IMPORTANT NOTES AND CAUTIONS



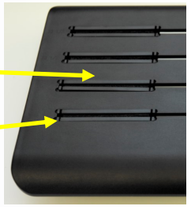
A) Ultrasonic cleaning generates heat by way of kinetic energy as well as introduces air bubbles into the bath. The colored temperature light bar will move from left to right: GREEN to GREEN-ORANGE,TO GREEN-ORANGE-RED (long red bar). When the long red bar is lit to the right of the orange bar, the bath temperature is 95 deg F. (35 deg C.) You may continue to restore and clean records until the small RED light to the right of the long RED bar is lit. This indicates approx. 2 minutes remaining of wash time. Time to finish the last cycle. NOTICE: When the small RED light bar flashes, critical temperature has been reached: In both situations: Stop the process and remove the record(s) from the bath. Turn power off, remove the top assembly, let cool for 10-15 minutes. Some users simply refill the basin with fresh water/IPA mix and continue, and rotate between 2 sets of 2, 1.78 gallons of water.

B) The cavitation effect introduces air into the tank. Pressing the PULSE (DE-GAS) button after restoring 3 or so records for one cycle of 1:36 minutes will remove air bubbles increasing the efficiency of the cleaning and restoration action.

C) Check periodically the basin and change out water whenever the basin's water becomes too murky; It is a good practice to perform one change every 12 records. **Never keep water in tank overnight.**

D) **STOP USING THE MACHINE FOR 10 MINUTES AFTER 35 MINUTES OF CONTINUOUS NON-STOP OPERATION. THIS TO COOL DOWN THE ULTRASONIC GENERATOR. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE CERAMIC TRANSDUCERS AND VOID WARRANTY.** Removing the record assembly cover speeds up the cooling and reduces recovery time. Turn power off for 10 minutes.

E) **AFTER EVERY USE:** (i) **DRAIN THE TANK**. (ii) USING THE SUPPLIED RABBIT MICROFIBER CLOTH, **WIPE THE TANK DOWN** WITH THE CLOTH MOISTENED WITH 70% ALCOHOL. (iii) **REMOVE THE RECORD POSITIONING FELTS** BY PULLING ON THE TABS. (iv) **MIST FELTS WITH DISTILLED WATER**, (v) **PAD DRY** using the rabbit cloth. (vi) LET **AIR DRY** BEFORE RE-INSERTING INTO THE SLOTS . *NOTE WHERE THE 45 RPM FELT PAD ON THE INSERT IS SHORTER THAN THE OTHERS (33/78)* (vii) USING DISTILLED WATER, **MIST THE UNDERSIDE OF THE RECORD WASHER ASSEMBLY.** (viii) Use the RABBIT Microfiber cloth with some 70% IPA applied to the cloth to **DRY THE UNDERSIDE OF THE RECORD WASHER ASSEMBLY. Pull on the belt by hand to move the gears. Dry gears with rabbit cloth.**



NEVER KEEP WATER IN THE TANK OVERNIGHT. DISCARD!

F. IF IN PLAYING A RECORD A WHITE FLUFF - LIKE MATERIAL APPEARS ON THE NEEDLE, THIS INDICATES TO YOU WHERE: (i) THE RECORD WAS NOT SUJECT TO ENOUGH 2 or 5 MINUTE CLEANING CYCLES. (ii) WHERE OUR SYSTEM HAS SOFTENED PRIOR CLEANING AGENTS FOUND IN THE RECORD'S GROOVES LEFT OVER FROM OTHER PROCESSES. SHOULD THIS OCCUR: (a) USE THE SUPPLIED NEEDLE CLEANER TO CLEAN THE STYLUS. (b) PROCESS THE RECORD ONCE MORE: REPEAT STEPS 4-7 AS REQUIRED UNTIL WHITE PASTE THAT WAS PREVIOUSLY DESCRIBED DIMINISHES, THEN POLISH.



G. The ultrasonic washer may clean other items: such as jewelry, reading glasses, silverware. **DO NOT PLACE ITEMS DIRECTLY INTO THE TUB. They will scratch the basin.** Order a parts basket, Model KA-JT-1 The basket will suspend your items being cleaned.

UTILITY CLEANING OPERATION

1) Remove the Record Washer assembly. (Not needed for this operation). Set aside.

2) Ensure the tank is filled to the MAX LINE with distilled water. Add 1 tablespoon of Liquid detergent to the distilled water. Place the items to be washed in the basket.

3) Turn power on. Use the DOWN button: set the timer to 1:00.

4) Press the ON/OFF Button Twice. The system will start, a buzzing sound will be hear. The Timer will count down. Insert the basket into the basin with the items requiring cleaning. A greyish like smoke will rise up from the Basket. This indicates that the cleansing action has started. When the smoke stops, your item has been washed. Full manual with KA-JT-1 describes cautions to observe when cleaning jewelry with stones.

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MODEL KA-RC-1

ULTIMATE ULTRASONIC RECORD RESTORATION SYSTEM

OWNER'S MANUAL

USER NOTICE: COMPLETELY READ THIS MANUAL BEFORE USE!

VER. 12 NOV 2021

CHECK OUT OUR LATEST TRAINING VIDEOS AND TECHNICAL INFORMATION AND ANY PRODUCTUPDATES ON OUR WEB SITE!

