

# B-400R

GUIDE TO YOUR YAMAHA ELECTONE

Welcome to the Yamaha world of music. We are sure your selection of a Yamaha Electone was a wise one, and we want you to know that we will do everything possible to help you derive a lifetime of enjoyment from this fine musical instrument.

Please read this manual carefully to be sure you are familiar with each of the Electone's features and their expressive possibilities. In that way you and your Electone can become lifelong partners in musical creativity.

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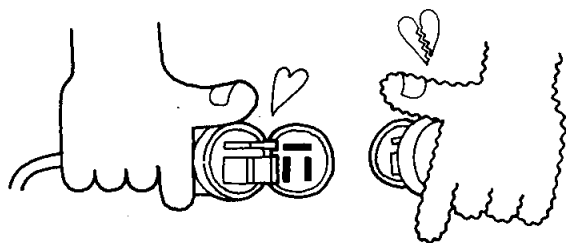
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# Read the following before playing

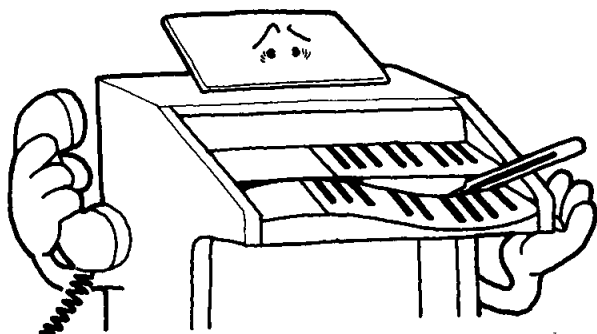
In general, treat your Electone with the same care you would any fine musical instrument. The following points are suggested for optimum enjoyment.

1. Use only proper line voltage. Consult your Yamaha serviceman for changes.

*As to British-Standard Model, its information is in 'Specifications' on page 12.*

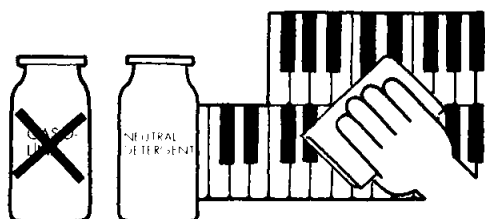


2. Never touch the inside parts yourself.

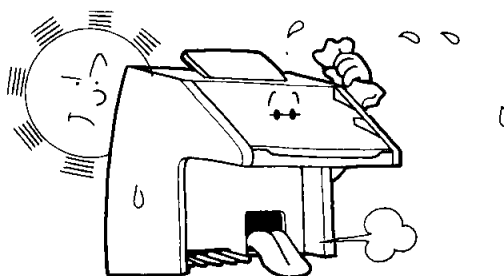


3. Always shut off the power after playing.

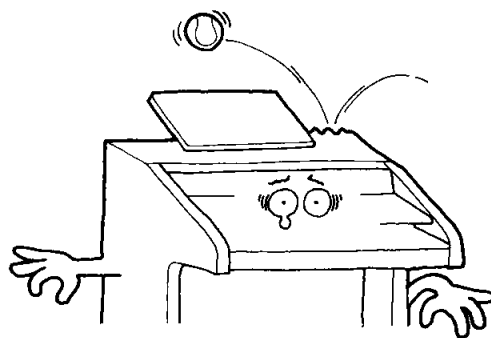
4. Clean keys, etc, with a damp cloth only. Never use solvents such as gasoline; they will damage the finish.



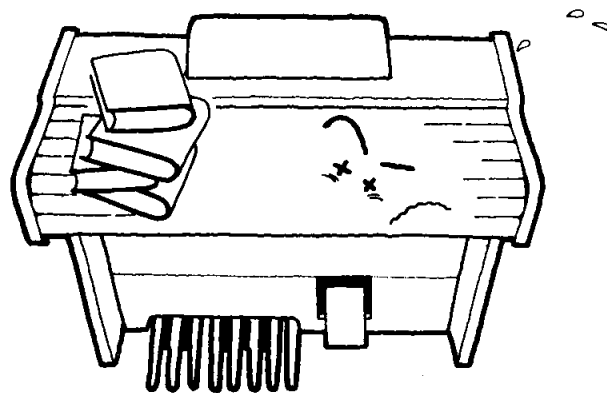
5. Shield the cabinet from direct sunlight, humidity and heat to protect the finish and joints.



