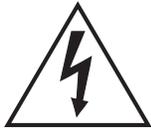
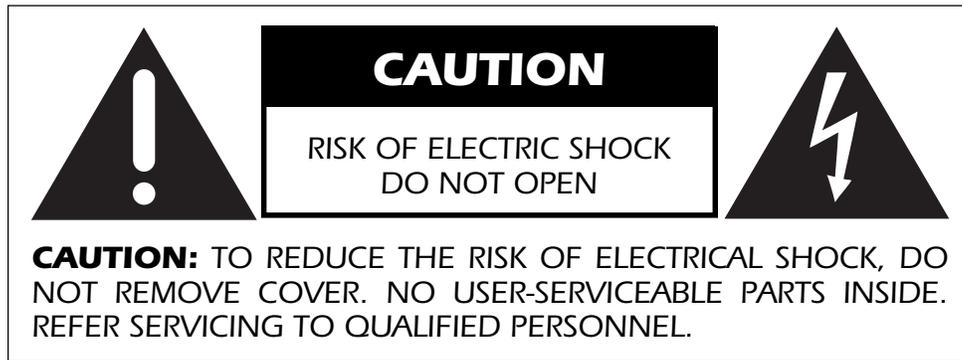


Owner's Manual

N°390S
CD
Processor

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



Marking by the “CE” symbol (shown left) indicates compliance of this device with the EMC (Electromagnetic Compatibility) and LVD (Low Voltage Directive) standards of the European Community.

NOTICE

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 interference to radio or television reception, which can be determined by turning the equipment on and off, 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 the 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.

CAUTION: Changes or modifications to this equipment not expressly approved by the manufacturer could void the user’s authority to operate the equipment.

The information contained in the manual is subject to change without notice. The most current version of this manual will be posted on our web site at <http://www.madrigal.com>.

Important Safety Instructions

Please read all instructions and precautions carefully and completely before operating your Mark Levinson® preamplifier.

1. **ALWAYS** disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.
2. This product must be terminated with a three-conductor AC mains power cord which includes an earth ground connection. To prevent shock hazard, all three connections must **ALWAYS** be used.
3. AC extension cords are **not** recommended for use with this product.
4. **NEVER** use flammable or combustible chemicals for cleaning audio components.
5. **NEVER** operate this product with any covers removed.
6. **NEVER** wet the inside of this product with any liquid.
7. **NEVER** pour or spill liquids directly onto this unit.
8. **NEVER** block air flow through ventilation slots or heatsinks.
9. **NEVER** bypass any fuse.
10. **NEVER** replace any fuse with a value or type other than those specified.
11. **NEVER** attempt to repair this product. If a problem occurs, contact your Mark Levinson® retailer.
12. **NEVER** expose this product to extremely high or low temperatures.
13. **NEVER** operate this product in an explosive atmosphere.
14. **ALWAYS** keep electrical equipment out of the reach of children.
15. **ALWAYS** unplug sensitive electronic equipment during lightning storms.

From all of us at Madrigal Audio Laboratories, thank you for choosing your Mark Levinson N°390S CD Processor.

A great deal of effort went into the design and construction of this precision device. Used properly, it will give you many years of enjoyment.

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Unpacking and Placement

Unpacking the N°390S

Unpack your N°390S CD Processor and remove all accessories from the carton.



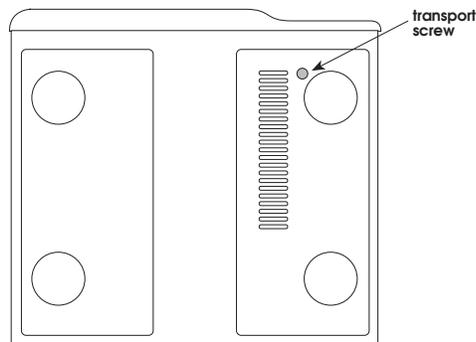
Important!

Keep all packing materials for future transport of your N°390S. Shipping your new component in anything other than its purpose-designed packing material may result in damage that is not covered by the warranty.

Included with your new Mark Levinson CD processor is a pair of knit, white gloves designed to assist you in the initial unpacking and placement of your new purchase. Please accept them as a token of our appreciation for having purchased one of our products.

Remove the Transport Screw

Place the N°390S CD Processor upside-down on a soft, clean surface. Remove the transport screw from the bottom of the unit and save it with the packing materials for future use.



7



Warning!

The transport screw must be removed before operating the N°390S, since it immobilizes the transport mechanism during shipping to prevent damage. This screw must also be replaced before shipping the unit.

Placement of the N°390S

The N°390S should be placed close to your digital audio processor, thus keeping interconnect cabling reasonably short. It may be placed on a shelf or in a cabinet where it is convenient to operate, but should not be rack mounted, so as to leave access to the rear panel power switch.

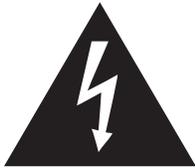
The N°390S is designed for continuous operation—hence the standby button on the front panel rather than a power button. However, a rear-panel power switch is provided for your convenience should you want to disconnect the unit from the AC mains (as when taking a vacation, for example).

Drawings are included in this manual to facilitate special installations and custom cabinetry (see *Dimensions*).

Operating Voltage & Frequency

The N°390S CD Processor is set at the factory (internally) for 100V, 120V, 200V, 220V, or 240V AC mains operation as appropriate for the country in which it is to be sold. Make sure that the label on the rear of the N°390S (adjacent to the power cord) indicates the correct AC operating voltage for your location, as attempting to operate the N°390S at an incorrect voltage can damage the unit.

The N°390S CD Processor is also set at the factory for operation on either 50 or 60 Hz AC line frequencies, as appropriate for the country in which it is to be sold. It will not operate if it senses an incorrect line frequency.



Warning!

Neither the voltage nor the line frequency setting may be changed by the user. There are no user serviceable parts inside the N°390S. Only qualified, authorized service personnel may open the N°390S CD Processor, as hazardous voltages exist within the unit.

If the AC mains voltage or frequency indicated on your N°390S is incorrect, please contact your local, authorized Mark Levinson dealer or distributor.

The N°390S can easily be powered by a normal 15-ampere AC mains line. If other devices are also powered from the same AC line, their additional power consumption should be taken into account.

A Quick Start...

We recognize that many people are understandably eager to begin listening to their new components, and that reading the manual is often done (if at all) at a later time—perhaps while listening to music with the new product itself. We *strongly* recommend that you read this manual thoroughly, as the N°390S CD Processor incorporates many unusual features that enhance its operation.

Fortunately, we can help you get some music up and running on your system quickly, so that you may begin enjoying your new CD player while reading more about it. The goal here is simply to make some music as quickly as possible. The following procedure assumes that you have a relatively conventional system and it is already connected with the exception of the N°390S (e.g., preamplifier to power amplifier, to speakers, etc.).

1 Turn off your associated components

This minimizes the opportunity for a momentary electrical surge disturbing your system while making connections. If you have a large power amplifier, allow its power supply to fully discharge before proceeding (which may take as long as several minutes, depending on its design).

2 Remove the transport screw from the bottom of the N°390S

If you have not done so already, remove the knurled transport screw from the bottom of the N°390S now. Be sure to save it and all packing material for possible future use. (*Shipping the N°390S without proper packing material and without the transport screw in its proper position may cause damage to the unit that would not be covered by the warranty.*)

3 Connect the N°390S to AC power

Connect the AC cord to the N°390S at the receptacle on the rear panel, and then to your AC outlet. Then turn on the power switch just above the AC power receptacle. (The international symbol for “on” is a single vertical line: I. “Off” is symbolized by a circle: O.) The N°390S will take a few moments to initialize and will then be ready to use.

- 4 Connect either the XLR or the RCA analog outputs on the N°390S to an appropriate input of your preamplifier**
 When properly implemented, balanced interconnection via XLR connectors and high quality balanced cables offers superior performance, and is preferred to single-ended RCA interconnection. Both sets of outputs on your N°390S have been optimized to ensure maximum compatibility in a wide range of systems. (*Note that you should never connect a line-level component such as a CD player to a phono input on a preamplifier. Although no damage is likely to result to either CD player or preamplifier, the sound will be badly distorted and the volume may be much louder than you expect.*)
- 4a If going direct from the N°390S to an amplifier!**
 See *Special Functions* setup on page 52 to set the N°390S to variable output mode.
- 5 Power up the rest of the system, leaving the power amplifiers for last**
 Always turn the power amplifier(s) off first, and on last. This good habit minimizes the opportunity for unexpected transients to be passed to your loudspeakers. Another good habit is to reduce the volume on your preamplifier to minimum value before you restore power to the system. When the N°390S is in its variable preamp mode, it powers up at a low volume to minimize sudden changes in volume.
- 6 Load a disc in the drawer and press Play; slowly raise the volume on your preamplifier**
 Congratulations! You should now be able to enjoy your favorite music while reading the rest of this manual. (*Please, do read the rest of this manual.*)

Break-in period

Although your Mark Levinson N°390S CD Processor delivers outstanding performance straight out of the box, you should expect to hear it continue to improve as it reaches its normal operating temperatures and its various components “break-in.” It has been our experience that the greatest changes occur within the first 300 hours, as the N°390S reaches thermal equilibrium and capacitors become fully formed. After this initial break-in, its performance will remain quite constant.

The only exception to this rule is if power is removed from the unit for more than a few minutes, allowing it to cool down. Depending on the degree of cooling involved, you should expect a brief warm-up period before the N°390S’s sound quality is at its best. Unless your N°390S was allowed to become quite chilled, subsequent thermal re-stabilization should not take long.

Special Design Features

Congratulations on your purchase of the N°390S CD Processor. The Madrigal design team is confident you will enjoy the outstanding performance of the N°390S for many years. In case you are interested in technical details, what follows is a brief outline of some of the key technologies in your new CD player.

A New Generation

The task of a CD player is easy to define: it must recover the correct data from the disc and convert that data to a series of analog voltages with neither amplitude nor timing errors (sometimes called “jitter”). As simple as this sounds, achieving it in reality has been extremely difficult—as evidenced by the significant sonic differences between various CD players.

Conventional CD player design depends heavily on the quality of the oscillator used to control the rate at which the disc spins. This oscillator exists in an extremely “noisy” electrical environment close to the motor that spins the disc. The electrical noise introduces timing errors in the delivery of the digital signal that have come to be known as “jitter.” Subsequent handling of the digital audio signal in traditional CD player designs cannot improve upon this “jittery” signal, lacking a better reference. To the contrary, the various stages of signal processing between the laser pickup and the actual conversion to analog can only contribute additional jitter of their own.

The Mark Levinson N°390S leaps beyond conventional digital audio technology by employing a proprietary, closed-loop jitter-reduction system in conjunction with a double speed CD-ROM drive. Using a custom-made crystal oscillator with better than five part-per-million accuracy, the digital signal is relocked immediately before its conversion to analog, eliminating transport-related jitter from the digital audio signal. This same crystal oscillator controls the all-digital servo used to control the rate at which the disc spins, and the digital to analog conversion process.

In effect, the design of the N°390S turns the accepted *status quo* on its head. By placing the all-important reference clock immediately prior to digital to analog conversion, and slaving all the mechanical subassemblies to it rather than the other way around, the signal presented to the outputs of the N°390S is uncontaminated by electrically- or mechanically-induced jitter. The sonic advantages of this design are immediately apparent in the clarity, warmth and stunning dynamic contrasts exhibited by the N°390S.

Digital Servo Control The laser mechanism used in the N°390S uses all digital servo controls of its operations. Critical functions such as focus and tracking are handled completely in the digital domain with mathematical precision. A digital servo remains stable over time, never needing readjustment under normal conditions.

Digital Input/Output Versatility The N°390S CD player incorporates two digital inputs, allowing two external digital sources such as a laserdisc player and digital cable radio to benefit from the excellent digital processor incorporated within. The two most common digital interfaces are supported for the widest compatibility: EIAJ (sometimes called “TosLink™”) and S/PDIF coaxial, *via* an RCA connector.

Two high quality digital output configurations are also supported in the N°390S. A new complementary driver for the balanced AES/EBU electrical output delivers outstanding performance to the high quality XLR connector. A single-ended S/PDIF electrical output is also provided *via* an RCA connector. These digital outputs may be used to feed the input of digital recorders or an outboard digital processor, and they both benefit from the closed-loop jitter reduction circuitry described above. (In effect, they duplicate the functionality and performance of the corresponding outputs on a Mark Levinson N°37 CD transport.)

All digital interfaces have been carefully optimized to deliver the finest performance each interface standard allows. As a direct result, the N°390S performs optimally with any digital processor, without having to resort to techniques which would limit its compatibility with other products.

Industrial Design The N°390S shares the handsome industrial design of other Mark Levinson components such as the N°380 preamplifier. The combination of the hand-brushed, black-anodized aluminum faceplate and bead-blasted custom-machined buttons make operating the N°390S a tactile as well as a sonic pleasure.

A large, easily read display provides information as to the operational status of the N°390S from across the room, making the supplied remote control more genuinely useful than on products lacking such a display.

