POINT SEVEN™

SHIELDED REFERENCE MONITOR

REFERENCE MANUAL

ALESIS

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1996

Introduction

Thank you for purchasing the Alesis Point Seven Shielded Reference Monitors. To take full advantage of the Point Seven's operation, and to enjoy long and trouble-free use, please read this user's manual carefully.

How To Use This Manual

This manual is divided into the following sections describing the various features of the Point Sevens. Though we recommend you take time to read through the entire manual once carefully, those having general knowledge about monitors should use the table of contents to reference specific functions.

Chapter 1: About the Point Seven. Engineering specifications and reasons why near field monitors have become so popular.

Chapter 2: Speaker Installation. This chapter explains how to connect the Point Sevens to a power amplifier and discusses proper speaker placement.

Chapter 3: Troubleshooting. This chapter contains troubleshooting tips and service information should problems occur.

When something important appears in the manual, an icon (like the one on the left) will appear in the left margin. This symbol indicates that this information is vital when operating the Point Seven.

CE

DECLARATION OF CONFORMITY

Manufacturer's Name:	Alesis Corporation
Manufacturer's Address:	3630 Holdrege Ave. Los Angeles, CA 90016 USA

declares, that the product:

Product Name:	Point Seven

conforms to the following Standards:

EMC:	EN55013:1990 Class B EN55020:1988 sections 4.3, 5.4, 6.2, 7.0 & 8.0 are under consideration
European Contact:	Sound Technology 17 Letchworth Point, Lechworth, Hertfordshire, SG6 1ND, England. Phone: +44.1462.480000 Fax: +44.1462.480800

October, 1996

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CHAPTER 1
ABOUT THE POINT SEVEN

Unpacking and Inspection

Your Point Sevens were packed carefully at the factory, and the shipping carton was designed to protect the speakers during shipping. Please retain this container in the highly unlikely event that you need to return the Point Sevens for servicing.

The shipping carton should contain the following items:

- This instruction manual
- Alesis Point Sevens with the same serial number as shown on shipping carton
- Port Plugs (for use with Subwoofers)
- Alesis warranty card

It is important to register your purchase; if you have not already filled out your warranty card and mailed it back to Alesis, please take the time to do so now.

The Point Sevens are symetrically designed, avoiding the need for mirror-imaged pairs. The Point Seven speakers you receive should be identical on the left and right sides.

Engineering Statement

Your new Alesis Point Seven Shielded Reference Monitors are intended for very space limited recording environments, for use in close proximity to a computer monitor or when portability is a requirement.

Tonally, every effort has been made to emulate the accurate studio sound of Alesis' own Monitor One with slightly less deep bass extension. The "Point Seven" designation refers to the Seven's 5 1/4" woofer piston area as being seven tenths the piston area of the Monitor One's 6 1/2" woofer. The Point Seven's newly developed silk dome tweeter offers a frequency response to 27kHz, which has been tailored specifically for non-fatiguing near-field monitoring.

If you're in a hurry to get started with the Point Sevens, skip ahead to Chapter 2, "Speaker Installation", for connection and placement tips.

The Point Seven's 5 1/4" woofer cone is made of proprietary non-woven carbon fiber. This material is 25% lighter than polypropylene with twice the stiffness for quicker transient response in the low-to-midbass region and improved midrange intelligibility. The non-woven carbon fiber cone, along with the closed cell synthetic rubber surround, are both materials which are nearly impervious to ozone, direct sunlight, heat and humidity. Therefore, after the initial break-in period (about 20 hours), the sound should remain virtually unchanged for the life of the product.

The Seven's shielded tweeter utilizes a vented pole piece with a separate rear chamber to lower the free air resonance. This high Q (very highly damped) design features a pure silk dome, an internal pole-piece-mounted phasing plug and low viscosity ferrofluid formulated specifically to retain the best balance of transient response to power handling.

