

**CONTRA™**  
SERIES IIa  
Model 410 BA

**CONTRA R™**  
SERIES IIa  
Model 411 BA

**CODA™**  
SERIES IIa  
Model 410 AA

**CODA R™**  
SERIES IIa  
Model 411 AA

**CONTRA EX™**  
SERIES II  
Model 410 BE



Model 420 CA

*Acoustic Image*®  
Musical Amplification:  
Setting The Standard

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Contra



Contra R



Coda



Coda R



New Yorker



Contra EX

# Owner's Manual

## Combo Amplifiers

*Acoustic Image*®  
Musical Amplification:  
Setting The Standard

# Welcome to Acoustic Image!

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*You have purchased a state-of-the-art musical instrument amplifier system, combining purity, power and portability in a package that sets a new standard in high fidelity amplification.*

*Each of our designs is engineered to accurately reproduce the sound of acoustic and electric instruments, delivering flat frequency response across the entire musical spectrum; extended, tight, well-controlled bass; and complete clarity of sound reproduction.*

*This manual provides operating information for your Acoustic Image Contra, Coda, New Yorker combo amp or Contra EX extension speaker cabinet.*

### The Basics

All Contra, Coda and New Yorker combos are based on the same superb class-D 300-watt power amplifier, on a compact three-way speaker system (also used in the Contra EX) and on a sophisticated, sensitive preamplifier. The features of the preamp define the specific combo model.

The power amp is a high efficiency design that requires no external heat sinks or cooling fans and is capable of driving loads as low as 2 ohms. AC power and output speaker jacks are located on the rear of the enclosure. A standard, three-prong detachable AC power cord is used to provide power to the unit, while AC voltage selection switch allows the unit to operate at 115V/60 Hz or 230V/50 Hz.

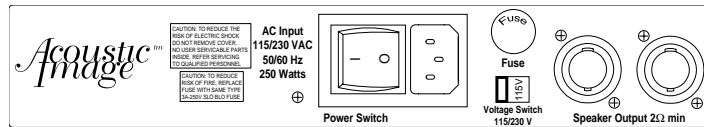
Depending on the model chosen, your preamp offers an instrument channel alone or instrument and microphone channels, with or without an 8-program digital reverb. All of our preamps incorporate a four-band EQ per channel, high and low impedance instrument inputs (to optimize the sound of piezo-type pickups), an effects loop with return level control, and a selectable notch/high pass filter for feedback control and reduction of low frequency boominess--along with a direct out capability with ground lift and a master level control. The New Yorker does not have the return level control, notch/high pass filter or the direct out ground lift.

All of our speaker enclosures incorporate a 10-inch downfiring woofer, a 5-inch frontfiring midrange, and a 1-inch defeatable tweeter. A built-in lifter mechanism allows the cabinet to be tilted to better direct sound to the your listening position. Both padded and hard shell cases are available as accessories.

While our combos and speakers are designed to play loudly--and clearly--enough so that you can be heard in most gigging situations, they are not suited to playing at extreme volumes. Generating high SPLs may require an extension cabinet such as the Contra EX or augmentation by a larger house system.

# Operation

## Power



*Contra/Coda Rear Panel (the New Yorker rear panel is similar).*

Plug the detachable AC power cord into the receptacle on the back of the amp and into a wall receptacle. A power switch next to the AC connector turns on power to the pre- and power amps, illuminating a “power on” indicator on the front panel of the amp. A 3-amp slo-blo fuse is mounted on the back panel. To replace this, remove the AC cord and twist out the fuse holder. A spare fuse is included with this manual.

All combos will work with either 115 volt, 60 Hz AC or 230 volt, 50 Hz AC power. A switch located on the rear panel selects the appropriate voltage. Note that the correct AC power cord must be used for connection to the appropriate wall plug. If you do not have the right cord, you can buy one from an electronics or computer store. Be sure the switch is in the correct position for the intended application. **Operation at 230 volts with the switch in the 115 volt position will damage the unit.**

## Preamp

*Refer to the signal flow diagram (shown for the Coda R--the other models have the same signal flow for the features equipped) and the control panel drawings for more information.*

