

**AKAI**  
*professional*

RIFF-O-  
MATIC U 400

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**Variable Tempo/Constant Pitch  
Phrase Recorder**

**WARNING**

To prevent fire or shock hazard, do not  
expose this appliance to rain or moisture.

**Operator's Manual**

**WARNING!!**

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

1-En

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## WARNING

The U400 is designed to be used in a standard household environment.

Power requirements for electrical equipment vary from area to area. Please ensure that your AC Adaptor supplied meets the power requirements in your area. If in doubt, consult a qualified electrician or AKAI professional dealer.

120 VAC	@ 60 Hz for USA and Canada
220~230/240 VAC	@ 50 Hz for Europe
240 VAC	@ 50 Hz for Australia

## PROTECTING YOURSELF AND THE U400

- Never touch the AC Adaptor with wet hands.
- Always disconnect the AC Adaptor from the power supply by pulling on the adaptor/plug, not the cord.
- Allow only an AKAI professional dealer or qualified professional engineer to repair or reassemble the U400. Apart from voiding the warranty, unauthorized engineers might touch live internal parts and receive a serious electrical shock.
- Do not put, or allow anyone to put any object, especially metal objects, into the U400.
- Use only a household AC power supply. Never use a DC power supply.
- If water or any other liquid is spilled into or onto the U400, disconnect the power, and call your dealer.
- Make sure that the unit is well-ventilated, and away from direct sunlight.
- To avoid damage to internal circuitry, as well as the external finish, keep the U400 away from sources of direct heat (stoves, radiators, etc.).
- Avoid using aerosol insecticides, etc. near the U400. They may damage the surface, and may ignite.
- Do not use denaturated alcohol, thinner or similar chemicals to clean the U400. They will damage the finish.
- Modification of this equipment is dangerous, and can result in the functions of the U400 being impaired. Never attempt to modify the equipment in any way.
- Make sure that the U400 is always well-supported when in use on a firm level surface.
- In order to assure optimum performance of your U400, select the setup location carefully, and make sure the equipment is used properly. Avoid setting up the U400 in the following locations:
  1. In a humid or dusty environment
  2. In a room with poor ventilation
  3. On a surface which is not horizontal
  4. Inside a vehicle such as a car, where it will be subject to vibration
  5. In an extremely hot or cold environment

**CAUTION (Only for the product sold in Canada and U.S.A.)**

To prevent electric shock, do not use this polarized AC power plug with an extension cord, receptacle, or other outlet unless the blades can be fully inserted to prevent blade exposure.

14-En

**ATTENTION**

Afin d'éviter tout risque de décharge électrique, n' utilisez pas cette prise polarisée avec une rallonge, une prise de courant ou autre sortie à moins que les lames puissent être complètement insérées et qu'elles ne soient plus visibles.

14-F

**IMPORTANT (for U.K. customers only)**

This equipment is fitted with an approved converter plug.

To change the fuse in this type of plug proceed as follows:

- 1) Remove the fuse cover and old fuse.
- 2) Fit a new fuse which should be a BS1362 5 Amp A.S.T.A. or BSI approved type.
- 3) Refit the fuse cover.

If the AC mains plug fitted to the lead supplied with this equipment is not suitable for your type of AC outlet sockets, it should be changed to an AC mains lead, complete with moulded plug of the appropriate type.

If this is not possible, the plug should be cut off and a correct one fitted to suit the AC outlet. This should be fused at 5 Amps.

If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5 Amp.

**PLEASE NOTE: THE SEVERED PLUG MUST BE DESTROYED TO AVOID A POSSIBLE SHOCK HAZARD SHOULD IT BE INSERTED INTO A 13 AMP SOCKET ELSEWHERE.**

The wires in this mains lead are coloured in accordance with the following code:

**BLUE —NEUTRAL**  
**BROWN —LIVE**

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

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

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

**DO NOT CONNECT ANY WIRE TO THE PIN MARKED E OR  $\perp$  OR COLOURED GREEN OR YELLOW & GREEN WHEN WIRING THE PLUG.**

Ensure that all the terminals are securely tightened and no loose strands of wire exist. Before replacing the plug cover, make certain the cord grip is clamped over the outer sheath of the lead and not simply over the wires.

