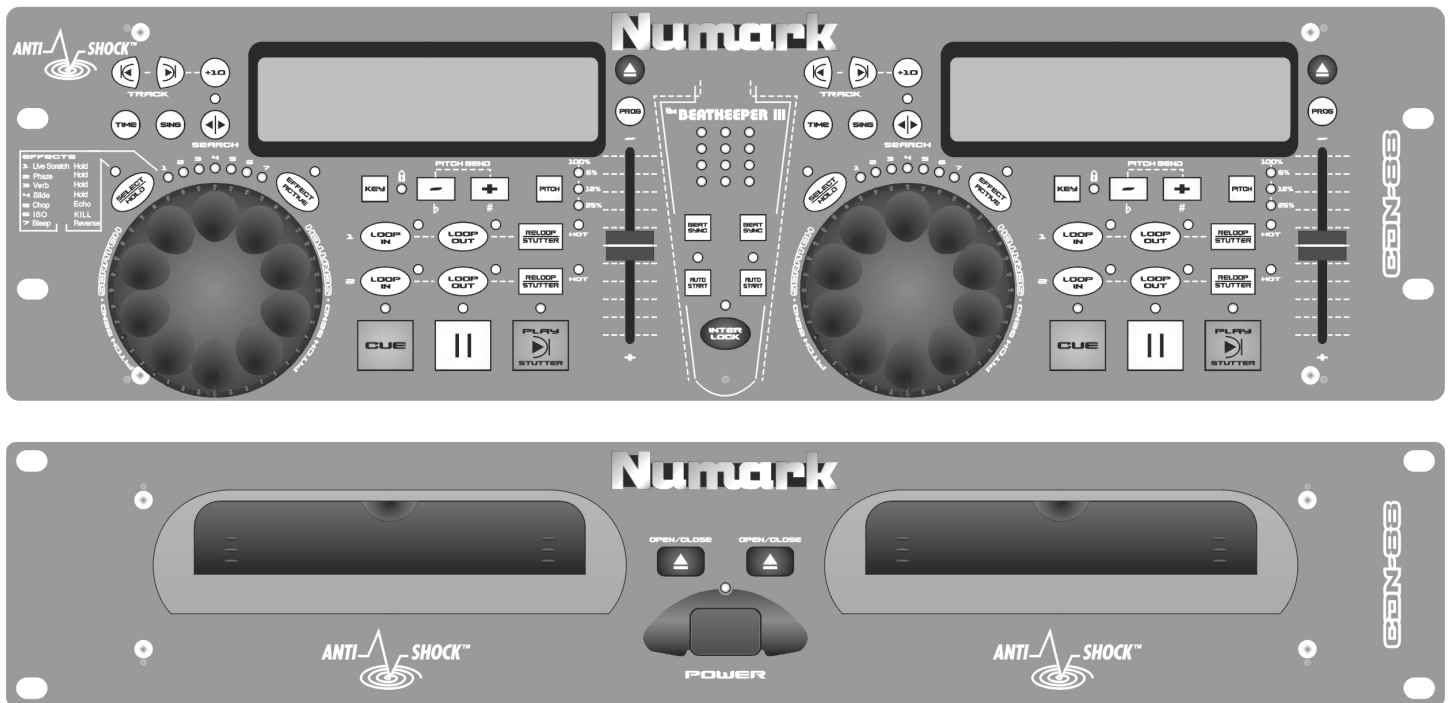


Numark®

Professional Disc Jockey Products

CDN-88

PROFESSIONAL DUAL CD PLAYER with Scratch Wheel and Beatkeeper



OPERATING MANUAL

Safety Information and Product Registration



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



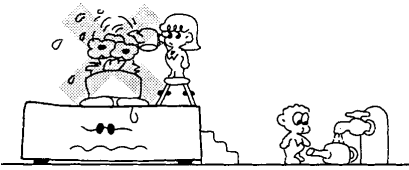
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE ANY COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

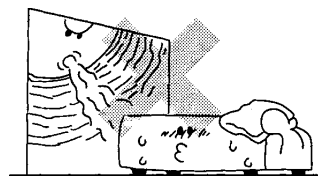
The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this appliance.


CAUTION
FOR USA & CANADIAN MODELS ONLY
TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

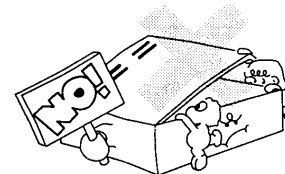
SAFETY INSTRUCTIONS

1. Read Instructions - All the safety and operating instructions should be read before this product is connected and used.
2. Retain Instructions - The safety and operating instructions should be kept for future reference.
3. Heed Warnings - All warnings on this product and in these operating instructions should be followed.
4. Follow Instructions - All operating and other instructions should be followed.
5. Water and Moisture - This product should be kept away from direct contact with liquids.

6. Heat - Avoid placing this product too close to any high heat sources such as radiators.
7. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed,

sofa, rug, or similar surface that may block the ventilation opening; or, placed in a built-installation, such as bookcase or cabinet that may impede the flow of air through the ventilation openings.



8. Power Sources - This product should be connected to a power supply only of the type described in these operating instructions, or as marked on the unit.
9. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked upon or pinched by items placed on or against them. When removing the cord from a power outlet be sure to remove it by holding the plug attachment and not by pulling on the cord.

10. Object and Liquid Entry- Take care that objects do not fall into and that liquids are not spilled into the inside of the mixer.
11. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
12. Non-use Periods - The power cord of the appliance should be unplugged from the outlet when left unused for long periods of time.
13. Damage Requiring Service - Only qualified personnel should service this product. If you have any questions about service please contact Numark at the number(s) shown on the back cover of this manual.



14. Grounding or Polarization - Precautions should be taken so that the grounding or polarization means built into the CD player is not defeated.
15. Internal/External Voltage Selectors - Internal or external voltage selector switches, if any, should only be reset and re-equipped with a proper plug for alternative voltage by a qualified service technician. Do not attempt to alter this yourself.
16. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer of the cart or stand for this purpose. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

Numark- The Leader in DJ Technology

WARNING: To reduce the risk of fire or electrical shock, do not expose this appliance to rain or moisture. Electrical equipment should NEVER be kept or stored in damp environments.

DANGER: INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION: This product utilizes a laser. Use of controls or adjustments other than those specified herein may result in hazardous radiation exposure.

NOTICE CONCERNING FCC REGULATIONS

This equipment generates and uses radio frequency energy and may cause interference to radio and television reception if you do not operate it in strict accordance with the procedures detailed in this OPERATING MANUAL.


This unit complies with Class B computing device rules in accordance with the specifications in Sub-part J or Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. There is no guarantee, however, that interference will not occur in a particular installation. If the unit does cause interference to any radio or television reception, try to reduce it by one or more of the following means:

- a) Reposition the other unit and/or its antennae
- b) Move this unit
- c) Move this unit and the other unit(s) further apart
- d) Plug this unit into a different AC outlet so that it is on a different circuit from the other equipment.

This note is in accordance with Section 15.838 of the FCC Rules.

This unit does not exceed the Class B limits for radio noise emission from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

SERVICE INSTRUCTIONS

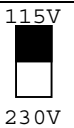
- Disconnect power cord before servicing
- Replace critical components  only with factory parts or recommended equivalents
- For AC line powered units - Before returning repaired unit to user, use an ohmmeter to measure from both AC plug blades to all exposed metallic parts. The resistance should be no more than 100,000ohms.

DOUBLE INSULATED - When servicing use only identical replacement parts

For 220-volt use in USA, use NEMA style 220-volt plug. For other countries use proper plug for local outlet.