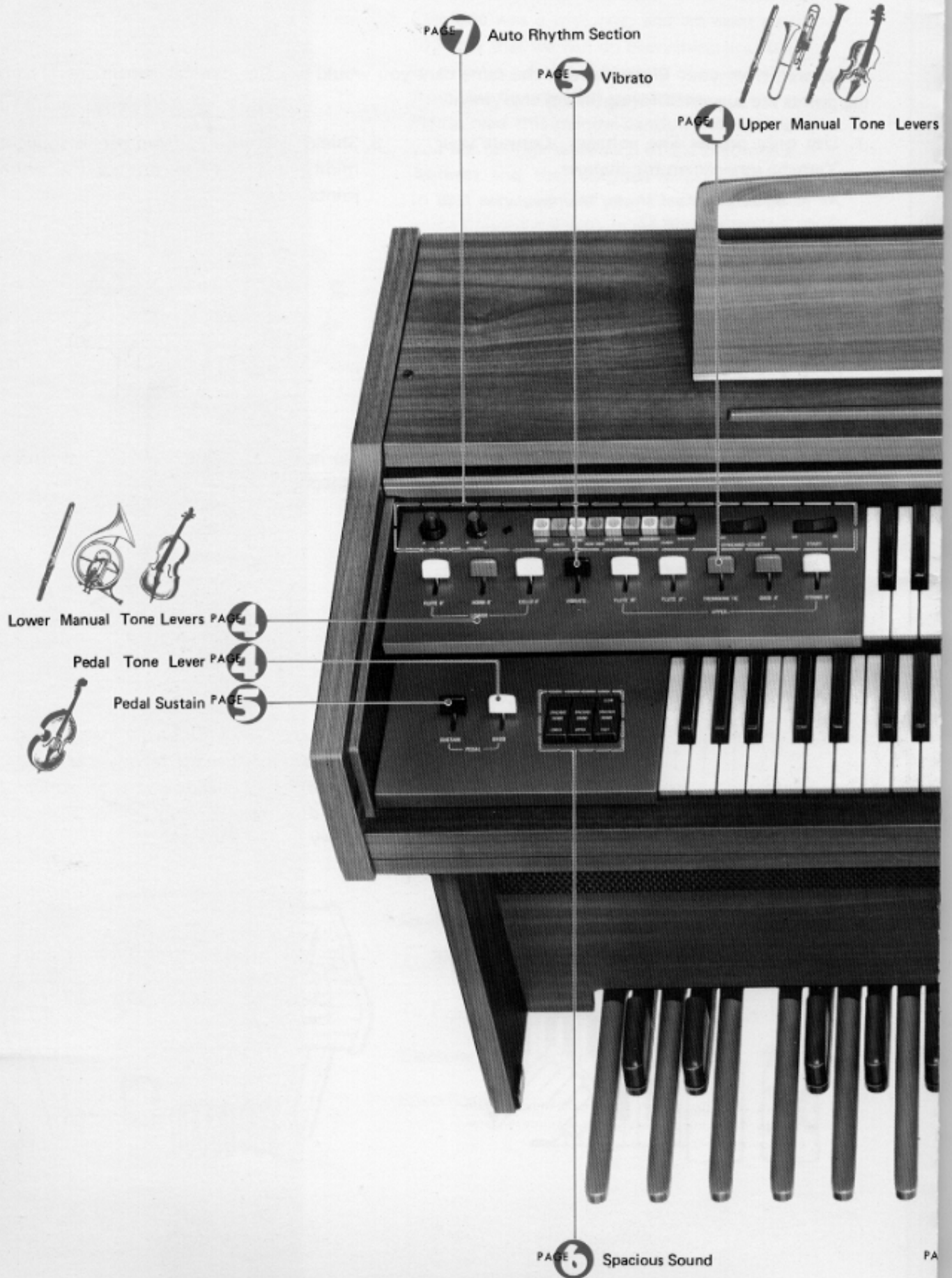
6. Do not hit or scratch the cabinet with a hard object.



