



**EM-305**  
**EM-303**  
INTELLIGENT SYNTHESIZER

**OWNER'S MANUAL**

**Roland**



# Roland

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INTELLIGENT SYNTHESIZER

# EM-305/EM-303

## OWNER'S MANUAL

### Before You Begin...

Thank you for your purchase of the Roland EM-305/303 Intelligent Synthesizer. The EM-305/303 is a synthesizer keyboard that lets you enjoy playing ensembles with very little effort. To help you get the most out of your keyboard, and enjoy years of trouble-free service, please read your manual thoroughly.

### Main Features

**1. Lots of tones available for play**

The EM-305/303 has 128 tones covering a wide range of instruments, including piano, violin, and trumpet. It's easy to select these tones, making it a snap to play a rich array of instrumental sounds. There are also many drum tones available for rhythmic expression.

**2. Sophisticated ensembles can be played**

Whether it be rock, bossa nova, samba, or whatever, the built-in Arranger lets you play music in a wide range of styles. Just select the music style you want, and the synthesizer automatically plays a full accompaniment.

**3. High-quality stereo sound with just the synthesizer**

The EM-305/303's built-in amp and speakers produce high-quality sound — without having to hook up a keyboard amp or other external device.

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# Important Notes

When using an AC adaptor, be sure that it is one supplied by the manufacturer. Use of any other power adaptor could result in damage, malfunction, or electric shock.

## (Power Supply)

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.
- The power supply required for this unit is shown on its nameplate. Ensure that the line voltage of your installation meets this requirement.
- Avoid damaging the power cord; do not step on it, place heavy objects on it etc.
- When disconnecting the AC adaptor from the outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for a long period of time, unplug the power cord.
- The use of an AC adaptor is recommended as the unit's power consumption is relatively high. However, when using batteries, please use the alkaline type.
- When replacing batteries, be sure to follow the instructions in "Changing Batteries" (see page 6).

## (Placement)

- Do not subject the unit to temperature extremes (eg. direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas or areas that are subject to high vibration levels.
- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.
- Do not expose this unit to temperature extremes (eg. direct sunlight in an enclosed vehicle can deform or discolor the unit) or install it near devices that radiate heat.

## (Maintenance)

- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

## (Changing Batteries)

- Avoid using new batteries together with old ones. Also avoid mixing different types of batteries (eg. regular carbon and alkaline batteries).
- When replacing batteries, be sure to maintain correct polarity.
- Remove the batteries whenever the unit is not going to be used for an extended period of time.

## (Additional Precautions)

- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Never strike or apply strong pressure to the display.
- Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.
- To prevent the risk of electric shock, do not open the unit or its AC adaptor.

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## About the EM-305 and the EM-303

This manual explains the functions of both the EM-305 and the EM-303. In this manual, the following symbols are used whenever a particular explanation applies to only one of the two. Make sure that specific descriptions apply to your particular model.



For owners of the EM-305.

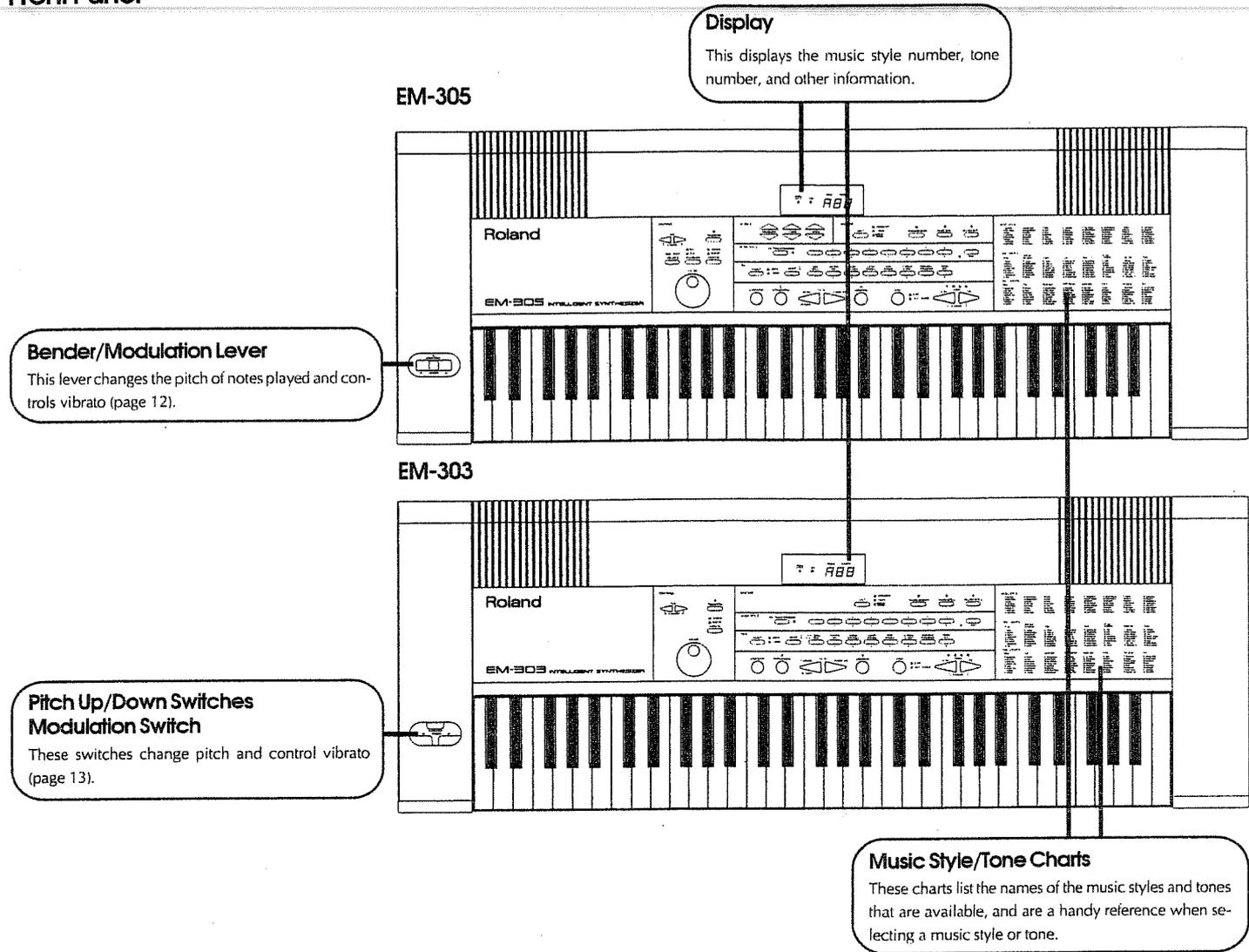


For owners of the EM-303.

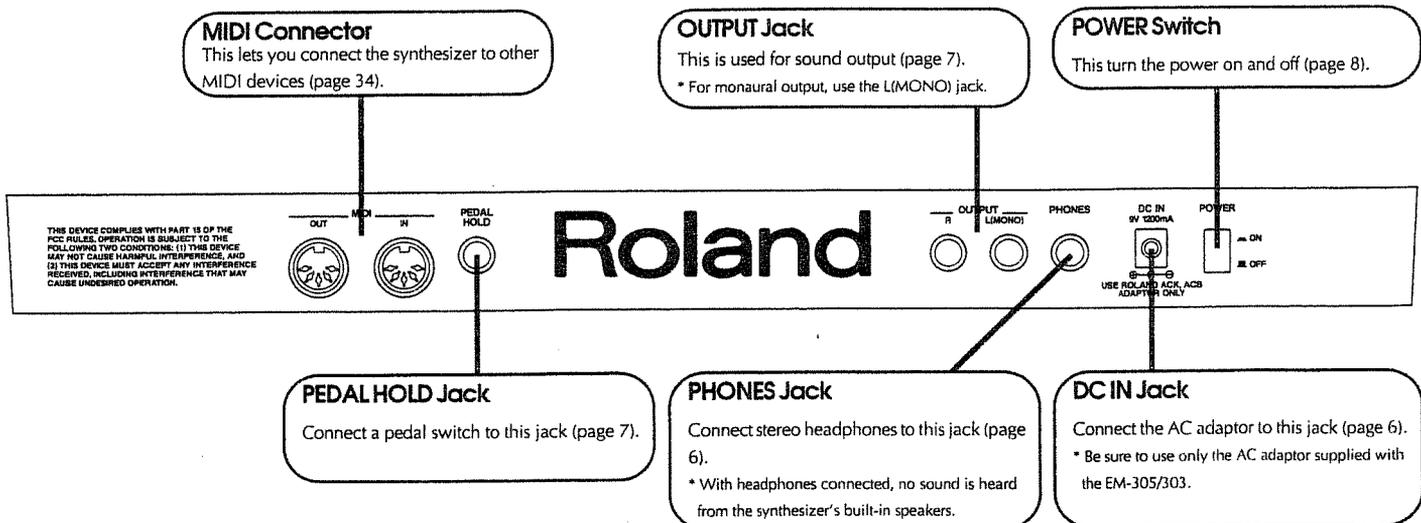
# Part Names and Description

This section explains the names and operation of all the parts on the EM-305/303. If you need more details, see the page number given for the particular function. Switches marked [305] are available only on the EM-305.

## Front Panel



## Rear Panel



# Panel Switches

## CONTROLS Section

Use the controls in this section to make overall settings for the EM-305/303.

TUNE ..... These buttons adjust the overall tuning (page 32).

TRANSPOSE ..... This button shifts the pitch of the keyboard up and down in semi-tone (page 31).

KBD VELO ..... [305] This buttons used for turning Velocity on/off, and for tuning a specific note to a different pitch (page 32).

RECORDER ..... [305] This records whatever you play (page 28).

EFFECTS ..... This button turns the effects on and off (page 28).

VOLUME ..... This knob adjusts the overall volume (page 8).

## MASTERS Section

These controls set the Split and Intelligence functions.

SPLIT ..... This button selects the keyboard mode (page 24).

CHORD MEMORY ... This function sustains the chord that has been played even when the keys are released (page 23).

CHORD INTELL ..... This button turns the Chord Intelligence function on and off (page 21).

MELODY INTELL ..... This button turns the Melody Intelligence function on and off (page 23).

## BALANCE Section

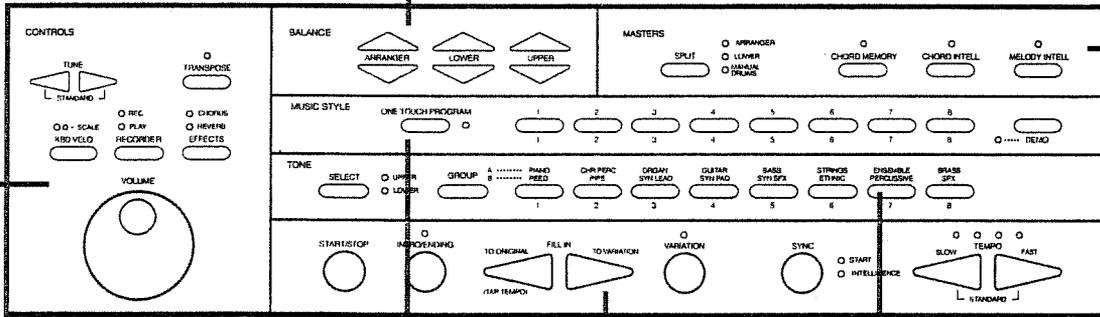
The controls in this section allow you to create the right volume balance between different parts.

ARRANGER .... [305] These buttons adjust the volume of the Arranger (page 27).

LOWER ..... [305] These buttons adjust the volume of the lower tone (page 27).

UPPER ..... [305] These buttons adjust the volume of the upper tone (page 27).

### EM-305



## MUSIC STYLE Section

Use these buttons to select a music style.

ONE TOUCH PROGRAM

..... This button turns the One Touch Program function on and off (page 19).

Buttons 1-8 ... These buttons select the music styles (page 16).

DEMO ..... This button selects the demo song mode (page 9).

## TONE Section

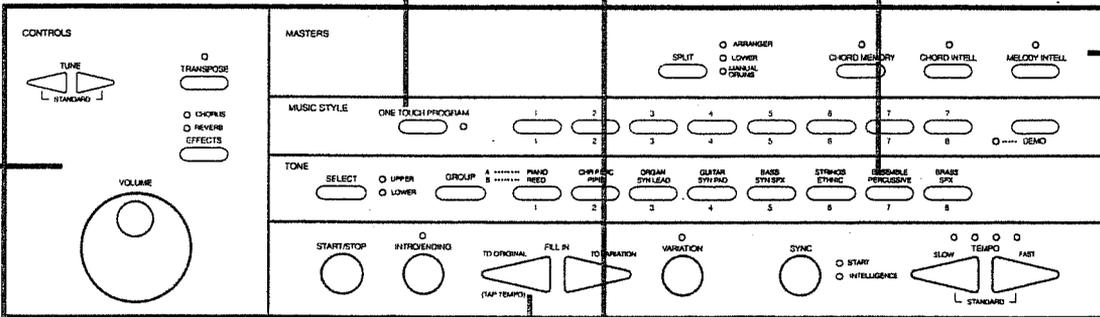
Use the buttons in this section to select a tone.

SELECT ..... This button switches between the lower and upper tone (page 25).

GROUP ..... This button selects either group A or B (page 12,25).

Buttons 1-8 ... These buttons select the tones (page 12,25).

### EM-303



START/STOP ..... This button starts and stops the music style and the Recorder (EM-305 — page 14,23).

INTRO/ENDING .. This function adds an intro or an ending phrase to a music style (page 17,24).