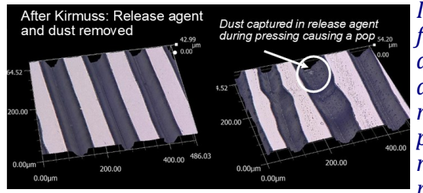
THIS MANUAL CONTAINS IMPORTANT SAFETY AND OPERATIONAL INFORMATION. FAILURE TO DO SO MAY VOID WARRANTY, DAMAGE EQUIPMENT AND/OR DAMAGE RECORDS. ONLY USE KIRMUSS APPROVED SURFACTANTS. USE OF THE KA-RC-1 SYSTEM ACKNOWLEDGES THAT THE USER HAS READ THE MANUAL COMPLETELY.

In the EU: www.kirmussaudio.net

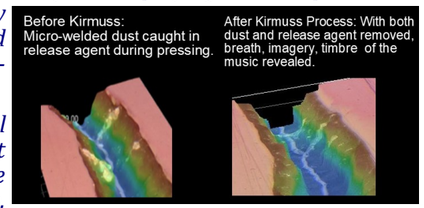
www.KirmussAudio.COM

Thank-you for purchasing our Record Restoration System. *Once records are processed with the KA-RC-1 you will realize between 1.3 to 4 dB gain of signal to your phono stage over floor from your cartridge after restoring your records. This varies based on the provenance of the record.* ***WE DO NOT JUST SURFACE CLEAN, WE RESTORE!*** *Manual, vacuum, and peer ultrasonic systems may only surface clean as both records and cleaning solutions have the same electric charge. As a test, you may see for yourself where the record repels any liquid cleaning solution used, this as seen by pooling of water on the surface of a record placed horizontally. Further, as water droplets in a cleaning solution are larger than the record grooves, they cannot reach the inside of the grooves. ONLY DOES THE KIRMUSS KA-RC-1 reach into the grooves. For this to occur: An ionizing surfactant spray is used to change the charge of the record before inserting it into the KA-RC-1 to attract the sonic wave created by ultrasonic cavitation and forcing the ionizing agent also into the grooves. The spray supplied with the KA-RC-1 is not a cleaning solution.* *(It cannot be used with other machines or processes, damage may occur)*

About Records: *Records are precious and many are one of a kind and are irreplaceable. No matter how you store and play your records they inevitably will require care and maintenance. When playing records, dust particles and contaminants that have settled on the record will eventually find their way into the grooves. As the record is played, they will also build up on the stylus as the tone arm moves across the record and "dull" the sound. The heat of the needle has been found also to micro-weld the dust into release agent found in the grooves that appears once the record has been pressed.*



It is this releases agent that allows the record to "pop out" of the stamper at the factory. Our process removes this release agent which serves no future purpose, and thus removes the micro-welded dust responsible for these unwanted pops and clicks. Now, with the release agent removed, you will no longer "burn in" more pops as well as now see your stylus make full contact with the now exposed detail in the grooves, and in essence, just like playing the stamper directly. After processing, the needle now makes contact with the pressed grooves, less release agent, revealing the breath, soundstage, imagery and timbre as it was meant to be.