6F-En

CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE MANUFACTURER FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

32-En

### **FCC WARNING**

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.

21B-En

### **AVIS POUR LES ACHETEURS CANADIENS DU U400**

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

27-F

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

27-En

This appliance is not equipped with a main power switch. Even when the appliance is turned off, the power supply to the appliance is not completely turned off when the power cord is plugged in. Pull out the adaptor when not using the appliance for long periods.

4-En

## **Copyright Notice**

The AKAI U400 is a computer-based instrument and uses software contained in ROM. Software that is provided with the instrument, including information contained in this manual, is copyrighted by applicable laws. You can use that software or information concerning the instrument only for personal use. You are strictly prohibited to copy or modify any part of the software or manual without written permission from AKAI professional M.I. Corp., Yokohama, Japan.

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## WARRANTY

AKAI professional M.I. Corp. warrants its products, when purchased from an authorized “AKAI professional” dealer, to be free from defects in materials and workmanship for a period of 12 (twelve) months from the date of purchase. Warranty service is effective and available to the original purchase only, and only on completion and return of the AKAI professional Warranty Registration Card within 14 days of purchase.

Warranty coverage is valid for factory-authorized updates to AKAI professional instruments and their software, when their installation is performed by an authorized AKAI professional Service Center, and a properly completed Warranty Registration has been returned to your “AKAI professional” dealer.

To obtain service under this warranty, the product must, on discovery of the defect, be properly packed and shipped to the nearest AKAI professional Service Center. The party requesting warranty service must provide proof of original ownership and date of purchase of the product.

If the warranty is valid, AKAI professional will, without charge for parts or labor, either repair or replace the defective part(s). Without a valid warranty, the entire cost of the repair (parts and labor) is the responsibility of the product's owner.

AKAI professional warrants that it will make all necessary adjustments, repairs and replacements at no cost to the original owner within 12 (twelve) months of the purchase date if:

- 1) The product fails to perform its specified functions due to failure of one or more of its components.
- 2) The product fails to perform its specified functions due to defects in workmanship.
- 3) The product has been maintained and operated by the owner in strict accordance with the written instructions for proper maintenance and use as specified in this Operator's Manual.

Before purchase and use, owners should determine the suitability of the product for their intended use, and owner assumes all risk and liability whatsoever in connection therewith. AKAI professional shall not be liable for any injury, loss or damage, direct or consequential, arising out of use, or inability to use the product.

The warranty provides only those benefits specified, and does not cover defects or repairs needed as a result of acts beyond the control of AKAI professional, including but not limited to:

- 1) Damage caused by abuse, accident, negligence.
- 2) Damage caused by any tampering, alteration or modification of the product: operating software, mechanical or electronic components.
- 3) Damage caused by failure to maintain and operate the product in strict accordance with the written instructions for proper maintenance and use as specified in this Operator's Manual.
- 4) Damage caused by repairs or attempted repairs by unauthorized persons.
- 5) Damage caused by fire, smoke, falling objects, water or other liquids, or natural events such as rain, floods, earthquakes, lightning, tornadoes, storms, etc.
- 6) Damage caused by operation on improper voltages.

***IMPORTANT NOTE: This warranty becomes void if the product or its software is electronically modified, altered or tampered with in any way.***

## WARRANTY

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AKAI professional shall not be liable for costs involved in packing or preparing the product for shipping, with regard to time, labor, or materials, shipping or freight costs, or time or expense involved in transporting the product to and from AKAI professional Authorized Service Center or Authorized Dealer.

AKAI professional will not cover under warranty an apparent malfunction that is determined to be user error, or owner's inability to use the product.

THE DURATION OF ANY OTHER WARRANTIES, WHETHER IMPLIED OR EXPRESS, INCLUDING BUT NOT LIMITED TO THE IMPLIED CONDITION OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

AKAI professional hereby excludes incidental or consequential damages, including but not limited to:

- 1) Loss of time.
- 2) Inconvenience
- 3) Delay in performance of the Warranty.
- 4) The loss of use of the product.
- 5) Commercial loss.
- 6) Breach of any express or implied warranty, including the Implied Warranty of Merchantability, applicable to this product.

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## Introduction

Thank you for buying an AKAI RIFF-O-MATIC U400 Variable Tempo/Constant Pitch Phrase Recorder.