FILL IN ..... These buttons add a 'fill-in pattern' (page 17).

VARIATION ..... This button switches to the Variation backing arrangement without playing a fill-in (page 16).

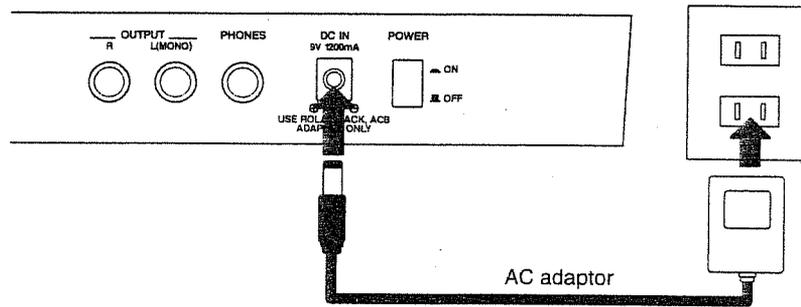
SYNC ..... This button sets the sync start function (page 23).

TEMPO ..... These buttons adjust the music style (and Recorder song) tempo (page 19).

# Making the Connections

## Plugging in the AC Adaptor

-  **1** Plug the AC adaptor into the DC IN connector on the rear panel.
-  **2** Plug the adaptor into a power outlet.

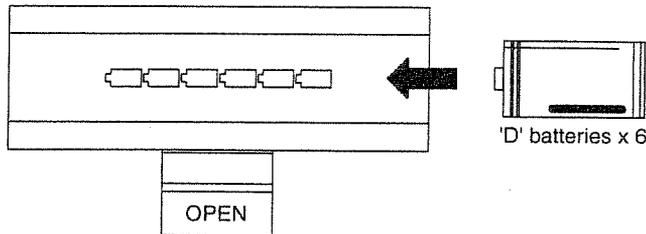


\* Be sure to use only the AC adaptor supplied with your EM-305/303.

## Installing Batteries

You can also use batteries to power the EM-305/303 (instead of the AC adaptor).

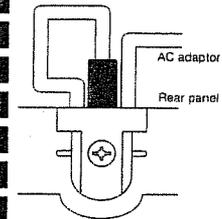
-  **1** Remove the battery cover on the bottom of the EM-305/303.
-  **2** Load six 'D' batteries (sold separately) as shown in the figure.



\* When using the EM-305/303 on battery power only, the sound will be distorted when the batteries begin to run down. If this happens, replace the batteries as soon as possible.

### The cable hook

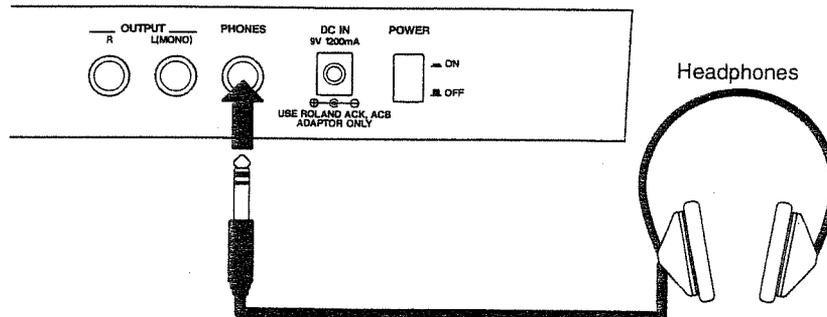
By looping the AC adaptor cable around the cable hook, you can prevent the plug from accidentally being disconnected.



## Listening with Headphones

You can listen to your music through the built-in speakers, or you can use headphones.

-  **1** Plug the headphones into the PHONES jack.



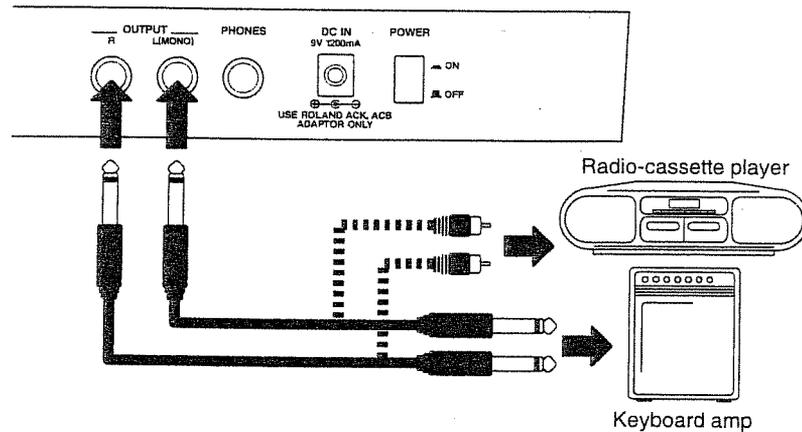
\* The PHONES jack on the EM-305/303 is a standard stereo phone jack. If you're using mini-plug headphones, be sure to use the proper adaptor plug to convert it to standard size.

\* When headphones are connected to the PHONES jack, the internal speakers will be cut off.

## Playing Sounds Through a Keyboard Amp, Radio-cassette Player, or Other Playback Device

You can listen to your music with the built-in speakers, or you can hook the instrument up to an external playback device (like a keyboard amp or radio-cassette player), and listen to your music that way. When connected to a radio-cassette player, you can also record your performances onto cassette tape.

 Connect the OUTPUT L(MONO) and R jacks on the rear panel to the INPUT jacks on the keyboard amp or radio-cassette player.



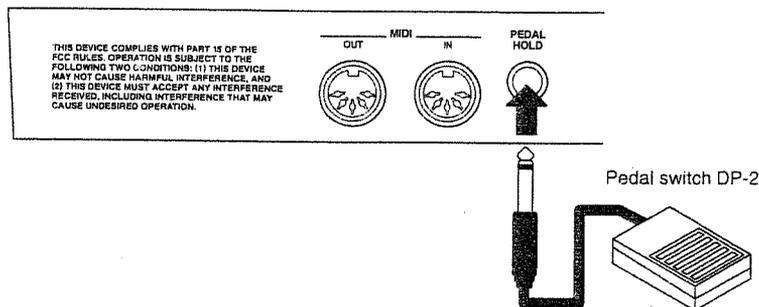
\* When making a monaural (single-cable) connection, be sure to use the L(MONO) jack.

\* If you're connecting the EM-305/303 to a radio-cassette player, make the connection to the LINE IN or AUX IN jack on the playback device. If the playback device has RCA jacks, use the necessary plug adaptors.

## Connecting the Pedal

Connecting a pedal switch lets you sustain (hold) a sound while the pedal is depressed, just like the damper pedal on a piano.

 Plug the pedal switch into the PEDAL HOLD jack on the rear panel.



\* Use the optional DP-2 pedal switch available from Roland.

### If You Don't Want Sound from the Synthesizer...

If you want to play through an external device such as a keyboard amp or radio-cassette player, but don't want any sound from the speakers in the synthesizer, insert a plug into the PHONES jack.

# Let's Listen to the Demo Songs

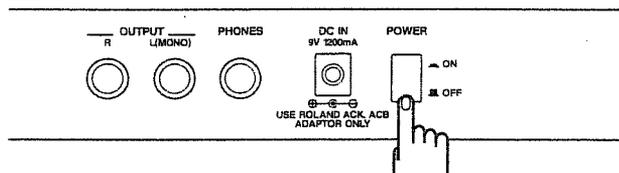
The EM-305/303 has eight built-in tunes for demonstration that make use of a wide range of tones and accompaniment music styles. These tunes are called demo songs.

To begin, try listening to the demo songs and find out for yourself what the EM-305/303 can do.

## Powering Up

First of all, make sure the AC adaptor is plugged in (or that batteries are loaded).

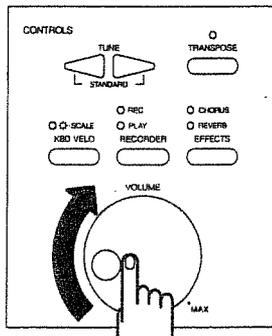
 Press the POWER switch.



## Adjusting the Volume

Use the VOLUME knob in the CONTROLS section to adjust the volume of the EM-305/303.

 Rotate the VOLUME knob to the appropriate level.



# Playing the Demo Songs

Now let's listen to the demo songs.

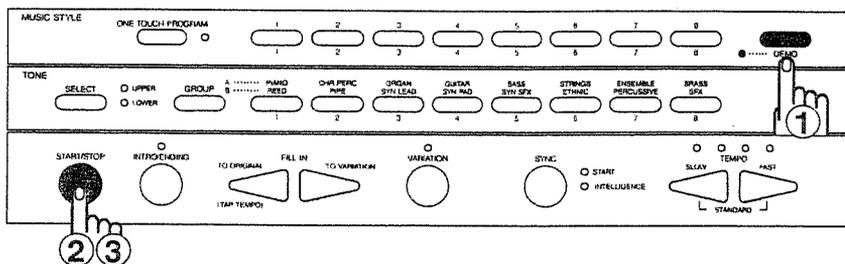
 **1** Press the DEMO button.

This lights up the indicator, which means that you're now ready to hear a demo song.

 **2** press the START/STOP button.

The eight demo songs are played, one after another.

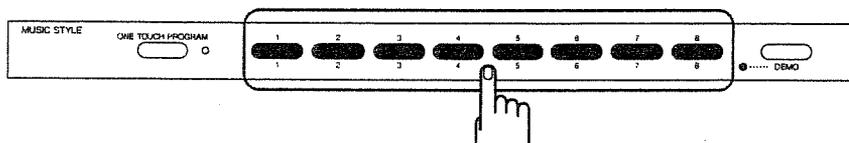
 **3** To stop playback of the demo songs, press the START/STOP button again.



The demo songs highlight the capabilities of the instrument. They contain combinations of rhythm performances with drums and percussion, bass patterns, backings, embellishing phrases, and melodies. Listening to the demo songs should give you a good idea of the tones and music styles available in the EM-305/303.

You can also listen to any of the eight demo songs individually.

 Pressing the corresponding MUSIC STYLE button (1 — 8) lets you hear only that song.

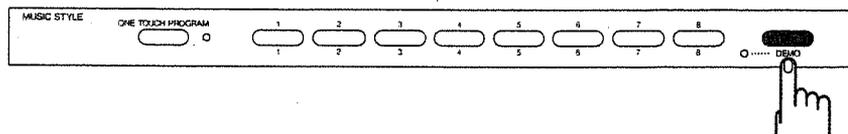


\* You can't change songs during playback. To listen to a different song, first stop playback by pressing the START/STOP button, then press the desired number button (1 — 8).

When the demo songs finish playing, you need to exit the demo mode and ready the synthesizer for normal play.

 Press the DEMO button again.

The DEMO indicator goes out.



These are the eight demo songs built in to the EM-305/303.

<b>1. Straight Row</b>	by Marvin Sanders	Style: Big Band	Copyright©1993, Marvin Sanders
<b>2. Golden</b>	by Ichi Itoh	Style: 50's Rock	Copyright©1993, Roland
<b>3. Father</b>	by Ichi Itoh	Style: Bossa Nova 1	Copyright©1993, Roland
<b>4. Summer Etude</b>	by Mark Van Der Sluis	Style: Ballad	Copyright©1993, Roland New Zealand
<b>5. Mascot</b>	by Marvin Sanders	Style: March	Copyright©1993, Marvin Sanders
<b>6. Town Square</b>	by Marvin Sanders	Style: Blue Grass	Copyright©1993, Marvin Sanders
<b>7. Joe's Revival</b>	by Marvin Sanders	Style: Gospel	Copyright©1993, Marvin Sanders
<b>8. Yellow</b>	by Ichi Itoh	Style: Blues	Copyright©1993, Roland

#### **Marvin Sanders**

Marvin Sanders is a somewhat wacky Los Angeles composer whose work can be heard on projects for Toyota, Acura, Max Factor, Alpine, Thomas Brothers, Theater for Young Audiences, and Michael Jackson. He has also worked extensively with Roland, conducting clinics and writing music for numerous product videos and demos including ROM-plays in the SC-155 and JV-880.

#### **Seiichi Itoh**

His life has thus far been a story of remarkable achievements, beginning with winning an electric organ contest even while still in junior high school. While in high school, he acquired in-depth knowledge on computers and their use in business. At the time he entered university, he was also an active participant in the business of a Japanese record company. Afterwards, a period in which he served as an advisor on keyboard instruments for Roland Corporation lead to his being taken on-board as a full-time employee. So far, he has performed in 137 cities overseas, and 200 within Japan. He resigned from Roland in 1987 in order to establish his own school of music. Currently, while managing his company's "Studio Ichi," he also serves as an advisor to Roland concerning development of new electronic musical instruments, and assists with their promotion throughout the realm of music.

#### **Mark Van Der Sluis**

Mark is a natural musician with no formal music training. Since the age of 12, he has been composing and performing as a professional keyboard player, involved in recording, television and live performances. Mark joined Roland New Zealand in 1989 as a Product Specialist and continues to be actively involved in promotional performances, product demonstration and clinics.

# SECTION 1

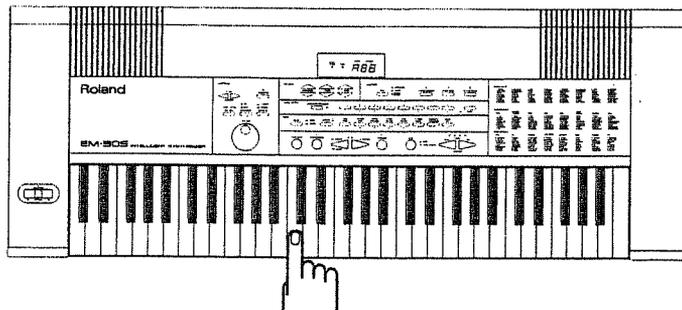
## Let's Play!

