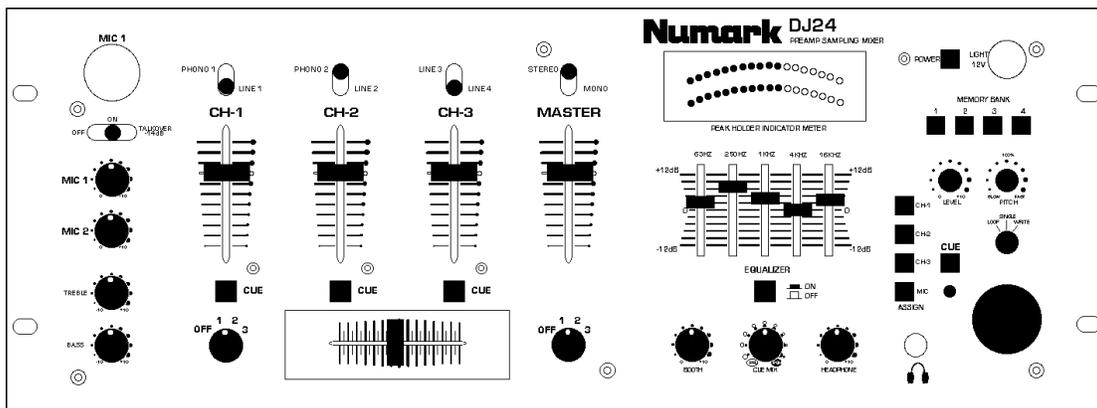


# Numark

Professional Disc Jockey Products

## DJ-24 STEREO MIXER with Digital Sampler OWNER'S MANUAL



*Numark - The Proven Leader in DJ Technology*

# Safety Information and Product Registration

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>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.</p> <p>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 to persons.</p> <p>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.</p>		

<b>CAUTION</b>
FOR USA & CANADIAN MODELS ONLY
<p>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.</p>

## 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. 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.

8. 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.

9. Object and Liquid Entry - Take care that objects do not fall into and that liquids are not spilled into the inside of the mixer.

10. Damage Requiring Service - This product should be serviced only by qualified personnel. If you have any questions about service please contact **Numark** at the number(s) shown on the back cover of this manual.

11. Grounding or Polarization - Precautions should be taken so that the grounding or polarization means built into the mixer is not defeated.

12. 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.

NOTE: This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

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

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 for your records. Please return the warranty card enclosed to register your mixer with us.	
MODEL: <b>DJ24</b>	PURCHASED FROM: _____
SERIAL NUMBER: _____	DATE OF PURCHASE: _____

# NUMARK DJ24 STEREO MIXER

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## **CONGRATULATIONS!**

You have purchased the **DJ24** Stereo Mixer by **Numark**. This equipment features all new circuitry and the latest in manufacturing and design technology to give you greater quality and better reliability than ever before. The **DJ24** brings to you the finest quality of DJ equipment available today.

*Thank you for buying Numark DJ products!*

### ***FEATURES...***

**Mixer features include:**

- *User replaceable assignable ALPs™ crossfader .*
- *5-band graphic equalizer with In/Out switch.*
- *Master and Booth level controls*
- ***Neutrik™** “Combo” connector allows 1/4” or XLR plug to be used for DJ Mic.*
- *12-bit 24 second sampler*
- *Dedicated DJ Mic and Second Mic Channel with 2 Band EQ and Talk-over dual control*
- *Split cue headphone monitoring with cross-fader*
- *Stereo/Mono switch on the Master*
- *Tape Out for direct recording.*
- *Powerful stereo headphone output*
- *Push button cueing*
- *High-end performance audio signal*
- *12V BNC light connector*

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## IMPORTANT INFORMATION...

**Please read this entire manual before connecting the DJ24 to your system.**

**For optimum performance:**

- Always make sure that AC power is OFF while making any connections.
- Do not use excessively long cables (i.e. over 50ft/14m) Be sure plugs and jacks are tightly mated. Loose connections can cause hum, noise or intermittents that could easily damage your speakers.
- Never use spray cleaners on the slide controls. Residues cause excessive dirt build-up and this will void your warranty. In normal use slide controls can last for many years. If they malfunction (usually because of a dirty or dusty environment) consult a professional technician.
- Never attempt to make any adjustments or repairs other than those described in this manual. Take the **DJ24** to your dealer or to an authorized **Numark** Service Center.

