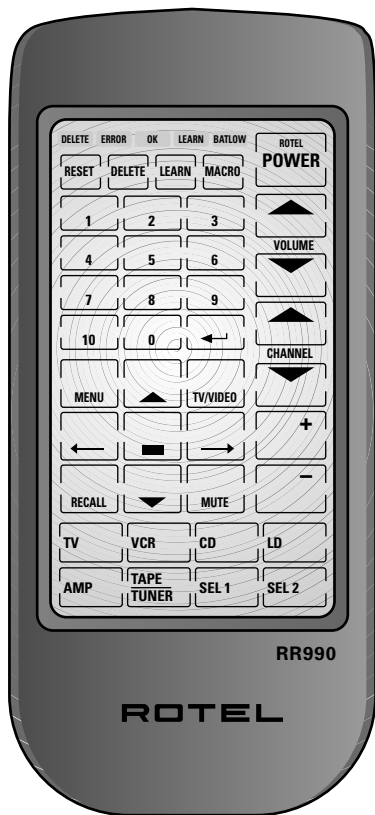


ROTEL®



RR-990 Remote Control Owner's Manual

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INTRODUCTION

Thank you for placing your confidence in Rotel.

We're sure you'll find our RR-990 Remote System Controller a significant improvement over conventional remotes in overall convenience and ease of operation. It's a comprehensive one-remote solution to coffee table clutter without the "multi-button madness" imposed by most other remotes.

Please take a few moments to read this user guide. You'll find the time well spent as it will significantly shorten your search for remote control sanity.

Welcome to the world of Rotel!

A Definition or Two

The RR-990 uses a flat LCD (Liquid Crystal Display) touch screen instead of the individual buttons you'll find on a conventional remote control. However, we're old fashioned enough to refer to each individual "touch area" on the panel as a **button**.

And, because the LCD panel display changes when you select different components, we'll refer to each of the eight individual views as component **Control Panels**. You can view them by touching one of the eight **Component Selector** buttons located at the very bottom of the touch screen.

Some Preliminary Precautions

- The RR-990 is surprisingly rugged but it's not indestructible. So please don't drop it — particularly not on a concrete floor! With normal care, the RR-990's low maintenance design will let you enjoy its convenience for years to come.

- Although the RR-990's LCD touch panel is water-resistant, the RR-990 itself is *not* a submarine. As much as you might appreciate a good bowl of punch or a refreshing dip in the hot tub, the RR-990 won't. You'll enjoy its benefits much better if you don't drown it.
- And the RR-990 isn't a pincushion, either. Please keep sharp objects away from it, particularly from the LCD touch screen. That means you shouldn't use a pen-point to press a button. Watch out for sharp fingernails, too!
- As you no doubt already know, don't put the RR-990 in direct sunlight or expose it to high temperatures. Extreme cold can be particularly destructive as condensation can form on critical circuits as they warm up after a taste of the Arctic. Moderation is the key word here.
- When the RR-990 needs a bit of cleaning, use a soft, lint-free damp cloth. Don't use abrasive cleaners. Or steel wool. Or harsh detergents either. And make sure the rear panel Function switch is Off whenever you clean the RR-990. (We'll show you why later.)
- Above all, don't try to take the RR-990 apart. There isn't anything inside you can fix anyway and disassembly will void the warranty.

Now that we've given you all the "bad news," let's get on to the good stuff. You'll be happy to know there's a lot of it!

1 – BASIC ORIENTATION

Out Of The Box

Remove the RR-990 and the package of 4 AAA batteries from the packing material.

Turn the RR-990 over and slide the cover off the battery compartment by putting your thumb on the arrowhead and pushing in the indicated direction.

Place the four AAA batteries inside (follow the polarity drawing on the bottom of the compartment) and replace the cover. **MAKE SURE** you install the batteries correctly! Otherwise, you could inadvertently damage the RR-990.