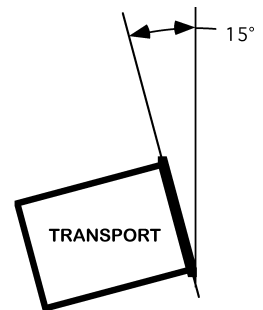
LINE VOLTAGE SELECTION

- 1) The desired voltage may be set with the VOLTAGE SELECTOR switch on the rear panel of the main unit, using a screw driver.
- 2) Do not twist the VOLTAGE SELECTOR switch with excessive force as this may cause damage.
- 3) If the VOLTAGE SELECTOR switch does not move smoothly contact a qualified serviceman.



MOUNTING YOUR CD PLAYER

1. Mount the units in your console or rack with 19" EIA rails
2. The transport should be mounted not to exceed an angle of 15 degrees.
Your CD player can be affected by excess vibration so mount the units in a secure environment if possible.



Please record the serial number of your unit as shown on the back of the chassis as well as the name of the dealer from whom you purchased the unit. Retain this information and your original purchase receipt for your records. Please return the enclosed warranty card to register your CD player with us.

MODEL: _____ PURCHASED FROM: _____
 SERIAL NUMBER: _____ DATE OF PURCHASE: _____

A note from Numark

Congratulations, you are now the owner of one of the most technically advanced pieces of DJ equipment ever developed. The CDN-88 is the result of many years of development and several NUMARK exclusive patents. The developers and engineers behind the CDN-88 all have a significant amount of DJ experience and understand your needs. As we like to say, "this unit was designed by DJs for DJs", like the rest of NUMARK's products. That's why some of the features in this unit may work slightly differently than others on the market. **To get the most out of your CDN-88, we highly recommend reading this short manual thoroughly.**

We have taken great pride in developing features that will enhance your creativity when using CDs.

- **Live Scratching:** it really sounds like a vinyl record. Though we fully believe that nothing can replace the skills or excitement of the turntablist, we also know this feature is tremendous fun to use on CD and will change the way approach those little shiny discs.
- **Triple Anti-Shock memory:** Improves our patented Anti-Shock™ technology, not only in programming, but also with the use of 2X speed CD mechanisms for faster loads and mechanical vibration protection. Add to that 48 seconds of buffer memory, and the unit really is shock proof.
- **The Beatkeeper™ III:** Improves our patented Beatkeeper™ technology for even faster and more accurate readouts through the buffer memory. The primary use of this technology is an essential tool of many effects in the unit itself. Our goal is to enhance the DJ's skills. Remember you are not just a DJ but a musician as well. Also, when you use the Beatkeeper and Interlock, you have full control over the unit. Maybe you want to keep two songs matched and pitch the entire mix up or down. Or perhaps use an ISO/KILL - mix the drums on one song with the vocals of another.
- **200% pitch control:** Why not? This gives you + or - 100% control over your music. Exploit your creativity!
- **Key Lock:** Similar yet different from "master tempo". With "master tempo" the pitch only locks at the 0% point. So often a DJ is in the middle of a pitched mix and determines they need to make rapid and drastic changes in speed to bring in a record or change the mood. With KEY LOCK you can lock on right in at your current position, no returning to 0%. On top of that we took it one step further. Because we developed our own technology for this feature our KEY LOCK can go + or - 100%. Why not?
- **End of Track Dead Space Elimination:** So often a DJ will play a CD continuously for the cocktail or dinner hour. This feature eliminates the inconsistent space often found between tracks and keeps the music going.
- **Effects:** We took the liberty of adding some effects never before seen in a CD Player. Because we do the effects from a real time buffer, the effects are far more impressive then if provided from an external effects processor. Beat synchronized echo and chop are amazing. The echo can actually be set to play before the music. Standard filter effects such as Phaze, Verb, Slide, ISO, and KILL are also included. We also added BLEEP to get rid of those dirty lyrics on the fly and true reverse with no time limits.

We hope you have as much fun performing with the CDN-88 as we did developing it.

The NUMARK product team

Numark- The Leader in DJ Technology

Numark® CDN-88

PROFESSIONAL DUAL-TRANSPORT CD PLAYER **with Scratch Wheel, Effects, and the Beatkeeper™ III**

(Vinyl Creativity + Numark Technology = CDN-88)

Imagine doing *everything* you can do on vinyl, but in your CD player. The CDN-88 provides real time scratching with true vinyl sound and feel. Capabilities such as +/-100% pitch change and Key Lock (a.k.a. master tempo), reverse play, dual loops, Anti-shock™, and sound processing give you the technology to be as creative as you want. A built in Beatkeeper™ with Interlock™ function can align all cue points, make perfect loops, and, if you choose, automatically lock both players together on the beat. Now you can do anything you want with your music. This is the real deal.

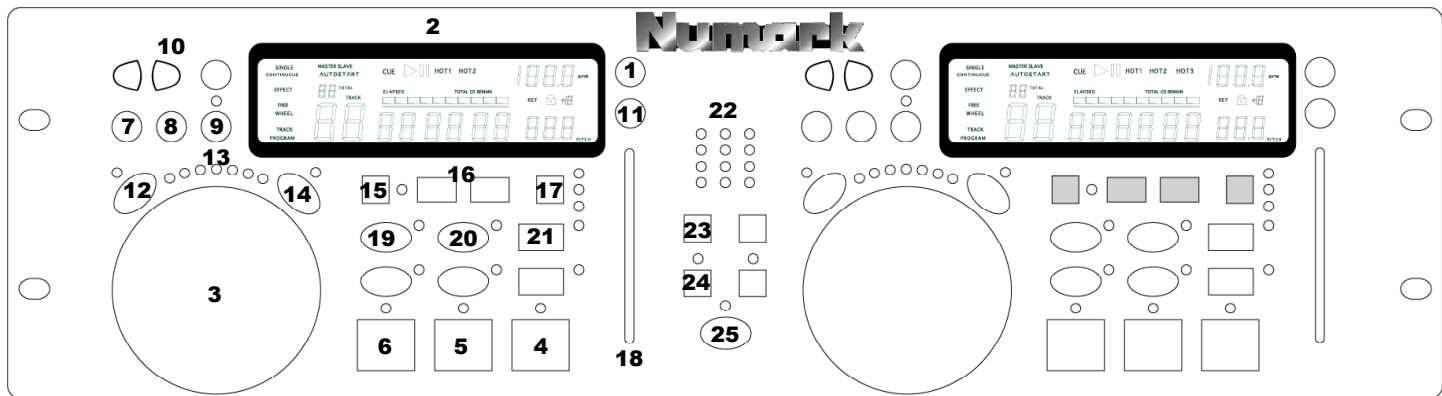
Technology will no longer limit your creativity!