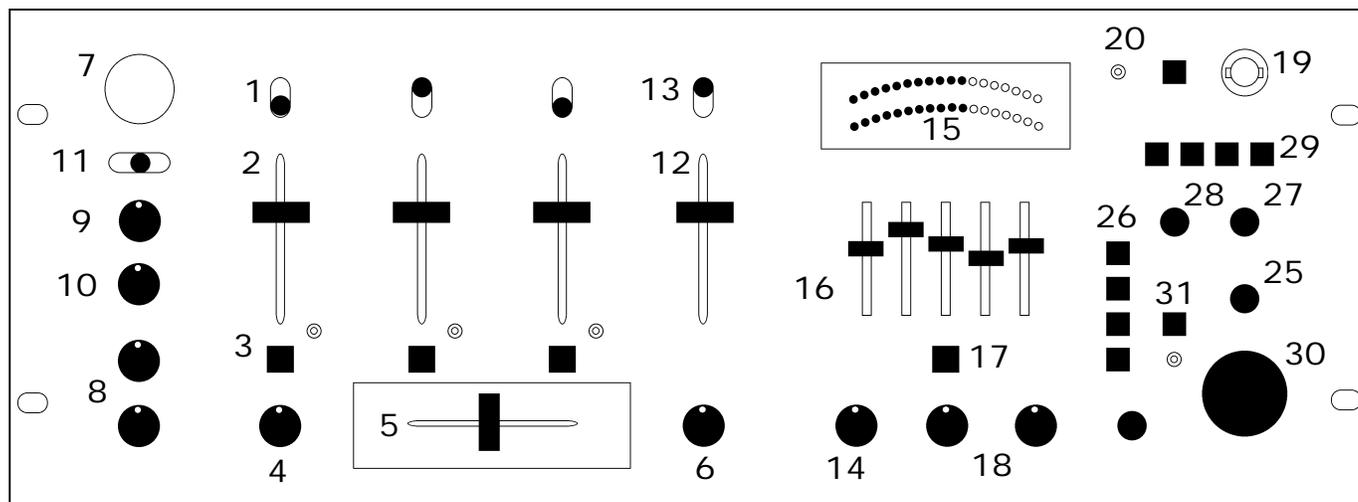
### A NOTE ON CABLES:

Make the input and output connections with readily available *low-capacitance* stereo cables. Quality cable makes a *big* difference in audio fidelity and punch. See your **Numark** dealer or an electronics or audio specialist store if you are not sure which cables to get.

## SYSTEM PRECAUTIONS

- Use appropriate cables throughout your system: Quality shielded audio cables and terminated shielded video cables, low-capacitance preferred. Speaker cables must be 14-gauge minimum; 12- or 10-gauge is better.
- Reliability will be enhanced through the use of banana connectors on the speaker wires. Observe correct speaker wire polarity. If in doubt, consult your **Numark** dealer or a qualified technician.
- Take care to connect only one cable at a time. Pay attention to the color-coded, labelled Input and Output jacks.
- ALWAYS remember: “**TURN AMPS ON LAST AND OFF FIRST**”. Begin with master faders or volume controls on minimum and the amplifier gain/input control(s) down. Wait 8 to 10 seconds before turning up the volume. This prevents transients which may cause severe speaker damage.
- Use restraint when operating controls. Try to move them slowly. Rapid adjustments could damage speakers due to amplifier clipping.
- **Avoid amplifier “clipping” at all costs:** this occurs when the red LEDs (usually on the front panel of most professional power amplifiers) start flashing. “**Clipping**” is when the power amplifier is distorting and working beyond it’s limits. Amplifier distortion is THE major cause of speaker failure.
- To prevent fire or shock hazard, do not expose the unit to rain or moisture. **Never place cans of beer, soda, glasses of water or anything wet on top of the mixer!**

## DJ24 FRONT PANEL DIAGRAM...



## GUIDED TOUR OF FEATURES AND OPERATING INSTRUCTIONS...

Please read this entire manual before you begin operation.