The EM-305/303 contains a wide range of instrument sounds (called "tones"), including piano, guitar, violin, and trumpet. You can easily switch tones as you play. Let's start by checking out some of the 128 different tones.

### Playing Tones

First, make sure the EM-305/303 is on. If you've been doing something else on the synthesizer, turn the power off and then on again to clear it.

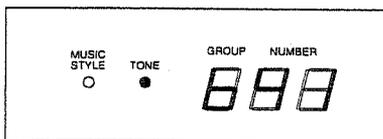
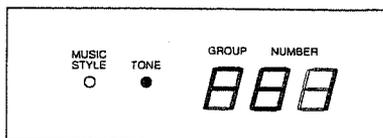
 Hit any key.



You should hear a piano tone. This is "A11 Piano 1," which is number 11 in tone group A.

The 128 tones are listed under the alphabetical and numerical headings of "Group," "Bank," and "Number." There are two groups — A and B — each of which has eight banks containing tones for different kinds of instruments, like piano, organ, and guitar. Each bank contains eight tones indicated by numbers from 1 — 8. Tone charts are printed on the upper right part of the front panel for easy confirmation of the tones available in each group and bank.

The tone currently selected — which you just played on the keyboard — is indicated as a "Group - Bank - Number" in the display. For instance, a display of "A81" means "Group A - Bank 8 - Number 1," which is the Trumpet tone. A display of "b41" means you've chosen Group B - Bank 4 - Number 1. That's the Fantasia tone.



#### When the Power Is Turned On...

Turning on the power initializes (or resets) the instrument's basic settings. If something doesn't work like it should, or if you're not sure about what you're doing, switch the power off and then on again, and then start over.

#### The Display

The instrument's display gives you all sorts of information. It normally shows the number of the tone or music style. (You can tell which by checking whether the TONE or the MUSIC STYLE indicator is lit).

## Try Playing a Wide Range of Tones

Now you're ready to try playing each of the 128 different tones! Here's how you change the selected tone:

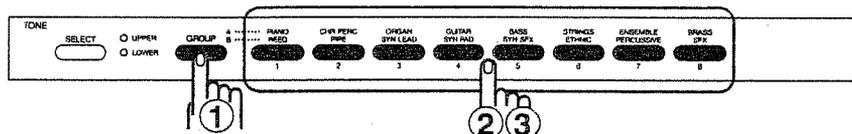
**1** Press the **GROUP** button to choose the group.

Each press of the **GROUP** button switches from Group A to Group B (or vice versa). Check the display to find out which group is currently selected.

*\* To change from one tone to another within the same group, you don't need to press the **GROUP** button.*

**2** Press a button from **1 — 8** in the **TONE** section to choose the bank.

**3** Then press a button from **1 — 8** in the **TONE** section to select the number.



*\* When switching tones, be sure to use buttons 1 — 8 in the **TONE** section to choose the bank first, followed by the number.*

**When Buttons 1 — 8 are Pressed...**

When you press a button to choose the bank, the right-most character in the display flashes.

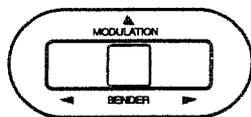
This shows that the synthesizer is waiting for the number selection. Continue by pressing one of the buttons (1 — 8) to specify the number.

## Add Expressive Power to the Tone

You can add expressiveness to tones by shifting the pitch up or down, or by adding vibrato.

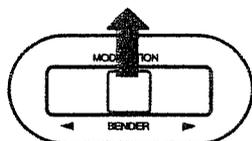
### EM-305 Using the Bender/Modulation Lever

While playing a tone on the keyboard, you can move the Bender/Modulation lever to the left to lower the pitch, or to the right to raise it. By moving the Bender/Modulation lever from side to side in this way, you can shift the pitch of a note up and down by one whole tone (two half-steps).



Lowers the pitch ← → Raises the pitch

Pushing the Bender/Modulation lever toward the top of the instrument while playing a tone on the keyboard adds a 'vibrato' effect.

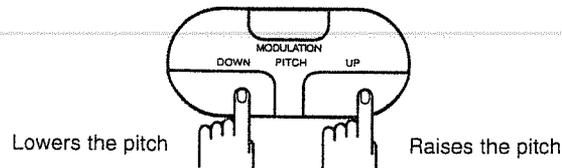


Adds vibrato

*\* With some tones, it's hard to hear the effect produced by moving the Bender/Modulation lever.*

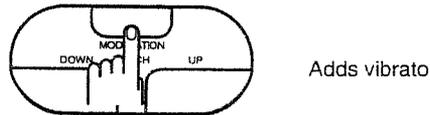
## EM-303 Using the Pitch Up/Down Switches

While playing a tone on the keyboard, you can press the left switch to lower the pitch, or press the right switch to raise it. Using the Pitch Up/Down switches in this way, you can shift the pitch of a note up and down by one whole tone (two half-steps).



## EM-303 Using the Modulation Switch

Pressing the Modulation switch while playing a tone on the keyboard adds a vibrato effect.



*\* With some tones, it's hard to hear the effect produced by pressing the Pitch Up/Down, Modulation switches.*

Using the Bender/Modulation lever or the Pitch Up/Down switches to shift pitch is an effective way to add realistic effects. Using these controls you can create 'string bending' techniques (as used by guitar players), or 'scoop attack' (as created by woodwind and brass instrument players).

Vibrato is effective when added to sustained tones, such as those produced by string and wind instruments. Adding vibrato makes the pitch fluctuate slightly, enabling you to create life-like performances.

# Try Playing with the Music Styles

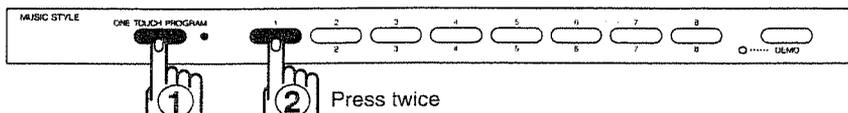
The EM-305/303 has an Arranger function that makes it easy to enjoy music in a wide variety of styles. This Arranger is a function that automatically adds rhythm, bass, and backing appropriate to the selected style.

Now let's try playing with the musical styles in the EM-305/303.

**1** Press the ONE TOUCH PROGRAM button.

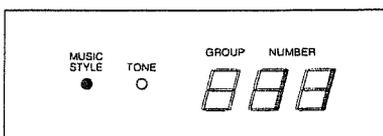
The button indicator will light.

**2** Press the 1 button in the MUSIC STYLE section twice.



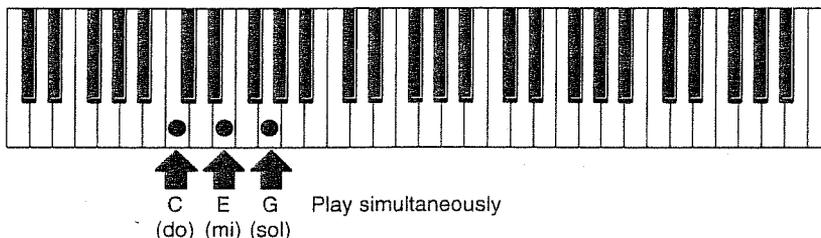
This operation selects "11 Big Band" as the music style.

When you select the music style, the corresponding number appears in the display. Make sure that the MUSIC STYLE indicator is lit and the number "11" is displayed.



Now let's try playing.

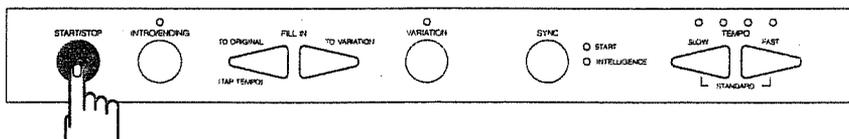
**h** Simultaneously play the three keys shown in the following figure.



When you play the keyboard, the performance begins. Simply playing a chord on the keyboard makes rhythm, bass, and backing start automatically.

\* The accompaniment continues even after you release the keys.

**h** To stop the accompaniment, press the START/STOP button.



## What is the Arranger?

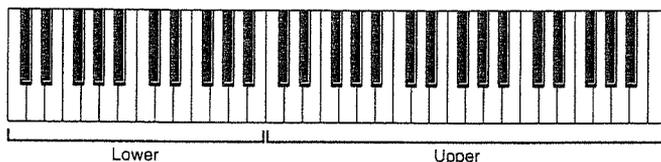
In music, each instrument is assigned a specific role, with all the instruments together making up an ensemble. When arranging a song, you must assign an instrument to each part, while at the same time keeping the entire ensemble in mind. For example, what rhythm should the drums play? What phrases should the bass play? The Arranger of the EM-305/303 is a function that automatically creates parts for rhythm, bass, and so on.

## Listen Carefully to the Music Style Accompaniment

When it starts, listen carefully to the music style accompaniment. It is not just a repetition of the same notes from one bar to the next — play follows a different pattern over several measures. Playing different keys on the keyboard (changing the chord) also makes the accompaniment change. In this way, the music style gives you the accompaniment that is best matched to the flow of the song and the chords you're playing.

By using the Arranger function, you can get an automatic accompaniment that matches the chords you play with your left hand. You can then play a melody with your right hand!

Middle C on the EM-305/303 keyboard marks a boundary, with the keys to the left used for the Arranger function (automatic accompaniment) and the keys to the right for playing the melody. This division of the keyboard into two sections is called a "split." The left-hand part is called the lower section, and the right-hand part is the upper section.



Now try playing a melody with the right hand while playing the music style with the left. Use the sample score shown below.



How did it sound? It's easy to play a piano melody and enjoy big-band jazz orchestra accompaniment as the backing. With the EM-305/303, you can make entertaining ensembles with just simple keyboard play.

If you find it difficult to use the accompaniment proficiently, it may be helpful for you to practice in the sequence described below.

**1) First, play the accompaniment with just your left hand.**

Once you play a chord, the music style accompaniment continues in the same chord until you play a different one. After you play one chord, get ready to play the next one.

**2) When you play a chord, hit all the keys at the same time.**

When you play a chord, the accompaniment won't be correct if you play the keys one at a time. Be sure to hit all the keys of a chord simultaneously.

**3) Listen carefully to the rhythm as you play.**

The music style accompaniment automatically changes the chord at the same time that the keyboard is played. Listen closely to the rhythm and try to play the chords on the first beat of the measure.

**4) Practice the right-hand melody.**

When the music style accompaniment is stopped, you can play just the melody on the upper section. After you can play the melody smoothly with your right hand, add the left-hand part.

**How to Read the Score**

The upper staff (treble clef) is the melody you play with your right hand on the upper section. The lower staff (bass clef) gives the chords you play with your left hand on the lower section.

**TEMPO Indicators**

The four indicators above the TEMPO button show the beat of what's being played. The red indicator shows the first beat of the measure.

## Try Out a Range of Music Styles

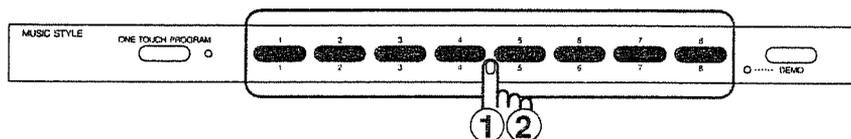
In addition to Big Band, the EM-305/303 offers music styles in a diverse range of genres — 64 in all. Check out these music styles for yourself.

As with the tones, the music styles are organized into Banks and Numbers. Check the list of music styles printed on the right side of the front panel.

First of all, make sure that the accompaniment is stopped. If a music style is playing, press the START/STOP button. Also make sure that the ONE TOUCH PROGRAM indicator is lit.

 **1** Press a button (1—8) in the MUSIC STYLE section to choose the bank.

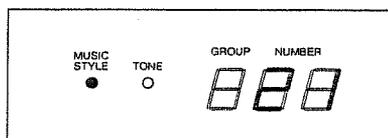
 **2** Next, press a button (1—8) in the MUSIC STYLE section to choose the number.



 **3** Play a chord in the lower section of the keyboard to start accompaniment in the style you've selected.

\* When switching from one music style to another, be sure to use buttons 1 through 8 in the MUSIC STYLE section to select the bank and then the number.

The music style that is currently selected appears in the display as a 'bank' and a 'number.' For instance, a display of "21" signifies "Bank 2, Number 1," (the Bossa Nova music style).



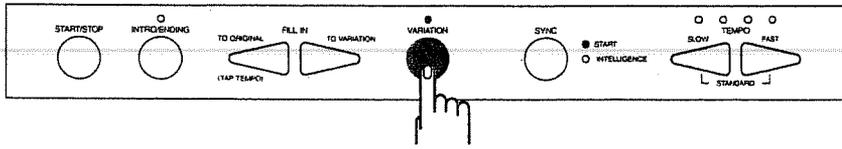
When you select a different music style, the tempo and the tone of the upper section are also instantly changed to match the new music style. You can even change the music style while you're still playing, but be careful — the tempo and the tone of the upper section change too! (See "One Touch Program" on page 19.)

## Add Variations

The music style can add accompaniment features like rhythm, bass, and backing, depending on the musical genre, but each music style also offers another type of accompaniment. These alternate patterns are called "variations," while the basic style of accompaniment is called the "original." Since the EM-305/303 has 64 built-in music styles, and you can use both the original and the variation patterns, you can enjoy a total of 128 different accompaniment patterns!

You can switch between an original and its variation by pressing the VARIATION button.