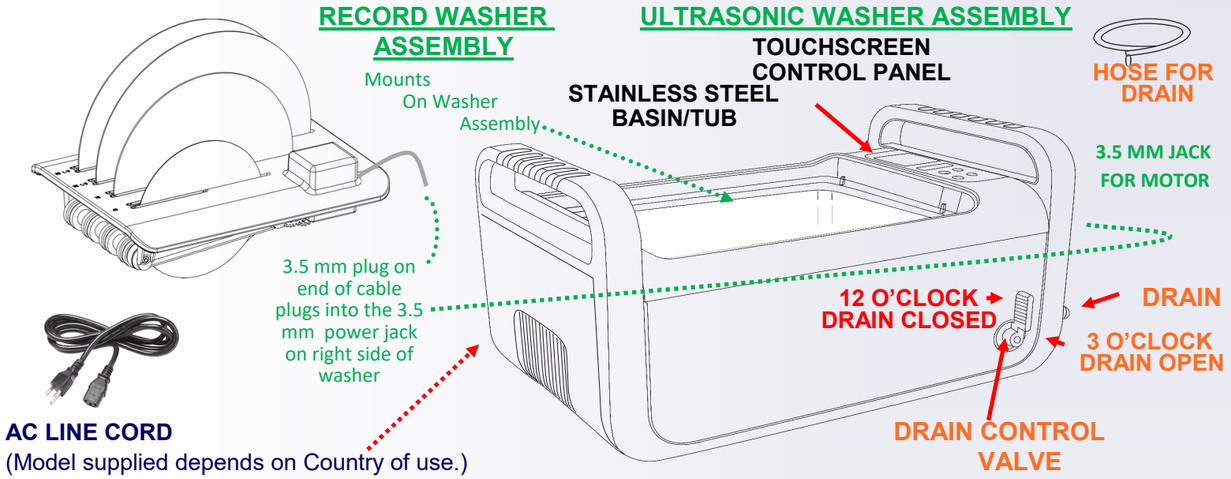


Add the presence of Humidity. *Records stored in paper sleeves will see fungal growth on the record and where also other contaminants such as dirt and dust that have accumulated on the records will eventually lodge themselves in the record's grooves and where this over time also affects sound reproduction. As the needle passes over these one loses the breath and air that vinyl is so well known for as the needle is not making proper contact with the minute variances found in the grooves of the pressing as they are now "coated. By removing the release agent that rises naturally rises to the surface of the record as the PVC material heats and forms the record this also reduces the growth of fungus.* ***Need we discuss handling?*** *In some instances the record's surface may also be damaged as a result of abuse and from physical contact with anything that is hard including stylus drops as well as facing scratches, gouges, indentations and the unintentional "tone arm skid". While not much can be done here, we have witnessed where 7 times out of 10 records processed surface noises from surface scratches and even the "tone arm skid click" may be eliminated, as the needle is now "seated in the pocket" of the groove.* ***All told: Surface only cleaning using manual or mechanical methods including other ultrasonic and vacuum systems will not restore the record's brilliance. Some ultrasonic systems may in fact due to their ultrasonic frequency may irreparably harm them and where vacuum or air drying may further coat the records.*** *Only will our Restoration Method and Process provide you with discernable signal gain. With grooves now restored and contaminants and coatings removed the needle will now sit properly making proper contact with the left and right channels and offer you the breath, air, and the incredible soundstage that analog records are known for. The KA-RC-1 revolutionizes the way we care for records. It is also possesses a Patented Record Suspension System that assures records of any speed and size are spaced correctly.*

Rest assured of many years of satisfaction with our revolutionary ultrasonic based record restoration system.

The KA-RC-1 from KirmussAudio, 5 years in the making, ***...NOT JUST A CLEANER, we RESTORE! Thank-you, Enjoy!***

IN YOUR KIT: Main Restoration System Components.



AC LINE CORD
(Model supplied depends on Country of use.)
AC Line Cord Receptacle and on/off power switch located on the backside of ultrasonic washer.

NOT INCLUDED: *i) Distilled Water. [Available at local grocery store or pharmacy]. Aprox.6.5 L / 1.75 US Gallons ii) 40 mL / 1.4 ounces of 70% IPA Isopropyl Alcohol.* ***With no additives showing on label.*** *NEVER USE MORE THAN 40mL (1.4 OZ) OF ALCOHOL added to the basin. Higher amounts will see the loss of the plasticizer/ stabilizer on the record.*

The alcohol is used to kill dormant and live fungus, not used for cleaning. Use always in a well ventilated area.
The distilled water should be replaced very 12-15 records. DISCARD DAILY. DO NOT LEAVE IN TANK OVERNIGHT.

SUPPLIED ACCESSORIES:



KA-AS-1 (*) Combination Anti-bacterial/anti-static surfactant spray solution. (60 mL/2 ounces). To also use as an anti-static agent. Comes with 6 sq. inch (15 sq. cm) lint free KA-MF-2 optician's cloth. ***AVAILABLE ACCESSORY KA-AS-1-R1 300 mL / 10 oz. REFILL BOTTLE.***



KA-B1 Combination "2-in-One" 2.5M Carbon Fiber and Parastatic Felt Brush. In the process we use the parastatic felt to polish the record's grooves after removing any droplets of water remaining with the optician's microfiber cloth. [When not used with the record restoration process: *The parastatic felt side removes dust where the carbon fiber brush side removes static and dust from the grooves before playing a record.]*



KA-B-1 Goat Hair Bush. Used to apply the surfactant to the record's surface.



KA-MF-1 Microfiber "Rabbit Cloth". Used as workspace mat. Also to dry the Goat Hair Brush between applications of surfactant.

KA-MT-2 (5"/127 mm), **KA-MT-3** 4"/101 mm felt mat to suspend records over the workstation cloth while applying surfactant and polishing.



KA-N-1 STYLUS (**) CLEANER Used to clean turntable stylus.

Contact KIRMUSSAUDIO (303-263-6353) OR YOUR AUDIO DEALER TO REORDER
>>>NEW! NOW AVAILABLE NEW MODEL KA-RS-1 RECORD SUPPORT PLATTER, AIDS IN SPINNING RECORD WHEN APPLYING SURFACTANT OR DRYING/POLISHING RECORDS.<<<
AFTER RESTORATION USE OUR PVC FREE, ANTI-STATIC, ANTI-FUNGAL RECORD SLEEVES KA-S1-40
(*), (**) TOXICOLOGY: Non Toxic Solution: 98-99% distilled water, 1-2% propanediol 1-2 diol 178 mix

WARNINGS: 1) BEFORE USE: Please read this manual carefully before using our KirmussAudio Record Restoration System as it contains important details and product safety notices. **2) WARRANTY IS VOIDED IF ANY OTHER SOLUTIONS OR CLEANERS ARE USED OTHER THAN THOSE SUPPLIED IN THIS KIT OR RECOMMENDED BY KIRMUSSAUDIO. 3) NEVER USE MORE THAN 40mL (1.4 OZ) OF 70% ALCOHOL added to the basin, higher amounts will affect the plasticizer or stabilizer in the record. 4) NEVER USE THE KIRMUSSAUDIO SURFACTANT WITH ANY OTHER ULTRASONIC MACHINE: DEPENDING ON THE MACHINE, MAY CAUSE HARM TO RECORDS USING 40KHz or HIGHER. 5) AFTER USE, NEVER KEEP WATER IN THE MACHINE. ALWAYS MIST THE RECORD ASSEMBLY AFTER USE, DRY WITH THE SUPPLIED RABBIT WORKSTATION CLOTH. 6) AS WE ARE DEALING WITH FUNGUS ON RECORDS, USE IN A WELL VENTILLATED AREA.**

STEP 2: RECORD CLEANING AND RESTORATION, continued.

