Sound Laboratory

ZOOM®

Pre-Amp & Effects for Acoustic Guitar

A3

OPERATION MANUAL

Thank you very much for purchasing the ZOOM A3.

Please read this manual carefully to learn about all the functions of the A3 so that you will be able to use it fully for a long time.

Keep this manual in a convenient place for reference when necessary.

Contents

Usage and Safety Precautions 2
Introduction 3
Terms Used in This Manual 3
Part Names 4
Turning the Power ON 6
Adjusting the Tone and Volume 8
Adjusting Effects 10
Using the Boost Function 15
Using the Anti-Feedback Function 16
Selecting and Saving Patch Memories 18
Changing Patch Memories 20
Changing Various Settings 22
Using the Tuner 28
About the Firmware 30
Restoring the A3 to its Factory Default Settings 32
Effect Types and Parameters 33
Troubleshooting 42
Specifications 43

© 2013 ZOOM CORPORATION

Copying or reproduction of this document in whole or in part without permission is prohibited.

Usage and Safety Precautions

SAFETY PRECAUTIONS

In this manual, symbols are used to highlight warnings and cautions that you must read to prevent accidents. The meanings of these symbols are as follows:

Warning	Something that could cause serious injury or death.
Caution	Something that could cause injury or damage to the equipment.

Other symbols

!	Required (mandatory) actions.
⃠	Prohibited actions.

⚠ Warning

Operation using an AC adapter

- ! Use only a ZOOM AD-16 AC adapter with this unit.
- ⃠ Do not use do anything that could exceed the ratings of outlets and other electrical wiring equipment. Before using the equipment in a foreign country or other region where the electrical voltage differs from that indicated on the AC adapter, always consult with a shop that carries ZOOM products beforehand and use the appropriate AC adapter.

Operation using batteries

- ! Use 4 conventional 1.5-volt AA batteries (alkaline or nickel-metal hydride).
- ! Read battery warning labels carefully.
- ! Always close the battery compartment cover when using the unit.

Alterations

- ⃠ Never open the case or attempt to modify the product.

⚠ Precautions

Product handling

- ! Do not drop, bump or apply excessive force to the unit.
- ! Be careful not to allow foreign objects or liquids to enter the unit.

Operating environment

- ⃠ Do not use in extremely high or low temperatures.
- ⃠ Do not use near heaters, stoves and other heat sources.
- ⃠ Do not use in very high humidity or near splashing water.
- ⃠ Do not use in places with excessive vibrations.
- ⃠ Do not use in places with excessive dust or sand.

AC adapter handling

- ! When disconnecting the AC adapter from an outlet, always pull the body of the adapter itself.
- ! During lightning storms or when not using the unit for a long time, disconnect the power plug from the AC outlet.

Battery handling

- ! Install the batteries with the correct +/- orientation.
- ! Use a specified battery type. Do not mix new and old batteries or different brands or types at the same time. When not using the unit for an extended period of time, remove the batteries from the unit.
- ! If a battery leak should occur, wipe the battery compartment and the battery terminals carefully to remove all battery residue.

Connecting cables with input and output jacks

- ! Always turn the power OFF for all equipment before connecting any cables.
- ! Always disconnect all connection cables and the AC adapter before moving the unit.

Volume

- ⃠ Do not use the product at a loud volume for a long time.

Usage Precautions

Interference with other electrical equipment

In consideration of safety, the A3 has been designed to minimize the emission of electromagnetic radiation from the device and to minimize external electromagnetic interference. However, equipment that is very susceptible to interference or that emits powerful electromagnetic waves could result in interference if placed nearby. If this occurs, place the A3 and the other device farther apart. With any type of electronic device that uses digital control, including the A3, electromagnetic interference could cause malfunction, corrupt or destroy data and result in other unexpected trouble. Always use caution.

Cleaning

Use a soft cloth to clean the panels of the unit if they become dirty. If necessary, use a damp cloth that has been wrung out well. Never use abrasive cleansers, wax or solvents, including alcohol, benzene and paint thinner.

Malfunction

If the unit becomes broken or malfunctions, immediately disconnect the AC adapter, turn the power OFF and disconnect other cables. Contact the store where you bought the unit or ZOOM service with the following information: product model, serial number and specific symptoms of failure or malfunction, along with your name, address and telephone number.

Copyrights

- Windows®, Windows Vista® , Windows® 7 and Windows® 8 are trademarks or registered trademarks of Microsoft®.
- Macintosh® and Mac OS® are trademarks or registered trademarks of Apple Inc.
- All other trademarks, product names and company names mentioned in this documentation are the property of their respective owners.

Note: All trademarks and registered trademarks mentioned in this manual are for identification purposes only and are not intended to infringe on the copyrights of their respective owners.

Introduction

Acoustic modeling restores body tone

Presets for 16 body types and 28 model types simulate the sonic characteristics of a variety of acoustic guitars with different body shapes and material properties. By choosing a body and model according to the guitar that you are using, you can share the original rich and beautiful tone of your acoustic guitar with audiences when you perform live.

High-quality preamp can be used with both pickups and mics

The preamp was designed especially for acoustic guitars and can be used with piezoelectric, magnetic and passive pickups. In addition, you can connect a condenser microphone to the XLR mic input, which can provide phantom power, and mix that signal with the pickup signal to shape the sound. This acoustic guitar preamp offers a full array of features. The 3-band EQ can be used to adjust the tone according to the environment. The BALANCE knob can be used to set the ratio of the original sound (DRY) and the sound after the effects (WET). The super low noise design provides a 120dB S/N ratio and a –100dBm noise floor.

40 types of acoustic guitar effects

The 40 effects, which have a focus on chorus, delay, reverb and other spatial effects, can make acoustic tones even more beautiful. Other effects include a compressor that suppresses input peaks and evens the volume level, an air effect that simulates the sense of space from room tone and a detuning effect that creates a sound like a 12-string guitar. You can use any 2 of these effects together as you like.

Anti-feedback function with minimal effect on tone quality

The Anti-feedback function can quickly and effectively eliminate feedback during a performance. Just step on the Anti-feedback switch to automatically detect the frequency that is causing feedback and surgically apply a steep filter to cut that frequency band. The Anti-feedback function can handle up to 3 different frequencies that are causing feedback.

Clean boost of up to 12 dB

The Boost function can reduce the volume differences of fingerpicking, strumming chords and other guitar playing techniques, as well as increase amplification during solos. You can also adjust the sound when the boost is active with the TONE parameter.

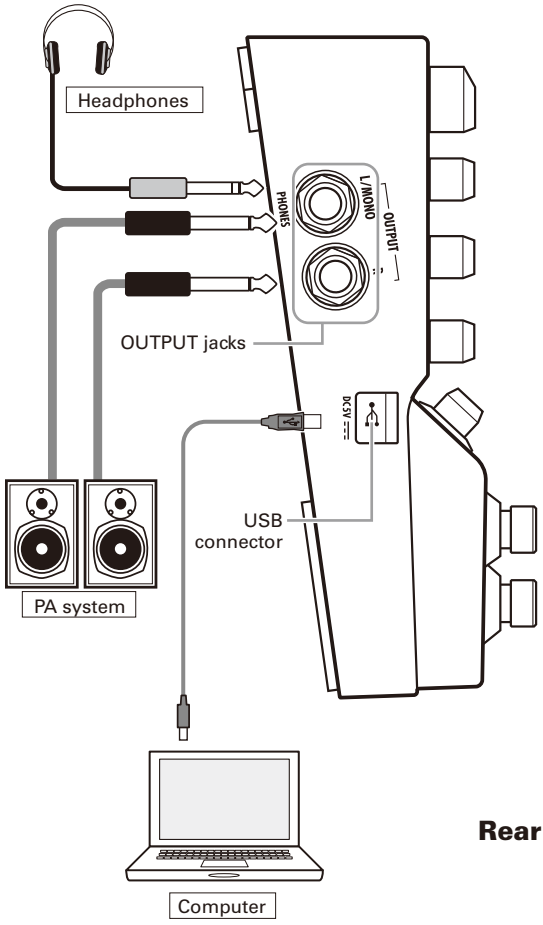
Terms Used in This Manual

Patch memory

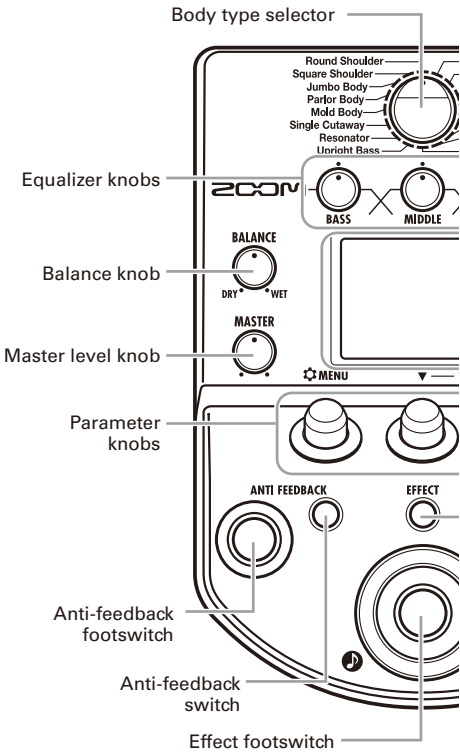
The ON/OFF status and the parameter settings of each effect are stored as "patch memories". The **AE** can store 20 patch memories.