This new musical tool enables you to sample a recorded musical phrase and play it back at one of the tempos provided without changing its original pitch. With the U400, you can easily transcribe or practice along with phrases that are too fast to distinguish at their original tempos.

To make best use of the U400, please read this manual thoroughly before operating it. Also, please keep this manual in a safe location for future reference.

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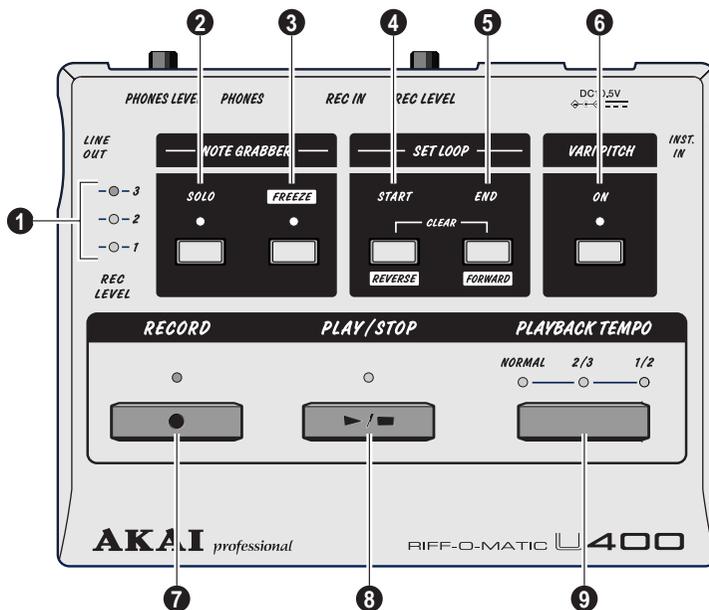
**Please note:** Words entirely in upper case letters refer to controls or input/output jacks on the U400.

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## Features

- Recording is possible up to 35.7 seconds at 29.4 kHz sampling frequency
- Playback tempo switchable between Normal, 2/3, or 1/2 without changing the pitch
- Simple operation with REC and PLAY keys for immediate looped playback
- Instrument input that accepts an output from an electric guitar or bass
- Looping of any segment of a recording
- FREEZE function for looped playback of individual notes
- SOLO band-pass filter isolates the specific guitar sound that you want to transcribe
- The vari-pitch function lets you hear the sound clearer but with the pitch shifted

## Panel Descriptions



### 1 REC LEVEL

Indicates the signal level at **REC IN**. Adjust the input level using the **REC LEVEL** control, so that the third red LED indicator does not light.

### 2 NOTE GRABBER/SOLO

Pressing this key activates the band pass filter which is specifically tuned to isolate guitar sounds from the rest of the music (the LED will light).

### 3 NOTE GRABBER/FREEZE

Pressing this key activates the Freeze function (the LED will light). The function provides a short looped playback at any point of the recording. See page 9 for details.

### 4 SET LOOP/START (REVERSE)

Determines the start point of looped playback. The point where this key is pressed, during playback, will be a new start point for that playback.

This key is also used to set the loop point during the Freeze function.

### 5 SET LOOP/END (FORWARD)

Determines the end point of looped playback. The point where this key is pressed during playback will be a new end point for that playback. Pressing this key together with **SET LOOP/START** while the loop is playing will cancel the current start and end point settings; The whole recording will be looped (played repeatedly).

This key is also used to set the loop point during the Freeze function.

### 6 VARI PITCH

Pressing this key activates the Vari Pitch function (the LED will light). During this function, the playback pitch changes as the playback tempo is changed.

### 7 RECORD

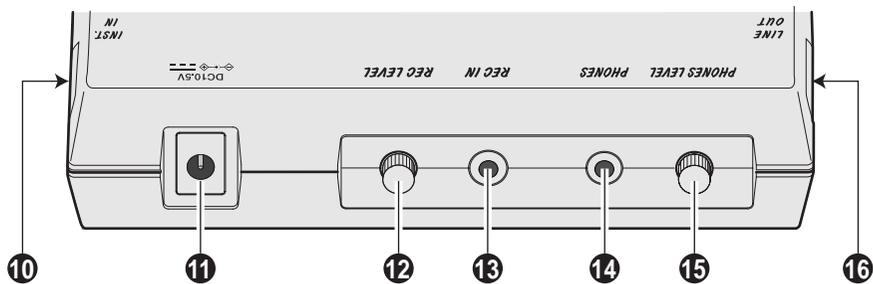
Pressing this key puts the U400 in the standby recording status. The next key that is pressed determines how recording proceeds. See pages 5~6 for details.

