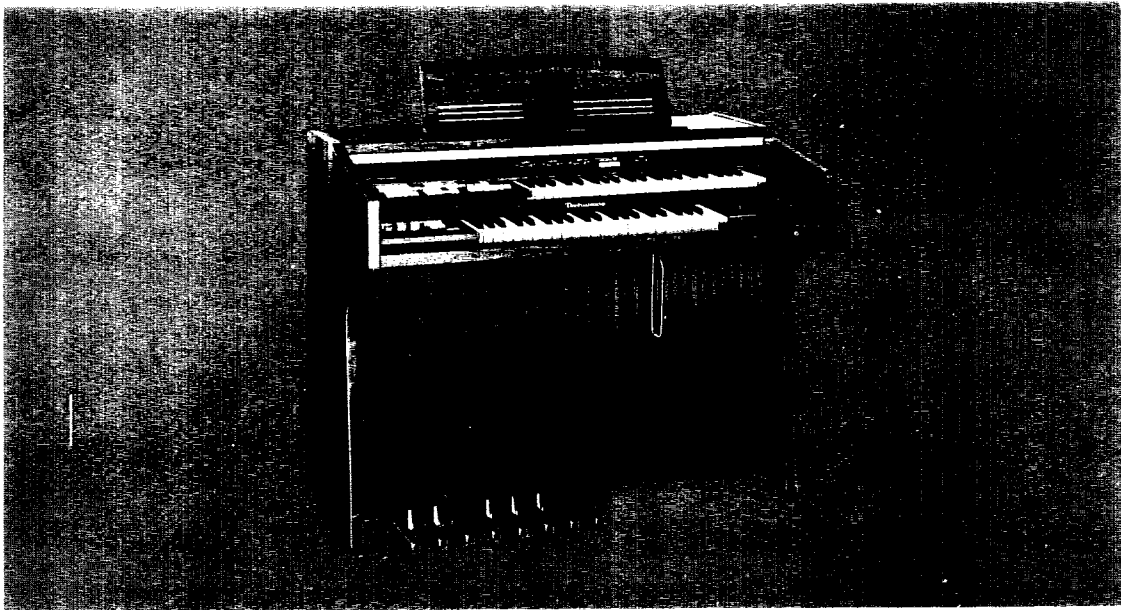


Operating Instructions

Electronic Organ
SX-4300A



Technitone

Before operating this set, please read these instructions completely.



OPERATING INSTRUCTIONS

Thank you very much for selecting this Organ. We are sure you will enjoy many happy hours of entertainment from this excellent musical instrument.

This organ is a unique musical instruments designed for playing performances from the simplest to the most complex music, and can be easily played by anyone, from the beginner to the most competent musician.

Read this booklet carefully to get the best results from your Organ.

CONTENTS

MAIN FEATURES	2
NAMES OF PARTS & COMPASS CHART	4
TO NE TABS	5
PRE-SET SOUNDS	6
EFFECT TABS & LEVERS	7
AUTOMATIC RHYTHM CONTROLS	9
AUTO-PLAY-CHORD CONTROLS	10
HARMONIZER CONTROLS	11
OTHER CONTROLS & FACILITIES	14
MAINTENANCE & SPECIFICATIONS	16

Harmonizer

The Harmonizer has a function, which has simplified the function of the music synthesizer, born from a composite of electronic and sound technology with which it is constructed. It can be called a mini-synthesizer.

This electronic organ has adopted three music-source waveforms (square wave, stair-step wave and sawtooth wave) and has a unique design. It is a harmonizer which can vary the degree of mixture of the square waves and sawtooth waves.

Because it can freely produce tones that suit your taste—round and soft clarinet tones or brilliant and radiant trumpet tones or mute-like tones—by operating two kinds of control levers, you can effectively use the unique tones to enjoy performances which are rich in originality.

Because the harmonizer has been newly added to this electronic organ, you can enjoy the pleasure of creating tones more than you have in the past.

Auto-Play-Chord

The Auto-Play-Chord (automatic accompaniment) is designed so that accompaniment with the left hand and bass with the left foot, which seems to be difficult for beginners when playing the electronic organ, can be played with only "one finger."

Beginners can first use the One-finger chord, and after they get used to it to some degree, proceed to the Fingered Chord... thus they can practice gradually according to the individual level of skill, and then master accompaniment.

In addition, the Separated Pedal, a unique feature from Matsushita, can be used to automatically play the accompaniment by pressing the left hand and the left foot sounds individually as desired.

Pre-set Sounds

Pre-set sounds are the unique tone buttons with which you can freely obtain the characteristic sounds of the saxophone, piano, harpsichord or vibraphone—tones which are said to be difficult to produce by using only a combination of the fundamental tone tablets; moody saxophone, rich reverberations of the piano, transparent, delicate tones of the harpsichord and the sweet sound of the vibraphone can be enjoyed even by a beginner with the one-touch operation. When a Pre-set button is pressed during a performance, all of the other upper keyboard tones will be cancelled, and the pre-set sound that you like can be obtained on a preferential basis. Because of it, effective contrasts can be added to the music to produce a rich performance.