The frequency response of Alesis' proprietary tweeter is designed to be flat (± 2 dB) from its 2kHz crossover frequency to 10kHz. At 10kHz the response drops smoothly to 27kHz, at which point it drops by -6dB. This is an optimal response for non-fatiguing, long term, high level, nearfield mixdowns. This design results in a flat, linear mix when played back on home or car systems from appropriate distances.

Magnetic shielding of both the Point Seven's drivers was not an afterthought. Rather, from design inception, the system had to exhibit less than three gauss leakage so that even extremely sensitive 21" computer monitors would be unaffected by close proximity positioning. Shielding of both woofer and tweeter is accomplished by the use of a second opposing-field-oriented "bucking" magnet, plus a sixteen gauge steel cup which encases the entire magnetic structure.

The eleven element crossover features modified algorithm third order Butterworth filters for both the high and low pass sections along with woofer impedance compensation. (Compensation is unnecessary on the tweeter. The tweeter's impedance characteristic is exceptionally flat as designed and the resonance peak is already very effectively damped with the ferrofluid.) The crossover frequency of the Point Seven is 2000Hz. The actual voltage curve, however, shows the woofer beginning its rolloff at 800Hz @ 6dB/octave to 1600Hz. At this point the curve "knees" a second time and from 1600Hz to 3200Hz the rate is 12dB/octave.

The tweeter voltage curve also "knees" twice but the curves are substantially steeper. From 3400Hz down to 1700Hz the tweeter rolls at 12dB/octave. Below 1700Hz the acoustic rolloffs approaches 60dB/octave. This radical curve shaping yields a tweeter with prodigious power handling capability, even at the extremely low 2kHz crossover point. (Note that the slightly non-complementary curve slope spreads of 1600Hz-3200Hz for the woofer versus 3400Hz-1700Hz for the tweeter are the acoustical "offset" required to compensate for mechanical offset of the woofer and tweeter. It is this "offset" or frequency spread which brings both drivers into proper time alignment.) The advantages of these "altered algorithm" high and low pass Butterworth alignments are:

a) a virtually perfect group delay characteristic (almost a straight line) yielding accurate phase.
b) exceptionally linear power response (several averaged, off-axis frequency response curves) through the middle octaves. Along with the 5 1/4" cone size this linear (flat) power response projects an exceptionally large "sweet spot".
c) a longer smoother, sound characteristic blend between the non-woven CF woofer and silk dome tweeter.

The Point Seven's cabinet construction employs Alesis' proprietary non-skid rubber-vinyl composite material laminated to a .625" MFD (medium density fiberboard) core. The eight corner protectors used on our Monitor Two have been adapted to the Point Seven in anticipation of its portable application.

Dual, front baffle mounted, 9" long ports have been carefully integrated to yield a Qtc = 1.2 (a 3dB bump @ 120Hz) which provides a balanced, full range sound when used alone. For critical mixing/playback, recessed head, polyethylene "port plugs" are provided. The plugs transform the Point Seven into an acoustic suspension design giving a more critically damped response (Qtc = .9) and improved transient characteristics. This versatile, "convertible" ported/closed box feature is possible because the woofer's EBP (Efficiency Bandwidth Product has been designed to fall into the narrow parameter range wherein both configurations will work equally well.

A Little History

In the early days of recording, most recording studios used big monitor speakers almost exclusively. Unfortunately, they also required high powered amplifiers and expensive acoustic treatment (often poorly done) of the *entire* control room. Still, a well-constructed big monitoring system really was impressive to listen to, a fact not overlooked by the studio owners who wanted to impress the record company executives who paid for the big studio's time. These big systems had big level control knobs, and clients enjoyed "cranking-up" the volume. Fortunately, recording engineers and producers eventually learned that this was not the best way to accurately mix music because it wasn't the way most people listened to their radios, cassettes and CD players. Also, big monitor systems and the costs for the required control room acoustic treatments were going through the roof (no pun intended), particularly beyond the budget limits of smaller project and home studios which were growing in numbers. A new way of accurate monitoring was needed: near-field monitoring.