**8 PLAY/STOP**

Pressing this key while in stop mode starts looped playback. Pressing the key a second time stops playback.

**9 PLAYBACK TEMPO**

Selects the tempo of looped playback. The playback tempo can be switched between Normal, 2/3 and 1/2 .

**10 INST.IN**

Connects to an electric guitar, bass, etc. Source sounds input here are sent to **LINE OUT** and **PHONES**. Adjust the input level using volume controls on the instrument. Note that too high a volume level will result in distortion.

**11 DC 10.5V**

Connects to the provided AC power adaptor.

**12 REC LEVEL**

Adjusts the input level at **REC IN**.

**13 REC IN**

Connects to the line output on an audio device such as a tape player, CD player, etc., using the audio cable supplied. The input level is adjusted by **REC LEVEL**.

**14 PHONES**

Connect a pair of headphones here. The headphone level is adjusted by **PHONES LEVEL**.

**15 PHONES LEVEL**

Adjusts the **PHONES** output level.

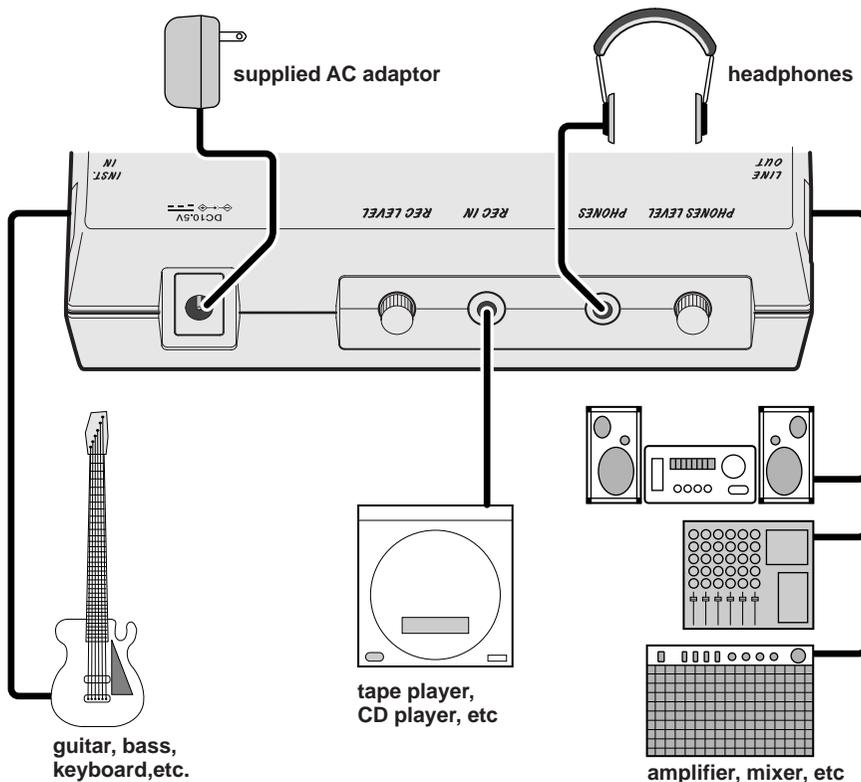
**16 LINE OUT**

Connects to a mixer or amplifier. This outputs playback of the recording and sounds from **REC IN** and **INST.IN**.

**Note:** Any controls on the U400—pots, keys and jacks, are all represented in upper-case in the manual description.

## Connections

Connect all equipment to the U400 as shown in the following illustration.



- REC IN connects to the line outputs on your tape player, CD player, etc., using the supplied audio cable.  
If your tape player, CD player, etc, does not have line outputs, you can use the headphone output instead. In this case, if the headphone output level is set too high, the sound may still be distorted even when REC LEVEL is adjusted.
- Always use the AC power adaptor supplied to supply power to the U400. As there is no power switch on the U400, the device is turned on or off by plugging or unplugging the AC adaptor. Never pull on the cable to disconnect.
- If you use the U400 in an area of different voltage from where you bought the device, it requires another AC power adaptor for that area. Consult your AKAI professional dealer for more information.