TABLE OF CONTENTS

Safety and Warnings (PLEASE READ)	2
Mounting Procedure and Registration	3
Letter from the Engineers	4
Introduction	5
Description of the Features	
Remote Control Unit	6
Transport	6
Display	7
Set-up Instructions & Connections	7
Basic Operation	
Play, Pause, Cue, Pitch, General CD control	8
Advanced Operations	
Looping	9
Stuttering (Hot Starts)	10
Beatkeeper	11
Interlock	11
Key Lock, Key Change, Auto Start	12
Special Effects	13
Program Functions	15
Specifications	15
Warranty	16

Numark- The Leader in DJ Technology

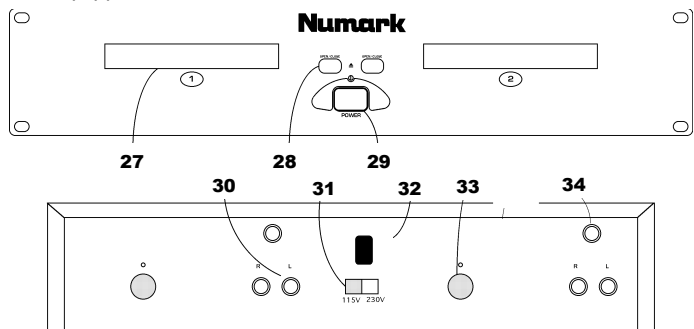
DESCRIPTION CDN-88REMOTE FEATURES



1. **OPEN/CLOSE-** Pressing will open or close the disc tray on the transport.
2. **LCD DISPLAY-** Indicates all the functions, as they are occurring, with the CD.
3. **WHEEL-** Used for various functions such as cueing, scratching, pitch bend, searching, and effect control
4. **PLAY/STUTTER-** To start the music from the initial cue point.
5. **PAUSE-** To pause the music.
6. **CUE-** To move the music to the cue point and preview the selection.
7. **SING-** To set play mode in single or continuous play.
8. **TIME-** Controls display indication of time mode.
9. **SEARCH-** Puts wheel in search mode.
10. **<<, >>, +10-** Used for selecting tracks.
11. **PROGRAM-** Used for setting track order and various special commands.
12. **EFFECT SELECT/HOLD-** Used to determine desired effect.
13. **EFFECT INDICATOR-** Shows selected effect.
14. **EFFECT ACTIVE-** Used to put the wheel in effect mode.
15. **KEY-** Used for various key control.
16. **-,+ -** Works as pitch bend and controls key and pitch functions.
17. **PITCH-** Activates and sets pitch slider range.
18. **PITCH SLIDER-** Controls the overall speed of the music.
19. **LOOP IN-** Used to set stutter and loop in points.
20. **LOOP OUT-** Used to set loop out points and release the loop.
21. **RELOOP/STUTTER-** Used for repeated play (stutter) from the loop in point, repeating a previously set, and hot start.
22. **MARCHING BAR GRAPH-** Tracks the beats and measure position of music in both units and indicates when they match.
23. **BEAT SYNC-** Used for various Beatkeeping functions.
24. **AUTO START-** Used for setting Relay, Fader, and Automatic play start.
25. **INTERLOCK-** Links both players for beat alignment.
26. **FADER START JACK (not shown)-** Located on the rear of the control unit for remotely starting your CD player from a similarly equipped mixer.

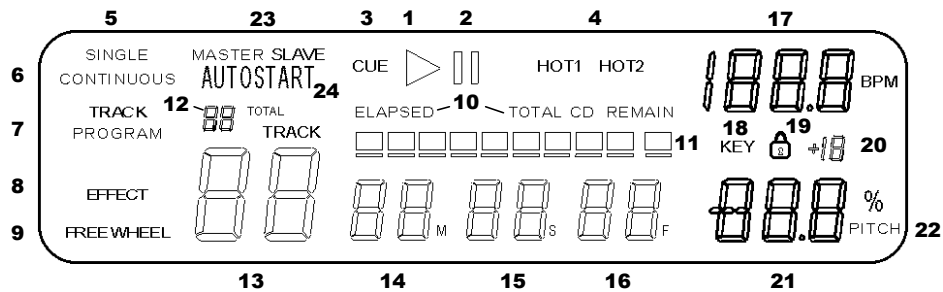
TRANSPORT FEATURES

27. **DISC TRAY-** Place your CD in here.
28. **OPEN/CLOSE (Disc Tray Open/Close) -** Press to load or eject the disc. NOTE: Tray will not open unless the disc is not in play.
29. **POWER BUTTON -** To turn the machine on and off.
30. **RCA AUDIO JACKS -** Connect your CD player to your mixer from this line level output.
31. **VOLTAGE SELECTOR -** Set this switch to the voltage for your location.
32. **POWER CORD -** Plug your unit into a power outlet.
33. **CONTROL CONNECTOR -** Plug your control cables for each unit into here and the back of the remote unit.



34. **DIGITAL OUTPUTS -** The output format is type 2, form 1, also known as S/PDIF (Sony/Phillips Digital Interface Format). In order to use the digital output you must first activate it through the "PROGRAM" features. Once activated you can not use variable pitch slider, the pitch bend buttons, or loop when active. *If you wish to use the digital output of the unit, you must first set the digital out mode or the output sampling rate will be incorrect.*

LCD DISPLAY FEATURES

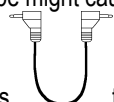


1. **PLAY** - Active while the unit is actually playing a CD.
2. **PAUSE** - Active when the unit is paused.
3. **CUE** - Flashing when the unit is setting a cue point. Active when the unit is paused at a cue point.
4. **HOT 1 HOT 2** - Active when hot points have been set.
5. **SINGLE** - Shows when the unit is set to play just one track at a time.
6. **CONTINUOUS** - Shows when the CD will play continuously through all tracks and then start over repeating the CD infinitely.
7. **PROGRAM** - On when a sequence of songs is preprogrammed into the unit.
8. **EFFECT** - indicates when wheel is in effect mode
9. **FREE WHEEL** - indicates when the wheel will cue as a smooth transition over the music creating a scratch effect. When not lit the wheel will cue in the customary stutter style.
10. **TIME MODE** -
 - **(ELAPSED)** is for showing time as it is taking place.
 - **(REMAIN)** shows how much time is left on a particular track.
 - **(TOTAL CD)** indicates when full CD remain time is showing.
11. **TIME BAR** - Shows either track time remaining, total CD time remaining or track elapsed time depending on the setting of the "TIME" button.
12. **TOTAL TRACK** - shows number of tracks available on the CD.
13. **TRACK** - Shows the track that the unit is playing with.
14. **MINUTES** - Shows the minutes elapsed or remaining depending on mode setting.
15. **SECONDS** - Shows the seconds elapsed or remaining depending on mode setting.
16. **FRAMES** - The CD Player breaks down a second into 75 frames for accurate cueing. This shows the frames elapsed or remaining depending on mode setting.
17. **BPM** - Indicates the current BPM and effect information.
18. **KEY** - Lights when key effects are active
19. **LOCK** - Lights when key has been locked
20. **KEY LEDS** - Indicates key position.
21. **PITCH** - Lights when pitch is active.
22. **PITCH LEDS** - shows current pitch position.
23. **MASTER/SLAVE** - indicates side dominance in interlock functions
24. **AUTOSTART** - Indicates when the CD is set to AUTOSTART.

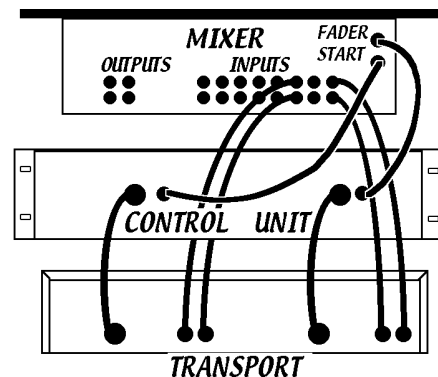
CONNECTING YOUR UNIT

Typical connection with a mixer is illustrated right.

1. Connect the output connection cords from the CD Player to the line inputs of your mixer.
2. Connect the remote control connection cable from the Unit A connector on the main unit to the Unit A connector on the remote control unit. Repeat for Unit B.
3. The output connection cords and the remote control connection cables are supplied with the main unit. Be sure to use the remote control connection cables, which have been supplied. Use of another cable type might cause damage.



4. For fader start connect fader start cables to both side of your CD player to a similarly equipped DJ mixer, as in the top drawing.





