying other instruments.

Touch Vibrato Control [Ⓝ]

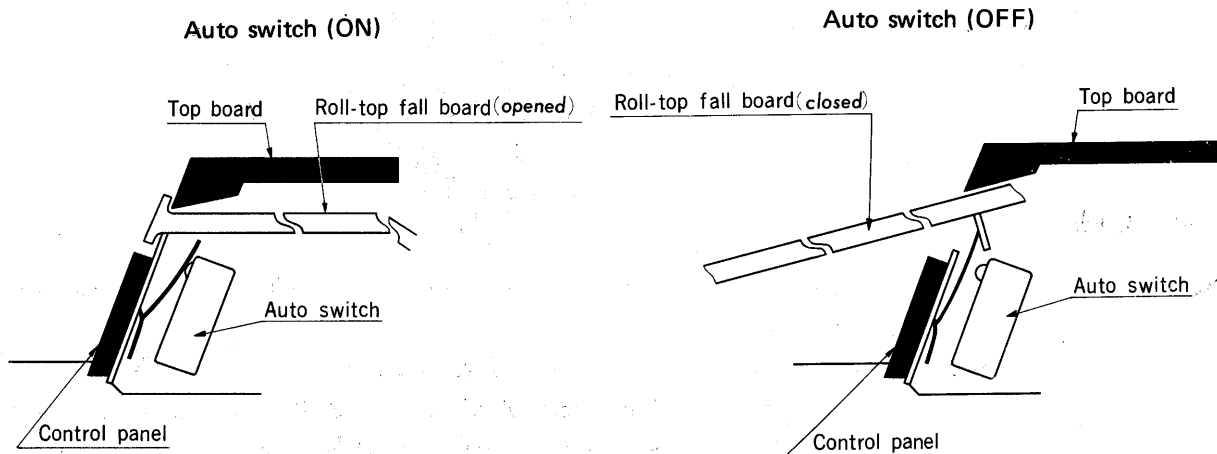
The explanation of this tablet is given under Touch vibrato, Page 24.

Knee Lever [Ⓝ]

The metal lever folded horizontally underneath the key bed is the knee lever. It allows passage by passage precision control of voice switching in conjunction with the Upper Preset Cancel tablet [Ⓝ]. See *Voice Presets* and *Upper Preset Cancel* on pages 13 and 19.

Automatic Power Switch

The automatic power switch is linked to the roll-top fallboard. When the fallboard is closed, the Electone is automatically switched off, and the Electone will be turned on again when the fallboard is reopened. There is thus no danger of the organ being left on inadvertently. This is, however, designed as a safeguard, and power should normally be turned on and off using the main switch.



To Fully Enjoy Your Electone

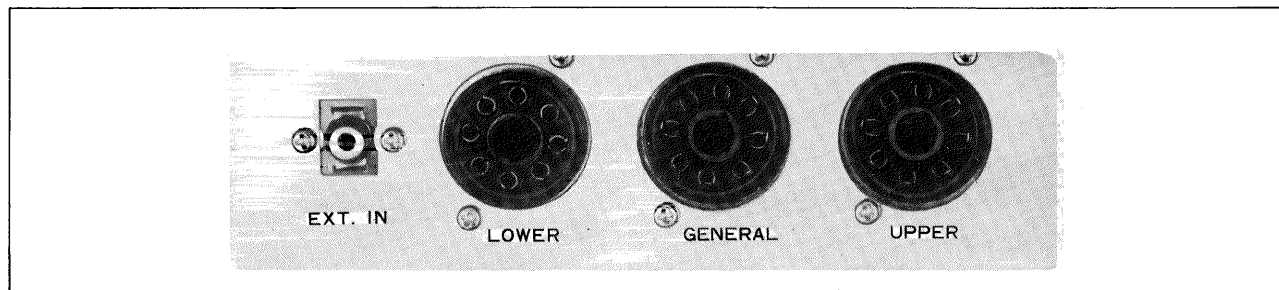
Besides the many tone and effect levers through which almost infinite varieties of voice and expression can be obtained, the Yamaha Electone E-3 offers you a number of additional features to further enhance your playing pleasure.

Earphone Jack

An earphone is provided and its use cuts out the speakers so that you can practice in privacy without disturbing others. This also means that while you can hear yourself, others will not hear you until you feel ready. The earphone jack is located under the key bed.