7. To open or close the fallboard grasp the front lip with both hands and slide gently. Never pull directly upwards. Do not place anything heavy on the fallboard.



# This is Your Electone



While reading the manual, keep this page open for reference.



Specifications subject to change without notice.

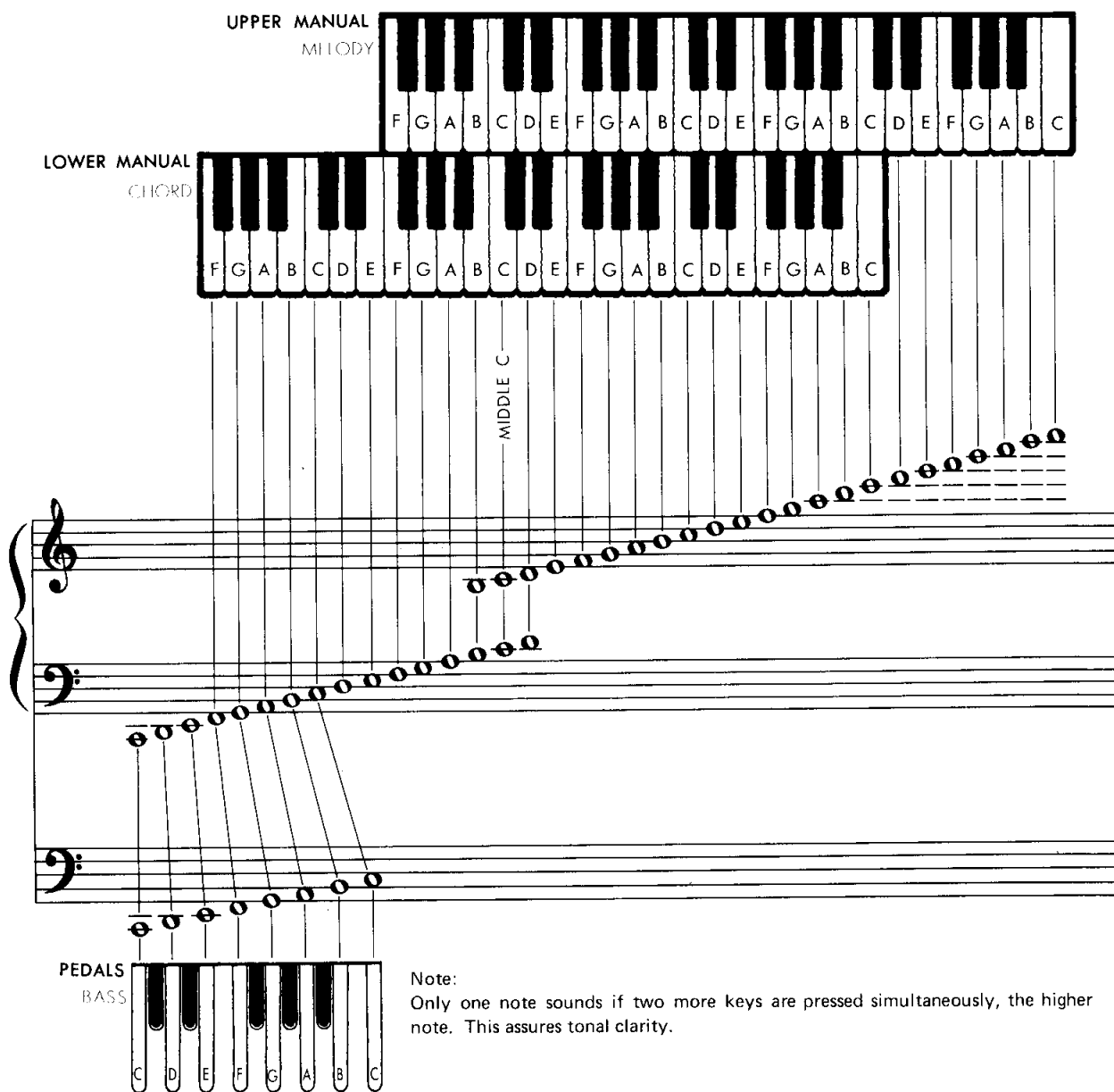
# Keyboards

The B-4DR has three keyboards. The upper two are called "manuals" and the lower one, played with the foot "pedals." They have keys and octaves as follows:

Upper Manual	44 keys (3 $\frac{2}{3}$ octaves)
Lower Manual	44 keys (3 $\frac{2}{3}$ octaves)
Pedals	13 keys (1 octave)

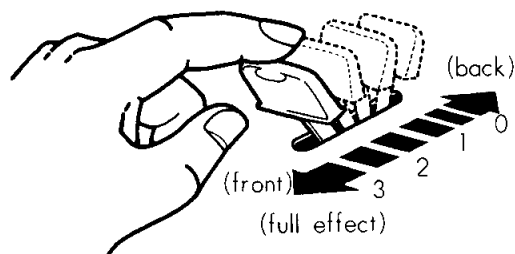
The B-4DR is designed to permit playing the melody on the upper manual with the right hand, the chords on the lower manual with the left hand, and bass notes on the pedals with the left foot.

All keys are arranged in the keyboard method layout shown below. Each white key has a name (from C to B), and the blacks are sharps or flats.



Note: Only one note sounds if two more keys are pressed simultaneously, the higher note. This assures tonal clarity.

# Tone Levers



To the left of the upper and lower manuals are series of tone levers which control the Electone voices that will sound when the keys are depressed. They are divided into groups for upper, lower and pedals, so that different registrations can be set for each.

Upper Manual Levers	5 voices
Lower Manual Levers	3 voices
Pedal Lever	1 voice

Each lever provides two methods of control. One is by continuously moving the lever from off to full, to achieve the exact setting for that tone, and thus balancing the overall tone setting with perfect precision. Each lever also has two easy-to-feel click stops, at 1/3 and 2/3 positions. This lets you refine any setting with mathematical precision and no guesswork in a matter of seconds.



## PITCHES OR FOOTAGES

The B-4DR has two different pitch levels, indicated by the numbers 16' and 8'. These are standard organ abbreviations showing the tone's pitch in relation to the fundamental (written note). An 8' tone will sound just as it has been written. A 16' tone (meaning that the wave length of the vibrations are twice as long as 8', or half as fast) will provide a tone exactly one octave lower than the written note.



## Vibrato

Vibrato is a waving of the tone. You will see violin and cello players use it freely by an oscillating motion of the left hand. It increases the emotional quality of the violin tone. This vibrato lever produces the same vibrato effect.

## Reverb

The reverberation effect, which makes your playing sound full and rich as if you were playing in a large hall, can be adjusted continuously and smoothly to suit your taste.

## Reverb Balance

To balance the reverberation between the upper and lower manuals.

## Pedal Sustain

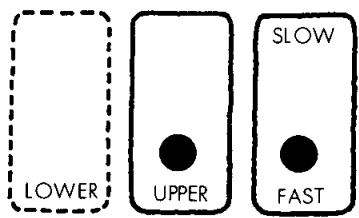
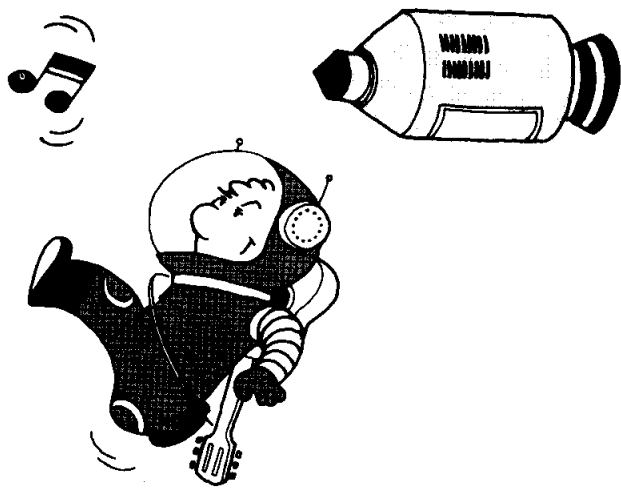
This control provides continuous adjustment of the sustain effect on the pedals and allows the pedal note to continue to sound a few seconds after you have released it.

## Expression Pedal

Push down the pedal to control the volume of each note or phrase. This pedal is extremely important for adding emotion to your playing. The pedal is balanced to stay in any position once set. Rest the entire right foot on the pedal and relax it, pressing with the toe to increase volume, with the heel to decrease it.

