



Reactor 50-112 / 50-212 **Owners Manual**

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Introduction

Congratulations on your purchase of an Atomic Reactor 50 112/212, a major step in bringing vacuum tube analogue musicality to the digital world. The Reactor 50 112/212 is an extremely versatile musical instrument that provides a live performance platform for your modeling tools and instrument processors. The Reactor 50 112/212 is clearly different from other guitar amplifiers. What we would like to accomplish in the following pages is to bring you up to speed on exactly how and why we made it that way.

Product Summary

The Amplifier / Speaker

The Reactor 50 112/212 is made up of two systems: the main system which can stand alone is an 50 watt RMS tube audio power amplifier that is joined with a very high efficiency 12" tuned speaker system. The power amplifier employs top grade components like all polypropylene capacitors, a tube phase inverter (12AX7) plus two top-grade, 6L6GC tubes to deliver full-rated power over a very wide frequency response, flat out past 20 kHz at very low distortion. It won't color or alter the tone created by a modeler, preamp, processor or effects device.

Coupled to the Reactor's amplifier section is Atomics' own, high efficiency, custom designed, 12-inch speaker(s). The speakers is (are) mounted in a precisely tuned birch ply cabinet. This gives the Reactor 50 112/212 a speaker system that is wide range and smooth (no sharp peaks or ragged response). The cabinet features a unique dual flared port and a closed back. The unique design of the speaker cabinet coupled with the dynamic abilities of both the amp and speaker can give a level of performance that you would expect to hear from an amp with two times the power capabilities of the Reactor 50 112/212. More importantly, the way the amp and speaker system have been designed, they are able restore to the input signal, especially a digitally created model, the musical dynamics and feel that we usually expect to hear produced by a well designed analog tube amp.

Docking System

Early in the development of the Reactor 50 112/212 we decided that in addition to providing a world class sonic solution for taking digital amp modeling tools live, we would also tackle that other monster inherent to all digital technology. Having seen what happens to the value of all things digital, we designed the Reactor to be able to easily adapt to changes in technology or modeler brand popularity. This is the motivation behind the second part of the Reactor 50 112/212, The "DS-1" docking system (Patent Pending). The DS-1 acts as a universal mount for many types of modelers and preamps. The principle components in the DS-1 are the docking unit, the docking bay and the Reactor Series Template Kits.

Combined with the appropriate template kit, the DS-1 can accommodate most popular desktop modelers that are available today. As new modelers are developed, we are able to make available new template kits.

Once a modeler is installed in the DS-1, all of the signal input and output as well as the power supply connections are made. No wall wart or external power is required, the Reactor automatically selects and sends the correct power / voltage to the modeler loaded DS-1. Installation and de-installation is quick and requires no tools. The DS-1 is then easily loaded into the Reactor 50 112/212. A blank template is also available for people who wish to use rack mount modelers and other choices for preamps, including the growing number of people using floor based "pedal style" amp modeling products. The Reactor's classic design will long outlive current digital technology with value, versatility, and the elegance of a classic.

Getting Started

Unpacking

If you are reading this manual you have probably already opened your Reactors shipping carton. Now would be a good time to familiarize yourself with the things that are inside the carton.

What's in the Box

Every Reactor 50 112/212 comes from the factory shipped complete with a DS-1 docking unit and the following items:

1. Owners Manual
2. Product Registration Card

Packed with the DS-1

1. One (1) AC line cable for proper usage in the country of purchase.
2. Three (3) mushroom head bumper caps
3. The wiring harness to connect a desktop style modeler into the DS-1.

Important

The 50 112/212/50 or the 212/50 Atomic Reactor only have one controller. Not because we forgot something or because the money ran out, but because the amp modeler takes care of all the sound adjustments. It's not a bug, it's a feature!

The Input jack next to the On/Off switch (Red) and the Stand-By switch (Blue) should be used as Guitar Input when Modelers like a Pod, V-Amp, ToneLab or Black Box with the docking station DS-1 and the appropriate Template Kit are fitted in the Atomic Reactor.

All other Modelers – especially all Floor Pedals – should be connected to the Return Jack of the Atomic Reactor amplifier, the guitar is then connected to the Input jack of the Modeler. The docking station DS-1 should then be closed with the blank template kit, on which no drinks or food should be placed, even though the temptation may be great. Your amp will not like drinks, they could kill him; liquids are not good for a high voltage tube system.