7. As shown in the training video as well as portrayed in the accompanying Quick Start Guide Insert that comes with the restoration system, as we brush the surfactant into the record's grooves we in the second and subsequent surfactant applications will notice the emergence of a white "toothpaste like" material. This in fact is visible confirmation of contaminants that are being dislodged (SOFTENED) by the ultrasonic and being picked up by the surfactant and brush. As we go through several cycles of applying the surfactant, either in 2 or 5 minute cycles (Tech Note 1 and noted in Step 6 (a and b)).We will see first the rise of this whitish material, then a decrease. Added, also a more rapid evaporation of the fresh surfactant being rubbed into the grooves as we approach the end of the restoration process. The latter indicates to the user that this this is the last application of surfactant, no more cycles with surfactant spray needed except the final cycle. No other process that we know of whether vacuum, spin clean, or ultrasonic actually gives you feedback of the actual restoration and when in fact a record has seen its grooves cleaned and restored. As we approach the end you see this evaporation and where you will note also where the record comes out of the machine relatively dry as PVC repels water by nature. AS NOTED BEFORE: If there is pooling of water on the record after the first 5 minute cycle with surfactant applied: REVERT TO 4 TWO MINUTE CYCLES and a FINAL 5 MINUTE CYCLE with surfactant sprayed onto the record. (CONSULT THE SUPPLEMENTAL NOTE). This as there is a coating on the record.



ABOVE: As surfactant is applied to the record with the brush, the appearance and the rise of "white paste-like material requires another 2 or 5 minute cycle with surfactant applied in the machine.

BELOW: A reduction of whitish materials or quick evaporation of the surfactant indicates the last 2 or 5 minute cycle before applying a mist of distilled water, drying and polishing.





NOW, TO FINISH THE RECORD AND END THE RESTORATION PROCESS:

8. Place the record on the felt pad or the KA-RS-1 support turntable. With the supplied KA-MF-2 grey optician's microfiber cloth. (Fig. 7), remove any remaining water.



9. Now use the ***FELT SIDE*** *of the supplied KA-B-1 combination felt/ carbon fiber brush and follow the grooves. This polishes the grooves. Pass over the grooves several times. Then flip the combination parastatic felt/carbon fiber brush over and use the* ***CARBON FIBER SIDE*** *to pass over the grooves and to remove any static.*



10.Then place the record onto a turntable. At arm's length now apply a light mist of the anti-static spray/anti-fungal spray to head of a pad dried GOAT HAIR BRUSH. Only apply a small mist. >>Make sure the goat hair brush was first misted with distilled water then padded dry using the rabbit cloth.<< With the record now spinning, move the goat hair brush across the grooves of the record, back and forth, while it spins. Do both sides. [FIG 6]. Then use the CARBON FIBER BRUSH in like fashion across the grooves on both sides of the record.[FIG.5].

THE RESTORATION PROCESS IS COMPLETE. Play or store the record.

TIP: Between applications of surfactant onto the record's surface as previously described, mist the goat hair brush with distilled water then pad dry with the rabbit cloth. This to: *(A) Keep the goat hair brush clean between cycles; (B) To allow one to better see the rise and fall of the whitish-like material being brought up by the brush between cycles.*

MAINTAINING RECORDS AFTER RESTORATION:

A. *Before auditioning any record it is good practice with the record spinning on the turntable to lightly pass the PARASTATIC FELT BRUSH to remove surface particles. Then use the CARBON FIBER BRUSH side over the grooves to reduce static.*

B. On occasion *use the supplied spray and apply a light mist as before on a clean goat hair brush at arm's length the anti-static/fungal surfactant spray. Then move the brush across the record while spinning on the turntable. Finish with the CARBON FIBER BRUSH.*

C. *Always* ***STORE RECORDS IN ANTI-STATIC, ANTI-FUNGAL, NON-PVC, HDPE 3 MIL. DUST FREE RECORD SLEEVES.*** *Always* ***HANDLE RECORDS BY THE EDGES.***
YOU MAY ORDER OUR RECORD SLEEVES KA-S1-40

D. *As the release agent has been removed there is no need to process a record. Just use common sense and the use of the combination carbon fiber and parastatic felt brush as described above before playing a record. If the record was handled often and has fingerprints and skin oils on the edges or on the record, at your discretion you may* ***Perform a Quick Clean single cycle of 3 minutes with surfactant applied to both sides to previously restored records. Then use the microfiber optician's cloth to dry, use the parasitic felt to polish, then step 10, Page 7, anti-static treatment before use or storage.)***

STEP 2 RECORD CLEANING AND RESTORATION

Now after prepping the system as outlined in Step 1, (Page 5), you are ready to process records.