Electronic Multi-Tremolo Effect

Matsushita engineers have ingeniously used their skills to provide a beautiful multi-speed tremolo effect. The realism is created by using stereophonic amplifiers to cause the sound to flow from one speaker system to the other. The advantages of the Matsushita system over other mechanical types are that the Matsushita system cannot wear out because there are no moving parts—it is noiseless in operation, and the tremolo can be heard through headphones when silent practice is required. Finally, the Organ sounds can be recorded direct to a tape recorder without the need for microphones, and the quality of the sound is therefore perfect because the tremolo can also be recorded on tape. In addition, the speed and depth of sound can be set to suit your own taste.

There is also an "Electronic Chorus" effect in addition to the "Multi-Tremolo" effect. This effect creates a rotational effect in slower sounds and is very useful for church music and special effects for light music.

Delay Effect

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

Sustain Effect

Sustain is an effect of gradually reducing the volume automatically of the voice selected after the key has been released. This Organ is designed to give the sustain effect to all of the 16', 8' and 4' tones, and to the Harmonizer voice. You will soon realize how attractive this effect is and find many uses for it.

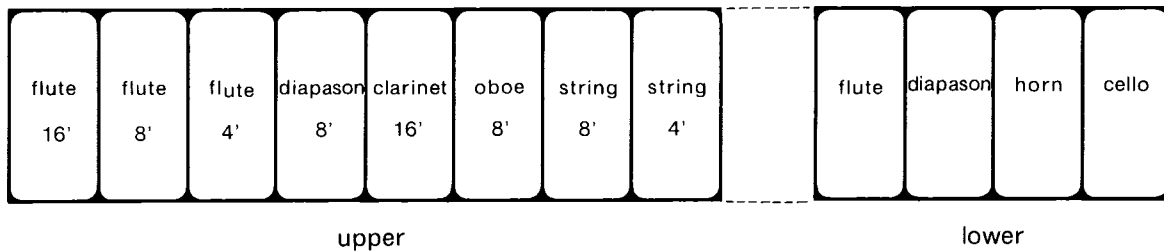
Glide Control Effect

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.

Before we start explaining the Organ in detail, it is important to examine the make-up of an organ in order that you may fully understand what is meant by Tones, Manuals, Footages, etc.

First, an organ obtains its 'big sound' from the various pitch levels, which can be produced by depressing one key. For example, when you depress a note, say middle C, on a piano, the sound produced in musical terms is one note only in one pitch. If you depress the same note on an organ and select for example, a 16', 8' and 4' tone tab, the sound produced by that one key is in fact three octaves or three C notes.

On this organ, you can reproduce three pitch levels: 16', 8', and 4'. The footage classification, by the way, stems from the pipe organ; i.e., the length of pipe required to produce a particular frequency or note. A 16' pipe would produce the sound an octave lower than an 8' pipe, simply because it is twice the length, and so on. Each tone tab on this organ has a corresponding pitch level.



The upper manual provides two 16' tones, four 8' tones and two 4' tones, FLUTE 16', CLARINET 16', FLUTE 8', DIAPASON 8', OBOE 8', STRING 8', FLUTE 4', and STRING 4'.

Tones on the organ are not necessarily designed to imitate the instruments of the orchestra. They are there to indicate to you the player what sound you are likely to hear when depressing the various tone tabs. There are three basic families of tones: Flute, Oboe and String. There is a fourth, Diapason, which is a combination of all three families of tone having some Flute, a little Oboe and a little String in its harmonic make-up.

The 16', 8' and 4' tones can be used as solo voices or in any combination. All these tones can be used effectively with sustain.

Lower Manual Tone Tabs

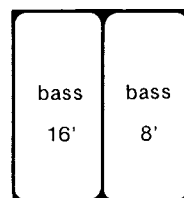
The lower manual provides four 8' tones: FLUTE, DIAPASON, HORN and CELLO.

These tones can be played as solo voices, but are usually combined to provide suitable accompaniment to upper manual voices. These tones do not sustain.

Pedal Keyboard Tone Tabs

The pedal keyboard provides one 16' tone, and one 8' tone. BASS 16', and BASS 8'.

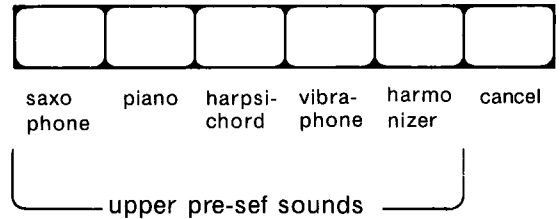
The Bass 8' with sustain is similar to that of a string bass.



pedal

The Bass 16' tone is particularly attractive when used for playing Theater, Classical and Church Organ music.

Pre-set sound means that the tone has been determined in advance. When the Pre-set button is pressed, the tones of the upper keyboard are cancelled, and the selected Pre-set sound will be produced as you play. To change back to the tones of the upper keyboard during a performance, simply press the Cancel button at the extreme right; the changeover will be automatic. If two Pre-set buttons are pressed at the same time, only the one on the right will take effect. Multi-tremolo, Chorus, Vibrato, Reverberation and Delay can be added, but Sustain is already set its best.



saxophone

Although called saxophone, this particular heavy reed sound effect is a wonderful addition to any organ, for not only does it produce a typical moody saxophone solo voice when used with the delay effect, but it can also be used to reproduce the powerful sounds of a 'Big Band' when played with chords by the right hand.

piano

This is a true piano tone, using an independent percussion system.