### INSTALLATION AND OPERATION

Study the **Connections Diagram** on page 13. First, connect all stereo input sources. Next connect your microphone(s) and monitor headphones. Make sure all faders are at "zero" and the unit is off. Finally, connect the stereo outputs to the power amplifier(s) and/or audio sources. Plug the **DJ24** into AC power. Now you are ready to switch it on.

The **DJ24** is divided into five functional blocks: Input, Crossfader, DJ Mic, Master/Zone Output, and Equalizer. It is important to learn how each of these work.

### CHANNEL INPUTS/CONTROLS SECTION

#### 1. Channels 1, 2, & 3 Input Toggle Switches

select which source will be live to that channel based on what you have connected to the rear panel input section.

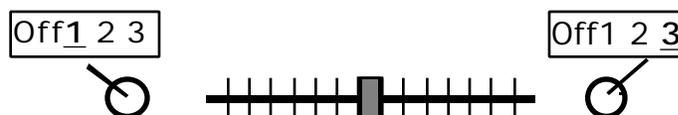
2. The **Input Faders** are low-noise, low-impedance, high-quality, smooth Alps™ faders. These control individual source levels in the mix.

3. **Channel Cue Assign**. The **Cue** pushbuttons are used to route channel audio to the **Monitor Section**. The channel faders do not control the **Cue** send volume.

### CROSSFADER SECTION

4. The **Crossfader Assign** knob to the left of the crossfader lets you choose which input channel will be heard when the crossfader is in the far left position.

5. The **Replaceable Crossfader** achieves clean segues between the two selected input channels.



"Hard left" selects the channel set up of the **Assign Left** knob. In this example it is Channel 1. "Hard right" selects the channel set up on the **Assign Right** knob. In this example it is Channel 3. With the crossfader centered both assigned channels are live. Use the crossfader for fast and seamless segues from one selected channel to the other. To turn off the crossfader simply turn both knobs all the way to the left.

**Note:** The crossfader is user replaceable in case of failure. Simply unscrew the two large screws which hold it in place, lift it out and disconnect it's cable. Re-attach the new crossfader and screw the mounting plate back onto the unit - you're back in business!

6. The **Crossfader Assign** knob to the right of the crossfader lets you choose which input channel will be heard when the crossfader is in the far right position.

## DJ MIC SECTION

The **DJ24** has an extremely flexible **DJ Mic** channel. The **Talkover** function reduces the level of the music while leaving the **DJ Mic** at normal volume.

7. **Neutrik™** "Combo" connector allows connection of either a 1/4" jack or an XLR jack for the DJ Mic 1. This is ideal for connecting an XLR gooseneck directly into the mixer.

8. **Treble and Bass Controls** fine tune the tone of your voice on both mics through the sound system. The controls are detented for setting tone "flat". For best results, use a dynamic cardioid microphone.

9. The **DJ Mic 1 Fader** controls the **DJ Mic** volume for the **Neutrik™** "Combo" connector.

10. The **Mic 2 Fader** controls the **Mic** volume for the 1/4" connector on the rear of the mixer.

### 11. **Mic Off/On/Talkover Switch.**

**Off** turns off Mic 1

**On** turns on Mic 1

**Talkover** turns down the input level of your music sources from Channels 1-4.

Talkover is very useful for making announcements without adjusting any levels.

*Try using this feature for audience participation when you want the music to temporarily cease and the audience to be heard - "YEAH!"*

## MASTER/BOOTH OUTPUT SECTION

12. The **Stereo Master Fader** controls the overall output level.

13. **Stereo/Mono toggle** adjusts the **Master** output for the operation selected.

14. The **Booth Level** controls speaker volume for a remote zone or booth monitors. If you do not use booth monitors the output can feed a tape deck, another amplifier, another mixer or a satellite speaker system. **Note:** This can also be used to supply line level audio to a lighting controller or to lights that are sound activated.