The Atomic Reactor is a full range system, its special loudspeakers can handle frequencies up to 18 KHz, which is the same as a normal PA system. You can switch the output mode from „Studio/Direct“, „Direct Mode“, „Recording Out“ or „Direct Out“, so that the right speaker, box and microphone models are activated.

The output signal of the Modelers can be sent direct to a Mixer via the Send Jacks (left/right) on the rear side of the Atomic Amps, for an absolute professional PA or Recording sound.

Turning On and Off

Like most Tube Amps, the Atomic Amps have a Stand-By switch. It's important to use this switch. This means; first use the Red Power switch to turn the Atomic Reactor on at the mains, wait 30 seconds and then use the Stand-By switch to be ready to play. When turning the Amplifier off, start with the Stand-By switch and then turn the Power switch off. It's important to use this sequence for turning on and off.

Special information for owners of Line6 POD or POD xt, Behringer V-Amp, VOX ToneLab and M-Audio Black Box

For these so called „Desktop Modelers“ we have special frame templates and power cords. You should have received the right Template-Kit for your modeler. This Kit, together with the Docking Station DS-1 and your Desktop Modeler will form a complete unit. The power and audio connections follow internally; Floorboards, Midi-Pedals, USB-Tools can also be connected to the rear side of the Amp.

The DS-1

Atomics' philosophy is to afford it's customers the opportunity to choose the brand of modeler or preamp that they prefer, and thus enjoy the sonic characteristics that they demand. The DS- 1 allows Atomic Reactor Series amplifiers to act as a platform for select digital amp modelers and other types of related equipment. When using a modeler installed in the DS-1, all of the signal input and output as well as the power supply connections are made. No wall socket or external power is required, the Reactor automatically selects and sends the correct power / voltage to the modeler loaded into the DS-1. Installation and de-installation requires no tools. The DS-1 is then loaded into the Reactor 50 112/212. The DS-1 design gives the user the ability to "quick swap" (you don't have to turn the Reactor on or off and wait for the tubes to come up to speed) the Dock into and out of the Reactor. With the "quick swappable" capability designed into the DS-1 you can quickly change Dock/modeler combination.

Template Kits

The installation of your modeler into a Dock requires the proper matching template kit. Currently, the following kits are available.

<i>MODELER</i>	<i>PART #</i>
LINE 6 POD	ATP2
LINE 6 POD XT	ATPXT
BEHRINGER V-AMP	ATVAMP
BEHRINGER V-AMP 2	ATVAMP
VOX TONELAB	ATTLAB
For rack mount & floorboard style modelers and preamps use the BLANK KIT. For more info check out pages 8, 12, 13, & 14.	ATBLANK



Template Kits are designed to adapt most popular desktop modelers into the Atomic DS-1 Docking Unit.

A template kit consist of a pre-fitted, injection molded frame and the appropriate mounting hardware to hold a modeler securely in place inside the DS-1 docking unit.

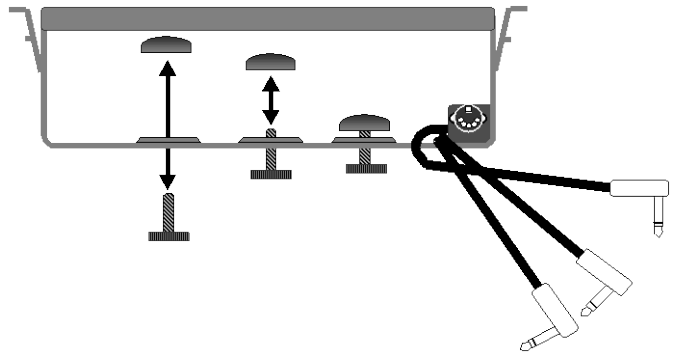
The kit also includes the proper power connecting cable for the modeler to allow the modeler to be powered by the Atomic Reactor 50 112/212's super high quality power supply! **NO WALL-WART NEEDED!**

Installing a Modeler into the DS-1



In the large opening of the Atomic Amp, you will see three round cavities, like circles in a cornfield. This is where the mushroom heads of the locking screws fit.