## Inputs

The Contra, Coda and New Yorker all have an instrument channel with high (10 megohm) and low impedance (1 megohm) inputs, accessible using standard 1/4-inch plugs. The option is given in order to get the best sound from piezo pickups. Both inputs have the same gain through the amp. Which impedance is most appropriate for your particular instrument depends on pickup design. To decide, listen to the bass/treble balance as you change inputs. Typically, terminating in the higher impedance will raise the relative level of the bass frequencies. Magnetic pickups normally sound best with the low impedance input. **Don't be afraid to experiment to find the best sound for your ears. There are no set rules as to which input is best to use.**

If your preamp has two channels, the microphone channel is accessed using a standard XLR connector. Phantom power is available through the connector for powering a mic or outboard preamp and can be activated using the push button switch located next to the connector. To avoid an audible “pop”, set the mic input level control all the way off when switching on the phantom power.

The two instrument inputs are separately buffered. This allows you to plug two instruments into your amp and play them separately or together. This feature is useful when you are doubling on two instruments with different impedance requirements (for example, electric and acoustic guitar or bass). Plug the acoustic into the high Z input and the electric in to the low Z input. You can then play each instrument as needed without having to plug and unplug instruments.

With the Coda models, the mic and instrument channels can be blended to mix a mic and pickup for best sound from one instrument or to mix vocals with an instrument. An adaptor can be used to convert the XLR input to a 1/4 inch input if a second instrument channel is desired. However, when using an adaptor, the resulting input impedance is fairly low which limits the use of the channel to magnetic pickups. Using a piezo pickup with such a low impedance will likely result in poor sound quality.

## Controls

The preamp has the following controls in each channel: input level, bass, mid, treble, brite and effects level. In addition, there is a variable frequency, selectable notch/high pass filter and a master level control. Note that the New Yorker does not have the effects level control or the filter capability.

### Level

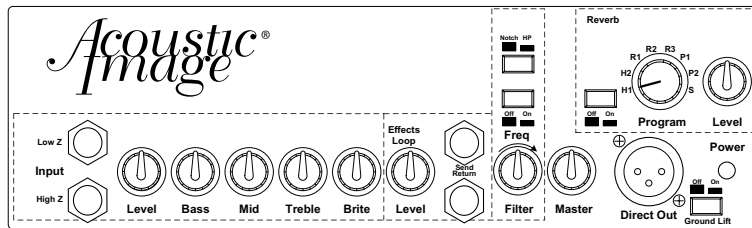
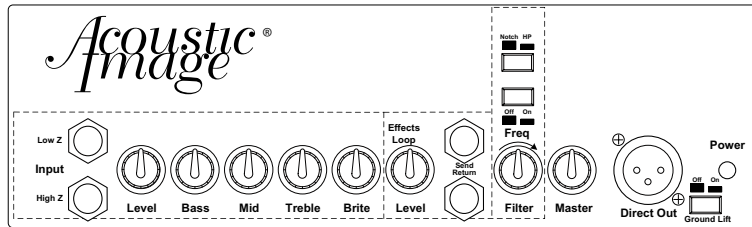
The input level controls the level of the signal at the input stage of the preamp. The master volume controls the level of the signal at the output of the preamp (at the input of the power amp). Set the master control at “12 o'clock” and the input level at zero. The input level should then be used to control the overall output of the unit.

The maximum volume at which the system will play is limited by the capability of the speaker system. A 10-inch driver in a small cabinet has a limitation in how loudly it will play. If more volume is needed, use a Contra EX extension cabinet or take a feed from the Direct Out jack to a PA system or another amplifier.

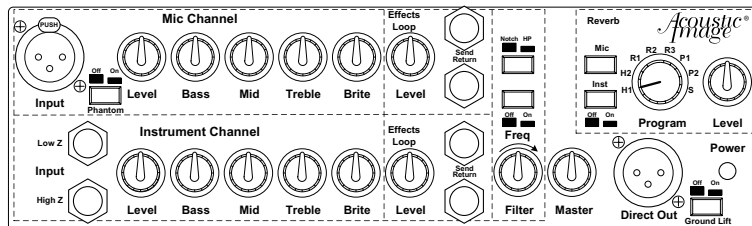
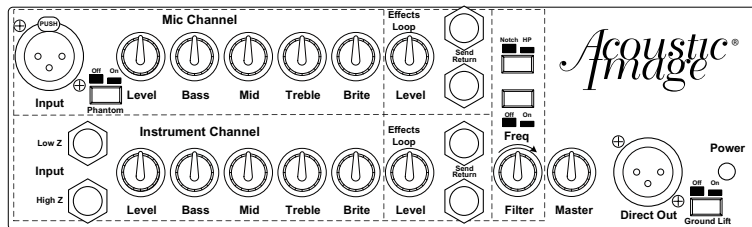
### Tone

