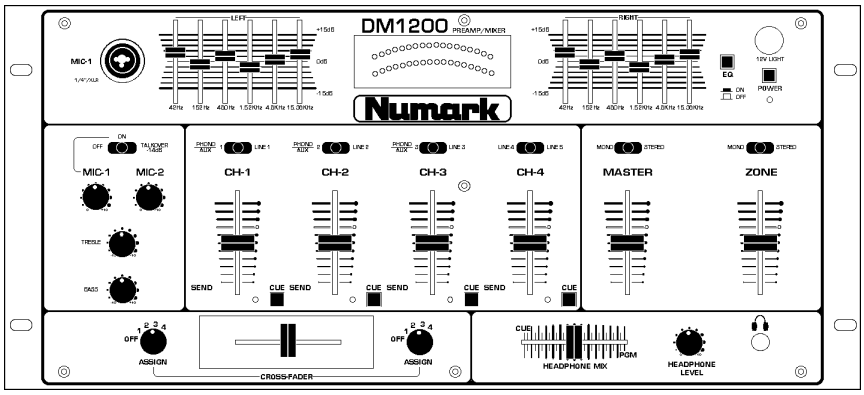
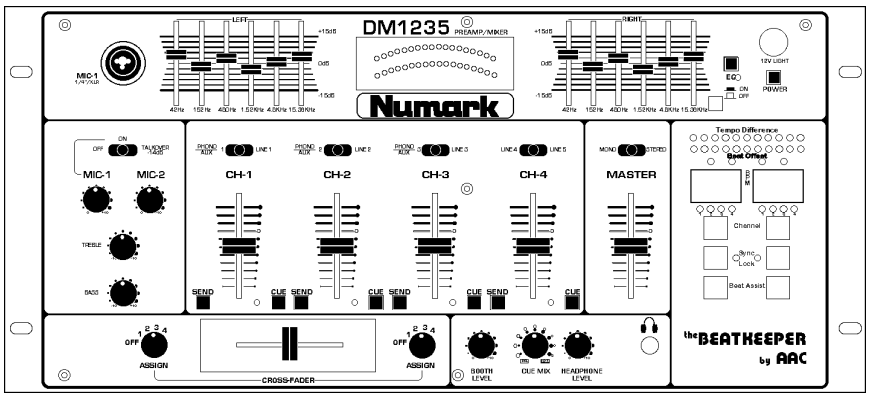
Numark

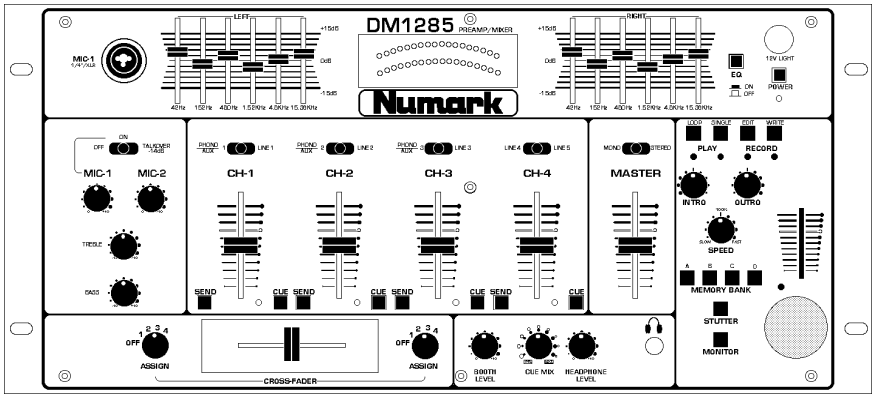
Professional Disc Jockey Products

DM1200/DM1235/DM1285 STEREO MIXER

OWNER'S MANUAL







Numark INDUSTRIES
11 Helmsman Avenue, North Kingstown, RI 02852 **http://www.numark.com**

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 to persons.

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

Numark - The Leader in DJ Technology

NUMARK DM1200/DM1235/DM1285 STEREO MIXER

INDEX

CONGRATULATIONS!