Your First View

When you turn the RR-990 over again, you'll see the component Control Panel displayed on the LCD screen is actually divided into three areas:

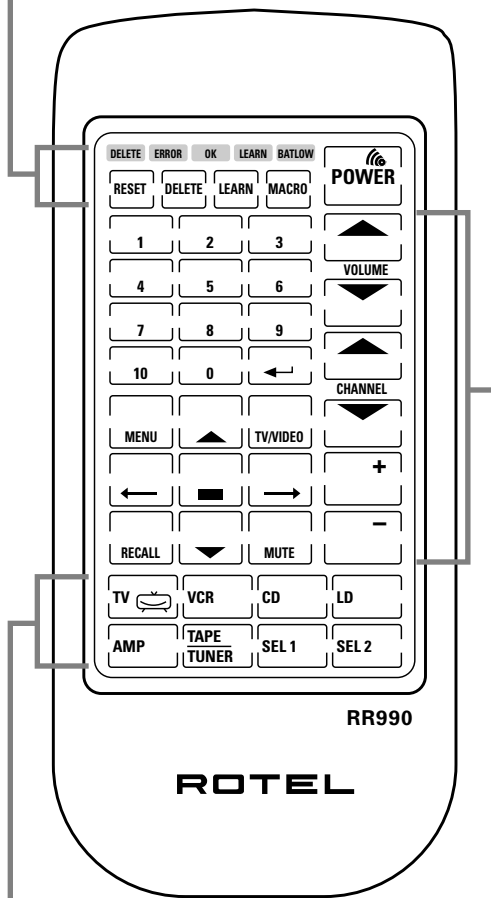
1. A top section containing five always-visible buttons. Four are small ("Reset," "Delete," "Learn," and "Macro") while "Power" is larger. There are also five hidden indicators ("Delete," "Error," "OK," "Learn," and "BatLow") that appear only to confirm a requested function or to alert you to something you will need to know as you're using the RR-990.
2. A changeable center section (most of the LCD screen) with the operating buttons for a particular component. You can choose to view all of the available buttons at once (**Complete mode**) or only essential ones (**Basic mode**). There's also a **Custom mode**. You'll find out more about these options just a bit further on.
3. An always-visible bottom section with two rows of selector buttons for different components. You can tell what component you're currently operating by noting which selector has an icon displayed to the right of the ID.

Top Section

5 hidden status indicators and 5 control buttons.

Center Section

Control Panel with functions for each component. Control Panels change depending on which component is selected. And, you can customize the appearance of each Control Panel.



Bottom Section

8 Component Selector buttons. Selecting a different component causes the Control Panel display to change accordingly. Note the icon displayed on TV button, indicating that this component is activated.

Playing Around: Viewing Modes

Take a moment to get familiar with RR-990 now.

1. Press each of the component selectors quickly. You'll hear a confirming "double beep" and the center portion of the screen will change as you select a different component. Notice that each selector has a hidden icon that appears only when you've activated the Control Panel for that component. Also, notice that each component's Control Panel takes up almost the entire center portion of the screen.
- 2) Now, press and hold the active component selector (the selector with the visible icon) for about two seconds. You'll hear a single confirming beep (if "beep" is enabled — see below) and the control panel will change to show only essential buttons. This is the **Basic** viewing mode we spoke of earlier. Press and hold the same component selector again until you hear another beep and you're back to the **Complete** mode view. It's your choice.

The RR-990 will remember the view you've chosen for each individual component's Control Panel. This lets you select, for example, a **Complete** view for your VCR, a **Basic** view for your TV, and a **Custom** view for your laserdisc player, etc.

To "Beep" Or Not To "Beep"

You can turn off the confirming beep by simply pressing the component selector a second time immediately after selecting the component. To reinstate the beep, just press the same selector once more!

NOTE: Look for the "beep" icon in the upper right hand corner of the POWER control. If it's there, the beep is enabled; if not, it isn't.

Custom Screen Configuration

As we've already explained, the RR-990 gives you three ways to view each component's control panel: **Standard**, **Basic**, and **Custom**.

Let's look a bit more closely at the **Custom** viewing mode.

You may have noticed that the **Standard** mode was very complete — perhaps too complete for your use — while the **Basic** mode just didn't provide quite enough flexibility for your system.