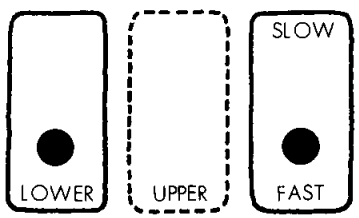


# Spacious Sound



Successfully incorporating the essential sound quality of the Yamaha rotary speaker, this new effect is achieved solely through special electronic circuitry, adding full, rich musical expression to your music.

Spacious Sound is available in two speeds. Use SLOW for stately, liturgical selections, FAST for popular numbers. Works on Upper, Lower or both manuals, according to which of the three selectors you choose.



### UPPER SELECTOR

Use this selector to apply the Spacious Sound to the upper manual tones.

### LOWER SELECTOR

Use this selector to apply the Spacious Sound to the lower manual tones. The use of upper and lower selectors together will apply the Spacious Sound to the whole organ.

### SPEED SELECTOR

Combined with either or both of the above selectors, this selector determines the speed of the Spacious Sound. Set on FAST for (tremolo effect), SLOW for (chorus effect).

# Auto Rhythm Section



This section provides eight catchy rhythms, each one called forth by a simple button. You can also create more rhythm variations with the variation button. In addition to a combined volume and balance knob, tempo control and tempo indicator light, there are two other switches: ordinary Start and the Yamaha Synchro-Start which begins the rhythm accompaniment on the first beat of a measure when the first lower manual or pedal note is struck. A foot switch fitted in the expression pedal housing lets you stop and restart the rhythm at any point during play.

## NORMAL START

For instant rhythm at the beginning of a selection. Push the rhythm selector desired, then flick the Start switch on.

## SYNCHRO-START

Select the rhythm, switch on the Synchro-Start and begin to play once you have the tempo established. The rhythm will begin as soon as you strike a lower manual or pedal note. This switch permits you to lead in with a rhythm-free melody at first if so desired.

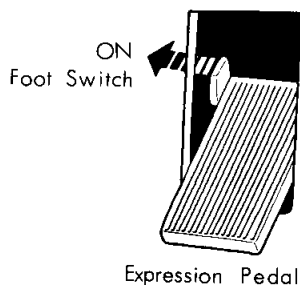
You can switch off the Auto Rhythm with the foot switch.

When you wish to continue hearing the Auto Rhythm, be sure to switch on with the foot switch.

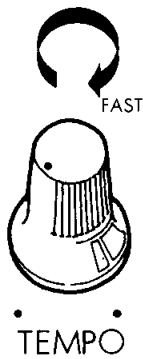
## RHYTHM FOOT SWITCH

Once the rhythm is on, push this switch once to instantly stop it, once again to restart. It lets you stop and restart the rhythm in the middle of playing without using your hand.

**Note:** If the foot switch has been used, be sure it is reset to normal after you finish playing your selection, and then make sure both Start and Synchro-Start switches are off. Otherwise you may turn on one of the switches in the middle of a new number only to find the rhythm still cancelled.



Expression Pedal



**TEMPO**

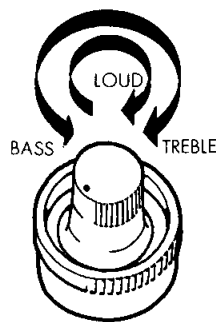
The tempo of the Auto Rhythm section can be adjusted by a continuous control knob. This is best accomplished by turning on the Synchro-Start switch.

Although no sound will be produced, the indicator lamp will flash each quarter note, letting you visually check the tempo while you adjust.

**BALANCE**

This control lets you balance the low rhythm sounds, such as drums, and the high sounds (i.e., cymbals) according to your taste and the selection. It can make a big difference even when using the same rhythm. Turn the knob to the right to accentuate the higher (treble) sounds, to the left for lower (bass). If you accentuate the treble sounds the rhythm becomes brighter.

Check the playing hints for specific settings.