Numark- The Leader in DJ Technology

CDN-88 Dual CD Player

Basic Operations



Open/Close: Press to load or eject the disc. NOTE: Tray will not open unless the disc is not in play. This button is programmable to allow automatic door close at various times. This is to protect the tray from accidental damage while open. In order to program the close time press and hold  followed by . The display will indicate options of 30 seconds, 60 seconds, 120 seconds, and (--) for no auto close. *This setting will be remembered at power down.*



Play/Stutter: Starts the music from either the first set cue point or the last point of pause. By starting from the last pause point while the unit is paused a new cue point is set. Pressing this button while the unit is in play restarts the unit from the last cue point, creating a "stutter" effect.

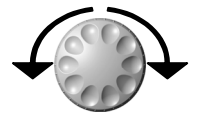




Pause: Stops the music while in play. Pressing play following this sets a new cue point. Holding down the button while scratching or stuttering the music will stop the music at the current position, allowing you to capture a loop in or cue point.

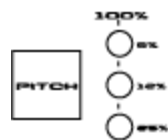





Cue: Returns and pauses the music at the last set cue point. The cue point is the last place in which the unit was paused and then play was pressed. Pressing a second time allows for temporary play of this point.

You can easily edit the cue point by turning the wheel. As you rotate the wheel the music will sound. By stopping the wheel and pressing play a new point is set. The sound during wheel rotation can be adjusted from a smooth



"scratch" sound to the tradition "stutter" sound. To alternate modes hold  followed by . The display will indicate FREE WHEEL when the scratch sound is active. This indication will go away when the style of cue is stutter. *This setting will be remembered at power down.*







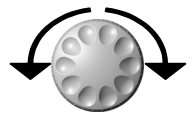
Pitch Range: activates the pitch slider and adjusts the amount of control the pitch slider has on the overall speed of music. On depression of pitch will toggle the slider on and off. Range adjustments of 6, 12, 25, and 100% can be achieved by holding down  and then pressing   to cycle through the range options.



Pitch Slider: By moving the slider downward the speed of the music speeds up. By moving upward the speed slows down. With 100% control the music can be stopped or play at 2 times original speed. To match the speeds of both sides you can either monitor the music of both PLAYER 1 and PLAYER 2 by ear or use the automatic BPM readout and adjust the pitch. When the tempo of the music of the CD you wish to match is slow compared to the tempo of the other music, move the slider to the (+) side and match the BPM. When faster, move the pitch slider to the (-) side. By making this adjustment the speeds will be matched though the beats may not yet be aligned.



Pitch Bend: Buttons and Jog Wheel: Allows the user to temporarily change the speed of the music to align beats. When the beats of the music of the CD you wish to match is fast compared to the tempo of the other music press the  or rotate the jog wheel counter clockwise (to the left). When PLAYER 2 is behind press the  or rotate the jog wheel clockwise (to the right). The pitch changes temporarily while the  or  button is being pressed or the jog wheel is rotated. The faster you rotate the wheel or the longer you hold the buttons the more you change. Releasing the button or wheel results in a return to the original pitch.



Time: switches the time modes on the display between elapsed playing time, remaining time on the track and remaining time on the entire CD. *This setting will be remembered at power down.*



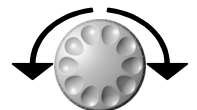
Single: toggles the unit to play back just one track at a time (single) or play continuously through all tracks and then start over repeating the CD infinitely (continuous). *This setting will be remembered at power down.*



Track Selection: These buttons are used to select the track to be played. +10 quickly allows the user to move through tracks on the CD.



Search: Changes the mode of the jog wheel to a search mode. This button will remain active while the wheel is being moved and for 8 seconds after. Moving the wheel clockwise rapidly moves forward through the music. Counterclockwise moves backwards through the music. There are 2 search speeds depending upon wheel rotation speed.




Numark- The Leader in DJ Technology

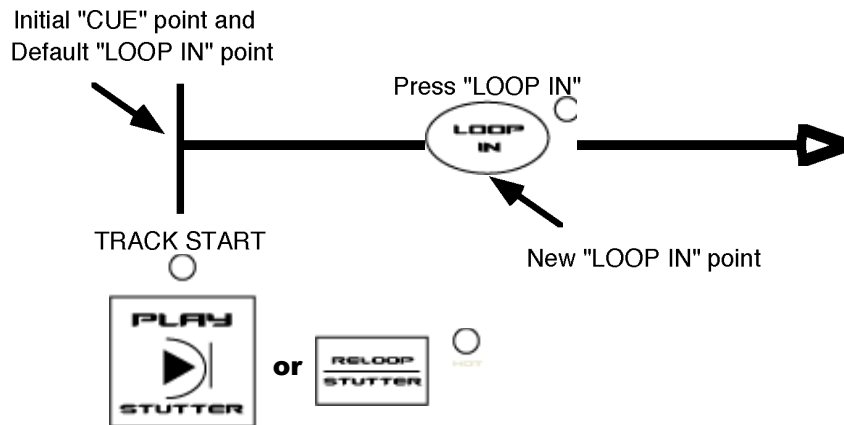
Advanced Operations


LOOPING: A loop is any area of a CD that you choose to repeat with no breaks. On the CDN-88 two seamless loops are possible. There are 3 buttons associated with the loop feature.





LOOP IN:

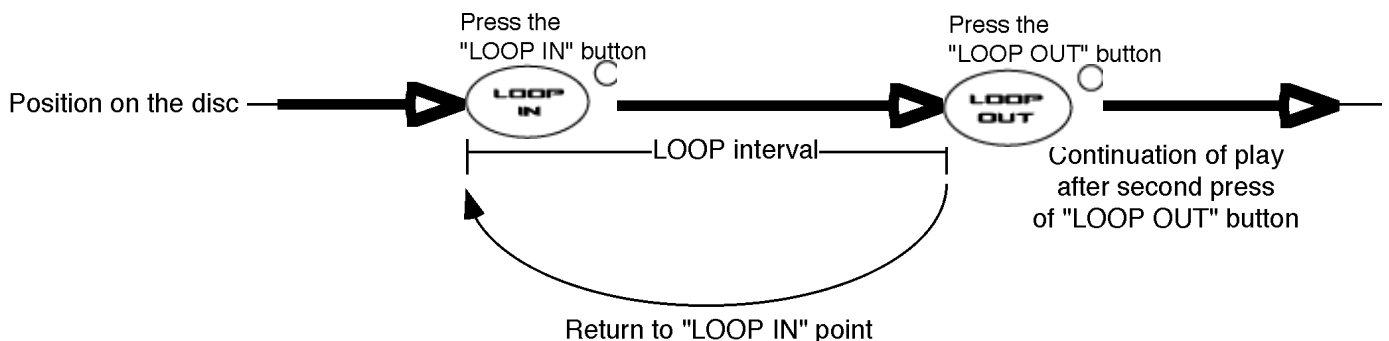
The "LOOP IN" is where you wish for the loop to actually start. The initial "CUE" point of the CD is also the default "LOOP IN" point for both loops or "Hot Start" point. If you wish to set a new "LOOP IN" point, just  while the CD is playing when it reaches the desired point. The "LOOP IN" LED will light indicating a new loop is set. The "Hot Start" LED will also illuminate indicating a point has been set and is accessible. *By default the "LOOP IN" also becomes the "STUTTER" or "Hot Start" point.*



NOTE: The CD Player will always remember a new set point as the "LOOP IN" or "Hot Start" point until you actually set a new "LOOP IN" point or put in a new CD. The new point will be accessible until you remove the CD from the unit. If you change tracks and you previously set a "Loop In" on another track, pressing  will jump to that point.

