OPERATION & TROUBLESHOOTING





SAFETY

When using the Azuradisc Model 747 disc repair machine, the following basic safety precautions should always be followed to reduce the risk of fire, electric shock, or injury to persons:

- · Read this manual before assembling or using the machine.
- Use this machine only for its intended use as described in this manual.
- Use only with Azuradisc-recommended accessories and repair materials. (The use of repair materials not approved by Azuradisc may damage discs permanently or cause injuries.)
- Pay close attention when the machine is used near children. The machine is not intended for use by children.
- Do not operate the machine if the cord or plug is damaged, is not working properly, has been damaged, or immersed in water. If these conditions are present, return the machine to Azuradisc for examination, repair, or adjustment.
- Do not drop or insert objects into any openings.
- To disconnect, turn off the machine, then remove plug from the electrical outlet.
- Use a grounded plug when using an extension cord.
- Keep fingers and all body parts away from moving parts and openings.
- Disconnect electrical supply before cleaning.

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Every effort has been made to ensure that the information in this manual is accurate. Azuradisc is not responsible for printing or clerical errors.

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Azuradisc Inc. is not responsible or liable for damage, of any type, to discs inserted into an Azuradisc machine. If you believe that an Azuradisc machine is malfunctioning, discontinue use and contact Azuradisc or an authorized representative.

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OUT OF THE BOX

After unpacking the Model 747, verify the following items, in the quantities shown, are included. Contact Azuradisc, or the local representative if any items are missing.







2 ea. - Stage 1 Final Polishing Head - Repairs up to 300 discs Open cell foam polish head for the final polishing stage. Item #ST1 00157 2

2 ea. - Stage 2 Polishing Head - Repairs up to 300 discs

Used to remove light scratches.

Item #PH 00048 3

1 ea. - Booster Plate

Used with Stage 2 Polishing Head

Item #PH00162-6

1 ea. - Polish Compound 8 oz Bottle - Repairs up to 300 discs

Used to polish disc during stages one and two.

Item #PCW 00053 7

1 ea. - Optical Spray Cleaner 8 oz Bottle - Up to 500 uses

Cleans optical surfaces without ammonia or alcohol. Recommended for use with micro-fiber wiping cloths.

Item #SC 00001 8

2 ea. - Micro-Fiber Wiping Cloths - Hand washable and reusable super soft material to clean optical surfaces. Recommended for use with Optical Spray Cleaner.

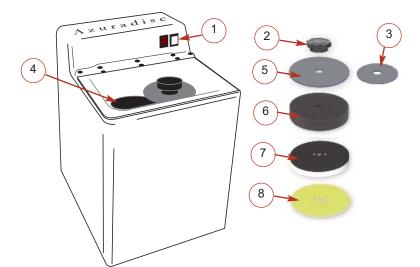
Item #PC 00392 7

1 ea. - Power Cord (240 Volt Model Only)

1 ea. - Owner Documentation

- Model 747 Operation & Troubleshooting Manual
- 10 ea. Promotional Tri-fold Brochures
- · Warranty Registration Card

PART IDENTIFICATION



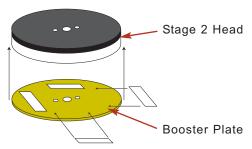
- 1. Power Switch and Start/Reset Button
- 2. Disc Retaining Knob
- 3. 3 inch (8 cm) Disc Retaining Plate (optional)
- 4. Large Platen
- 5 inch (12 cm) Disc Retaining Plate (included)
- 6. Stage 1 Final Buff Head
- 7. Stage 2 Polishing Head
- 8. Booster Plate

SET UP

WARNING: TO PREVENT DAMAGE TO DISCS, THE AZURADISC MODEL 747 MUST NEVER BE OPERATED WITHOUT POLISH COMPOUND AND OPTICAL SPRAY!

Place the machine on sturdy surface. Ensure there are no obstructions, and clear an area on both sides of machine to store discs and repair materials.

Before installing a new Stage 2 head for the first time, attach the booster plate with double sided tape as shown.



OPERATION

THE POLISHING PROCESS

The Model 747 uses two polishing heads to repair light scratches and scuff marks on discs. Use polish compound and optical spray cleaner as directed to ensure consistent finishes and to keep discs from overheating during the process.