Near-field monitors, by their definition, are intended for mounting close to the listener. The idea here is to improve the direct acoustic path between the speaker and the listener by making it shorter, thereby giving less opportunity for the always present indirect (reflected) sounds to get back in and muddle things up. With near-field monitoring, the surrounding acoustic environment becomes a much less significant factor in establishing the monitor system's sound character.

A good set of small monitors properly placed in a reasonably non-reverberant room and powered by a 100-watt amplifier will yield surprisingly accurate results at budget prices. Carried to another studio, the same monitor should also provide *repeatable* results. In fact, some recording engineers carry their own speakers around because they know how they will sound in almost any room. Now, even the big studios use smaller speakers to augment their big monitoring systems, and near-field monitors have become proven tools in the recording business.

CHAPTER 2

SPEAKER INSTALLATION

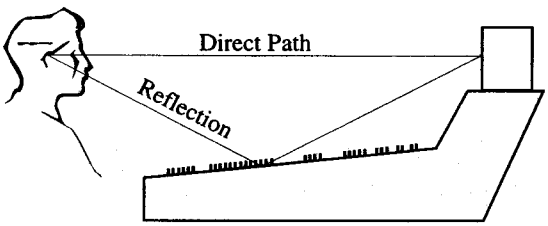
Like any speaker system, your Point Sevens will work best when properly positioned in a suitable acoustic environment. Achieving proper speaker placement is usually straightforward, but even with near-field monitors, speaker placement and the acoustics of the listening room itself are too often overlooked and can become significant contributors to an inaccurate and uninspiring monitoring environment.

Speaker Placement

While near-field monitors are more forgiving of the surrounding room acoustics, it is always prudent to optimize the listening environment whenever possible. First, the user should be aware of the effect that the size of the listening room can have on low frequency response. In general, the smaller the room, the stronger the bottom end will be, although placement within a larger room can also make a difference. This has to do with the way low-frequency waves travel in closed spaces. If you find your monitor system to be either light or heavy on the bottom, try moving them around within your listening room.

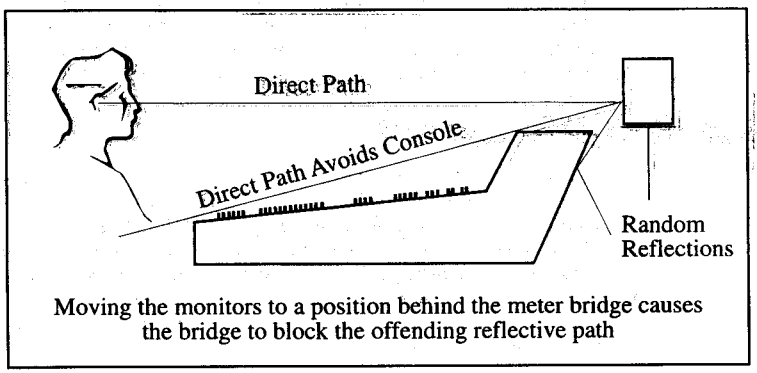
You should avoid locating your Point Sevens near reflective surfaces such as glass, tile, large open walls or table tops. Still, many rooms used for recording have these surfaces, so the best way to deal with them is to place the monitors out in the room away from reflective walls, windows and sizable objects. Even with these reflective surfaces separated from the monitoring position, typical mixing situations usually still have the top surface of the mixing board to deal with.