Part Names

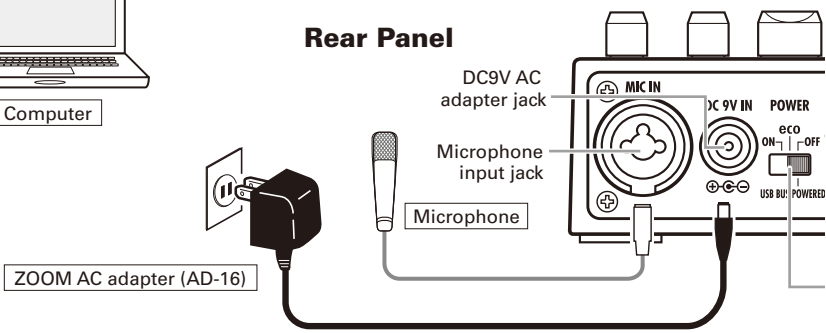
Left Panel



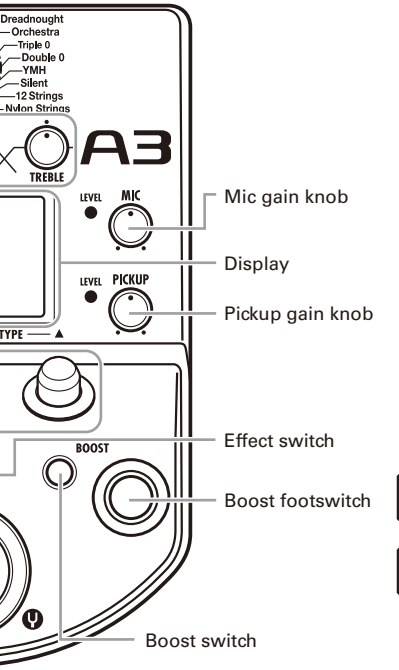
Top Panel



Rear Panel



Right Panel



Mic gain knob

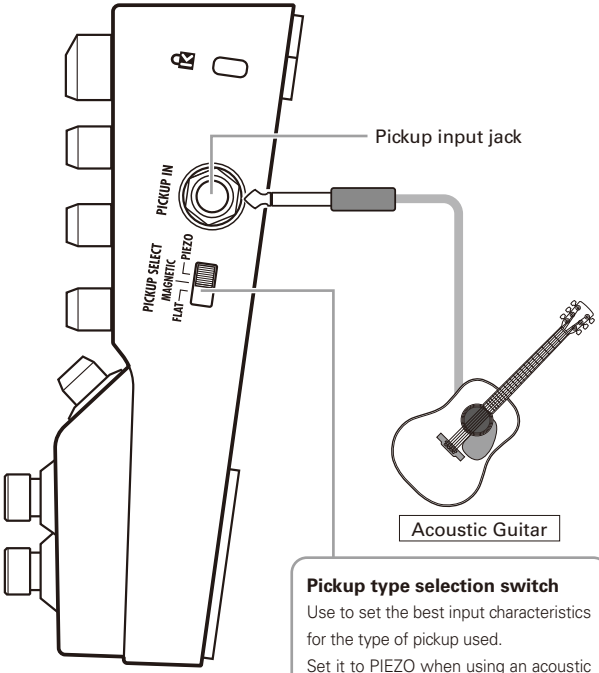
Display

Pickup gain knob

Effect switch

Boost footswitch

Boost switch



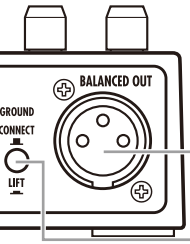
Pickup input jack

Acoustic Guitar

Pickup type selection switch

Use to set the best input characteristics for the type of pickup used.

Set it to PIEZO when using an acoustic guitar with a piezoelectric pickup or MAGNETIC when using a magnetic pickup. You can also set it to FLAT if you do not want any pickup adjustment.



BALANCED OUT connector

POWER (eco) switch

GROUND switch

Use this switch to connect or disconnect the BALANCED OUT connector with the ground.

Set it to "LIFT" (pushed in) to separate the signal path from the grounding pin. Set it to "CONNECT" (not pushed in) to connect it to the grounding pin.

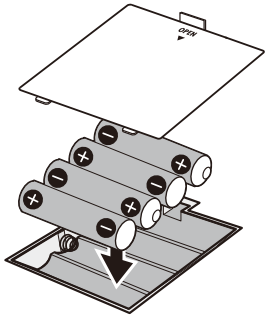
Turning the Power ON

1 To turn the power ON

- Lower the volume of any connected amplifier or other audio equipment all the way.

■ When using batteries

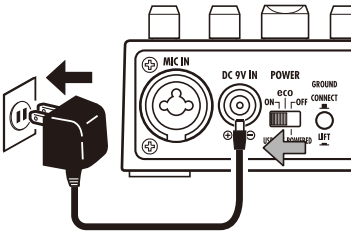
Open the cover on the bottom of the unit and insert batteries in the compartment.

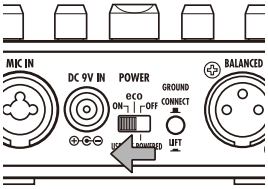


Bottom of the unit

■ When using an adapter

Connect an AD-16 adapter.





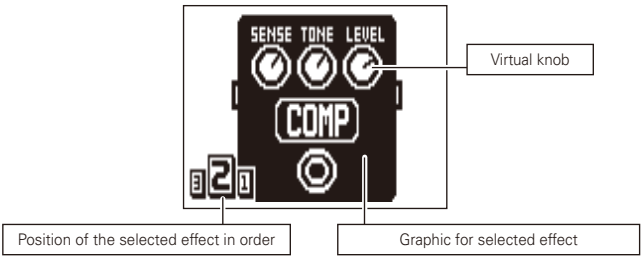
- Turn the connected amplifier or other audio equipment ON and raise its volume.

Using the POWER switch eco setting

When set to eco, if the AB is not used for 10 hours, its power will automatically turn off.
If you want to keep it on all the time set the POWER switch to ON.

2 Display information

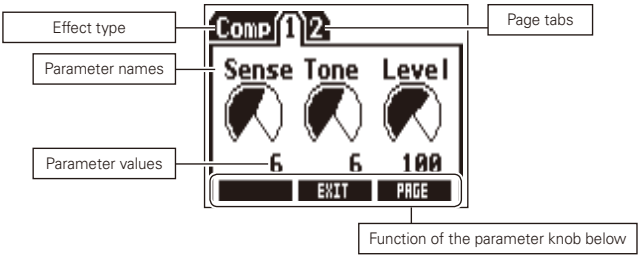
■ The Home Screen shows the current effect



HINT

- The positions of the virtual knobs change with the parameter values.
- Press EFFECT to return to the Home Screen when any other screen is open.

■ Edit Screen shows parameters being edited



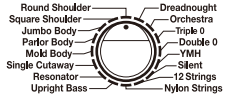
HINT

- If there are 4 or more parameters that can be adjusted, multiple page tabs will be shown.

Adjusting the Tone and Volume

1 To select the body type

Choose the body type that matches your guitar.

- Turn 

.

NOTE

- This has no effect on the mic input.
- This is not saved with patch memories.
- See page 33 for information about the body types that can be selected.

2 To adjust the input sensitivity

■ For the pickup input

- Turn 

.

■ For the mic input

- Turn 

.

NOTE

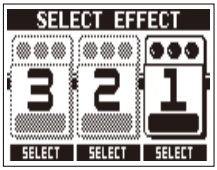
- Set so the LEVEL indicator does not blink red.

3 To select the model type

- Press 

on the Home Screen.
- Press 

to select Effect 1.

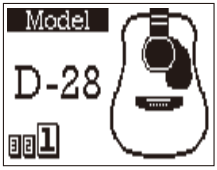




- The model type appears on the Home Screen.
- Use 

and 

to select the model type.



NOTE

- For details about the model types, see page 34.

4 To adjust the equalization

- Turn 

.