- 1** Screw the 3 thumbscrews labeled "A", "B" & "C", into the corresponding holes located on the bottom of the DS-1.

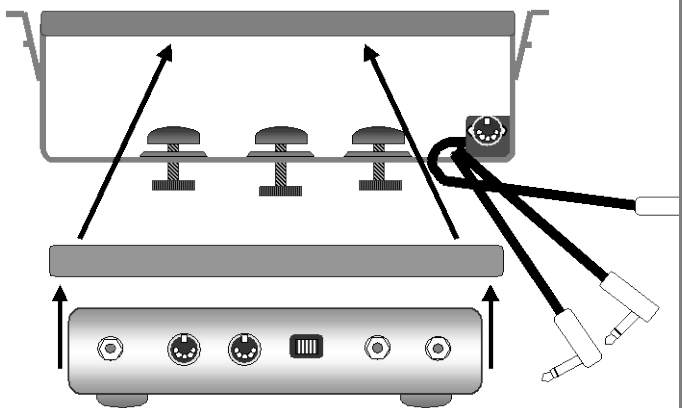


- 2** Attach the 3 rounded mushroom heads caps to the ends of the locking screws. *

*A set of mushroom heads come shipped with each Reactor 50 112/212.

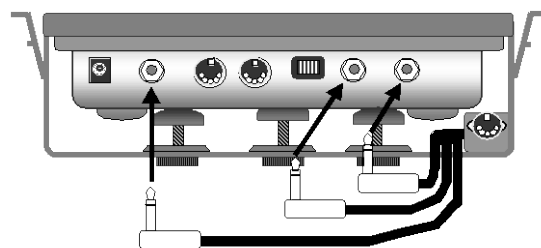
- 3** Position the proper docking template on the top of your modeler.

- 4** Insert the docking template along with the modeler into the rear of the DS-1, locating and positioning it in the notch of the template frame.

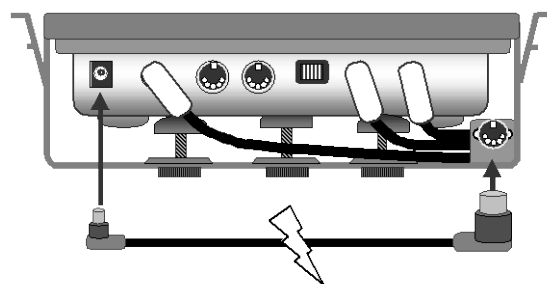


- 5** Tighten down the thumbscrews until modeler is held securely in place.

- 6** After securing modeler, connect the Input and, Left/Right output connectors. The Input cable is extra long to accommodate modelers that have their input jacks located on the front. Please note that there is plenty of room to get to foot controller connections etc. If your modeler has a ON/OFF switch, switch it ON now.



- 7** Use the power cable included with the docking template to connect between your modeler's power input and the DS-1s power output. **THERE IS NO NEED FOR AN EXTERNAL POWER SUPPLY.** The DS-1 automatically compensates for your modeler's voltage and polarity.



Check if everything is connected correctly and then let the „Docking Station“ click into place. If this sounds complicated, don't worry, it isn't. Just try it, it's easier than you think.

Now turn the Master-Volume-Control on the rear side of the Atomic to the left (Volume off) and switch the red Power Switch on, after of course connecting the amplifier to the mains. Your Modeler will also switch on and the red power switch will light up, err red? Yeah you guessed it. Even the tubes will start to glimmer now. A tube amp needs time to warm up, the tubes need about 30 seconds to get up to their working temperature. Now turn on the blue Stand-By switch, which will light up green, no sorry only joking, it will light up blue. Now connect your guitar to the Input Jack of your Atomic Amp. Turn the Master-Volume-Control on the rear side of the amp and the Output-Level-Control of your Modeler to the required volume and it's time to start rocking. If you connected all your cables like we suggested and your Modeler is turned on, you should be surrounded by amazing tube analogue mixed with digital Modeler sounds, making crisp and warm guitar amp sounds. The right Output Jack of the DS-1 connects the Modeler directly to the Send-R-Jack of the Atomic Reactor-Effect-Loop on the rear side. The signal is mono until a cable is put into the Send-R-Jack.