In keeping with its sophisticated design, the N°390S also incorporates a Madrigal-designed loading mechanism. Contrasting strongly with the bulky, plastic drawers commonly used, the slim 1/8 inch drawer is machined from a solid piece of aluminum and rides on highly polished bearings. Its variable-speed design opens and closes quickly, but without jarring the disc contained within, nor risking a jam from dislodging it.

Convenience Features

Too often, high performance CD players have eschewed convenience in the hopes of seeming more “performance-oriented.” While there were good arguments for such a “minimalist” design in the days of analog turntables, the time is long gone when the audiophile needed to give up operational convenience for musical performance. After all, convenience features in a digital product are largely a matter of writing appropriate software, and have no affect on the quality of the digital data itself.

The N°390S supports a variety of custom programming options, including “delete programming” wherein selected tracks are omitted from the playlist. This allows the user to skip the one or two songs on an otherwise good disc that have been overplayed *ad nauseam*. The N°390S will remember such programs for thousands of discs, should you want to save that many programs.

Communications Links

As with all Mark Levinson 30-series components, the N°390S incorporates a sophisticated inter-component communications bus. Unique among high performance audio systems, Mark Levinson 30-series components offer a degree of system integration that makes even complex systems a pleasure to use.

For example, bringing the N°390S CD Processor out of standby will also bring the Linked preamplifier and power amplifier(s) out of standby, and select the appropriate inputs on the preamplifier so that a CD can be enjoyed. Even a sophisticated system with many components can thus offer one-button simplicity of operation.

In short, the Mark Levinson N°390S establishes a new standard for performance and practicality among high end CD players and should be auditioned by anyone who desires the finest in digital audio.

Fully Balanced Design

The N°390S is fully ballanced in both the analog and digital domains. Information from the disc and single-ended digital inputs are immediately converted to balanced signals and routed to balanced DACs by way of an LVDS (Low Voltage Differential Signal) transmission line. This design technique, borrowed from separate Mark Levinson digital processors, preserves the faultless timing of the digital audio signal made possible by our Closed Loop Jitter Reduction (CLJR) system mentioned earlier in this manual.

An Arlon 25N® printed circuit board provides the foundation for the critical analog audio circuit. First used in the N°32 Reference Preamplifier, this superior material offers superb dielectric properties and helps the N°390S achieve remarkable performance with complex audio signals.

Design of the fully balanced DAC/analog output module follows the Mark Levinson tradition of rigorous component selection. An unusual hybrid design approach incorporating both advanced Surface-Mount and “through-hole” technologies, allows us to utilize the *optimum* part at each location in the circuit, without the constraints on parts selection normally associated with traditional PCB assembly practices. Every active device has been painstakingly selected for top technical performance, with final selections of top performing devices determined by numerous, controlled sonic evaluations.

Advanced Digital Filter Techniques

Just as with Mark Levinson separate Digital Audio Processors, such as our N°30.6 Reference, the N°390S incorporates advanced digital filter techniques carefully chosen to optimize the sonic performance of its on-board digital processor. Whether playing a CD, or decoding a digital signal received through an auxiliary input, sample depth is increased to *24 bits* and sample rate increased to *352.8 kHz or 384kHz* (input rate dependent) prior to conversion to an analog signal. This sophisticated “processing” of the digital signal before conversion (referred to variously as “unconversion”, “upsampling”, or “oversampling”) is a fundamental contributor to the excellent sound achieved by all Mark Levinson digital processors. The N°390S confirms its internal conversion rate on its front panel display each time a disc is loaded, or an auxiliary input is chosen and locked.

The N°390S also incorporates High Definition Compatible Digital® decoding to take full advantage of the resolution available from HDCD encoded 16-bit CDs. The HDCD format retains more of the resolution inherent in modern high resolution recordings than can be accommodated by the normal CD standard by encoding information more efficiently within the 16-bit space available on the disc.

Digital to Analog Conversion

Digital to analog conversion within the N°390S is performed at an extraordinarily high level and features a Madrigal-developed, balanced implementation of the Analog Devices AD1853—a new class of *multi-bit* Sigma/Delta DAC devices delivering superb technical performance. In addition to its unusual multi-bit architecture and unlike typical Sigma/Delta devices, the AD-1853 has a differential current output stage, which allows us to optimize the critical current-to-voltage(I/V) conversion stage with dedicated operational amplifiers possessing superlative rise time and bandwidth characteristics. Following this, a new active analog filter circuit, implemented in a differential amplifier, sums both halves of the balanced signal and provides superb common mode noise rejection in addition to its outstanding filter characteristics.

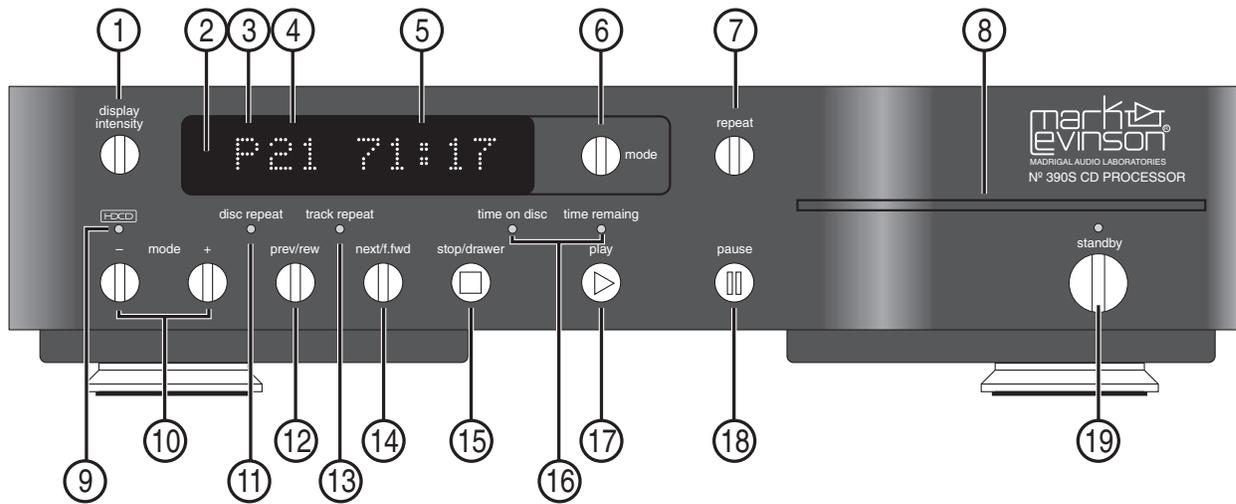
This approach to the Digital-to-Analog circuit block yields distortion and noise levels that are extraordinarily low and contributes greatly to the natural sound of the N°390S.

**Balanced Analog
Volume Control**

Rather than use the digital attenuator on-board the DAC, the N°390S incorporates a fully balanced analog volume control similar to that found in Mark Levinson separate preamplifiers. When activated (by turning on the variable output function under *setup: sound*), the output of the N°390S may be attenuated in precise 0.1dB steps through most of the range. Significantly, the N°390S maintains the full performance of its remarkable DACs at all volume levels—something impossible with digital volume controls, regardless of what techniques may be employed to mask the sonic consequences of this design approach.

**State-of-the-art
Output Buffer**

The balanced discrete output buffer circuitry used in the N°390S employs the same topology used in the remarkable Mark Levinson N°32 Reference Preamplifier. A hallmark of Mark Levinson preamplifier and digital processor design, this circuit has proven itself time and time again to be both sonically transparent and exceptionally immune to adverse interactions with interconnecting cables and unusual input impedance characteristics of power amplifiers or preamplifiers. The N°390S features a new, ultra compact, implementation of the Mark Levinson output buffer circuit pushing noise coupling and parasitic effects to vanishingly small levels. This exceptionally robust output stage allows the N°390S to make the most of what whatever combination of preamplifier, power amplifier, or cables you choose to use.



Front Panel, N°390S

1 display intensity

Pressing this button varies the brightness of the **display**. Four brightness levels are available, including “display off.” All other front panel LEDs change their brightness levels appropriately, except that they remain at the dimmest level when the display itself is off.

When power is first applied to the N°390S (or when power is restored after an interruption), the display is automatically set to its “medium” level.

Pressing the **display intensity** button once dims the display one level; pressing it again turns the display off; pressing **display intensity** once more returns the display to its brightest level; pressing it a fourth time will return it to medium. (If other Mark Levinson components in the system are “Linked” to the N°390S, all display intensities can change in unison. See *Special Functions* for more information.)

If the display is set to “off,” pressing any key will cause it to light at medium intensity for approximately four seconds in order to display the action of the key press.

2 Infrared Transceiver (within display)

Infrared commands transmitted from the remote control are received by a receiver behind this section of the display. Remote control of the N°390S may be unreliable if there is not a clear line of sight between the remote control and the receiver (if the remote is far off-axis, or if the N°390S is within a cabinet, for example). In such a case consider using a third-party IR repeater to route the signal to the IR input jack on the rear panel (see *Rear Panel, N°390S*).

In addition to receiving IR commands, the N°390S has the ability to teach a learning remote control its own commands from an IR transmitter located in this same area. (See *Using Learning Remote Controls* for more information.)

3 Special Mode Indicator

The first character in the display is reserved for indication of special modes of operation. For example, a **P** is displayed in this space to indicate a **Program** (a special sequence of tracks) is being played: **A** and **B** alternate while an **A-B loop** is being repeated. Similarly, an **R** is displayed to denote **random play**, and **II** is displayed to denote **pause**.

4 Track Indicator

The next two characters are used to indicate the number of the track being played. When a compact disc is loaded but the transport is in the **stop** mode, this same space indicates the total number of tracks on the disc (or in the program for the current disc, if programmed).

5 Time Indicator

The time section of the display can be set to display any of the following four indications of time in minutes and seconds:

- **time elapsed in track** (neither LED lit)
- **time elapsed on disc** (**time on disc** LED lit)
- **time remaining on track** (**time remaining** LED lit)
- **time remaining on disc** (**time on disc and time remaining** LEDs lit)

In effect, the N°390S assumes you will be most interested seeing *elapsed time* on the *current track*; only departures from that assumption are denoted by LEDs. The N°390S will remember the last display mode selected and continue to display that information until you change it, except in **stop** (when it always defaults to showing the time remaining on disc, or in the disc's *playlist* if it has been programmed). Once in **stop**, the time indication may be changed to show any of the other display modes (if desired).

These four options are accessed by pressing the **mode** button to the right of the display until **TIMES** is shown in the display (see 6, below). Then, use the **mode +** or **mode -** keys to cycle through the four modes of time display, using the **time on disc** and **time remaining** LEDs to indicate which mode is chosen at any moment.

6 mode button

The **mode** button beside the display cycles through the four functions that can be controlled by the **mode +** and **mode -** buttons (either on the front panel or the remote control). These four modes are:

- **PROGRAM** (for creating custom playlists)
- **INPUTS** (for selecting a digital source)
- **TIMES** (for selecting a time indication)
- **VOLUME*** (for controlling the volume of the N°390S*)

* (Note that the **volume** control is only made available if the N°390S's variable output mode is engaged; see *Special Functions* for more information.)

Any of these four modes (three modes if using the fixed output) may be accessed by repeatedly pressing the **mode** button, thereby cycling through the options.

Once a particular mode is chosen, pressing the **mode +** and **mode -** buttons increments or decrements that particular function. For example, **mode +** would either: add a track to a playlist; select the next digital input; advance to the next time indication; or raise the volume.

Along with **mode +** and **mode -**, the **mode** button is also used to change the option settings. (See *Special Functions*.)

7 Repeat button

You may choose to either repeat the entire disc (including any programs you might have entered for that particular disc) or an individual track by pressing the **repeat** button. From normal operation, the first press of the repeat button will light the **disc repeat** LED below the display (number 11 in the front panel illustration). Pressing the **repeat** button again will light the **track repeat** LED (number 13 in the front panel illustration). Pressing it a third time will cycle out of any repeating mode, as will pressing **stop/drawer** at any time. In either case, both repeat LEDs will be extinguished to indicate the absence of any repeat mode.

8 Drawer

The N°390S employs an elegant, slim drawer that is machined from a solid piece of aluminum. It is normally opened and closed by pressing the **stop/drawer** button (number 15 in the front panel illustration). If opened, it may also be closed simply by gently pushing the front edge inward (as though you were going to close it manually). The N°390S will interpret this as a request to close the drawer and take over for you, smoothly closing the drawer.

If the N°390S senses an obstruction during opening of the drawer mechanism, it will attempt to re-close. If successful, it will read the disc's table of contents and display the disc's number of tracks and total time (followed by the playlist's track and time information, if one exists). If for any reason the drawer does not close fully, the display will show **DRAWER** to indicate the problem. After removing the obstruction, press the **stop/drawer** button again to close the drawer normally.

Similarly, if the N°390S senses an obstruction during the closing of its drawer, it is designed to stop immediately and will attempt to reopen. If the nature of the obstruction prevents this also, it will stop where it is and wait for your intervention, displaying **STOPPED!** to indicate the problem. After removing the obstruction, press the **stop/drawer** button again to close the drawer.

9 HDCD® indicator

This LED will illuminate when the N°390S is playing HDCD-encoded material, whether from the CD transport or from an external digital source.