Caution: Operation without polish compound or optical spray may overheat and damage discs.

LIGHT SCRATCH REPAIR



 Remove the retaining plate and retaining knob.



Place the Stage 2 polish head over the three posts on the large turntable.



. Spray the polish head with 6-8 sprays of the optical spray cleaner.



4. Apply a 2 inch (5.0cm) spot of polish compound to the polish head as shown.



 Place the disc on the small turn table with the label side up. The disc will overlap the Stage 2 polish head. Place the retaining plate, felt side down, over the disc.*



 Hold the retaining plate and disc stationary and turn the retaining knob until tight.**



Close the clear lid, turn on the main power switch and push the start button.



3. When the machine stops, remove the retaining knob**, plate, disc and the Stage 2 polish head. Install the Stage 1 foam polish head.

Tips

- * Caution: To prevent disc breakage, ensure the disc is properly aligned on the small platen turntable.
- ** Note: When inserting or removing a disc from the machine, hold the disc stationary while tightening or loosening the retaining knob.



9. Spray the Stage 1 foam polish head with 6-8 sprays of optical spray cleaner.



10. Apply a 1 inch (2.5 cm) spot of polish compound to the polish head as shown.



11. Place the disc on the small turn table with the label side up. The disc will overlap the Stage 1 polish head. Place the retaining plate, felt side down, over the disc.*



 Hold the disc and retaining plate stationary and turn the retaining knob until tight.**



 Close the clear lid, turn on the main power switch and press the start button.



14. When the machine stops, remove the disc, spray it with optical spray cleaner and wipe the disc from the center to the outer edge.**

QUICK CLEAN & POLISH



1. Remove the retaining plate and retaining knob.



Insert the Stage 1 foam polish head by lining up the three holes with the three posts on the large turntable.



Spray the foam polish head with 6 - 8 sprays of optical spray cleaner.



4. Apply a 1 inch (2.5 cm) spot of polish compound to the polish head as shown.

Tips

- * Caution: To prevent disc breakage, ensure the disc is properly aligned on the small platen turntable.
- ** Note: When inserting or removing a disc from the machine, hold the disc stationary while tightening or loosening the retaining knob.

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 Place the disc on the small turn table with the label side up. The disc will overlap the Stage 1 polish head. Place the retaining plate, felt side down, over the disc.*



6. Hold the retaining plate and disc the stationary and turn the retaining knob until tight.**



 Close the clear lid, turn on the main power switch and push the start button.



 When the machine stops, remove the disc, spray it with Optical spray cleaner and wipe the disc from the center to the outer edge.**

TROUBLE SHOOTING

No Power	 Verify the power cord is properly inserted in a working outlet; test the outlet with another device. On 220 Volt machines, check the fuse (by the power connector) as shown on the right. Caution: To avoid electrical shock, ensure the outlet is properly equipped with a ground connection.
Machine Overheating	Verify the machine is on a flat sturdy surface. A carpeted surface may block the air inlet on the bottom of the machine.

POLISHING TIPS:

If scratches remain on the disc after polishing, verify they are not top side scratches or foil dents. For more information on this subject, please refer to the section "Identifying Scratches".

When repairing black or dark discs such as PlayStation games, light repair marks may be visible on the disc surface after using the Stage 2 head. These marks should be consistent and should be removed by Stage 1 polishing. If there are scratches that still remain, simply repeat the repair process. If there are deep scratches in the disc that seem to be too stubborn to remove, and they are not top side scratches or foil dents, these will need to be repaired with a wet micro-abrasive type machine such as the Azuradisc Model 1600.

Using a dirty or regular cotton cloth may re-scratch discs. For the best results use a clean Azuradisc super soft micro-fiber wiping cloth. All polish marks should disappear entirely. However, if there are still hairline scratches from the last polish pattern repeat the process.

Tips

- * Caution: To prevent disc breakage, ensure the disc is properly aligned on the small platen turntable.
- ** Note: When inserting or removing a disc from the machine, hold the disc stationary while tightening or loosening the retaining knob.