HINT

- 

: Adjust to boost or cut low frequencies (around 60Hz) by up to ±12dB.
- 

: Adjust to cut middle frequencies (around 700Hz) by up to –12dB.
- 

: Adjust to boost middle frequencies (around 400Hz) by up to 12dB.
- 

: Adjust to boost or cut high frequencies (around 8kHz) by up to ±12dB.

5 To adjust the amount of the original sound

Adjust the balance between original (DRY) and effected (WET) signals.

- Turn 

.

NOTE

- The effected signal is the sound created by the pickup selection, preamp, effect, boost and equalizer settings.

6 To adjust the master level

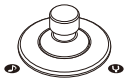
- Turn 

.

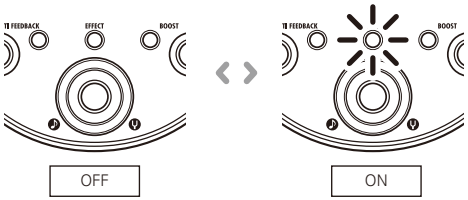
Adjusting Effects

Confirm that the Home Screen is shown.

1 To turn an effect ON and OFF

- Press  .

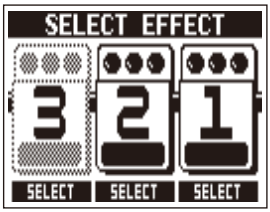
- This switches the effect shown on the display ON and OFF.



2 To select the effect to adjust

- Press EFFECT .

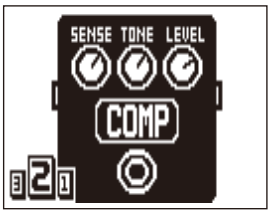
- Press MENU, ▼ TYPE, or TYPE ▲ to select the effect to adjust.



HINT

- Effects that are OFF appear gray.

- The selected effect appears on the Home Screen.



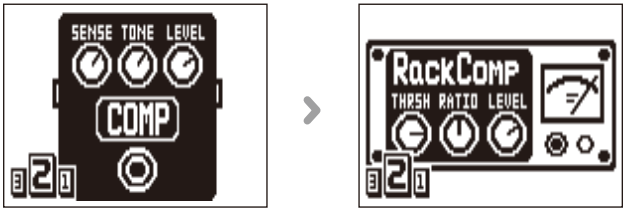
NOTE

- Effect 1 is dedicated to model types. (See page 34.)

3 To select an effect type

- Press ▼TYPE or TYPE▲ .

- The effect type changes.



HINT

- See the section starting on page 34 for information about effect types and parameters.

NOTE

- A model type can only be selected for Effect 1.

Effect processing capacity



The **A3** allows you to combine 3 effects as you like. However, if you combine effect types that require great amounts of processing power, the available processing capacity might not be enough. If the processing required for an effect exceeds the available capacity, the effect is bypassed and a "DSP Full!" message appears. This can be avoided by changing 1 or more of the effect types or setting them to THRU.

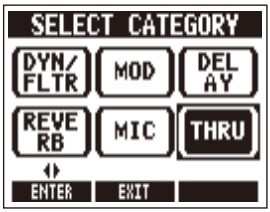
NOTE

- An effect requires the same amount of processing power whether it is ON or OFF.

NEXT ›››

4 To select the effect category

- Press and hold TYPE▲ for 1 second.



- Turn MENU to choose the category.
- Press MENU .

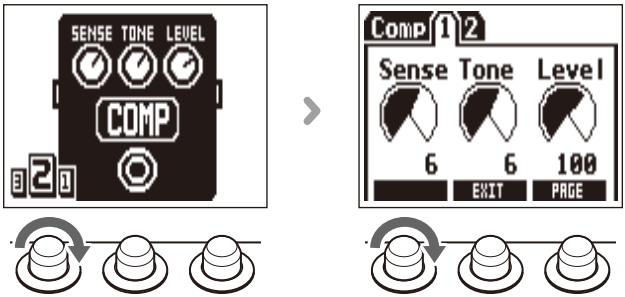
HINT

- Press ▼TYPE to cancel.
- Effect categories can only be selected for Effects 2 and 3.

5 To adjust parameters

- Turn MENU , ▼TYPE and TYPE▲ .

- The editing screen opens where you can adjust parameters.



6 To change the page

- Press TYPE▲ when the Edit Screen is open.

- The next page opens.



7 To use the Tap Tempo function

Delay effects and some modulation and filter effects can be synchronized to the tempo. Select an effect that can be synchronized, and set its Time, Rate or other parameter that can be synchronized to a ♪ or ♩ note value.
The tempo can be set by tapping the footswitch or a knob.

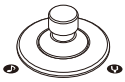
NOTE

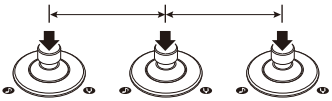
- By default, **when pressed and held, the footswitch is set to activate the Tuner.** To tap the tempo with the footswitch, the setting must be changed so that it activates Tap Tempo when pressed and held. (See page 24.)
- Tempo settings are saved separately for each patch memory.

■ To set the tempo by tapping the footswitch

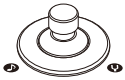
- Press and hold for 1 second.

NEXT ›››

- Tap  2 or more times at the desired tempo.





- Press and hold  for 1 second to return to the Home Screen.

NOTE

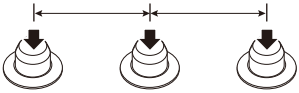
- If you press  when EFFECT becomes unlit and the effect turns OFF for 1 second.

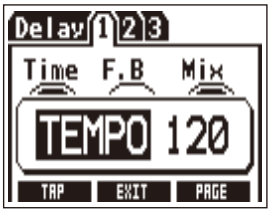
■ To set the tempo with the parameter knobs

- Open an effect that can be synchronized to the tempo. (See page 35.)

- Turn MENU , ▼ TYPE and TYPE ▲ .

- Press MENU 2 or more times at the desired tempo.





8 To return to the Home Screen

- Press EFFECT .

HINT

- You can press EFFECT on any effect screen to return to the Home Screen.

Using the Boost Function

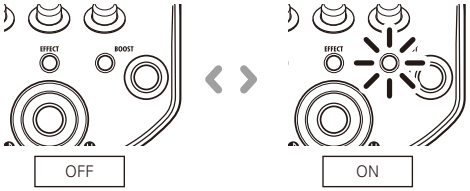
BOOST

You can increase the volume by up to 12 dB, allowing you to adjust the volume used during solos or when switching from strumming to finger picking.

1 To turn the boost ON and OFF

- Press BOOST .

- This turns the Boost function ON or OFF.



NOTE

- If the sound becomes distorted when the Boost function is ON, adjust the master level.
- The Boost ON/OFF setting is not saved. It is always OFF when the unit starts up.

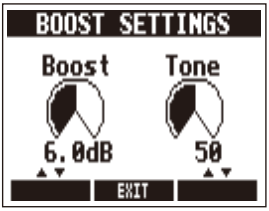
2 To adjust parameters

- Press BOOST .

- Adjust parameters.

  Boost : Turn MENU .

  Tone : Turn TYPE .



3 To complete the setting

- Press ▼TYPE or BOOST .

Using the Anti-Feedback Function

The frequency range that is causing feedback can be detected automatically and cut to stop the feedback.

1 To eliminate feedback

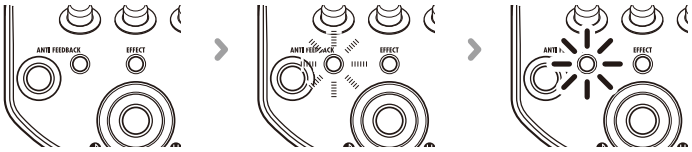
- Press 

.

NOTE

- The Anti-feedback ON/OFF setting is not saved. It is always OFF when the unit starts up.

- After detecting the frequency causing feedback, the Anti-feedback function turns ON.

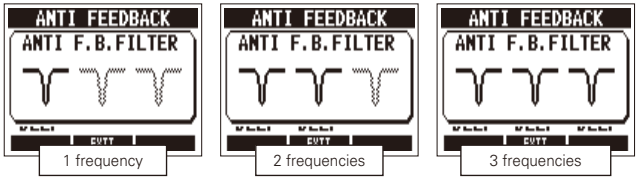


- Each time you press 

, the unit detects the feedback frequency. Up to 3 frequencies can be cut at once.

HINT

- After detection completes, the screen shows the number of feedback frequencies that are being cut.



- To turn off the Anti-feedback function, press 

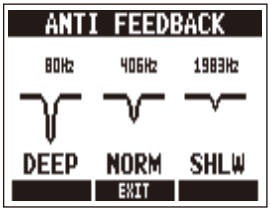
again when 3 frequencies have been set.

NOTE

- When the Anti-feedback function is turned off, the detected frequencies are forgotten.
- When the unit is detecting the feedback frequency, it will be canceled if you use any other switch or knob.

2 To adjust parameters

- Press ANTI FEEDBACK .



- Adjust the depth (amount frequency is cut).

  Depth of 1st filter: Turn MENU .

  Depth of 2nd filter: Turn ▼TYPE .

  Depth of 3rd filter: Turn TYPE▲ .

NOTE

- After detection, the depth of each filter is automatically set to DEEP.

3 To complete the setting

- Press ▼TYPE or ANTI FEEDBACK .

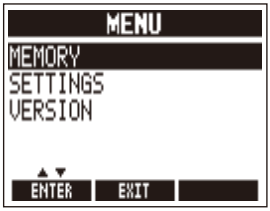
Selecting and Saving Patch Memories

You can save up to 20 effect settings as patches in the memory.
When shipped from the factory, the automatic patch saving function is active.
Changes to settings are saved automatically as soon as they are made.

1 To select a patch memory

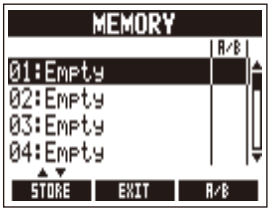
- Press MENU on the Home Screen.

- Turn MENU to select MEMORY.



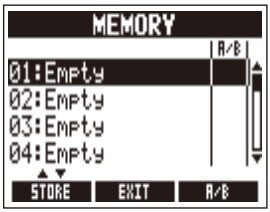
- Press MENU .

- Turn MENU to select a patch memory.



2 To save a patch memory

- Press MENU on the MEMORY screen.



- Change the name and select where to save the patch memory.



  Turn MENU to move the cursor.

  Turn TYPE▲ to change the character.

  Press TYPE▲ to change the type of character/symbol.

  Turn ▼TYPE to select where to save the patch memory.

- Press MENU .

NOTE

- After the settings are saved, the MEMORY screen reopens.

HINT

- You can cancel saving patch memory settings and return to the MEMORY screen by pressing ▼TYPE instead of MENU .

Changing Patch Memories

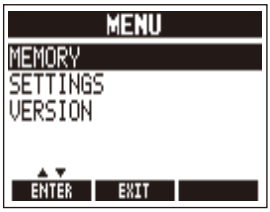
You can set in advance the order that patch memories are changed when you press the footswitch. You can add up to 20 patch memories to this order.

1 To add or remove patch memories to a list that the footswitch cycles through

- Press MENU on the Home Screen.

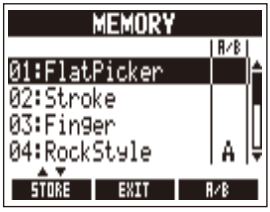


- Turn MENU to select MEMORY.
- Press MENU .





- Turn MENU to select a patch memory to add it to or remove it from the order.
- Press TYPE▲ .



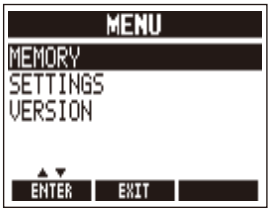
HINT

- Press and hold TYPE▲ to remove all patch memories from the footswitch list.

2 To cycle through patch memories in the list in order using the footswitch

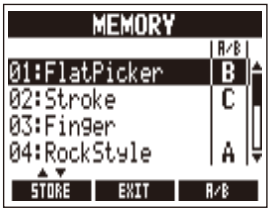
- Press MENU on the Home Screen.

- Turn MENU to select MEMORY.

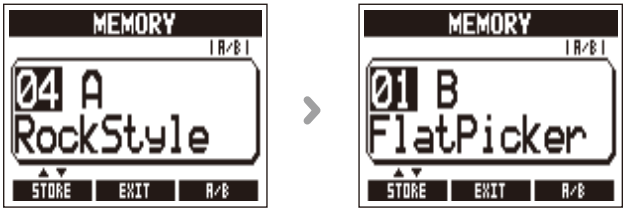


- Press MENU .

- Press .

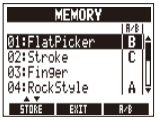


- Each time you press the footswitch, the patch memory will change in the set order.



HINT

- In the example on the right, pressing the footswitch cycles through the patch memories in alphabetical order like this.
  [04:RockStyle] → [01:FlatPicker] → [02:Stroke] →
  [04:RockStyle] → [01:FlatPicker] …



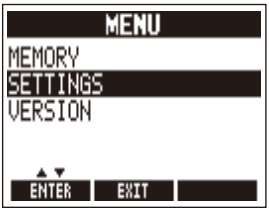
Changing Various Settings

1 To change various settings

- Press MENU on the Home Screen.

- Turn MENU to select SETTINGS.

- Press MENU .

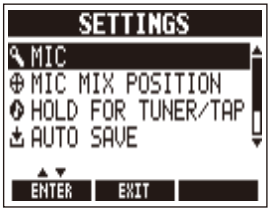


HINT

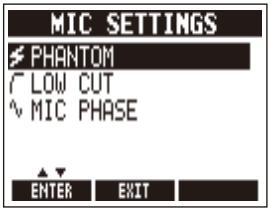
- When making settings, press TYPE to return to the previous screen.
- Press EFFECT to return to the Home Screen.

2 To change mic input settings

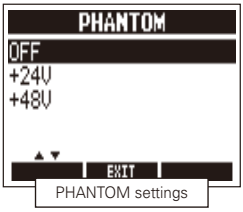
- Turn MENU to select MIC.
- Press MENU .



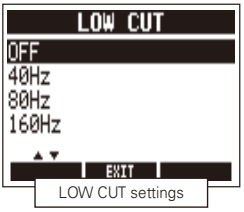
- Turn MENU to select the item to set.
- Press MENU .



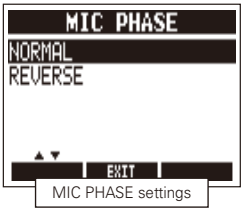
- Turn MENU to change the setting.



PHANTOM settings



LOW CUT settings



MIC PHASE settings

HINT

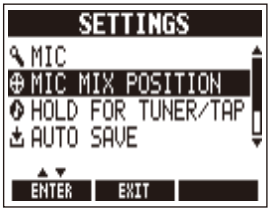
- PHANTOM : Set the phantom power voltage.
- LOW CUT : To reduce low-frequency noise, select a frequency band to cut.
- MIC PHASE : Set the phase of the mic input signal.

NOTE

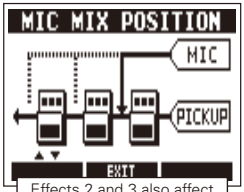
- If you press TYPE to exit the PHANTOM page, the selected setting will become active.
- Some condenser mics will not work with the +24V phantom power setting. This uses less power than the +48V setting, though, so it can help when using batteries.

3 To set the mix position of the mic input

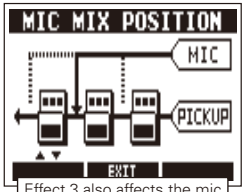
- Turn MENU to select MIC MIX POSITION.
- Press MENU.



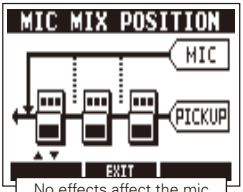
- Turn MENU to select the mic mix position.



Effects 2 and 3 also affect the mic input.



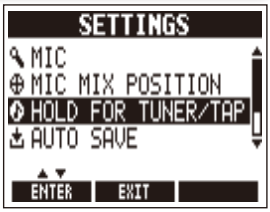
Effect 3 also affects the mic input.



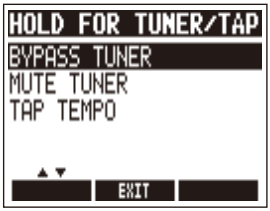
No effects affect the mic input.

4 To set the function activated by pressing and holding the footswitch

- Turn MENU to select HOLD FOR TUNER/TAP.
- Press MENU.



- Turn MENU to select the function.

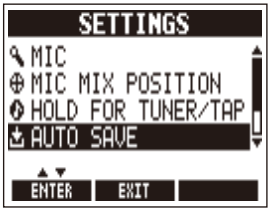


HINT

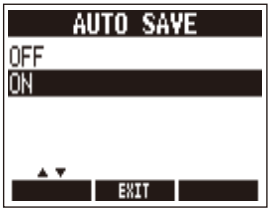
- BYPASS TUNER : Activates the tuner. The effects are bypassed when the tuner is being used.
- MUTE TUNER : Activates the tuner. The output is muted when the tuner is being used (default setting).
- TAP TEMPO : Activates Tap Tempo.

5 To set the Auto Save function

- Turn MENU to select AUTO SAVE.
- Press MENU .



- Turn MENU to select the setting.

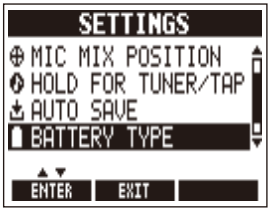


HINT

- ON (default): Changes to presets are automatically saved.
- OFF: Changes to presets are not saved until they are saved manually. (See page 19.)

6 To select the battery type

- Turn MENU to select BATTERY TYPE.
- Press MENU .



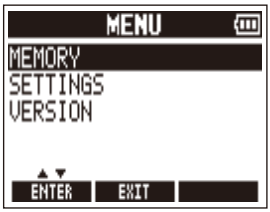
- Turn MENU to set the type of batteries used.



NEXT ›››

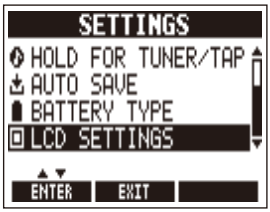
7 To check the remaining battery charge

- The remaining battery charge is shown at the top right of the MENU screen when batteries are in use.



8 To adjust the display

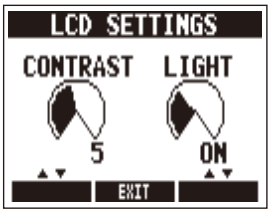
- Turn MENU to select LCD SETTINGS.
- Press MENU .



- Adjust the display.

CONTRAST : Turn MENU .

LIGHT (backlight time) : Turn TYPE ▲ .



9 To end making settings

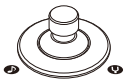
- Press EFFECT .

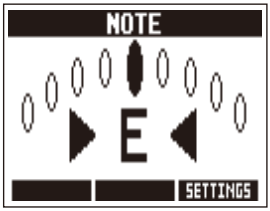
HINT

- When making settings, press TYPE to return to the previous screen.

Using the Tuner

1 To activate the tuner

- Press and hold  for 1 second.



HINT

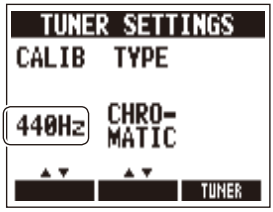
- A setting must be changed to make pressing and holding  activate Tap Tempo. (See page 24.)

2 To change the tuner's standard pitch

- Press  on the Tuner Screen.



- Turn  .



NOTE

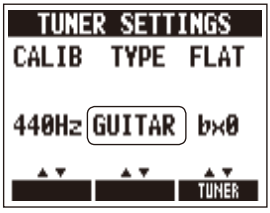
- The standard pitch for middle A can be set to 435-445 Hz.
- The standard pitch is remembered even when the POWER is OFF.

3 To select the tuner type

- Press  on the Tuner Screen.



- Turn  .



■ Chromatic tuner

The chromatic tuner shows the nearest pitch name (semitone) and how far the input sound is from that pitch.

■ Other tuner types

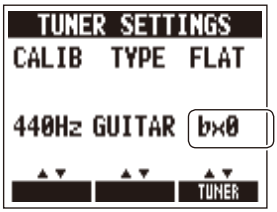
Depending on the selected type, the nearest string name and how far the sound input is from that pitch are shown. You can select from the following tunings.

Display	Meaning	String number/Note name						
		7	6	5	4	3	2	1
GUITAR	Standard tuning for guitars, including 7-string guitars	B	E	A	D	G	B	E
OPEN A	In open A tuning, the open strings make an A chord	-	E	A	E	A	C#	E
OPEN D	In open D tuning, the open strings make a D chord	-	D	A	D	F#	A	D
OPEN E	In open E tuning, the open strings make an E chord	-	E	B	E	G#	B	E
OPEN G	In open G tuning, the open strings make a G chord	-	D	G	D	G	B	D
DADGAD	This alternate tuning is often used for tapping, etc.	-	D	A	D	G	A	D

4 To use a drop tuning

- Press TYPE▲ on the Tuner Screen.

- Turn TYPE▲ .



NOTE

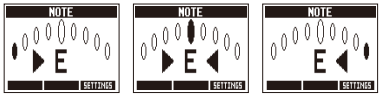
- You can drop the tuning by one (♭×1), two (♭×2) or three (♭×3) semitones.
- Drop tuning is not possible when the TYPE is set to CHROMATIC.

5 To tune a guitar

- Play the open string that you want to tune and tune it.

■ Chromatic tuner

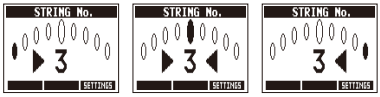
The name of the nearest note and the pitch accuracy are shown.



Flat | Correct pitch | Sharp

■ Other tuner types

The number of the nearest string and the pitch accuracy are shown.



Flat | Correct pitch | Sharp

6 To end tuning

- Press .

HINT

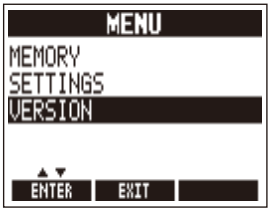
- You can also end tuning by pressing ANTI FEEDBACK and then BOOST .

About the Firmware

1 To view the firmware versions

- Press MENU on the Home Screen.

- Turn MENU to select VERSION.



- Press MENU.

- The firmware version is shown.



2 To download the latest firmware Update application

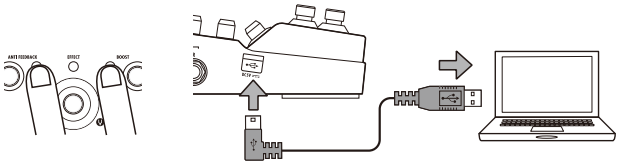
- Visit the ZOOM website (http://www.zoom.co.jp).

3 To prepare to update the firmware

- Confirm that the POWER switch is set to OFF.



- While pressing both ANTI FEEDBACK BOOST , connect the unit to a computer using the USB cable.





- The FIRMWARE UPDATE screen appears.



4 To update the firmware

- Launch the firmware update application on your computer, and execute the update.

NOTE

- Do not disconnect the USB cable while the firmware is being updated.

HINT

- See the ZOOM website for instructions about how to use the application.

NEXT ›››

5 To complete updating

- When the A3 has finished updating, "Complete!" appears on the display.

- Disconnect the USB cable.

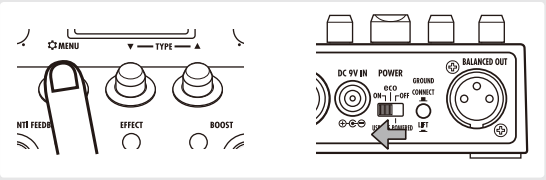
HINT

- Updating the firmware will not erase saved patch memories.

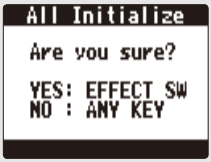
Restoring the A3 to its Factory Default Settings

1. To use the All Initialize function

- While pressing MENU, set the POWER switch to ON.



- The All Initialize screen appears.



2. To execute the All Initialize function

- Press EFFECT.

NOTE

- Press any key other than EFFECT to cancel.

HINT

- Executing the All Initialize function will restore all the settings of the A3, including its patch memories, to factory defaults. Do not use this function unless you are certain that you want to do this.

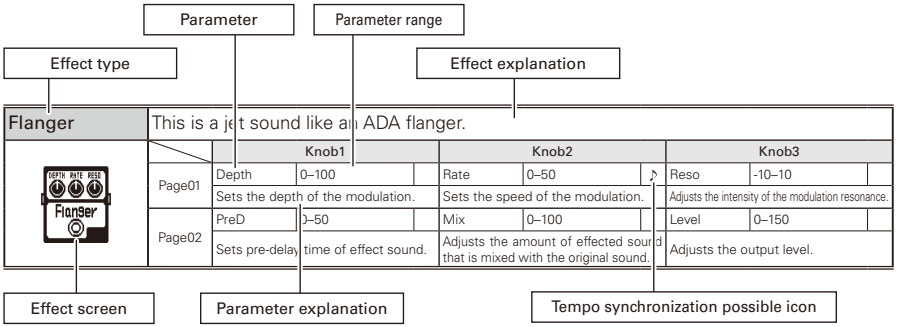
Effect Types and Parameters

■ Body Types

Round Shoulder		Dreadnought	
	Best for guitars with round shoulders, such as the Gibson J-45.		Best for dreadnought guitars, such as the Martin D-28.
Square Shoulder		Orchestra	
	Best for guitars with square shoulders, such as the Gibson Hummingbird.		Best for orchestra guitars, such as the Martin OM-28.
Jumbo Body		Triple 0	
	Best for jumbo body guitars, such as the Gibson SJ-200.		Best for 000 guitars, such as the Martin 000-28.
Parlor Body		Double 0	
	Best for parlor guitars, such as the Gibson LG-2.		Best for 00 guitars, such as the Martin 00-18.
Mold Body		YMH	
	Best for resin guitars, such as the Ovation Adamas.		Best for YAMAHA jumbo body guitars, such as the YAMAHA LL36.
Single Cutaway		Silent	
	Best for single cutaway guitars, such as the Taylor 314ce.		Best for silent guitars that do not have resonant body cavities.
Resonator		12 Strings	
	Best for resonator guitars.		Recreates the clear tones of 12-string guitars.
Upright Bass		Nylon Strings	
	Best for upright basses.		Best for classical guitars that use nylon strings.

■ Model Types

D-28 Dreadnought	**D-18** Dreadnought	**D-45** Dreadnought	**000-28** Triple 0
 Body characteristics of a Martin D-28, which is a standard acoustic guitar style.	 Body characteristics of a Martin D-18, which features a clear tone.	 Body characteristics of a Martin D-45, which features rich harmonics and deep bass.	 Body characteristics of a Martin 000-28, which features beautiful treble.
000-18 Triple 0	**OM-28** Orchestra	**OM-18** Orchestra	**OM-42** Orchestra
 Body characteristics of a Martin 000-18, which features clear bass.	 Body characteristics of a Martin OM-28, which features full high frequencies and just the right amount of volume.	 Body characteristics of a Martin OM-18, which features a tone with a fast response.	 Body characteristics of a Martin OM-42, which features rich harmonics and a tight low end.
00-21 Double 0	**00-18** Double 0	**J-45** Round Shoulder	**Advanced Jumbo** Round Shoulder
 Body characteristics of a Martin 00-21, which features a clear tone typical of jacaranda.	 Body characteristics of a Martin 00-18, which features a balanced tone from a small body.	 Body characteristics of a Gibson J-45, which features a dry tone that is perfect for strumming.	 Body characteristics of a Gibson J-45 Advanced Jumbo, which uses a rosewood back to add rich bass to the J-45 sound.
J-160E Round Shoulder	**Hummingbird** Square Shoulder	**Dove** Square Shoulder	**SJ-200** Jumbo Body
 Body characteristics of a Gibson J-160E, which is famous as a pioneering acoustic-electric guitar.	 Body characteristics of a Gibson Hummingbird, which is loved by pop and rock artists.	 Body characteristics of a Gibson Dove, which features a solid bass tone from its maple sides and back.	 Body characteristics of a Gibson SJ-200, which is known as the king of flattop guitars.
F-55 Jumbo Body	**LG-2** Parlor Body	**LG-0** Parlor Body	**314ce** Single Cutaway
 Body characteristics of a Guild F-55, which has deep bass and bell-like high frequencies thanks to its large body.	 Body characteristics of a Gibson LG-2, which is a small-bodied guitar loved by blues musicians.	 Body characteristics of a Gibson LG-0, which has a down-home sound thanks to its ladder bracing.	 Body characteristics of a Taylor 314ce, which is popular because of its great playability and balanced tone.
LL36 YMH	**LL66** YMH	**Adamas** Mold Body	**Legend** Mold Body
 Body characteristics of a YAMAHA LL36, which features a thick solid sound with a balanced tone.	 Body characteristics of a YAMAHA LL66, which has a transparent sound with a good balance of all the strings.	 Body characteristics of an Ovation Adamas, which was created to have ideal vibration traits by using a unique top material.	 Body characteristics of an Ovation Legend, which features a round back and a large sound hole.
Nylon Nylon Strings	**12Strings** 12Strings	**Resonator** Resonator	**UprightBass** Upright Bass
 Body characteristics of a nylon guitar used in bossa nova, jazz and other genres.	 Body characteristics of a Guild 12-string guitar, which features the unique wide sound of doubled strings.	 Body characteristics of a Dobro resonator guitar, which has a spider cone resonator in a wood body.	 Body characteristics of a 3/4 upright bass, which has soft highs and rich lows.



Flanger	This is a jet sound like an ADA flanger.								
		Knob1			Knob2			Knob3	
	Page01	Depth	0–100		Rate	0–50	♪	Reso	-10–10
		Sets the depth of the modulation.			Sets the speed of the modulation.			Adjusts the intensity of the modulation resonance.	
	Page02	PreD	0–50		Mix	0–100		Level	0–150
		Sets pre-delay time of effect sound.			Adjusts the amount of effected sound that is mixed with the original sound.			Adjusts the output level.	

■ Effect Types and Parameters

[DYN/FLTR]

Comp	This compressor is in the style of the MXR Dyna Comp.								
		Knob1			Knob2			Knob3	
	Page01	Sense	0–10		Tone	0–10		Level	0–150
		Adjusts the compressor sensitivity.			Adjusts the tone.			Adjusts the output level.	
	Page02	ATTCK	Slow, Fast						
		Sets compressor attack speed to Fast or Slow.							

RackComp	This compressor allows more detailed adjustment than Comp.								
		Knob1			Knob2			Knob3	
	Page01	THRSH	0–50		Ratio	1–10		Level	0–150
		Sets the level that activates the compressor.			Adjusts the compression ratio.			Adjusts the output level.	
	Page02	ATTCK	1–10						
		Adjusts the compressor attack rate.							

M Comp	This compressor provides a more natural sound.								
		Knob1			Knob2			Knob3	
	Page01	THRSH	0–50		Ratio	1–10		Level	0–150
		Sets the level that activates the compressor.			Adjusts the compression ratio.			Adjusts the output level.	
	Page02	ATTCK	1–10						
		Adjusts the compressor attack rate.							

OptComp	This compressor is in the style of an APHEX Punch FACTORY.								
		Knob1			Knob2			Knob3	
	Page01	Drive	0–10		Tone	0–100		Level	0–150
		Adjusts the depth of the compression.			Adjusts the tone.			Adjusts the output level.	
	Page02								

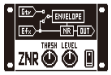
SlowATTCK	This effect slows the attack of each note, resulting in a violin-like performance.								
		Knob1			Knob2			Knob3	
	Page01	Time	1–50		Curve	0–10		Level	0–150
		Adjusts the attack time.			Set the curve of volume change during attack.			Adjusts the output level.	
	Page02								

NEXT ›››

Effect Types and Parameters

ZNR

ZOOM's unique noise reduction cuts noise during pauses in playing without affecting the tone.



	Knob1		Knob2		Knob3	
Page01	THRSH	1–25	DETCT	GtrIn, EfxIn	Level	0–150
	Adjusts the effect sensitivity.		Sets control signal detection level.		Adjusts the output level.	
Page02						

GraphicEQ

This unit has a 6-band equalizer.



	Knob1		Knob2		Knob3	
Page01	160Hz	-12–12	400Hz	-12–12	800Hz	-12–12
	Boosts or cuts the low (160 Hz) frequency band.		Boosts or cuts the low-middle (400 Hz) frequency band.		Boosts or cuts the middle (800 Hz) frequency band.	
Page02	3.2kHz	-12–12	6.4kHz	-12–12	12kHz	-12–12
	Boosts or cuts the high (3.2 kHz) frequency band.		Boosts or cuts the extremely high (6.4 kHz) frequency band.		Boosts or cuts the harmonics (12 kHz) frequency band.	
Page03	Level	0–150				
	Adjusts the output level.					

ParaEQ

This is a 2-band parametric equalizer.



	Knob1		Knob2		Knob3	
Page01	Freq1	20Hz–20kHz	Q1	0.5, 1, 2, 4, 8, 16	Gain1	-12–12
	Adjusts center frequency of EQ1.		Adjusts EQ1 Q.		Adjusts EQ1 gain.	
Page02	Freq2	20Hz–20kHz	Q2	0.5, 1, 2, 4, 8, 16	Gain2	-12–12
	Adjusts center frequency of EQ2.		Adjusts EQ2 Q.		Adjusts EQ2 gain.	
Page03	Level	0–150				
	Adjusts the output level.					

Exciter

This exciter is in the style of the BBE Sonic Maximizer.



	Knob1		Knob2		Knob3	
Page01	Bass	0–100	Trebl	0–100	Level	0–150
	Adjusts the amount of low-frequency phase correction.		Adjusts the amount of high-frequency phase correction.		Adjusts the level of the signal after it has passed through the module.	
Page02						

AutoWah

This effect varies wah in accordance with picking intensity.



	Knob1		Knob2		Knob3	
Page01	Sense	-10– -1, 1–10	Reso	0–10	Level	0–150
	Adjusts the sensitivity of the effect.		Adjusts the intensity of the resonance sound.		Adjusts the output level.	
Page02						

[MOD]

Tremolo

This effect varies the volume at a regular rate.