10 **mode – and mode + buttons**

Using these two buttons in conjunction with the **mode** button, any of four different N°390S functions can be controlled from the front panel :

- **PROGRAM** (for creating custom playlists)
- **INPUTS** (for selecting a digital source)
- **TIMES** (for selecting a time indication)
- **VOLUME*** (for controlling the volume of the N°390S*)

* (Note that the **volume** control is only made available if the N°390S's variable output mode is engaged; see *Special Functions* for more information.)

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Along with **mode +** and **mode –**, the **mode** button is also used to change the option settings. (See *Special Functions*.)

21

For detailed information on programming the N°390S, see *Programming the N°390S* later in this manual.

11 **disc repeat LED**

This LED is lit when the N°390S is set to repeat a disc (or a disc's program, if it has one) endlessly. This feature is accessed using the **repeat** button (see number 7, above).

12 **prev/rew button**

Pressing this button *momentarily* will return you to the beginning of the **previous** track. *Pressing and holding* this button will instead perform a reverse scan of the music, reminiscent of the **rewind** function found on many tape decks. This scanning mode may be either audible or silent (according to your choice in the **setup: sound** menu; see *Special Functions*), and it allows you to quickly find a particular point within a track. (Incidentally, if you wish to listen to the *current* track over again from the beginning, simply press **play** while the track is playing.)

13 track repeat LED

This LED is lit when the N°390S is set to repeat a single track endlessly. This feature is accessed using the **repeat** button (see number 7, above).

14 next/f.fwd button

Pressing this button *momentarily* will advance the N°390S to the beginning of the **next** track. *Pressing and holding* this button will instead perform a fast forward scan of the music, reminiscent of the **fast forward** function found on many tape decks. This scanning mode may be either audible or silent (according to your choice in the **setup: sound** menu; see *Special Functions*), and it allows you to quickly find a particular point within a track.

15 stop/drawer

Pressing this button once while a disc is playing will **stop** the disc, resulting in the total number of tracks and the total time on the disc being displayed. (Both the **time on disc** and the **time remaining** LEDs are lit to clarify the meaning of the information being displayed at this point.)

Pressing this button once the disc has stopped, or if there is no disc in the transport, will cause the **drawer** to open. If the disc is still playing, you may press the button twice rapidly, to effect both the **stop** command and the **drawer open** command; the N°390S will remember the second button push and execute it as soon as the disc has stopped spinning.

Pressing the **stop/drawer** button will cause an open drawer to close. If it senses a disc in the drawer, the N°390S will confirm its internal conversion rate on the display (24-bit, 352kHz) and then read the disc's table of contents so that it may display the total number of tracks and the total time on the disc for your information. If a custom playlist exists for the disc, the total number of tracks and the total time of the playlist is displayed instead.

16 time on disc and time remaining LED indicators

These LEDs are used to indicate which of the four available display modes the N°390S is in. The four indications of time that can be displayed are:

- **time elapsed in track** (neither LED lit)
- **time elapsed on disc** (**time on disc** LED lit)
- **time remaining on track** (**time remaining** LED lit)
- **time remaining on disc** (**time on disc and time remaining** LEDs lit)

These four options are accessed by selecting the **TIMES** mode (using the **mode** button) and repeatedly pressing the **mode +** or **mode -** buttons, which cycle forward or backward through the four modes, respectively.

17 play button

As you might guess, press this button in order to **play** a disc. If a programmed sequence of tracks exists for that particular disc, the program will be played from its beginning. Also, as you might expect, you may press the **play** button immediately after placing a disc in the N°390S's drawer; the drawer will close and the N°390S will enter the play mode as soon as it has confirmed its internal conversion rate (24-bit, 352kHz), has read the disc's table of contents and checked to see if a program exists that ought to be played.

The **play** button has another important function: if you wish to return to the beginning of the track currently playing, simply press **play** to restart at the beginning of that same track. If the N°390S is in **pause**, pressing **play** will re-cue the disc at the beginning of the current track.

23

18 pause button

Pressing this button once during play will **pause** the N°390S at that point within the track; the display will show double bars (▬▬) as a reminder that you are in the **pause** mode. Pressing the pause button a second time will resume play.

the extended pause mode

After two minutes in **pause**, the N°390S will go into an "extended pause" mode. **Extended pause** stops the disc and turns off the laser against the possibility that you have been called away and may not return for some time. The N°390S will slowly flash the double bars (▬▬) to indicate that you are in the **extended pause** mode rather than normal **pause**.

You may force the N°390S into **extended pause** mode by *pressing and holding* the **pause** button (on either the front panel or the remote control) until the double bars begin to blink.

In effect, **extended pause** is much like **stop**, with the exception that pressing **pause** will return you to the point on the disc where you had left off listening after only a momentary hesitation to spin the disc back up to speed and scan to the appropriate point.

19 Standby & Standby LED

Assuming that the N°390S is connected to AC power and the **main power** switch on the rear panel is in the “I” position (see *Rear Panel, N°390S*), pressing this button takes the N°390S out of **standby** mode and enables the front-panel controls.

When the N°390S’s **main power** switch is first turned on (or when power is restored after an interruption), the N°390S will go through a brief initialization and then be ready to operate (that is, it won’t be in standby mode).

Pressing **standby** again places the N°390S into standby mode, which turns the **display** off, turns off all digital outputs, and disables the front-panel controls. The internal circuitry remains powered up in order to maintain its thermal stability and optimum performance at all times.

Pressing **standby**, **drawer**, or **play** will bring the N°390S out of standby, enabling the front panel controls, and activating the display and outputs.

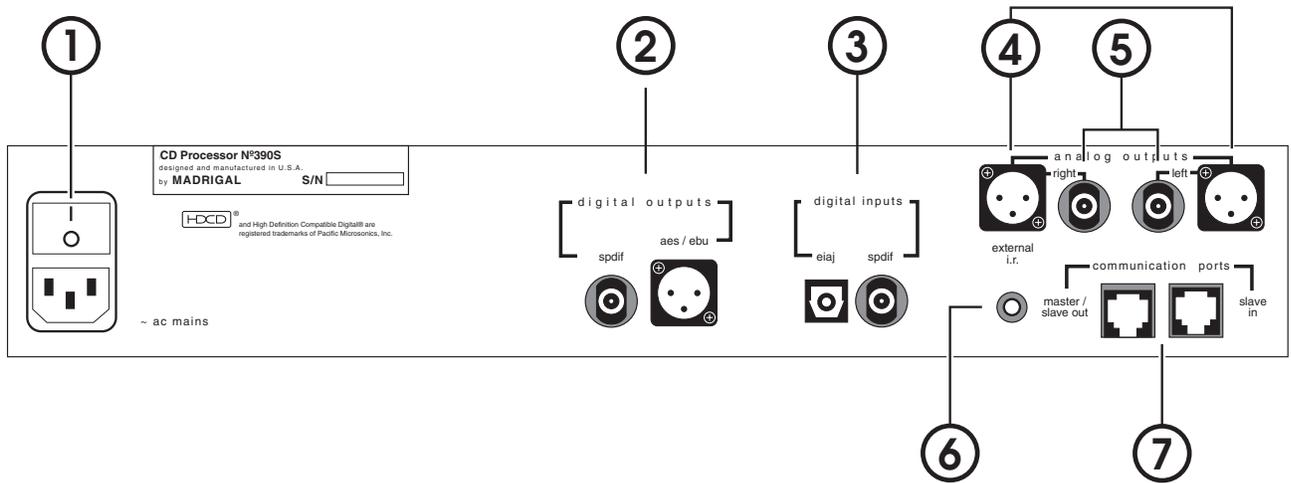
While the N°390S is in standby, the LED above the **standby** button flashes approximately every five seconds. (When the N°390S is Linked to other Mark Levinson components, all their standby lights will blink in unison.) When the N°390S is ready to operate (that is, when it is not in standby mode), this LED remains lit continuously.

sleep timer

As shipped from the factory, the N°390S will remain on until you deliberately place it in standby. If you prefer for it to automatically enter standby after a particular period of time, press and hold the **standby** button until the display reads **MANUAL**. Pressing the **next/f.fwd** button will advance it in one minute increments to a maximum of **120 minutes**. Pressing the **prev/rew** button will decrement the sleep timer by one minute increments. Reducing the timer setting below **1 minute** will return it to normal, **MANUAL** operation.

These options represent the length of time the N°390S before it will automatically go into standby. Having made your selection, simply allow the N°390S to timeout (when the display reverts to its normal operation, indicating disc information). You may change your N°390S back to manual standby mode before it enters standby by reversing this process.

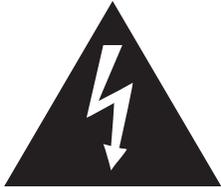
The sleep timer will automatically reset itself to **MANUAL** after having been activated. In this fashion, you can set it and forget it without having a subsequent listening session interrupted unexpectedly.



Rear Panel, N°390S

1 AC Power input and switch

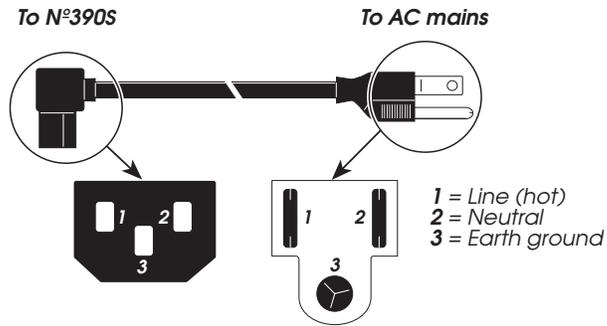
This input accepts AC power from the AC mains (via the supplied AC cable).



Warning!

The N°390S is set internally for 100, 120, 200, 220, or 240VAC mains operation at either 50 or 60Hz. Make sure that the label on the bottom of the unit indicates the correct AC operating voltage and frequency for your location before connecting it to AC mains.

Connect the female end of this cable to the N°390S. Connect the male end of this cable to wall outlet or to an “unswitched” convenience outlet like those found on some audio components.



Turn on the power by pressing the top of the power switch above the power cord receptacle (it has a solid vertical line to indicate “on”: I).



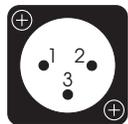
Caution:

Do not switch power off and on rapidly, as this interrupts the normal power-up sequence. We advise waiting at least five seconds between power cycles.

2 Digital Outputs

These outputs provide **digital audio signal (DAS)** via cables equipped with either XLR-type or RCA-type connectors to a digital audio processor.

The XLR output conforms to the Audio Engineering Society/European Broadcast Union (AES/EBU) professional digital audio standard, which calls for a 110Ω transmission of the DAS. Use a digital interconnecting cable specifically designed for the 110Ω AES/EBU standard, such as Madrigal MDC-1 cable, when using this input, with pin assignments as indicated below:



- Pin 1: Chassis ground
- Pin 2: non-inverted digital
- Pin 3: inverted digital
- Connector ground lug: chassis ground

It has been Madrigal’s experience that the AES/EBU interconnection standard offers the best quality of all digital transmission interfaces when fully optimized, and we recommend its use wherever possible between Mark Levinson components.

However, optimizing any electrical digital interface completely represents a significant engineering challenge. It is entirely possible that a different type of input may actually outperform a less-than-optimized AES/EBU implementation on some brands of digital components. For this reason, we have gone to great lengths to fully optimize both of the digital outputs on the N°390S. If you are using your N°390S with a different brand of processor, we recommend experimenting to determine which type of input on that component results in the best audible performance.

The RCA output provides **digital audio signal (DAS)** *via* cables equipped with RCA-type connectors to the digital processor. It conforms to the Sony/Philips Digital Interface Standard (S/PDIF), which calls for a 75Ω transmission of the DAS. Use a digital interconnecting cable specifically designed for the 75Ω S/PDIF standard, such as Madrigal MDC-2 cable, when using this output.

3 digital inputs

These inputs accept **digital audio signal (DAS)** *via* cables equipped with either **eiaj** optical or **RCA** (S/PDIF) coaxial connectors from digital sources such as a compact disc transport, laser disc transport, digital audio tape transport, or digital broadcast receiver.

The **eiaj** input accepts **digital audio signal (DAS)** *via* optical cable equipped with the EIAJ optical connector (sometimes called “Toslink™”) from digital sources such as a compact disc transport, laser disc transport, digital audio tape transport, or digital broadcast receiver.

The **RCA** input accepts **digital audio signal (DAS)** *via* cables equipped with RCA-type connectors from digital sources such as a compact disc transport, laser disc transport, digital audio tape transport, or digital broadcast receiver.

The RCA input conforms to the Sony/Philips Digital Interface Standard (S/PDIF), which calls for a 75Ω transmission of the DAS. Use a digital interconnecting cable specifically designed for the 75Ω S/PDIF standard, such as Madrigal MDC-2 cable, when using this input.

4 **balanced analog outputs**

These outputs normally provide balanced line-level analog audio (via cables equipped with XLR-type connectors) to a preamplifier, integrated amplifier, or receiver equipped with balanced inputs (see “Set-up and installation”). The pin assignments used are AES-standard, as shown below:



Pin 1: Signal ground

Pin 2: Signal + (non-inverting)

Pin 3: Signal – (inverting)

Connector ground lug: chassis ground

Alternatively, you may elect to use the variable output capability of the N°390S as a volume control, driving the power amplifier in your system directly. For a digital-only system, the N°390S is an excellent preamplifier.