In the same way as a piano keyboard, the sound will naturally disappear even though the key is held down.

harpsichord

Because this uses the same system as Piano, true harpsichord tones can be enjoyed.

vibraphone

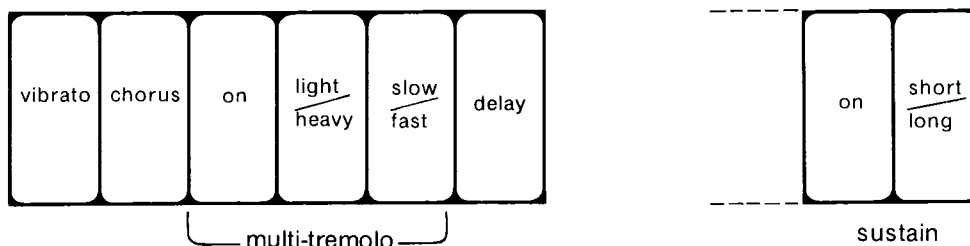
Matsushita Engineers have not only voiced this feature beautifully, but have also included an automatic tremolo (independent of the multi-tremolo) and sustain, which makes this stop most authentic. Here again, it is suggested that the Vibraphone sound be used either straight or with the Chorus effect, and not with Vibrato or Tremolo.

cancel

This button is used when changing over to the normal tones of the upper keyboard from the Pre-set sound or from the Harmonizer.

Upon pushing this button, the Pre-set sound or Harmonizer buttons will be switched off and the sound will change back to the sound set by tone tablet. Further, when you wish to switch to Harmonizer, simply push the Harmonizer button and the change will be automatic.

Once one has become accustomed to the instrument, it is a simple matter to create wonderfully varied sounds at the touch of a button. For example, if you have selected say, 16', 8' Flute in the organ tone tab section and wish to change in the space of a quaver rest to a solo saxophone, vibraphone or piano (pre-sets) or solo trumpet (Harmonizer), this will present little difficulty and will add great dimension to your organ playing.



Vibrato Tab

The Vibrato has a different character than the Tremolo: Vibrato changes the pitch of the note sharp and flat in quick succession. By using Vibrato with solo String or Flute tones, the sound produced will be very similar in character to an orchestral instrument. To change the degree of vibrato speed, use the Slow-Fast tab of the Multi-Tremolo.

Electronic Chorus Tab

The excellent chorale effect achieved by the CHORUS is achieved on the same principal as the aforementioned multi-tremolo, except that the Chorus sound flows at a much slower rate from one speaker to the other. The stereophonically reproduced chorale will add warmth and presence to your playing, particularly when performing Church/Classical music. It can also be used very effectively when playing Jazz or Swing music.

Electronic Multi-Tremolo Tabs

The three Multi-Tremolo tabs give a new tremolo effect and change the depth and speed of tremolo. Because of the principal of operation, the beautiful phase shift effect can be reproduced by combining Vibrato with the Multi-Tremolo in its fast or slow position. The Multi-Tremolo can be used with the Tremolo Vibrato delay feature, thus adding even greater dimensions to the sound and quality of your playing.

MULTI-TREMOLO ON-OFF

The MULTI-TREMOLO ON-OFF tab gives tremolo to the music when depressed at the bottom, and eliminates it when depressed at the top. The other two tabs (Light-Heavy & Slow-Fast) can change the degree of tremolo.

MULTI-TREMOLO LIGHT-HEAVY

The MULTI-TREMOLO LIGHT-HEAVY tab can change the depth of tremolo by making tremolo heavier or lighter. Note that Multi-Tremolo Light-Heavy & Slow-Fast tabs operate only when the Multi-Tremolo On-Off tab is in the "On" position.

MULTI-TREMOLO SLOW-FAST

The MULTI-TREMOLO SLOW-FAST tab can change the speed of tremolo by making tremolo faster or slower. If a throbbing, Theatre Organ tremulant is desired, this effect can be achieved by adding Vibrato to the Multi-Tremolo which is switched to the fast/heavy position.

Delay Tab

Very attractive effects can be achieved by playing this organ with Tremolos or Vibrato used with the Delay feature. A violinist controls vibrato by shaking the left hand at a pre-determined speed. If he wishes, he can stop the hand movement, thus creating a "straight" sound. The effect of controlling or delaying the vibrato in this way creates a beautifully romantic sound. It is important to remember however, that all players of not only strings, but brass, saxophone and reed instruments, use the delay vibrato effect to add color to their playing. You too will soon realize the advantage of having this delightful feature at your disposal.

Note that this delay effect is applied every time the key is released. When playing in legato, there is no delay and there is no change made.

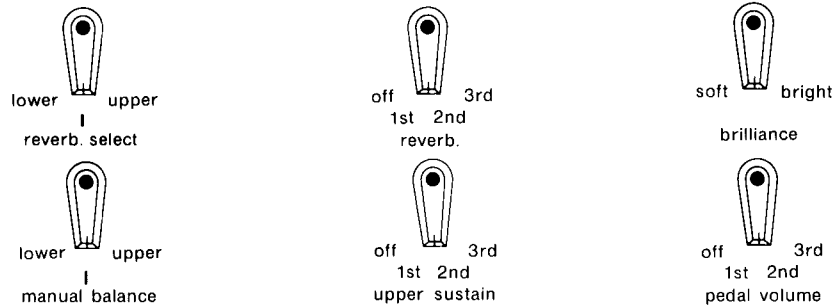
Pedal Sustain Tabs

PEDAL SUSTAIN ON-OFF

The PEDAL SUSTAIN ON-OFF tab gives sustain to the pedal notes. Pedal sustain means that a bass tone produced by the pedal keyboard decays gradually after the pedal is released.