Tone Cabinet Sockets



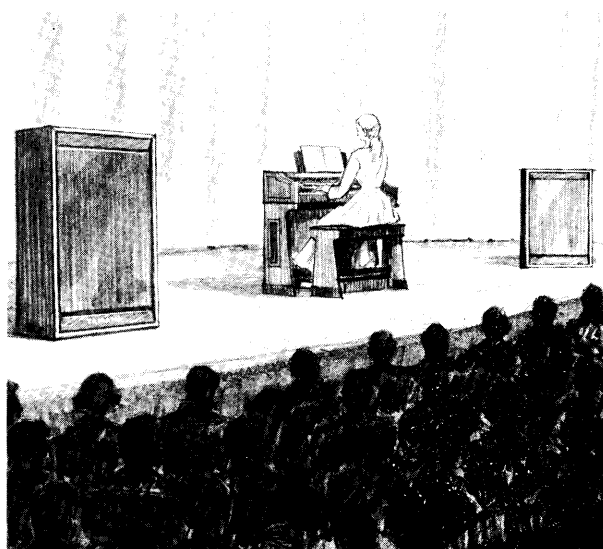
Three sockets are located at the lower left-hand corner of the back of the Electone (see the photo above). Thus when you are playing in a stage situation or require greater tonal power, you can connect Yamaha Tone Cabinets without the necessity of rewiring the amplifier.

All of them are US-type tone cabinet sockets: UPPER, GENERAL, and LOWER.

UPPER: This socket isolates the voice from the upper manual for separate transmission to a tone cabinet

LOWER: Isolates the voice of the lower manual. Thus the use of two Yamaha Tone Cabinets, one connected to the upper socket and one to the lower, will combine the augmented tonal power with an authentic stereo effect.

GENERAL: When only one tone cabinet is to be used, it should be connected to this socket to secure a balanced mix of upper manual, lower manual and pedal tones.

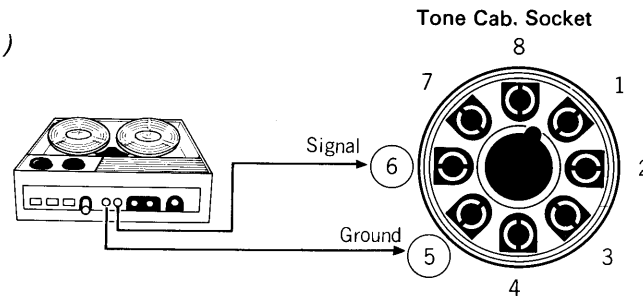


Recording

When it is desired to record your performance, the use of the tone cabinet sockets will provide a much clearer, higher fidelity tape than will a microphone. To connect a tape recorder to the US-type socket (see Fig. 1), obtain a US-type plug and connect

the signal terminal of the tape recorder 'record' plug to terminal #6 and the ground terminal to #5. For monaural recording (single track), use the GENERAL socket; for stereo, the UPPER and LOWER sockets.

(Fig. 1)



Note: Be sure to adjust the recording level of the tape recorder to the most suitable level before recording.

External Input Jack

This jack is located to the right of the tone cabinet socket (see the photo on page 27). It allows you to connect a tape recorder, record player or radio directly, using the amplifier and Natural Sound Speaker of the Electone. Thus these external inputs will come to life under Natural Sound reproduction and give you an opportunity to broaden your musical experience.

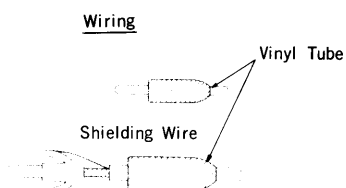
Since their tones are not controlled by the expression pedal, you can play a tape recording or record of an orchestral concert and 'sit in' yourself on the Electone.

Alternatively, you can record yourself playing a piano or the Electone, replay the tape, and be your own duet partner.