Since many people have at least one analog source, they will be better off having a full preamplifier to coordinate the operation of the entire system—digital *and* analog. In this case, you would leave the N°390S in its factory-default setting of having a fixed (line level) output.

5 **single-ended analog outputs**

These outputs provide single-ended line-level analog audio (via cables equipped with RCA-type connectors) to a preamplifier, integrated amplifier, or receiver.

Alternatively, you may elect to use the variable output capability of the N°390S as a volume control, driving the power amplifier in your system directly. Of course, this approach is only appropriate in relatively simple systems lacking any analog sources.

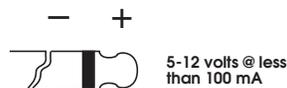
Since many people have at least one analog source, they will be better off having a full preamplifier to coordinate the operation of the entire system—digital *and* analog. In this case, you would leave the N°390S in its factory-default setting of having a fixed (line level) output.

6 **External IR Input**

The N°390S incorporates an infrared repeater input to facilitate a wide range of installation options. If desired, the N°390S may be placed inside a cabinet or outside the normal line-of-sight in the listening area, with the controlling IR signal being relayed to the N°390S by any of a number of commercially-available IR repeaters.

The specifications for this IR input call for a triggering voltage of 5-12 volts at no more than 100 milliamperes of current, with the tip of the 1/8" mini-plug having positive polarity, as below:

IR input tip polarity

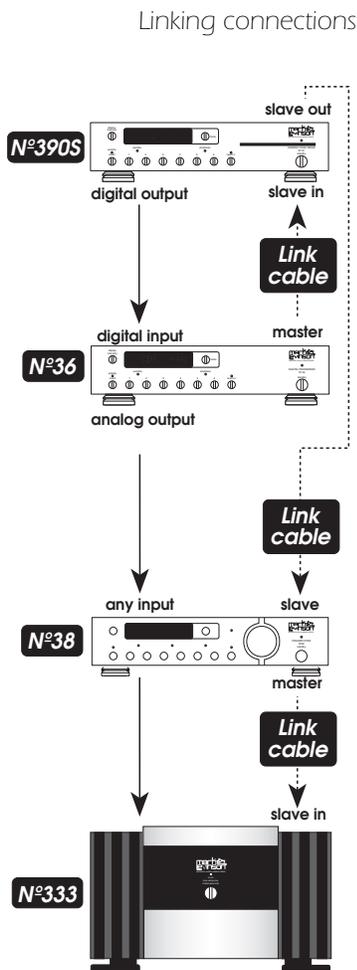


If you would like more information on the possibility of using an infrared repeater with your N°390S, please contact your Mark Levinson dealer.

7 Communication ports

These communications ports allow the N°390S to “link” to certain compatible Mark Levinson components. (See “*Special Functions.*”)

The Mark Levinson Linking system provides for inter-component communications. Normally, the digital processor in the system would serve as the “master” of this communications system, while other components including the transport would be “slaves” to that master. (The master acts as a central clearinghouse for that information—sort of like the Post Office, but quite a bit faster.) Since the N°390S is *both* a digital transport and a digital processor in one component, it automatically configures itself as either a master or a slave, based on the needs of the rest of the system. (Technically, if the N°390S senses another master on the communications bus, it automatically configures itself as a slave.)



The most common configuration for systems incorporating the N°390S is illustrated at left. The N°390S’s **master out** port normally sits at the beginning of the chain, and is connected to the **slave** port of a Mark Levinson preamplifier using a “straight-through” eight conductor modular cable. The preamplifier, in turn, serves as the “master” for the power amplifier(s) with which it is used. (See *diagram at left for clarification.*)

Alternatively, if you elect to use the variable output feature of the N°390S to drive a power amplifier directly, it may serve as the power amplifier’s “master” using a special eight-to-six conductor Link cable described below. Using this cable automatically configures the N°390S as though it were a Mark Levinson preamplifier in order to control the Mark Levinson power amplifier. (See *diagram at left for clarification.*)

Finally, if at some point you end up using your N°390S as a transport in conjunction with a separate Mark Levinson digital processor, simply insert it between the processor and the preamplifier (*connecting the processor's **master** port to the N°390S's **slave in** port, and the N°390S's **slave out** port to the preamplifier's **slave** port*) to keep the daisy chain going. Sensing another "master" on the communications bus, the N°390S will automatically configure itself as a slave to that master (hence the **master/slave out** nomenclature on the rear panel jack). *(See illustration on next page for clarification.)*

Important:

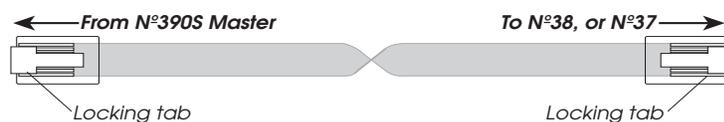
If a compatible Mark Levinson preamplifier (such as the N°380 or N°380S) is Linked, it must be the last of the line-level components in the daisy chain. (Technically, it serves to terminate the communications bus used by the source components.)

Electrically, the Link connection between the preamplifier and the power amplifier(s) in the system is independent of and distinct from the communications Links between various source components and the preamplifier. The reason for this is simple: the power amplifiers, lacking any microprocessor of their own, are dependent on the intelligence of the preamplifier for their Linked functionality. This remains true even when you employ the N°390S as your "preamplifier."

The modular cable needed for the Link connection between the N°390S and other Link components may be purchased from your Mark Levinson dealer. It may also be easily made to length using two modular connectors and the appropriate length (up to 100 feet/30 meters) of flat, eight conductor cable.

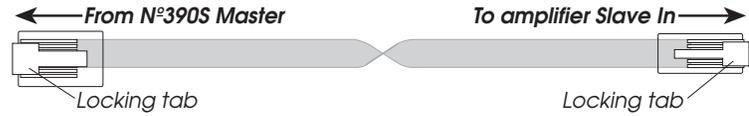
Modular cables and connectors are used throughout the world for both telecommunications and computers, and are widely available. The connectors are crimped on to the ends of the cable such that pin 1 at one end is connected to pin 1 at the other end. Such a "straight-through" connection is made (counter-intuitively) by introducing a 180° twist in the cable between the two ends, as shown below.

standard link cables



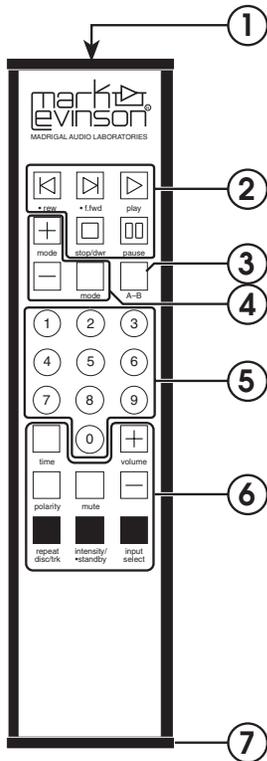
amplifier link cables

A different Link cable configuration is used when connecting the N°390S to a power amplifier as though it were a preamplifier. It uses **six**-conductor cable (rather than eight), with a six-conductor modular plug at one end and an eight-conductor modular connector at the other end (using pins 1 through 6 of the latter), as shown below:



(Note that the pins are numbered 1 through 8 from left to right when the locking tab is down and the metal contacts are pointing away from you.)

Remote Control, N°390S



1 IR Transmitter window

The N°390S's Remote Control sends infrared (IR) commands through its projection lens, and the N°390S receives IR commands through its Remote sensor window. (See "Front Panel, N°390S"). If either of these lenses is obstructed, no IR commands can be received by the N°390S. If you notice IR performance deteriorating, you may want to clean these lenses with a soft cloth and some glass cleaner. (Spray the cleaner on the cloth first, and then wipe the lens with the moistened cloth. Do not spray the cleaner directly on either lens, as this may allow moisture to migrate into the electronics behind the lens assemblies.)

2 Transport Buttons

The buttons used for routine operation of transport functions on the N°390S are grouped at the top of the remote control. They include:

- (◀) **rew**: When clicked, this will take you to the beginning of the **previous** track. (◀ is the international symbol for *previous*). When pressed *and held* (denoted by the bold dot •), the N°390S will enter a reverse scanning mode similar to the familiar *rewind* function of many tape decks, allowing a precise location within a track to be found. This scan may be silent or audible, depending on your **setup:sound** preferences. (See *Special Functions*.)
- (▶) **f.fwd**: When clicked, this will take you to the beginning of the **next** track. (▶ is the international symbol for *next*). When pressed *and held* (denoted by the bold dot •), the N°390S will enter a fast forward scanning mode similar to the familiar *fast forward* function of many tape decks, allowing a precise location within a track to be found. This scan may be silent or audible, depending on your **setup:sound** preferences. (See *Special Functions*.)
- (▶) **play**: Press to enter the **play** mode from either **stop** or **standby**, or to restart play at the beginning of the track currently playing. If there is no disc inside the N°390S, pressing **play** will open the drawer so you may add a disc.

- (■) **stop/dwr**: Press to **stop** play. The same button will operate the **drawer** if stopping the disc has no relevance (e.g., if it is already stopped, or if there is no disc inside the N°390S).
- (II) **pause**: Press to **pause** play in the current location. If left in **pause** mode for more than two minutes, the N°390S will enter **extended pause** mode, shutting down both the laser and the drive motors to enhance longevity and reliability. Upon pressing **pause** a second time, the disc will spin up and begin playing from the location where it had been paused.

3 **A/B repeat button**

The N°390S may be set to repeat any contiguous segment of a disc:

A-B: Press once to establish a beginning point (point **A**) for an endless playback loop. The display will flash the letter **B** to indicate that it is ready to accept your designated ending point (point **B**). (Note that **A** must precede **B** on the disc.) Once this has been done, the N°390S will repeat the segment of the disc between points **A** and **B** until you press **stop** or **A-B** again.

4 **mode buttons**

Using these three buttons, either of two N°390S functions can be controlled from the remote control:

- **PROGRAM** (for creating custom playlists)
- **TIMES** (for selecting a time indication)

Either of these modes may be accessed by repeatedly pressing the **mode** button, thereby toggling back and forth between the options.

Once a particular mode is chosen, pressing the **mode +** and **mode -** buttons increments or decrements that particular function. For example, **mode +** would either: add a track to a playlist; or advance to the next time indication.

Along with **mode +** and **mode -**, the **mode** button is also used to change the option settings. (See *Special Functions*.)

For detailed information on programming the N°390S, see *Programming the N°390S* later in this manual.

5 Numeric Keypad

The numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 may be used to directly access individual track numbers of discs played by the N°390S. For example, to go directly to track 13, press **1** followed by **3**, and then press **play**. You do not have to add a 0 before a single-digit track number: **7**, followed by **play**, will take you directly to track number 7. (In fact, if the N°390S is already in play, simply pressing the number button will be sufficient.)

The N°390S displays a certain amount of intelligence with respect to direct track access. If the first number entered identifies a particular track unambiguously (such as **2** on a 12-track disc), the N°390S is “smart” enough to immediately move to that track. If the first number entered could be the first of two digits (such as **1** on a 12-track disc), the N°390S will wait for a moment to determine whether you wish to enter a second number. If not, it will then go to the single-digit track you selected.

Random Play

Incidentally, if you press **0** followed by **play**, the N°390S will enter a **random play** mode in which the order of the current disc’s playlist is scrambled, and then played. The first character of the display (that shows a **P** when playing a custom program) will show **R** to indicate **random play**. Moreover, placing the N°390S into **random play** mode while the **disc repeat** function is engaged will cause it to play the various tracks on the disc randomly indefinitely (until you stop it). This can be a great way to provide background music during a dinner party, for example.

These numbers may also be used in conjunction with other features, such as programming and direct access by time. For example, when in the **stop** mode, you may press **5** and press the **prog** – button to delete track 5 from your playlist. In this case, the N°390S would play that particular disc normally, except that it would automatically skip from track 4 to track 6.

Selecting a particular track does not affect the operating mode. That is to say, pressing **7** while in **play** begins playing track 7; pressing **4** while in **pause** leaves you paused at the beginning of track 4.