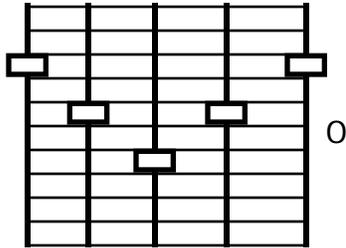
**CONTRACTOR'S NOTE:** *Booth Level provides zone control in installations where there are two separate rooms, or a bar and dance floor, for example. Remote zone volume should be controlled from the **DJ24**.*

15. **Stereo Auto Peak Hold Level Indicator.** This fast, accurate stereo meter tracks the output level. The red LEDs for +3dB, +5dB and +8dB hold program peaks for a second or two. With peak metering, it's OK to be "in the red" as long as +5dB or +8dB aren't constantly lit. Set the crossover, equalizer and power amp inputs to avoid distortion at each step in the audio chain. Proper attention to the peak meter results in the punchiest possible sound without audible distortion.

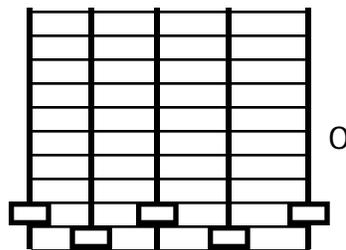
**EQUALIZER SECTION**

16. **5-Band Stereo Graphic Equalizer (EQ).** EQ compensates for differences in source material sound quality. In ultra-compact mobile systems this EQ can be used to tailor the sound to the acoustical requirements of the room. Center frequencies are 63Hz, 250Hz, 1kHz, 4kHz and 16kHz. Faders have a center detent for an accurate "flat" response.

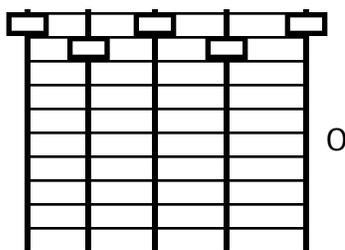
Below is a typical "house" EQ curve. Notice how the knobs above "0" balance out the knobs below. Start with this setting if you've never used a graphic EQ before:



Below is an example of a poor EQ curve because it cuts the output volume down by 6-10dB. You have to compensate by running the **Master** output higher:



Below is the worst sort of curve to use because you are using EQ to *add volume*. With exaggerated boost you can easily run your power amplifiers into "clipping" and damage your speakers.



**GENERAL EQ HINTS**

- Boost the 63Hz band for deep bass tones and solid kick drum sound. Use sparingly because this dramatically increases demand on power amplifiers and could drive them into "clipping".
- Cut slightly at 250Hz and more at 1kHz for extra clarity.
- Note:** Cutting is preferable to boosting.
- Boost 16kHz for a little "sizzle".
- **As a general rule, less equalization is better!**

17. **Equalizer On/Off.** This controls whether your final output will be routed through the EQ or not.

**MONITOR SECTION**

18. The **Monitor** section includes the **Program Mix** control, the **Headphone Volume** control and the **Headphone Jack**. Connect headphones with a standard 1/4" stereo plug. The **Cue** audio is sent to the headphone amp using the **Cue Assign Pushbutton** and the **Pgm Mix** control. The **Program Mix** controls the amount of program audio in the headphones so that beats can be matched exactly and segues are smooth when a song is cued.

19. **12V BNC Connector** allows a 12 volt gooseneck lamp to be connected directly to the mixer. This light is readily available from your **Numark** dealer.

20. **Power Switch** and **Power-On LED.**

## DIGITAL SAMPLER SECTION

The **Sampler** uses dynamic RAM with a 12-bit microprocessor controller. The same digital signal processing components used in professional audio equipment deliver high-quality samples.

25. The **Mode Knob** switches from effect to effect.

Modes are:

- **Loop** sets the unit to play back a sample and automatically repeat when it gets to the end of the sample.
- **Single** sets the unit to play back a sample once.
- **Write** sets the unit to sampler record ready. Depress the appropriate assign button to select the source you wish to record. Selecting a bank you wish to record to and hit the **Start/Stop** button (#30) to begin recording (it is safer to actually choose your bank before going to write mode so that you don't accidentally wipe out an existing sample). The LED will stay lit while you are in **Write** mode. After you are done writing your sample you should select a play mode (either Single or Loop) and listen to your sample.