## Recording

First of all, you need to record the phrases you wish to transcribe or practice along with. Remember, a stereo source is recorded in mono (merged).

### Preparations

Ensure that the audio device that supplies phrases you wish to record is correctly connected using the supplied audio cable.

Using **REC LEVEL**, adjust the input level as high as possible, without turning on the third red LED indicator on the REC LEVEL meter. Too high a level makes sounds distorted whereas too low a level makes sounds noisy.

—○— 3  
—●— 2  
—●— 1  
**REC  
LEVEL**

### Recording Methods

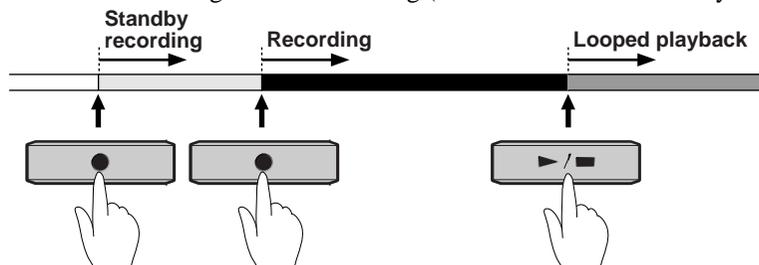
You can start recording in one of the following methods.

#### < Immediate Recording >

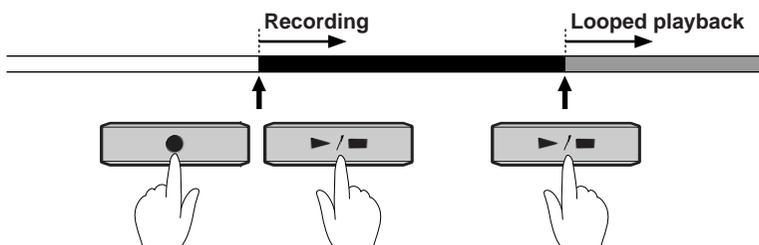
Pressing **RECORD** puts the U400 in the standby recording mode (the LED will blink). The REC IN signal can be monitored.

Pressing **RECORD** a second time starts recording (the RECORD and PLAY/STOP LEDs will light).

The recording will be stopped by pressing **PLAY/STOP**. Otherwise, it will automatically stop in approximately 36 seconds. On completion of recording, the U400 automatically starts looped playback over the whole length of the recording (the PLAY/STOP LED only will light).



Recording can be started immediately by pressing **RECORD** and **PLAY/STOP** at the same time.

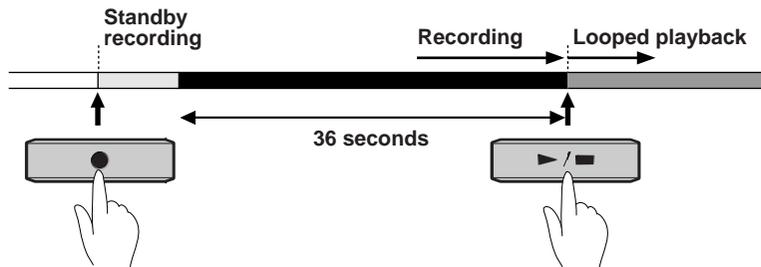


### < Elapse Recording >

Pressing **RECORD** puts the U400 in the standby recording mode (the LED will blink) and the REC IN signal can be monitored.

Pressing **PLAY/STOP** finishes recording of up to the last 36 second portion of the source before the **PLAY/STOP** key is pressed.

On the completion of recording, the U400 automatically starts looped playback over the whole length of the recording (the PLAY/STOP LED only will light).



This method is convenient if you want to stop recording after making sure that the source phrase has ended.

---

**Note:** You can record only a single phrase of up to 36 seconds. Your recording will be erased when another recording is made or the U400 is turned off. The device has no memory area for storage.

*It is not possible to record the sounds from INST.IN.*

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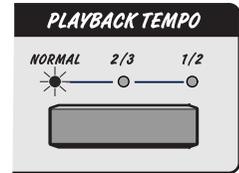
## Playback

### Playback Tempo

Select a playback tempo by pressing **PLAYBACK TEMPO**, you can select from NORMAL, 2/3 and 1/2 tempo .