You have purchased a quality stereo mixer designed and manufactured 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. This mixer brings to you the finest quality of DJ equipment available today.

Thank you for buying Numark DJ products!

DM1200 FEATURES...

- *User replaceable assignable ALPs™ crossfader*
- *Balanced XLR Outputs*
- *Dual 6-band graphic equalizer with In/Out switch*
- *Master and Zone level controls*
- ***Neutrik™** "Combo" connector allows 1/4" or XLR plug to be used for DJ Mic*
- *5-8 switchable line inputs*
- *Three phono inputs*
- *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 and Zone*
- *Tape Out for direct recording*
- *Powerful stereo headphone output*
- *Push button cueing*
- *High-end performance audio signal*
- *12V BNC light connector*

DM1235 with theBEATKEEPER FEATURES...

- *Automatic BPM tracking of up to 8 input sources (4 simultaneously)*
- *Accurate digital BPM displays*
- *Visual live tracking of your mix progress, using Tempo Difference and Beat Offset Bar Graphs*
- ***All visual displays update on every beat***
- *Sync Lock Button for accurate BPM tracking*
- *Beat Assist for locking to the correct beat*
- *Simple user interface*

Once you've synced your Beatkeeper you've opened a whole new dimension in mixing. The Beatkeeper has two bar graphs - one showing the tempo difference, and the other showing the beat offset. Now you can see when your mix is on track. If the beats start to drift, you'll be able to easily adjust the music before your audience can hear it.

DM1285 with SAMPLER FEATURES...

- *True 16-bit CD quality audio and powerful recording, editing and playback options*
- *Re-triggering for stuttering "rap"-style effects*
- *Effect Level Fader*
- *Large Start-Stop button*
- *Digital processor modes: -*
  ***-Edit** (allows Intro and/or Outro trimming of the sample after it is recorded)*
  *-**Single** (sample plays once)*
  *-**Repeat** (loops sample until disengaged)*
  *-**Stutter** (for "stutters" and "stabs" in single or repeat mode)*
  ***-Speed Control** (plays sample faster or slower than originally recorded resulting in frequency shift)*
  *-**Monitor** (for monitoring sample with or without program or cue audio output)*
  *-**Write** (safely record a sample)*

IMPORTANT INFORMATION...

Please read this entire manual before connecting the DM1200 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 or oils 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 **DM1200** to your dealer or to an authorized **Numark** Service Center.

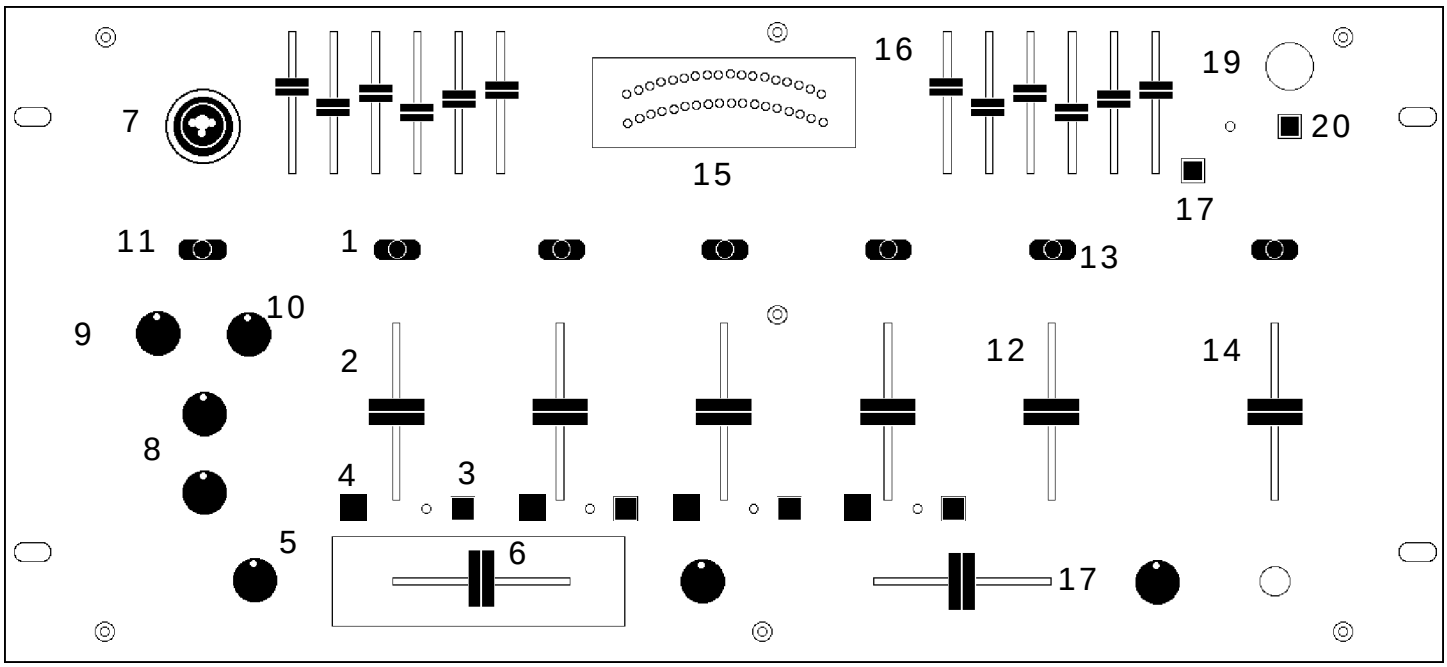
A NOTE ON CABLES:

Make the input and output connections with readily available *low-capacitance* stereo cables. Quality cables make 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 purchase.

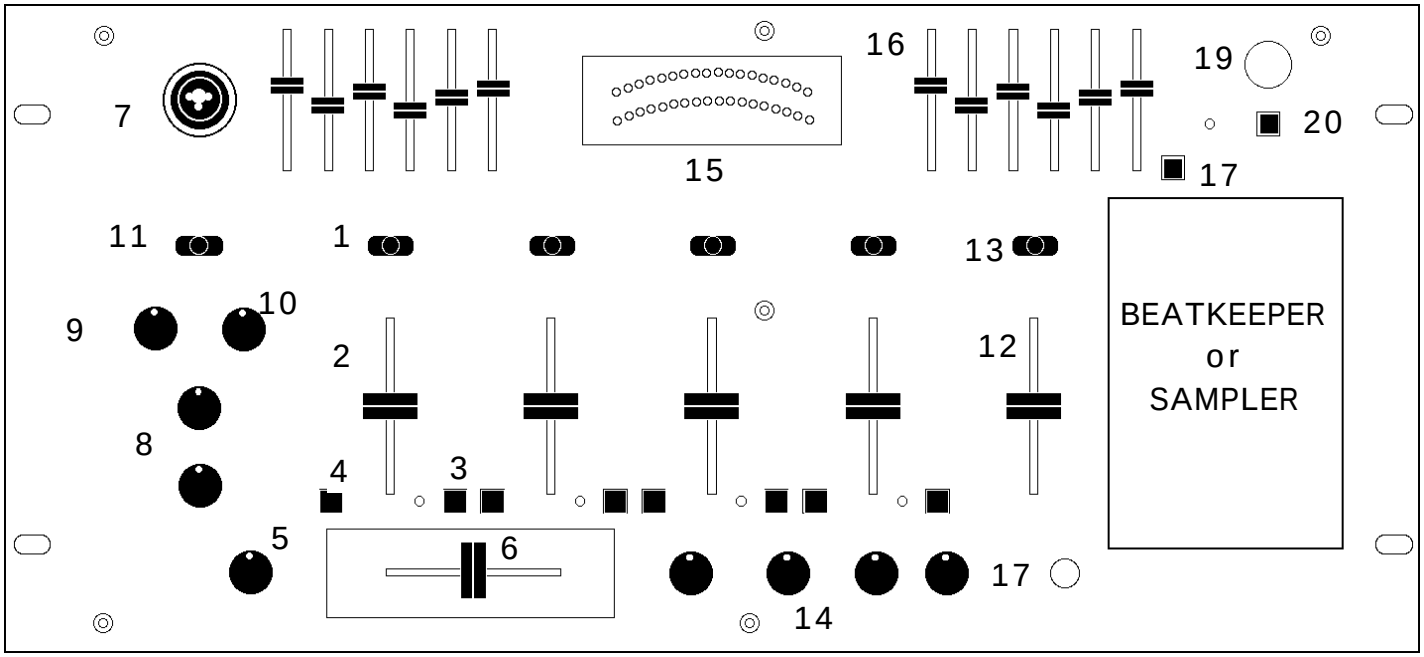
SYSTEM PRECAUTIONS

- 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, labeled 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 its 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!**