 Each press of the VARIATION button switches from the original to the variation, or vice versa.

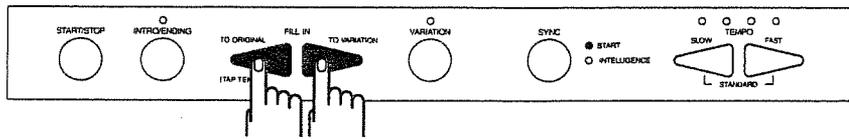


You can select either the original or the variation of a style to best match the mood or feel of the song. As an example, you could use the original for the quiet, first half of a song, then switch to the variation (during play) for the livelier second half.

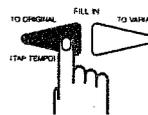
## Insert a Fill-in

When playing a song, there may come a point at which you want to switch to the variation pattern. However, just switching to the variation could sound rather abrupt. This is where the "fill-in" comes in. A fill-in is a short rhythmic 'break' played before the variation pattern is introduced. With the EM-305/303, you can add fill-ins during either original or variation accompaniment.

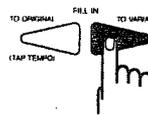
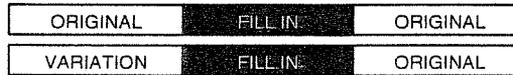
 Press either the TO ORIGINAL or TO VARIATION button to insert a fill-in.



TO ORIGINAL makes the music style switch to the original pattern after the fill-in, and TO VARIATION makes it switch to the variation. This means that you can use this function when switching from the original to the variation, or the other way around.



TO ORIGINAL: Changing to Original after playing the fill-in



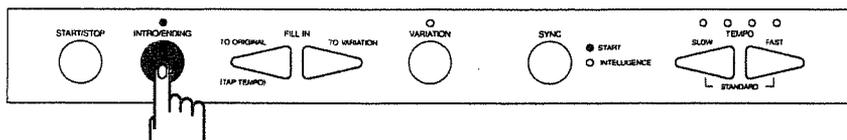
TO VARIATION: Changing to Variation after playing the fill-in



## Add an Intro and an Ending

The EM-305/303 also has a function for adding 'intros' and 'endings' to your tunes. Each music style has its own pair of intros and endings. Make sure that the ONE TOUCH PROGRAM indicator is lit.

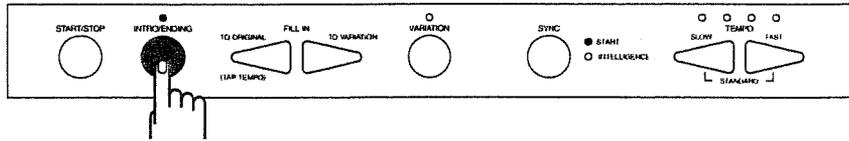
 When you wish to add an intro to the beginning of your song, press the INTRO/ENDING button.



The intro starts when you press the START/STOP button (while the indicator is flashing), or when you play the lower section of the keyboard.



To add an ending, press the INTRO/ENDING button during play.



Play stops automatically after the ending.

\* The number of measures in the intro or ending depends on the music style. Check out the Music Style Chart (page 41) for more information.

## Use a Variety of Functions with Your Music

So far we've covered the original and variation patterns of music styles, fill-ins, and the intro and ending functions. Now let's try using these functions while playing a tune.

Select "21 Bossa Nova" (original) as the music style.

▼ INTRO

▼ FILL TO VARIATION

ENDING ▼

If your song wasn't as smooth as you would like, the following pointers may help.

### Watch your timing when you press the button.

If your timing is off when you press the TO ORIGINAL or TO VARIATION button, the fill-in may not play correctly, or may end up being inserted in a different bar. Listen closely to the rhythm as you play. The same holds true for the ending — watch your timing when you press the INTRO/ENDING button. The ending is added at the first beat of the bar immediately after the measure where you press the button.

## SECTION 2

# Many Different Ways to Play

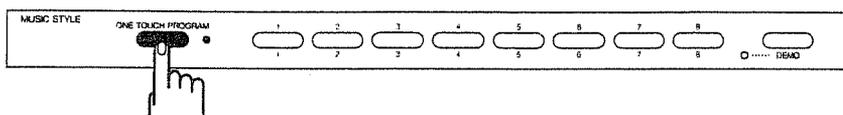
In Section 1 you saw how you can play with a variety of tones and music styles. The EM-305/303 also has lots of other functions that can make your music even more fun — and easier — to play.

## About One Touch Program

In Section 1, when you played a music style, you started out by pressing the ONE TOUCH PROGRAM button. One Touch Program is a function that automatically makes the best settings for each music style.



Each press of the ONE TOUCH PROGRAM button turns this function on or off.



When One Touch Program is turned on, the following settings are made when you switch the music style:

**Tempo** ----- A tempo suited to the music style.

**Tone** ----- An upper tone appropriate to the music style.

**Chorus** ----- The chorus for the upper tone is turned on or off, depending on the music style.

\* For explanations of tempo, tone and effects, see the descriptions of each on the pages listed below (tempo: page 19, tone: page 12 and effects: page 28).

\* Refer to the Music Style Chart (page 41) to check the tone that is selected when One Touch Program is on.

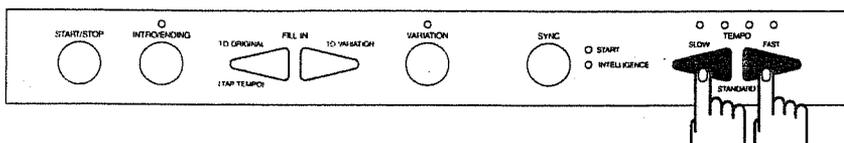
\* When One Touch Program is turned on, the Sync function is set to Sync Start, the Chord Memory function is also switched on, and the split point is set by the Arranger.

## Change the Tempo

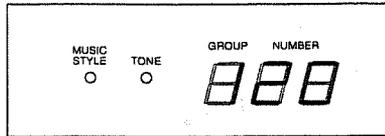
The tempo (speed) of the music style performance can be changed using the TEMPO buttons.



Pressing the SLOW button slows the tempo, and pressing the FAST button speeds it up.



While you're doing this, the current tempo is shown in the display.



\* After a short time, the display returns to the music style number.

Pressing the SLOW and FAST buttons at the same time returns the setting to the preset tempo of the selected music style.

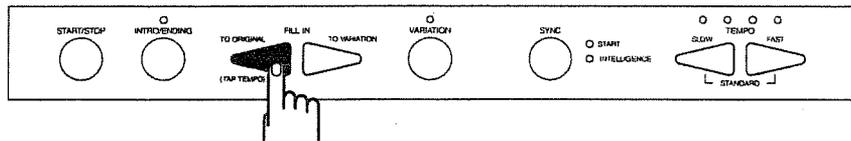
You can confirm the speed and the beat of the tempo with the TEMPO indicators. The red indicator flashes on the first beat, with the green indicators flashing on the second and following beats.

## Tap Tempo

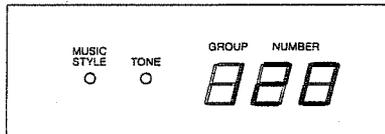
The EM-305/303 has a handy feature that lets you set the tempo by tapping on a button. This is called "Tap Tempo."



With play stopped, tap the TAP TEMPO button (the TO ORIGINAL button) at the desired tempo.



While you're doing this, the display shows the current tempo.



\* After a short time, the display returns to previous readout.

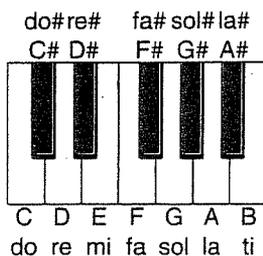
## Handy Functions for Playing Chords

The EM-305/303 can play music in a wide range of styles, depending on the chords played in the lower section. This means that as long as you have a melody score with chords, you can start playing right away. The EM-305/303 also has functions called 'Chord Intelligence' and 'Chord Memory' that make it even easier to play!

### About Chords

The name of a chord expresses the fundamental tone of the chord (called the "root") along with symbols that indicate the chord type. For example, the chord name "CM7" describes a major seventh chord with C (do) as the root.

The root is shown using letters of the alphabet, and has the following relationship to the keys on the keyboard.

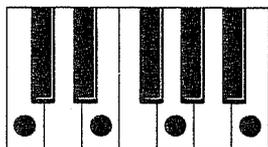


### The Tempo Number

The tempo indication is the number of quarter notes played per minute, with higher numbers indicating faster tempos. You can set this to any value from 20 to 250 beats per minute.

The chord type is shown using symbols such as "M7," "m," and "m7." This shows what kinds of tones are used to make the chord, with the root taken as the fundamental tone.

As an example, the chord CM7 is composed of four tones: C (do), E (mi), G (sol), and B (ti). In this combination, C (do) is the root, E (mi) is a major third (four half-steps) above, G (sol) is a perfect fifth (seven half-steps) above, and B (ti) is a major seventh (11 half-steps) above the root.



The chord type "M7" (major seventh) means a combination of tones composed of the root, a major third, a perfect fifth, and a major seventh. Because this has nothing to do with pitch of the root tone, the chord name "DM7" is made up of D (re), F# (fa #), A (la), and C# (do #).

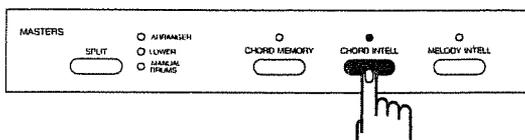
Check out the Chord Chart (page 42) for a list of the chords that the EM-305/303 can play. If you'd like to learn more about chords, it may be helpful to refer to books on musical theory or composition.

## Chord Intelligence

The EM-305/303 can recognize and play ten types of chords played in the lower section. Of these, however, seven frequently used chord types can be played by simply playing one, two, or three keys. This function is called 'Chord Intelligence.'



To use Chord Intelligence, press the CHORD INTELL button in the MASTERS section.

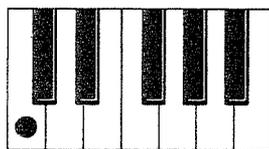


Below is a description of the chord types that can be played by the Chord Intelligence function. See the Chord Chart (page 42) for the chords made with each root tone.

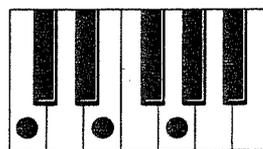
### Major

Play the root tone of the chord.

ex.C



Chord Intelligence on

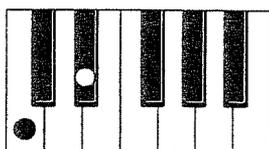


Chord Intelligence off

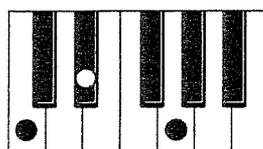
### Minor (m)

Play the root and the tone three half-steps (a minor third) above.

ex.C m



Chord Intelligence on



Chord Intelligence off

### Chord Notation

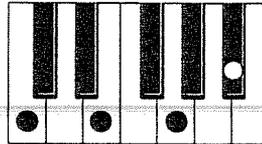
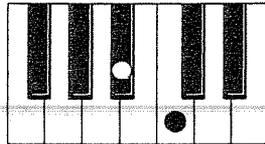
Many different notation systems are used to indicate chord types. For instance, C major is normally written "CMaj," but it sometimes may be expressed only as "C." Here are some examples of the many methods used for chord notation.

- Major: Maj, (no indication), or  $\Delta$
- Minor: Min, min, or -
- Major seventh: Maj7, maj7, or  $\Delta 7$
- Minor seventh: min7 or -7
- Diminished: dim or O
- Minor seventh flat fifth:  $\emptyset$ , min7-5, or min7(b5)
- \*\*"Minor seventh flat fifth" is also called "half diminished."

### Seventh (7)

Play the root and the tone two half-steps (a major second) below.

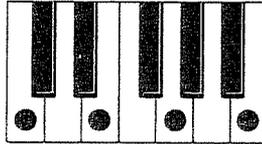
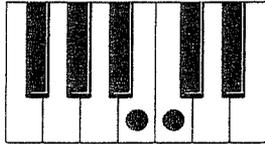
#### ex.C 7



### Major Seventh (M7)

Play the root and the tone one half-step (a minor second) below.

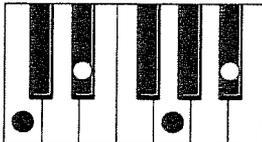
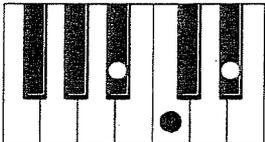
#### ex.C M7



### Minor Seventh (m7)

Simultaneously play the root, the tone three half-steps (a minor third) above, and the tone two half-steps (a major second) below.

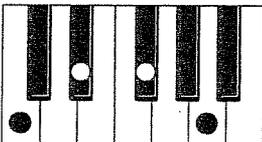
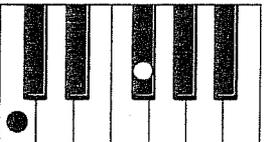
#### ex.C m7



### Diminished (dim)

Play the root and the tone six half-steps (a diminished fifth) above.

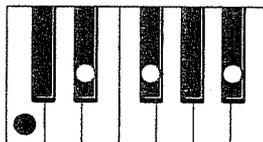
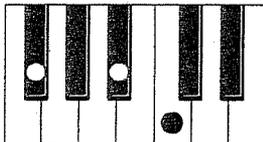
#### ex.C dim



### Minor Seventh Flat Fifth (m7(b5))

Play the root and the tones two half-steps (a major second) and six half-steps (a diminished fifth) below.