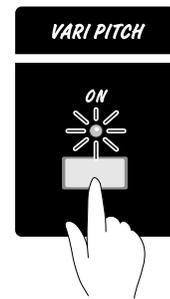
The playback tempo is changed but the original pitch is retained.

There may be slight noises because the constant pitch is obtained by digital waveform expansion.



### Vari Pitch

Pressing VARI PITCH activates the Vari Pitch function (the LED will light). During this function, the playback pitch is lowered as the playback tempo is lowered, as set with **PLAYBACK TEMPO**. This may work better in some applications when the noise from the digital waveform expansion process is noticeable.

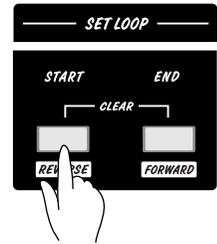


## Loop Points

On the completion of recording, the U400 automatically starts looped playback over the whole length of the recording. You can adjust the start and end points of that loop to playback just the portion you want to hear.

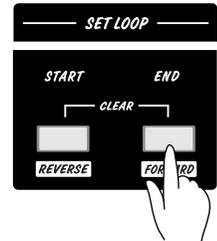
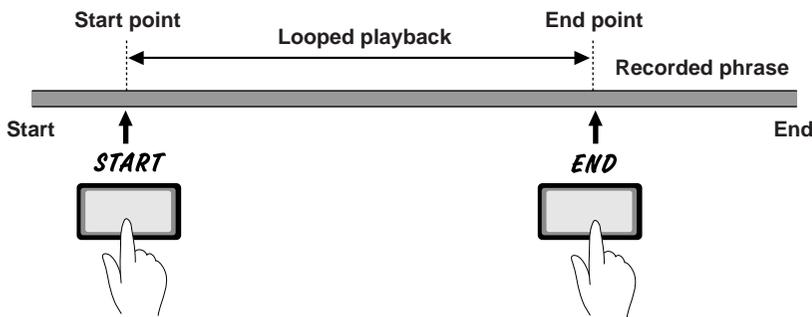
### Start Point

During playback of the recording, pressing **SET LOOP/START** specifies a new start point for the looped playback.



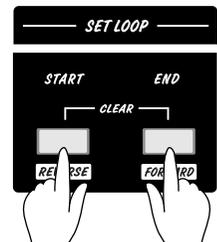
### End Point

During playback of the recording, pressing **SET LOOP/END** specifies a new end point for the looped playback.



### Canceling a Loop

During playback of the recording or in STOP mode, pressing both **SET LOOP/START** and **SET LOOP/END** cancels a loop you specified; Playback will be looped over the whole length of the recording.



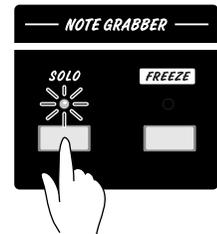
## Note Grabber

This function includes **SOLO** (a band pass filter to make guitar sounds more distinct) and **FREEZE** (a very short looped playback at any point in the recording). These are useful to isolate individual notes in a complex phrase.

### SOLO

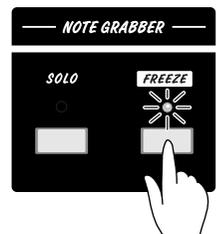
**SOLO** is a band-pass filter that attenuates sounds of higher and lower frequencies that makes sounds in the middle range more distinct, such as guitar phrases, etc.

Pressing **SOLO** activates the SOLO function (the LED will light). Pressing the button again, while the LED is lit, cancels filtering and plays the entire frequency range.

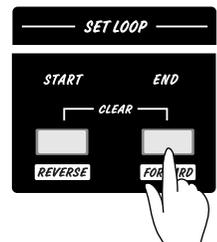


### FREEZE

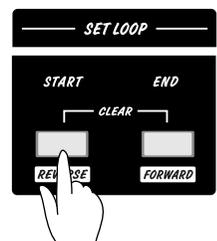
During playback of the recording, press **FREEZE** (the LED will light) and a very short looped playback occurs at that point.



At this time, you can move the loop forward by holding **FORWARD**; When releasing **FORWARD**, another short loop will occur at the new point.