Each tone control has a center detent at the flat position. Experiment with settings to achieve the frequency balance that sounds best to you. In general, small values of boost and cut are best. The amp is designed with flat frequency response so only minor corrections should be required to compensate for room effects or “peaky” pickups in order to maintain the balanced response desired for acoustic instrument amplification. To minimize electronic noise, avoid operating all controls simultaneously at their maximum settings.

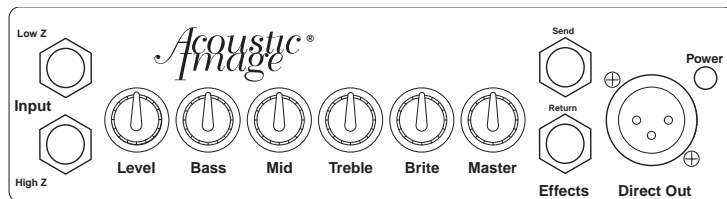
The bass control is a shelving-type that affects frequencies below 250 Hz and with a maximum boost/cut of 15 dB. The mid control affects frequencies between 300 Hz and 2000 Hz and has a maximum boost/cut of 15 dB. The treble control is also a shelving-type that affects frequencies above 1000 Hz



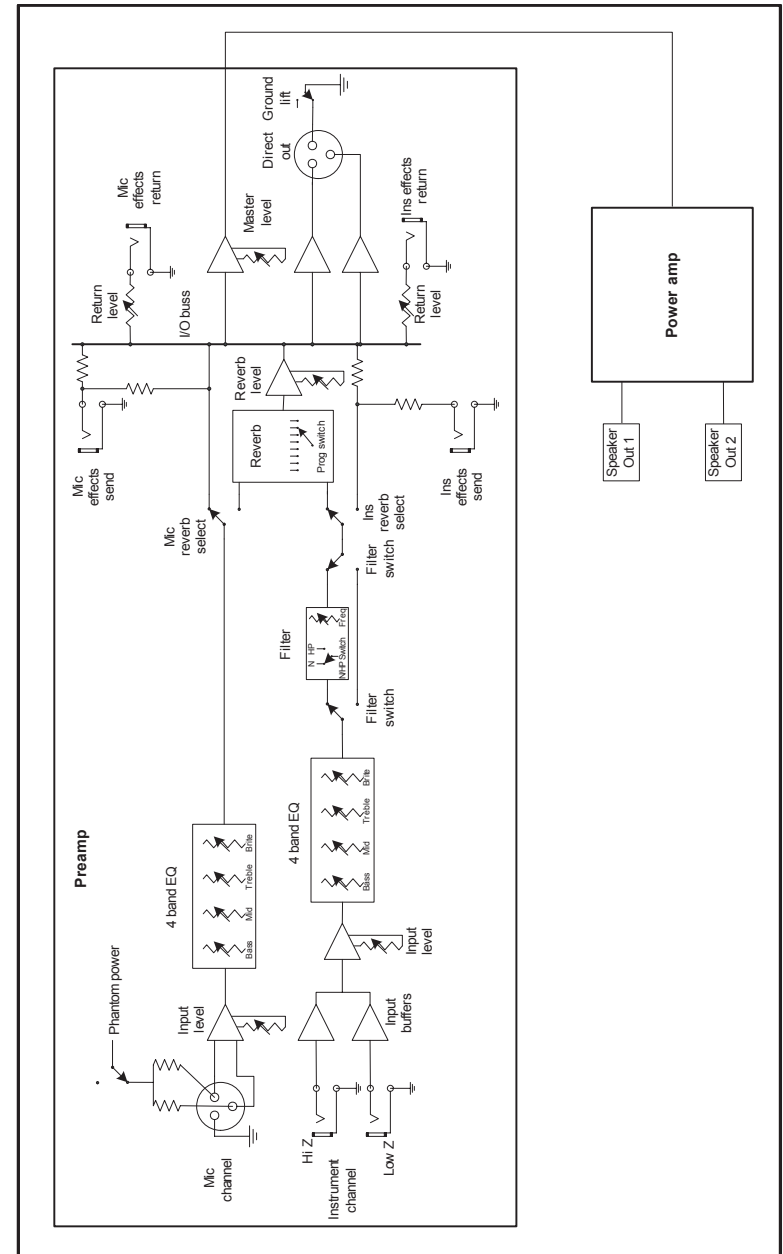
Contra/Contra R Control Panels



Coda/Coda R Control Panels



New Yorker Control Panel



Signal Flow Diagram

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with a maximum boost/cut of 15 dB. The brite control affects frequencies between 6,000 and 16,000 Hz and provides a maximum boost/cut of 15 dB.

### **Notch/High Pass Filter**

The notch/high pass filter is a fixed amplitude, variable frequency type that inserts either an 18 dB cut or a 12 dB per octave rolloff at frequencies between 30 and 700 Hz, depending on the position of the control. The notch filter is used to remove a given feedback frequency to reduce feedback “howl”. The high pass filter is used to reduce the bass output in cases where room location or instrument/pickup combination results in “boomy” sound. To use either, push the on/off switch to turn on the filter circuit then select the filter type using the notch/high pass switch. Start with the control fully counterclockwise and gradually turn it clockwise until the desired effect is achieved, then experiment with the position of the control to give you the sound you like best. The New Yorker combo does not have the filter capability.

### **Effects Loop**

Acoustic Image preamps have output (“Send”) and input (“Return”) capability in each channel to allow you to use effects boxes. The send output is affected by the input volume and tone controls and can also be used as a preamp output for driving other power amplifiers. The Return input can be used to directly connect an external preamp to the unit’s power amp. The effects level control in each channel controls the volume of the returned (“wet”) signal relative to the original (“dry”) signal. Because the effects loop is a parallel type, plugging something into the send output does not interrupt the signal path. So, a tuner can be plugged into the send output without affecting the signal going through the amp. When the effects loops are not used, the level controls should be set at zero. The New Yorker does not have the effects level control.