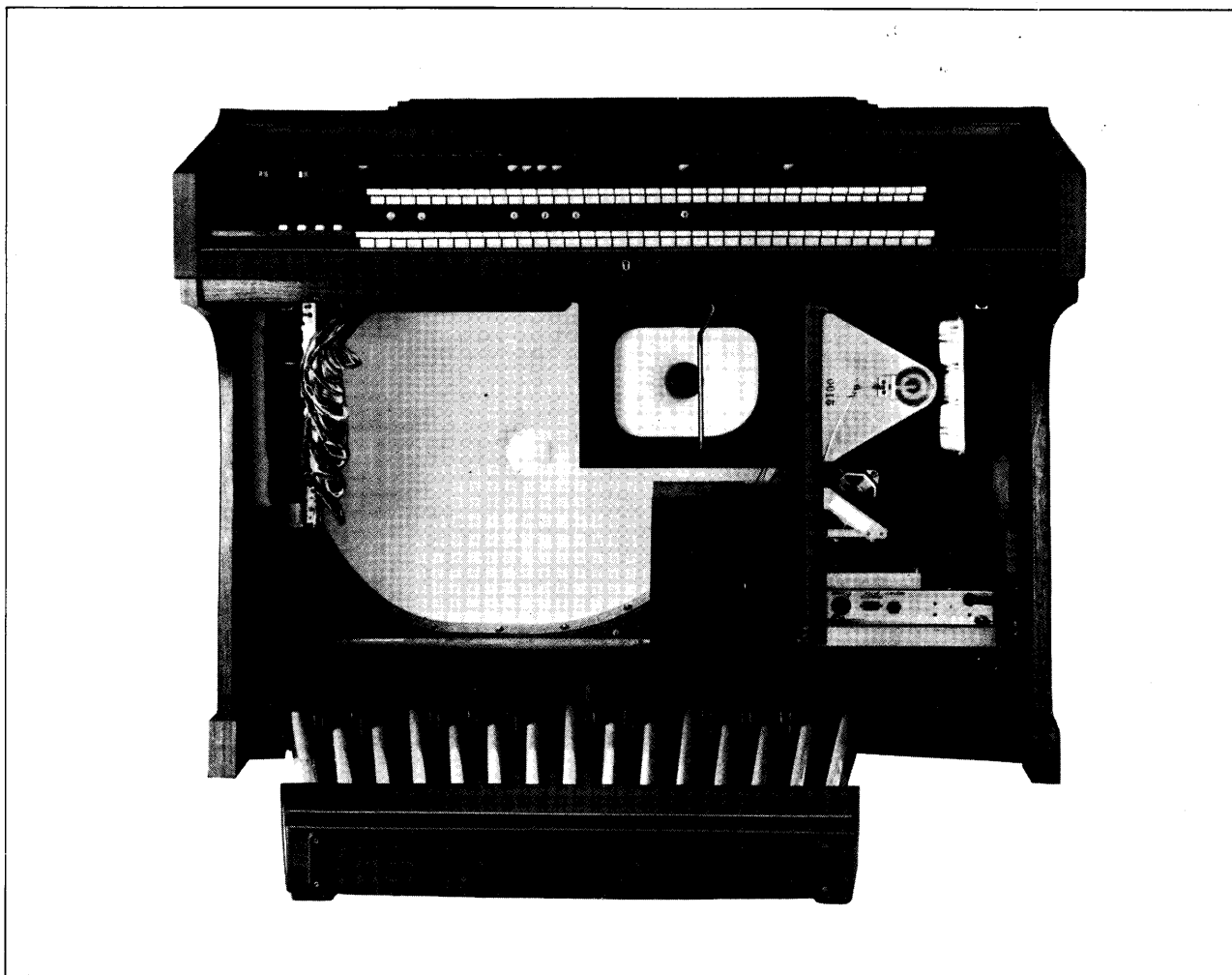
In addition, the 'Mini-Pops', a rhythm cabinet distributed by Yamaha, may be connected here for even more advanced percussion effects.



- Note:**
1. Connect the External Jack and the output jack of a tape recorder with a shielding wire. Use a spare plug inserted in the Ext. Jack.
 2. Volume setting for playback tends to differ with the make or model of tape recorder you use.
 3. Adjust the volume of the Electone and the tape recorder to avoid distortion of the sound quality.
 4. Make absolutely sure never to touch or otherwise interfere with the circuits or internal elements of the Electone.



A Word about Yamaha's New Exclusive Natural Sound Speaker



In this age of electronic marvels, we are accustomed to speakers which offer 'only X% distortion' or 'high fidelity throughout the range'. One almost gets the feeling that human perception is left out in the search for technical perfection.

And if you examine the 'tonal characteristics curve' of a violin, or of a cello, or piano or organ, you will realize that this is exactly what has happened. The natural imperfections which are the emotion and the power of live performance will obviously elude the scientists' intent on mathematical exactness and symmetry.