Also, you can use **REVERSE** to move the loop backward; While holding **REVERSE**, the phrase will be played in reverse. When you release **REVERSE**, another short loop will occur at the new point.



While **FORWARD** or **REVERSE** is being held down, the playback speed will be the one you specified using **PLAYBACK TEMPO**. Searching is possible in the whole recording length, regardless of the loop points specified.

To cancel **FREEZE**, press **FREEZE** a second time; its LED goes out and playback stops immediately.

Instead, you can press **PLAY/STOP** to resume normal playback.

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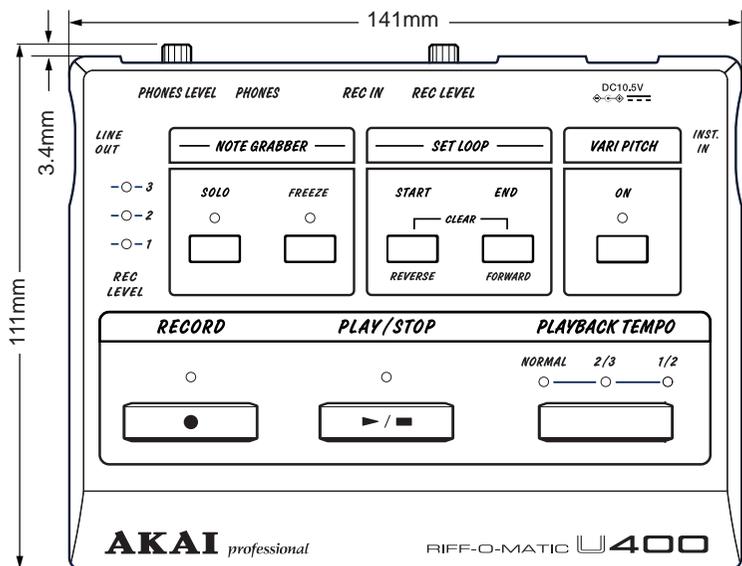
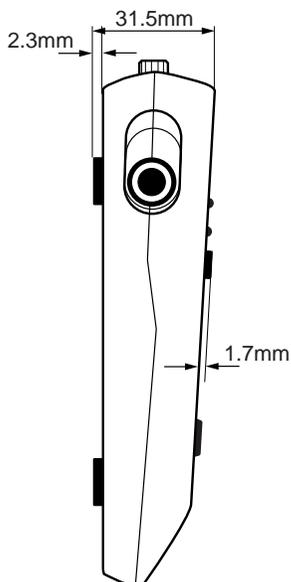
**Note:** Normally, you press **FREEZE** during playback of the recorded phrase to start the short loop at that point. However, if you press **FREEZE** while playback is stopped, you will hear a short loop that is located at the very beginning of the recorded phrase.

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## Specifications

- Model** : Variable Tempo/Constant Pitch Phrase Recorder RIFF-O-MATIC U400
- Sampling Frequency** : 29.4 kHz
- Recording Time** : 35.7 seconds
- Memory Capacity** : 2 MBytes
- Controls** : **PLAYBACK TEMPO** NORMAL, 2/3, 1/2  
**NOTE GRABBER** SOLO/FREEZE  
**SET LOOP** START/END  
**VARI PITCH**  
**RECORD**  
**PLAY/STOP**
- Inputs** : **REC IN** 1/8-inch stereo phone jack -18dBm/3.8KΩ  
**INST.IN** 1/4-inch phone jack -40dBm/8.2KΩ
- Outputs** : **LINE OUT** 1/4-inch phone jack -6dBm/68Ω  
**PHONES** 1/8-inch stereo phone jack 1mW/32Ω
- Pots** : **PHONES LEVEL** output level control of PHONES  
**REC LEVEL** input level control of REC IN for recording
- Level Meter** : 3 LEDs at REC LEVEL
- Power Supply** : DC 10.5V 150mA supplied by the AC power adaptor included
- Weight** : 340g (without AC Adaptor)
- Accessories** : AC power adaptor (10.5 VDC converter, 300 mA output) 1  
 Audio connection cable (1/8-inch stereo phone plugs) ..... 1  
 Operator's Manual ..... 1

**Dimensions** :



\* Above specifications are subject to change without notice.

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