### TO RECORD A SAMPLE

- a** - Select the **Write** mode to go into stand by mode.
- b** - Select the bank (or multiple banks) into which you want to record. Any bank can be selected. Each bank contains 6 seconds of recording time. If you want to record a longer sample select multiple banks (they must be adjoining). To playback a multi-bank sample you must reselect the same banks later. **Note:** To overwrite an existing sample, select that bank instead of an empty bank. Changing bank selection at this point in time is possible and will not destroy any previously recorded samples.
- c** - Hit the **Start-Stop** button to begin recording. The red LED will light.
- d** - Hit **Start-Stop** a second time to stop the sampling, or allow the memory banks to fill up, at which time sampling will stop automatically. Once your writing is complete, switch to a playback mode. The sampler is now ready for playback.

27. The **Speed Control** plays samples faster or slower resulting in a pitch shift of the sample. In the center position, the sample is played at recorded speed. Moving the knob to the left will slow down playback by up to 50%; moving the knob to the right will speed up the playback by up to 200%. Positions near the center provide fine changes in playback speed. Positions further from the center detent provide more drastic changes in playback speed.

28. **Effect Level Mix fader.** This precisely sets the audible level of the sample in the mix.

29. **Memory Bank Select Pushbuttons A-D.** Four banks are available for storing samples. To record a bank go to **Write** and then hit the bank button. You can record into any combination of banks by pressing multiple bank buttons. After sampling, you can either select the next bank and record it (remember **Write** is still on, just select the bank and hit Start/Stop) or you can manually select a playback mode.

- You can play any combination of the Memory Banks from left to right (that is, Memory Bank B will always play before Memory Bank D - but you can play ABCD; BC; BD; ACD; only C; only D; etc.).

30. The large **Start-Stop** button controls sample recording and sample playback. The small red Effects Indicator LED glows when the sampler is "on". Here are the functions:

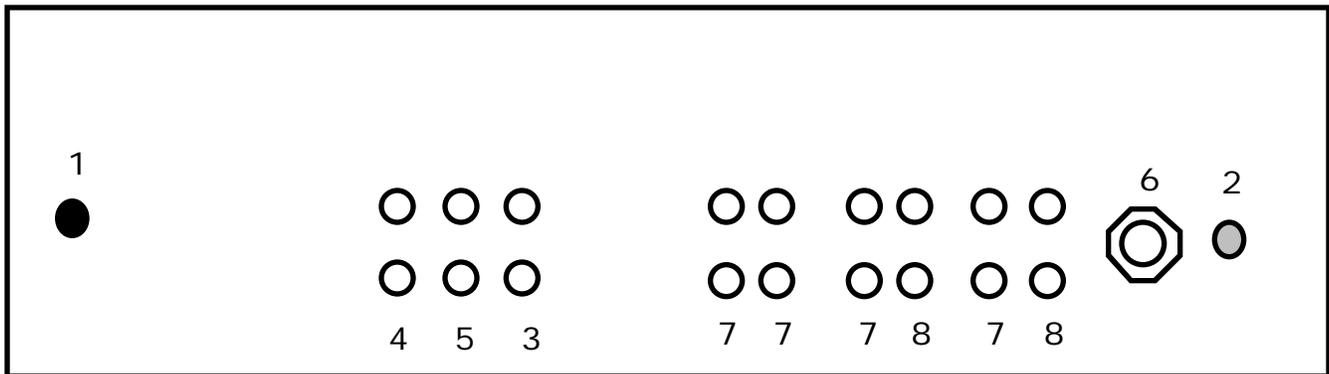
- Tap the button when in sampler **Write** mode to begin sampling (the LED will light). Tapping it again ends the sample and the LED goes out. (unless the sampler has run out of memory and shuts off automatically.
- *In **single** or **loop** play without Trigger, tap the button to play the sample and tap it again to stop the playback. Every time you play the sample, the music starts from the beginning of the sample.*
- In **Single** or **Loop** play with **Trigger** you are ready to "**stab**" samples. With the **Trigger** Out, the sample plays all the way through before you can play it again. With it In, you can stab or stutter a sample. When you shout "Rock it - rock the house!" and sample it, it can be played back as -

**R-R-R-R-R-R-Rock --  
Rock-Rock-Rock it - Rock it Rock it -  
Rock - - Rock it - rock the house!**

by simply "drumming" with your fingers.

31. **Monitor Pushbutton.** To hear the sample or effect in the headphones, press this button. **Program Mix** still works and you will be able to hear any other input channels with the **Cue** buttons activated.