We at Yamaha believe that music must satisfy the man, not the equation. This is why we have built the Natural Sound Speaker.

Here is a speaker which is not symmetrical. It is not

a cone, nor a horn nor any other conventional shape. It consists, in essence, of a diaphragm with a fixed edge, the whole surface of which vibrates according to the principle of multi-dimensional flexion.

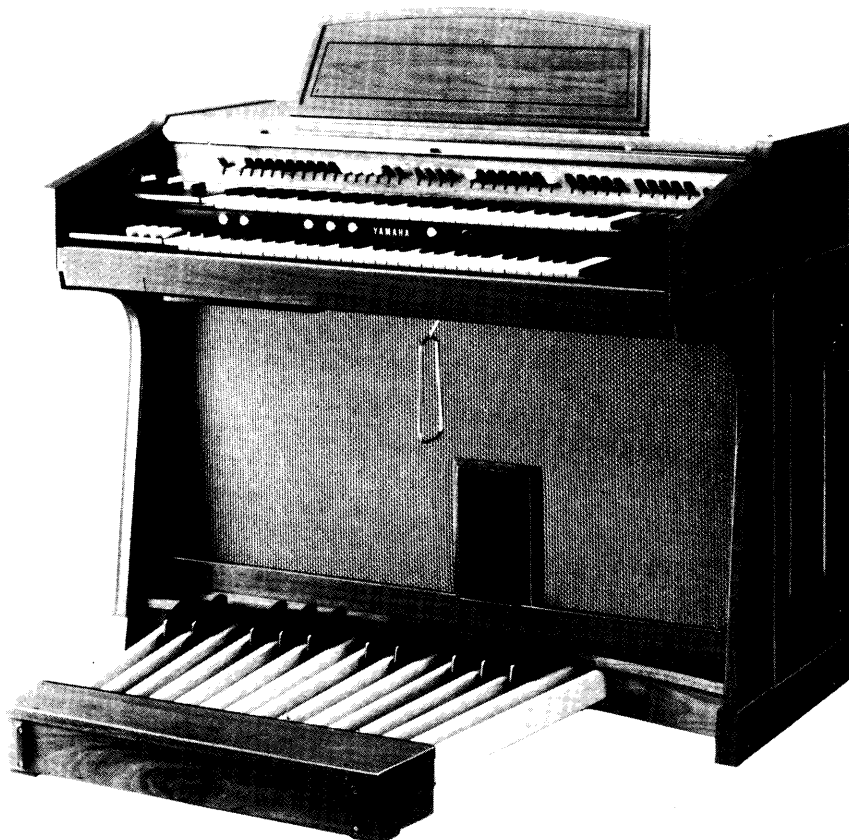
The shape is derived from that of the piano sounding board, and like the sounding board of any other musical instrument, it is 'imperfect'. Like your ear and like everything else in nature, it follows no pat formula, it obeys no regular rule. It is not a Hi-Fi speaker, for what musician wishes to be faithful to someone else's concept of sound?

Surely the musician, as a creative artist, deserves a sound system which is designed for the human ear; designed for Nature; designed not for reproduction but for creative musicianship. We believe the Natural Sound Speaker fulfills this aim.

Care of Your Electone

In general, you should treat your Electone E-3 with the same care you would give any fine musical instrument. However the following points are suggested to assure optimum enjoyment.

1. Be sure to use your Electone only on the correct voltage. If it is necessary to change the voltage of the Electone, please consult your Yamaha Electone service agent.
2. If any trouble develops, contact your Yamaha service agent immediately. Do not attempt to touch or otherwise interfere with the circuits or internal elements of the Electone.
3. When you have finished playing, be sure to turn off the main power switch.
4. In order to clean the manual keys, tabs, etc., use a damp cloth. Never apply organic solvents such as alcohol as it may result in damage to the plastic materials used.
5. Do not expose the Electone cabinet to the direct rays of the sun, as this may result in bleaching of the finish or separation along the joints of the wood.
6. It is also advisable to place the Electone in such a way that it is not exposed to excessive humidity or currents of heated air.
7. In opening and closing the roll-top fallboard, grasp the handle with both hands and slide the fallboard gently in its groove. Never attempt to raise the fallboard directly upwards, and do not place heavy objects on it.



Do not Be Alarmed If...

1. A note should sound the instant you turn on the switch

This merely indicates normal operation consequent to a flow of electricity in the main amplifier.