Unfortunately, the board itself can be a major source of reflections and the additional acoustic conduction into the board can affect your monitor's amplitude and phase response. Speaker placement on the console's meter bridge provides for two clear acoustic paths between the speakers and the recording engineer which results in undesirable comb filtering effects and poor imaging. The first path is the direct one, and the second is via a reflection off the mixer main control panel:



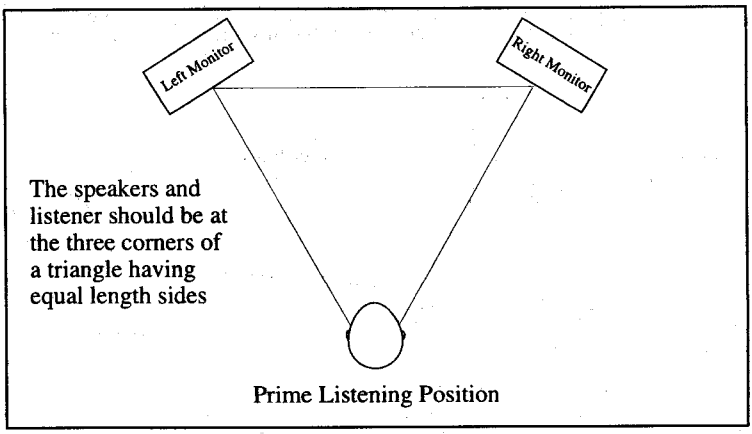
Monitors placed on the console's meter bridge can directly radiate back onto the console control panel causing a strong delayed reflection at the listening position

This kind of speaker placement also couples acoustic energy from the speaker's cabinet more readily into the console's chassis. Both conditions should be reduced by placing the speakers on their own stands acoustically detached from, and slightly behind, the console as shown below. In this location, the reflective path off the console's control panel is now blocked by the meter bridge.

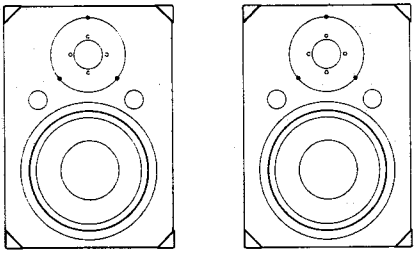


Moving the monitors to a position behind the meter bridge causes the bridge to block the offending reflective path

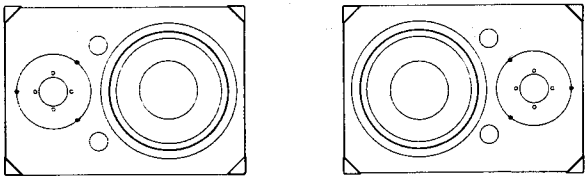
Careful consideration should also be given to the physical spacing between the speakers. Alesis recommends that the distance between the speakers equal the distance between the listener and either speaker. In other words, the listener and the two speakers are at the three corners of a triangle having equal- length sides. The Figure below shows this concept. Note that both speakers are turned in somewhat, so that the prime listening position is directly in front of each speaker. Applications that require monitoring by more than one engineer are accommodated by a smaller rotation of the cabinets. This will widen the prime listening position somewhat.



Alesis has designed the Point Sevens for vertical mounting.



If, however, you need to keep their height profile as low as possible to minimize the recording engineer's visual obstructions, they may be mounted horizontally. If used this way, they should be installed with the tweeters towards the outside (see below).