## DJ24 REAR PANEL DIAGRAM...



### REAR PANEL: INPUTS AND OUTPUTS

1. **AC Cord.** See safety precautions on page 3 for proper treatment of the power cord.

2. **GND** is the grounding lug for turntables 1 and 2 (phono inputs on Channels 1 and 2). Always use this connection (your turntable cable should have a grounding wire).

3. The **Stereo Main Outputs** are low-impedance RCA connectors controlled by the **Master** fader.

4. The **Stereo Zone Outputs** are low-impedance unbalanced RCA jacks controlled by the **Zone Level** control.

5. The **Tape Outputs** are low-impedance unbalanced RCA jacks which output the program mix and allow you to connect any recording device.

6. **Mic 2** is a high-impedance 1/4" input.

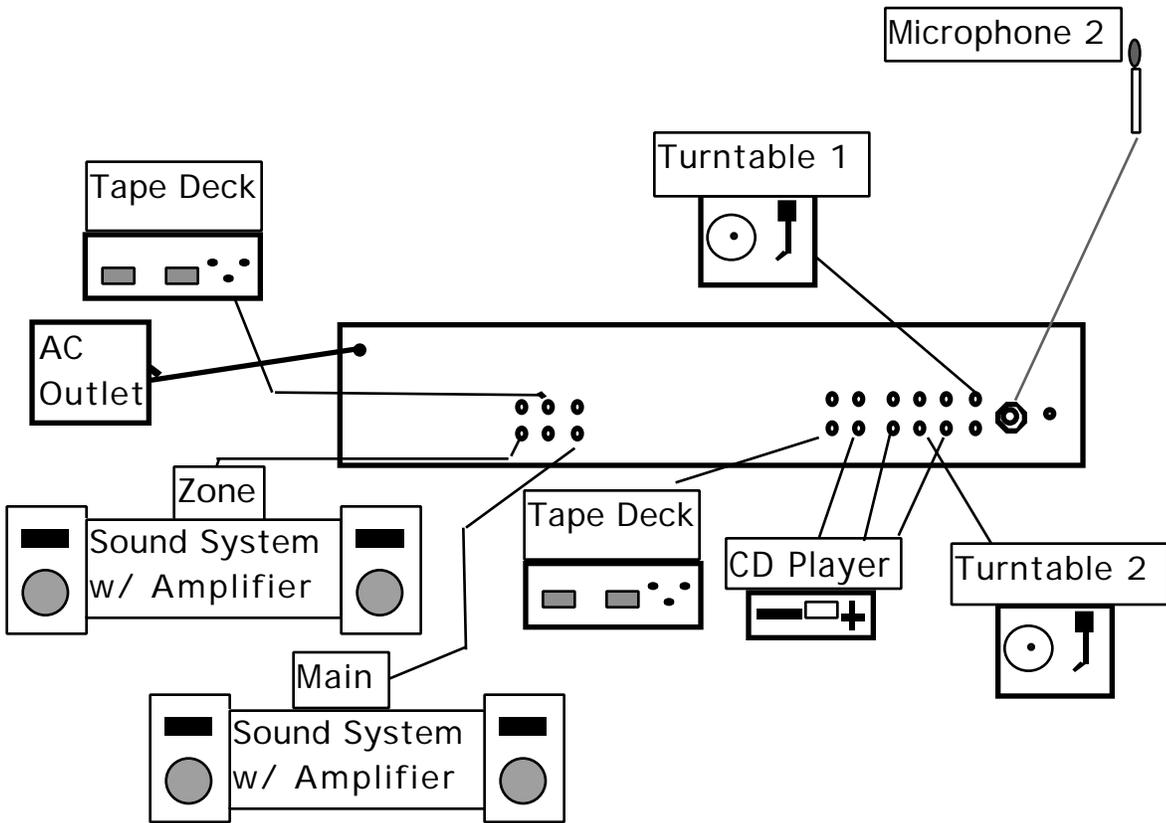
7. **Channels 1-3 Line Inputs** are unbalanced RCA jacks. The **Line Input** is selected with the toggle switch on the front panel.

You can connect stereo audio from HiFi VCRs, cassette and reel-to-reel tape decks, DAT machines, CD players, laser discs, tuners, even synthesizers or other mixing consoles.