2. Only one note is produced even when two pedals are depressed

When the pedal sustain effect is used, notes overlap following notes. In order to achieve tonal clarity, the Electone is designed so that a note is electronically suppressed the instant the next note is struck. If two pedals are struck simultaneously, only the higher one sounds.

3. Occasional unpleasant static

In the majority of such cases, the cause can be traced to the turning on or off of refrigerators, washing machines, electric pumps or other household appliances. Electrical fault in a neighboring outdoor neon sign may also be to blame.

When the cause is a home appliance, connect the Electone to an outlet as far as possible away from the offending appliance. This phenomenon, although perhaps annoying, poses no danger to the Electone's circuitry.

If the cause is a fault in neon or fluorescent lighting fixtures, the fault should be repaired. When the cause is unknown, or in case of doubt, contact your Yamaha dealer.

4. The pedalboard seems pitched high, or the treble of the upper manual low

This is particularly noticeable in comparison with the piano, and results from the difference in the harmonic composition of the tones. The piano has a greater wealth of harmonic overtones, particularly in the upper and lower reaches of the compass. Thus tuning cannot be done on the basis of the fundamental alone but must take into account the many harmonics. On the other hand, the Electone has a set number of harmonics and therefore cannot be tuned like the piano. It must be tuned on the basis of the fundamental alone. In this sense, the piano and the Electone are fundamentally different. This is common in all organs.

5. The Electone reproduces radio or TV sound signals

This kind of phenomenon can occur when there is a powerful radio or TV transmitter, or an amateur radio operator, located in the vicinity. If this situation is distracting, contact your Yamaha dealer.