#### ex.C m7(b5)



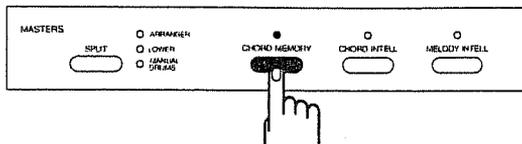
*\*Although Chord Intelligence cannot be used, three other types of chords are recognized in addition to the ones described above: aug (augmented), sus 4 (sus four), and 7 sus 4 (seventh sus four).*

## Chord Memory

Chord Memory is a function that continues play of the music style while maintaining the sounds played on the lower section of the keyboard. The chord played on the lower section is held until you play the next one.



Pressing the **CHORD MEMORY** button in the **MASTERS** section switches this function on or off.



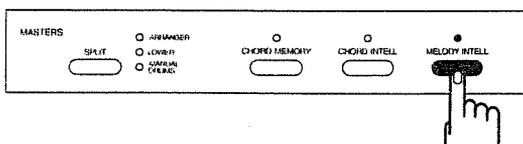
When you use Chord Memory, you get the same effect as holding down the keys you've play on the keyboard until you play the next chord. This gives you time to get ready to play the next chord. This is also convenient when you want to free your hand to use the Bender/Modulation Lever or the Pitch Up/Down Switches to change the pitch of the melody notes or add vibrato.

## Add Harmony to the Melody

The Melody Intelligence function automatically adds a harmony part to the melody you play in the upper section of the keyboard.



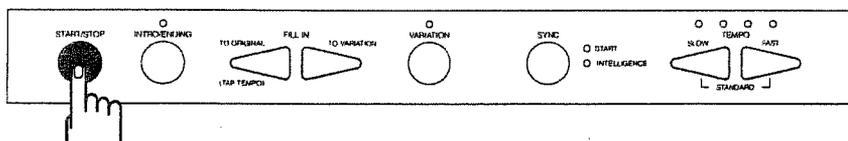
Pressing the **MELODY INTELL** button in the **MASTERS** section switches this function on or off.



Harmony is added with the appropriate pitch interval determined according to the chord played in the lower section. This function works when the Split Mode is set to Lower or Arranger.

## Starting and Stopping Play

You can start and stop play of the music style by pressing the **START/STOP** button.

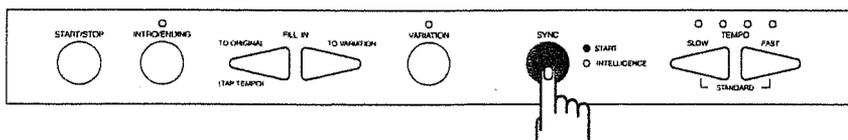


## About Sync

The EM-305/303 has a Sync function that automatically begins to play a music style when you play the lower section of the keyboard. This Sync function has two modes: Sync Start and Sync Intelligence.



Press the **SYNC** button to cycle through **START** -> **INTELLIGENCE** -> **OFF**.



### Sync Start (START)

Performance of the music style starts automatically when you play the lower section of the keyboard.

### Sync Intelligence (INTELLIGENCE)

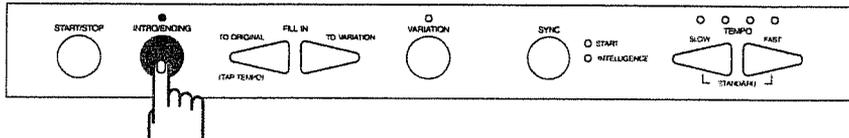
The music style starts automatically when you play the lower section of the keyboard. When you release the keys, however, the music style stops. The music style continues when you play the lower section again.

## About Intros and Endings

Press the INTRO/ENDING button to add an intro or an ending to your song.



To add an intro, check that Sync Start is ON, then press the INTRO/ENDING button to turn on the function.

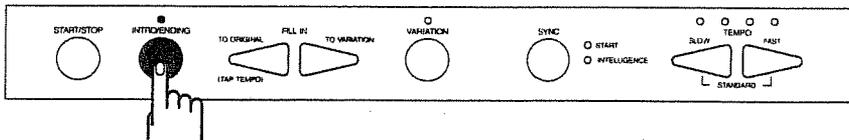


The intro starts when you play in the lower section of the keyboard.

If Sync Start is off, the intro is added immediately when you press the INTRO/ENDING button.



To add an ending, press the INTRO/ENDING button while the music style is playing.



An ending of several bars is inserted, and play stops.

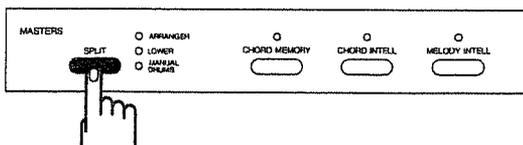
\* The number of measures in the intro or ending depends on the music style. See the Music Style Chart (page 41) for more information.

## About Splits

For music style accompaniment, you played chords in the lower section and the melody in the upper section. The EM-305/303 makes it possible for you to enjoy a wide variety of performance methods, including dividing (or "splitting") the keyboard into different sections in this way.



Press the SPLIT button in the MASTERS section to cycle through the Split Modes.



The EM-305/303 offers four Split Modes: Off, Arranger, Lower, and Manual Drums.

### Off

This enables upper-section tones to be played over the entire keyboard. Select Off when you want play the keyboard with a single tone.

### Arranger

This enables music styles to be played with the lower section and the melody to be played in the upper section.

Choose Arranger when you want to enjoy ensembles with the Arranger function.

### Lower

This lets the upper and lower sections play different tones. In this mode, no music styles are played.

Select Lower when you want to play different tones with the left and right hands.

### Manual Drums

This mode lets you play drum sounds from the keyboard.

Select Manual Drums to enjoy a broad variety of percussion sounds.

*\* Even when in a Split Mode other than Arranger, the rhythm part of the music style is played. If you don't want this rhythm accompaniment, be sure to turn off the Sync function and start play without pressing the START/STOP button.*

## Try Playing with Two Different Sounds

When you're in the Lower Split Mode, you can play sounds in the lower and upper sections of the keyboard. This lets you create ensembles of two different sounds with just one keyboard — for instance, you could play the bass part with the left hand while playing a piano part with the right.

## Changing the Upper and Lower Tones

The tones for the upper and lower sections are changed using the TONE section.

 **1** Press the SELECT button to choose either the upper or lower section for changing the tone.

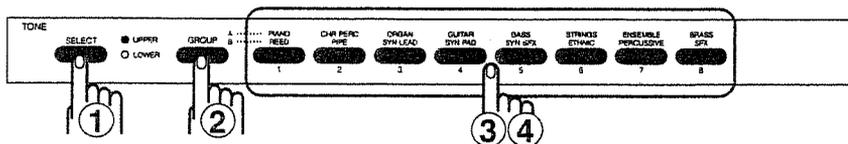
Check the UPPER and LOWER indicators to make sure of your selection.

 **2** Press the GROUP button to choose group A or B.

 **3** Use the buttons (1 — 8) to select the bank.

 **4** Next, use the buttons (1 — 8) to choose the number.

*\* When switching tones, be sure to use buttons 1 through 8 in the TONE section to choose a bank and then a number.*



## Changing the Split Point

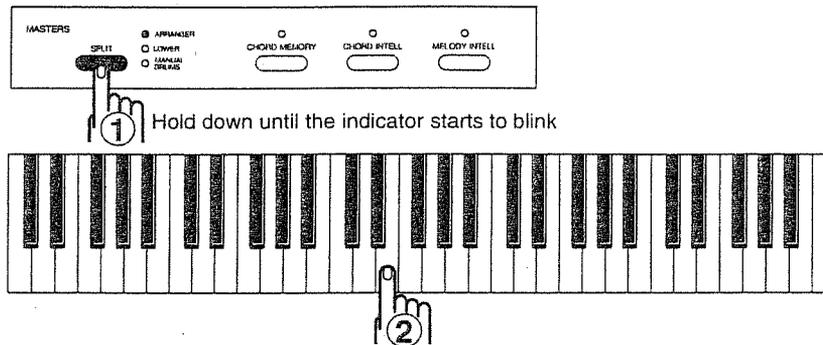
When you're in the Arranger or the Lower Split Mode, you can change the split point (the boundary between the lower and upper sections).

- 1** When the ARRANGER or LOWER indicator is lit, press and hold down the SPLIT button.

After a short wait, the indicator starts to blink.

*\* Pressing the SPLIT button in the ordinary way changes the Split Mode. If you want to change the split point, you have to hold down the SPLIT button until the indicator begins to blink.*

- 2** Press the key that you want to be the new split point.



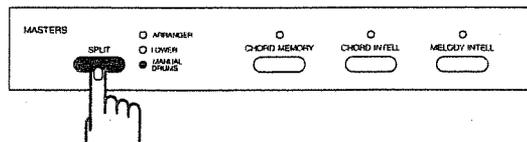
*\* You can set different split points for Arranger and Lower.*

*\* The key you press to set as the split point is included in the upper section.*

## Play Drums

The EM-305/303 can play tones from a wide variety of pitched instruments, such as the piano and violin, but it also has built-in drum sounds for percussion performances. Manual Drums lets you use the keyboard to play these percussion sounds.

- 1** Press the SPLIT button in the MASTERS section to select Manual Drums.



See the Tone Chart (page 40) for a list of the percussion sounds assigned to the keyboard.

### About Drum Sets

On the EM-305/303, the drum sets vary according to the selected music style. Check out the Music Style Chart (page 41) for the drum sets that are selected with each music style.

# Try Out Some Handy Functions

The EM-305/303 comes equipped with a variety of handy functions that make your music even more enjoyable.

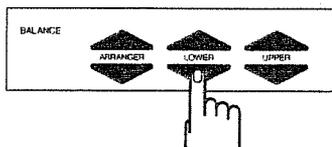
## Change the Volume Balance

EM-305

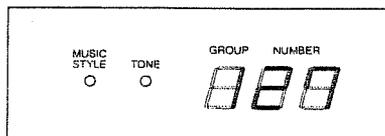
On the EM-305, you can adjust the volume balance for the Arranger section, the lower section, and the upper section. When you're in the Arranger or Lower Split Mode, you can adjust the volume level of the upper section to create the best overall balance.

 Use the **ARRANGER**, **LOWER**, and **UPPER** buttons in the **BALANCE** section to adjust the volume of the corresponding part.

Press the  $\Delta$  button to increase the volume, or the  $\nabla$  button to lower it.

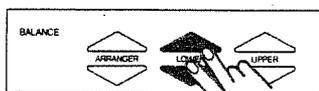


Volume can be adjusted within a range of 0 to 127. The value is shown in the display.

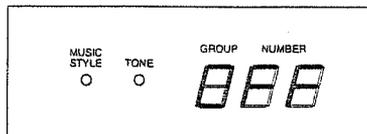


*\* After a short wait, the display returns to the music style number.*

By pressing the  $\Delta$  and  $\nabla$  buttons at the same time, you can turn the part off completely. (Press both buttons again to turn the part on.)



Press simultaneously



*\* Volume balance is a function for adjusting the level of the Arranger section, the lower section, and the upper section. If you want to adjust the overall level of sound, use the **VOLUME** control.*

## Change the Effects

The EM-305/303 features reverb and chorus, which are two effects for adding depth and spaciousness to your music.

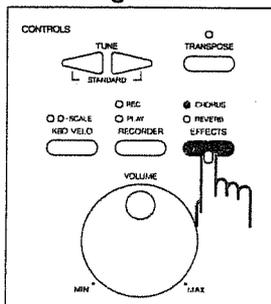
Reverb is an effect which makes your music sound like it is being played in a nice concert hall!. Chorus adds 'breadth' and 'thickness' to the sound.



Use the **EFFECTS** button in the **CONTROLS** section to turn these effects on and off.

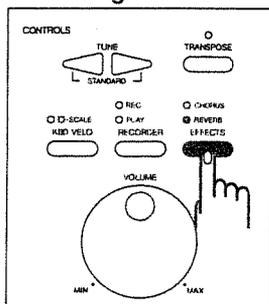
You can turn Chorus on or off by pressing and releasing the EFFECTS button quickly. You can turn Reverb on or off by pressing and holding down the EFFECTS button for a second or two.

### Switching Chorus



Press normally

### Switching Reverb



Hold down the button

\* Use the **REVERB** and **CHORUS** indicators to determine whether Reverb and Chorus are on or off. (The effect is on when its indicator is lit.)

## Record Your Performance



The EM-305 has a Recorder function that makes it possible for you to easily record your keyboard performances.

### The Difference Between the Recorder Function and a Tape Recorder

Using the Recorder function is a simple way to store the music you play. It works like a tape recorder, but is designed to be even more convenient to use. Besides, the EM-305's Recorder function doesn't just store sounds, it stores your performance.

The Recorder function can store not only what you play on the keyboard, but also every panel operation you make, just as you make it — tone changes, fill-ins, everything. This means you can record and play back performances that don't differ at all from live playing.

We call this process of using the Recorder function to store your performances "recording."

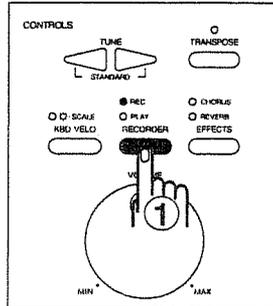
## Try Recording a Tune

Let's use the Recorder function to make a recording. First of all, make all the settings you need; music style selection, tone selection, and Sync Start.

 **1** Press the RECORDER button.

The REC indicator (red) lights and the Recorder function is ready to record (the 'record standby' mode).