ADVANCED OPERATION

PRESSURE ADJUSTMENT

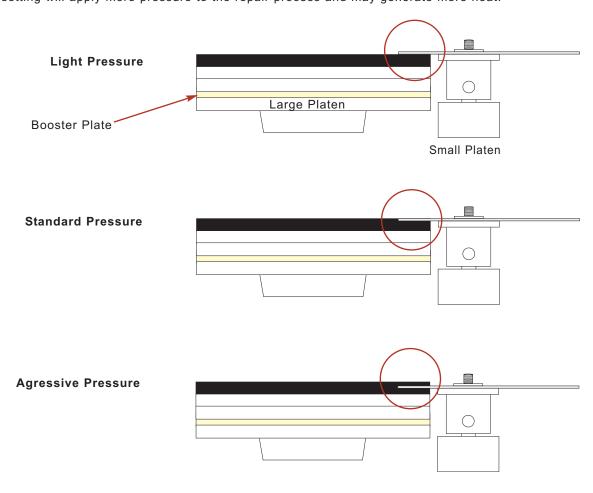
Important Notice: Machine is factory set for optimum performance. Contact Azuradisc before making adjustments.

1.800.933.4923 480.827.8786 South Pacific New Zealand +64 9 414 1430 Australia +61.300.360.565

Adjustments will affect the factory settings & the performance of the machine! Our Technicians are available to help with any issue you may have.

ADJUSTMENT PROCESS

The amount of pressure applied to the disc is directly related to the height of the small platen compared to the "stationary" height of the large platen, and the booster plate when assembled correctly. Adjusting the small platen to a lower setting will apply more pressure to the repair process and may generate more heat.



Verify you are familiar with all the parts and their purposes found in the Part Identification section.

1. Start the adjustment by cleaning the set and lock screws.



Remove rubber plug from the center of the small platen and store in a safe place.



- Using the 3/32 inch hex key, completely remove the set screw from the small platen, clean and lubricate.
- 4. Re-install the clean set screw and turn it until it stops.



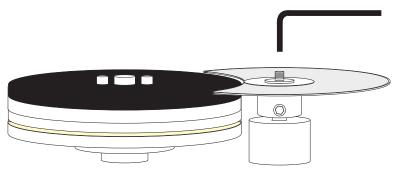
lock screw.



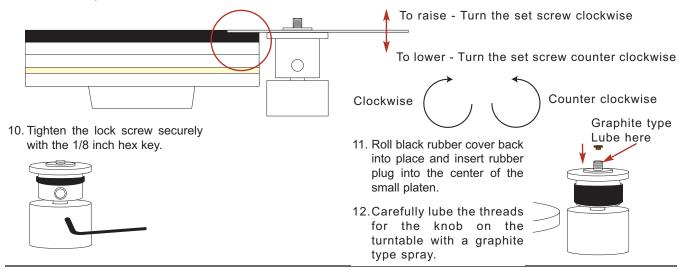
- Using the 1/8 inch hex key, remove the lock screw, clean and lubricate.
- 7. Re-install the clean lock screw and turn until it is snug and then back it out 2 full turns to allow the adjustment in Step 10. Do not tighten!

Note: It may be necessary to remove the small platen and clean the mounting shaft to make adjustment easier. Re-install the turntable, with the lock screw located on the flat spot on the shaft.

8. Place the Stage 2 head on the large platen and the adjusting CD on the small platen like a disc to be repaired.



9. With the 3/32 inch hex key, turn the set screw until the top of the adjusting CD is flush with the top of the Stage 2 head. To lower the turntable, lightly tap the top with the plastic handle of a screwdriver (to avoid damaging the threads).



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PREVENTIVE MAINTENANCE

Warning! Always disconnect the machine power cord before cleaning.

NORMAL MAINTENANCE

Replace the main polishing heads (Stage 1 & 2) when worn. Before making adjustments, contact Azuradisc or a local representative, as making adjustments will greatly affect the performance of your machine.

CLEANING

- · The machine should be cleaned every three months, or after 100 repairs, which ever comes first.
- The outer case can be cleaned with a damp non-abrasive cloth. Do not to get the power switch wet.
- To clean the inside tray of the machine use a small damp cloth. If the machine requires a more thorough cleaning, use a mild cleaning product such as standard window cleaner or Armor All™.