PEDAL SUSTAIN SHORT-LONG

The PEDAL SUSTAIN SHORT-LONG tab can change the duration of the sustained bass notes. By operating this tab you can select long or short pedal sustain, to suit the music being played.



Reverberation Lever

The REVERBERATION lever can change the length of the reverberation effect, giving spaciousness and warmth to your music. By changing the degree of reverberation you can bring various special effects to the music, particularly when the Reverberation select lever is used.

Reverberation Select Lever

The REVERBERATION SELECT lever can select the reverberation ratio of either the upper manual or the lower manual. When you set this lever to the centre point, the reverberation length of both manuals becomes equal. When this lever is turned to the UPPER position, the reverberation to the Upper Manual exceeds that of the Lower, 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 high fidelity amplifier system. It controls the upper harmonics of tones from SOFT to BRIGHT, and its normal position is the centre 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. This lever is particularly effective in making the String tone and the Oboe tone more brilliant and creates on the other hand a soft warm sound to flute voices when in the soft position.

Manual Balance Lever

The MANUAL BALANCE lever controls the volume balance between the Upper Manual and the lower Manual at the discretion of the player. When this lever is set to the centre 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. This feature enables the player to use, if desired the voices on the Lower Manual for melodies thus adding greater variety to the sounds available.

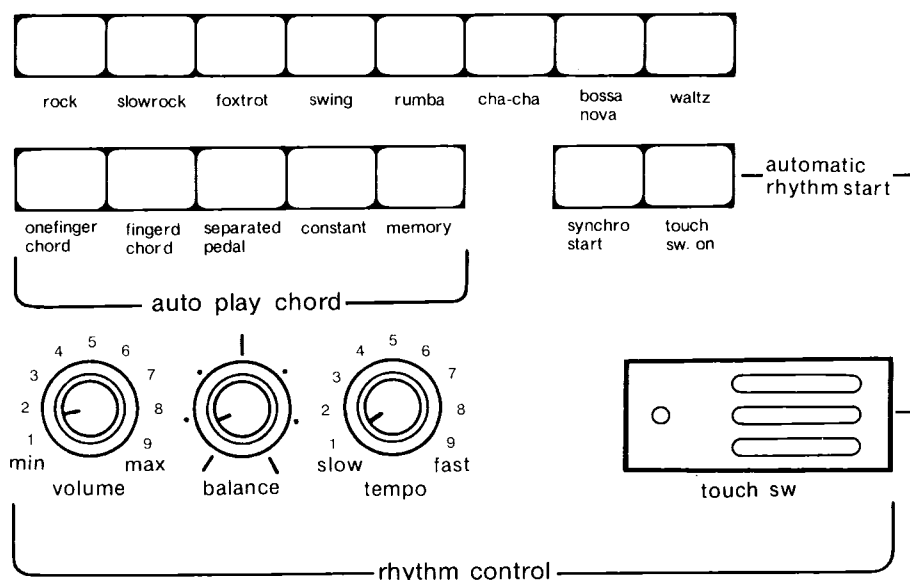
Pedal Volume Lever

The PEDAL VOLUME lever controls the volume of the Pedal Keyboard. 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.

Upper Sustain Lever

The UPPER SUSTAIN lever controls the length of sustain heard after the key or chord has been released. This feature controls all 16', 8' and 4' tones but it does not affect the Pre-set sounds. By setting this lever to the proper position, you can obtain the sustain effect throughout the music, and also you can temporarily give the sustain effect to the music by operating the Sustain On-Off Knee lever.

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



Rhythm Selection Buttons

This rhythm section has eight rhythm selectors. They are Rock, Slow Rock, Fox Trot, Swing, Rumba, Cha-Cha, Bosa 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 many interesting rhythm patterns can be created.

Rhythm Volume Knob

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

It should be noted that the main volume and expression pedal of the organ effects the volume of the rhythm.

Rhythm Balance Knob

If the knob is turned clockwise, the percussion instrument sound of the cymbals and the maracas become louder, while the sound of the other percussion instruments is reduced. 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 decreases. If this knob is turned fully clockwise it can be used as a cancel effect, and in this way various additional rhythms can be created.

Tempo Control Knob

If you turn the TEMPO CONTROL knob clockwise, the tempo of the rhythm increases. Set the tempo of the rhythm to suit the music you are playing.

The Tempo Lamp in the touch start switch is designed to illuminate on the first beat. You can easily pre-empt the tempo by watching the tempo lamp if the synchronous start switch is depressed to the ON position. In this position the tempo lamp indicates a beat interval even though the rhythm is not sounding.

Rhythm Start Switches

There are two starting methods for the rhythm as shown below. In each case the rhythm begins always on 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. By 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. The rhythm will stop by pushing this button during a performance.