If you use a multi-effect device or just plain old stomp machines, they can be connected using the normal Send and Return Jacks of the Atomic Amp. Using the red push-button you can switch the Effect-Loop from mono to stereo. Check your Modeler manual for information about controlling the output level.

For Rich Kids: If you want a really professional stereo solution, buy a second Atomic Reactor amp. Connect the Send-R-Output from the first Atomic Amp (the one with the Modeler!) with the Return-Jack on the rear of the second Atomic Amp.

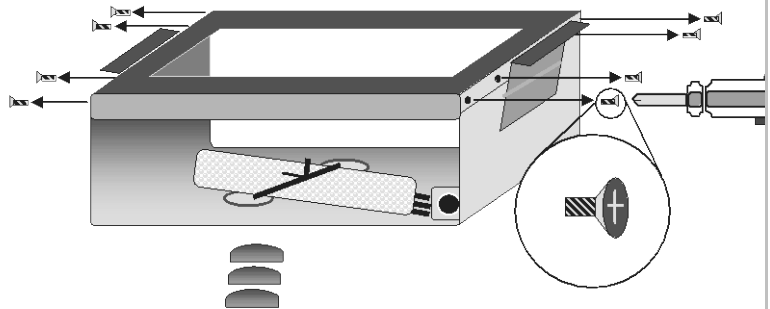
For even Richer Kids: Wanna use more than one Modeler? No problem, just order a second, third, fourth or fifth DS-1 and the Template Kit for your Modelers. Set up like we described earlier and during a gig, you can snap one out, snap a new one in, without turning the Atomic Amp off. The new Modeler is ready for use immediately.

Special instructions for owners of Floor-Amp-Modelers and other Modelers not mentioned above

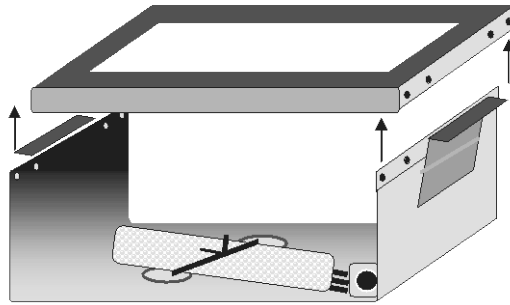
Do not despair, if you own one of these devices and cannot use the DS-1 Docking Station. We will show you how it is done.

Installing a Blank Template into the DS-1

1 First locate the 8 screws attaching the template frame to the top of the DS-1. There are 4 screws that come in groups of 2 on each side. Remove these screws (and don't lose them!) using a properly sized Phillips-head screwdriver.

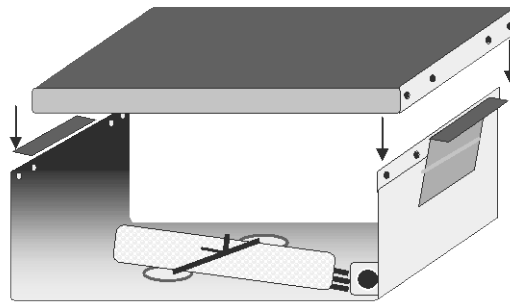


- 2** Remove the template frame of the DS- 1



Still got the screws?

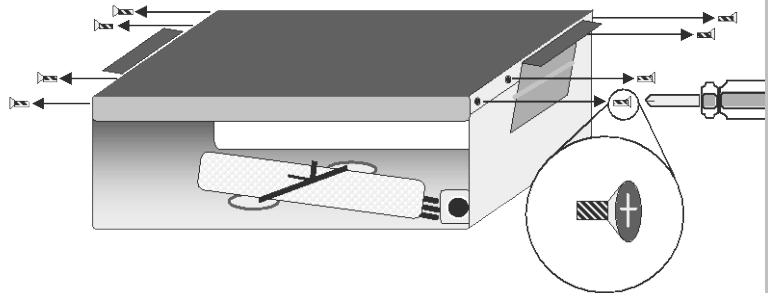
- 3** Replace the template frame with a blank template (Atomic Part # ATBLANK – purchased separately).



Still got the screws?

- 4** Replace the 8 screws. **(Whew!)** You can now load the DS-1 into the Reactor as usual *.