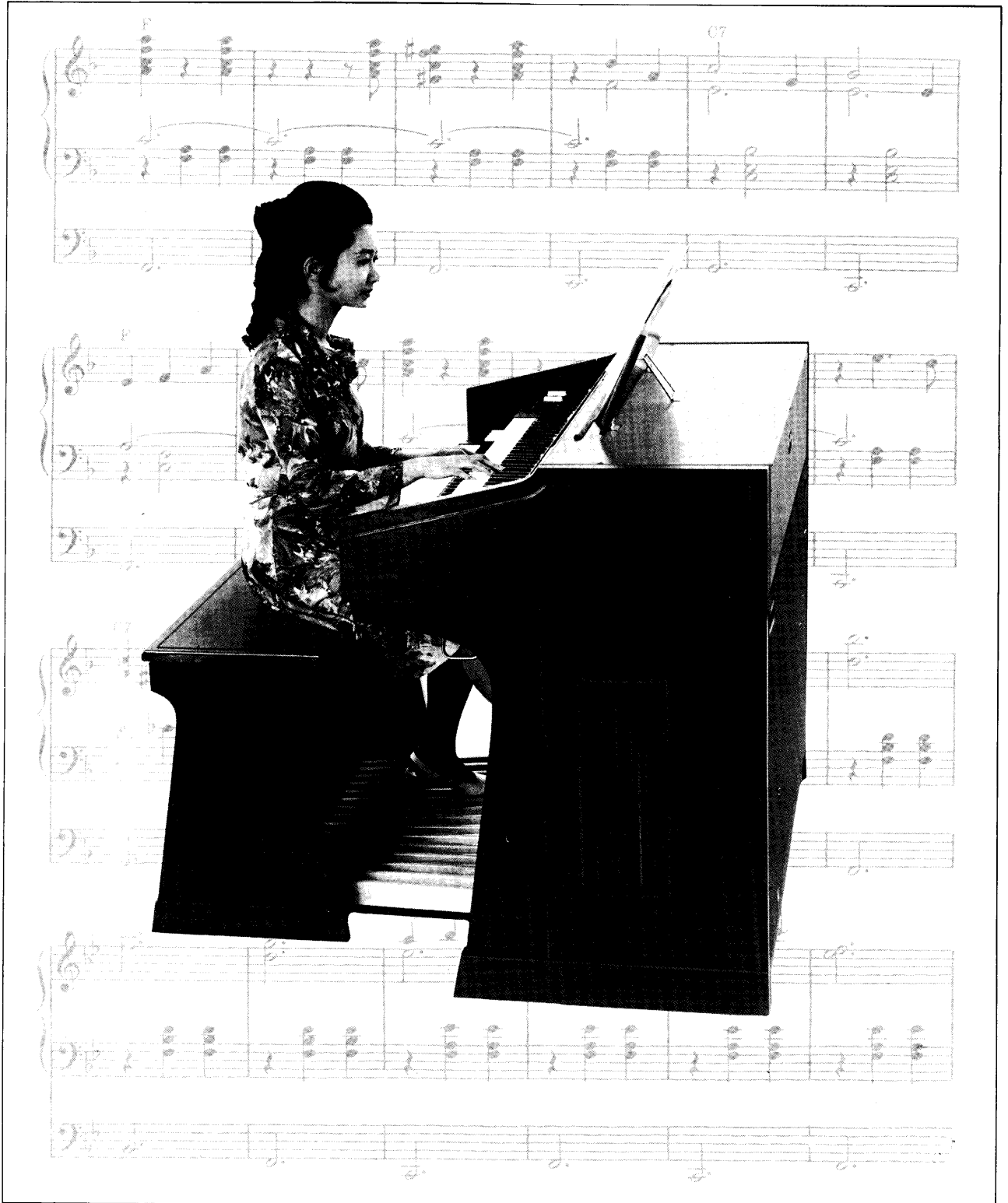
Specifications of Model E-3

KEYBOARDS		
Upper Manual	61 keys C—c ₄	(5 Octaves)
Lower Manual	61 keys C—c ₄	(5 Octaves)
Pedalboard	25 keys C ₁ —c	(2 Octaves)
TONE LEVERS		
Upper Manual	Flute	16'
	Flute	8'
	Diapason	8'
	Clarinet	8'
	Brass	8'
	Oboe	8'
	Kinura	8'
	String	8'
	Flute	4'
	String	4'
	Flute	2 ² / ₃ '
	Flute	2'
	Flute	1 ³ / ₅ '
	Flute	1'
	Chimes	(3 Octaves)
Lower Manual	Wood	16'
	Wood	8'
	Diapason	8'
	Horn	8'
	Cello	8'
	Wood	4'
	Cello	4'
	Wood	2 ² / ₃ '
Pedalboard	Bass	16'
	Bass	8'
	Tuba	8'
	Bass	4'
EFFECT LEVERS		
	Brilliance	
	Coupler (Upper)	
	Repeat Depth (Upper)	
	Repeat Speed (Upper)	
	Vibrato Depth	
	Vibrato Speed	
	Attack (Pedals)	
EFFECT CONTROLS		
	Reverb	
	Pedal Sustain	
	Upper Manual Sustain	
	Lower Manual Sustain	
	Manual Balance	
EFFECT SELECTORS		
	Upper Manual Sustain	
	Lower Manual Sustain	
	Upper Preset Cancel	
	Manual Attack (Normal/Fast)	
TREMOLO SECTION		
	Upper Voice (Main/Rotary)	
	Lower Voice (Main/Rotary)	
	Ensemble	
	Tremolo	
	Chorus	

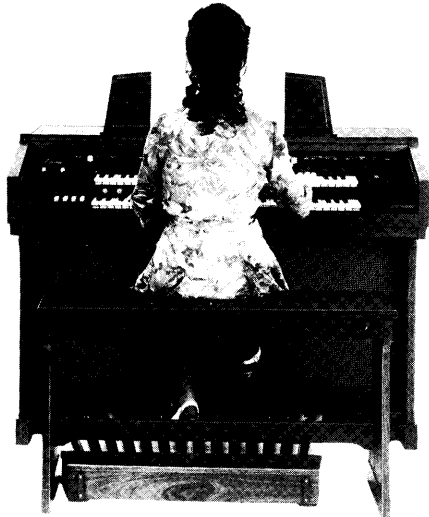
PERCUSSION SECTION		
Percussion Levers		
Lower I		
Lower II		
Pedal		
Button I		
Button II		
Percussion Buttons (Four)		
PISTONS		
Pedal Solo		
Touch Vibrato		
Voice Presets (Four)		
1 & 2	Upper Manual	
3	General	
4	General (factory set)	
Preset Cancel		
OTHER CONTROLS		
Preset Board (Drawer type)		
Master Volume		
Pedal Volume		
Expression Pedal		
Pitch Control		
Touch Vibrato Control		
Knee Lever		
Power Switch (Man. & Auto) w/Pilot Lamp		
OTHER FITTINGS		
Piston Indicator Lights (Six)		
Earphone Jack		
External Input Jack		
Tone Cabinet Sockets (Three)		
Roll-top Fallboard with Lock		
Music Rest		
NATURAL SOUND SPEAKERS		
Main:	Bass—JA-6001 35" × 25"	
	Mid-range—JA-1704 8 ³ / ₄ " × 11"	
Rotary:	JA-1701 6 ¹ / ₂ " × 9"	
	Electro-control 2-speed	
MAIN AMPLIFIERS		
Dual-channel Solid State (SEPP)		
ELECTRICAL RATINGS		
All circuitry transistorized		
Transistors: 797		
Diodes: 484		
Total Output Power: 60 watts (30 watts × 2)		
Power Consumption: 130 watts		
100/110/117/125/220/240V AC 50/60 Hz		
DIMENSIONS		
	Cabinet	Bench
Width	51 ¹ / ₄ "	40"
Depth	29 ¹ / ₂ "	14"
	w/pedals 45 ¹ / ₂ "	
Height	41"	23 ³ / ₄ "
Weight	352 lb	31 lb
FINISH		
Natural American Walnut, Oil Finish		