EDUCATION

HOW DISCS ARE MADE

CDs consist of 99% clear polycarbonate plastic. The reflective layer, protective layer and screen print comprise the remaining 1% of the disc.

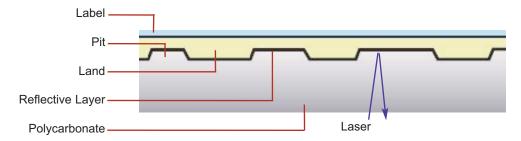


- A disc is created from molten polycarbonate and digital information is stamped on the top of the disc, while it is still near melting point, using a die with microscopic bumps. These bumps are known as "pits and lands".
- After the information is molded into the polycarbonate, a reflective foil layer is applied using a process called sputtering or wet silvering. This layer reflects the laser back to the player, so it's integrity is extremely important. The layer is usually silver, but can be made of gold or platinum.
- A clear lacquer coating is applied to seal the reflective layer and prevent oxidation. This layer is very thin and offers little protection from top side scratches.
- 4. Finally the artwork is screen-printed on the top of the disc.

Pits and Lands are imprinted into the disc to indicate a one or a zero. A laser beam is sent from the player to the disc and the reflective layer reflects it back to the reader and the ones and zeros are translated by the player.

Recordable discs have a photosensitive dye type layer instead of the stamped information layer. This layer, when exposed to a certain light, will make an impression of a pit into the layer.

Re-recordable discs use a layer that allows the laser to polarize the photosensitive layer back and forth between a visible pit to an invisible pit.



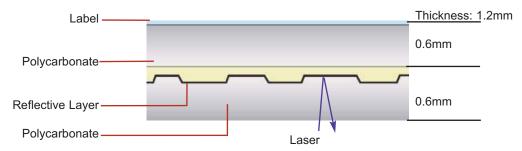
HOW A DVD IS MADE

DVDs are made in different ways depending on the amount of information that is recorded on the disc. DVDs may be single or double layered and single or double layered double sided.

NOTE: DVDs cannot be repaired as many times as CDs because the read side polycarbonate layer is thinner.

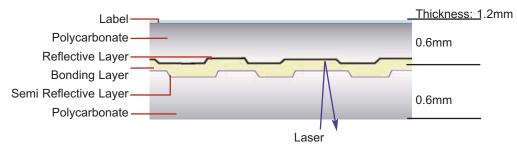
Single Layer DVDs (DVD-5 - 4.7GB)

These DVDs are made the same way as a CD with one additional polycarbonate layer added between the label and the pits and lands.



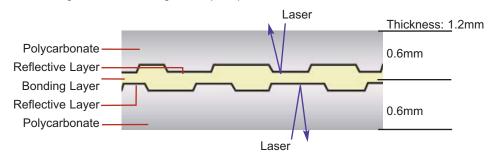
Double Layered DVDs (DVD-9 - 8.5GB)

Double layered DVDs have a semi reflective layer and a reflective layer giving two layers to store information.



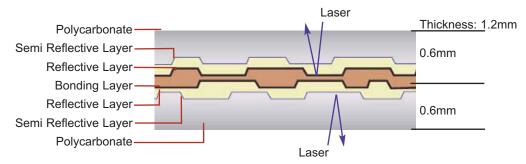
Double Sided DVDs (DVD-10 - 9.4GB)

Double sided DVDs consist of two discs bonded back to back with the reflective layers in the middle and both sides are repairable. Double sided DVDs require the use of smaller of micro-abrasive polishing papers to prevent the manufacturer's label area from being removed during the repair process.



Double Sided/Double Layered DVDs (DVD-18 - 17.1GB)

Double sided/double layered DVDs are simply two double layered discs bonded back to back.



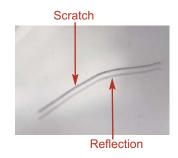
IDENTIFYING SCRATCHES

The three basic types of scratches on CDs are: topside, reading side, and top side foil dents. DVDs are not subject to top side scratches and foil dents as the manufacturing process is different from CDs.