The Reactor is now ready to be used with a Pro-rack or foot controller style modeler



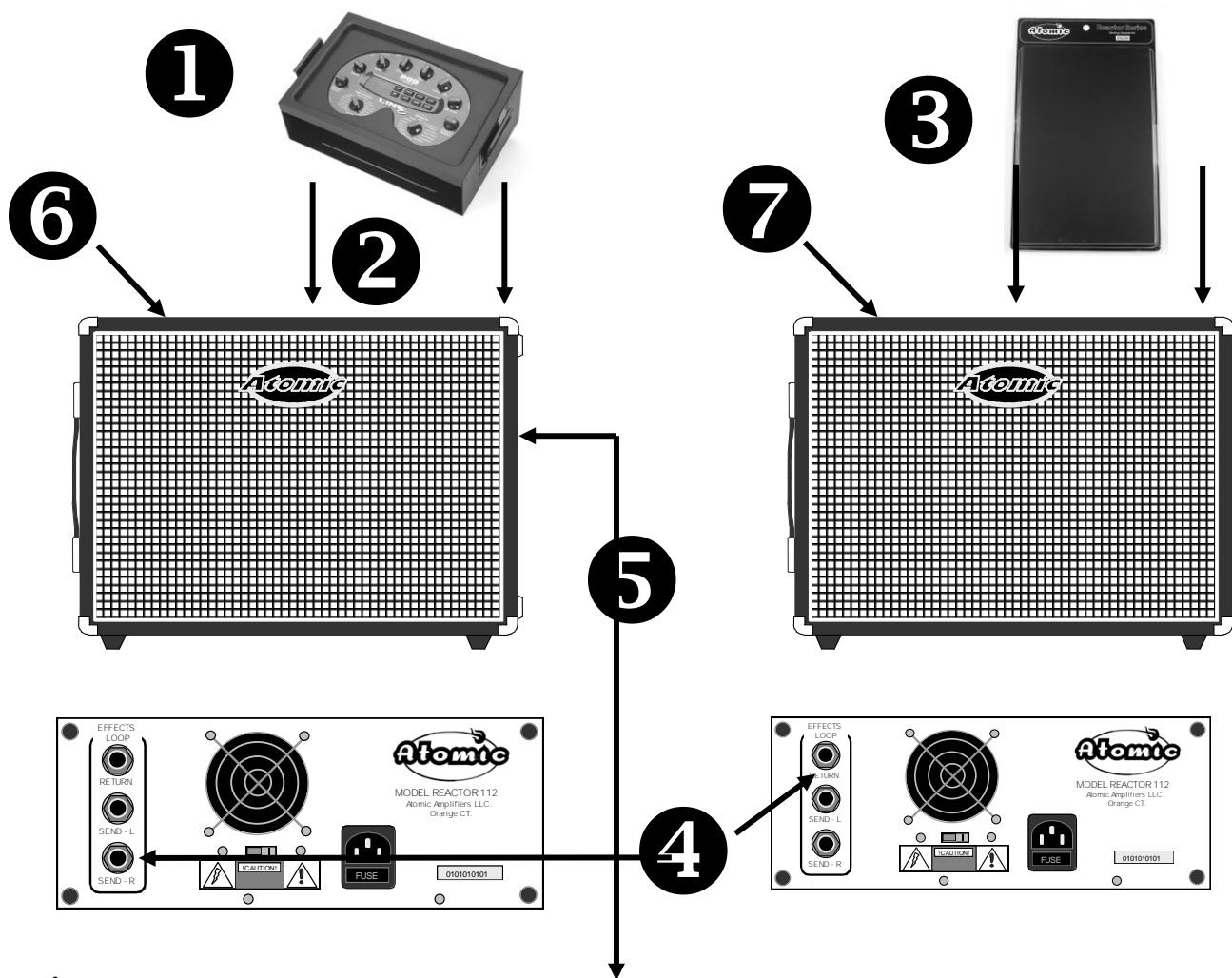
- * **NOTE! When bypassing the DS-1, the "RETURN" input on the rear jack panel of the Reactor 50 112/212 should be used as the Reactor's main input, (see pages 11-14). Inserting a jack into the RETURN puts the Reactor in "Direct Mode" and automatically cancels out the open audio cables from the DS-1.**

Return the DS-1 into it's place in the Atomic Amp with a snap – and that's it!