LOOP OUT:


The "LOOP OUT" determines the end point for a loop. The first time you press  while a CD is in play mode, the "LOOP OUT" LED will turn on and flash while the song automatically returns to the "LOOP IN" point with no breaks and continues to play. When the song reaches the "LOOP OUT" point again it returns to the "LOOP IN" point and continues to repeat this action. You will notice the "LOOP IN" LED will also be flashing during loop action. To release or end the LOOP press  a second time and play will continue forward when the song passes the previously set "LOOP OUT" point. The "LOOP OUT" LED will be lit solid indicating that the "LOOP" is now in memory for "RELOOP" purposes.

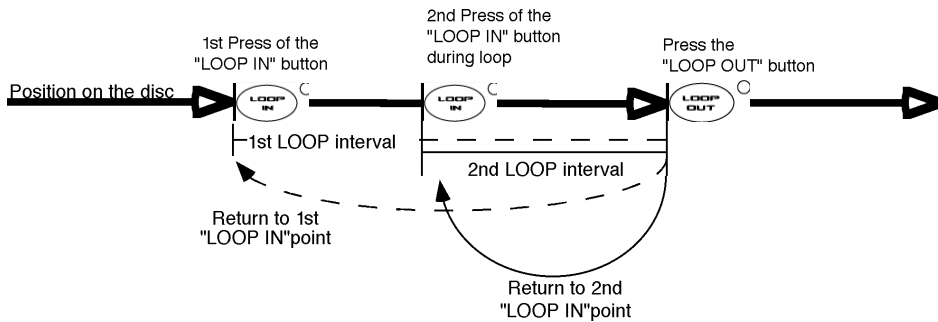






Note: The "LOOP OUT" point will be erased if "LOOP IN" is pressed or a new "CUE" point is set after the "LOOP OUT" point. This is important because without this point "RELOOP" will not be possible.


CDN-88 Dual CD Player

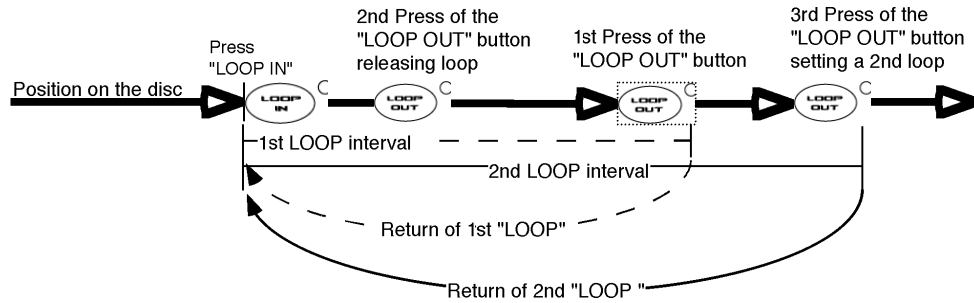
MOVING LOOP POINTS

The "LOOP IN" point can be moved while the music is playing just by pressing  at the new desired point. The next time "LOOP OUT" is reached the CD will return to this new "LOOP IN" point. If "LOOP IN" is pressed after the "LOOP OUT" point it will clear the "LOOP OUT" point



The "LOOP IN" point can also be edited while paused. First hold down  then press  to move to the loop in point. Next rotate the wheel to search for a new cue point and then press  again to set the new point. Check your point by pressing .

The "LOOP OUT" point can also be moved while a loop is playing. Press  to release the old "LOOP OUT" point and pressing it again at the new desired point.

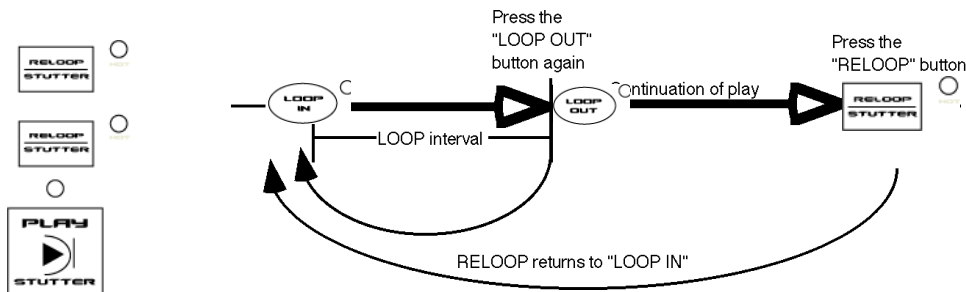


RELOOP/STUTTER:

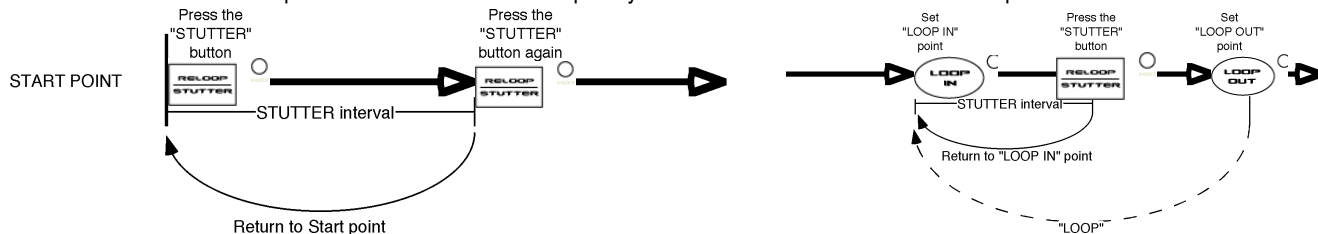



This button performs 2 different functions depending on loop setting.

ReLoop is only possible if "LOOP" points have been previously set. The "RELOOP" function automatically returns the music to the "LOOP IN" point and will play the loop until it is released with the "LOOP OUT" button.



Stutter starts instant play from previously set "Hot" points. Simply set your stutter (Hot Start) point by follow the directions for setting loop in because the points are the same. **Remember the button serves also for the reloop function so if a loop out has been set the unit will also loop until released.** This function lets you set 3 Hot Start points. The first is based on the "PLAY" cue point and the second two are based upon "LOOP IN". Since the default "LOOP IN" points are also the initial start point your unit can be "stutter" started from up to 3 buttons.

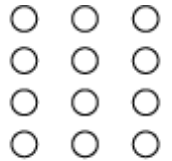



NOTE: The CD Player will always remember a new set "Hot" points until you actually set a new "LOOP IN" point or put in a new CD. The new point will be accessible until you remove the CD from the unit. If you change tracks and you previously set a "Loop In" on another track, pressing  will jump to that point.

Numark- The Leader in DJ Technology


The Beatkeeper™ III and Interlock mode

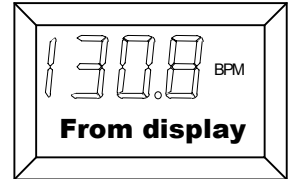
The CDN-88 includes the latest Numark patented Beatkeeper™ technology. The Beatkeeper™ automatically tracks beats based upon a combination of frequencies and rhythm patterns in the music. It shows BPM in the display of each side and outputs 4-count (a.k.a. measure) information about the music in a marching bar graph.




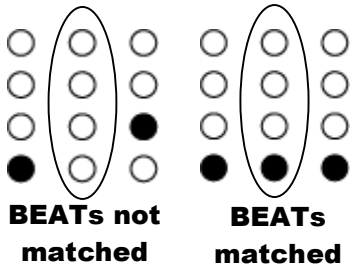
- **The Bar Graph:** Most dance music and rock is set up in 4 beat increments called measures. Many of the features within the CDN-88 use this information for incredible results. It's important to understand the basics of how the Beatkeeper works to effectively take advantage of other advanced features in the unit. The bottom LED is for the 1st beat or "Down Beat". Typically most music starts on the down beat so the unit sets the first beat to where the music begins. Occasionally this may not be correct or you may wish to reset it. To reset the down beat simply tap the  at the new downbeat location as the music is playing or in pause.