*\* Pressing the RECORDER button again cancels this stand-by status.*

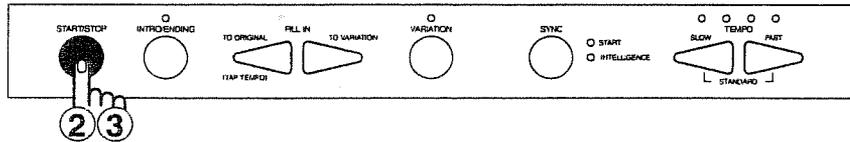


 **2** Start play by pressing the START/STOP button, or by turning on Sync Start and playing in the lower section of the keyboard.

Recording starts automatically when the music begins.

 **3** End your performance by pressing the START/STOP button or the INTRO/ENDING button.

Recording stops automatically when the music style accompaniment ends.



*\* You can record up to approximately 3,500 sounds (notes). When the Recorder memory is almost full the REC button indicator starts to blink.*

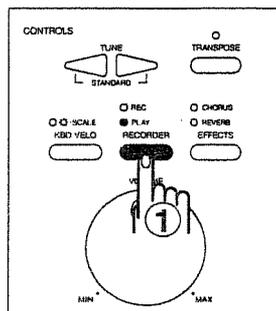
## Listen to the Performance You Recorded

Now let's listen to the performance you've just recorded.

 **1** Press the RECORDER button twice.

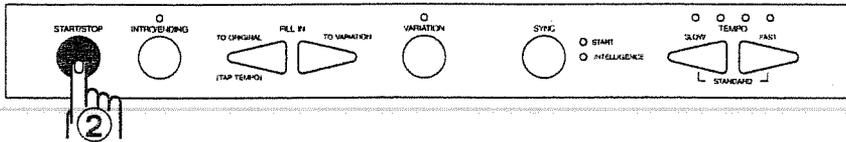
The PLAY button indicator (green) lights up.

*\* If the PLAY indicator doesn't light up when you press the RECORDER button twice, it means that there is nothing stored in the recorder. Check to make sure you're doing everything right and try recording again.*



Press twice

**2** Press the **START/STOP** button to begin playback of the recorder performance.



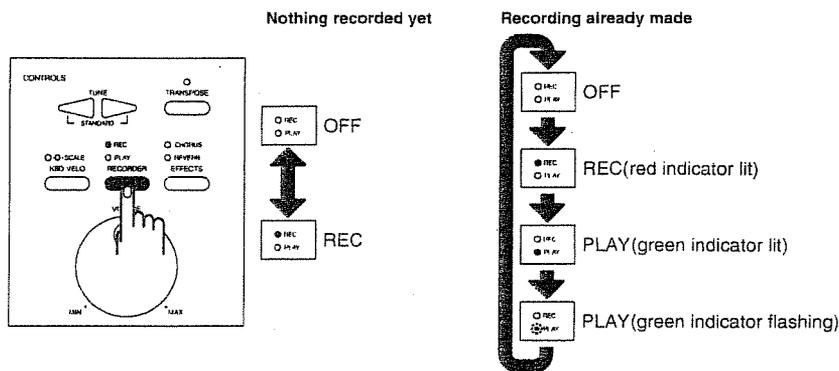
The music keeps playing until the recorded performance is finished. You can also stop the performance by pressing the **START/STOP** button or the **INTRO/ENDING** button.

*\* A recorded performance remains stored in memory until you turn off the power to the EM-305.*

## About the RECORDER Button

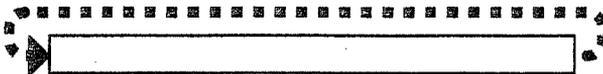
The **RECORDER** button is used to switch the mode for the Recorder function. When there's no music recorded in the Recorder, pressing this button switches between **OFF** and **REC** (record stand-by). Because nothing has been recorded, you can't switch to **PLAY**.

If something has been recorded, pressing the **RECORDER** button cycles through; **OFF** -> **REC** (red indicator lit: record stand-by) -> **PLAY** (green indicator lit: playback) -> **PLAY** (green indicator flashing: loop play).



## Loop Play

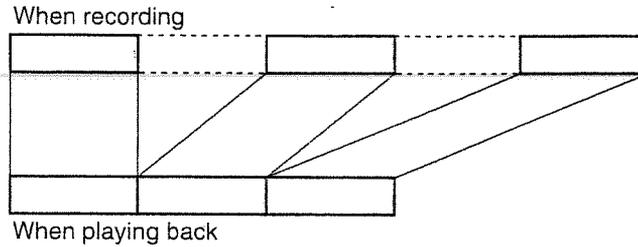
Loop play lets you listen to a recorded performance over and over. If you start play by pressing the **START/STOP** button while the **PLAY** button indicator is blinking, the performance is repeated.



- \* You can't use loop play if you've recorded an ending.*
- \* If you've recorded an intro, it will only be played back the first time. On subsequent playback, the intro will simply be replaced by the regular Music Style recorded in the song.*

## About Sync Intelligence

Sync Intelligence lets you record your music only while you are playing the lower section. For example, if the chords on the lower section are difficult, you can record them taking all the time you need.

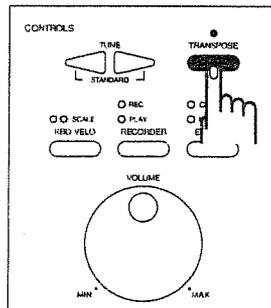


## Play with Simple Fingering

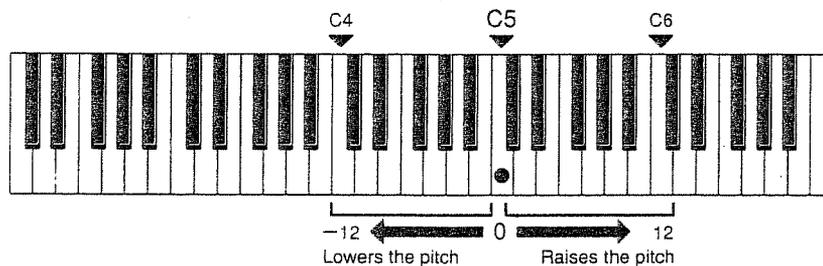
The EM-305/303 makes it possible for you to shift the pitch of the entire keyboard, allowing you to play difficult tunes (with lots of sharps (#) or flats(b)) in keys with simple (and easier to play) fingerings (like C major or A minor). This function is called "Transpose."



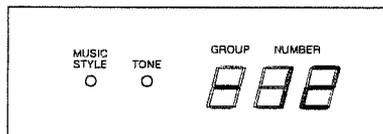
While holding down the TRANSPOSE button (the indicator blinking), press a key on the keyboard.



Press any key within an octave of C5 (do). Pressing a key below C5 lowers the overall pitch, and pressing a key above C5 raises it.



The display shows how far the pitch has been transposed up and down, in half-step.



\* The transpose setting is stored in memory until the power is turned off.

Let's say, for example, that you want to play a tune in C# major using the fingering of C major. Since you need to transpose the pitch up a half-step, hold down the TRANSPOSE button and hit the C#5 key.

You can also use the TRANSPOSE button to switch the Transpose function on and off. Transpose is on when the indicator is lit.

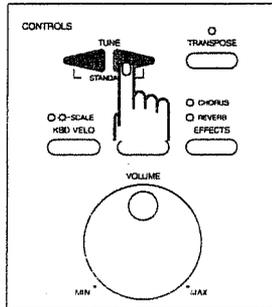
# Tuning

When you're using the EM-305/303 to play along with other instruments, the sound won't be right unless you adjust the tuning. Here's how you can adjust the EM-305/303 to be in tune with other instruments.

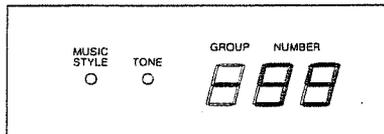
 Press the TUNE ◀ or ▶ button.

Pressing the ▶ button raises the pitch.

Pressing the ◀ button lowers the pitch.



The display shows the pitch as a number from -99 to 0 to 99.



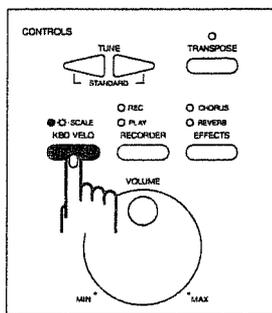
Pressing ◀ and ▶ at the same time returns the EM-305/303 to standard pitch (A4 = 440 Hz : the display shows 0).

## Change the Velocity and Scale of the Sounds

### **EM-305** Change the Velocity of the Sounds

Velocity is a term used to refer to the strength with which a key is played. Normally, a higher playing velocity results in a louder sound. This is an important function that is essential for controlling playing dynamics. Velocity is normally utilized during play, but with the EM-305 you can set a velocity level that remains constant.

 Pressing the KEY VELO button switches this function on and off.



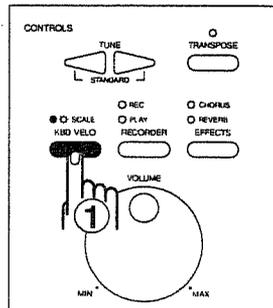
When off, the indicator goes out and velocity is constant.

## EM-305 Change the Scale

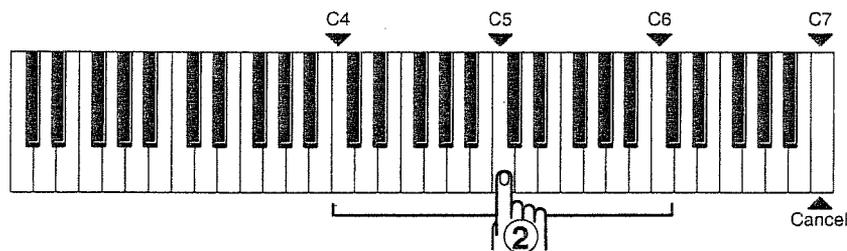
Nearly all Western instruments use the “equally tempered (tuned) scale”(equal temperament). However, there are many kinds of music from around the world that don't use this equal temperament. The EM-305 has a function that lets you change this scale.

**1** Hold down the KEY VELO button.

This makes the indicator blink.



**2** In the range from C4 (do) to C6 (do), press the key that you would like to lower by a quarter-tone.



- \* If you want to designate more than one tone, press the keyboard keys one by one while continuing to hold down the KEY VELO button.
- \* Once you have pressed a key to lower its pitch, pressing the same key again returns it to its original pitch.
- \* To return all keys to the original equal temperament, press the C7 (do) key.

When you change the scale, you can achieve a special ambiance that cannot be expressed with the Western equal temperament. If you want an Arabic scale, for instance, you should lower the pitch of E (mi) and B (ti) by a quarter-tone each.

## SECTION 4

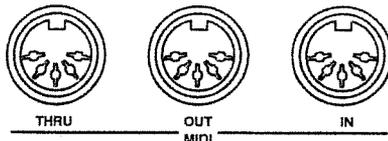
# Try Out MIDI

## What's MIDI?

MIDI stands for Musical Instrument Digital Interface, an industry-wide standard for exchanging data between digital musical instruments. A MIDI-compatible instrument can 'read' and 'understand' tone switching messages or performance data sent from another MIDI instrument, even if they are completely different models or made by different manufacturers. In the MIDI standard, data describing which keys are played, for how long, at what volume, and so on, is handled as MIDI "messages."

## About MIDI Connectors

MIDI messages are transmitted or received via three MIDI connectors. MIDI cables are used to connect these connectors, depending on how they are to be used.



**MIDI IN:** Messages from external MIDI devices are received here.

**MIDI OUT:** MIDI messages from the EM-305/303 are sent to external MIDI devices from here.

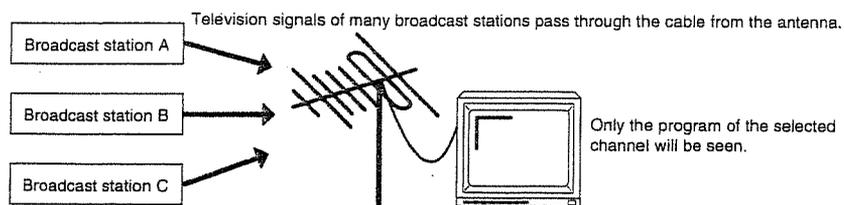
**MIDI THRU:** This port transmits an exact copy of all messages received via the MIDI IN port.

\* The EM-305/303 doesn't have a MIDI THRU connector.

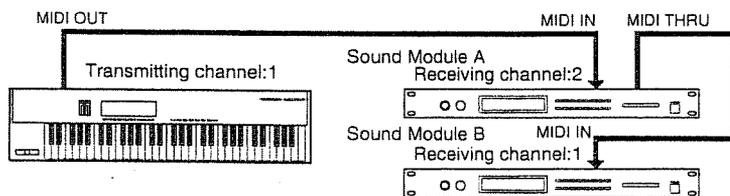
## MIDI Channels

Rather than have one cable for each MIDI device, MIDI lets you use a single cable to transmit messages to many MIDI devices at once. Using this arrangement, each device gets only those messages intended specifically for it. This is where the idea of 'MIDI channels' comes in.

You can think of MIDI channels as being similar to television channels. When you switch TV channels, you can see programs from a variety of different television stations, but you must be receiving on the same channel as the TV station is sending in order to see the program.



MIDI has channels too, numbered from 1 to 16, and only when the transmitting channel is the same as the receiving channel is the MIDI data transmitted. For instance, in the setup on the next page, only Sound Module B will sound when you play the keyboard, because it is receiving on the same channel that the keyboard is transmitting (channel 1).



## Main Types of MIDI Messages

There are a variety of different kinds of MIDI messages, and each has information about a particular kind of MIDI performance nuance. MIDI messages are broadly divided into Channel Messages (those that have information specific to a channel), and System Messages (information that applies to the system as a whole).