### **Direct Out**

An XLR jack is provided for a Direct Out connection that allows the system’s output to be fed to mixing boards of house PA systems or recording studios. As a result, the instrument amplified by the unit can be recorded or further amplified by the house PA system. In the Coda combos, the Direct Out signal is the combined output of the mic and instrument channels and it is affected by the input level and tone controls of each channel (post EQ). Any reverb selected signal is also present in the direct out signal.

A ground lift switch is available to “lift” the ground from the output of the direct out—reducing noise should a ground loop create hum when the unit is connected to a mixing board. The New Yorker does not have the ground lift switch.

### **Reverb (Contra R and Coda R only)**

Our high-quality digital reverb units offer 8 program selections: 2 “Hall” (Concert Hall and Arena), 3 “Room” (Club, Chamber and Garage), 2 “Plate” reverb simulations (Plate and Vocal), and 1 “Spring” reverb simulation. With

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the Coda R, there are also switches to select which channel (mic or instrument) has reverb added. If both switches are closed, the selected reverb setting appears in both channels. A level control affects the level of the reverb signal that is mixed with the “dry” signal to control the overall effect of the reverb. You should experiment with both the reverb program selection and the level control to find the sound that you prefer. When reverb is not used, the switches for both channels should be off and the level control should be turned fully counterclockwise.

### **External Speaker Jack**

An extension speaker (ideally, the Contra EX) can be connected to the amp to increase its output level, using the jack provided on your amp’s rear panel. Speakers are connected via Neutrik Speakon connectors (“twist lock” type). These connectors are used because of their low contact resistance and non-shorting operation. The output of each Speakon connector is wired to pole “1”. Make sure the cables you use to connect an external speaker are similarly wired. Cables with Speakon connectors are available from Acoustic Image if you are unable obtain them from your local music store. A 16-inch speaker cable that connects the amp output to the speaker is supplied with the unit. Spares are available from Acoustic Image.

The power amplifier is capable of driving speaker loads as low as 2 ohms. Use a high quality speaker system in order to get the maximum performance from the amp. The Acoustic Image Contra EX is an excellent choice.