Check out our web site for the training video on restoring records or for any technical updates.

First, find a safe and well ventilated area to set up the restoration station. If your records are coated with fungus, use a face mask and gloves. Locate the "rabbit cloth" and place it on your worktable next to the restoration system. Then place the KA-MF-2 felt pad on it, used to suspend the records off of the workstation cloth when brushing in the surfactant as directed with the goat hair brush. *(An optional support Model KA-RS-1 (left) is available that suspends the records off the work area by 7/8" where the records may be spun easily)*

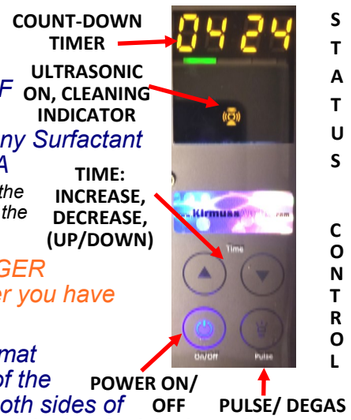


1. TO START CLEANING: Press the "ON/OFF" Button on the control panel twice. The ultrasonic cleaner will "Buzz" and the motor will turn. The timing clock will count down: 4:59, 4:58 and so on.



FIG. 1

2. Insert records(*) into the appropriate slots, [FIG 1],one at a time. As they are inserted, the records will turn clock-wise. IF A RECORD IS NOT MOVING, REMOVE AND RE- INSERT. Let one 5 minute cycle complete. This first cycle does not use any Surfactant that is brushed into the record. IF RELATIVELY CLEAN, USE A 2 MINUTE CYCLE. *FYI: The Distilled water with the 1.4 oz. (40 mL) of I 70% PA is used to wet the record and remove any surface oils and contaminants and also kills live or dormant fungus coming off the record.* *The unit will stop at 0:00, then the timer will reset itself to 5:00.*



HINT: When restoring multiple records at the same time, IT IS BEST TO STAGGER RECORDS BY ONE MINUTE INCREMENTS. You will discover what is best after you have used the system and started restoring records and get a feel for the process.

3. Take the records out one at a time, place the record onto the supplied 5" felt mat at your workstation. (Or on the optional KA-RS-1 support). Then apply a SHOT of the ionizing surfactant agent spray which is also an anti-bacterial/fungal agent on both sides of the record, at 3 locations as shown. [FIG.2]. (12 o'clock, 4 o'clock + 8 o'clock positions.) Do one side at a time.



FIG. 2

4. Using the supplied GOAT HAIR BRUSH, work the surfactant into the record's grooves in a circular motion first, then across the grooves. Use light to moderate pressure working the Surfactant into the grooves as shown in [FIG.3]. Do both sides. The Surfactant wets the record, reduces surface tension, and sees the plasma wave that is attracted by the surfactant to work it into the grooves by the cavitation action and thus dislodging the contaminants in the grooves.

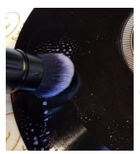


FIG3: Goat Hair Brush: Work spray into grooves

5.With the records prepped for a second cycle washing, (now the first cycle with surfactant), Press the "ON/OFF Button" on the control panel twice. You will hear the motor of the cleaning assembly run as well as hear the high pitched sound of the sonic cleaner. The clock will count down: 4:59, 4:58 and so on. INSERT THE RECORDS INTO THE CORRESPONDING SLOTS AS BEFORE. IF A RECORD IS NOT MOVING, REMOVE, RE-INSERT. Let run for 5 minutes. ***Operational Note:*** *Pressing the up or down keys increases or decreases cleaning time in one minute intervals. Pressing the ON/OFF button twice restarts the machine and resets the washing cycle timer to 5:00.*

6. ***After the first five minute cycle with spray applied:*** ***You need to review the condition of the record to determine the next steps. Follow either (a) or (b).***

(a) *>>>IF THE RECORD WHEN PLACED HORIZONTALLY AT THE WORK STATION AND WHERE ONE NOTICES THE RECORD'S SURFACE SEES SHEETS OF WATER OR HUNDREDS OF WATER DROPLETS THAT REMAIN ON THE SURFACE, this indicates that there is a coating detected on the record. (Tech Note 1). This impedes the effectiveness of the restoration process. In this situation, use the rabbit cloth to wipe off the excess surface water before applying more surfactant spray. Work in the spray as before. NOW Set the timer to 2 minutes using the down button. PRESS THE ON OFF BUTTON TWICE. The system will start, insert the record. You will need to use a TOTAL of 4 TWO MINUTE CYCLES, FOLLOWED BY A FINAL FIVE MINUTE CYCLE.* ***USE THIS 2 MINUTE CYCLE FOR NEW RECORDS AS WELL.*** *Repeat the process, wipe off excess water, re-apply the spray. As you proceed you will notice where there is less sheeting of water and where you will see finally a whitish paste-like material appear. The process is now removing contaminants from the grooves of the record. AFTER THE 5 MINUTE CYCLE: GO TO* ***SECTION 8, PAGE 7, to then dry and polish the record.***