### Channel Messages

The MIDI messages that transmit the actual performance data are Channel Messages, and these are the ones that do most of the actual work of controlling the instrument. Since there are so many different kinds of MIDI instruments, what exactly is controlled by MIDI messages depends on the design of the individual instrument.

#### Note Messages

These contain information about keyboard performances.

#### Pitch Bend Messages

These transmit data about how the Bender/Modulation lever (EM-305) or Pitch Up/Down switch (EM-303) has been manipulated.

#### Program Change Messages

These transmit tone switching commands.

#### Control Change Messages

These transmit data about performance-enhancing features. On the EM-305/303, this includes vibrato added using the Bender/Modulation lever (EM-305), manipulation of the Modulation switch (EM-303), and pedal operations.

### System Messages

System Messages include SysEx (System Exclusive) messages and messages needed for timing, synchronization, and troubleshooting. These messages affect the system as a whole and are not broken up into specific channels.

#### Realtime Messages

These messages are sent to synchronize the operation of several MIDI instruments, such as for starting or stopping a performance.

#### System Exclusive Messages

SysEx messages are used for controlling special features of a particular MIDI device. In general, you can swap SysEx data with the same model.

## MIDI Implementation Chart

MIDI allows many different musical instruments and devices to exchange data. It is not necessarily the case, however, that all MIDI messages can be received by all MIDI devices. For example, you may set up your keyboard to send Aftertouch messages, but if the sound module you have connected doesn't respond to Aftertouch, you will not hear the effect you're looking for when you press harder on the keys. The only way two devices can exchange a given MIDI message is if that function is available on both instruments.

Each instrument has, in its owner's manual, a MIDI Implementation Chart that will help you determine at a glance what features will be compatible with other instruments (pages 44 and 45). The dimensions of these charts are standardized, so you can fold them as shown and physically match them to see if the MIDI messages of one device will be received by the other.

MIDI device A		MIDI device B	
Function	Transmits	Recognized	Removes

# Give MIDI a Try

With MIDI, you can use the keyboard of the EM-305/303 to play an external MIDI device, or make recordings on a MIDI sequencer. This section describes a few examples of simple MIDI operations.

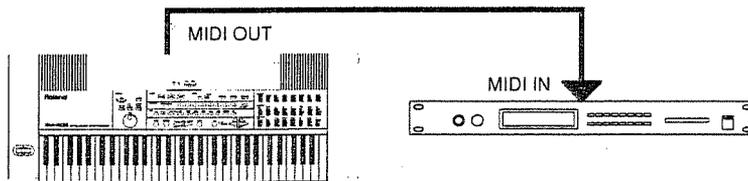
## Playing an External MIDI Device

You can play an external MIDI device (such as a synthesizer) using the keyboard of the EM-305/303.

**1** Use a MIDI cable to connect the MIDI OUT connector on the EM-305/303 to the MIDI IN connector on the other MIDI device.

**2** Set the receive channel on the other MIDI device to channel 4.

\* Refer to the manual for the MIDI device for an explanation of how to set the receive channel.



When you set the receive channel on the external MIDI device to channel 4, you can play the MIDI device using the upper keyboard section of the EM-305/303. You can also change the tone of the MIDI device by switching the tone on the EM-305/303.

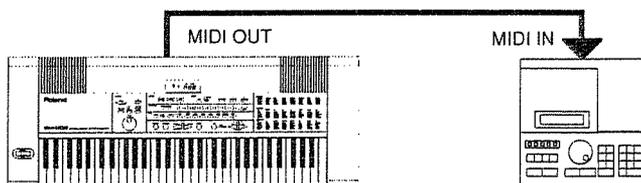
\* When you use the connections and settings just described, the tone of the upper section and the MIDI device are both played.

## Make Recordings with a MIDI Sequencer

You can make recordings of your EM-305/303 performances on a MIDI sequencer.

**1** Use a MIDI cable to connect the MIDI OUT connector on the EM-305/303 to the MIDI IN connector on the MIDI sequencer.

**2** Make a realtime recording on the MIDI sequencer.



\* You can store the performance you recorded with the MIDI sequencer on a floppy disk for playback at any time.

\* When playing back your performance on the MIDI sequencer, use a MIDI cable to connect the MIDI OUT connector on the sequencer to the MIDI IN connector on the EM-305/303.

\* You can make recording with the MIDI sequencer while synchronizing the music style of the EM-305/303. Check out the manual for the MIDI sequencer for more information.

\* In preparation for playback of recorded data, setup your sequencer so that only Channel Messages are transmitted. (Refer to your sequencer manual.)  
(If your sequencer transmits start/stop and /or MIDI clock messages to your EM-305/303, problems with playback will occur.)

# *If You Think There Might Be a Problem...*

## **The unit won't turn on.**

- Check the connections (electrical outlet and DC IN jack) of the AC adaptor (page 6).
- If you're operating the EM-305/303 on batteries, they may be dead. Try replacing them with new batteries (page 6).

## **There's no sound.**

- Check that the VOLUME knob in the CONTROLS section is turned up sufficiently (page 8).
- Make sure there are no headphones plugged into the PHONES jack (page 6).
- \* *No sound will come out of the speakers in the EM-305/303 when headphones are connected to the PHONES jack.*
- If you're playing through an external keyboard amp or radio-cassette player, check the audio cable connections, and make sure the external device is turned on with the volume turned up (page 7).
- Is the volume balance turned off or set to zero (page 27)

## **I can't play a music style.**

- Make sure the SPLIT control in the MASTERS section is set to ARRANGER (page 24).

## **I can't add an intro.**

- Start playing after you press the INTRO/ENDING button (page 24).
- \* *If you press the INTRO/ENDING button after you start to play, an ending is added.*

## **The tone changes.**

- Make sure One Touch Program is turned off (page 19).
- \* *If One Touch Program is on, the tone of the upper section is switched automatically when you switch the music style.*

## **The timing of the fill-in is off.**

- Press the TO ORIGINAL or TO VARIATION button just before the measure where you want to add the fill-in (page 17).

## **The timing of the ending is off.**

- The ending is added at the first beat of the bar immediately after the measure you're in when you press the INTRO/ENDING button.

## **When I release the lower keyboard, only rhythm accompaniment is heard.**

- Turn on Chord Memory (page 23).
- \* *When Chord Memory is turned off, the accompaniment of the Arranger function is played only while the lower keyboard is being played. (The rhythm part is played even while you're not playing the keyboard).*

## **Accompaniment stops when I release the lower keyboard.**

- Turn off Sync Intelligence, or set up the system for Sync Start (page 23).
- \* *When Sync Intelligence is on, the performance stops when you release the lower section of the keyboard, then restarts when you touch the keyboard again.*

## **The sound of the lower keyboard keeps playing.**

- Turn off Chord Memory (page 23).
- \* *When Chord Memory is on while the Split Mode is set to Lower, the sound of the lower section continues even after you release the keyboard.*

**The music style sound strange.**

- Be sure to hit all of the keys simultaneously when you play a chord in the lower section.

**I want a simple way to play chords.**

- Turning on Chord Intelligence gives you a simple way to specify chords (page 21).

**I want to add harmony to the melody.**

- When you turn on Melody Intelligence, harmony is automatically added to the melody (page 23).

**Melody Intelligence doesn't add harmony.**

- Play a chord in the lower section of the keyboard (page 23).

*\* Melody Intelligence automatically adds harmony according to the chords played in the lower section of the keyboard.*

**The REC button indicator doesn't light when I press the RECORDER button.**

- The REC button indicator may not light when you press the RECORDER button while Sync Intelligence is on. If this is the case, press the START/STOP button, and then press the RECORDER button.

# Tone Chart Lower/Upper Tone

## GROUP A

Piano	Chromatic Percussion	Organ	Guitar
11 Piano 1	21 Celesta	31 Organ 1	41 Nylon-str Gt
12 Piano 2	22 Glockenspiel	32 Organ 2	42 Steel-str Gt
13 Piano 3	23 Music Box	33 Organ 3	43 Jazz Gt
14 Honky-Tonk	24 Vibraphone	34 Church Org 1	44 Clean Gt
15 E.Piano 1	25 Marimba	35 Reed Organ	45 Muted Gt
16 E.Piano 2	26 Xylophone	36 Accordion Fr	46 Overdrive Gt
17 Harpsichord	27 Tubular-bell	37 Harmonica	47 Distortion Gt
18 Clav	28 Santur	38 Bandoneon	48 Gt Harmonics

Bass	Strings/Orchestra	Ensemble	Brass
51 Acoustic Bs	61 Violin	71 Strings	81 Trumpet
52 Fingered Bs	62 Viola	72 Slow Strings	82 Trombone
53 Picked Bs	63 Cello	73 Syn Strings 1	83 Tuba
54 Fretless Bs	64 Contrabass	74 Syn Strings 2	84 Muted Trumpet
55 Slap Bass 1	65 Tremolo Str	75 Choir Aahs	85 French Horn
56 Slap Bass 2	66 Pizzicato Str	76 Voice Oohs	86 Brass 1
57 Synth Bass 1	67 Harp	77 Syn Vox	87 Synth Brass 1
58 Synth Bass 2	68 Timpani	78 Orchestra hit	88 Synth Brass 2

## GROUP B

Reed	Pipe	Synth Lead	Synth Pad etc
11 Soprano Sax	21 Piccolo	31 Square Wave	41 Fantasia
12 Alto Sax	22 Flute	32 Saw Wave	42 Warm Pad
13 Tenor Sax	23 Recorder	33 Syn Calliope	43 Polysynth
14 Baritone Sax	24 Pan Flute	34 Chiffer Lead	44 Space Voice
15 Oboe	25 Bottle Blow	35 Charang	45 Bowed Glass
16 English Horn	26 Shakuhachi	36 Solo Vox	46 Metal Pad
17 Bassoon	27 Whistle	37 5th Saw Wave	47 Halo Pad
18 Clarinet	28 Ocarina	38 Bass&Lead	48 Sweep Pad

Synth SFX	Ethnic	Percussive	SFX
51 Ice Rain	61 Sitar	71 Tinkle Bell	81 Gt Fret Noise
52 Soundtrack	62 Banjo	72 Agogo	82 Breath Noise
53 Crystal	63 Shamisen	73 Steel Drums	83 Seashore
54 Atmosphere	64 Koto	74 Woodblock	84 Bird
55 Brightness	65 Kalimba	75 Taiko	85 Telephone 1
56 Goblin	66 Bag Pipe	76 Melo Tom 1	86 Helicopter
57 Echo Drops	67 Fiddle	77 Synth Drum	87 Applause
58 Star Theme	68 Shanai	78 Reverse Cym	88 Gun Shot

# Tone Chart Manual Drum

Drum set	Standard set Jazz set	Room set	Power set	Electronic set	TR-808 set	Brush set	Orchestra set
C2	Kick Drum 1 / JAZZ KD 1		MONDO Kick	Elec BD	808 Bass Drum	JAZZ KD 1	Concert BD 1
	Side Stick				808 Rim Shot		
	Snare Drum 1		Gated SD	Elec SD	808 Snare Drum	Brush Tap	Concert SD
	Hand Clap					Brush Slap	Castanets
	Snare Drum 2			Gated SD		Brush Swirl	Concert SD
	Low Tom 2	Room Low Tom 2	Room Low Tom 2	Elec LowTom 2	808 Low Tom 2		Timpani F
	Closed Hi-Hat [EXC1]				808 CHH [EXC1]		Timpani F#
	Low Tom 1	Room Low Tom 1	Room Low Tom 1	Elec LowTom 1	808 Low Tom 1		Timpani G
	Pedal Hi-Hat [EXC1]				808 CHH [EXC1]		Timpani G#
	Mid Tom 2	Room Mid Tom 2	Room Mid Tom 2	Elec Mid Tom 2	808 Mid Tom 2		Timpani A
C3	Open Hi-Hat [EXC1]				808 OHH [EXC1]		Timpani A#
	Mid Tom 1	Room Mid Tom 1	Room Mid Tom 1	Elec Mid Tom 1	808 Mid Tom 1		Timpani B
	High Tom 2	Room Hi Tom 2	Room Hi Tom 2	Elec Hi Tom 2	808 Hi Tom 2		Timpani c
	Crash Cymbal 1				808 Cymbal		Timpani c#
	High Tom 1	Room Hi Tom 1	Room Hi Tom 1	Elec Hi Tom 1	808 Hi Tom 1		Timpani d
	Ride Cymbal 1						Timpani d#
	Chinese Cymbal			Reverse Cymbal			Timpani e
	Ride Bell						Timpani f
	Tambourine						
	Splash Cymbal						
C4	Cowbell				808 Cowbell		
	Crash Cymbal 2						Concert Cymbal2
	Vibra-slap						
	Ride Cymbal 2						Concert Cymbal1
	High Bongo						
	Low Bongo						
	Mute High Conga				808 Hi Conga		
	Open High Conga				808 Mid Conga		
	Low Conga				808 Low Conga		
	High Timbale						
C5	Low Timbale						
	High Agogo						
	Low Agogo						
	Cabasa						
	Maracas				808 Maracas		
	Short Hi Whistle [EXC2]						
	Long Low Whistle [EXC2]						
	Short Guiro [EXC3]						
	Long Guiro [EXC3]						
	Claves				808 Claves		
C6	High Wood Block						
	Low Wood Block						
	Mute Cuica [EXC4]						
	Open Cuica [EXC4]						
	Mute Triangle [EXC5]						
	Open Triangle [EXC5]						
	Shaker						
	Jingle Bell						
	Castanets						
	Mute Surdo [EXC6]						
C7	Open Surdo [EXC6]						
	Slap						Pedal Hi-Hat [EXC1]
	Scratch Push						Open Hi-Hat [EXC1]
	Scratch Pull						Ride Cymbal
	Sticks						
	Square Click						
	Metronome Click						
	Metronome Bell						
	Kick Drum 2 / JAZZ KD 2					JAZZ KD 2	Concert BD 2
	High-Q						Closed Hi-Hat [EXC1]