Reading Side Scratches - CDs, CD-ROMs & DVDs

Reading side scratches are the most common type, the easiest to identify, and the only type of scratch that can be repaired.

If the scratch has a double Image, as shown in the figure to the right, it is a reading side scratch and can be repaired by using an Azuradisc scratch repair machine. The double image is the result of the actual scratch and a reflection made by the reflective foil layer.



8

Top Side Scratches

Note: The scratches shown below are not found on DVDs

Top side scratches are caused by a sharp object damaging the top or label side of a disc. In this case, the information just below the printed label area is damaged and causes a skip. Top side scratches cannot be repaired, however they can be prevented by using an Azuradisc Scratch Guard.

The easiest way to identify a top side scratch is to hold the suspected scratch up to a light source and verify that light will pass through the disc in that area.

Light passes through the disc.

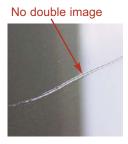


Note: If light does not pass through, check the reading or bottom side of the disc for a scratch without a "double image". If a double image is not visible, it is a topside foil dent or a top side scratch that did not damage any of the label.

Top Side Foil Dents

Top side foil dents are not scratches but look like a scratch on the reading side of the disc. The dent is made by a large amount of pressure put on the label side of the disc, causing the foil layer to dent. This dent will cause skips and cannot be repaired, however they can be prevented using an Azuradisc Scratch Guard.

The easiest way to identify the top side foil dent is to see if there is a "double image" produced. There should not be a second image because the damage is to the inner foil layer. There will not be any evidence on the label side of the disc because the pressure did not cause any of the label to be removed.



THE MODEL 747

DISC REPAIR TECHNOLOGIES

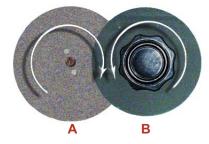
Low and high friction are the two main types of disc repair methods available.

Low friction disc repair machines, such as the Azuradisc Model 747, are excellent for repairing light scratches and scuff marks. The process consists of one turntable (A) powered by a motor as the second turntable (B) spins freely. The high speed of the power driven turntable causes the second turntable to turn in the opposite direction as illustrated in the diagram below. This method creates a low amount of friction allowing a dry process that will not damage the disc.

Note: The low friction repair process only permits the use of polishing heads and does not use abrasive materials.

High friction machines, such as the Azuradisc Model 1600, utilize up to 4 different abrasive steps and 2 polishing steps, and are ideal for repairing scratches found on the reading side of a disc. The process consists of two power-driven turntables rotating in the same direction, creating the most friction and allowing for a faster cut rate when using an abrasive material. Water is used to cool the disc to prevent damage by the friction and permits a wide range of disc repairs.

Low Friction - Model 747



High Friction - Model 1600



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AZURADISC ONE-YEAR/100,000 DISC LIMITED WARRANTY

WARRANTY COVERAGE

Azuradisc's warranty obligations for its products are limited to the terms set forth below:

Azuradisc, Inc. ("Azuradisc") warrants all of its non-replacement products or parts (the "Warranted Products"), against defects in materials and workmanship for a period of one (1) year from the date of original purchase or (for disc repair and disc testing machines and parts thereof) until 100,000 discs have been processed using that Warranted Product, whichever comes first ("Warranty Period").

If a defect is discovered and a valid claim received by Azuradisc within the Warranty Period, at its option, Azuradisc will (1) repair the Warranted Product at no charge, using new or refurbished replacement parts, (2) exchange the Warranted Product with one that is new or that has been manufactured from new or serviceable used parts and is at least functionally equivalent to the Warranted Product, or (3) refund the purchase price of the Warranted Product. No Lemon Guarantee: Notwithstanding the foregoing, if more than 3 valid claims are received by Azuradisc during the Warranty Period for the same defect in a Warranted Product, Azuradisc will replace the Warranted Product with a new one.*

Azuradisc warrants replacement products or parts provided under this Limited Warranty against defects in materials and workmanship from the date of the replacement or repair for ninety (90) days or for the remaining portion of the Warranted Product's warranty, whichever provides longer coverage for you. When a Warranted Product is exchanged, any replacement item becomes your property and the Warranted Product becomes Azuradisc's property. When a refund is given, the Warranted Product becomes Azuradisc's property.