The **Custom** mode gives you the opportunity to configure each of the RR-990's eight component Control Panels to suit your exact needs. The **Custom** view option lets you delete just the buttons you decide are unnecessary from that component's **Standard** Control Panel. Here's how:

NOTE: You must begin to customize a Control Panel from the Complete viewing mode.

1. Press the Component Selector for the component Control Panel you want to customize. (If "beep" is enabled, you'll hear a double beep as you switch to the desired Control Panel.)
2. Hold the appropriate Component Selector for approximately six (6) seconds. The following things will happen as you do:
 - The "Beep" icon will disappear from the **Power** button.
 - The **Basic** screen will appear accompanied by a beep (notice that the beep icon has reappeared).
 - The **Standard** screen will reappear accompanied by a beep.
 - A **Standard Edit** screen will appear accompanied by three beeps.

Look at the **Standard Edit** screen and notice that the Component Selectors at the bottom are all blinking. The only item *not* blinking is the icon associated with the component Control Panel you are about to customize.

3. Touch any button you think you *won't* need. It will disappear and you'll hear a double beep in confirmation.
4. Made a mistake? Don't worry - just press the same point on the LCD touch screen again and the button will reappear accompanied by a single confirming beep.
5. Continue this process until you've constructed the ideal Control Panel for the component you've chosen. (Don't worry about doing it perfectly the first time around. You can reenter **Edit mode** and reconfigure the Control Panel any time.)
6. When you've finished editing the Control Panel, simply press the Component Selector again. The RR-990 will beep three times to confirm that it is leaving **Edit mode** and will show your newly-customized Control Panel. Congratulations, you did it!

A Shortcut With A Long Explanation

You can edit the **SEL 1** and **SEL 2** Control Panels just as you would any other Control Panel (**TV**, **VCR**, **CD**, etc.). However, **SEL 1** and **SEL 2** allow you to quickly configure a Custom Control Panel based on any of the RR-990's other Control Panels.

This may be particularly useful if you've decided to use **SEL 1**, for example, as the Control Panel for another VCR. If this is the case, simply enter into Control Panel Edit mode for **SEL 1** by following steps 1 and 2 above.

When you see the Component Selectors at the bottom of the LCD panel blinking, simply touch the Component Selector (**CD**, for example) whose Con-

trol Panel functions are most similar to the one you need for **SEL 1**.

You'll notice that **SEL 1**'s Control Panel changes immediately into a duplicate of the Control Panel for the Component Selector you've just touched.

Now, just delete unneeded buttons as shown in steps 3, 4, and 5 above until you're satisfied with your new creation. Then touch the **SEL 1** Component Selector once again. You've just "locked in" your new Custom Control Panel and left Edit mode.

And it took far less time to do it than to read how, didn't it?

2 - INITIAL PROGRAMMING

Now that you've gotten to know your way around the RR-990's LCD screen, it's time to get really adventurous and put this knowledge to real use! After all, this *is* the reason you bought the RR-990 in the first place, isn't it?

Here's Why . . .

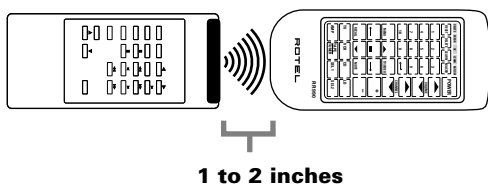
As it comes from the factory, the RR-990 is a lot like a very precocious 3 year old: It's got a lot of potential but it doesn't know very much. You need to send it to school. However, in this case, you're also its teacher.

The RR-990 contains no internal control codes. It is truly a blank slate: You can point it at anything, press all the buttons you want, and it will do . . . *nothing*. It needs to be programmed first. You're elected.

Here's How . . .

1. Gather that confusing pile of remote controllers from your coffee table. Place them gently near the RR-990. Make sure the area you've chosen isn't in direct sunlight or lighted by very bright halogen lamps, etc. (The RR-990 learns best in normal to slightly dim room lighting.)