DM1200 FRONT PANEL DIAGRAM...



DM1235/DM1285 FRONT PANEL DIAGRAM...



GUIDED TOUR OF FEATURES AND OPERATING INSTRUCTIONS...

INSTALLATION AND OPERATION

Study the **Connections Diagram** on page 14. 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 your mixer into AC power. Now you are ready to switch it on.

We have divided this manual into various functional blocks:

Input, Crossfader, DJ Mic, Master/Zone Output, Equalizer, and the onboard options of Beatkeeper or Sampler. It is important to learn how each of these work.

CHANNEL INPUTS/CONTROLS SECTION

1. **Channels 1, 2, 3 & 4 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.

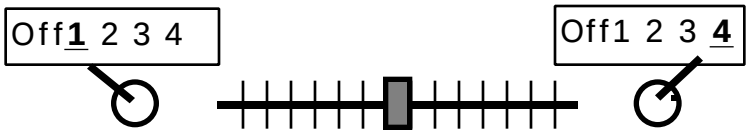
4. **Effect Send** (Channels 1-4). Depress these buttons when you want the signal from any input channel to be routed to the Send Out Jacks. On the DM1285 this button sends signal to the onboard sampler.

The channel faders do not affect the signal levels which are routed to the send output.

CROSSFADER SECTION

5. 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. 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.

6. 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 4. 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 its cable. Re-attach the new crossfader and screw the mounting plate back onto the unit - you're back in business!

DJ MIC SECTION

Your mixer 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. 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/On** turns Mic 1 off and on. Mic 2 is controlled only through the Mic 2 Fader. **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 **Zone 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: The Zone control on the DM1235 and DM1285 is located to the right of the crossfader section.

NOTE: This can also be used to supply line level audio to a lighting controller or to lights that are sound activated.

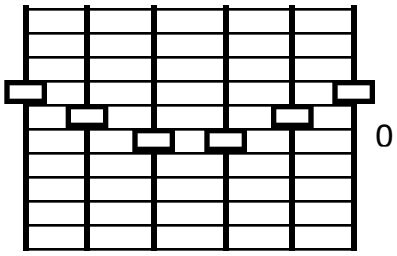
CONTRACTOR NOTE: ***Booth Level*** *provides zone control in installations where there are two separate rooms. For example,a bar and dance floor. Remote zone volume should be controlled from the mixer.*

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.

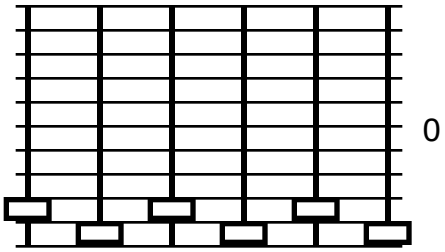
EQUALIZER SECTION

16. **6-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 42Hz, 152Hz, 480Hz, 1.5kHz, 4.8kHz and 15.4kHz. Faders have a center detent for an accurate "flat" response.

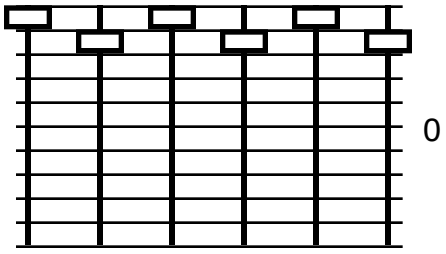
    Below is a typical "house" EQ curve. Notice how the knobs above "0" balance out the knobs below. Start with this setting if you've never used a graphic EQ before:



    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" (see page 6) and damage your speakers:



GENERAL EQ HINTS

• Boost the 42Hz 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" (see page 5).
• Cut slightly at 152Hz and more at 460Hz for extra clarity. ***Note:*** *Cutting is preferable to boosting.*
• Boost 15kHz 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.