Turn the Master-Volume-Control on the rear of the Atomic Amp down. Connect the amp to your favourite mains socket. Turn on the Power Switch (red), wait the obligatory 30 seconds until the tubes are warm. Now turn the Stand-By switch on (blue) and adjust the gain level on the Master-Volume the Atomic Amp and your Modeler and you will hear those fantastic warm, crisp Guitar/Amp sounds blow your tootsies off!

For Rich Kids: If you want a really professional stereo solution, buy a second Atomic Reactor amp. Connect the Send-R-Output from the first Atomic Amp (the one with the Modeler!) with the Return-Jack on the rear of the second Atomic Amp.

Desktop Modeler in Stereo



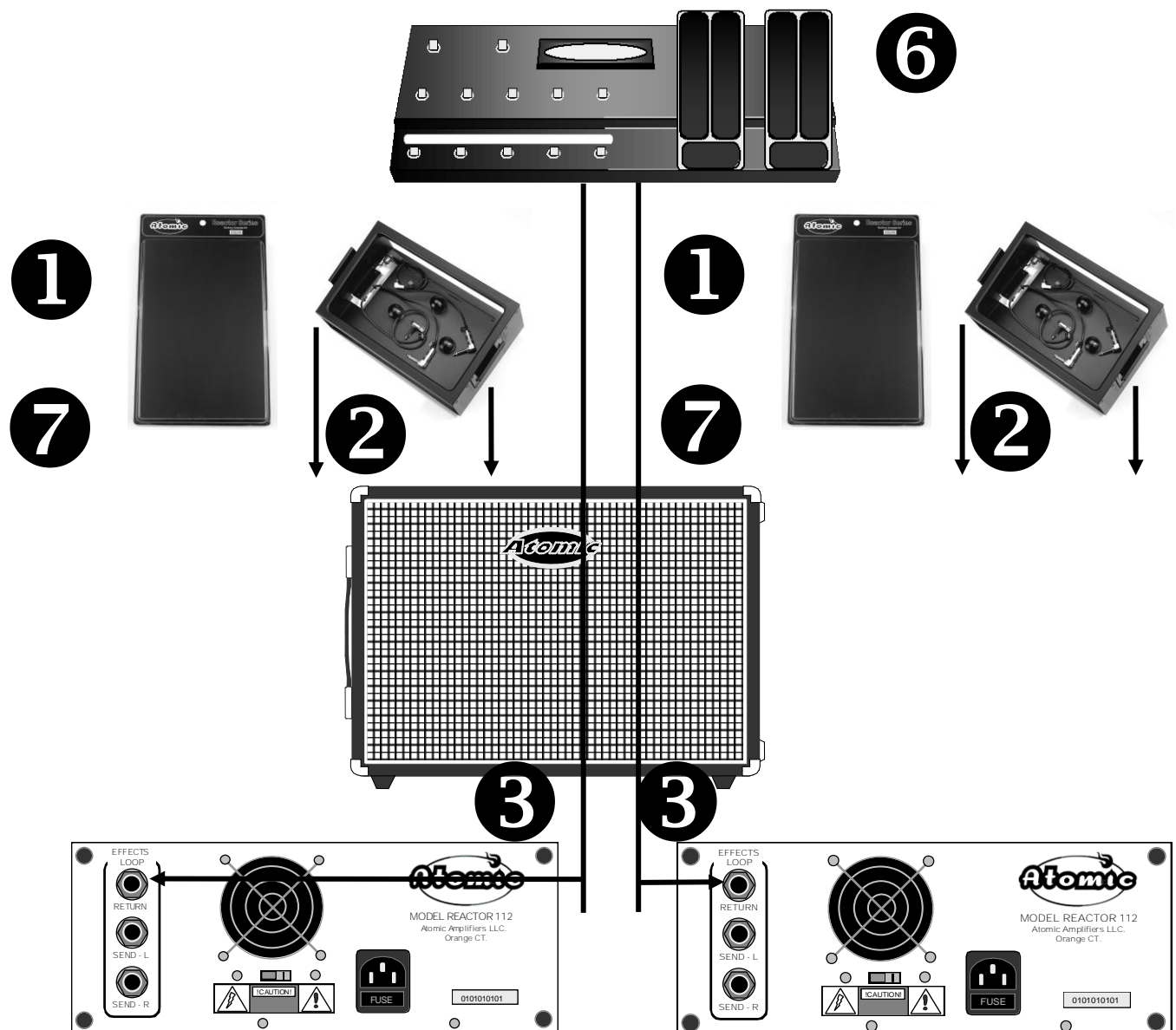
* PLEASE NOTE!