**VOLUME**

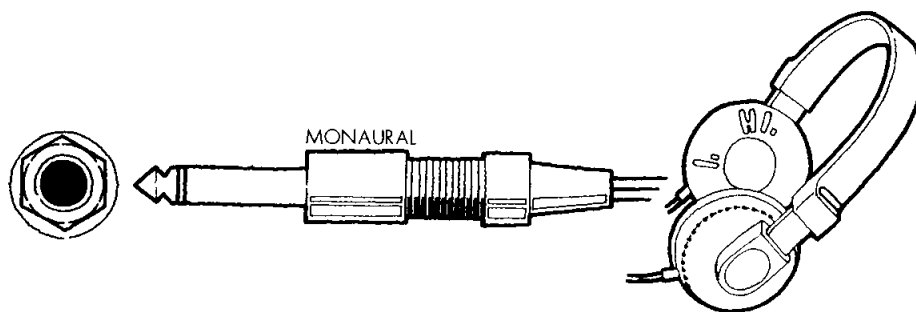
Use it to balance the volume of the rhythm section and the manuals. This volume is then varied during the selection by the expression pedal, just like that of the other tones.

VOLUME-BALANCE

# To Fully Enjoy Your Electone

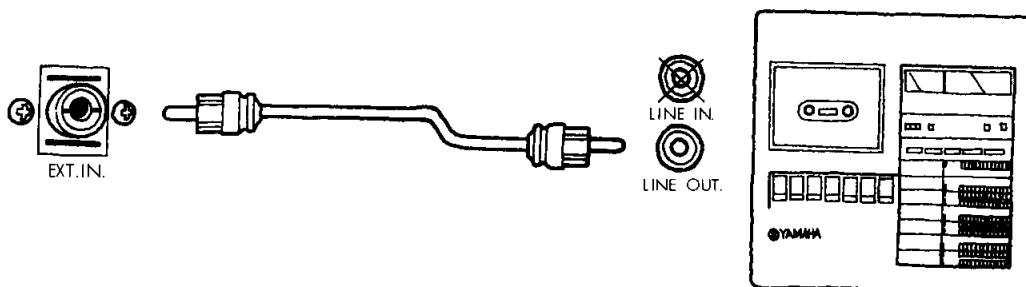
## HEADPHONE

A Yamaha headphone set (optional) can be plugged into the jack under the keyboard. With the headphone connected, the speaker is automatically shut off, allowing you to play or practice at any volume level without disturbing anyone.



## EXTERNAL INPUT JACK

This is used to feed any sound source (i.e., Tape recorder) through the Electone speaker. Since the volume of the sound sources is not affected by the expression pedal, you can play along on the Electone with any other performance.



# Electone is not out of order If ...

**1. ....the set does not go on when the power switch is turned on. Check the following.**

Is the AC plug fully inserted into the electric wall outlet? Reinsert it to be sure. Is there power coming from that outlet? —Unplug the Electone and plug in a lamp, switch it on to check that it lights. If it does not the problem is probably in your household electric system. Check your fuses or circuit breakers.

If there is power in the outlet but the Electone does not play, unplug the cord and contact your Yamaha dealer. There are NO USER-SERVICEABLE PARTS inside.

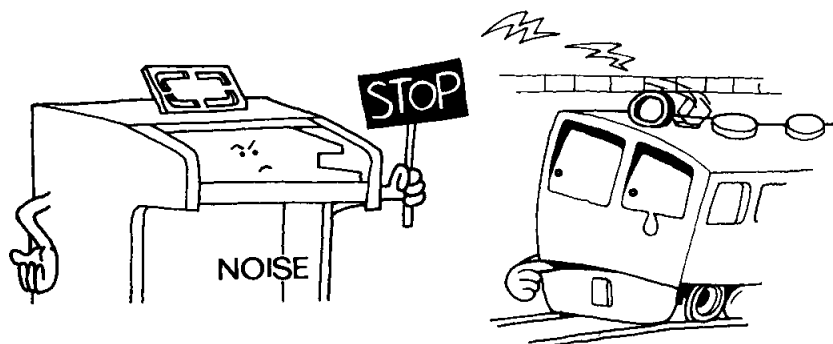
**2. ....a note should sound the instant you turn on the switch.**