TOUCH START SWITCH

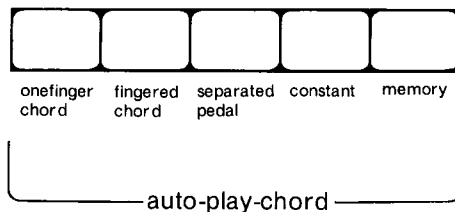
This TOUCH START switch is especially convenient because on-off control of the rhythm can be quickly accomplished by simply touching it (when the Touch Switch button is set to the ON position). Note that, even when the Synchronous Start button is ON, that the Touch Start switch can be used to control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

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. When so set, the rhythm cannot be started even if the Touch Start switch is accidentally touched. To use the rhythm, press this button to the lower position and 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.

The Auto-Play-Chord is a function which makes the rhythm accompaniment (lower manual and pedal) fully automatic. The organist can play the melody on the upper manual in the normal way and the rhythm accompaniment will be automatically played with a selected rhythm, such as Rumba or Rock, by simply playing an accompanying chord on the lower manual and a bass note on the pedal keyboard. Accordingly, even those who are just beginners can play the organ easily and effectively within a short space of time.

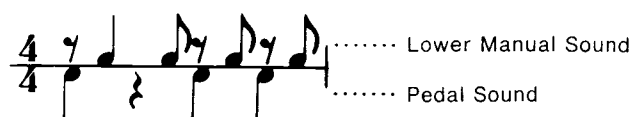
Because this Auto-Play-Chord is connected to the automatic rhythm, if one of the rhythm selection buttons is not pushed, the automatic accompaniment will not be obtained, in another word, only when the automatic rhythm is operating does the Auto-Play-Chord function. When you don't require the percussion 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 for the automatic rhythm.



examples of chord

major chord			minor chord			
C	F	G	Am	Dm	Gm	
						lower manual
						pedal

When you select the Rumba rhythm for example with the Auto-Chord, the sound from the lower manual and pedal is follows:



One finger chord

When, with this button ON, only one key of the lower keyboard is pushed, a triad (a chord of **so do** and **mi** if **do** is pushed) and the bass sound (**do**) corresponding to that chord are played for automatic accompaniment.

The chord in this instance is a major chord, but it becomes a minor chord when the black pedal of the pedal keyboard is depressed, and a minor seventh chord when the black and white keys are depressed simultaneously. In other words, 4 types of chords can be selected with one sound of the lower keyboard.

Fingered chord

When, with this button ON, a favorite chord is played on the lower keyboard, the bass sound corresponding to that chord (**do** when a chord of **do**, **mi** and **so** is played) is automatically played together with the chord played on the lower keyboard.

If one has mastered a performance by using the **one finger chord**, this **fingered chord** can be used to practice playing the chord with the left hand.

Separated pedal

With this button ON: the lower keyboard and the pedal keyboard can be played separately in favorite scales, for automatic accompaniment matched with the selected rhythm.

If one has mastered a performance by using the **one finger chord** or the **fingered chord**, this **separated-pedal** can be used to practice playing at a higher skill of accompaniment by using the left hand and the left foot.

Constant

This function is used together with the **one finger chord** and the **fingered chord**.

When used with the **one finger chord**, sustained sounds of a chord of the lower keyboard and the corresponding bass sound can be played by simply depressing one key.

When used with the **fingered chord**, sustained sounds of a chord which is played on the lower keyboard and the corresponding bass sound can be played.

Memory

This button is used together with the **one finger chord**.

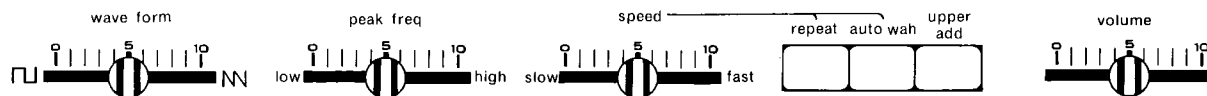
When this button is ON, the sound of any key of the lower keyboard which is pushed can be memorized, giving an automatic accompaniment even when the finger is released from the key.

If another key is pushed, the sound of that key is newly memorized. When a button other than the **one finger chord** is used with this memory function, only bass sound can be memorized.

This **auto-play-chord** can be used, with a finger of the left hand, to present a pleasing automatic accompaniment, including bass sound, which matches your favorite rhythm.

Taking full advantage of these features, you can advance in gradual practice of accompaniment with the left hand and foot, and master the enjoyment of a wonderful performance.

When the **auto-play-chord** function is not used, be sure to set it to the off position.



This ingenious tone generation system designed by Matsushita offers tone colors rarely found on organs at any price, and we are quite sure that once you have accustomed yourself to using this feature, you will enjoy it. The following examples indicate a few recommended positions which will produce good examples of the many varied sounds of which the Harmonizer is capable. The principal of the Harmonizer is similar to a musical synthesizer except that the synthesizer is monophonic (only plays one note at a time). The Harmonizer is polyphonic (can play more than one note, i. e., a chord) which is a great advantage over normal synthesizers.

When a harmonizer is used, first set the harmonizer button at the right side of the pre-set sounds, to ON.