If you wish to use a pair of Reactors in MONO, simply use the SEND - L output instead of SEND - R.



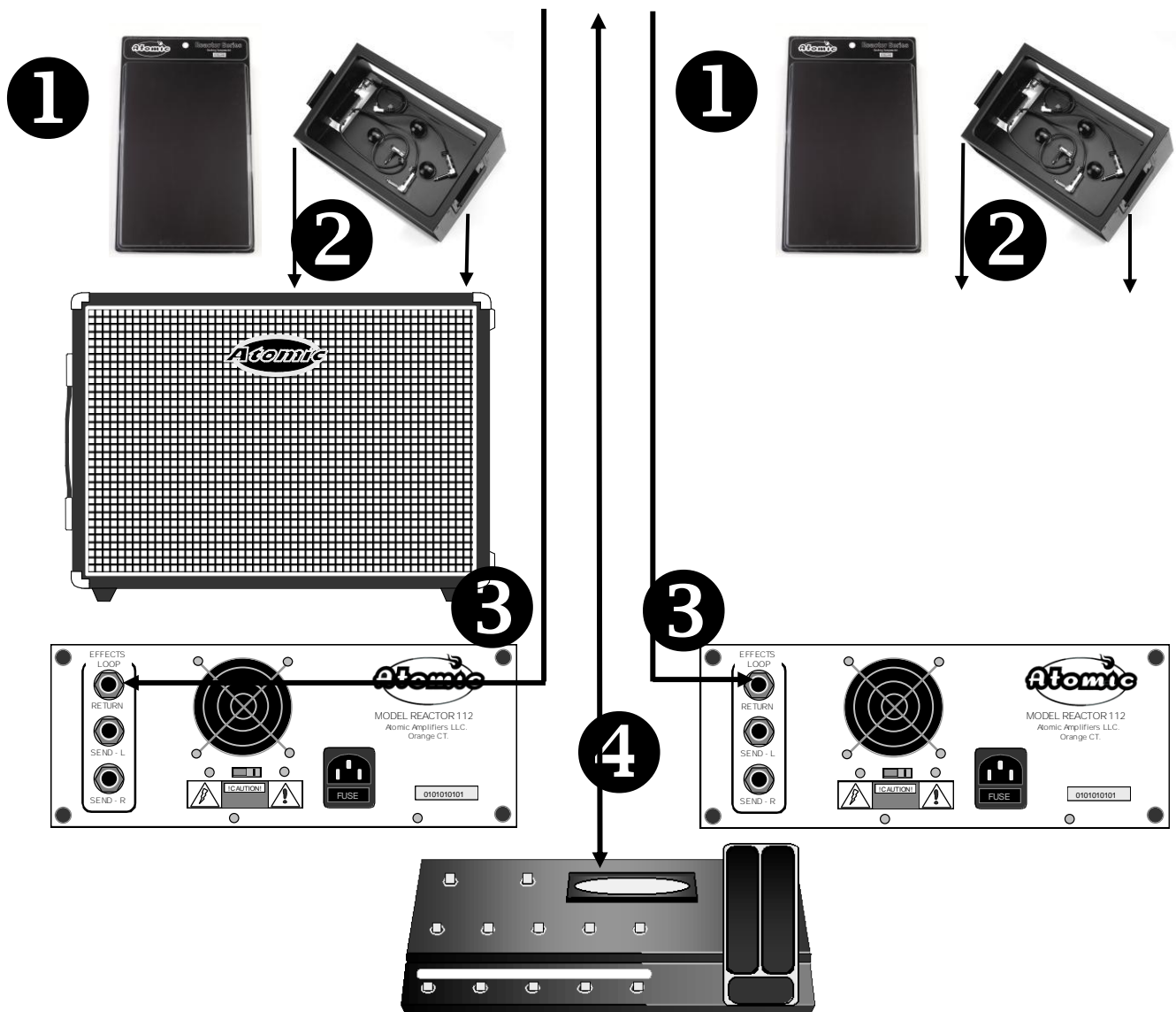
- 1 After obtaining the proper template load your modeler into the DS-1 that comes provided with your Reactor 50 112/212.
- 2 Load the DS-1 into the docking bay located in the top of Reactor #1, making sure that the dock locks click into position.
- 3 Install a blank template onto the Reactor #2's DS-1. Then load the DS-1 back into the Reactor.
- 4 Run a standard shielded 1/4 inch cable from Reactor #1's Send R on the rear panel to the Return on Reactor #2's rear panel.
- 5 If using a foot controller with your modeler, connect it as normal using the connector access port located on the rear of the reactor.
- 6 Turn on Reactor #1s power switch (it should light up). Your modeler should power up at the same time as the amp.
- 7 Turn on Reactor #2s power switch (it should light up). Later turn on by.
- 8 Bring up the levels on your modeler and switch to some of your favorite presets.

