ZOOM 504II ACOUSTIC

Operation Manual

Introduction

Thank you for selecting the ***ZOOM 504 II*** (hereafter simply called the "***504 II***").

Please take the time to read this manual carefully so as to get the most out of the unit and to ensure optimum performance and reliability.

Retain this manual, the warranty card and all other documentation for future reference.

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SAFETY PRECAUTIONS

In this manual, symbols are used to highlight warnings and cautions for you to read so that accidents can be prevented. The meanings of these symbols are as follows:

Warning This symbol indicates explanations about extremely dangerous matters. If users ignore this symbol and handle the device the wrong way, serious injury or death could result.

Caution This symbol indicates explanations about dangerous matters. If users ignore this symbol and handle the device the wrong way, bodily injury and damage to the equipment could result.

Please observe the following safety tips and precautions to ensure hazard-free use of the 504 II.

About power

Warning

- Since power consumption of this unit is fairly high, we recommend the use of an AC adapter whenever possible. When powering the unit from a battery, use only an alkaline type.

AC adapter operation

- Be sure to use only an AC adapter which supplies 9 V DC, 300 mA and is equipped with a "center minus" plug (Zoom AD-0006). The use of an adapter other than the specified type may damage the unit and pose a safety hazard.
- Connect the AC adapter only to an AC outlet that supplies the rated voltage required by the adapter.
- When disconnecting the AC adapter from the AC outlet, always grasp the adapter itself and do not pull at the cable.
- If the unit is not to be used for a long time, disconnect the AC adapter from the outlet.

Battery operation

- Use four IEC R6 (size AA) 1.5 V batteries (alkaline/manganese).
- The 504 II cannot be used for recharging. Pay close attention to the labelling of the battery to make sure you choose the correct type.
- If the 504 II is not to be used for an extended period of time, remove the battery from the unit.
- If battery leakage has occurred, wipe the battery compartment and the battery terminals carefully to remove all remnants of battery fluid.
- While using the unit, the battery compartment cover should be closed.

Environment

Caution

Avoid using your 504 II in environments where it will be exposed to:

- Extreme temperature
- High humidity or moisture
- Excessive dust or sand
- Excessive vibration or shock

Handling

Caution

- The 504 II is a precision instrument. Except for the foot switches, do not push other parts with your feet or subject them to strong force.
- Take care that no foreign objects (coins or pins etc.) or liquids can enter the unit.
- Be sure to turn the power to all equipment off before making connections.
- Before moving the unit, turn the power off, and disconnect all cables and the AC adapter.

Alterations

Caution

Never open the case of the 504 II or attempt to modify the product in any way since this can result in damage to the unit.

Features

The 504 II is a sophisticated multi effect processor for acoustic or electric guitar with the following features and functions:

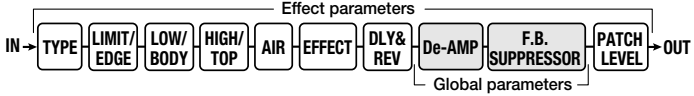
- **Rich effect palette for acoustic guitar**
  The 504 II incorporates a wealth of effects specially designed for use with an acoustic guitar. De-AMP reduces harshness when playing an acoustic guitar through a guitar amplifier. AIR lends a spacious feeling to the sound. TOUCH makes picking more uniform and smooth. The 504 II is also useful as a preamplifier for recording acoustic or electric guitar, and it offers various patches tuned specially for electric guitar.
- **Great for electric guitar too**
  The built-in simulator transforms the sound of an electric guitar into that of an acoustic instrument. During a live performance, this makes it a snap to switch between different sound characteristics.
- **Highly effective feedback suppressor**
  The F.B.SUPPRESSOR function automatically detects the frequencies where feedback (howling) occurs and attenuates that band. Operation can be controlled easily with a foot switch.
- **Built-in auto-chromatic tuner**
  The integrated tuning function lets you quickly and precisely tune your instrument on stage.
- **Dual power supply enables operation anywhere**
  The dual power supply principle allows the unit to be powered either from an AC adapter or from four IEC R6 (size AA) batteries. Continuous operation time on batteries is 8 hours with manganese batteries and 28 hours with alkaline batteries.
- **Compatible with foot switch and pedals**
  An optional foot switch (FS01) or expression pedal (FP01/FP02) can be connected to the CONTROL IN jack. The foot switch is useful for quickly detecting the feedback frequency, and the expression pedal allows adjusting the volume or effect tone in real time.
- **Improved successor to 504**
  While inheriting the sound characteristics of the very successful ZOOM model 504, the 504 II is even more compact and carries a lower price tag. What's more, it incorporates the world's first wah effect specifically designed for acoustic guitar, plus several other novel effects such as the EMPHASIZER which duplicates the characteristic sound of a resonator.

Terms Used in This Manual

This section explains some important terms that are used throughout the 504 II documentation.

■Effect parameter

The effects of the 504 II consist of a succession of modules that determine the sound. These individual modules are called the effect parameters. As shown in the following illustration, the 504 II has 10 different effect parameters. Changing the setting of an effect parameter is like turning the control knob on a compact effect, leading to a change in the sound.



■Effect type

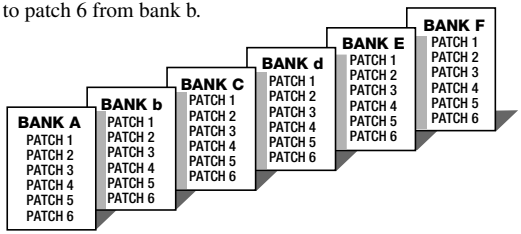
Some effect parameters comprise several different effects which are referred to as effect types. For example, the DLY&REV parameter has the four effect types LARGE, SMALL, DELAY, and DLY+REV. Only one of these can be selected at a time.

■Patch

In the 504 II, effects are stored and called up in units referred to as patches. A patch comprises information about the setting and on/off status of effect parameters. The memory of the 504 II holds up to 36 patches.

■Bank

A group of six patches is called a bank. The 504 II manages a total of six banks, labelled A through F. The patches within each bank are numbered 1 through 6. To specify a patch, the 504 II uses the following format: "A1". This means that patch number 1 from bank A is selected. Therefore "b6" would refer to patch 6 from bank b.



■Play mode/edit mode

The internal status of the 504 II is referred to as the operation mode. The two major modes are play mode, in which you can select patches and use them for playing your instrument, and edit mode, in which you can modify the effects. The [PLAY/EDIT] selector serves for switching between the play mode and edit mode.

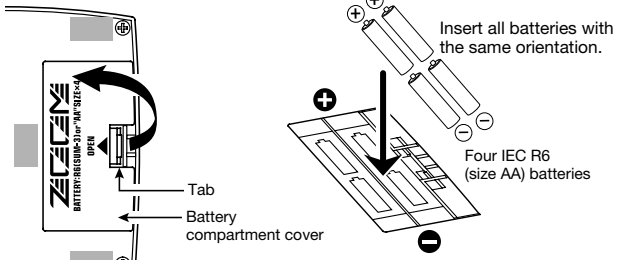
■Global parameters

Normally, effect parameter settings are stored individually for each patch, but some effect parameters affect all patches. Such parameters are called global parameters. The global parameter settings do not change also when the patch is switched.

Using the unit on batteries

1. Turn the 504 II over and open the cover of the battery compartment on the bottom.
Press the latch to release it and then raise the cover.

2. Insert four fresh IEC R6 (size AA) batteries into the battery compartment.



3. Close the cover of the battery compartment.
Close the cover of the battery compartment.
Push the cover in until the latch audibly snaps into place.

Use four IEC R6 (size AA) batteries.
When the batteries are getting low, a dot (.) in the bottom section of the display starts to flash.

NOTE While not using the 504 II, you should disconnect the cable plugged into the INPUT jack, to prevent draining the batteries.

Controls and Functions / Connections

Top Panel

[PLAY/EDIT] selector
This knob serves for switching between play mode (in which you use the patches for playing) and edit mode (where you can edit patches to your liking).

[+]/[-] keys
Serve for switching banks up and down, adjusting parameters, and other functions.

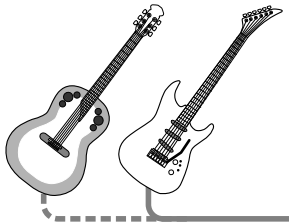
[STORE] key
Serves for storing edited patches, copying patches to another location, and other functions.

Display
Shows patch numbers, setting values, and other information required for operation of the 504 II.

[▼]/[▲] foot switches
These switches are used for selecting patches, controlling the tuner, and other functions.

Rear Panel / Connections

INPUT jack
Serves for connecting the output of the pickup (preamplifier) attached to an acoustic guitar, or the output of an electric guitar.
When the 504 II is operated on batteries, the unit will be turned on when a plug is inserted in this jack.



[Setting the input gain]
When using a magnetic pickup, a single-coil electric guitar, or any other pickup with low output level, the input gain can be raised as follows.

- **Turn the 504 II on while holding down the foot switch [▼].**
  The indication "HI-GAIN" scrolls on the display, and the input gain is set to high.

NOTE The input gain setting is not stored in the internal memory. Repeat the setting as required every time you turn the unit on.

DC 9V (AC adapter) jack
To use the 504 II on AC power, plug an AC adapter (ZOOM AD-0006) with a rated output of 9 volts DC, 300 mA (center minus plug) into this jack. When a plug is inserted in this jack, the 504 II is turned on.

CONTROL IN jack
Serves for connection of the optional foot switch (FS01) or expression pedal (FP01/FP02).

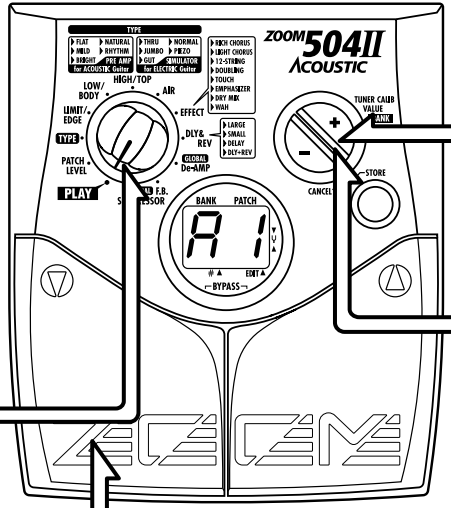
OUTPUT jack
This stereo phone jack serves for connection to the guitar amplifier. It is also possible to plug a pair of stereo headphones into this jack, or to use a Y cable for sending the output to two amplifiers.

Selecting Patches for Play

To try out the 504 II, we recommend that you simply play your instrument while switching patches. This will let you quickly see what the 504 II can do.

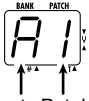
1 Power-on

- When using the 504 II on batteries, plug a shielded cable with mono phone plug into the INPUT jack of the 504 II.
- When using the 504 II with the AC adapter, plug the adapter into the outlet and plug the cable from the adapter into the DC 9V jack on the 504 II.
- Turn on the guitar amplifier and adjust the volume to a suitable position.



2 Set 504 II to play mode

- When the [PLAY/EDIT] selector is set to a different position, set it to "PLAY".



Bank Patch number

The currently selected bank and patch number are shown on the display.

HINT Immediately after turning on power to the 504 II, the unit will be in play mode also if the [PLAY/EDIT] selector is set to a different position.

3 Switch patches

- To switch patches in play mode, use the [▼]/[▲] foot switches.

4 To directly switch the bank

- You can use the [+]/[-] keys to directly switch among the banks A - F.

5 To adjust the master volume

- Keep both [+]/[-] keys depressed for more than 1 second.

- **While the master volume setting is shown, pressing the [+] or [-] key changes the setting.**

  The setting range is 0 - 50. When the unit is turned off and on again, the setting will be reset to 40.

HINT When using headphones, the master volume setting can be used to adjust the listening volume.

Using the Tuner Function

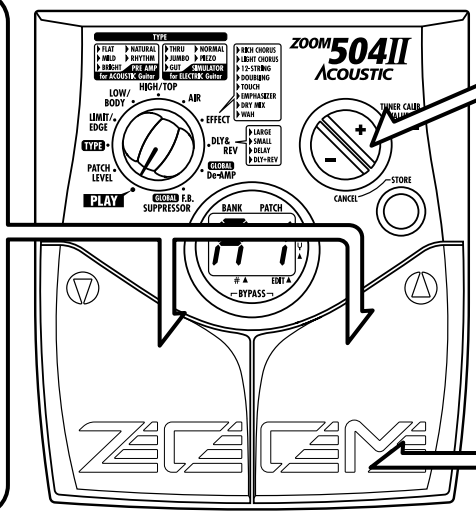
The 504 II incorporates an auto-chromatic tuner for guitars. To use the tuner function, the built-in effects must be bypassed (temporarily turned off) or muted (original sound and effect sound turned off).

1 Switch to bypass or mute

- **Bypass:**
  Press both [▼]/[▲] foot switches together briefly and release.

- **Mute:**
  Press both [▼]/[▲] foot switches together and hold for at least 1 second.

NOTE The bypass or mute condition cannot be activated when the unit is in the edit mode.



3 Adjusting the reference pitch of the tuner

The center A reference frequency of the built-in tuner can be fine-adjusted.

- **Press one of the [+]/[-] keys.**

Reference pitch

- **While the reference pitch setting is shown, pressing the [+] or [-] key changes the setting.**

The reference pitch range is 35 - 45 (center A = 435 Hz - 445 Hz).

NOTE When the unit is turned off and on again, the reference pitch setting is reset to 40 (440 Hz).

4 Return to play mode

- **Press one of the [▼]/[▲] foot switches.**

2 Tune the guitar

- **Play the open string you want to tune, and watch the display.**

The left side of the display shows the note which is closest to the current pitch.

A = A	D = d	G = G
A# = A.	D# = d.	G# = G.
B = b	E = E	
C = C	F = F	
C# = C.	F# = F.	

The right side of the display shows a symbol that indicates by how much the tuning is off.

Pitch is high	Pitch is correct	Pitch is low
C	A	C

Indication turns faster the more the pitch is off.

- **Tune the other strings in the same way.**

Editing a Patch

The patches of the 504 II can be freely edited by changing the effect parameter settings. Try editing the currently selected patch to create your own sound.

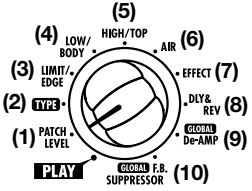
1 Select the effect parameter

- **Use the [PLAY/EDIT] selector to select the effect you want to change.**

The value of the currently selected parameter is shown on the display. (When the 504 II is in edit mode, a dot (.) is shown in the bottom right section of the display.)

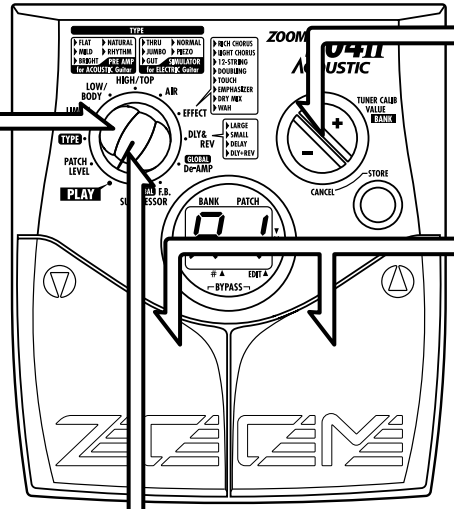
Parameters selectable with [PLAY/EDIT] selector

(1) Patch level
(2) TYPE parameter
(3) LIMIT/EDGE parameter
(4) LOW/BODY parameter
(5) HIGH/TOP parameter
(6) AIR parameter



(7) EFFECT parameter
(8) DLY&REV parameter
(9) De-AMP parameter (GLOBAL)
(10) F.B.SUPPRESSOR parameter (GLOBAL)

GLOBAL = global parameter



2 Change the parameter value

- **Use the [+]/[-] keys.**

Holding down one of these keys will continuously change the value. Additionally pressing the opposite key will cause a faster change. Pressing both keys simultaneously skips values in larger steps.

3 Changing the parameter on/off condition

- **Press both [▼]/[▲] foot switches together.**

The parameter is turned off, and the indication "oF" appears on the display. Pressing both foot switches together once more turns the parameter on again.

This operation is not possible for the patch level and TYPE parameters (step 1, parameters (1) and (2)).

4 Terminate the edit mode

- **To terminate the edit mode and return to the play mode, set the [PLAY/EDIT] selector to the "PLAY" position.**

NOTE Unless you store the edited patch in memory, the settings you made will be lost when you select a different patch after returning to the play mode. Do not forget to store an edited patch that you wish to keep, as described on page 14.

Storing/Copying Patches

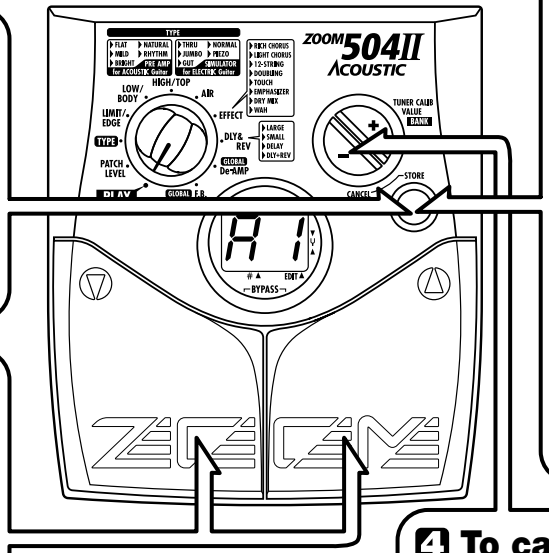
An edited patch can be stored at any desired location in the internal memory of the unit. It is also possible to copy an existing patch and store it at another location.

1 Press the STORE key in play mode or edit mode.

The bank and patch number on the display are flashing.

2 Use the [▼]/[▲] foot switches to select the target location in which to store the patch.

NOTE When storing or copying a patch, it is not possible to use the [+]/[-] keys to switch only the bank number.



3 Press the STORE key once more.

When the store/copy process is completed, the unit reverts to the original mode, with the target patch being selected.

NOTE When the store/copy process is executed, the previous content of the store target is overwritten and cannot be restored if it was a user-created patch. You should therefore take care when selecting a target patch. However, the factory default settings of an individual patch or all patches can be restored, as described on page 21.

4 To cancel the store/copy process

- **Press the [-] key instead of the STORE key.**

  The store process is aborted and the unit reverts to the previous mode.

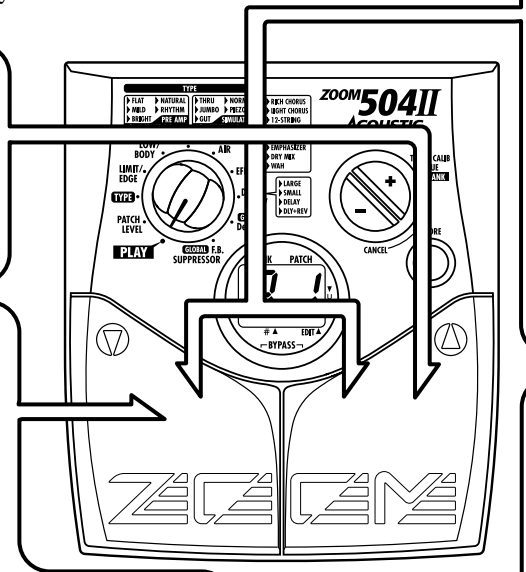
NOTE The store process is also canceled when [PLAY/EDIT] selector is operated instead of the [-] key.

Changing the "Patch Call" Method

In normal operation, the sound of the 504 II will change immediately if a patch is selected in play mode. This may be undesirable if a patch from a distant memory location is called and the sound of other unwanted patches in between is heard. If desired, you can change the "Patch call" method from direct selection to the pre-select method. In pre-select mode, you first specify the desired patch and then confirm the selection. The sound will only change after you have confirmed the operation.

1 Changing the "Patch call" method to pre-select

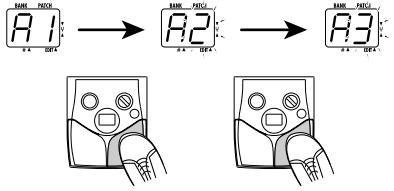
To change the "Patch call" method to pre-select, you must turn the unit on while holding down the [▲] foot switch.



2 Specifying the desired patch

- **Use the [▼]/[▲] foot switches to select the patch you want to use next.**

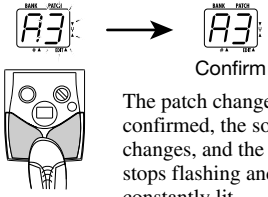
  You can also use the [+]/[-] keys to only switch the bank.



The bank and patch number of the patch to be used next will be shown on the display, but the sound does not yet change.

3 Confirm the patch change

- **When the desired patch is shown, press the [▼]/[▲] foot switches together.**



The patch change is confirmed, the sound changes, and the display stops flashing and stays constantly lit.

4 Changing the "Patch call" method back to direct select

- **To change the "Patch call" method back to normal direct select operation, simply turn the unit off and back on again.**

  This will return the patch select method to the default setting.

Using the Feedback Suppressor

The 504 II incorporates an F.B.SUPPRESSOR that serves for reducing acoustic feedback by cutting a specific frequency range (feedback frequency). The F.B.SUPPRESSOR can be used in play mode or edit mode.

■ Using F.B.SUPPRESSOR in play mode

If feedback occurs while playing the instrument, the optional foot switch (FS01) connected to the CONTROL IN jack can be used to automatically detect the feedback frequency.

1. Insert the plug of the FS01 into the CONTROL IN jack of the 504 II, then turn power to the 504 II on.

NOTE If the FS01 is plugged into the CONTROL IN jack while the 504 II is already on, malfunction may occur. Be sure to turn on the 504 II only after connecting the foot switch.

2. Set the [PLAY/EDIT] selector to "F.B.SUPPRESSOR".

3. Use the [+]/[-] keys to change the display indication to "SC".

"SC" is the attenuation setting value based on automatic detection of feedback frequency. Automatic detection starts when the F.B.SUPPRESSOR parameter is set to "SC" or set to off and then on again.

HINT When wishing to retain the "SC" setting also while the unit is turned off, store the currently selected patch.

4. Return the [PLAY/EDIT] selector to "PLAY".

5. If feedback occurs during play, press the FS01 twice.

F.B.SUPPRESSOR is switched on/off and the 504 II automatically detects the feedback frequency for attenuation.

■ Using F.B.SUPPRESSOR in edit mode

The following method allows finding the feedback frequency in edit mode, either automatically or manually.

1. If feedback occurs while playing the instrument, set the [PLAY/EDIT] selector to "F.B.SUPPRESSOR".

The 504 II switches to the edit mode.

2. Use the [+]/[-] keys to change the display indication to "SC".

If "SC" is already set, change the value and then select "SC" again, or press both [▼]/[▲] foot switches (or the foot switch FS01 connected to the CONTROL IN jack) twice, to switch the F.B.SUPPRESSOR parameter off and then on again.

3. If feedback is not satisfactorily reduced by step 2, set the F.B.SUPPRESSOR parameter to a value between 1 - 30 that yields the best reduction.

HINT When wishing to retain the F.B.SUPPRESSOR parameter setting also while the unit is turned off, store the currently selected patch.

Using the Expression Pedal (FP01/FP02)

The 504 II is equipped with a CONTROL IN jack designed for connection of the optional expression pedal FP01 or FP02. The pedal can be used as volume pedal or as a controller for varying effect parameters.

For information on parameters that can be adjusted with the expression pedal, please refer to pages 26 - 29.

1. Plug the cable from the FP01/FP02 into the CONTROL IN jack of the 504 II, and then turn the 504 II on.

NOTE If the FP01/FP02 is plugged into the CONTROL IN jack while the 504 II is already on, malfunction may occur. Be sure to turn on the 504 II only after connecting the expression pedal.

2. Select the patch in play mode, and move the expression pedal back and forth while playing your instrument.

Move back and forth

Depending on the program content of the patch, the volume or effect parameter will change.

HINT The expression pedal can also be used in edit mode to control the volume or effect parameter.

Restoring Factory Defaults

The 504 II comes with 36 preprogrammed patches. These factory default patches can be restored also if they were overwritten by patches created by the user.
There are two ways of restoring factory defaults. "All Initialize" returns the entire set of patches to the original condition. "Factory Recall" restores a specific patch to the original condition.

1. While holding down the STORE key, plug the appropriate cable into the INPUT jack (or DC 9V jack).
The indication "AL" flashes on the display.

■ To perform All Initialize

2. Press the STORE key once more.
All patch settings are returned to the factory default condition, and the unit switches to play mode. To cancel All Initialize, press the [-] key.

NOTE All user-created patches will be lost when performing All Initialize. Use this function with care.

■ To perform Factory Recall

2. Use the [▼]/[▲] foot switches to select the patch you want to return to the original condition.
The specified bank and patch number are flashing on the display.

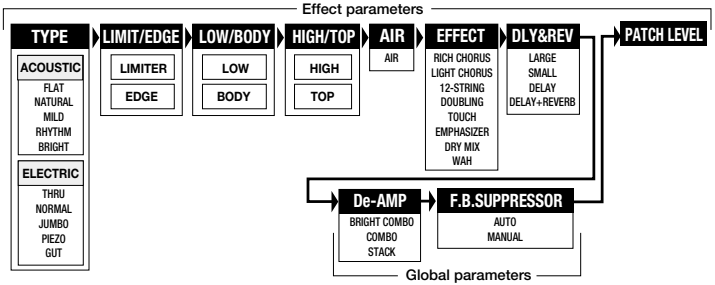
During Factory Recall, the [+]/[-] keys cannot be used to switch the bank only.

3. Press the STORE key once more.
The settings of the specified patch are returned to the factory default condition.

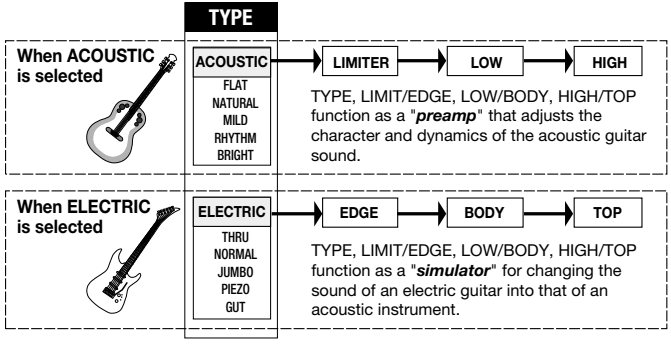
If desired, repeat steps 2 and 3 to restore other patches. To terminate the Factory Recall operation, press the [-] key. The unit will switch to the play mode at this point.

Linking Effects

The patches of the 504 II consist of ten effect parameters (including two global parameters). By setting these parameters to the desired values, you can control the sound of a patch.
It is also possible to switch individual parameters on and off, and to program the expression pedal to adjust the value of a specific parameter.



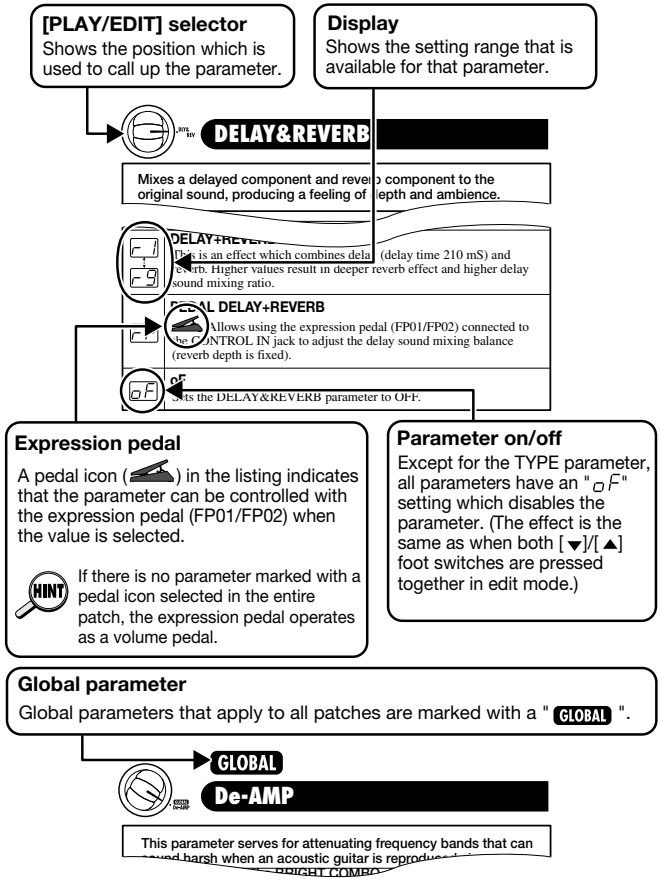
The parameters TYPE, LIMIT/EDGE, LOW/BODY, HIGH/TOP have separate settings for acoustic and for electric guitar. Depending on whether ACOUSTIC or ELECTRIC is selected for the TYPE parameter, the content of the other three parameters changes as follows.



Effect Parameters

This section describes all parameters and their setting values.

How to read the listing



PATCH LEVEL

1 ↕ 30	Adjusts the overall volume of the patch. A value of 25 corresponds to unity gain (input level and output level are equal).

TYPE

ACOUSTIC		ELECTRIC	
Selects the preamp characteristics for acoustic guitar.		Simulator for changing the sound of an electric guitar to that of an acoustic instrument.	
FL	**FLAT** The sound of the acoustic guitar is output with flat frequency response.	tH	**THRU** Simulator is not used and sound of electric guitar is output as is.
nA	**NATURAL** Natural sound character suitable for most music genres and playing styles.	nr	**NORMAL** Simulates conventional acoustic guitar sound.
Md	**MILD** Mild and warm sound, particularly suited for acoustic guitar with a piezo pickup.	Jb	**JUMBO** Simulates the sound of an acoustic guitar with a large body.
ry	**RHYTHM** Tight sound suitable for chord stroking.	PE	**PIEZO** Simulates the sound of an acoustic guitar with a piezo pickup.
br	**BRIGHT** Bright sound suitable for fingering.	Gt	**GUT** Simulates the sound of a classic guitar with nylon strings.

LIMITER/EDGE

ACOUSTIC		ELECTRIC	
1 ↕ 15	**LIMITER** Adjusts the action of the limiter. Higher values result in stronger limiter action for more effective suppression of level peaks.	1 ↕ 15	**EDGE** Adjusts the action of edge effect. Higher values result in stronger emphasis of the acoustic guitar sound.
oF	**oF** Sets the LIMITER/EDGE parameter to OFF.		

LOW/BODY

ACOUSTIC		ELECTRIC	
1 ↕ 10	**LOW** Adjusts the low-range EQ boost. Higher values result in stronger bass sound.	1 ↕ 10	**BODY** Adjusts the size of the simulated guitar body. Higher values result in stronger emphasis of the body sound.
oF	**oF** Sets the LOW/BODY parameter to OFF.		

HIGH/TOP

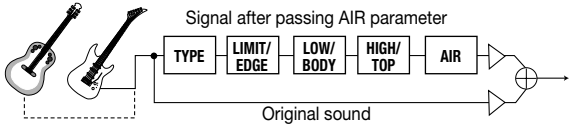
ACOUSTIC		ELECTRIC	
1 ↕ 10	**HIGH** Adjusts the high-range EQ boost. Higher values result in stronger treble sound.	1 ↕ 10	**TOP** Adjusts the top frequency range. Higher values result in brighter sound.
oF	**oF** Sets the HIGH/TOP parameter to OFF.		

AIR

1 ↕ 10	Simulates the ambient character of sound picked up with a microphone. Higher values result in greater simulated distance between the guitar and the microphone.
oF	**oF** Sets the AIR parameter to OFF.

EFFECT

Allows choosing one out of eight different effects that shape the sound in various ways. The effect intensity can also be adjusted.

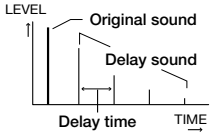
C1 ↕ C9	**RICH CHORUS** Generates a deep, rich sounding chorus. Higher values result in stronger chorus effect.
CP	**PEDAL RICH CHORUS** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the mixing ratio of the RICH CHORUS effect.
c1 ↕ c9	**LIGHT CHORUS** Generates a light chorus with soft modulation. Higher values result in stronger chorus effect.
cP	**PEDAL LIGHT CHORUS** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the mixing ratio of the LIGHT CHORUS effect.
S1 ↕ S9	**12-STRING** Produces an effect resembling the sound of a 12-string guitar. Larger values result in a stronger effect.
SP	**PEDAL 12-STRING** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the intensity of the 12-STRING effect.
d1 ↕ d9	**DOUBLING** Creates a doubling effect like two players playing the same tune with a slight shift. Higher values result in larger shift between original sound and effect sound.
dP	**PEDAL DOUBLING** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the intensity of the DOUBLING effect.
t1 ↕ t9	**TOUCH** This effect aligns the picking touch. Higher values result in distinct notes even with soft picking.
tP	**PEDAL TOUCH** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the intensity of the TOUCH effect.
E1 ↕ E9	**EMPHASIZER** This effect adds higher harmonics to emphasize the sound character. Higher values result in more dazzling sound.
EP	**PEDAL EMPHASIZER** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the intensity of the EMPHASIZER effect.
n1 ↕ n9	**DRY MIX** Mixes the original guitar sound to the signal after passing the AIR parameter. Lower values result in stronger AIR parameter influence and higher values result in stronger original sound. 
nP	**PEDAL DRY MIX** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the mixing balance between the signal after passing the AIR parameter and the original sound. NOTE The actual sound that will be produced by this effect depends on the settings made for the various parameters before the AIR parameter. If the sound after the AIR parameter and the original sound is not very different, the effect will be weak.

A1 ↕ A9	**WAH** This is an auto wah effect that works on single notes. Higher values result in stronger auto wah.
AP	**PEDAL WAH** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to manually adjust the WAH effect. When no pedal is used, the parameter functions as auto wah.
oF	**oF** Sets the EFFECT parameter to OFF.

DELAY&REVERB

Mixes a delayed component and reverb component to the original sound, producing a feeling of depth and ambience.

L1 ↕ L9	**LARGE** Simulates the reverberation in a fairly large room. Higher values result in a deeper reverb effect.
LP	**PEDAL LARGE** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the reverb sound mixing balance.
S1 ↕ S9	**SMALL** Simulates the reverberation in a fairly small room. Higher values result in a deeper reverb effect.
SP	**PEDAL SMALL** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the reverb sound mixing balance.
d1 ↕ d9	**DELAY** This is a delay effect with a delay time of 370 mS maximum. Higher values result in longer delay time (longer delay sound intervals).



Value	Delay time
1	100ms
2	150ms
3	180ms
4	215ms
5	230ms
6	250ms
7	280ms
8	340ms
9	370ms

dP	**PEDAL DELAY** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the delay sound mixing balance (delay time will be set to 250 mS).
r1 ↕ r9	**DELAY+REVERB** This is an effect which combines delay (delay time 210 mS) and reverb. Higher values result in deeper reverb effect and higher delay sound mixing ratio.
rP	**PEDAL DELAY+REVERB** Allows using the expression pedal (FP01/FP02) connected to the CONTROL IN jack to adjust the delay sound mixing balance (reverb depth is fixed).
oF	**oF** Sets the DELAY&REVERB parameter to OFF.

GLOBAL
De-AMP

This parameter serves for attenuating frequency bands that can sound harsh when an acoustic guitar is reproduced via a guitar amplifier. Choose the BRIGHT COMBO, COMBO, or STACK setting depending on the amplifier that is used, and adjust the value as required.

b1 ↕ b9	**BRIGHT COMBO** Designed for use with combo type amplifiers having a bright sound. Higher values result in stronger attenuation effect.
c1 ↕ c9	**COMBO** Designed for use with regular combo type amplifiers. Higher values result in stronger attenuation effect.
S1 ↕ S9	**STACK** Designed for use with stack type amplifiers. Higher values result in stronger attenuation effect.
oF	**oF** Sets the De-AMP parameter to OFF.

GLOBAL

F.B.SUPPRESSOR

Reduces acoustic feedback by attenuating the frequency band where the feedback occurs. The frequency can be detected automatically or manually.

AUTO SCAN
Automatically detects the frequency where feedback is occurring.

MANUAL
Allows the user to set the frequency to be suppressed. Higher values shift the attenuated band towards higher frequencies.

oF
Sets the F.B.SUPPRESSOR parameter to OFF.

For details on how to use the F.B.SUPPRESSOR effect, see pages 18 - 19.

Specifications

Built-in effects	max. 10 simultaneous / 33 total
Banks and patches	6 banks x 6 patches = 36 patches (rewritable, with memory store capability)
A/D converter	16 bit, 64 times oversampling
D/A converter	16 bit, 8 times oversampling
Sampling frequency	31.25 kHz
Input	GUITAR input: standard mono phone jack (rated input level -20 dBm/input impedance 470 kilohms)
Output	Standard stereo phone jack (doubles as line and headphone jack) (maximum output level +5 dBm/output load impedance 10 kilohms or more)
Control input	For optional FP01 or FP02 / FS01
Display	2-digit 7-segment LED
Power requirements	Separately available AC adapter, 9 V DC, 300 mA (center minus plug) (ZOOM AD-0006) Four IEC R6 (size AA) batteries Battery life: approx. 28 hours continuous operation (alkaline batteries) / approx. 8 hours continuous operation (manganese batteries)
Dimensions	145 mm (D) x 125 mm (W) x 40 mm (H)
	Weight280 g (without batteries)

- 0 dBm = 0.775 Vrms
- Design and specifications subject to change without notice.

Patch List

For ACOUSTIC GUITAR

BANK	PATCH	PATCH NAME	COMMENT	PEDAL
A [DEMO]	1	BAND LEAD	Basic acoustic lead sound for band ensemble.	DLY+REV
	2	SPACY-12	12-string acoustic guitar sound.	Large
	3	NUANCE	Compressed sound for subtle passages.	Volume
	4	WHITE PAD	Rich chorus sound with delay and reverb.	Volume
	5	ACOUSTIC DRIVE	Overdriven Acoustic guitar sound.	Volume
	6	ACOUSTIC WAH	New acoustic guitar sound with wah effect.	Wah
b [WORLD]	1	J-FOLK	Early Folk guitar sound.	Volume
	2	HAWAIIAN STEEL	Lap steel guitar sound.	DLY+REV
	3	DELTA BOTTLE	Ideal for bottle neck and delta blues styles.	Emphasizer
	4	ORIENTALIZE	Exotic instrument sound from the Far East.	12-string
	5	STREET BLUES	Articulate sound with room ambience.	Volume
	6	SPANISH GUT	Nylon(Gut) acoustic guitar sound.	Volume
C [VARIATION]	1	RESONATOR	Classic Dobro style sound.	Volume
	2	DIMENSION	Spacious chorus effect sound.	Volume
	3	GRAPHITE BODY	"Graphite body" acoustic guitar simulation sound.	Volume
	4	MIRACLE	Special effect sound.	Volume
	5	STUDIO STRUM	Recording quality strumming sound.	DLY+REV
	6	ARPEGGIAN	Bright arpeggio effect with detuned Chorus.	Volume
d [PLAY]	1	STUDIO FINGER	Recording quality finger picking sound.	Volume
	2	ACOUSTIC MASTER	Basic acoustic guitar with short reverb.	Volume
	3	POWER CHORD	Powerful sound for open chord strumming.	Volume
	4	THE CAPO	Clear intonation sound with Capo effect.	Volume
	5	BRILLIANT	Rich, full sound for open tuning playing.	DLY+REV
	6	UNIT LEAD	Excellent lead sound for group playing.	Light chorus
E [for ELECTRIC GUT GUITAR]	1	EMOTION	Expressive Nylon/Gut-string acoustic guitar.	Dry mix
	2	THROB	Country style sound for "thumb pick" style playing.	Volume
	3	SCENE	Ideal acoustic sound for movie soundtracks.	Volume
	4	WET	Mellow tone for pick and finger style playing.	Large
	5	BRIGHT BOSSA	Ideal for Bossa Nova and Spanish acoustic styles.	Volume
	6	FUNKY	Funky Auto-Wah sound.	Volume

** When using a guitar amplifier, it is recommended to adjust the De-AMP parameter.*

ACOUSTIC SIMULATION for ELECTRIC-GUITAR

BANK	PATCH	PATCH NAME	COMMENT	PEDAL
F [DEMO]	1	STANDARD	Standard acoustic simulation sound.	Volume
	2	EL-ACOUSTIC	Piezo pickup electric-acoustic sound.	Rich chorus
	3	12-PLUS	Acoustic 12-string sound.	12-string
	4	WARM QUALITY	Warm tone with Auto-Wah effect.	Wah
	5	SLIDE BOTTLE	Bottle neck slide playing sound.	Delay
	6	NYLON	Solo Nylon-string sound.	Volume

** ACOUSTIC SIMULATION is suitable for single pickup at front position.*

Usage Precautions

- **Electrical interference**
  For safety considerations, the 504 II has been designed to provide maximum protection against the emission of electromagnetic radiation from inside the device, and protection from external interference. However, equipment that is very susceptible to interference or that emits powerful electromagnetic waves should not be placed near the 504 II, as the possibility of interference cannot be ruled out entirely.

  With any type of digital control device, the 504 II included, electromagnetic interference can cause malfunctioning and can corrupt or destroy data. Care should be taken to minimize the risk of damage.

- **Cleaning**
  Use a soft, dry cloth to clean the 504 II. If necessary, slightly moisten the cloth. Do not use abrasive cleanser, wax, or solvents (such as paint thinner or cleaning alcohol), since these may dull the finish or damage the surface.

  Please keep this manual in a convenient place for future reference.

Troubleshooting

No power	**Low volume**
Refer to "1. Power-on" on page 8.	Pickup with low output is being used? See page 6.
Patch does not change	**Battery life is short**
Check whether patch call method is set to pre-select (see page 16).	Are manganese batteries being used? Continuous operation time is 28 hours with alkaline batteries but only 8 hours with manganese batteries. The use of alkaline batteries is recommended.

CATCH US IF YOU CAN

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