PLAYING THE ELECTONE MODEL E-3

Illustrated Guide For Beginners



Posture



1. Sit in the middle of the seat somewhat towards the front. The weight should be shifted slightly to the right in order to allow the left leg greater freedom of movement.
2. The right hand generally fingers the upper manual and the left hand fingers the lower manual while the pedalboard is played with the left foot. Check that you can reach all the keys on the three keyboards conveniently.
3. Relax the muscles of the left leg and, with the knee joint loose, move the foot left and right. Keeping the ankle loose, push the pedals just short of the black pedals.
4. Relax the right ankle and place the full length of the foot onto the Expression pedal. Check that you can push the pedal down fully with comfort, and that you are equally comfortable at all positions of the Expression pedal.

Technique

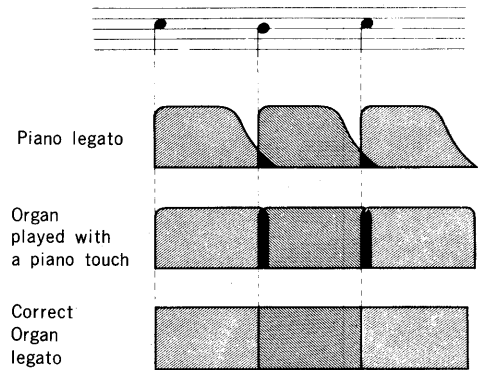
Playing the Manuals

Clench both fists and then relax extending the fingers naturally. This form allows the fingers to move more quickly and easily, and is therefore applicable to all keyboard instruments.

Correct use of the fingers is essential to play beautiful Electone music. The melody part should in general be played with *the organ legato touch*. In order to achieve the legato playing, it is necessary to poise the finger in readiness above the key to be struck next. Many rules may be applied to the correct fingering, but in any case a most economical and rationalized use of the fingers is desirable.

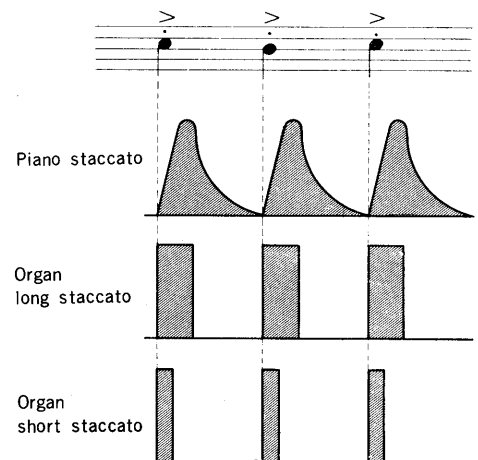
Legato

1. It is important to practice to achieve the organ touch that will produce a smoothly continued legato without distracting overlap.
2. The melody part should in general be played legato. But in order to emphasize the legato, it is necessary to take "breaths" at the ends of phrases.



Staccato

1. Since the duration of the note can be regulated very easily by the length of time the key is depressed, it is possible to obtain a wide variation in staccato treatment.
2. Generally a rhythm accompaniment with the left hand should be played staccato. A shorter staccato will generally be suited to rhythmical compositions while longer one to slow pieces. You should always try to choose the precise length that fits the work best.