(b) *WITH RECORDS* ***THAT DO NOT SHEET WATER AS NOTED ABOVE:*** *USE THREE OR FOUR, 5 MINUTE CYCLES WITH SURFACTANT APPLIED. The number of cycles with surfactant applied depends on the record's condition.* ***REFER TO SECTION 7, PAGE 7, for details as to when to stop this process and to dry, and polish. ALSO YOU MAY REFER TO THE SINGLE SHEET QUICK PICTORIAL GUIDE SUPPLIED AS A SUPPLENT TO THIS MANUAL FOR MORE DETAILS.***

BASIC SAFETY GUIDELINES AND OPERATING CONSIDERATIONS:

READ BEFORE FIRST USE! WARNING: BE SURE THAT THE ULTRASONIC UNIT IS DISCONNECTED FROM A SOURCE OF POWER WHEN MOVING, FILLING, OR EMPTYING THE BASIN.

- Always mount the unit on a flat, stable, level surface.
- USE ONLY distilled water ADDING THE 1.4 OZ/ 40 ML OF 70% IPA to the tank. Do not exceed 1.4 OZ / 40 mL). This is used to kill live and dormant fungus and is not used as a cleaner.
- WHEN FILLING THE TANK: Fill the tub with distilled water to the MAX LINE. DO NOT OVERFILL.
- DO NOT OPERATE IF THE WATER LEVEL IS BELOW THE MIN LINE.
- **Even though the unit incorporates multiple protection circuits, if the unit is turned on for over 15 seconds without any water in the tank this may damage the unit or reduce the life-span of the unit. Always add water, then plug the unit in the wall outlet, then turn on.**
- Do not run the unit continuously. Even though the washer is designed with overheat protection **it is recommended to stop the unit for about 10 minutes to prolong the life of the unit after 35 minutes of continuous non-stop operation.**
- **Follow the INSTRUCTIONS in this manual to operate the device. As we are also removing fungus from records, work in a well ventilated area. Use a mask if fungus is severe.**

To prevent life-threatening electrical shock, observe the following:

- Danger of electrical shock! Never immerse the device or the power cord in water or other liquids.
- Danger of electrical shock! Never touch the power plug with wet hands, especially when inserting or removing the plug or accessing the Main Power Switch located on the rear of the unit, adjacent to the power cord.
- Danger of electrical shock! If the unit has fallen into water during operation, do not touch the unit. Remove the power plug from the main electrical power outlet first.
- Danger of electrical shock! Do not spray water or liquid on the device.
- Never operate the device unattended .
- When removing the power cord from the socket or outlet, with dry hands, grab the power plug not the cord.
- If there is damage to the power plug, cord, housing, or other parts of the device, do not use the device.
- Do not disassemble the device, except by professionals. NO USER SERVICEABLE PARTS INSIDE.
- If the unit is damaged, is non-operational, or has fallen into water, take it to a qualified service provider.
- ALWAYS DISCONNECT FROM A SOURCE OF POWER and Remove the power plug from the rear socket:
  - -if a malfunction occurs
  - -before moving the device
  - -before cleaning the device
  - -before emptying the basin
  - -before replenishing the water
  - -if the device is not going to be used for prolonged period
  - -after each use (recommended) . (Also drain the water, never keep water in the basin overnight.

It is good practice to connect to an earth ground fault leakage circuit breaker (outlet) with a rated tripping current of no more than 30 mA that provides further protection against electrical shock.

To prevent fire hazards, observe the following:

- Never block the vents on the device. Keep the vents free from lint, hair and other materials.
- Do not place the device on a soft surface, such as a bed or a couch, where the vents could become blocked.
- Observe all other warnings described in the previous section.
- If the supply cord is damaged, it must be replaced.

Other Notes:

- To disconnect: turn all controls to the off (0) position, then with dry hands remove the plug from outlet. Do not unplug by pulling on the AC power cord. To unplug, grasp the plug, not the cord. Unplug from outlet when not in use and before filling the tank, draining the tank, servicing or cleaning.
- To reduce the risk of electrical shock, do not put the appliance in water or in other liquids. Do not place or store the appliance where it can fall or be pulled into a tub or sink. Use in a dry area.
- Follow the supplied instructions as to the use of the KA-RC-1 Do not use other processes or chemicals with our system. This voids the warranty. No need to AIR DRY AIR OR VACCUM DRY A RECORD AFTER PROCESSING. Follow our instructions. Processed records come out virtually dry. VACUUMING INTRODUCES DUST AND STATIC ONTO PREVIOUSLY RESTORED GROOVES.

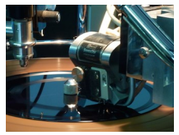
- RETURN THE WARRANTY CARD WITHIN 15 DAYS OF PURCHASE TO MAINTAIN WARRANTY.