BEAT SYNC: This button is used for resetting the downbeat and also re-calibrating the BPM. The Beatkeeper is considered by many to be the most accurate automatic beat counter on the market today, however, it occasionally may have trouble determining the correct BPM. This will happen when the music contains complex rhythms or may start without a beat at all. If the BPM showing in the display you know is incorrect or the beat LEDs are not flashing with the beat you have 2 options to reset the Beatkeeper. The first way is to tap  on






the downbeat and hold for a second. This will tell the unit to search and display the next BPM it finds. If this doesn't work you can manually tap  on the beat and the display will indicate the new BPM. The BPM will be based upon the average of your last 8 taps. The Beatkeeper will then know which beats in the music it should be using to determine the correct BPM and track them through the song.






Sometimes the unit will be tracking the wrong beat but have the correct BPM. To reset the downbeat simply tap the  once on the down beat.

Marching Bar Graph: This is the middle graph that compares the music from both units. When the BPM and down beat match the green middle LEDs will also light up indicating a perfect mix when beat mixing.





INTERLOCK: This button will automatically match the BPM both sides of the CDN -88 and lock them together on the beat. Before using this function it is important to be sure the Beatkeeper is tracking the correct BPM and is actually synchronized with the beat. In order to match with control one side is called the master and the other a slave. **The master is always the first unit to be playing.** The slave follows the master. As soon as the master is stopped for any reason the opposite side becomes the new master control. Before using this function it is advisable to activate the key lock since pitch shifts are automatic and can be audible. When interlock is pressed you will see the BPM display of the slave automatically change to match the master and the pitch indication in the display change the amount needed to match speeds. During interlock all pitch functions of the slave will deactivate and follow everything you do with the master. All actions of the slave such as loop functions, , , , and PLAY will now also be beat aligned with the master.

- If both units are playing the slave will adjust to match to the nearest beat of the master.
- If  is pressed the slave will now start with the next beat of the master.
- If  is pressed during , the slave will automatically start the next time the master matches the beat of the slave.

When the slave becomes the master or is released from interlock and still playing, the pitch playing will often be different than the original position of the pitch slider. The pitch slider will not function until it is brought to the new position. Move the pitch slider in the direction shown in the display. For example if the display says "INC 4.5%" move the slider in the positive direction 4.5% (increase). If it says "DEC -3%" then move the slider in the negative direction 3% (decrease). As you get closer to the correct position the indication will reduce until you are at the pitch currently playing. After this has been achieved all pitch functions will return to the player and pitch can be adjusted as normally. If the unit is stopped for any reason the pitch will automatically reset to the current position of the slider. **Note: Interlock may automatically deactivate when effects are engaged that can not be beat aligned such as live scratch.**

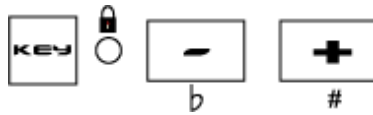
Smart Looping

The Beatkeeper and Looping can work together to create perfect loops every time. In order to work correctly first properly align the Beatkeeper™ on


the beat. To active smart looping hold down  followed by  at the same time. After this has been done all loop points and stuttering will play perfectly to the beat of the music.




CDN-88 Dual CD Player

Key Lock / Key Change



The CDN – 88 uses Numark Patented technology to lock the key of the music in place at the current pitch position or change it from the current position. This is different than “master tempo” often found on many modern units because the key lock to the current pitch position and not automatically set to the “0” pitch position. By doing this we have allowed you to activate this function while playing without changing the key.



Key Lock: Pressing  holds the key in place. An indication in the display will show the current key change. If pitch (tempo) is changed the current key will continue to play. By putting the pitch at 100% you can actually slow the music to a complete stop while playing the last heard tones of the music. This works very well on vocals and can be a very cool effect. If the unit has Key Lock active after the track has been changed and before play is hit, the unit will lock to 0. If Key is deactivated during pause the unit will reset to match the current pitch position.

Key Change: Pressing a combination of key including  and  or  will change the key. The key can increase to 1 octave above normal key or up to 2 octaves above normal key when the Slide effect is used. The key can decrease up to 5 octaves below normal key. The display will limit to 19 half steps above or below normal key. If the key is higher, the display will show "H". If it is lower, the display will show "L".


Auto Start



This button provides 3 functions depending upon the way it is set.




Interlock Play Start: This function was explained in the Beatkeeper section. If  is pressed during , the slave will automatically start the next time the master matches the beat of the slave.

Relay Play: This function will automatically start play on the side pressed (slave) after completion of the track on the opposing side (master). In continuous mode, the relay feature will allow the master to complete playing the full CD then switch to the slave. In single mode the player will alternate after each track.

To activate, press  (without interlock activated) on the slave side. When the master has finished play it will send a signal to the slave to start play. The slave will start automatically and the master pause and cue to the beginning of the next track. The master will now become the slave.

The relay time of this feature can also be programmed by holding down  and pressing . Options will appear to relay immediately after the track (0), with time added of 1,2,3 or 4 seconds (1,2,3,4), or a reduction of 3,2, or 1 seconds (-3,-2,-1). By reducing time the tracks will crossover before the end of a track, creating an automatic segue from master to slave. *This feature will also work in track sequence program mode; however, if the sides are also in SINGLE mode the same number of tracks programmed should be the same. Play will stop at the end of the last track.*

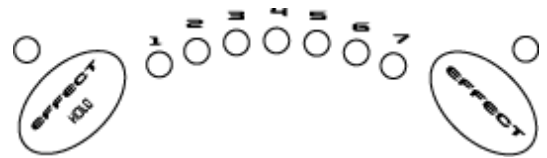
Fader Start: This function will activate the CD player to work with most standard fader start compatible mixers. First you must follow the directions


for connecting to your fader start compatible mixer. To activate, press  and hold it for 2 seconds. The display will indicate fader start is active. Following the directions in your fader start mixer manual for proper operation. Essentially when your mixer crossfader is moved one side of the CD player will play while the other side cues allowing the user to control the CD player and blending from the mixer.



Note: A few mixer manufacturers have made their products incompatible with the industry standard so fader-start may not always work.

SPECIAL EFFECTS

Your CDN-88 is equipped with some of most advanced effects on the market today. To fully take advantage of these effects it's helpful to practice and understand their use.



To select an effect tap  until the desired number is found. To put the effect into hold mode or a secondary effect hold down the button for 1 second. The LED above will light indicating the hold has been activated. To release the hold tap the button once. The effect will remain in position.

To activate the effect, press  then rotate the wheel to the desired parameter.  For all effects except reverse the pitch bend in the wheel will be deactivated so you will use the pitch bend buttons instead.

EFFECTS:

1. **LIVE SCRATCH** – This effect makes it possible for the wheel to scratch the music while it is playing. If you move the wheel back and forth the music will stop and play slowly as the wheel is moved similar to scratching a record. When the wheel stops moving the music will continue onward. You can also push the wheel forward and the unit will automatically play as it slows.

LIVE SCRATCH HOLD – This effect works like the above except it pauses the music when the wheel stops moving. It is basically the same as powering off a turntable.