2. Make sure you've selected a **Complete, Basic,** or **Custom** view for each of the RR-990's eight Control Panels. (If you're only using the RR-990 to replace 5 other remotes, you need only select the appropriate view for five Control Panels, etc.)
3. Turn the **Function switch** on the RR-990's rear panel to the **On** position. One end of an open paper clip makes a handy tool!
4. Select the desired Control Panel by pressing the appropriate Component Selector at the bottom of the RR-990's LCD touch screen.
5. Press the "**Learn**" button (top row of the LCD touch screen) for approximately 2 seconds. (The **Learn** indicator will come on: You're now in the Learn mode.)
6. Aim the emitter end of the original remote controller (the end you normally point at whatever component you're trying to control) at the receptor end of the RR-990 (the bottom of the unit), in a "head to tail" configuration an inch or two away.



7. Continuously press the button on the RR-990's Control Panel that you want to program with a command code from the original remote.
8. At the same time, continuously press the button on the original remote to generate the signal you want the RR-990 to learn.
9. The RR-990's **Learn** indicator will blink to signal you that it is learning the command.
10. When the RR-990 learns that command, the **OK** indicator will come on to signal successful completion of that cycle.
11. To program other buttons on the same Control Panel, simply repeat steps 7 and 8 above.
12. To end a learning session, press the "**Learn**" button again. The **Learn** indicator will go out. (As a safety measure, the RR-990 will automatically exit Learn mode if no button is pressed within two minutes.)
13. To prevent accidental erasure, make sure you place the rear panel **Function switch** in the **Off** position.

Troubleshooting

Occasionally, the learning process goes awry. (Remember your own school days?) Here are some notes to help if you encounter difficulties:

The Error indicator:

- If you see an **Error** indicator during programming, repeat steps 7 and 8.
- If the **Error** indicator blinks, the RR-990's memory is most likely full and you will need to delete some button functions from memory before the RR-990 will be able to learn new commands. (See *Deleting Individual Function Commands* in Section 3 for more details.)
- If the **Error** indicator shows steadily after several tries, your original remote controller may use an incompatible data format that the RR-990 can not learn. Occasionally, the original data format can temporarily "freeze" the RR-990. If this happens, just remove and immediately replace the batteries. This will restore the RR-990 to its original operating status.
- If problems persist, ask your dealer for assistance or call your Rotel distributor and ask for Technical Support.

Continuous Control Codes:

- Occasionally, one of the buttons on an original remote controller generates a very long command code or continuously generates a shorter command sequence over and over again. (This sometimes happens with “Volume Up” and “Volume Down” commands for example.)
- The RR-990 accepts code sequences up to 20 seconds in duration but if you’re continuously pressing a “Volume Up” key on the original remote until the RR-990 signals you that it has learned the code completely, you may never see the RR-990’s “OK” indicator come on.
- If this happens, simply press the problem key on the original remote *once* while holding down the RR-990’s corresponding button. This will often produce a much shorter code string that the RR-990 will have no trouble learning.
- In a very few cases, you may find that the RR-990 doesn’t emulate a continuous or “repeated” command from the original remote controller perfectly. Experiment with the learning sequence by pressing the original remote’s problematic key several times very quickly during the RR-990’s learn cycle. This will generally solve the problem.

Now That Your RR-990 Is Smarter

Once you’ve programmed the RR-990 with commands from several original remote controllers, you’ll really begin to appreciate its flexibility.

As you use it, you’ll notice the “OK” indicator flash at the top of the screen whenever you press a programmed button on any Control panel. This is simply the RR-990’s way of telling you that the key you’ve just pressed has been programmed successfully and that the RR-990 is sending out a command to the associated component for execution.

If you press a button and see the “Error” indicator instead, the RR-990’s memory for that particular button is empty. Most likely, you simply forgot to program it while in Learn mode. Just follow the programming instructions in *Here’s How* above.

If you see the “BatLow” indicator, replace all four (4) AAA batteries as soon as possible. A backup battery will preserve all the command codes you programmed into the RR-990 but you will have to reconstruct any Custom Control Panels afterwards.

NOTE: Always replace all four AAA batteries at the same time. We also suggest that you remove the AAA batteries if you’re not going to be using the RR-990 for an extended period (2 months or more).