Overview of Vinyl: *Before the arrival of downloadable detailed music, MP3's, CD's, audio tapes or 8-tracks: Music, speeches, live radio broadcasts and even books were recorded on vinyl records. Even if today music becomes more and more digital and transportable, vinyl records endure and see a come back. While vinyl's durability may at the onset appear to be part nostalgia, vinyl records really do sound different – and even better, many agree.* ***Their presence, soundstage and artist's emotion cannot be reproduced or felt in modern day formats.*** *The best source for Vinyl Pressings are analog, taking the full spectrum of sound created by the instrument or voice. Even the best digital formats in fact sample the analog source and depending on the sampling bit rate sees compromises made due to the media's bandwidth and throws out some of the nuances that vinyl offers.*



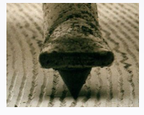
So, why all the noise, static, and fuss over cleaning records? *To appreciate cleaning as well as restoring records and what the KirmussAudio KA-RC-1 offers one must understand how a record is made. Edison called his sound-recording machine the phonograph, which means literally "sound-writer." It had a wooden cylinder with a thin sheet of foil wrapped round it with a sturdy needle with a horn attached to it pressed against the foil. Edison spoke into the horn and the sound energy from his voice was funneled and concentrated by the horn and made the needle vibrate up and down. Cranking a handle the cylinder rotated and the needle cut a groove into the foil. The depth of the groove varied according to how loud or soft his voice was, where the sound of his voice translated into a mechanical form. To play back the recorded sound, Edison simply ran the process in reverse. He put the needle back at the start of the groove and cranked the handle. The needle ran along the groove, jolting up and down to follow the pattern it had cut previously. As it moved about, it vibrated and the noise of its vibrations was amplified by the horn, recreating the sound of Edison's voice.* ***Today:*** *True to Edison's original design: a Master Recording is made in a studio where a "Lacquer" is placed on a record-cutting machine (lathe) and as it rotates electric signals vibrate a cutting head which holds a needle. The needle etches a groove in the Lacquer. The lacquer with an imprint is then sent to a production lab where the lacquer is first coated in nickel, then silver. A metal master is therefore produced. The resulting master disc has ridges instead of grooves. This Metal Master is then used to create a metal record called the "Mother" which is then used to form what is called a "Stamper". Stampers are just negative versions of the original recording that will be used to make the actual vinyl records.*







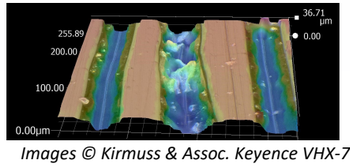
To make a record: *The Stamper is placed in a hydraulic press where a vinyl "hockey puck/ biscuit with labels attached for both side A and B " is about 2 inches thick, and is then pressed down by the stamper, flattening it. The PVC plastic itself has both plasticizers as well as stabilizer and liquefier agents added to it. As the PVC is heated and pressed, a scillic acid rises to the surfaces of the plastic record and is termed a release agent. It is the Stampers that push an impression of the master recording onto it.*

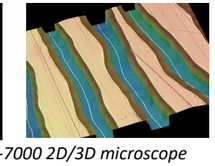


Playback of the LP: *Today's record players and turntables are still based on the "needle in groove concept". While a mechanism is now used to spin the record with the aid of a belt or a direct drive motor system and a platter replaced the Edison Disk or Can, it is now a needle that is set at one end of a tone arm that is mounted on a cartridge which is suspended on an elastic material which then sees the needle vibrate as it travels along the record's grooves. The stylus reads the grooves and picks up vibrations and variations as it moves along the record which now move a coil within a magnetic field inside the cartridge and which then in turn changes the vibrations into electrical signals which are carried along wires to the amplifier. These boosted signals are finally turned back into sound through the speakers, producing the sounds and music recorded on vinyl records.*

CONTAMINANTS ARE THE ENEMY TO YOUR LISTENING PLEASURE! *Even a pristine record that is still sealed in its jacket is covered with a thin layer of mold release which appears as a scillic acid during the fabrication process which eases the removal of the record. Pops heard when playing a new record are dust particles at the factory that landed on the warm record, and were caught in the grooves. Added: If a record is played without removing this released agent, heat from the needle hitting the grooves may see these dust particles micro-welded into the grooves and may thereafter be heard as new pops. Used records see many other contaminants on the record's surface or embedded in the grooves; fungus, skin-cell debris, fine particles of dirt and sand, oils from finger prints (skin oil), left over residues from various cleaning processes used seen as films, etc.... These "coatings" affect the performance of the needle and how it vibrates. It all makes sense. Less contact with the grooves, less dynamic range and signal. Less air, breath, and soundstage.* ***The KirmussAudio system uses a process to restore and not just clean records. After the Kirmuss process: A new pressing will see 1.3 dB average gain, records cleaned prior by vacuum or other sonic technologies will see a 3 to 4dB gain. Proven using science.***

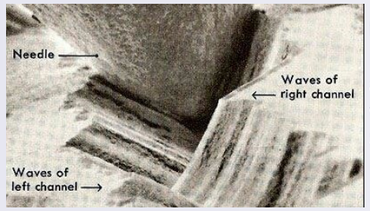
RIGHT: A RECORD CLEANED WITH ANOTHER ULTRASONIC PRICED AT 5 TIMES THE COST OF THE KA-RC-1. Both the record and cleaning solution have the same electrical charge. Limited groove cleaning results. Micro-welded dust not removed.