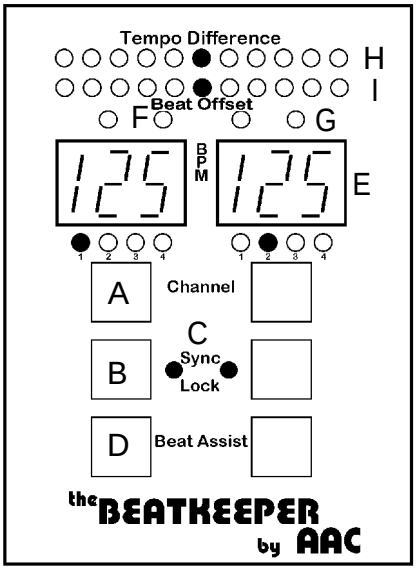
MONITOR SECTION

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**.

DM1235 with theBEATKEEPER



A. CHANNEL SELECT-
Tap this button to select desiRed pre-fader input channel. The respective input channel LED will light up **1,2,3,or 4.**

B. SYNC LOCK BUTTON-
When an input is not yet set and scanning for the tempo, tapping the Sync Lock button once will lock in the music as long as there is a BPM number displayed for the input. When an input is locked in, tapping the Sync Lock button tells the Beatkeeper to start scanning for a new tempo again.

C. SYNC LOCK LED
OFF- The respective input is not locked or set to track the music.
ON- The respective input is synced and ready to track the music.

D. BEAT ASSIST BUTTON-
Tapping the Beat Assist button once automatically realigns the downbeat to exactly when you tapped the button. Tapping the beat assist button two or more times also sets the tempo and sync locks the music.

E. BPM DISPLAY-
(--)- No audio signal is being processed for this input, or the Beatkeeper has not completed tracking the BPM for this input.
(NUMBER)- The respective input is currently playing music with this number of Beats Per Minute (as determined by the Beatkeeper).

F. DOWN BEAT LED (Red)
OFF- The Beatkeeper has not yet matched the beat of the respective audio input.
BLINKING- The Beatkeeper has matched this LED to the beat of the respective audio input.
ON- The Beatkeeper is waiting for the music to start on the respective input.

G. PEAK SOUND LED (Green)
OFF-The Beatkeeper is not detecting sound from the respective audio input.
BLINKING- The Beatkeeper is detecting 'rhythm setting' sounds from the respective audio input.

H. TEMPO DIFFERENCE GRAPH
OFF- One or Both of the audio inputs are not yet sync-locked in.
RED LED ON- The audio inputs tempos are not aligned.
YELLOW LED ON- The audio inputs tempos are close to aligned.
GREEN LED ON- The audio inputs tempos are perfectly aligned.

I. BEAT OFFSET GRAPH
OFF- One or both of the audio inputs are not yet sync-locked or are not sending an audio signal.
RED LED ON- The audio inputs beats are not aligned.
YELLOW LED ON- The audio inputs beats are close to aligned.
GREEN LED ON- The audio inputs beats are perfectly aligned.

Beat mixing is a skill that must be practiced in order to be proficient at it.
3 and 4-way mixing can be a very difficult skill to master.
Visual mixing with the Beatkeeper gives you the tools to help you do this, but nothing replaces practice.

Channel Selection

When your mixer is first turned on, the channels selected will be 1 & 2 respectively. If you wish to track the beat of another channel, tap on the channel select button until the desired input is reached.

NOTE: *The Beatkeeper will track the source that is selected with the channel toggle switch*.

Syncing Your Beatkeeper

When learning how to use the Beatkeeper, choose some dance music with a hard, steady beat.

Start the music for left channel of your Beatkeeper. When the Beatkeeper has located the beat, the BPM display will illuminate with the music's Beats Per Minute.