Floorboard Style Modelers



- 1** Using two Reactor 50 112/212s Install blank templates onto the DS-1 docking units.
- 2** Replace the DS-1's back into the docking bays located in the top of the Reactors making sure that the dock locks click into position.
- 3** Plug the Left and Right outputs of your Foot Controller style modeler or preamp into the pair of Reactor's RETURN inputs.
- 4** If using outboard effects pedals or devices with your modeler, connect them as normal per the manufacturer's instructions.
- 5** It is a good idea to make sure the output levels are turned down on your modeler.
- 6** Turn the modeler's power on.
- 7** Turn the Reactors power switches to the ON position (they should light up).
- 8** Bring up the levels on your modeler and switch to some of your favorite presets.

Pro Rack Type Modelers or Preamps



- 1** Using two Reactor 50 112/212s Install blank templates onto the DS-1 docking units.
- 2** Replace the DS-1's back into the docking bays located in the top of the Reactors making sure that the dock locks click into position.
- 3** Plug the Left and Right outputs of your Pro-Rack style *modeler or preamp* into the pair of Reactor's RETURN inputs.
- 4** If using outboard effects pedals or devices with your modeler, connect them as normal per the manufacturer's instructions
- 5** It is a good idea to make sure the output levels are turned down on your modeler.
- 6** If using outboard effects pedals or devices with your modeler, connect them as normal per the manufacturer's instructions.
- 7** Turn the Reactors power switches to the ON position (they should light up).
- 8** Bring up the levels on your modeler and switch to some of your favorite presets.

Connecting an external Loudspeaker Box

On the rear side of the Atomic Reactors 50 112/212/50 and the 212/50 is a Output Jack for an external Loudspeaker Box. The impedance should not exceed 8 Ohms, use a professional loudspeaker cable **not** a guitar cable which can melt and burn. The red push-button "Internal ON/OFF" is there to turn the internal loudspeaker on or off, when an external box is connected. This button must be turned on when **no** loudspeaker box is attached.

Adjusting and replacing the Amplifier Tubes

The Atomic Reactor uses an internal bias adjustment for both tubes (6L6GC from the Slovakian manufacturer JJ). When tubes from other manufacturers are being used, a bias adjustment may be necessary to keep getting the maximum from you Atomic Reactor. Do not think of doing this yourself; get a qualified professional Service Engineer to do it. Inside the amplifier there are high voltages (up to 400 Volt) being used. If one of the tubes should fail always replace both tubes at the same time. Always use a matched pair! The third tube is a 12AX7 (ECC83), which takes over the role of the phase inverter. This tube is not suffer any deterioration. All tubes should only be replaced by the same type.

Fuse

Under the mains cable socket on the rear side of the Reactor, you will find the fuse. If this should ever blow, replace it with same type: 1,6 A 230 - 250 V.

Guarantee

The warranty time is 24 months, starting from the receipt of purchase. This does not include the tubes, which have a natural wear lifespan.

We've saved the most important information for the end

Get out and have some fun, make some good music and enjoy your new setup.



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