**NOTE:** Plug mono audio sources into both Left and Right inputs using a "Y" cable connector.

8. **Phono Inputs on Channels 1 and 2** use unbalanced RCA jacks. Your input signal is fed directly to the DJ24's high-quality RIAA phono pre-amplifiers so use this position only for moving magnet cartridges. Line level sources will overload the sensitive phono pre-amps and will sound very bad, so always be sure to toggle the line/phono switch over to line before connection of line sources.

# DJ24 CONNECTION DIAGRAM...



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## **SPECIFICATIONS...**

### **INPUTS:**

Line: 10k  $\Omega$  input impedance  
80 mV rms sensitivity (for 1.22 V output)

Mic: 10k  $\Omega$  input impedance balanced/unbalanced  
2.5 mV rms sensitivity (for 1.22 V output)  
500 mV rms max input

Phono: 47k  $\Omega$  input impedance  
1.5 mV rms sensitivity @ 1 KHz (for 1.22 V output)

### **OUTPUTS:**

Line: 9V rms max (+20 dBm)

Headphone Amp: .5 watt into 47

Distortion less than .01%

### **EQUALIZER:**

5-Band Stereo Graphic EQ  
Band centers 63Hz, 250Hz, 1KHz, 4KHz, 16KHz +/- 12 dB

### **SIGNAL TO NOISE RATIOS (vs. maximum output):**

Line: Better than 85 dB  
Mic: Better than 72 dB  
Phono: Better than 83 dB

### **FREQUENCY RESPONSE:**

Mic: 20 Hz- 15k Hz  $\pm$  .5 dB  
Line: 20 Hz- 20k Hz  $\pm$  .5 dB  
Phono:  $\pm$  1 dB except for controlled attenuation of -3 dB  
@ 20 Hz to reduce rumble and feedback

### **TALKOVER ATTENUATION:**

variable from no cut to -16 dB

### **POWER CONSUMPTION:**

20 Watt typical, 28 Watt with full headphone output

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***BLOCK DIAGRAM...***

# **Numark**

## ***Professional Disc Jockey Products***

### **Warranty and Service Information**

Numark Industries, LLC and Numark International, Inc. (hereafter "Numark") warrants each new product manufactured and/or supplied by it to be free from defects in material or workmanship under conditions of normal use and service for 360 days, beginning on the date of purchase from an authorized Numark Dealer, but not to exceed 2 years from date of shipment by Numark.

The Numark obligation under this warranty is limited to repairing or replacing, at its option, the product or part(s) therein; which upon examination by Numark shall appear to be defective or not up to factory specifications; providing the Numark product is returned (transportation prepaid) to Numark.

Numark shall not be liable for any damages, consequential or otherwise, resulting from the use and operation of this product and makes no other warranty(s) either express or implied on this product, including any warranty of merchantability.

This warranty does not extend to any of our products which have been subjected to misuse, neglect, accident, incorrect wiring not our own, improper installation, or use in violation of instructions furnished by us, nor extended to units which have been repaired or altered outside of our factory, nor to cases where the serial number thereof has been removed, defaced, or changed, nor to accessories used therewith not of our own manufacture. Numark reserves the right to make changes or improvements in its products, during subsequent production, without incurring the obligation to install such changes or improvements on previously manufactured equipment.

To place this warranty into effect, the enclosed WARRANTY REGISTRATION CARD must be returned to Numark Industries, LLC within thirty (30) days after date of purchase.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you.

#### **EQUIPMENT TRANSPORT**

A Return Authorization number should be obtained from Numark through the addresses or phone numbers below.

It is the customer's obligation, when returning faulty equipment, to properly pack the Numark equipment in its original packaging. Failure to do so may inadequately protect the equipment in transit and, therefore, jeopardize the customer's warranty. The defective Numark equipment should be sent, FREIGHT PREPAID with Return Authorization number to:

**NUMARK INDUSTRIES**  
**11 Helmsman Road**  
**North Kingstown, RI 02852 USA**  
**Attention: Service Department**

**Telephone: +1 (401) 295-9000**  
**Fax: +1 (401) 295-5200**  
**E-mail: numark@numark.com**