6 Other Operational Buttons

time: Pressing this button (followed by appropriate numbers from the numeric keypad) allows direct access to any particular time on a disc. Note that this is a context-sensitive control—the time accessed will be according to the currently selected time display mode, e.g., 30:00 with the **time remaining** and **time on disc** LEDs lit will take you to that point where thirty minutes remains to the end of the disc.

polarity: Pressing this button on the N°390S remote control will transparently and automatically invert the polarity of *both* channels. Some recordings sound better with one polarity than the other; on many, the difference is subtle. In any case, the best place to judge the better polarity for any given recording is from the listening position (hence the placement of this feature on the remote control).

rpt disc/trk: Press once to enter **disc repeat** mode (repeating the entire disc, or an entire playlist if one is entered). This action will illuminate the **disc repeat LED**. Press a second time to enter the **track repeat** mode (repeating a single track *ad nauseum*). A third press will cycle you back to normal operation, as will pressing **stop**.

mute: Pressing this button will engage the **mute** function of a compatible Mark Levinson preamplifier without stopping the transport. Pressing it a second time will restore the volume to its previous setting. Since this function depends on the ability of the N°390S to pass the instruction to the N°380 (for example), the two components must be connected by a Link cable, and operate within a system which has a “master” digital processor. (See *Special Functions* for more information.) If you are using the N°390S’s preamp (variable output) feature, the N°390S will engage its own mute circuitry instead.

intensity/•standby: Pressing this button momentarily cycles the N°390S (and any Linked Mark Levinson components) through their four levels of **display intensity** (bright, medium, dim, off). When pressed *and held* (denoted by the bold dot •), this button will place the N°390S into or out of **standby**.

Analog Input Switching

(+) **volume:** Pressing this button on the N°390S remote control will transparently and automatically raise the volume of a Linked Mark Levinson preamplifier, minimizing the need to juggle multiple remotes. Since this function depends on the ability of the N°390S to pass the instruction to the N°380 (for example), the two components must be connected by a Link cable. (See *Special Functions* for more information.) Alternatively, the N°390S may be configured to use its own, internal volume control in all-digital systems lacking a preamplifier. (See *Setup Options*.)

(-) **volume:** Pressing this button on the N°390S remote control will transparently and automatically lower the volume of a Linked Mark Levinson preamplifier, minimizing the need to juggle multiple remotes. Since this function depends on the ability of the N°390S to pass the instruction to the N°380 (for example), the two components must be connected by a Link cable. (See *Special Functions* for more information.) Alternatively, the N°390S may be configured to use its own, internal volume control in all-digital systems lacking a preamplifier. (See *Setup Options*.)

input select: Pressing this button on the N°390S remote control will transparently and automatically cycle through its various active digital inputs, allowing you to select other digital sources connected to the N°390S.

Alternatively, you may force the **input select** button to select from among your *analog* inputs on a Linked Mark Levinson preamplifier by *pressing and holding* the button until it shows **DIGITAL**, then clicking the button to change it to **ANALOG**, and then pressing and holding the **input select** button a second time to confirm your change. (You may change it back at any time by reversing this procedure.)

7 Battery Compartment

The two AA batteries used by the Remote Control must be placed inside the compartment at the bottom of the remote's housing. Using the hex wrench provided in your accessory kit (look inside the slot within the foam rubber), carefully remove the two screws on the bottom of the housing and insert the batteries, being careful to orient them as indicated inside the battery compartment. Then replace the screws using the hex wrench.

Conditions that Affect IR Performance

IR communication between the Remote Control and the N°390S can be affected by:

- direct sunlight
- interior lighting
- wall, window, ceiling, and floor treatments
- the angle of the Remote Control relative to the N°390S

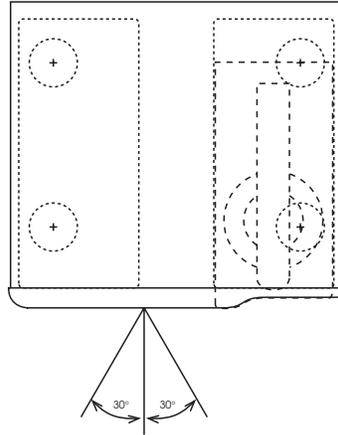
If the N°390S will be subject to direct sunlight, place it no more than 10 feet from where you'll normally operate the Remote Control. Where bright sunlight virtually floods the room, IR communication may be inconsistent.

In a room lighted primarily with incandescent fixtures, place the N°390S no more than 25-30 feet from where you'll normally operate the Remote Control. In a room with fluorescent fixtures, this range will be reduced. Where bright fluorescent lighting virtually floods the room, IR communication may be inconsistent.

IR, like visible light, reacts differently when it meets different surfaces. Carpeting and draperies, for example, tend to diffuse (scatter) IR and interfere with its transmission. Glossy or reflective surfaces, such as mirrors and smooth walls, "bounce" (reflect) IR and won't interfere with its transmission. When placing the N°390S, it's important to account for potential IR bounce and diffusion. For example, in a room with thick carpeting, heavy draperies, and many pieces of furniture, you may need to place the N°390S closer to where you'll normally operate the Remote Control than you would in a sparsely furnished room with bare walls and hardwood flooring.

If possible, install the N°390S directly opposite from where you'll normally operate the Remote Control. In practice, the Remote Control will operate the N°390S at up to 30 degrees to either side of this direct line. To either side of this line, successful IR communication will depend on bounce and ambient lighting. (Please refer to diagram).

Optimum IR
reception window



If the requirements of your installation preclude a clean line of sight between the N°390S and your listening position, you may want to consider using an infrared repeater to route the remote control's commands directly to the N°390S, using the external ir input on the rear panel. (See item #6 in *Rear Panel, N°390S*.) Please ask your dealer for more information on third-party IR repeaters.

Setup and Installation

Caution!

For your protection, review “Important Safety Instructions” before you install your N°390S.

Connecting AC Mains

Plug the female end of the AC power cord into the appropriate socket on the rear panel of the N°390S, being certain to seat it firmly, all the way into the receptacle.

Double-check to make sure that the AC power switch is in the off position (the side of the switch with an “O” should be depressed), and also that the voltage indicated on your N°390S corresponds to the normal voltage for your country. (Connecting a 120-volt N°390S to a 220-volt AC outlet is *not* a good idea.)

Plug the male end of the power cord into the wall outlet, and then turn on the power switch located on the rear panel of the N°390S (by depressing the side of the switch that has a single vertical line like this: “I”).

Connecting Digital Audio Sources

The N°390S incorporates **EIAJ** optical and **RCA** digital input connectors for up to two additional digital sources. (See *Rear panel, N°390S*.)

For optical digital interconnection, we recommend the use of better-quality optical eiaj cable. Your dealer can help you select an appropriate cable for your system.

For electrical digital interconnection, we recommend Madrigal MDC cable. MDC-2 is designed for 75Ω **S/PDIF** interconnection (via either RCA or BNC connectors). MDC-2 is available in various lengths from your Mark Levinson dealer.

Using appropriate cables, connect an output of each additional source (laserdisc, digital tape, etc.) to the appropriate input on your N°390S.

Connecting the Digital Audio Outputs

The N°390S incorporates **aes/ebu** and **s/pdif** electrical output connectors for use with either digital recorders or with outboard digital processors. (See *Rear panel, N°390S*.)

For electrical digital interconnection, we recommend Madrigal MDC cable. MDC-1 is designed for 110Ω **AES/EBU** interconnection (via XLR connectors). MDC-2 is designed for 75Ω **S/PDIF** interconnection (via either RCA or BNC connectors). Both MDC-1 and MDC-2 are available in various lengths from your Mark Levinson dealer.

Using appropriate cables, connect the appropriate outputs on your N°390S to your external digital components.

Making Link Connections

The N°390S incorporates sophisticated inter-component communications capabilities when Linked to compatible Mark Levinson components. (See “Communication Ports” in *Rear panel, N°390S*.) If you own compatible Mark Levinson components, connect them to the N°390S with an eight-conductor modular cable as described on p. 25. You may find that you need to cycle power off and on once after making this connection for the first time (if making the connection to a previously operating component), in order to ensure that all components in the chain are aware of each other’s presence. Engaging **PLAY** on the transport once from **STOP** will complete the Link connection by activating the communications bus between the components. (*When using a preamplifier, you must also name the appropriate input “No390S” as described in the preamp’s manual in order to complete the Link.*)

To help with special installations and custom cabinetry, drawings are included in this manual. (See *Dimensions*).

Connecting Analog Outputs

The N°390S provides both balanced (via XLRs) and single-ended (via custom-made Madrigal RCAs) analog outputs. Either set of outputs may be connected either to a preamplifier or (with the variable output feature engaged) directly to a power amplifier. It has been our experience that balanced interconnection provides superior performance, particularly if long runs of cable are required.

Using appropriate cables, such as our own Madrigal CZ-GEL controlled impedance cables, connect the appropriate outputs on your N°390S to your preamplifier or power amplifier.

Basic Operation

Before operating your N°390S, take a minute to become familiar with its controls and their locations. (See “*Front Panel*” and “*Remote Control*.”)

Loading a CD

To load a CD:

1. Make sure that the **main power** switch is set to the “I” position.
2. Press **stop/drawer** to open the drawer.
3. Place a CD into the recess of the drawer, label side up.
Handle the CD by the outer edges and center hole only.
4. Press **stop/drawer**.

Note: If you have previously saved a program for the CD, the letter **P** will appear preceding the track number on the display. (See “*Programming the N°390S*.”)

*To override a previously saved program, briefly press **mode** – once while in **program** mode. All of the CD’s tracks will be accessible for basic operation, but the program will still be retained in the N°390S’s memory.*

Playing a CD

To play all tracks on the CD, press the **play** button. All tracks will play in order. Play will stop automatically at the end of the CD.

To begin play with a track other than the first track:

1. Before pressing **play**, press **next** until the number of the desired track shows on the Display. If you pass the track you want to play, you can “back up” by pressing **previous**. (You may also select the track using the numbered buttons on the Remote Control.)
2. Press **play** to begin playing that track. The remaining tracks will play in order. Play will stop automatically at the end of the CD.

To return to the beginning of a track while it is playing, press **play**. Play will be suspended briefly, then that track will replay followed by the remaining tracks on the CD.

Random Play

Using the Remote Control, you may have the N°390S play tracks at random. To do this, press the **0** (zero) numbered key, then press **play**. The display will show **RANDOM** briefly to indicate that you have entered the

random-play mode. Subsequently, the letter **R** will appear preceding the track number in the display as a reminder. To cancel random play, press **stop**.

Navigating the Disc

You may skip to another track any time while a CD is playing. To move to another track, press **next** (to go forward) or **previous** (to go backward) until the number of the track you want to play shows on the Display. (You may also select the track using the numbered buttons on the Remote Control.) Play will resume as soon as the pickup reaches that track.

You may search for a particular passage on the CD using **fast forward** and **rewind**, by *pressing and holding* the **next** and **previous** buttons (respectively). Use the reduced-volume audible scan available during these modes to search the CD until the laser pickup reaches the passage you want to hear. (*Assuming your CD player is set for audible rather than silent scanning. If not, see Special Functions.*)

As soon as you release the button, play resumes.

If you search past the beginning or end of a track, the laser pickup will move on to the previous (or next) track. If you try to search forward past the end of a CD or program, the laser pickup will stop at the end of the last track. If you try to search backward past the beginning of a CD or program, the laser pickup will stop at the beginning of the first track of the disc (or playlist).

Direct Time Access

You may use **time** on the Remote Control to begin play at a specific *time* on the disc.

1. Select the desired track using either **next** and **previous** or the **numeric keypad** on the Remote Control.
2. Press **time**, then press the numbered buttons corresponding to when you would like play to begin. (The numbers you select will appear in the **time** portion of the display.)
3. To begin play at that point, press **play**.

Note: The time you select depends on the selection you've made with the display mode button: elapsed or remaining, CD or track.

For example, if you want to begin play one minute and thirty seconds into track 2, select track 2 by pressing **2** on the remote control. Press **time**, enter **1 3 0**, then press **play**. (This example assumes that the most recently used display mode was *elapsed time on track*.) If you do not press **play**, the N°390S will timeout after ten seconds (that is, it will

“forget” that you had begun to do something, and revert to normal operation).

Alternatively, you might want to set the N°390S to play music for a specific period of time. Say you'd like to listen to music until the evening news begins in 30 minutes. Make sure both the **time on disc** and **time remaining** LEDs are on (indicating *time remaining on disc*, the default display mode when in **stop**); press **time**; enter **3 0 0 0**; and press **play**. This sequence will direct the N°390S to a point 30 minutes from the end of the disc, and engage play at that point. When the music ends, you will know it is time to turn on the news.

Pause To suspend play while a CD is playing, press **pause**. To resume play at the same point, press **pause** again.

If left in **pause** for about two minutes, the transport will stop spinning and the laser will turn off (thereby enhancing the longevity of both). This **extended pause** mode will be indicated by the display showing a slowly flashing quotation mark (▮▮) as a reminder that you are in the **extended pause** mode (since this mark mimics the double bars used to indicate **pause**).

Alternatively, **extended pause** may be engaged by pressing *and holding* the **pause** button until the double bars begin to blink.

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Repeat Disc To repeat (continuously) all tracks on a CD, press **repeat** until the **disc repeat** LED is lit. To return to normal play, press **repeat** (or **rpt disc/trk** on the remote) again two more times (to cycle through **track repeat** to normal **play**). Pressing **stop** will also restore the N°390S to normal (non-repeating) operation.

Repeat Track To repeat (continuously) the track in (normal) play, press **repeat** (or **rpt disc/trk** on the remote) twice to cycle through **disc repeat** to **track repeat**. While the track repeat function is active, the LED above the button is lit.

This feature is helpful (for example) when trying to learn how to play a particular song by playing along with the disc. To learn sections of the song, you may want to use the A-B repeat function described below. Once you have most of the sections learned, you can put them together with a track repeat.

Track repeat takes priority over other functions such as **next** and **previous**. To return to normal operation, press **repeat** again.

A-B Repeat To repeat (continuously) a specific phrase or passage on a CD (when learning how to play a favorite solo, for example), press **A-B** on the remote at the beginning of the passage you would like to repeat. At the end of the passage, press **A-B** on the remote again. The passage you selected will repeat continuously.

While the **repeat A-B** function is active, the letters **A** and **B** will alternate, preceding the track number on the display. To return to normal play, press the **A-B** button again.

Polarity The N°390S can change its playback polarity to compensate for the inverted polarity of some recordings. When you first press **polarity** on the remote control, the N°390S will display its *current* polarity, either **NORMAL** or **INVERTED**. Subsequent clicks on the **polarity** button while the display is indicating the current polarity will toggle between the two possibilities.

Programming the N°390S

Introduction to Playlists

Rather than playing an entire CD, you may choose to play only certain selections. To do this, you create a “playlist.” If this is a one-time playlist, it may be used immediately upon being created (and will vanish when a new playlist is created). Alternatively, thousands of playlists may be stored in the N°390S’s permanent memory, at which point each becomes the default playlist for the particular disc with which it is associated (until you explicitly change it).

Before using your N°390S’s programming features, become familiar with its controls and their locations, as well as their basic functions.

*Note: During the playing of a playlist, the N°390S’s basic functions operate as described in “Basic Operation,” except that they affect the playback of the **program**, not the entire CD. For instance, pressing **next** during play skips to the next track in the playlist, whether or not it is the next track on the CD. In the same way, engaging **disc repeat** will repeat the entire **playlist**, not the entire disc.*

The N°390S allows up to 99 selections per playlist, with any given track appearing once only. In practical terms, the only limitation on the length of your playlist is the number of tracks on your disc.

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Important Note:

Assembling a playlist is possible only when the disc is stopped.

The N°390S’s memory can store playlists for thousands of different CDs. Saved playlists remain in memory when you place the N°390S into **standby**, when you turn off the **main power** switch — even if AC power is interrupted.

When you load a CD, the N°390S reads that CD’s unique identification code. If you assemble a playlist for a particular CD *and* save it into the N°390S’s memory, the N°390S “remembers” that CD’s playlist.

The next time you load that CD, the N°390S will recognize the CD’s identification code and automatically load the previously saved playlist. (The display initially shows the number of tracks and total time on the *disc*, preceded by the letter **P** in the display.)

Even if you have previously saved a playlist for a CD, the N°390S allows you to temporarily override it (and have access to all tracks on the CD), without erasing it from memory. This temporary override applies to polarity programming as well.

To temporarily override a previously saved playlist, click the **mode** button until **PROGRAM** is displayed on the front panel, and press **mode** – while the CD is loaded but before play has started. All of the CD's tracks will subsequently be accessible for normal operations, but the original playlist will still be retained in the N°390S's memory. You can even create a temporary playlist as an alternative to your normal, permanent playlist.

Assembling a Playlist

To assemble a new playlist:

1. Load a CD, and wait for the display to show the number of tracks and their total playing time.
2. Make sure that the N°390S is in the programming mode by clicking the **mode** button until you see **PROGRAM** in the display.
3. Using the **next** and **previous** buttons (or the numbered buttons on the Remote Control), select the first track in your playlist.
4. Add the first selection to your playlist by pressing **mode +**. The display will acknowledge your command by showing a **P** preceding the track number on the display to indicate that it has been added to the playlist.
5. Assemble the rest of your playlist by repeating steps 2 and 3. Make sure to press **mode +** after each selection.

Programming by Omission

If you want to play *most* of a CD, and just “omit” a few tracks, you may want to use this shortcut:

1. Load a CD, and wait for the display to show the number of tracks and their total playing time.
2. Make sure that the N°390S is in the programming mode by clicking the **mode** button until you see **PROGRAM** in the display.
3. Using the **next** and **previous** buttons (or the numbered buttons on the Remote Control), select the first track you want to *eliminate* from your program.
4. “Omit” the track by pressing **mode –**. This action deletes the track from the current playlist, indicated by the **PRG–** in the display next to the track number.
5. Using **next** and **previous**, move to any other tracks you would prefer to skip, pressing **mode –** to eliminate each track from the playlist. Once you are in the program

mode, a **P** will illuminate to indicate a track is in the playlist, and extinguish for any track omitted from the playlist.

Saving a Playlist

Once you have created the playlist you want for a particular disc, you may either use it as a temporary playlist (using it only for that one occasion), or save it as the default playlist for that disc. To save a playlist:

1. When you've finished adding selections, you can save the new playlist by *pressing and holding* the **mode +** button.
2. The N°390S will confirm that your playlist is saved by displaying **SAVED** briefly (or **REVISED** if you changed an existing playlist).

Reviewing a Playlist

To review your playlist before playing it:

1. Load a CD for which you've already saved a playlist (the letter **P** will appear preceding the track number on the display); or load an unprogrammed CD, then assemble and save a playlist.
2. Make sure that the N°390S is in the programming mode by clicking the **mode** button until you see **PROGRAM** in the display.
3. Without selecting any particular track (while the playlist's total number of tracks and total playing time are displayed), press **mode +**. The display will show the first selection in your playlist. For example, if track 3 is the first selection in your program, the display would show **P03 > 1st**.

*Note: If you try to review a nonexistent playlist, the display will show **NO PGM**.*

4. To view the next selection, press **mode +** again, and so on.
5. After you view the last selection, one more press of **mode +** will cause the display to show **END PGM** momentarily, and then move on to show the first track in the playlist.

Deleting a Track from a Playlist

You may delete any selection from a playlist. To delete a selection:

1. Load a CD for which you've already saved a program (the letter **P** will appear preceding the track number on the display).
2. Make sure that the N°390S is in the programming mode by clicking the **mode** button until you see **PROGRAM** in the display.
3. Press **mode +**. The display will show the first selection in your program.

4. Press **mode +** until the selection you want to delete appears on the display.
5. Press **mode -**; the display will remove the **P** from the displayed track to indicate that it has been removed from the playlist.
6. Repeat steps 4 and 5 for each selection you want to erase from your program.
7. If you would like to make this change permanent, *press and hold* **mode +** when you finish erasing selections from your program; the display will show **REVISED**.

Adding a Track to a Playlist

You also may add a selection to a previously saved playlist. To do so:

1. Load a CD for which you've already saved a playlist (the letter **P** will appear preceding the track number on the display); or load an unprogrammed CD, then assemble and save a playlist.
2. Make sure that the N°390S is in the programming mode by clicking the **mode** button until you see **PROGRAM** in the display.
3. Using the **next** and **previous** (or the numbered buttons on the Remote Control), select the track you want to add to your playlist.
4. Add the selection to your playlist by pressing **mode +**. Your new selection will be added to the end of your existing playlist.
5. Repeat steps 2 and 3 for each selection you want to add to your program. Make sure to press **mode +** after each selection.
6. If you would like to make this change permanent, *press and hold* **mode +** when you finish erasing selections from your program; the display will show **REVISED**.

Overriding a Playlist

When you load a CD, the N°390S reads its unique identification code. If you assemble a playlist for a particular CD *and* save it into the N°390S's memory, the N°390S "remembers" that CD's playlist.

Even if you have previously saved a playlist for a CD, the N°390S allows you to temporarily override it (and have access to all tracks on the CD), without erasing it from memory. You can even create a temporary playlist as an alternative to your normal, permanent playlist.

To *temporarily* override a previously saved playlist,

1. make sure that the N°390S is in the programming mode by clicking the **mode** button until you see **PROGRAM** in the display

2. press **mode** – while the CD is loaded, but before play has started.
3. the display will show **CLEARED** to indicate that the program has been temporarily overridden

The display will show the total number of tracks and the total time on the disc (as it would if there were no playlist associated with the disc). The **P** that denotes playlist will be turned off. (If you change your mind, simply press **stop** to restore the previously created playlist.) All of the CD's tracks will subsequently be accessible for normal operations, but the original playlist will still be retained in the N°390S's memory.

Erasing Playlists from Memory

To *permanently* erase a previously saved playlist from the N°390S's memory, *press and hold* the **mode** – button while stopped in the **PROGRAM** mode; the display will show **DELETED**.

Why Polarity Programming?

During the recording process, the polarity of the recorded signal is typically inverted many times. If the total number of 180° inversions is even, the “net” polarity remains unchanged; if odd, a 180° polarity inversion is introduced. Some people seem quite sensitive to this distinction. (The difference can be envisioned by imagining a kick drum being struck: the initial motion of the drum head is forward, forming a compression wave; if inverted, it would be reproduced as though the drum head had initially moved backward, creating a rarefaction.)

To complicate matters further, different portions of (or instruments on) the recording may experience even or odd numbers of inversions, resulting in no single “correct” playback setting. This problem is particularly common among multiple-microphone recordings. Ultimately, only you can decide whether one polarity setting sounds better than the other, and if so, which you prefer.

Fortunately, if the N°390S can control the playback polarity of its processor from the its remote control. Moreover, the N°390S can be asked to “remember” your preference (should you have one) for each recording.

Important Note:

Programmed playlists include polarity information. The N°390S will ensure the “correct” polarity (that is, the polarity you chose when creating the program) upon playback of that playlist. This polarity may only be overridden by either temporarily overriding the playlist or by re-programming the playlist (see below). If you are sensitive to polarity (many people are not), you will want to determine the correct polarity before creating your playlists.

**Whole-Disc
Polarity Programming**

If you want to remember only the preferred polarity for an entire disc, and do not wish to store a custom playlist:

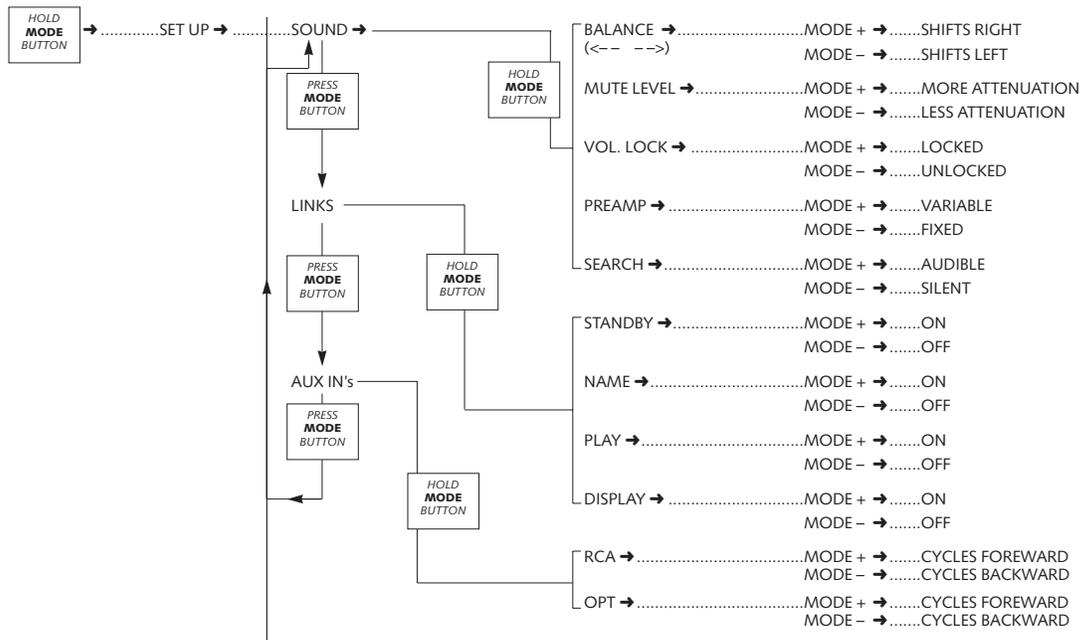
- 1 **Press stop.** When in **stop**, the N°390S displays the total number of tracks and time on the disc. (If you have already saved a program, the track display will be preceded by a **P**, and indicate the total number of tracks and time of the program, not the disc. You must not have a preexisting program if you wish to save a single polarity for the entire disc in one step. To erase a preexisting program, press and hold the **mode –** button.)
- 2 **Make sure that the N°390S is in the programming mode** by clicking the **mode** button until you see **PROGRAM** in the display.
- 3 **Choose your preferred polarity.** You may use either the **polarity** button on the processor or the **polarity** button on the N°390S remote control. Select your preferred setting.
- 4 **Press and hold the mode + button.** The display will show **POLARITY** to indicate that it has saved your polarity program for the entire disc. The display will show a small **p** preceding the total number of tracks and time on the disc.

**Track-by-Track
Polarity Programming**

Some discs seem to flip back and forth in polarity between one track and the next. If you wish to store polarity on a track-by-track basis, follow the directions for assembling a playlist (above), making certain that the polarity indicated for each track is correct before you press the **program +** button to add it to the playlist. Similarly, you may “edit” the polarity of an existing program by pressing **stop** and then reviewing the playlist one track at a time. Change the polarity of any track you like while its information is being displayed, and then press and hold the **program +** button to revise the program.

**Overriding a
Polarity Program**

If you want to doublecheck you previously-saved polarity program, simply press the polarity button at any time. Doing so will change the polarity of the N°390S, but will not modify the polarity program (e.g., the next time you play the disc, the polarity you saved in the program will be used).



Special Functions

The N°390S offers many special customization features, allowing it to serve a wide range of needs simply and completely. These options are grouped in three **SETUP** menus: **SOUND**, **LINKS**, and **AUX IN's**.

These three menus are accessed by *pressing and holding* (“camping on”) the **mode** button until the display changes to show **SETUP**, followed by **SOUND**. Subsequent clicks of the **mode** button will cycle through the various major menus (**LINKS**, **AUX IN's**, and back to **SOUND**); any of these menus may be selected by pressing and holding the **mode** button a second time. Subsequent clicks of the **mode** button will cycle through the various items within each major menu; *pressing and holding* the **mode** button will take you back to the three main menus (should you want to go from a **SOUND** item to a **LINK** item, for example).

At any point, having selected the menu item you would like to change, use the **mode +** and **mode -** buttons to turn various options on or off, respectively.

SOUND Menu Items:

Fixed/Variable Volume

The N°390S gives you the option of engaging a high quality analog volume control, allowing you to use the N°390S as a digital-sources-

only “preamp,” driving a power amplifier directly. This capability is particularly useful in simple systems involving only two or three digital sources. When first engaged, the volume control circuitry will be set to a low volume to avoid any chance of overdriving your loudspeakers.

The N°390S has the ability to “link” several of its functions to compatible Mark Levinson components (like the N°360/S Digital Audio Processor and the N°380/S Preamplifier, and the N°33 and 300-series power amplifiers).

Note:

To take advantage of linked functions, you must connect the N°390 to the other components via their communication ports. (See Rear Panel and Setup and Installation.)

Silent/Audible Cueing

The N°390S also gives you the option of hearing a reduced-volume scan of the program material during fast forward or rewind, or of having the scan be silent. For some, the audible cueing helps identify the portion of the track they seek; others find the broken-up bits of music disconcerting and prefer silence.

Balance Control

If you have engaged the volume control circuitry by setting the **+** **VARIABLE** menu item, then you will also see a balance control within the setup menu, indicated by arrows pointing in both directions (when at the neutral position). Pressing the **mode +** key will move the balance and the image to the right, indicated by a number of decibels and the arrow pointing to the right; pressing the **mode -** key will reverse this process. (This menu does not appear in the **- FIXED** volume mode, since it would not apply.)

Mute Control

Similarly, a user-adjustable mute control is available when the volume control circuitry has been engaged. It offers a range of -3 to -41 decibels of muting in response to the remote control’s mute button being pushed. The factory default is -20 dB.

Locked Volume

Lastly, if (and only if) the volume control circuitry is engaged, you have the option of setting a maximum volume beyond which the N°390S will not go. This is particularly helpful if you have a combination of high sensitivity speakers and high sensitivity power amplifiers, which might make the normal maximum volume setting on the N°390S dangerously loud for your particular system. (It was designed to be able to

drive even relatively insensitive systems.) Alternatively, it can serve as a helpful “party control” to guard against indiscrete guests becoming somewhat overzealous in the heat of the moment....

If you want to set a maximum allowable volume, select your chosen volume setting and then toggle from UNLOCKED to LOCKED.

LINK Menu items:

Standby link

This feature links the standby modes of the various Mark Levinson Linked components. For example:

- If CD processor, preamplifier and power amplifier(s) are in standby mode, pressing the CD processor’s **standby** button will take all four components out of standby mode (making them ready to use).
- If CD processor, preamplifier and power amplifier(s) are “on” (not in standby mode), pressing the N°390S’s **standby** button will place only the CD processor in standby mode (presuming that you may wish to use your digital processor with some digital source other than the N°390S).
- If CD processor, preamplifier and power amplifier are “on” (not in standby mode), pressing the *preamp’s* **standby** button will place all four components into standby mode.

Name link

If you use the N°390S as a transport with a Linked processor with your N°390S (via one of the digital outputs), having the NAME link on will allow the N°390S to show up in the display of the processor by name, e.g., **No39** rather than a generic **CD**.

Play link

When you press the N°390S’s play button, this link automatically selects the appropriate inputs on the preamplifier so you can listen to the CD (*if* you have named that input “No39” as described in the preamp’s owner’s manual). This function also works on the Linked processor if the N°390S is used as a transport (functioning as a “slave” on the communication system rather than as the “master.”)

Display link

This links the display intensity functions of the N°390S and the other Linked components. When the components are linked, all displays will be set to the same brightness. Pressing display intensity on any of the Linked components will affect all the displays.

AUX IN’s Menu items

The N°390S also allows you to rename the two auxiliary digital inputs, in order to give them a name that might be more meaningful in the

context of your system than their factory-default, generic **RCA** and **OPT** input names. You may select from the following list of names (the same list is available for both inputs).

DMX	Digital Music Express
DSS	Digital Satellite System
DAT	Digital Audio Tape
DCC	Digital Compact Cassette
MD	Mini-Disc
CDR	Compact Disc-Recordable
CDI	Compact Disc-Interactive
DBS	Direct Broadcast Satellite
LD	Laser Disc
CD	Compact Disc
ADC	Analog to Digital Converter
AUX	Auxiliary
DCA	Digital Cable Audio
PCD	Proceed CD
PDT	Proceed Digital Transport
CDD	Compact Disc Drive
N.U.	Not Used*

If, while playing the N°390S you decide to change inputs (using either of its digital inputs), the N°390S will place itself in pause. If you haven't switched back to listen to the N°390S again within 30 seconds, it will assume you are finished listening to it and place itself in the stop mode.

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Note that if you elect "N.U." (Not Used) as the name of an input, that input will be bypassed while cycling through the available inputs. Thus if you are using one of the two auxiliary inputs and not the other, setting the unused input to "N.U." will change the input selection process to a simple toggle between the two used inputs. Labelling both auxiliary inputs "N.U." will effectively disable the input selection process on the N°390S, although it will still control the analog inputs of a Linked preamplifier..

Changing Link Options

The following procedure will guide you through changing your Link options, should you decide you would like something other than the factory's default settings. (Note that most people are perfectly satisfied with the default settings, and never need to concern themselves with this section.)

1. Make sure that the **main power** switch is set to the "on" ("I") position and the unit is not in "standby."
2. Press *and hold* the front-panel **mode** button until **SETUP** followed by **SOUND** appears on the display. Release the **mode** button; subsequent "clicks" of the **mode** button

will cycle through each of your N°390S's main menus, in this order:

SOUND
LINKS
AUX IN's

Continued clicks on the **mode** button will return you to the beginning of the list, in case you accidentally pass the option you want to change.

3. When the display shows the menu you want to access, *press and hold* the **mode** button again. Subsequent clicks of the **mode** button will cycle through the various items *within* that menu.
4. When an item you wish to change is in the display, use the **mode +** and **mode –** keys (either on the front panel or on the remote control) to change the setting.
5. Repeat step 4 for each setting you want to change.
6. When you have finished, *press and hold* the **mode** button again to confirm your change(s). The display will return to the original three main menus.

Once saved, your link settings remain in memory when you place the N°390S into **standby**, when you turn off the **main power** switch — even if AC power is interrupted.

Sleep Timer

The N°390S also may be set to automatically enter standby after a pre-defined period. As shipped from the factory, its standby function is manual (that is, it only enters or leaves standby when told to do so by the user).

This feature is similar to a “sleep timer” on a clock radio. If playing a CD, for example, the N°390S will enter standby automatically after the user-selected period of time. To change between manual and timed/automatic standby:

1. Press *and hold* the **standby** button until the display reads **MANUAL**.
2. Release the **standby** button and then use the previous and next buttons to either advance or reduce the amount of time you want to transpire between the last activity of the N°390S and its going into standby. You may select any number of minutes between 1-120. You may restore normal, manual operation by pressing previous to go “below” 1 minute, into MANUAL standby operation.
3. Allow the N°390S to timeout (returning the display to its normal operation).

Using Learning Remote Controls

The N°390S includes both an infrared receiver *and* an infrared transmitter. With this capability, it can “teach” a learning remote control any commands that might be needed for remote operation.

Specifically, the N°390S can send all of the necessary IR commands from its **display** window, enabling you to teach a learning remote any or all of its pre-programmed commands, as well as some optional special commands that are available to solve specific installation-related problems.

The N°390S has two special modes of operation into which it may be placed in order to facilitate the “teaching” of remote control commands to a learning remote control. The first allows you to easily teach the commands for which there are corresponding front panel buttons. The second allows you to teach “special” commands to the remote control for which there are no corresponding front panel buttons.

Teaching N°390S Front Panel Commands

1 Press and hold the repeat button to enter the front panel teaching mode

The display will show **< TEACH IR** to indicate that the N°390S is ready to teach a learning remote control the infrared commands that correspond to its front panel buttons. The left-pointing arrow points directly at the point from which the IR commands will be sent, to assist you in lining up your learning remote control.

If you change your mind, simply don't touch *any* button for ten seconds and the N°390S will return to normal operation. (*Hint:* you may remember that this special “hidden” feature of the N°390S is accessed via a press-and-hold of the **repeat** button by associating its use with the external IR “repeaters” so often used in custom installations; the functionality found here is of most value in such installations.)

2 Press any front panel button to cause the N°390S to send the corresponding IR command

Line up the IR window of your remote control with the left side of the N°390S display, at a distance of approximately 2"-6". Select the to-be-learned button on the remote, then press the corresponding button on the N°390S to fire the appropriate IR code.

Most learning remotes need to be held fairly still while they learn new IR commands; movement can garble the received IR. If you are uncertain as to how to prepare your remote control for learning new commands, refer to the instructions provided with the remote control.

3 Repeat the process of “teaching” new commands to the various buttons on your remote control until all appropriate or desired front panel commands have been learned by your remote

4 When finished, exit the Teach IR mode by Allowing the N°390S to “timeout”

You may wish to teach your remote control some of the N°390S’s special commands (those for which there is no corresponding front panel button); in this case, you should go directly to the next section. Otherwise, simply avoid pressing any buttons for about ten seconds, and the N°390S will automatically return to normal operation.

At some point, however, you should test all your newly “learned” commands to ensure that they were “learned” correctly.

Teaching Other N°390S Commands

As mentioned above, the N°390S has the capability to teach learning remote controls special commands for which there are no front panel counterparts. These commands can be especially helpful in solving problems in certain kinds of custom installations.

These “positive control” commands in the N°390S will place it into a certain mode of operation regardless of its current state. For example, a positive control command to enter **standby** will *leave* the N°390S in **standby** if already there, or *switch* it to **standby** if it is currently operating. This type of positive control is especially helpful when you do not necessarily know the current status of the N°390S, as might be the case in a multi-room home entertainment system (for example).

1 Place the N°390S in its front panel teaching mode

As explained on the previous page, you do this by pressing and holding the **repeat** button until the display reads **TEACH IR**. If no further buttons are pressed within approximately ten seconds, the N°390S will “time out” and return to normal operation.

2 release, then Press and hold the Repeat button a second time to place the N°390S in its Custom IR mode

After about five seconds, the display will change from **TEACH IR** to **OPERATE** (the first special IR code available for teaching). This indicates that the special IR codes that do not correspond to front-panel buttons are now available for teaching to a learning remote control—including some that are designed to solve problems unique to custom installations.

3 press the “repeat” button repeatedly to advance to the desired Function

The table on the next page lists the various commands that are available for the N°390S for which there is not front-panel equivalent. In some cases, they represent “positive control” alternatives to commands which normally toggle between two settings (such as standby and operate). In other cases, they represent functions which exist only on the remote control. In the second column are the designations that will be displayed to indicate that the N°390S is ready to fire the corresponding IR code.

Pressing **repeat** will advance you to the next command in the table. If no button is pushed for more than ten seconds, the N°390S will “time out” and return to normal operation.

Command	Display
positive control for operate	OPERATE
positive control for standby	STANDBY
positive control for stop	JUST STOP
set display intensity to off	DISPLAY 0
set display intensity to medium	DISPLAY 2
positive control for unpause	UNPAUSE
positive control for pause	PAUSE
positive control for leaving the repeat mode	NO REPEAT
positive control for open drawer	OPEN
positive control for close drawer	CLOSE
positive control for random play	RANDOM
positive control for selecting analog inputs	ANALOG
positive control for selecting digital inputs	DIGITAL
positive control for program -	PROG -
positive control for program +	PROG +
Select CD input	SET CD
Select RCA input	SET RCA
Select optical (EIAJ) input	SET OPT

4 Momentarily press the REPEAT button to transmit the selected code

Line up the IR window of your remote control with the left side of the display of the N°390S, at a distance of approximately 2"-6". Select the to-be-learned button on the remote, then fire the selected code from the N°390S by pressing **mode**.

(If you are uncertain as to how to prepare your remote control for learning new commands, refer to the instructions provided with the remote control.)

5 Repeat the process of "teaching" new special commands until all desired commands have been learned by your remote control.

If you take longer than approximately ten seconds between button pushes, the N°390S will time out and return to normal operation. If this occurs, return to step #1 in this section. You may move through the entire list by pressing **repeat**.