You can then enjoy the creation of sounds according to your own liking. Special sound effects can be added to this harmonizer, such as vibrato, chorus, multi-tremolo, reverberation, sustain, delay, etc. Further, these effects can be mixed freely with tones of the upper keyboard for additional enjoyment. Note, however, that a combination of the harmonizer and the pre-set sound cannot be used.

When a change is made from the harmonizer to a tone tablet, push the pre-set sound cancel button. Also, when changing to pre-set sound, simply push the pre-set sound button; the harmonizer will be automatically turned off.

Waveform

The many varied sounds of which the Harmonizer is capable are due to the infinite control of waveforms. Matsushita has designed the Harmonizer unit to enable you to vary the frequency shape from the square-wave (\square) to the sawtooth-wave (\sloperight) patterns. The result is a very pleasing and versatile sound effect. To produce the soft tones of the tube system (like the clarinet), slide and set the control to the squarewave side and, for a strong tone full of harmonics (like a trumpet), set the control to the sawtooth-wave side.

Peak Frequency

Tones consist of waveforms containing various components. By sliding this control either to the right or left, the characteristics of the music area you wish to emphasize will be changed. To stress and "round-out" the tone of the Waveform you have selected, slide the control to the **low** side; to give gayness and brilliance to the selected waveform, slide the control to the **high** side.

Speed

This button is used together with the Repeat and Auto Wah buttons. By changing the speed of Repeat or Auto Wah, such effects as mandolin, Auto wah or muting can be obtained.

Repeat

With this button ON, and Speed set to zero, percussion effects can be selected. If, on the other hand, Speed is set to 10, a mandolin-like clear and distinct staccato sound can be obtained.

Auto Wah

With this button ON, and Speed set to zero, the muted effect of a "wah" trumpet can be obtained. If, on the other hand, Speed is set to 10, the Auto Wah effect can be selected.

Upper Add

When this button is ON, sounds of the tone tablets can be mixed with the sounds of the harmonizer.

Volume

The sound volume of the harmonizer can be freely adjusted. Note that no sound will be produced if the volume is set to zero.

When the harmonizer is not being used, be sure to push the cancel button to keep it off.

Some examples of the tones which can be created with the Harmonizer are shown below.

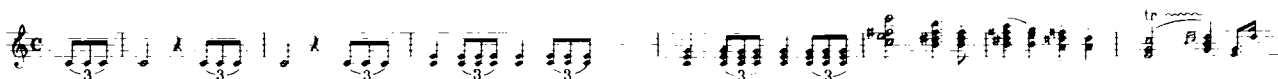
BRASS ENSEMBLE

wave form peak freq speed repeat auto wah upper add volume Chorus-On



BRIGHT TRUMPET

wave form peak freq speed repeat auto wah upper add volume Chorus-On



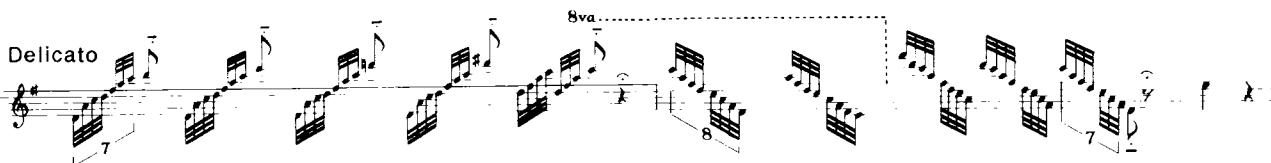
CLARINET

wave form peak freq speed repeat auto wah upper add volume Chorus-On



HARP

wave form peak freq speed repeat auto wah upper add volume Chorus-On
Vibrato-On
Sustain Lever-2nd

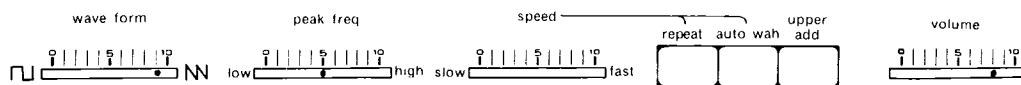


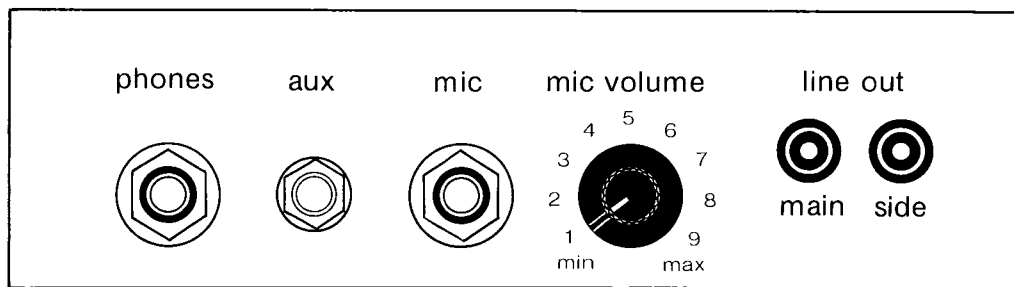
WAH TRUMPET

wave form peak freq speed repeat auto wah upper add volume Chorus-On
Vibrato-On
Delay-On

SOFT TRUMPLET

wave form peak freq speed repeat auto wah upper add volume Chorus-On
Vibrato-On
Delay-On





Headphones Jack

All Matsushita organs have a facility for using headphones for silent practice. When plugged in, the organ speaker system is automatically cut off: the only sound heard in these conditions is through the headphones.