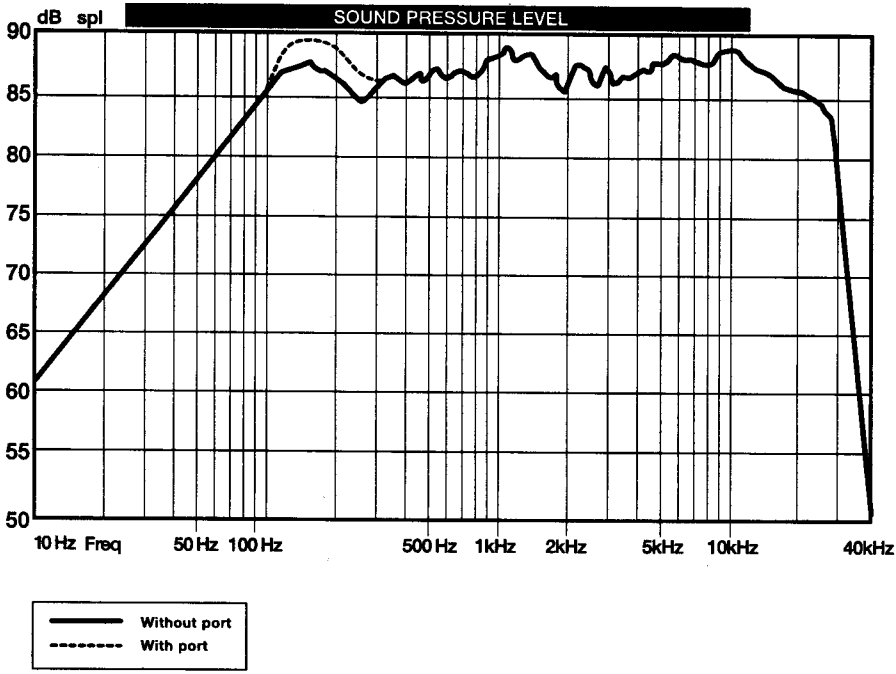


The Point Sevens are completely covered with a non-slip rubber textured laminate whereas other speakers provide small stick-on pads (or nothing at all) to keep them from slipping around while they are playing. If you need to move the Point Sevens or adjust their position slightly, lift them off the mounting surface first rather than attempting to slide them.

Using The Port Plugs

The low frequency responce of the Point Sevens can be custom tailored by using the four (supplied) port plugs. If they are used by themselves, without any outside bass augmentation (i.e. a subwoofer), then the ports should be left open. This will give a 3dB bass boost between 90Hz and 130Hz and result in a "balanced" sound.

If, however, you want the most "accurate" sound and are willing to sacrifice bass response below 100Hz, then insert the plugs. This will give slightly less *apparent* bass but the sound will be tighter and very well damped. When used with a subwoofer, the Point Seven's plugs should always be used. If the ports are left open *and* a subwoofer is used, the resulting sound will have a bloated, unnatural midbass.



Connections

Professional grade 5-way gold-plated binding posts are provided for external wiring to the amplifier. This type of connector can accommodate bare or tinned wires, banana plugs and even spade lugs.

About Wire: A lot of hype and confusion exists about the type of speaker wires to use, most of it created by the wire manufacturers themselves in an effort to have a unique story to tell. While this expensive wire will not hurt the speaker's performance at all, Alesis does not subscribe to most of this hype and chooses to take an approach based on science when recommending speaker wire. Our recommendation is simple; use the shortest length of the largest diameter wire you can get. #12-14 gauge multi-stranded speaker wire found at most hi-fi and electronics stores works very well. This kind of wire resembles oversized lamp cord and is very easy to work with.

Before connecting the speakers, check that your amplifier is turned OFF. Be sure you get the + terminals of the speakers wired to the + terminals of the amplifier. To help you do this, most speaker cable has a way to tell one conductor from another. Some use different-colored wires or insulation; others mold a small line or marker into one insulator to mark it. If one speaker's polarity is out of phase with the other, the result will be loss of low frequency response and stereo imaging when the system is played. In most cases, the speaker outputs of the amplifier will have a red terminal and a black terminal; these should be connected to the same-colored terminals of the

Point Seven. Consult the manual of your power amplifier for specific information. In a properly-phased system, a positive input to the amplifier should result in a positive voltage on the red terminal, and push the driver forward.

If you are using a dual banana plug connector, one side of the plug usually has a "GND" marker molded on it so you can keep polarity straight after unplugging and replugging. In standard practice, the GND side connects to the black terminal of the speaker.

To connect wires to the terminals if you are not using a banana plug:

1. Strip about 1/2" (15 mm) of insulation from the ends of each wire. If the wire is stranded, twist the strands together at the end.
2. Turn the red and black terminal caps counter-clockwise until they reach their limit. As you do, the hole through the terminal post will be exposed.
3. Insert the wires into the holes, observing proper polarity.
4. Tighten the terminal caps so that they hold the wire firmly. Make sure no insulation is caught inside the terminal, to avoid a loose connection.

Power and Protection

The Point Sevens are rated to handle 50 watts program material. However, an amplifier with a 100 watt power rating into four ohms, like the Alesis RA-100 Reference Amplifier, is recommended for most monitoring situations. This is because an amplifier with too little power driven into clipping is far more likely to destoy a tweeter than a higher powered amp delivering a clean, undistorted signal.

Be sure to verify that your amplifier is rated for 4 ohm speakers. Some older amplifiers are not and may fail if overloaded. Alesis is not responsible for any failures caused by the use of an inproperly-rated amplifier.Also, there is no situation where an amplifier rated beyond 200 watts should ever be used because of the danger of damaging the Point Seven. To do so is asking for trouble and will void your warranty.

Alesis does not suggest the use of any external protection devices, but considers such devices as fuses, lamps and/or thermal breakers safe to use, so long as they do not cause failures or require modifications to the Point Seven's construction which would void the warranty. Actually, many such devices are generally considered ineffective and can additionally alter the speaker's sound character, an undesirable trait for a studio monitor.

The best protection against speaker failure is to mix at a reasonable listening level.

Alesis thanks you for choosing our products. We value any comments you may have about this monitor system, this manual, your Alesis dealer and about our factory service. Please take a minute now to fill out your warranty card and tell us what you think.

CHAPTER 3

TROUBLESHOOTING

Troubleshooting Index

If you experience problems while using the Point Sevens, please use the following table to locate possible causes and solutions before contacting Alesis Technical Support for assistance.

Symptom	Cause	Solution
No sound	Speaker disconnected	Check speaker cable connections
	Power amp not set correctly	Check power amp volume, power, inputs
Unfocused sound, bass frequencies muddy or missing	Speakers out of phase	Check + and - connections from power amp to speakers
	Poor mix	Compare to commercial CD of similar style: time to remix your track....
Distorted output	Power amp overloading speakers	Make sure rating is below 200W or turn down level
	Damaged speaker components	Swap speakers to see if the problem follows the speaker; if so contact Technical Support

Maintenance

Cleaning

The cabinet surfaces of the Point Seven are covered with a textured rubber laminate. Clean these surfaces when necessary with a lint-free cloth dampened in warm soapy water. To preserve the textured finish, don't rub hard on the surface. Do not attempt to clean the cabinet with a brush (which may damage the surface) or a sponge (which may leave small crumbs in the texture).

Do not attempt to clean either of the drivers.

The Point Sevens require no periodic maintenance.

Service

Before sending the Point Sevens in for repair, make sure they are faulty and that the problem isn't being caused by something else in the system. Distortion or noise may be caused by a defective amplifier, preamp, cable, equalizer etc., or a loose connection in the system. Connect the Point Sevens to a system that is known to be working properly to check whether the monitors have malfunctioned.

Obtaining Repair Service

Before contacting Alesis, check over all your connections, and make sure you've read the manual.

Customers in the USA and Canada: If the problem persists, call Alesis USA at 1-800-5-ALESIS and request the Technical Support department. Talk the problem over with one of our technicians; if necessary, you will be given a return order (RO) number and instructions on how to return the unit. All units must be shipped prepaid and COD shipments will not be accepted.

For prompt service, indicate the RO number on the shipping label. Units without an RO will not be accepted. If you do not have the original packing, ship the NanoVerb in a sturdy carton, with shock-absorbing materials such as styrofoam pellets (the kind without CFCs, please) or "bubble-pack" surrounding the unit. Shipping damage caused by inadequate packing is not covered by the Alesis warranty.