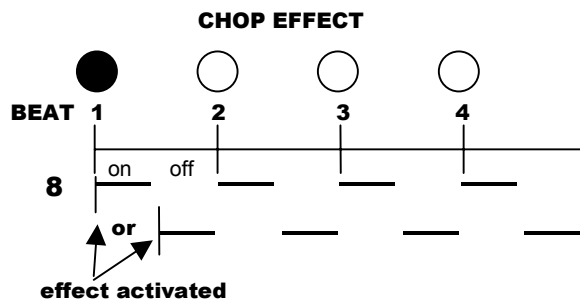
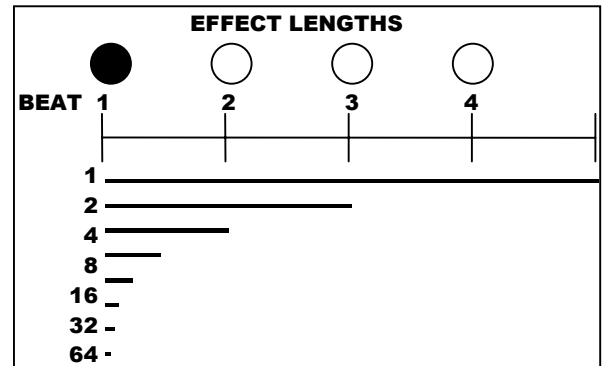
Live scratching is similar to working with a playing turntable, while the hold mode is similar to scratching a turntable with the power off.

2. **PHAZE** – Creates an effect on the music similar to the sound of an airplane taking off. As the wheel is moved the effect is created. If the wheel stops moving the effect will return to the beginning on it's own. If the effect is in hold the effect will stay at the current sound until the effect is released by the button or hold removed.

3. **VERB** – adds reverb to the PHAZE effect to create a slightly different sound. The wheel works a similar way.

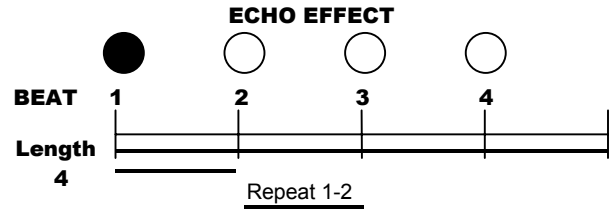
4. **SLIDE** – Smoothly changes the key of the music. In the display you will see the key indication change as the wheel is moved. The wheel also works in a similar way.

5. **CHOP** – This effect works best when the Beatkeeper™ is properly aligned. Chop breaks up the music by turning the volume on and off based upon the BPM of the Beatkeeper™. First activation of the effect plays 1/8th note or half of every beat. In the BPM display will indicate an 8 which means one measure (4 beats) of music has been broken into 8 parts. Rotation of the wheel to the left decreases the parts to 4, 2, and 1. At 1 the music plays for 4 beats then is silent. Rotating to the right breaks up the music into 16, 32, 64, then smaller increments making for another interesting effect. When the effect is first activated the music will play the section then turn off for a section. This is important because you can reverse the sections that are off and on by activating the effect in the other section. If you deactivate the effect then turn it on again it remembers the last set parameter.



CDN-88 Dual CD Player

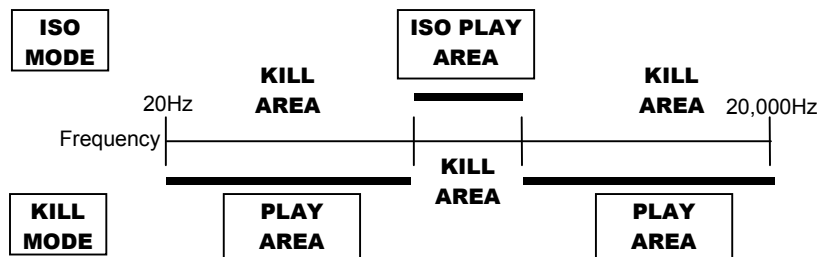
ECHO – this effect adds echo to the music also based upon the Beatkeeper™. The start position of the wheel is no echo (--). If you move the wheel to the right the numbers will go 64, 32, 16, 8, 4, 2, and 1 indicating the amount of echo added to the unit. If you move the wheel to the left you will create negative or preceding echo. This essentially plays the music before you get to it. Numbers are –64, -32, -16, -8, -4, -2, -1. At 1 the music will echo 1 full measure or 4 beats of music. If you turn off the effect then back on again it remembers the last set parameter.



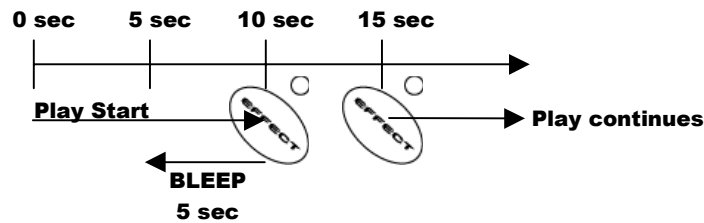
(Note: a preceding echo requires the unit to play from buffer memory. If the buffer becomes unavailable the effect will stop until buffer is regained.)

6. **ISO** - This isolation filter lets you play only a specific frequency of the music. Rotation of the wheel moves the frequency played through the audio spectrum. If you turn off the effect then on again it remembers the last set parameter.

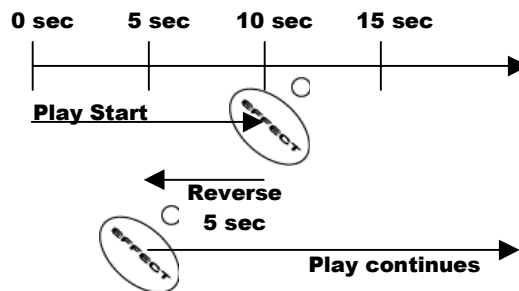
KILL- This elimination filter lets you play all but a specified frequency. Rotation of the wheel moves the frequency not played through the audio spectrum. If you turn off the effect then on again it remembers the last set parameter.



7. **Bleep**- The effect activates as soon as the button is pressed. It is a temporary (forward) reverse function for “bleeping” dirty lyrics or creating interesting effects. By pressing the button the music plays backwards from buffer until released or until the buffer runs out. When the button is release, or the buffer runs out, the audio plays forward from the point where the music would have been if the button was never pressed. For example, is the effect is activated for 5 seconds at 10 seconds into a song, forward play will resume at 15 seconds. *The buffer time for this operation is variable depending upon the number of loops set and anti-shock buffer available.*



Reverse- This actually plays the music backwards. Now you can finally hear all the hidden messages you music contains. When the effect is activated the music will play backwards until it is released.



Numark- The Leader in DJ Technology

PROGRAM FUNCTIONS



This button provides several programmable functions depending upon the combination of buttons used.

Track Sequence Program - Depress while the unit is stopped and the program indicator will light. Select each track to be

programmed and press between selections. Press to start the track program. To exit and erase program hold for more than 2 seconds while the unit is stopped, open the disc tray, or turn off the power.

End of track dead space elimination – holding down and pressing will show an option for eliminating the dead space at the end of tracks. This is useful if you are playing a CD continuously and want to eliminate the gaps between songs. The unit will startup with this in the off position. The display will indicate “0 space” when the function is set to eliminate space. Setting this function on one side will affect both sides. This way you can enable the function while CD 1 is playing by using CD 2.

Relay time - holding down and pressing will show options for the amount of time used for relaying between tracks. Options will appear to relay immediately after the track (0), with time added of 1,2, or 3 seconds (1,2,3), or a reduction of 1,2, or 3 seconds (-1,-2,-3). By reducing time the tracks will crossover before the end of a track, creating an automatic segue from master to slave. *This feature will also work in track sequence program mode; however, if the sides are also in SINGLE mode the same number of tracks programmed should be the same. Play will stop at the end of the last track.* Setting this function on one side will affect both sides. This way you can enable the function while CD 1 is playing by using CD 2.