30-DAY/720-DISC MACHINE REFUND POLICY*

If you are in any way dissatisfied with your purchase of one of our disc repair or disc testing machines, you may return it to Azuradisc within 30 days or before processing 720 discs, whichever comes first. Azuradisc will provide you with a full refund, minus your shipping costs and a restocking fee of up to 15% of the price of your machine (depending on the condition of the machine). In order to receive a refund, your machine must be returned undamaged and postmarked within 30 days of receipt. Return shipments to Azuradisc must be insured for the entire cost of the machine.

EXCLUSIONS AND LIMITATIONS

This Limited Warranty applies only to the Warranted Products. This Limited Warranty does not apply to any other products, whether or not packaged or sold with the Warranted Products.

This Limited Warranty can be redeemed only by the original purchaser of a Warranted Product. If you wish to transfer this Limited Warranty, please contact Azuradisc for more information.

Any Software distributed by Azuradisc, whether or not incorporated into the Warranted Products, is not covered under this Limited Warranty. Refer to Azuradisc's Software License Agreement, reviewable at www.Azuradisc.com or by calling 1 (800) WE-FIX-CDS, for more information.

This Limited Warranty does not apply to the following:

- · Normal wear or deterioration (follow preventative maintenance schedules to minimize wear and tear on your machine);
- Improper installation or maintenance including but not limited to failure to follow any preventative maintenance schedule;
- Damage caused by accident, abuse, misuse, misapplication, or failure to follow usage directions;
- Warranted Products that have been used with non-Azuradisc products;
- · Damage caused by service performed by anyone other than Azuradisc or an Azuradisc-certified service technician;
- · A Warranted Product that has been modified without the written permission of Azuradisc;
- · If any Azuradisc serial number, date stamp or other marking has been removed or defaced;
- Any item concerning the Warranted Product's appearance that is not due to a defect in material or workmanship.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. AZURADISC SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF AZURADISC CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN TO THE EXTENT POSSIBLE ANY CLAIMS UNDER SUCH IMPLIED WARRANTIES SHALL EXPIRE ON EXPIRATION OF THE WARRANTY PERIOD. No Azuradisc reseller, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

IN NO EVENT SHALL AZURADISC BE LIABLE, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT PRODUCT LIABILITY OR OTHERWISE, FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF A WARRANTED PRODUCT, OR FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING LOSS OF PROFITS, LOSS OF USE, INTERRUPTION OF BUSINESS, OR ANY COSTS OF RECOVERING OR REPRODUCING ANY PROGRAM OR DATA STORED IN AN OPTICAL DISC, ARISING OUT OF OR IN CONNECTION WITH THE USE OF OR INABILITY TO USE THE WARRANTED PRODUCT OR AZURADISC'S PERFORMANCE OF ITS OBLIGATIONS HEREUNDER, TO THE FULL EXTENT THESE DAMAGES MAY BE DISCLAIMED BY LAW.

This Limited Warranty gives you specific legal rights and you may also have other rights that vary from jurisdiction to jurisdiction.

OBTAINING WARRANTY SERVICE

If you have a problem with one of the Warranted Products, **DO NOT SHIP THE PRODUCTS DIRECTLY TO AZURADISC**. Instead, please contact our Technical Support personnel at 480. 827.8786 or 1.800.WE.FIX.CDS for a return authorization number.

For all warranty service, the Warranted Product must be returned to Azuradisc or an Azuradisc-designated repair center with the transportation charges prepaid through an insured carrier. Proof of purchase and location purchased from, as well as an explanation of the problem, must accompany the Warranted Product. You are responsible for any import duties, taxes and other such fees. Azuradisc will reimburse your prepaid transportation charges only when replacing Warranted Products pursuant to the No Lemon Guarantee. Provided that your Warranted Product is returned to Azuradisc in the manner prescribed above and that your Warranted Product requires service covered by this Limited Warranty, Azuradisc will pay for return shipping to you anywhere in the Continental United States.

*No Lemon Guarantee and 30-day/720-disc machine refund policy apply only to Continental United States customers.