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

**3. ....occasional unpleasant static occurs.**

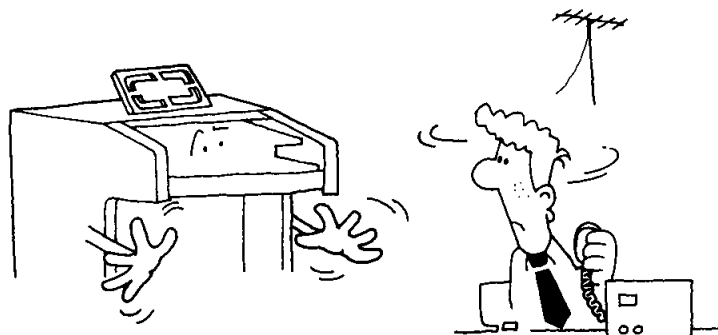
In the majority of such cases, the cause can be traced to the turning on or off of refrigerators, washing machines, electric pumps or other household appliances. Electrical faulty in a neighboring outdoor neon sign may also be to blame.

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 annoying, poses no danger to the Electone circuitry. If the cause is a fault in a neon or fluorescent lighting fixture, it should be repaired. When the cause is unknown, or in case of doubt, contact your Yamaha dealer.



**4. ....the Electone can produce radio or TV signals.**

If there is a powerful transmitter such as radio station in the vicinity this can occur. Contact your Yamaha dealer.



**5. ....Pedal notes sound too high, upper manual notes too low.**

This is especially noticeable when comparing the Electone and piano. Piano tones are combinations of harmonics and must interact with their surroundings, while Electone harmonics are simpler (Multiples of the fundamental tone), requiring the Electone to be adjusted differently, at the assembly stages.

**6. ....rattling (sympathetic vibration) occurs.**

All materials have critical resonance frequencies at which they vibrate. The Electone's continuous tones will naturally cause other objects (windows, shelves, etc.) to vibrate.



# Specifications

## KEYBOARDS

Upper Manual	44 keys f ~ c <sub>4</sub> (3 $\frac{2}{3}$ octaves)
Lower Manual	44 keys F ~ c <sub>3</sub> (3 $\frac{2}{3}$ octaves)
Pedals	13 keys C <sub>1</sub> ~ C (1 octave)

## TONE LEVERS

Upper Manual	Flute	16'
	Flute	8'
	Trombone	16'
	Oboe	8'
Lower Manual	String	8'
	Flute	8'
	Horn	8'
Pedals	Cello	8'
	Bass	

## EFFECT LEVERS

Vibrato  
Pedal Sustain

## EFFECT CONTROLS

Reverb  
Reverb Balance (Upper/Lower)

## SPACIOUS SOUND SELECTORS

Upper Voice  
Lower Voice  
Slow/Fast

## AUTO RHYTHM SECTION

Rhythm Selectors  
March           Waltz  
Swing           Slow Rock  
Jazz Rock       Rhumba  
Bossanova      Samba  
Variation

Rhythm Controls  
Rhythm Start  
Synchro-Start  
Rhythm Stop (Foot control)  
Tempo  
Volume  
Tone Balance  
Tempo Indicator

## OTHER CONTROLS

Expression Pedal  
Power Switch

## OTHER FITTINGS

Headphone Jack  
External Input Jack  
Power Indicator  
Roll-top Fallboard  
Music Rest  
Matching Bench

## SPEAKERS

Yamaha 30cm (12"), 5cm(2")

## CIRCUITRY

Solid State (Incl. LSIs and ICs)  
Output Power: 15 Watts (RMS)  
Power Consumption: 40 Watts  
Power Source: 50/60Hz, AC

## DIMENSIONS

Width: 111cm (43 $\frac{1}{2}$ ")  
Depth: 56cm (22")  
Height: 90cm (35 $\frac{1}{2}$ ")

## WEIGHT

55kg (121 lbs.)

## FINISH


American Walnut Grain

*Specifications subject to change without notice.*

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## Special Instructions for British-Standard Model

As the colours of the wires in the mains lead of the apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

## IMPORTANT

THE WIRES IN THE MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

GREEN-AND-YELLOW: EARTH  
BLUE: NEUTRAL  
BROWN: LIVE

## WARNING:

THIS APPARATUS MUST BE EARTHED.

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*Specifications subject to change without notice.*

SINCE 1887  **YAMAHA**  
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN