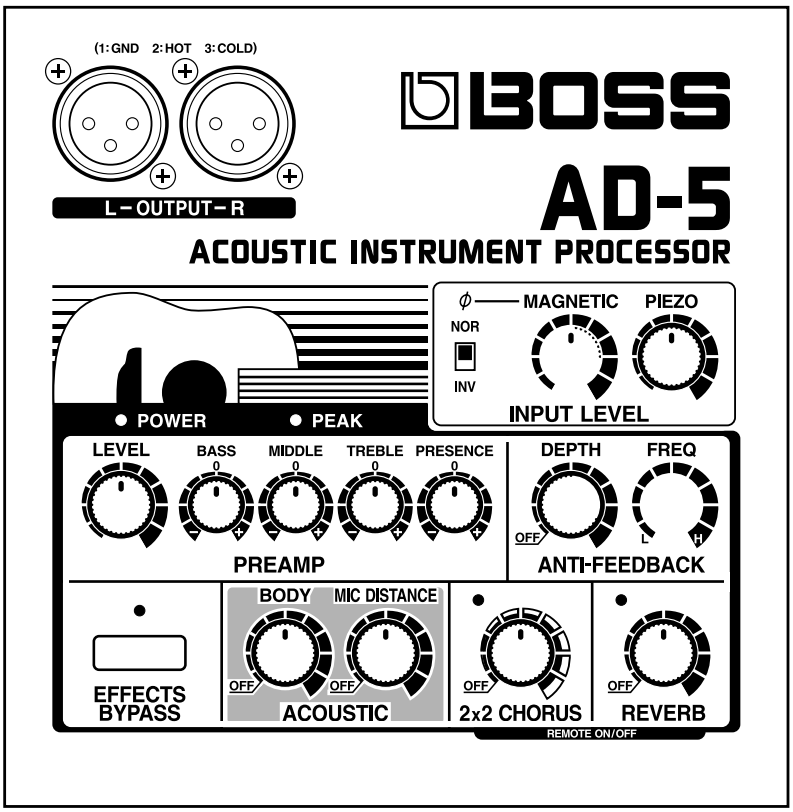
AD-5

ACOUSTIC INSTRUMENT PROCESSOR

Owner's Manual



USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About ⚠WARNING and ⚠CAUTION Notices

⚠WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

⚠	The △ symbol alerts the user to important instructions or warnings.The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
	The ⃠ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
	The ● symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

ALWAYS OBSERVE THE FOLLOWING

⚠WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual.
- Do not open (or modify in any way) the unit or its AC adaptor.
- Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your dealer, or qualified Roland service personnel.
- Never use or store the unit in places that are:
  - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
  - Damp (e.g., baths, washrooms, on wet floors); or are
  - Humid; or are
  - Dusty; or are
  - Subject to high levels of vibration.
- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.

⚠WARNING

- Be sure to use only the AC adaptor supplied with the unit. Also, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.
- Avoid damaging the power cord. Do not bend it excessively, step on it, place heavy objects on it, etc. A damaged cord can easily become a shock or fire hazard. Never use a power cord after it has been damaged.
- This unit, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult an audiologist.
- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit.

⚠ WARNING

- Immediately turn the power off, remove the AC adaptor from the outlet, and request servicing by your dealer or qualified Roland service personnel when:
  - The AC adaptor or the power-supply cord has been damaged; or
  - Objects have fallen into, or liquid has been spilled onto the unit; or
  - The unit has been exposed to rain (or otherwise has become wet); or
  - The unit does not appear to operate normally or exhibits a marked change in performance.

- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.

- Protect the unit from strong impact. (Do not drop it!)

- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.

- Before using the unit in a foreign country, consult with your dealer, or qualified Roland service personnel.

⚠ CAUTION

- The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation.

- Always grasp only the plug or the body of the AC adaptor when plugging into, or unplugging from, an outlet or this unit.

- Whenever the unit is to remain unused for an extended period of time, disconnect the AC adaptor.

- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.

- Never climb on top of, nor place heavy objects on the unit.

- Never handle the AC adaptor body, or its plugs, with wet hands when plugging into, or unplugging from, an outlet or this unit.

- Before moving the unit, disconnect the AC adaptor and all cords coming from external devices.

- Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet (page 7).

- Whenever you suspect the possibility of lightning in your area, disconnect the AC adaptor from the outlet.

Introduction

Thank you, and congratulations on your choice of the BOSS AD-5 Acoustic Instrument Processor.

Before using this unit, carefully read the sections entitled: "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (page 2; page 5). These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, this manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

Main Features

New "Acoustic" Function

The AD-5 offers newly-developed acoustic processing that enhances the sound from electronic sources such as an electric-acoustic guitar's pickup. The resulting sound has the full-bodied richness and warmth of that traditionally captured by microphones placed near an acoustic guitar.

Handles Both Piezo and Magnetic Pickups

The unit comes with separate dedicated jacks for input from piezoelectric and magnetic pickups. With the AD-5, you can mix the input of both pickups.

High-Performance Preamplifier

The AD-5 offers an onboard preamplifier equipped with a four-band (including an ultra-high frequency "presence" band) equalizer.

This equalization really comes in handy when you need to adjust the tone of the sound produced by a pickup that has no tone controls of its own.

Chorus and Reverb Customized Exclusively for Acoustic Guitar

Since the unit is designed so signals are divided into separate frequency ranges, Chorus can be applied independently to the bass and treble ranges. Moreover, the Reverb has been newly designed so it is optimized for acoustic guitar sounds.

Additionally, you can use a footswitch connected to the Remote jack to switch Chorus and Reverb on and off.

Anti-Feedback

An anti-feedback function is included, virtually eliminating howling.

Balanced Output

Also provides balanced output, making it possible for you to connect directly to PA systems.

Insert Jack Offers Greater Sound Creation Possibilities

An insertion jack specifically for external effects is included with the AD-5, allowing you to use it in conjunction with other effects devices.

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IMPORTANT NOTES

In addition to the items listed under "USING THE UNIT SAFELY" on page 2, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- The AC adaptor will begin to generate heat after long hours of consecutive use. This is normal, and is not a cause for concern.
- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and / or damage to speakers or other devices.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.

Maintenance

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

Additional Precautions

- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.
- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels (especially when it is late at night).
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

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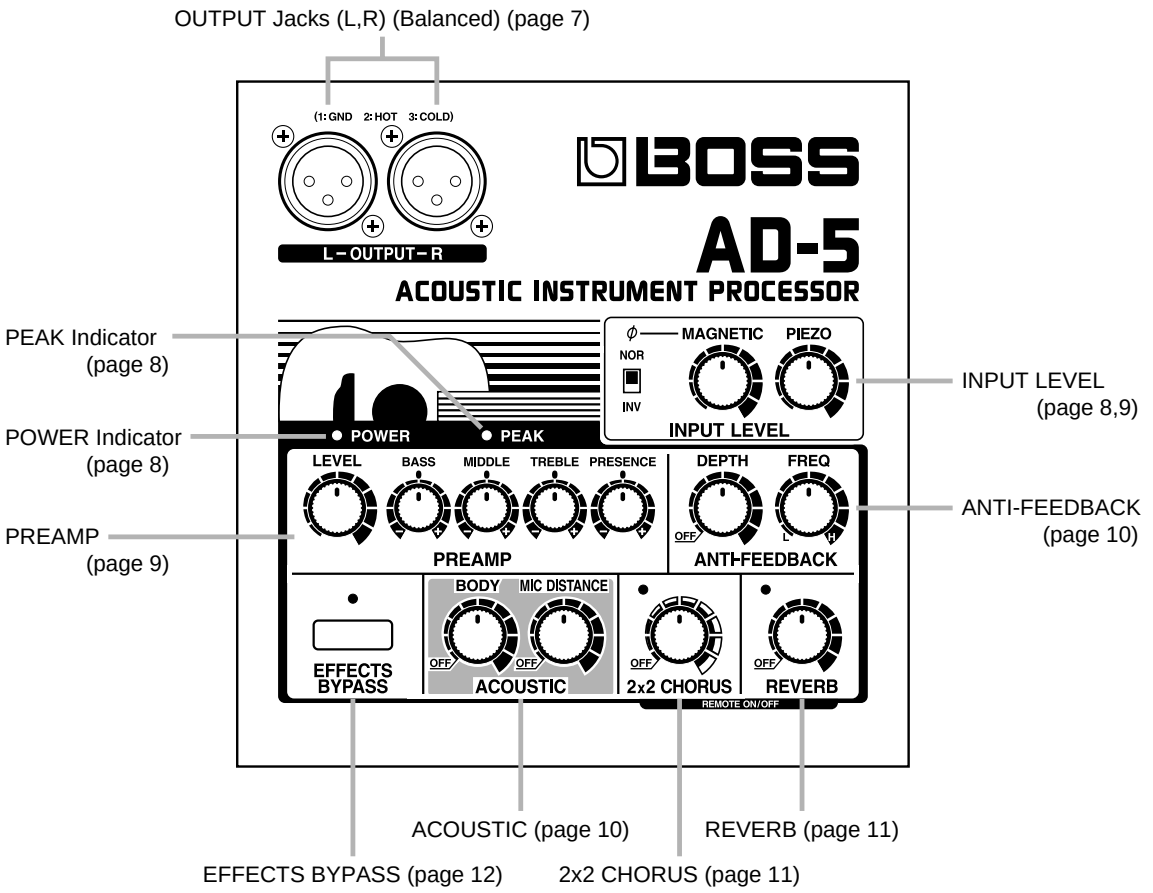
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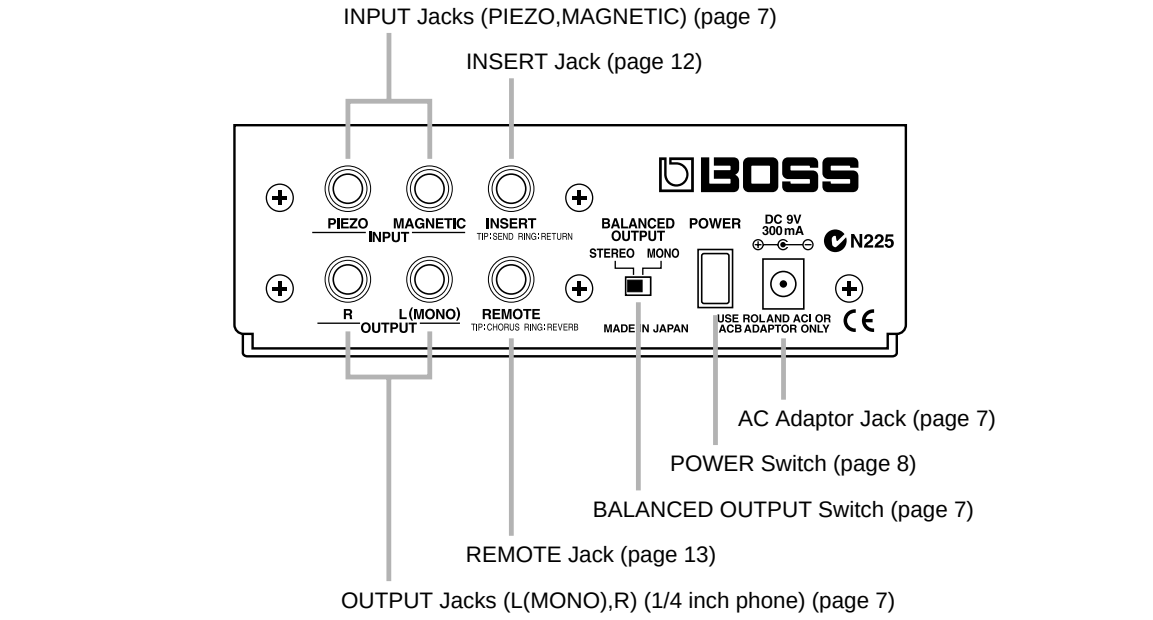
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Panel Descriptions



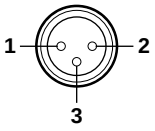


Before Performing with the AD-5

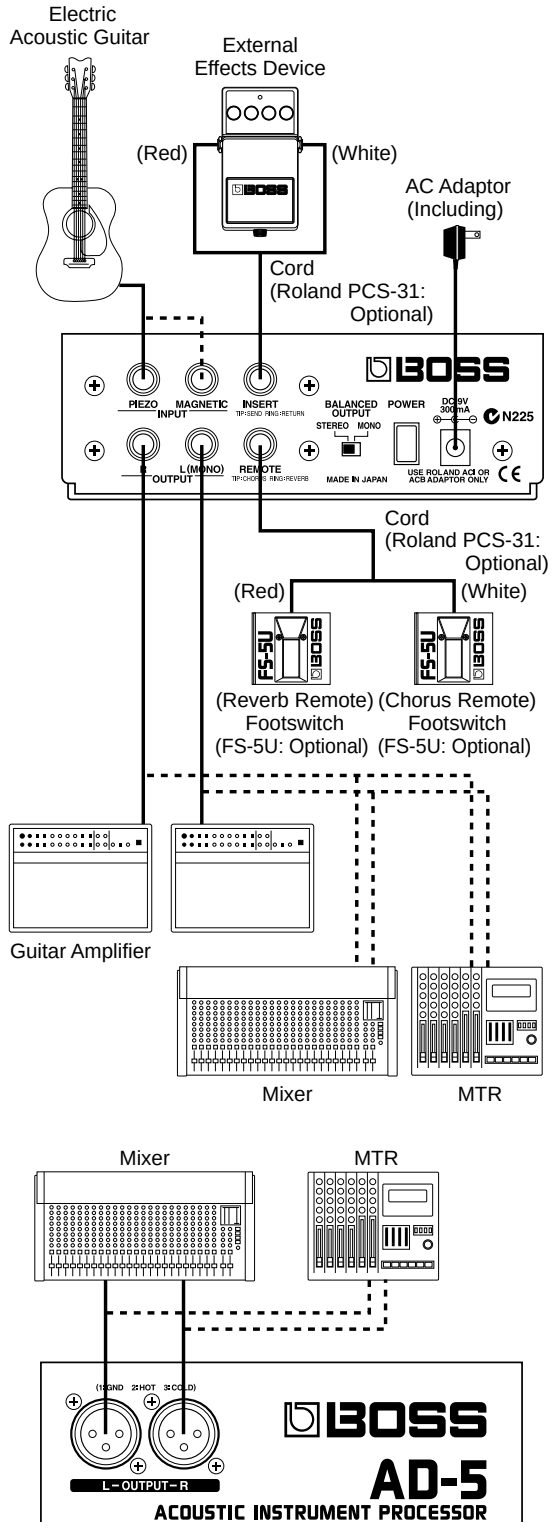
Connections

After connecting the AD-5 to your guitar and amplifier as shown below, connect the AC adaptor that is included with the unit.

* *To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.*
* *Turn on the power on all connected equipment before you turn up the volume on your amplifier.*
* *To output in monaural via the 1/4" phone outputs, connect the cable to the OUTPUT L (MONO) jack.*
* *To output monaurally via the balanced outputs, switch the BALANCED OUTPUT switch to MONO.*
* *The pin assignment for the XLR connectors is as shown below. Before making any connections, make sure that this pin assignment is compatible with that of all your other devices.*



1: GND
2: HOT
3: COLD



Turning on the Power

Once the connections have been completed (page 7), turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and / or damage to speakers and other devices.

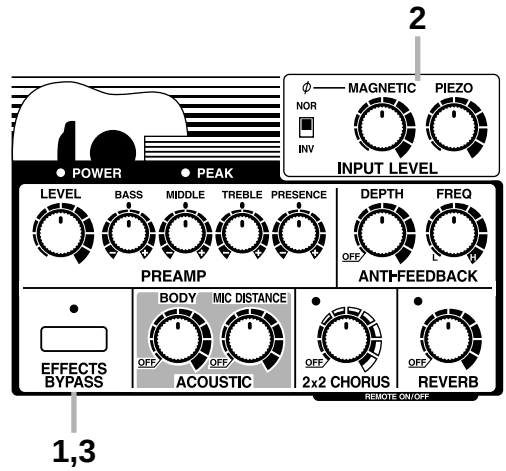
External Effects Device
↓
AD-5
↓
Output Equipments
(Guitar Amp or Other Device)

After switching on the AD-5, you can start playing as soon as the Peak indicator has stopped flashing on and off (after a few seconds).

* *This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.*

Adjusting the Input Level

The level of the output from a guitar can vary greatly depending on the particular guitar pickup used. You may be unable to enjoy the AD-5's features to the full if you use inappropriate levels. Refer to the following, and adjust the Input Level knob for the type of pickup being used (PIEZO or MAGNETIC).



1. Press the EFFECTS BYPASS button and confirm that the EFFECTS BYPASS indicator has lit. (The Bypass function is now active.)

2. Adjust the INPUT LEVEL knob for the input jack to which your guitar is connected until you have it so the PEAK indicator lights up only briefly, at the moments the guitar is played most strongly.

* *If using both input jacks simultaneously, also adjust the relative balance for the two inputs while adjusting each input level.*

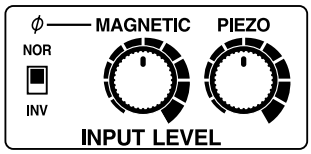
3. When adjustment is complete, press the EFFECTS BYPASS button again, and the EFFECTS BYPASS indicator will go out.

* *The PEAK indicator lights up at 3 dB below clipping level (when distortion begins to occur).*

* *After adjusting the input level, if the PEAK indicator lights frequently when the guitar is played, lower the preamp level (page 9).*

Names of Things / What They Do

INPUT LEVEL



Adjusts the overall input volume level. Input from the two input jacks is mixed here.

PIEZO

Adjusts the volume of the PIEZO input.

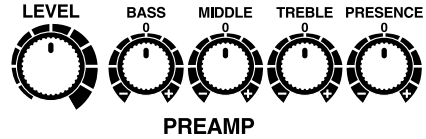
MAGNETIC

Adjusts the volume of the MAGNETIC input.

ϕ (Phase Switch)

Selects the phase for the input from the MAGNETIC input jack. Use this to get the phase for the input of both input jacks to work well together. Ordinarily, you will probably want to keep it at NOR (Normal). However, if the tone does not sound quite right when both inputs are mixed—perhaps with a reduction in volume being experienced—try switching to INV (Inverted).

PREAMP



The AD-5's preamplifier (preamp) features a four-band EQ, including an ultra-high frequency "presence" band.

LEVEL

Adjusts the preamp volume level. Turning the knob clockwise increases the volume.

* *If the PEAK indicator seems to light rather frequently even after adjusting the input level (page 8), lower this level.*

BASS

Adjusts the low range. Turning the knob clockwise away from "0" increases the bass; turning the knob counterclockwise decreases the bass content.

MIDDLE

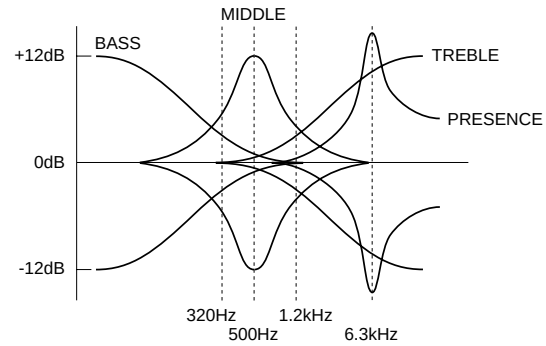
Adjusts the midrange. Turning the knob clockwise away from "0" causes the midrange to become more prevalent; turning the knob counterclockwise decreases the midrange content.

TREBLE

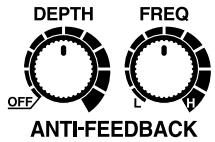
Adjusts the high range. The more the knob is moved clockwise away from "0," the more prevalent the upper range becomes; turning the knob counterclockwise decreases the upper range content.

PRESENCE

Adjusts the ultra-high range. Turning the knob clockwise away from "0" increases the ultra-high range portions; turning the knob counterclockwise decreases the ultra-high range content.



ANTI-FEEDBACK



What anti-feedback does is reduce the howling sound that can arise due to feedback between the guitar and amplifier. The sound at frequencies where howling occurs is compressed, thereby suppressing the howl.

DEPTH

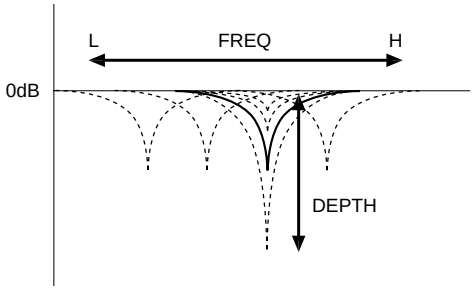
Adjusts the manner in which the anti-feedback effect is applied. Turning the knob clockwise suppresses howling more; turning it completely counterclockwise turns the effect off.

* *Whenever such howling is not a problem, or at times such as when using the AD-5 during recording, set this to the "Off" position.*

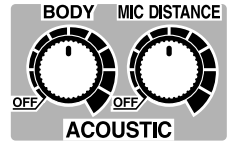
FREQ (Frequency)

Adjusts the frequency at which the anti-feedback effect is applied. Turning the knob clockwise raises this frequency.

When howling occurs, rotate the Depth knob completely clockwise, adjust the Frequency knob to find the position that reduces the howling, then turn the Depth knob counterclockwise to the point just before howling again begins to occur.



ACOUSTIC



With this feature, you can change the sound from a pickup on an electric-acoustic guitar into a richer sound, similar to that obtained by a microphone placed near a guitar.

BODY

This simulates the characteristic resonance inside the body of an acoustic guitar. The nature of this resonance changes according to the control setting position, so determine your own preferred setting to match the guitar you use. Turn the knob completely counterclockwise turns the effect off.

MIC DISTANCE

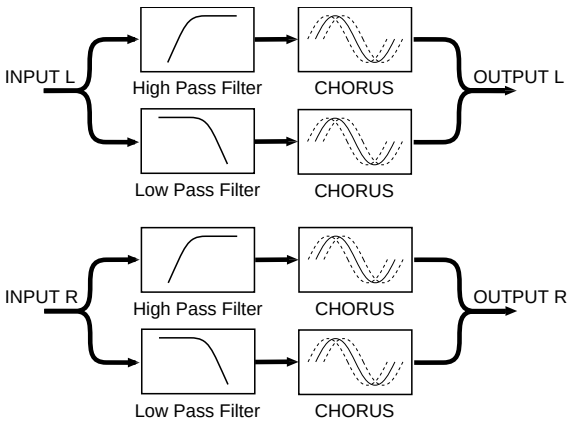
This simulates the distance between the microphone capturing the sound of an acoustic guitar and the guitar itself. Turning the control clockwise creates a sound obtained by placing the microphone at a greater distance; turning it completely counterclockwise turns the effect off.

2x2 CHORUS



Chorus is an effect that gives sounds more of a feeling of spaciousness, and makes them sound fatter.
The chorus used in the AD-5 is a separated stereo type for acoustic guitars. Chorus can be applied to both bass and treble ranges, on both left and right channels.

Turning the knob clockwise deepens the chorus effect; turning it completely counterclockwise turns the effect off. Additionally, by using a footswitch connected to the Remote jack, you can temporarily turn the effect on or off (page 13). The Chorus indicator lights up when chorus is on.



REVERB



Reverberation is the sound reflected by walls and floors, which overlaps and blends. Reverb changes according to factors such as the size and shape of the space (such as a room or hall), the differences in the material of the surface (a wall, for example) that is reflecting the sound, and so on.
With the AD-5, these elements are tailored to the acoustic guitar and digitally processed to simulate these sounds.

Turning the knob clockwise deepens the reverb effect; turning it completely counterclockwise turns the effect off. Additionally, by using a footswitch connected to the Remote jack, you can temporarily turn the effect on or off (page 13). The Reverb indicator lights while reverb is on.

Other Functions

EFFECTS BYPASS

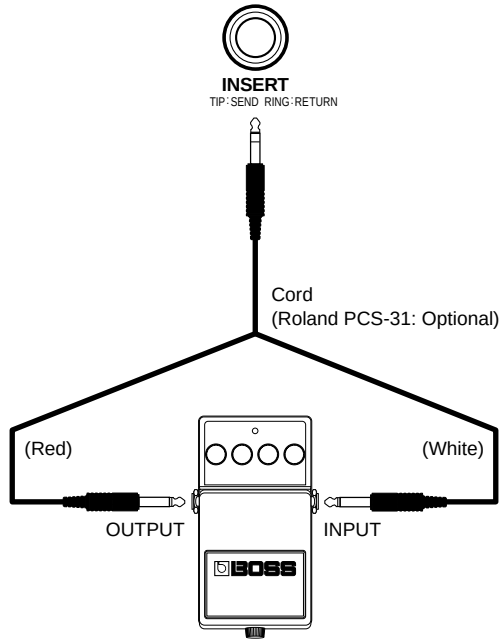
When using the Effects Bypass function, you switch to "effects bypass" state, whereby the sound right after the input level stage is routed directly to the output.



Pressing the EFFECTS BYPASS button turns the Effects Bypass on and off. The EFFECTS BYPASS indicator comes on when Effects Bypass is on.

INSERT FUNCTION

When an external effect (such as ones in the BOSS Compact Series) is connected to the Insert jack, you can also add this effect when creating sounds. With an external effect connected via the Insert jack with a connector cable (Roland PCS-31; optional), the sound that is mixed by means of the INPUT LEVEL knobs is sent out through the Insert jack (SEND), and the sound returned after effects have been applied arrives back at the Insert jack (RETURN).



External Effects Device

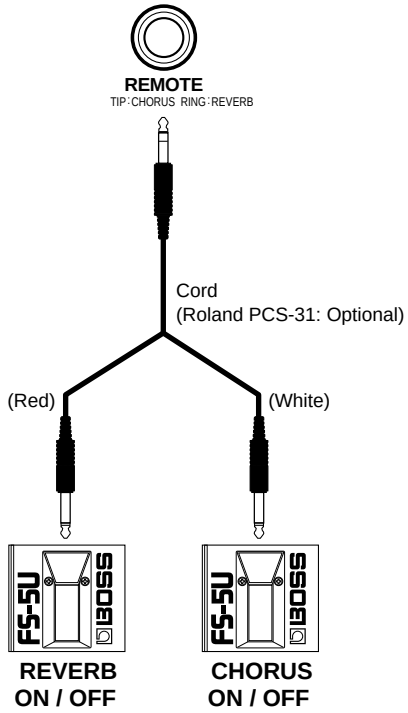
* *If EFFECTS BYPASS is turned on while an external effect is plugged into the Insert jack, the sound obtained after the external effect has been applied to it will be output from the Output jacks.*

REMOTE

With a footswitch (FS-5U; optional) connected to the REMOTE jack, you can temporarily turn the effect on or off.

* *If the knobs are turned while either Chorus or Reverb is temporarily turned on or off, or if the power is turned off and then on again, original settings and status are recalled.*

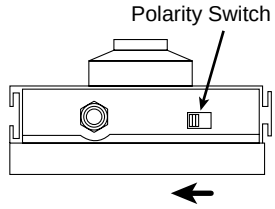
By connecting two footswitches to the REMOTE jack by means of a connector cable (Roland PCS-31; optional), you can use the two footswitches to turn on and off Chorus and Reverb.



With a mono cable connected to the REMOTE jack, and using only one footswitch, you can switch on / off only the Chorus effect.



* *When a footswitch (FS-5U; optional) is connected to the REMOTE jack, set the polarity switch in the following manner:*



Appendix

Troubleshooting

If there is no sound, or if you think that the AD-5 may be malfunctioning, please first go through the following checkpoints. If the problem persists, please contact your dealer or the nearest Roland Service Station.

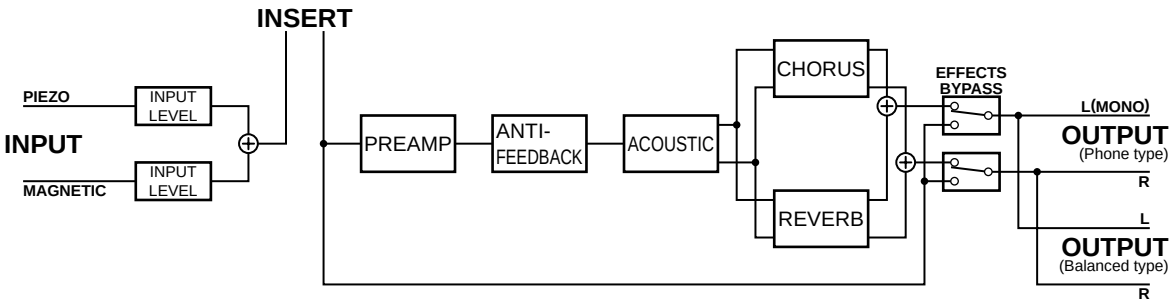
No Sound/Low Sound Level

- Make sure that other equipment is properly connected.
- Check to see that volume levels of other connected equipment, such as amplifiers, mixers, and effects devices are not turned too far down.
- Confirm that volume control knobs (Preamp, Input Level) are not turned all the way down.

Sound is Distorted (The PEAK indicator lights frequentry.)

- Have you adjusted the Input Level? Try adjusting the Input Level (page 8).
- Is the preamp level turned up too high? Adjust the preamp levels (page 9).

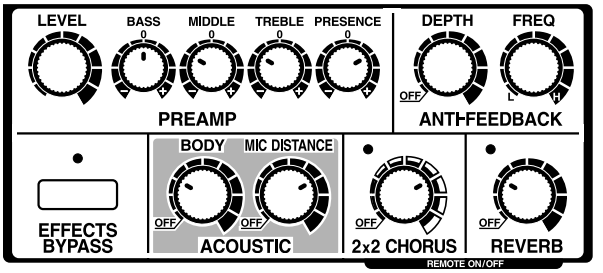
Block Diagram



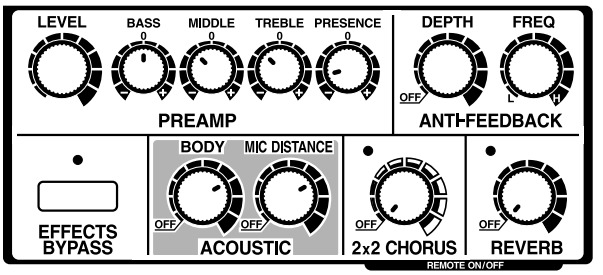
Setting Samples

<< Steel Strings / Flat Back >>

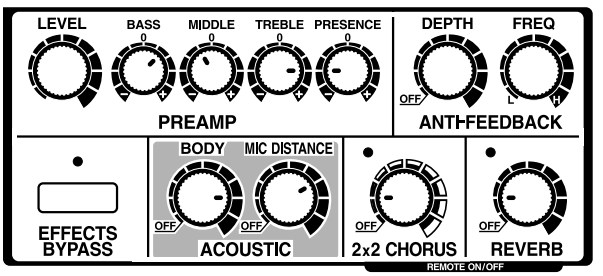
Fusion



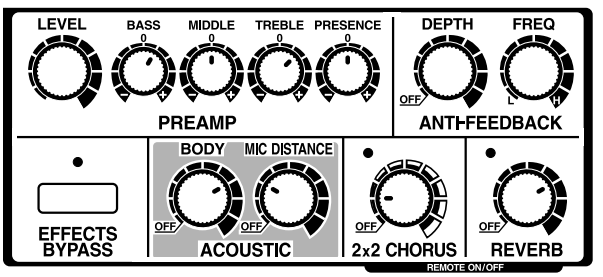
Bossa Nova



Blues

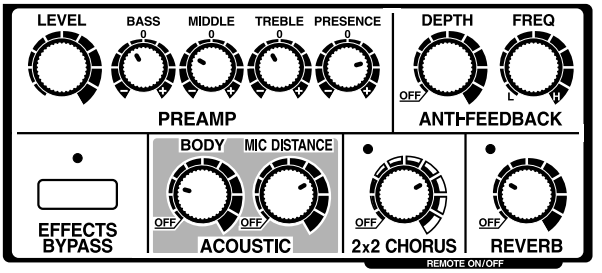


Ballade

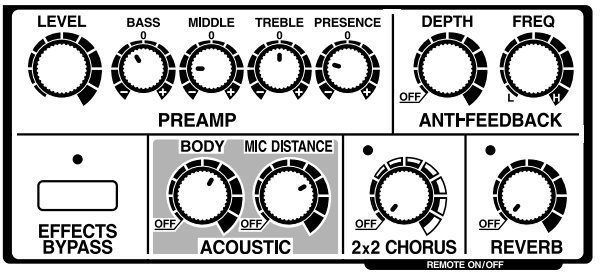


<< Steel Strings / Round Back >>

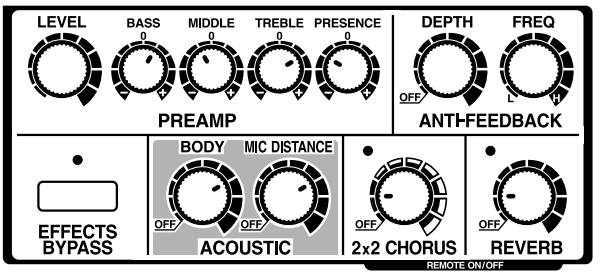
Fusion



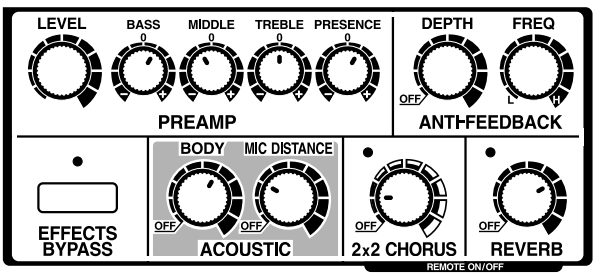
Bossa Nova



Blues

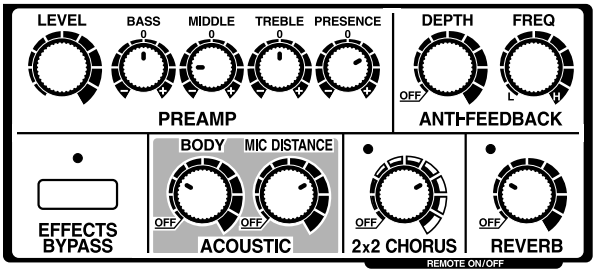


Ballade

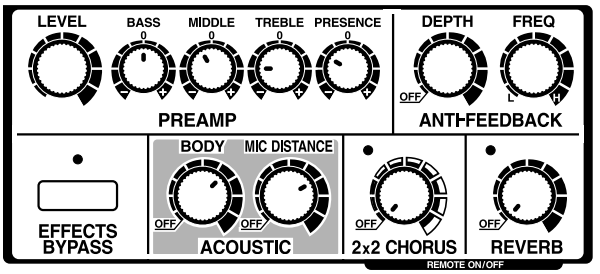


<< Nylon Strings >>

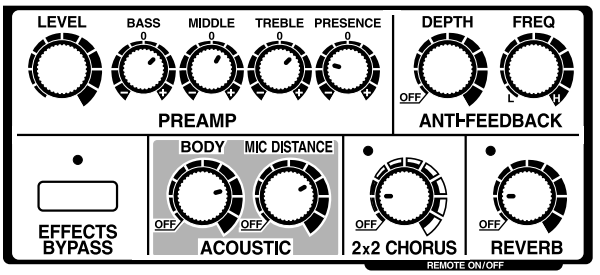
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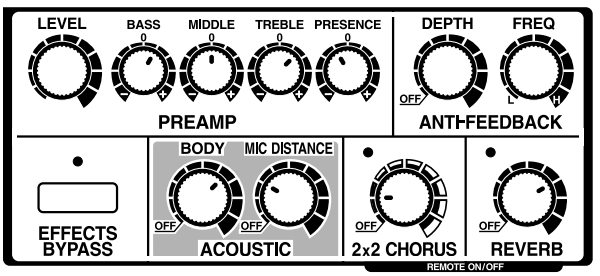
Bossa Nova



Blues



Ballade



Specifications

AD-5: ACOUSTIC INSTRUMENT PROCESSOR

AD Conversion
21 bit AF Method

DA Conversion
20 bit Input,
4 Times Oversampling Digital Filter + Δ ∑ Method

Sampling Frequency
44.1 kHz

Nominal Input Level
INPUT: -10 dBu
INSERT RETURN: -10 dBu

Input Impedance
INPUT (PIEZO): 4.7 MΩ
INPUT (MAGNETIC): 1 MΩ
INSERT (RETURN): 100 kΩ

Nominal Output Level
OUTPUT: -10 dBu
OUTPUT (XLR): -10 dBu into 600 Ω
INSERT (SEND): -10 dBu

Output Impedance
OUTPUT: 2 kΩ
OUTPUT (XLR): 600 Ω
INSERT (SEND): 1 kΩ

Controls
[INPUT LEVEL]
  Phase Switch
  MAGNETIC Knob
  PIEZO Knob
[PREAMP]
  LEVEL Knob
  BASS Knob
  MIDDLE Knob
  TREBLE Knob
  PRESENCE Knob
[ANTI-FEEDBACK]
  DEPTH Knob
  FREQUENCY Knob
[ACOUSTIC]
  BODY Knob
  MIC DISTANCE Knob
2x2 CHORUS Knob
REVERB Knob
EFFECTS BYPASS Button

POWER Switch
BALANCED OUTPUT Switch

Indicators
POWER
PEAK
EFFECTS BYPASS
2x2 CHORUS
REVERB

Connectors
INPUT Jacks (PIEZO, MAGNETIC)
INSERT Jack (1/4 inch TRS Phone Type)
OUTPUT Jacks L(MONO), R
OUTPUT Connectors L, R (XLR-3-32 Type)
REMOTE Jack
AC Adaptor Jack

Power Supply
DC 9 V (Roland ACI or ACB-Series)

Current Draw
300 mA

Dimensions
150 (W) x 155 (D) x 65 (H) mm
5-15/16 (W) x 6-1/8 (D) x 2-9/16 (H) inches

Weight
1.0 kg (excluding the AC Adaptor)
2 lbs 4 oz

Accessories
Owner's Manual
AC Adaptor (Roland ACI or ACB-Series)
Roland Service

Options
Foot Switch: FS-5U
Cord: Roland PCS-31 (1/4 inch TRS Phone Type – 1/4 inch Phone Type x2)

** 0 dBu = 0.775 Vrms*

** In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

About the AF (Adaptive Focus) Method

This newly developed AD conversion process virtually eliminates all quantization noise, and dramatically improves overall dynamic range. It accomplishes this by using two types of AD converters (with different input levels) to convert audio signals into data in combination with a unique DSP method for creating a composite of the separately obtained

For EU Countries

CE

This product complies with the requirements of European Directive 89/336/EEC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

NOTICE

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

AVIS

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

AD-5

BOSS

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