--- :No Sound  
 Blank :Same as the percussion sound of "Standard Set"  
 [EXC] :Percussion sound of the same number will not be heard at the same time

# Music Style Chart

Music Style	Beat	Tempo	Number of measures		Drum set	One touch program	
			Intro	Ending		Upper Tone	Chorus
11 Big Band 1	4/4	160	5	5	Standard	A11	OFF
12 Brsh Swing 1	4/4	176	8	2	Brush	A11	OFF
13 Blues 1	4/4	60	2	3	Brush	A43	OFF
14 Old Swing 1	4/4	132	4	2	Standard	A81	OFF
15 Slow Swing 1	4/4	108	1	6	Brush	A32	ON
16 Shuffle 1	4/4	170	2	5	Brush/Standard	B12	OFF
17 Swing Blld 1	4/4	70	2	3	Standard	A16	ON
18 Jazz Waltz 1	6/4	160	4	3	Brush	A43	OFF
21 Bossa Nova 1	4/4	120	4	6	Brush	A11	OFF
22 Bossa Nova 2	4/4	120	4	6	Brush	A15	ON
23 Samba 1	4/4	110	4	4	Standard	B73	OFF
24 Cha Cha 1	4/4	125	4	8	Standard	A81	OFF
25 Rhumba 1	4/4	120	2	4	Standard	A24	ON
26 Polka 1	4/4	120	2	2	Standard	A36	OFF
27 March 1	4/4	120	2	2	Orchestra	A82	OFF
28 Pop Waltz 1	3/4	75	4	5	Brush	A11	OFF
31 R&B 1	4/4	120	1	2	Standard	A33	OFF
32 Funk 1	4/4	112	4	3	Standard	A33	OFF
33 Rock 1	4/4	114	4	5	Power	A33	OFF
34 50s Rock 1	4/4	195	8	2	Standard	B13	OFF
35 Twist 1	4/4	164	1	5	Standard	B13	OFF
36 50s Pop 1	4/4	130	8	4	Standard	A32	OFF
37 Old Ballad 1	4/4	60	1	2	Room	A11	OFF
38 Modrn Blld 1	4/4	82	4	3	Standard	A15	OFF
41 Dixieland 1	4/4	212	4	4	Standard	B18	OFF
42 Gospel 1	6/4	152	4	4	Room	A33	OFF
43 Bluegrass 1	4/4	155	3	4	Standard	A61	OFF
44 Train-beat 1	4/4	140	4	4	Standard	A43	OFF
45 Country 1	4/4	125	8	2	Standard	A11	OFF
46 Cntry Rock 1	4/4	120	6	9	Standard	A41	OFF
47 Cntry Blld 1	4/4	80	4	6	Standard	A43	OFF
48 Cntry Wltz 1	3/4	86	4	5	Power	A33	OFF
51 Big Band 2	4/4	160	5	5	Standard	A81	OFF
52 Brsh Swing 2	4/4	176	8	2	Brush	A43	OFF
53 Blues 2	4/4	60	2	3	Brush	A15	ON
54 Old Swing 2	4/4	132	4	2	Standard	A84	OFF
55 Slow Swing 2	4/4	108	1	6	Brush	A15	OFF
56 Shuffle 2	4/4	170	2	5	Standard/Brush	B12	OFF
57 Swing Blld 2	4/4	70	2	3	Standard	A43	OFF
58 Jazz Waltz 2	6/4	160	4	3	Brush	A43	OFF
61 Bossa Nova 3	4/4	120	4	6	Brush	B22	OFF
62 Bossa Nova 4	4/4	120	4	6	Brush	A15	ON
63 Samba 2	4/4	110	4	4	Standard	A41	OFF
64 Cha Cha 2	4/4	125	4	8	Standard	A15	OFF
65 Rhumba 2	4/4	120	2	4	Standard	B24	ON
66 Polka 2	4/4	120	2	2	Standard	A36	OFF
67 March 2	4/4	120	2	2	Orchestra	A86	ON
68 Pop Waltz 2	3/4	75	4	5	Brush	A41	OFF
71 R&B 2	4/4	120	1	2	Standard	A33	OFF
72 Funk 2	4/4	112	4	3	Standard	A16	ON
73 Rock 2	4/4	114	4	5	Power	A32	ON
74 50s Rock 2	4/4	195	8	2	Standard	A12	OFF
75 Twist 2	4/4	164	1	5	Standard	A31	OFF
76 50s Pop 2	4/4	130	8	4	Standard	A71	OFF
77 Old Ballad 2	4/4	60	1	2	Room	A15	OFF
78 Modrn Blld 2	4/4	82	4	3	Standard	B27	OFF
81 Dixieland 2	4/4	212	4	4	Standard	A14	OFF
82 Gospel 2	6/4	152	4	4	Standard	A37	OFF
83 Bluegrass 2	4/4	155	3	4	Room	A42	OFF
84 Train-beat 2	4/4	140	4	4	Standard	A43	OFF
85 Country 2	4/4	125	8	2	Standard	A11	OFF
86 Cntry Rock 2	4/4	120	6	9	Standard	A31	ON
87 Cntry Blld 2	4/4	80	4	6	Standard	A12	OFF
88 Cntry Wltz 2	3/4	86	4	5	Power	A37	OFF

\* For intros, endings, and fill-ins, a different drum set from the music style may be used.

# Chord Chart

The keys indicated by dots show the notes that make up each chord.

When Chord Intelligence is turned on, you can play the particular chord just by pressing the key(s) marked with a star(s). When Chord Intelligence is off, play the keys indicated by the dots.

C	C#	D	E $\flat$	E	F
C $\flat$ 7	C# $\flat$ 7	D $\flat$ 7	E $\flat$ $\flat$ 7	E $\flat$ 7	F $\flat$ 7
C7	C#7	D7	E $\flat$ 7	E7	F7
Cm	C#m	Dm	E $\flat$ m	Em	Fm
Cm7	C#m7	Dm7	E $\flat$ m7	Em7	Fm7
Cdim	C#dim	Ddim	E $\flat$ dim	Edim	Fdim
Cm7 ( $\flat$ 5)	C#m7 ( $\flat$ 5)	Dm7 ( $\flat$ 5)	E $\flat$ m7 ( $\flat$ 5)	Em7 ( $\flat$ 5)	Fm7 ( $\flat$ 5)
Caug	C#aug	Daug	E $\flat$ aug	Eaug	Faug
Csus4	C#sus4	Dsus4	E $\flat$ sus4	Esus4	Fsus4
C7sus4	C#7sus4	D7sus4	E $\flat$ 7sus4	E7sus4	F7sus4

F#	G	A $\flat$	A	B $\flat$	B
F#M7	GM7	A $\flat$ M7	AM7	B $\flat$ M7	BM7
F#7	G7	A $\flat$ 7	A7	B $\flat$ 7	B7
F#m	Gm	A $\flat$ m	Am	B $\flat$ m	Bm
F#m7	Gm7	A $\flat$ m7	Am7	B $\flat$ m7	Bm7
F#dim	Gdim	A $\flat$ dim	Adim	B $\flat$ dim	Bdim
F#m7(b5)	Gm7(b5)	A $\flat$ m7(b5)	Am7(b5)	B $\flat$ m7(b5)	Bm7(b5)
F#aug	Gaug	A $\flat$ aug	Aaug	B $\flat$ aug	Baug
F#sus4	Gsus4	A $\flat$ sus4	Asus4	B $\flat$ sus4	Bsus4
F#7sus4	G7sus4	A $\flat$ 7sus4	A7sus4	B $\flat$ 7sus4	B7sus4

# MIDI Implementation Chart

Function***		Transmitted	Recognized	Remarks
<b>Basic Channel</b>	Default Changed	1, 2, 3, 4, 5, 10 x	1, 2, 3, 4, 5, 10, 16 x	*
<b>Mode</b>	Default Messages Altered	x x *****	Mode 3 x	
<b>Note Number</b>	True Voice	0-127 *****	0-127 0-127	
<b>Velocity</b>	Note ON Note OFF	o x	o x	
<b>After Touch</b>	Key's Ch's	x x	x x	
<b>Pitch Bend</b>		o	o	
<b>Control Change</b>	0,32 1 7 10 11 64 91 93  121	o o o o o o o o o x	o o o o o o o (Reverb) o (Chorus)  o	Bank Select Modulation Volume Panpot Expression Hold 1 Effect 1 depth Effect 3 depth  Reset All Controllers
<b>Prog Change</b>	True #	o *****	o 0-127	
<b>System Exclusive</b>		x	o	
<b>System Common</b>	Song Pos Song Sel True	x x x	x x x	
<b>System Real Time</b>	Clock Commands	o o	o o	FA, FC
<b>AUX Messages</b>	Local ON/OFF All Notes OFF Active Sense Reset	x x o x	x o o x	
<b>Notes</b>		* Upper:4(CH), Lower:3(CH), Accomp.1:5(CH), Accomp.2:1(CH), Accomp.Bass:2(CH), Rhythm:10(CH), Chord Recognition:16(CH)		

Mode 1 : OMNI ON, POLY  
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO  
Mode 4 : OMNI OFF, MONO

o : Yes  
x : No

# MIDI Implementation Chart

Function***		Transmitted	Recognized	Remarks
<b>Basic Channel</b>	Default Changed	1, 2, 3, 4, 5, 10 x	1, 2, 3, 4, 5, 10, 16 x	*
<b>Mode</b>	Default Messages Altered	x x *****	Mode 3 x	
<b>Note Number</b>	True Voice	12-108 *****	0-127 0-127	
<b>Velocity</b>	Note ON Note OFF	o x	o x	
<b>After Touch</b>	Key's Ch's	x x	x x	
<b>Pitch Bend</b>		o	o	
<b>Control Change</b>	0,32	o	o	Bank Select
	1	o	o	Modulation
	7	x	o	Volume
	10	x	o	Panpot
	11	x	o	Expression
	64	o	o	Hold 1
	91	o	o (Reverb)	Effect 1 depth
93	o	o (Chorus)	Effect 3 depth	
	121	x	o	Reset All Controllers
<b>Prog Change</b>	True #	o *****	o 0-127	
<b>System Exclusive</b>		x	o	
<b>System Common</b>	Song Pos Song Sel True	x x x	x x x	
<b>System Real Time</b>	Clock Commands	o o	o o	FA, FC
<b>AUX Messages</b>	Local ON/OFF All Notes OFF Active Sense Reset	x x o x	x o o x	
<b>Notes</b>	* Upper:4(CH), Lower:3(CH), Accomp.1:5(CH), Accomp.2:1(CH), Accomp.Bass:2(CH), Rhythm:10(CH), Chord Recognition:16(CH)			

# Main Specifications

## EM-305/303: Intelligent Synthesizer

### Keyboard

61 keys (velocity sensitive)

### Sound source

PCM + TVF

### Number of Parts

6 parts (drum, upper, lower, bass, and accompaniment 1/2)

### Maximum Polyphony

24 voices

### Number of tones

Panel-selectable: 128 tones

MIDI-selectable: 95 tones

Drum sets: 8 sets (selected by style)

### Effects

Reverb, Chorus

### Music styles

64 styles

### Recorder (EM-305 only)

1 track, 1 song

Note Storage: Approx. 3,500 notes

Tempo: 20 to 250 beats per minute

### Display

3 x 7-segment LED

### Connectors

PHONES, OUTPUT (L(MONO)/R), PEDAL HOLD, DC IN, MIDI IN/OUT

### Speakers

Full-range: 12cm x 2

### Rated output

5W x 2

### Power supply

DC 9 V: AC adaptor, dry-cell batteries (sold separately)

### Current consumption

1.2 A

\* Battery life (continuous use)

Manganese batteries (R20 <D> type): Approx. 2 hours

Alkaline batteries (LR20 <D> type): Approx. 6 hours

### External dimensions

1,022 (width) x 380 (depth) x 123 (height) mm

40-1/4 (W) x 15 (D) x 4-7/8 (H) inches

### Weight

7.4 kg, 16 lbs. 6oz

### Included Accessories

Owner's Manual

AC adaptor

Music rest

### Accessories (Sold Separately)

Stereo headphones

Pedal switch: DP-2

MIDI cables

Keyboard stand

*\* In the interest of product improvement, the specifications of this unit are subject to change without prior notice.*

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mada No.3-5 Jakarta 10130  
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TEL: (021) 354604, 354606

## TAIWAN

**Siruba Enterprise (Taiwan) Co., LTD.**  
Room. 5, 9fl. No. 112  
Chung Shan N.Road Sec.2  
Taipei, TAIWAN, R.O.C.  
TEL: (02) 5364546

## SOUTH AFRICA

**That Other Music Shop (PTY) Ltd.**  
256 Bree Street, Johannes-  
burg 2001 Republic of  
South Africa  
TEL: 337-6573

## Paul Bothner (PTY) Ltd.

17 Werdmuller Centre  
Claremont 7700 Republic  
of South Africa  
TEL: 021-64-4030

For Germany

## Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

Roland INTELLIGENT SYNTHESIZER EM-305/EM-303

(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

For the USA

## FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.

For Canada

### CLASS B

### NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

### CLASSE B

### AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère canadien des Communications.

EM-305/EM-303