	Knob1		Knob2		Knob3	
Page01	Depth	0–100	Rate	0–50 ♪	Level	0–150
	Adjust the depth of the modulation.		Adjusts the rate of the modulation.		Adjusts the output level.	
Page02	Wave	UP 0–UP 9, DWN 0–DWN 9, TRI 0–TRI 9				
	Sets the modulation waveform.					

Phaser

This effect adds a phasing variation to the sound.



	Knob1		Knob2		Knob3	
Page01	Rate	1–50 ♪	Color	4 STG, 8 STG, inv 4, inv 8	Level	0–150
	Sets the speed of the modulation.		Sets the tone of the effect type.		Adjusts the output level.	
Page02						

Chorus

This effect mixes a shifted pitch with the original sound to add movement and thickness.



	Knob1	Knob2	Knob3
Page01	Depth 0–100	Rate 1–50	Mix 0–100
	Sets the depth of the modulation.	Sets the speed of the modulation.	Adjusts the amount of effected sound that is mixed with the original sound.
Page02	Tone 0–10	Level 0–150	
	Adjusts the tone.	Adjusts the output level.	

Detune

By mixing an effect sound that is slightly pitch-shifted with the original sound, this effect type has a chorus effect without much sense of modulation.



	Knob1	Knob2	Knob3
Page01	Cent -25–25	PreD 0–50	Mix 0–100
	Adjusts the detuning in cents, which are fine increments of 1/100-semitone.	Sets the pre-delay time of the effect sound.	Adjusts the amount of effected sound that is mixed with the original sound.
Page02	Tone 0–10	Level 0–150	
	Adjusts the tone.	Adjusts the output level.	

SilkyCho

This chorus effect combines 2 bands of detuning and chorus for precise control.



	Knob1	Knob2	Knob3
Page01	LoMix 0–100	HiMix 0–100	ChMix 0–100
	Adjusts the amount of low-frequency detuning in the mix.	Adjusts the amount of high-frequency detuning in the mix.	Adjusts the amount of chorus in the mix.
Page02	LoPit -25–25	HiPit -25–25	PreD 0–50
	Adjusts the amount of pitch modulation for the low-frequency detuning.	Adjusts the amount of pitch modulation for the high-frequency detuning.	Sets pre-delay time of effect sound.
Page03	Rate 0–100	Depth 0–100	Tone 0–10
	Sets the speed of the modulation.	Sets the depth of the modulation.	Adjusts the tone.

MirageCho

This chorus shimmers like a mirage.



	Knob1	Knob2	Knob3
Page01	Depth 0–100	Rate 0–100	Mix 0–100
	Sets the depth of the modulation.	Sets the speed of the modulation.	Adjusts the amount of effected sound that is mixed with the original sound.
Page02	PreD 1–20	Tone 0–10	Level 0–150
	Sets pre-delay time of effect sound.	Adjusts the tone.	Adjusts the output level.

StereoCho

This is a stereo chorus with a clear tone.



	Knob1	Knob2	Knob3
Page01	Depth 0–100	Rate 1–50	Mix 0–100
	Sets the depth of the modulation.	Sets the speed of the modulation.	Adjusts the amount of effected sound that is mixed with the original sound.
Page02	Tone 0–10	Level 0–150	
	Adjusts the tone.	Adjusts the output level.	

Flanger

This is a jet sound like an ADA Flanger.



	Knob1	Knob2	Knob3
Page01	Depth 0–100	Rate 0–50 ♪	Reso -10–10
	Sets the depth of the modulation.	Sets the speed of the modulation.	Adjusts the intensity of the modulation resonance.
Page02	PreD 0–50	Mix 0–100	Level 0–150
	Sets pre-delay time of effect sound.	Adjusts the amount of effected sound that is mixed with the original sound.	Adjusts the output level.

PitchSHFT

This effect shifts the pitch up or down.



	Knob1	Knob2	Knob3
Page01	Shift -12–12 , 24	Tone 0–10	Bal 0–100
	Adjusts the pitch shift amount in semitones. Selecting "0" gives a detuning effect.	Adjusts the tone.	Adjusts the balance between original and effect sounds.
Page02	Fine -25–25	Level 0–150	
	Allows fine adjustment of pitch shift amount in Cent (1/100 semitone) steps.	Adjusts the output level.	

NEXT ›››

[DELAY]

Delay

This long delay has a maximum length of 4000 ms.



	Knob1		Knob2		Knob3	
Page01	Time	1–4000 ♪	F.B	0–100	Mix	0–100
	Sets the delay time.		Adjusts the feedback amount.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	HiDMP	0–10	P-P	MONO, P-P	Level	0–150
	Adjusts the treble attenuation of the delay sound.		Sets delay output to mono or ping-pong.		Adjusts the output level.	
Page03	Tail	OFF/ON				
	When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.					

ModDelay

This delay effect allows the use of modulation.



	Knob1		Knob2		Knob3	
Page01	Time	1–2000 ♪	F.B	0–100	Mix	0–100
	Sets the delay time.		Adjusts the feedback amount.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	Rate	1–50	Level	0–150	Tail	OFF/ON
	Sets the speed of the modulation.		Adjusts the output level.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

ReverseDL

This reverse delay is a long delay with a maximum length of 2000 ms.



	Knob1		Knob2		Knob3	
Page01	Time	10–2000 ♪	F.B	0–100	Bal	0–100
	Sets the delay time.		Adjusts the feedback amount.		Adjusts the balance between original and effect sounds.	
Page02	HiDMP	0–10	Level	0–150	Tail	OFF/ON
	Adjusts the treble attenuation of the delay sound.		Adjusts the output level.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

MultiTapD

This effect produces several delay sounds with different delay times.



	Knob1		Knob2		Knob3	
Page01	Time	1–3000 ♪	PTTRN	1–8	Mix	0–100
	Sets the delay time.		Sets the tap pattern, which varies from rhythmical to random patterns.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	Tone	0–10	Level	0–150	Tail	OFF/ON
	Adjusts the tone.		Adjusts the output level.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

StereoDly

This stereo delay allows the left and right delay times to be set separately.



	Knob1		Knob2		Knob3	
Page01	TimeL	1–2000 ♪	TimeR	1–2000 ♪	Mix	0–100
	Adjusts delay time of left channel delay.		Adjusts delay time of right channel delay.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	LchFB	0–100	RchFB	0–100	Level	0–150
	Adjusts delay feedback of left channel.		Adjusts delay feedback of right channel.		Adjusts the output level.	
Page03	LchLv	0–100	RchLv	0–100	Tail	OFF/ON
	Adjusts delay output of left channel.		Adjusts delay output of right channel.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

StompDly	By turning the feedback up on this stomp-style delay, you can make it self-oscillate.								
		Knob1			Knob2			Knob3	
	Page01	E.LVL	0–120		F.B	0–100		Time	1–600
		Adjusts amount of effect sound mixed with original sound.			Adjusts the feedback amount.			Sets the delay time.	
	Page02	Sync	OFF, ♪ – ♩x8	♪	Mode	MONO, STR		Tail	OFF/ON
		Activates tempo sync.			Sets output to mono or stereo (STR). When stereo, effect sound is output from L channel and unchanged input sound is output from R channel.			When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	
	Page03	HiDMP	0–10						
		Adjusts the treble attenuation of the delay sound.							

[REVERB]

HD Reverb	This is a high-definition reverb.								
		Knob1			Knob2			Knob3	
	Page01	Decay	0–100		Tone	0–10		Mix	0–100
		Sets the duration of the reverberations.			Adjusts the tone.			Adjusts the amount of effected sound that is mixed with the original sound.	
	Page02	PreD	1–200		HPF	0–10		Level	0–150
		Adjusts the delay between input of the original sound and start of the reverb sound.			Adjusts high-pass filter cutoff frequency.			Adjusts the output level.	
	Page03	Tail	OFF/ON						
		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.							

Hall	This reverb effect simulates the acoustics of a concert hall.								
		Knob1			Knob2			Knob3	
	Page01	Decay	1–30		Tone	0–10		Mix	0–100
		Sets the duration of the reverberations.			Adjusts the tone.			Adjusts the amount of effected sound that is mixed with the original sound.	
	Page02	PreD	1–100		Level	0–150		Tail	OFF/ON
		Adjusts the delay between input of the original sound and start of the reverb sound.			Adjusts the output level.			When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

Room	This reverb effect simulates the acoustics of a room.								
		Knob1			Knob2			Knob3	
	Page01	Decay	1–30		Tone	0–10		Mix	0–100
		Sets the duration of the reverberations.			Adjusts the tone.			Adjusts the amount of effected sound that is mixed with the original sound.	
	Page02	PreD	1–100		Level	0–150		Tail	OFF/ON
		Adjusts the delay between input of the original sound and start of the reverb sound.			Adjusts the output level.			When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

TiledRoom	This reverb effect simulates the acoustics of a tiled room.								
		Knob1			Knob2			Knob3	
	Page01	Decay	1–30		Tone	0–10		Mix	0–100
		Sets the duration of the reverberations.			Adjusts the tone.			Adjusts the amount of effected sound that is mixed with the original sound.	
	Page02	PreD	1–100		Level	0–150		Tail	OFF/ON
		Adjusts the delay between input of the original sound and start of the reverb sound.			Adjusts the output level.			When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

Effect Types and Parameters

Spring

This reverb effect simulates a spring reverb.