Tape a note to the top of the unit describing the problem, include your name and a phone number where Alesis can contact you if necessary, as well as instructions on where you want the product returned. Alesis will pay for standard one-way shipping back to you on any repair covered under the terms of this warranty. Next day service is available for a surcharge.

Field repairs are not normally authorized during the warranty period, and repair attempts by unqualified personnel may invalidate the warranty.

Service address for customers in the USA:

Alesis Technical Support
3630 Holdrege Avenue
Los Angeles, CA 90016

Customers outside the USA and Canada:
Contact your local Alesis distributor for any warranty assistance. The Alesis Limited Warranty applies only to products sold to users in the USA and Canada. Customers outside of the USA and Canada are not covered by this Limited Warranty and may or may not be covered by an independent distributor warranty in the country of sale. Do not return products to the factory unless you have been given specific instructions to do so.

SPECIFICATIONS

Drivers:	5.25" non-woven carbon fiber coned woofer, magnetically shielded 1" ferrofluid cooled silk dome tweeter, magnetically shielded
Crossover:	2.0kHz modified third order Butterworth filter
Frequency Response:	85Hz - 27kHz, ±3 dB
Power Handling:	50 watts program, 100 watts peak (using EIA-426A method)
Nominal Impedance:	4 ohms
Sensitivity:	86 dB SPL @ 1 watt/ 1 meter
Cabinet:	Rubber textured laminate over .625" MDF with molded corner protectors
Dimensions:	7.1"W x 11.2"H x 7.25"D
Weight:	11 lb. each

ALESIS LIMITED WARRANTY

ALESIS CORPORATION ("ALESIS") warrants this product to be free of defects in material and workmanship for a period of ninety (90) days for parts and labor from the date of original retail purchase. This warranty is enforceable only by the original retail purchaser.

To be protected by this warranty, the purchaser must complete and return the enclosed warranty card within 14 days of purchase.

During the warranty period ALESIS shall, at its sole and absolute option, either repair or replace free of charge any product that proves to be defective on inspection by ALESIS or its authorized service representative. In all cases disputes concerning this warranty shall be resolved as prescribed by law.

To obtain warranty service, the purchaser must first call or write ALESIS at the address and telephone number printed below to obtain a Return Authorization Number and instructions concerning where to return the unit for service. All inquiries must be accompanied by a description of the problem. All authorized returns must be sent to ALESIS or an authorized ALESIS repair facility postage prepaid, insured and properly packaged. Proof of purchase must be presented in the form of a bill of sale, canceled check or some other positive proof that the product is within the warranty period. ALESIS reserves the right to update any unit returned for repair. ALESIS reserves the right to change or improve design of the product at any time without prior notice.

This warranty does not cover claims for damage due to abuse, neglect, alteration or attempted repair by unauthorized personnel, and is limited to failures arising during normal use that are due to defects in material or workmanship in the product.

ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE LENGTH OF THIS LIMITED WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

IN NO EVENT WILL ALESIS BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES RESULTING FROM THE BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING, AMONG OTHER THINGS, DAMAGE TO PROPERTY, DAMAGE BASED ON INCONVENIENCE OR ON LOSS OF USE OF THE PRODUCT, AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. Some states do not allow the exclusion or limitation of incidental or consequential damages, so 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 only applies to products sold in the United States of America or Canada. The terms of this warranty and any obligations of Alesis under this warranty shall apply only within the country of sale. Without limiting the foregoing, repairs under this warranty shall be made only by a duly authorized Alesis service representative in the country of sale. For warranty information in all other countries please refer to your local distributor.

ALESIS
3630 Holdrege Avenue
Los Angeles, California 90016
1-800-5-ALESIS
alecorp@alesis1.usa.com

Your warranty will be in effect
and you will receive warranty information
ONLY IF YOU SEND IN YOUR WARRANTY CARD

Alesis Corporation 3630 Holdrege Avenue Los Angeles CA 90016