3 – ADVANCED FUNCTIONS

Deleting Individual Function Commands

Here’s how to delete the command codes for a particular key in a Control Panel:

- 1) Choose the Control Panel by pressing the appropriate Component Selector at the bottom of the LCD touch screen.
- 2) Press the “Delete” button at the top of the LCD screen for about two (2) seconds to enter Delete mode. (The **Delete** indicator at the very top of the screen will flash.)
- 3) Press the corresponding button for the control codes you want to delete. (The **Delete** indicator will go out.)
- 4) Repeat steps 2 and 3 for every function you wish to delete.
- 5) You can exit Delete mode at any time by simply pressing the “Delete” button.

Creating Macros

A “macro” is simply a series of individual commands triggered by pressing one button. Macros make operating a complex home entertainment system much easier.

For example, think of what you go through to play a videotape: You turn on the TV, turn on the VCR, select the TV input connected to the VCR, and, finally, put the VCR into Play mode. (This assumes, of course, that there’s a tape already in the VCR.) That’s four separate commands — and it may take you as many as six pushes on various buttons to execute them!

A “macro” makes this simpler by executing all the needed commands with just one push of a button!

Here’s how to construct a “macro”:

1. Place the RR-990’s rear panel **Function switch** to the **On** position.
2. Press “**Learn**” at the top of the LCD screen. (The **Learn** indicator will appear.)
3. Press “Macro” to enter the Macro Learn mode.
4. Select a Control Panel by pressing the corresponding Component Selector at the bottom of the screen. (TV, for example.)
5. On the Control Panel you’ve just selected, choose an *unprogrammed* button and press it. This button becomes the “initiator” of the macro you’re about to program into the RR-990. (The “**Surround**” button may be a good choice.)
6. Choose the macro’s first command by pressing the appropriate previously *programmed* button (“**Power**,” for example.)

7. Choose the macro’s next command by pressing another *programmed* button. This button may be in the same Control Panel or a different one. If it’s a different Control Panel, just press the appropriate Component Selector at the bottom of the screen and *then* press the correct command button.
8. When you’ve programmed all the individual commands you want (up to the RR-990’s limit of 10), touch the “**Macro**” button once more to finish it.
9. Touch “**Learn**” again to exit the Macro Learn mode.
10. Return the rear panel **Function switch** to its **Off** position.

You can create a additional macros by repeating the steps above. Just make sure that each new macro has a different “initiator” button and there will be no confusion.

NOTE: Macros can be incredibly flexible time-savers. We suggest you experiment with different functions. Use a macro to turn on all the components of your home entertainment system, another to turn on just a TV and VCR for quiet movie viewing, yet another to turn on just your audio components if you want to listen to CD, etc. You can create macros to mute volume, turn down or raise the lights, draw or open the drapes, etc. Of course, you’ll need ancillary equipment to do some of this but the RR-990 is ready and able to create a string of commands for any product that responds to infrared pulses so don’t be afraid to exercise your creativity.

Using Macros

Once you've created your macro "dream world," you can use each one easily by pressing "Macro" at the top of the screen and then the appropriate "initiator" button described in step 5 above. All the commands contained in that macro will be transmitted to the appropriate components without a second thought on your part!

Convenient, isn't it?

Clearing Memory

WARNING: Make sure you really want to do this before you try because this operation will erase everything you've programmed into the RR-990. And we mean everything — individual button commands, macros, the works. Don't say we didn't warn you!

1. Turn the rear panel **Function** switch to the **On** position.
 2. Press the "**Reset**" button at the top of the screen for more than two (2) seconds.
 3. Kiss everything "Good-bye"!
 4. Return the **Function** switch to its **Off** position.
-

NOTE: You'll probably use this function only if you're erasing early programming mistakes or you're passing the RR-990 on to a friend or family member for use with totally different components. As we said, be cautious.

One Year Limited Warranty

Rotel of America warrants this product to be free of defects for a period of one year from date of purchase.

This warranty gives you specific legal rights which may vary from state to state.

For warranty service, contact your authorized Rotel dealer or call the Rotel Technical Support center at:

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