6 When finished, Return to normal operation by allowing the N°390S to "time out"

The N°390S will "timeout" and return to normal operation after approximately ten seconds.

Troubleshooting

In general, refer any service problems to your Mark Levinson dealer. Before contacting your dealer, however, check to see if the problem is listed here. If it is, try the suggested solutions. If none of these solves the problem, contact your Mark Levinson dealer.

- 1. The N°390S won't function, and the Display is dark.**
 - ✓ The unit is in standby. Press the **standby** button.
 - ✓ The N°390S isn't plugged into the AC mains or the main power switch isn't turned on.
 - ✓ The wall socket, adapter, or extension cord is faulty.
 - ✓ There's a tripped circuit breaker or blown fuse in the wall outlet's circuit.
 - ✓ A fuse is blown in your N°390S (contact your Mark Levinson dealer).

- 2. The Display is Lit, but there is no output**
 - ✓ The proper digital input isn't selected on the N°390S.
 - ✓ The proper analog input isn't selected on your preamplifier.
 - ✓ The interconnecting cables are connected incorrectly or are faulty.
 - ✓ The variable output volume adjustment is set to **0.0** (off).

- 3. The N°390S display reads "NO DISC"**
 - ✓ There is no disc in the drawer for the transport to read.
 - ✓ The disc is upside down and therefore cannot be read.
 - ✓ The disc has loaded improperly and cannot be read—open the drawer, ensure that the disc is placed properly in the drawer, and try again.

- 4. The N°390S won't play a CD inserted in the player.**
 - ✓ The CD is inserted upside down.
 - ✓ There may be condensation (moisture) on the laser pickup. This can happen if the N°390S is moved from a cold environment (such as a warehouse or a shipper's truck) to a warm one. Set the **main power** switch to its "I" position, and leave it on for one hour to warm up, then try playing a CD again.

- 5. When a CD is playing, the sound "skips."**
 - ✓ The CD is severely scratched or dirty.
 - ✓ The N°390S is on an unstable surface or is too close to your speakers.

6. The linked functions don't work.

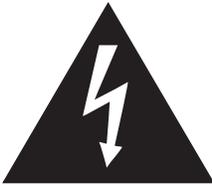
- ✓ The Link cable is disconnected, or is connected incorrectly. Check your Link connections.
- ✓ The Link options are turned off.
- ✓ The preamplifier is not aliased (renamed) for the N°39.
- ✓ The processor (if one is being used) does not have one of its inputs tied to the N°390S.
- ✓ Try turning off/disconnecting AC power from both the preamplifier and the N°390S. After several seconds, restore AC power to the preamplifier, *then* turn on the N°390S's **main power** switch. *Never operate the main power switch without first making sure that power is turned off to your receiver, integrated amplifier, or preamplifier/power amplifier.*
- ✓ You may have older versions of the system software in your associated Mark Levinson components which do not fully support all Linked functions. Contact your Mark Levinson dealer with the model and serial numbers of your Mark Levinson components. If needed, new EPROMs will be provided at no charge.

7. The Remote Control doesn't operate the N°390S.

- ✓ The Remote Control is at the wrong angle relative to the N°390S, and the N°390S can't receive the signal.
- ✓ The sensor window on the front panel of the N°390S is dirty or blocked.
- ✓ The Remote Control's projection lens is dirty.
- ✓ Fluorescent lighting or sunlight is interfering with the operation of the Remote Control.
- ✓ The Remote Control's batteries are weak and need to be replaced.
- ✓ The Remote Control's batteries are installed incorrectly.

Care and Maintenance

To remove dust from the cabinet of the N°390S, use a feather duster. To remove dirt and fingerprints, we recommend isopropyl alcohol and a soft cloth.



Caution!

Always apply the isopropyl alcohol to the soft cloth and then wipe the N°390S with the dampened cloth. Never pour or spray even small amounts of any liquid directly on the N°390S, as doing so may allow the liquid to reach the circuitry inside the unit. Any liquid inside the unit poses a hazard to both the user and to the unit, and must be avoided.

Make sure that the Remote sensor window on the front panel and the Remote Control's projection lens are kept clean and dust-free.

Fluorescent lighting and sunlight may interfere with the operation of the Remote Control. Avoid placing the N°390S near fluorescent lamps or in direct sunlight.

When the Remote Control's batteries need to be replaced, use only AA batteries; always replace both batteries at the same time. If you don't plan to use the Remote Control often, remove the batteries. When not used for an extended period, even "leakproof" batteries can leak corrosive acids that will damage the Remote Control (and will void the warranty).

A CD, handled carefully, will last indefinitely. A warped, dusty, or scratched CD can cause playback problems, including audible skipping or other noises. Handle a CD by the outer edges only; if necessary, support it with your index finger at the center hole.

When you're finished playing a CD, always return it to its plastic case. Store your CDs where they won't be exposed to direct sunlight, high humidity, or extremely high or low temperatures.

U.S. and Canadian Warranty

90-Day Limited Warranty

This Mark Levinson® product is warranted to be free from defects in material and workmanship under normal use for a period of ninety (90) days from the date of purchase. **To extend the warranty of this Mark Levinson product**, return the warranty registration card along with a copy of the original receipt of purchase to Madrigal Audio Laboratories, Inc., P. O. Box 781, Middletown, CT 06457.

Five Year Extended Warranty

The *extended warranty* for this Mark Levinson product is *five (5) years* from the date of purchase. During the warranty period, any Mark Levinson component exhibiting defects in materials and/or workmanship will be repaired or replaced, at our option, without charge for either parts or labor, at our factory. The warranty will not apply to any Mark Levinson component that has been misused, abused or altered.

Any Mark Levinson component not performing satisfactorily may be returned to the factory for evaluation. Return authorization must first be obtained by either calling or writing the factory prior to shipping the component. The factory will pay for return shipping charges only in the event that the component is found to be defective as above mentioned. There are other stipulations that may apply to shipping charges.

There is no other express warranty on this component. Neither this warranty nor any other warranty, express or implied, including any implied warranties of merchantability or fitness, shall extend beyond the warranty period. No responsibility is assumed for any incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts and other states do not allow the exclusion or limitation of incidental or consequential damages, so that the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. **This warranty is applicable in the United States and Canada only.** Outside of the U.S. and Canada, please contact your local, authorized Mark Levinson distributor for warranty and service information.

Obtaining Service

We take great pride in our dealers. Experience, dedication, and integrity make these professionals ideally suited to assist with our customers' service needs.

If your Mark Levinson component must be serviced, please contact your dealer. Your dealer will then decide whether the problem can be remedied locally, or whether to contact Madrigal for further service information or parts, or to obtain a Return Authorization. The Madrigal Technical Services Department works closely with your dealer to solve your service needs expediently.



Important!

Return authorization must be obtained from Madrigal's Technical Services Department BEFORE a unit is shipped for service.

It is extremely important that information about a problem be explicit and complete. A specific, comprehensive description of the problem helps your dealer and the Madrigal Technical Services Department locate and repair the difficulty as quickly as possible.

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A copy of the original bill of sale will serve to verify warranty status. Please include it with the unit when it is brought in for warranty service.



Warning!

All returned units must be properly packaged (preferably in their original packing material), and the proper return authorization numbers must be marked on the outer carton for identification. If the packaging to protect the unit is, in our opinion or that of our dealer, inadequate to protect the unit, we reserve the right to repackage it for return shipment at the owner's expense. Neither Madrigal nor your dealer can be responsible for shipping damage due to improper (that is, non-original) packaging.

Your dealer can order a new set of shipping materials for you if you need to ship your component and no longer have the original materials. There will be a charge for this service. We *strongly* recommend saving all packing materials in case you need to ship your unit some day.

Specifications

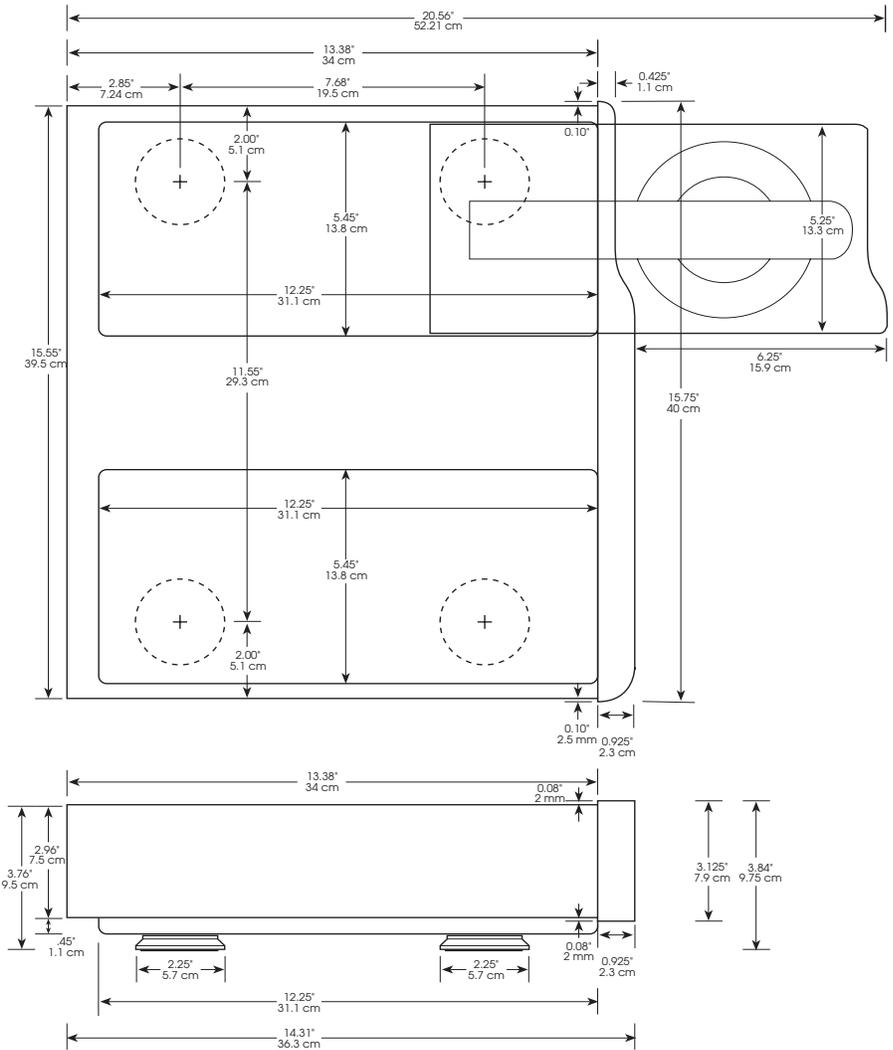
The correlation between published specifications and sonic quality is unreliable. A list of numbers reveals virtually nothing. All technical measurements must be subject to qualitative as well as quantitative interpretation.

Measurements of the N°390S yield excellent results by any standards. However, only those specifications that apply to its actual operation are included here.

- Frequency response: 10Hz - 20kHz, +0dB, -0.3dB
- Total harmonic distortion (THD): 0.002% @ 1 kHz, 0dBFS (10Hz-30kHz)
- Dynamic range: 96dB (10Hz-30kHz)
- Signal-to-noise ratio: 105dB (10Hz-30kHz)
- Channel separation: Better than 110 dB
- Intermodulation distortion (SMPTE IMD): Less than 0.005%
- Maximum output (0 dBFS signal): 4.45V balanced
2.225V single-ended
- Volume control (attenuation) range: -61.2 to +12 dB
- Digital-to-analog conversion: Dual differential 24-bit DACs
- Conversion Rate: 352.8kHz or 384kHz(input signal dependent), 24-bit
- Analog filter: Bessel-tuned, linear phase to 40kHz
- Low-level linearity: deviation less than 2 dB to below -90dBFS
less than 2 dB to below -102dBFS w/20-bit input
- Output impedance (analog): 10 Ω
- Direct digital output, XLR: AES/EBU 110 Ω , 3.5V
- Direct digital output, RCA: S/PDIF 75 Ω , 0.5V
- Mains voltage: 100V, 120V, 200V, 220V, 240V,
factory set for destination country
- Mains frequency: 50 or 60 Hz,
factory set for destination country
- Power consumption: 36 watts maximum
- Overall dimensions: See "Dimensions"
- Shipping weight: 50 lbs. (23 kg)
- Input complement: 1 EIAJ digital input
1 S/PDIF (RCA) digital input
- Output complement: 2 male XLR balanced audio outputs
2 RCA single-ended audio outputs
1 AES/EBU (XLR) digital output
1 S/PDIF (RCA) digital output
- Other I/O: 2 RJ-45 modular Communication Links
1 3.5mm external IR input jack
1 IEC AC mains connector

Madrigal provides an owner-transferable, five year limited warranty on all Mark Levinson products within the U. S. and Canada ONLY. Warranty and service policies outside the U. S. and Canada are set by the local, authorized distributor and are applicable in the country of purchase ONLY. Madrigal products are designed to operate at set voltages appropriate for the country of sale and may be damaged if operated at the wrong voltage.

Dimensions





MADRIGAL

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