The power amp is short circuit protected. If a short is connected to one of the speaker jacks, the output signal will be interrupted until the short is removed. If there is an intermittent short, the output will be interrupted for about one second each time the short appears. However, the nature of a switching amplifier makes it difficult to protect against shorts in all circumstances. **To be on the safe side, you should shut off the power to the amp before connecting or disconnecting speakers from the unit.**

### **Speaker Placement (Combos or Contra EX)**

The omnidirectional low frequency output of the Coda, Contra, New Yorker or Contra EX makes speaker placement relatively noncritical. You will easily be heard all over the bandstand no matter where one or more are located. However, best results are obtained when the cabinet is placed on the floor. Putting the unit on a shelf or stand will reduce bass frequencies. There may be circumstances where this is desirable. Again, feel free to experiment to find the sound that is best for you.

### **Sound Lifter**

In some settings, such as a hollow stage or small, “boomy” room, your amp or enclosure will produce too much bass. One way to cut unwanted bass output is to use the “Sound Lifter” peg to lift the front of the cabinet, reducing the coupling to the floor. To do this, remove the lifter peg from the storage clip on the bottom of the cabinet and screw it into the recessed nut on the bottom

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front edge of the cabinet. The peg should be stored in the clip when the amp is being transported in order to avoid damage to the peg or nut. You may want to use the lifter at all times in order to aim the high frequency output of the speaker toward your ear so that you can better hear the amp.

### **Tweeter Switch**

An on-off control for the tweeter is mounted in a recessed cup on top of the cabinet just behind the rear panel. The tweeter is engaged when the switch paddle is pointing toward the front of the cabinet. Try the unit with the tweeter on and off to decide which sounds best to you.

### **Care**

Acoustic Image combos and cabinets are made from lightweight but strong materials. A little care will keep yours looking new for years to come. Use a clean, dry cloth to clean the metal parts of the amplifier. The cabinet covering can be brushed or vacuumed to keep it dirt and lint free.

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## **Warranty and Repair**

We stand behind our products with a full warranty of five years from the date of purchase. Should a problem arise, please call us before returning your amplifier or enclosure. Naturally, our warranty does not cover products that have been damaged through misuse.

### **Warranty Information**

**Serial Number** \_\_\_\_\_

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## **Specifications**

### **System (all models)**

Frequency Response	30 Hz - 20 kHz, (40 - 16 kHz $\pm$ 3 dB)
Max SPL	>112 dB at 1 meter
AC Power	115V/60 Hz or 230V/50 Hz, switchable
Size	12" H x 15" W x 13" D
Weight	27 lbs, 23 lbs (New Yorker), 22 lbs (EX)

### **Preamp (Mic and Instrument Channels-as appropriate to model)**

Mic Input	600 ohm balanced, XLR connector
Phantom Power	38 volts, on/off switch
Instrument Inputs	Low impedance (1 M $\Omega$ ), High Impedance (10 M $\Omega$ ), separately buffered
Direct Out	+4 dB, balanced, XLR connector, ground lift
Effects Loop	Parallel type with return level control
Bass Control	Shelving type, $\pm$ 15 dB at 60 Hz
Mid Control	$\pm$ 15 dB at 650 Hz
Treble Control	Shelving type, $\pm$ 15 dB at 10 kHz
Brite Control	$\pm$ 15 dB at 9 kHz
Notch Filter	>-18 dB sweepable from 30 to 700 Hz
High Pass Filter	-12 dB/octave sweepable from 30 to 700 Hz

### **Reverb (Contra R and Coda R only)**

Type	Digital with 8 presets and level control
Reverb Presets	2 Hall (Concert Hall, Arena), 3 Room (Club, Chamber, Garage), 2 Plate (Plate, Vocal) and 1 Spring

### **Power Amp (all models)**

Topology	Class D (PWM)
Switching Frequency	280 kHz
Output Power	>200 W, >300 W with 4 $\Omega$ ext. cab. New Yorker is 250W and 350W, respectively
External Speaker Output	Neutrik Speakon type (pole 1), 4 $\Omega$ min.

### **Speaker System (all models)**

Woofers	10 inch, downfiring
Midrange	5 inch, forward firing
Tweeter	1 inch forward firing with on/off switch
Crossover	Passive, alignment corrected
Impedance	4 $\Omega$
Power rating	300W

### **Available Accessories**

Padded gig bag with shoulder strap, deluxe gig bag made by Mooradian, hard shell case, "twist lock" to "twist lock" and "twist lock" to 1/4 inch speaker cables.