Because this organ is a stereophonic organ, it is essential that only stereophonic headphones be used. You can hear the Multi-Tremolo effect through the headphones.

Output Terminals (MAIN, SIDE)[LINE OUT]

The organ is designed to enable the player to use it most successfully for professional work if required. By plugging into a high-power stereophonic amplifier via the Output Terminals, the complete organ sound, including microphone and auxiliary instruments, can be reproduced at a very high volume level. In addition, you can channel the sound of the organ into your Hi-Fi, Stereo or Quadraphonic system for home use to very good effect. Furthermore, the sound of this organ can be tape recorded most successfully by using this method of connection. The output terminals are located under the right side of the keyboard (output level 360mV 600 Ω).

Input Terminal [AUX]

If the organ is to be used for professional purposes or in conjunction with other electronic equipment, the Auxiliary Input Terminal will be a useful advantage. Among the many items which can be connected to this are Tape/Disc pre-amps, portable synthesizers and electric guitars. It is suggested that bass guitars not be used.

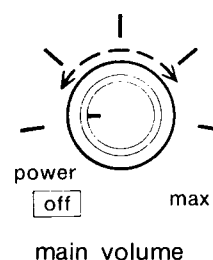
Because the input impedances of some guitars vary, better results may be achieved by plugging into the microphone terminal (input level 25mV, 20k Ω).

Microphone Terminal [MIC]

The input impedance of this Terminal is 20k ohms at 5mV and is therefore ideal for use with dynamic microphones of the uni-directional type. There is a volume control included at the microphone terminal in order to balance the voice with organ volume. There is a volume control included at the microphone terminal in order to balance the voice with organ volume. Increase the volume of the microphone by turning the control to the right (clockwise).

Power Switch & Volume Control Knob

You will have found that by turning the knob to the right, the organ is switched on and, by continuing to turn the control, the volume of the organ increases. It was mentioned earlier that the expression pedal also acts as a volume control. However, the main purpose of the Main volume control is to allow you to preset the maximum volume of the organ to suit the room in which the organ is being played, or the conditions under which the organ is used. The advantage of this control is that it enables the player to control the maximum volume desired, but yet still allowing him to use the expression pedal effectively. After playing the organ, the Volume Control is turned counterclockwise to a position at which the power is switched off.

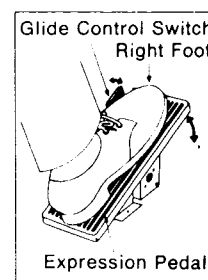


Expression Pedal

The volume pedal operated by the right foot is above all, what the feature implies, i.e., an expression control. In other words, it is there to enable the player to express a feeling for the music by controlling the volume of the organ. Remember not to beat time with your right foot on the Expression Pedal because to do so will have a detrimental effect on your performance.

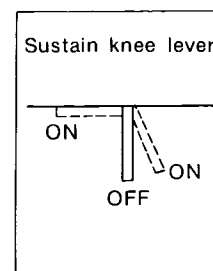
Glide Control Switch

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.



Sustain Knee Lever

The sustain can be turned on or off by using the right knee during the performance. When sustain is not needed, move it to the left, under the keyboard.