Images © Kirmuss & Assoc. Keyence VHX-7000 2D/3D microscope

LEFT: THE SAME RECORD RESTORED WITH CONTAMINANTS NOW REMOVED FROM THE GROOVES USING THE KIRMUSSAUDIO SYSTEM AND PROCESS. The repeated cycles with the record in the machine with the ionizing spray applied to the record prior to insertion changes the charge of the record to be opposite to that of the water in the tank. This attracts the sonic wave into the groove created by sonic cavitation.



The KirmussAudio KA-RC-1 consist of a 35 KHz ultrasonic coupled with a patented support mechanism that suspends multiple records of multiple sizes records at the proper height in the ultrasonic bath that comprises of water with a small amount of 70% IPA. Spaced correctly, cancelling unwanted standing waves, records are not skewered, and labels are not touched by the water. Strategically located transducers create cavitating micro-bubbles where the resulting plasma wave of 500 MPH (805 KPH) sees the applied surfactant rubbed into the grooves. The first 5 minute cycle without the application of our anti-fungal, anti-static surfactant is used is used to "degrease" and remove any surface dirt, simply "wetting" the record. It does little to restore the grooves. Vinyl by its nature repels water. The water/IPA mix is used to kill live and dormant fungus primarily. The intent of the entire process is to reach down into the grooves and remove any contaminants that may be present Thus an ionizing agent is sprayed onto the record to attract the plasma wave generated by way of cavitation and to therefore brush against the surfactant that was brushed into the record's the grooves by the goat hair brush. As the ultrasonic generates imploding micro-bubbles, this release of kinetic energy generates heat of which the system then monitors the water temperature, creating alarms when the water has reached both 95 and 105 degrees. F. (35 and 40 deg. C.) In this patented process, multiple records of multiple sizes may be restored without damaging the labels. The KA-RC-1 may restore two LP's, one 78 and one 45 record simultaneously. Consult for other options.

STEP 1, SYSTEM PREPARATION BEFORE USE:

A. **Unpack the contents.** Inside the tub you will find included the accessories as listed and itemized on Page 2. A warranty card must be filled out and returned within 15 days of purchase to validate warranty. BEFORE USE: Read the entire manual to familiarize yourself with system operation and the restoration process.

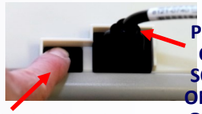
B. **Set the cleaner on a stable surface.** Keep away from hazards: EX: water, sinks, power outlets, etc..



C. WITH THE VALVE IN CLOSED POSITION. (12 O'CLOCK) **Fill the Ultrasonic unit's basin with only Distilled water** to the MAX line. Add 40 mL (1.4 oz) of 70% alcohol. (Never operate the unit with water below the MIN line)

D. **AC Power**: ENSURE THAT THE MODEL YOU HAVE IS MATCHED TO THE ELECTRICAL VOLTAGE OF YOUR COUNTY! If in doubt: Consult the label on the underside of the Unit.

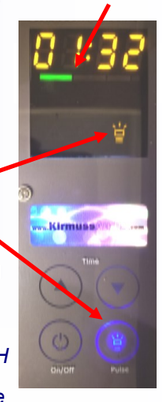
E. **Locate the AC Power Line Cord: plug into the rear of the unit**



F. ONLY with the basin filled with water, with dry hands, connect to a wall outlet. **Turn the Master Power Switch to On.** (The Master Power switch is located at rear of the unit.). The Control Panel will illuminate, the TIMER Display will show 5:00 minutes.

G. **DE-GAS THE WATER FIRST**. This removes air bubbles from the water. Press the **PULSE** (DE-GAS) Pushbutton on the control panel. The timer will show 1:36. Press the button once more, a high pitched pulsing sound will be heard (which is normal, sound of the sonic generator), The DE-GAS/PULSE indicator will illuminate, and the timer will count down.

ON POWER UP: ***The TEMPERATURE STATUS BAR*** *will see the GREEN BAR or GREEN and ORANGE light bars illuminate. (One or both depending on the temperature of the water poured into the basin. (indicating the temp is between 0-30% of 95 deg F.)* At the end of the De-Gas cycle, the ultrasonic generator will shut down. The Timer will now show 5:00 minutes after 0:00 appearing momentarily. ***NEVER DE-GAS WITH THE RECORD ASSEMBLY POWER CORD CONNECTED.***



H. Press the DE-GAS BUTTON twice once more to repeat the process. The Timer will show 1:36 and begin to count down. At the end, the timer first will go to 0:00, then to 5:00. ***With the timer reaching 0:00, the water in the tub has now been prepped for use.*** *We have removed all air bubbles that were introduced when the tank was filled.*

NOTE: AFTER PROCESSING 10 RECORDS, REPEAT THE DEGAS CYCLE. *(ONE CYCLE WITH THE RECORD COVER ASSEMBLY REMOVED AND DISCONNECTED.) WHY? Introducing records into the machine sees air being forced into the water as the record repels water. Air reduces the efficiency of the ultrasonic.*



J. Locate and then **mount the Record Washer Assembly on top of the ultrasonic washer.** Then, locate the 3.5 mm power plug with cable on the Motor Assembly, then plug it into the mating 3.5 mm power socket found on the right side panel of the washer which is located to the right of the control panel. DE-GAS WITH RECORD ASSEMBLY UNPLUGGED

You are now READY FOR STEP 2 (PG.6), and are ready to Clean and Restore !