	Knob1		Knob2		Knob3	
Page01	Decay	1–30	Tone	0–10	Mix	0–100
	Sets the duration of the reverberations.		Adjusts the tone.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	PreD	1–100	Level	0–150	Tail	OFF/ON
	Adjusts the delay between input of the original sound and start of the reverb sound.		Adjusts the output level.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

Arena

This reverb effect simulates the acoustics of a large enclosure such as a sports arena.



	Knob1		Knob2		Knob3	
Page01	Decay	1–30	Tone	0–10	Mix	0–100
	Sets the duration of the reverberations.		Adjusts the tone.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	PreD	1–100	Level	0–150	Tail	OFF/ON
	Adjusts the delay between input of the original sound and start of the reverb sound.		Adjusts the output level.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

EarlyRef

This effect reproduces only the early reflections of reverb.



	Knob1		Knob2		Knob3	
Page01	Decay	1–30	Shape	-10–10	Mix	0–100
	Adjusts the duration of the reverb.		Adjusts the effect envelope.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	Tone	0–10	Level	0–150	Tail	OFF/ON
	Adjusts the tone.		Adjusts the output level.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

Air

This effect reproduces the ambience of a room, to create spatial depth.



	Knob1		Knob2		Knob3	
Page01	Size	1–100	Tone	0–10	Mix	0–100
	Sets the size of the space.		Adjusts the tone.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	Ref	0–10	Level	0–150	Tail	OFF/ON
	Adjusts the amount of reflection from the wall.		Adjusts the output level.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

ModReverb

This reverb generates fluctuating echoes.



	Knob1		Knob2		Knob3	
Page01	Depth	0–100	Decay	1–30	Mix	0–100
	Sets the depth of the modulation.		Adjusts the duration of the reverb.		Adjusts the amount of effected sound that is mixed with the original sound.	
Page02	Rate	1–50	Tone	0–10	PreD	1–100
	Sets the speed of the modulation.		Adjusts the tone.		Adjusts the delay between input of the original sound and start of the reverb sound.	
Page03	Level	0–150	Tail	OFF/ON		
	Adjusts the output level.		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.			

SlapBack	This reverb creates a repeating echo effect.								
		Knob1			Knob2			Knob3	
	Page01	Time	0–1000	♪	Decay	1–30		Mix	0–100
		Sets the delay time.			Sets the duration of the reverberations.			Adjusts the amount of effected sound that is mixed with the original sound.	
	Page02	F.B	0–100		Tone	0–10		DRBal	0–100
		Adjusts the feedback amount.			Adjusts the tone.			Sets the ratio of delay and reverb.	
	Page03	Level	0–150		Tail	OFF/ON			
		Adjusts the output level.			When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.				

HD Hall	This is a dense hall reverb.								
		Knob1			Knob2			Knob3	
	Page01	PreD	1–200		Decay	0–100		Mix	0–100
		Adjusts the delay between input of the original sound and start of the reverb sound.			Sets the duration of the reverberations.			Adjusts the amount of effected sound that is mixed with the original sound.	
	Page02	LoDMP	0–100		HiDMP	0–100		Tail	OFF/ON
		Adjusts low frequency damping in reverb sound.			Adjusts high frequency damping in reverb sound.			When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.	

Plate	This simulates a plate reverb.								
		Knob1			Knob2			Knob3	
	Page01	PreD	1–200		Decay	0–100		Mix	0–100
		Adjusts the delay between input of the original sound and start of the reverb sound.			Sets the duration of the reverberations.			Adjusts the amount of effected sound that is mixed with the original sound.	
	Page02	Color	0–100		LoDMP	0–100		HiDMP	0–100
		Adjusts the reverb time of the low frequencies.			Adjusts low frequency damping in reverb sound.			Adjusts high frequency damping in reverb sound.	
	Page03	Tail	OFF/ON		Level	0–150			
		When ON, effect sound continues even after effect is turned off. When OFF, effect sound stops right when effect is turned off.			Adjusts the output level.				

[MIC]

Dyna 57	This simulates the sound of miking with a Shure SM57.								
		Knob1			Knob2			Knob3	
	Page01	Dist.	On, Off		Posi.	Hole, Brdg		Level	0–150
		Sets the mic distance.			Sets the mic position.			Adjusts the output level.	
	Page02								

Cond 414	This simulates the sound of miking with an AKG C414.								
		Knob1			Knob2			Knob3	
	Page01	Dist.	On, Off		Posi.	Hole, Brdg		Level	0–150
		Sets the mic distance.			Sets the mic position.			Adjusts the output level.	
	Page02								

Cond 87	This simulates the sound of miking with a Neumann U87.								
		Knob1			Knob2			Knob3	
	Page01	Dist.	On, Off		Posi.	Hole, Brdg		Level	0–150
		Sets the mic distance.			Sets the mic position.			Adjusts the output level.	
	Page02								

Troubleshooting

The unit will not turn ON

- Confirm that the POWER switch is set to "ON". When using bus power, set the switch to "OFF" before connecting the USB cable.
- When using batteries, confirm that they still have a charge.

No sound or very low volume

- Check the connections (→P4–5).
- Adjust input sensitivity (→P8).
- Adjust the master level (→P9).
- Confirm that unit is not in mute mode (→P24).
- If using a condenser mic, confirm that phantom power is ON (→P23).

There is a lot of noise

- Check shielded cables for defects.
- Use only a genuine ZOOM AC adapter.

The sound distorts strangely/has an odd timbre

- Adjust input sensitivity (→P8).
- Adjust the master level (→P9).
- Adjust the amount of boost amplification (→P15).
- Set the pickup selection correctly for the type of pickup. (→P5).

An effect is not working

- Adjust the balance knob (→P9).
- If the effect processing capacity is exceeded, "THRU" appears on the effect graphic. In this case, the effect is bypassed (→P11).

Batteries lose their charge quickly

- Confirm that you are not using manganese batteries. Alkaline batteries should provide 8 hours of continuous operation.
- Check the battery setting (→P25).
  Set the type of batter being used to enable the remaining charge to be shown more accurately.
- Confirm that phantom power is not being used. When +48V phantom power is being used, the unit can operate continuously for about 5 hours with alkaline batteries.

Specifications

Effect types		40 + 28 guitar models
Number of simultaneous effects		3
Number of user patches		20
Sampling frequency		44.1kHz
A/D conversion		24-bit with 128x oversampling
D/A conversion		24-bit with 128x oversampling
Signal processing		32-bit floating point & 32-bit fixed point
Frequency characteristics		40Hz - 20kHz (+1dB/-3dB) (10kΩ load)
Display		LCD
Input	**PICKUP IN**	Standard monaural phone jack Rated input level -20dBm Input impedance 1MΩ
	MIC IN	XLR/standard phone combo jacks Rated input level -20dBm Input impedance 1MΩ
Output	**R**	Standard monaural phone jack Maximum output level: Line: +5dBm (with output load impedance of 10kΩ or more)
	L/MONO/PHONES	Standard stereo phone jack (line/headphones) Maximum output level: Line: +5dBm (with output load impedance of 10kΩ or more) Headphones: 20mW + 20mW (into 32Ω load)
	BALANCED OUT	XLR connector Output impedance 100Ω (HOT-GND, COLD-GND), 200Ω (HOT-COLD) GND LIFT (switch selectable)
S/N (equivalent input noise)		120dB
Noise floor (residual noise)		-100dBm
Power		AC adapter DC9V (center minus plug) 500mA (ZOOM AD-16) Batteries 8 hours of continuous operation using 4 AA alkaline batteries
Dimensions		160.3mm(D) x 108mm(W) x 54.9mm(H)
USB		Firmware update
Weight		630g (Not including batteries)

• 0dBm = 0.775Vrms

FCC regulation warning (for U.S.A.)

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 to 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.

For EU Countries

CE Declaration of Conformity

ZOOM CORPORATION
4-4-3 Kanda-Surugadai, Chiyoda-ku, Tokyo 101-0062 Japan
http://www.zoom.co.jp

Z2I-1597-02