Playing the Pedalboard

The pedalboard of the E-3 gives you a full twenty-five pedals, and it is set in a radial arc, designed for maximum ease of playing. Perhaps this will cause an initial feeling of unfamiliarity in those who have only had the opportunity of playing ordinary console organs. However in using the pedals to produce bass rhythm, no problem is involved once you have become accustomed to the pedal positions.

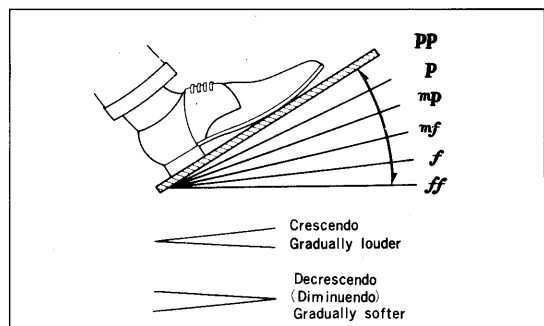
When playing the melody on the bass, both heel and toe are used. For this reason it is best to obtain the guidance of a qualified teacher for a period. Textbooks are also available on classic organ technique and studied adherence to some such guide can prevent the development of unfortunate mannerisms which might impede future progress.

Other general points that may be emphasized in pedalboard technique are :

1. Sitting always in the right and same position will enable you to play the correct pedal notes without looking at the pedals.
(see 'Posture', page 34)
2. The pedal touch is rather heavy, therefore attention must be paid to speed and power in order not to lose the rhythm.
3. Do not press on the portion of the pedals nearest you.
4. Be careful not to beat the pedals with unnatural movement of your whole leg.
5. Before commencing actual performance, it will be very helpful to practice rhythm and scale on the pedals, giving slightly greater tone lever emphasis to the pedals.

Using the Expression Pedal

The expression pedal should be depressed gently for *crescendo* and released gradually for *diminuendo*. Be careful to use this pedal with discretion. The expression should follow the natural course of the work, and should never be intrusive.

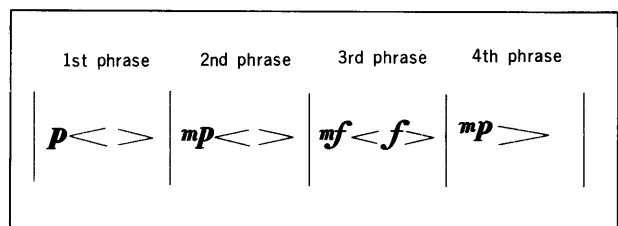


In Phrasing

1. Natural phrasing usually indicates a soft entry to a passage and a subsequent softening at the end.
2. Variety of phrasing is attained with gradual, not sudden, movements of the Expression pedal.

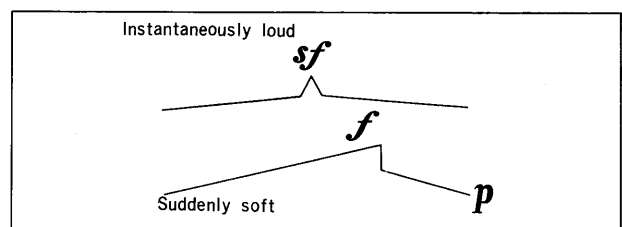
Throughout a Composition

1. Each musical composition is composed of a number of expressive phrases. It is important to keep the overall balance in mind.
2. The full range of the Expression pedal should be used, but not so excessively that it becomes intrusive or unnatural.



Accent

1. Suddenly depressing the Expression pedal and then partially releasing it will add accent.
2. If accent is used too freely, its effectiveness will be diminished.
3. The pedal should be released smartly.



Note:

1. *Crescendo* passages should peak at the point where notation indicates.
2. Even the same composition may require differing expressive treatment depending on the tempo at which it is played.
3. Rhythmical works will be enhanced with a little accent.
4. Expressive treatment can be truly effective only when the organist has truly grasped the essence of the composer's musical intention.

Resetting Levers, Controls and Tablets

When resetting the tone levers, effect levers, effect control knobs etc. midway through a piece, accomplish with either hand as convenient, in such a way as not to interrupt the melodic line.

Changes in tone lever settings may influence the relative volume of the upper and lower manuals. This can be corrected using the Manual Balance Control.

YAMAHA 
INTERNATIONAL CORPORATION
7733 Telegraph Road, Torrance, California 90503-1535