Maintenance

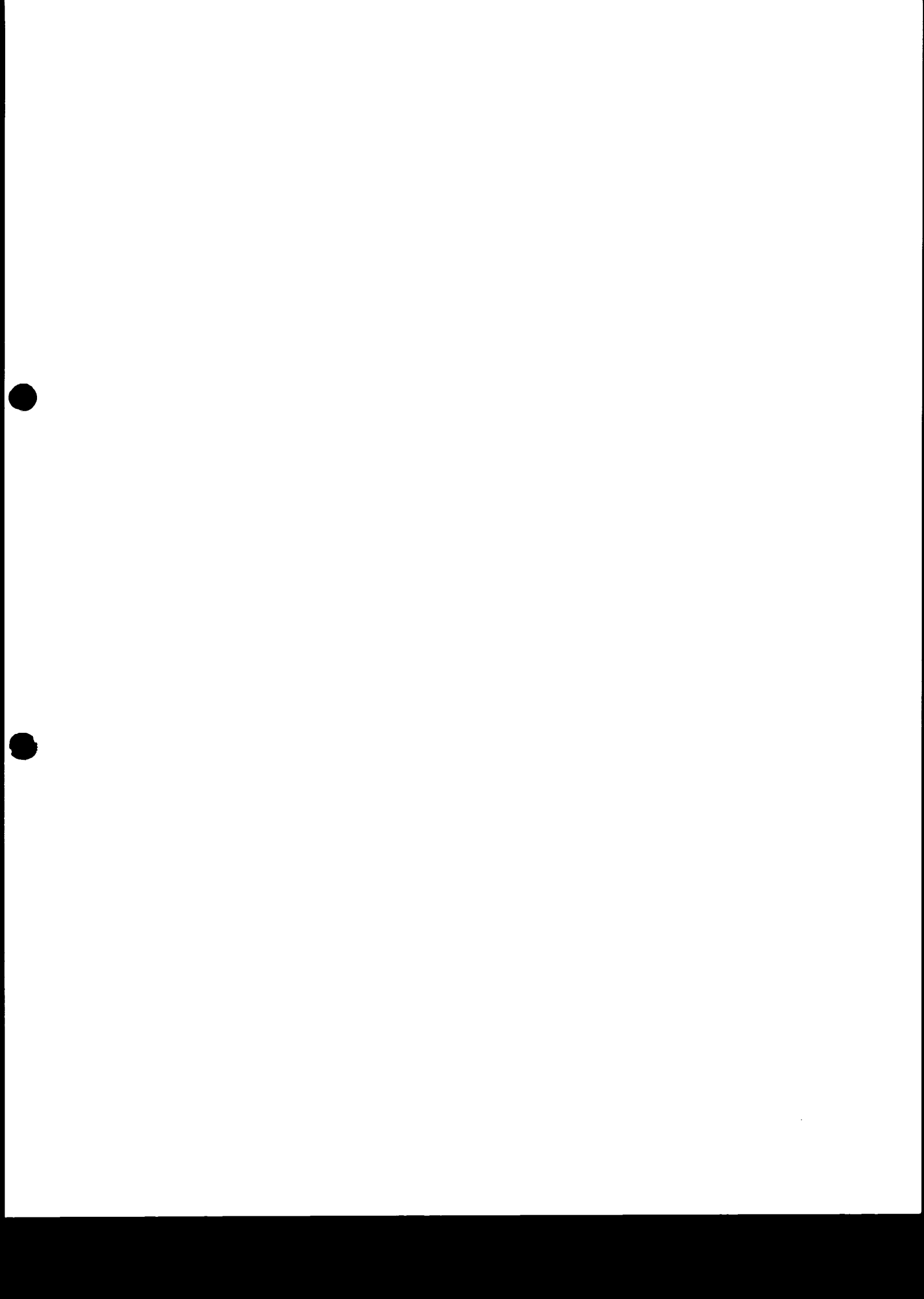
This Organ is a very high quality product and built to a standard to ensure good performance, long life and reliability. Nevertheless, even the finest merchandise service occasionally requires in the unlikely event of failure, please insist, when contacting your Organ Dealer that genuine replacement parts are used in order to satisfy yourself that your instrument will continue to give you many years of trouble-free pleasure.

However, the following do's and don'ts will assist you in keeping the organ in top condition:

- Be sure to switch the instrument off after use, and do not switch the organ on and off in quick succession, as this places an undue load on the electronic components.
- Do not, under any circumstances, remove the back from the organ and tamper with the electronic circuitry. If a fault does develop, switch the organ off, unplug it from the electrical outlet and contact your nearest Organ Dealer. To assist your Dealer, please explain the nature of the fault.
- To keep the lustre of the keys and tabs, simply use a damp cloth to clean and finish with a soft duster. Polish may be used but do not use thinners or petrol chemical based polishes.
- The cabinet may be polished with a wax polish, although you will find that a rub with a soft cloth will normally suffice.

Specifications

Keyboards:	Upper Manual	44 keys	F2-C6	(3½' octaves)
	Lower Manual	44 keys	F1-C5	(3½' octaves)
	Pedal Keyboard	13 keys	C1-C2	(1 octave)
Tones:	Upper Manual.....Flute 16', Flute8', Flute4', Diapason8', Clarinet16', Oboe8', String8', String4', Pre-Set SoundSaxophone, Piano, Harpsichord, Vibraphone, Cancel			
	Lower Manual.....Flute, Diapason, Horn, Cello			
	Pedal.....Bass16', Bass8',			
Effects:	Multi-Tremolo (On-Off, Light-Heavy, Slow-Fast), Chorus, Vibrato, Pedal Sustain (On-Off, Short-Long), Upper Sustain(Length), Manual Balance, Reverberation, Reverberation Select, Brilliance, Pedal Volume, Glide Control,			
Automatic Rhythm:	Rhythm Selectors.....Rock, Slow Rock, Fox Trot, Swing, Rumba, Cha-Cha, Bossa Nova, Waltz, Rhythm Volume, Rhythm Balance, Tempo, Synchronous Start, Touch Start, Touch Switch On-Off, Tempo Lamp.			
Auto-Play-Chord Harmonizer	One finger chord, fingered chord, separated pedal, constant, memory Harmonizer On-Off, Wave form, peak frequency, speed, repeat, auto wah, upper add, volume.			
Others:	Power Switch & Volume Control, Expression Pedal, Headphone Jack, Input jack Microphone Terminal (with Volume), Output Terminals (Main, Side), Pilot Lamp, Sustain Knee Lever			
Output:	50W(Peak power)			
Speakers:	25cm(10")×1, 20cm(8")×2, 8cm(3")×1			
L.S.I.:	2			
IC's:	73(Hi-Mic 51)	Transistors:	254(FET 11)	
Diodes:	408	Power Requirement:	130W AC 100/120/220/240V 50-60 Hz	
Cabinet:	Simulated Oceanian Rosewood: 114cm(45.1")(W)×94cm(37.2")(H)×59cm(23.3")(D)			
Net Weight:	68kg. (149lbs.)			



Matsushita Electric Trading Co., Ltd.

P.O. Box 288, Central Osaka Japan