FREE WHEEL CUE – holding down followed by will alternate the jog wheel between free wheel and non free wheel mode during cue operations. The sound during wheel rotation can be adjusted from a smooth “scratch” sound to the tradition “stutter” sound. The display will indicate FREE WHEEL when the “scratch” sound is active. This indication will go away when the style of cue is stutter. *This setting will be remembered at power down.*

Automatic door close protection – holding down followed by will adjust this option. The display will indicate 30 seconds, 60 seconds, 120 seconds, and (--) for no auto close. *This setting will be remembered at power down.* Setting this function on one side will affect both sides. This way you can enable the function while CD 1 is playing by using CD 2.

Digital Output – In order for the digital output to work the output must be turned on. To turn this on holding down followed by . When this is active digital out will turn on and all pitch and loop functions will disengage.

Smart Looping - To active smart looping hold down followed by at the same time. After this has been done all loop points and stuttering will follow the beat of the music.

SPECIFICATIONS

TECHNICAL:

Quantization	16-bit linear/channel, 3 beam laser
Oversampling rate	8 times
Frequency response	20Hz-20KHz
Channel separation	86dB
T.H.D. + NOISE	0.01%
S/N ratio (IHF-A)	94dB
Output level	2.0Vrms
Short access time (Play next track)	less than 1.7sec
Long access time (Track 1 ->Track 20)	less than 3sec
Digital Output	type 2, form 1, S/PDIF (Sony/Phillips Digital Interface Format)

GENERAL:

Environmental:

Operating Temperature	5-35 deg. C
Humidity	25 to 85% RH (non-condensing)
Storage Temperature	-20 to 60 deg. C

Dimensions:

Main Unit:	482(W) x 88.8(H) x 264(D) mm (without feet)
	19(W) x 3 1/2(H) x 10 3/8(D) inches (without feet)
Control Unit:	482(W) x 88.8(H) x 74(D) mm (without feet)
	19(W) x 3 1/2(H) x 2 7/8(D) inches (without feet)

Weight:	Player Unit:	5 Kgs., 11 lbs.
	Control Unit:	2 Kgs., 4.4 lbs.

Power Supply:	115/230V AC, 50/60Hz
Power Consumption:	25W

Numark- The Leader in DJ Technology

Numark®

Professional Disc Jockey Products

LIMITED PRODUCT WARRANTY

What is covered and for how long?

1. NUMARK INDUSTRIES LCC ("NUMARK") warrants to the original purchaser that NUMARK products; including but not limited to DJ mixers, amplifiers, CD players, CD Mix Stations, turntables, preamplifiers, beatkeepers, equalizers, microphones, headphones, cartridges, and all other accessories; are to be free from defects in material and workmanship under normal use and service for the period commencing upon the date of purchase from an authorized NUMARK dealer for a period of (1) Year.

What is not covered? This Limited Warranty is conditioned upon proper use of the product by the purchaser.

2. This Limited Warranty does not cover: (a) defects or damage resulting from accident, misuse, abuse, neglect, unusual physical or electrical stress, modification of any part of the product, or cosmetic damage; (b) equipment that has the serial number removed or made illegible; (c) all plastic surfaces and other externally exposed parts that are scratched or damaged due to normal use; (d) defects or damage from improper testing, operation, maintenance, installation, adjustment, or service of the mixers; (e) crossfaders.
3. What are NUMARK'S obligations? During the applicable warranty period, NUMARK will repair or replace, at NUMARK'S sole discretion, without charge to the purchaser, any defective component part of the mixer. To obtain service under this Limited Warranty, purchaser must first contact NUMARK and obtain a return authorization number ("RA#"). Purchaser must then return the mixer to NUMARK in an adequate container for shipping, accompanied by purchaser's sales receipt or comparable proof of sale showing the date of purchase, the serial number of the product, and the seller's name and address. To obtain an RA# and assistance on where to return the mixer, contact NUMARK customer service at 401-295 9000. Upon receipt, NUMARK will repair or replace the defective products. NUMARK may, at NUMARK'S sole discretion, use rebuilt, reconditioned, or new parts or components when repairing any product or replace a product with a rebuilt, reconditioned or new product. Repaired mixers will be warranted for a period equal to the remainder of the original Limited Warranty on the original mixer or for (90) days, whichever is longer. All replaced parts, components, boards and equipment become the property of NUMARK. If NUMARK determines that any mixer is not covered by this Limited Warranty, purchaser must pay all parts, shipping, and labor charges for the repair or return of such mixer.
4. What are the limits on NUMARK'S liabilities? THE WARRANTIES GIVEN IN THIS LIMITED WARRANTY, TOGETHER WITH ANY IMPLIED WARRANTIES COVERING NUMARK MIXERS, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, NUMARK SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, INDIRECT OR SIMILAR DAMAGES, LOSS OF PROFITS, DAMAGES TO PURCHASER'S PROPERTY, OR INJURY TO PURCHASER OR OTHERS ARISING OUT OF THE USE, MISUSE OR INABILITY TO USE ANY NUMARK MIXER, BREACH OF WARRANTY, OR NEGLIGENCE, INCLUDING BUT NOT LIMITED TO NUMARK'S OWN NEGLIGENCE, EVEN IF NUMARK OR ITS AGENT HAS BEEN ADVISED OF SUCH DAMAGES, OR FOR ANY CLAIM BROUGHT AGAINST PURCHASER BY ANY OTHER PARTY. THIS LIMITED WARRANTY IS THE COMPLETE WARRANTY FOR NUMARK'S MIXERS, AND IS GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. THIS LIMITED WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL PURCHASER OF THIS PRODUCT AND STATES PURCHASER'S EXCLUSIVE REMEDY. IF ANY PORTION OF THIS LIMITED WARRANTY IS ILLEGAL OR UNENFORCEABLE BY REASON OF ANY LAW, SUCH PARTIAL ILLEGALITY OR UNENFORCEABILITY SHALL NOT AFFECT THE ENFORCEABILITY OF THE REMAINDER OF THIS LIMITED WARRANTY WHICH PURCHASER ACKNOWLEDGES IS AND WILL ALWAYS BE CONSTRUED TO BE LIMITED BY ITS TERMS OR AS LIMITED AS THE LAW PERMITS.
5. This Limited Warranty allocates risk of product failure between purchaser and NUMARK, and NUMARK'S product pricing reflects this allocation of risk and the limitations of liability contained in this Limited Warranty. The agents, employees, distributors, and dealers of NUMARK are not authorized to make modifications to this Limited Warranty, or make additional warranties binding on NUMARK. Accordingly, additional statements such as dealer advertising or presentation, whether oral or written, do not constitute warranties by NUMARK and should not be relied upon.
6. How does state law apply to this warranty? SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO PURCHASER.
7. This Limited Warranty gives you specific legal rights. You may also have other rights, which vary from one jurisdiction to another.

RETURN INFORMATION

- a) A Return Authorization number must be obtained from Numark through the address or phone numbers below.
- b) A copy of the original sales receipt must also be included for the equipment to be repaired under warranty.
- c) The faulty equipment must be packed in its original packaging.
- d) One additional outer layer of packaging must be included to ensure product safety. Failure to do so may inadequately protect the equipment in transit and, therefore, jeopardize the customer's warranty.
- e) Numark will not accept COD shipments and no call tags will be issued for merchandise return.
- f) Numark will not return repaired merchandise to customers by priority service, unless by written request at the customer's cost. Requests must be submitted in writing with merchandise returned.
- g) The defective Numark equipment should be sent, FREIGHT PREPAID with Return Authorization number clearly printed on the outer packaging and original sales receipt enclosed to:

Numark INDUSTRIES
Attention: Service Department
11 Helmsman Avenue
North Kingstown, RI 02852 USA

Phone: +1 (401) 295-9000
Fax: +1 (401) 295-5200
Web: www.numark.com