You'll notice a flashing Green LED every time the Beatkeeper detects a rhythm defining instrument. The Beatkeeper will soon flash a Red LED on every beat, the same way you would tap your foot to the beat of the music. The Beatkeeper will display a BPM which will update every five seconds while scanning. As long as the beat is well-defined, the BPM number will equal the beats per minute of the song being played. **Once you see the Red beat LED flashing with the beat of the music, press the respective Sync Lock button,** and the Sync Lock LED will illuminate.

Activating the Sync Lock tells the Beatkeeper to stop scanning the music for a different BPM and to start tracking the beat changes of the current BPM as you adjust the pitch of the music. This function is manual to ensure that the Beatkeeper is right on the beat. **Once the Sync Lock LED is on, the Beatkeeper tracks the beats of the music and updates the BPM display on every beat.**

To unlock, simply tap the Sync Lock button once and the Beatkeeper is back in BPM scanning mode.

After syncing an audio input, try speeding up and slowing down the music. You'll notice that the Red beat LED will continue to flash on the downbeat, and the BPM number will adjust itself to match the tempo of the music. This indicates that the Beatkeeper is successfully tracking the beat and will continue to do so throughout your mix. If you stop the music, you will notice the Beat LED will go solid and the BPM number will remain in memory. Once the music is restarted, the Beatkeeper will remember the last tracked rhythm pattern and pick up on the beat right away.

PLAY the music, **OBSERVE** the beat match, and **PRESS the Sync Lock Button.** That's it. If you can do that twice, you can mix with the Beatkeeper.

Beat Assist

The Beatkeeper is foolproof. The Beatkeeper can track any music up to 199 beats per minute. The unit, however, is set to automatically track tempos between 80-150BPM. Of course, not all music is within this range, you may need to track the high tempos of Meringue or Salsa, or the low tempos of R&B slow jams or Reggae. Let's face it, not all music has hard, steady beats either, and sometimes you just need the music set up yesterday . For these occasions, we have the Beat Assist Button.

If the Beatkeeper is having trouble matching the beat to the flashing Red Beat LED, or if you need to sync up immediately, tap the Beat Assist button 2-8 times as you hear the beat, the same way you would tap your feet to the music. Pressing the Beat Assist Button more than once aligns the Beatkeeper to your taps. Notice that the Sync Lock LED automatically illuminates, signifying that the Beatkeeper is now locked in with the beat. Simply put, if the Beatkeeper isn't on track, or you're in a real hurry, you need to press a button twice instead of once.

If the Beatkeeper is synced to the correct BPM, but is aligned to the music's offbeat, tap the Beat Assist button with the beat of the music just once, and you will have brought the Beatkeeper back in sync.

Two Channel Mixing

After you feel comfortable syncing up the Beatkeeper, you're ready to mix. **Mixing with the Beatkeeper has three parts: syncing to the music** (which you've done), **aligning the tempos, and aligning the beats**. Once these three things are done, you will have a perfect mix. No more guessing, tapping, or embarrassing fades.

Choose another music selection, and start it on your right channel. Sync up the first song as described in the last section. With the first selection synced (Sync Lock LED illuminated), **sync up the right channel the same way you set up the left.**

As the second Sync Lock LED illuminates, a new dimension of DJing begins:

***VISUAL MIXING*.**

The bar graphs on the top of the Beatkeeper have now been activated and are updating automatically.

NOTE: *In order to perform a mix which is tracked by the Beatkeeper, both channels MUST be synced. This is indicated by the Yellow Sync Lock LED being lit for both inputs.*

In order to create the perfect mix, your goal is to keep both bar graphs as close to centered (Greenor Yellow) as possible.

First, align the top graph, the Tempo Difference Graph. This graph indicates how close the two BPMs are to each other. If they are exactly the same tempo, the GreenLED in the middle will light up. If one song is faster than the other, the bar graph will shift towards the faster song. **If the Tempo Difference graph is not centered, adjust the speed of one of the inputs using the pitch control.** For example, if the Tempo Difference graph has a Red LED illuminated closer to the right channel of the Beatkeeper, the right channel is faster than the left channel, either slow down the right channel, or speed up the left channel.

If the opposite is true, the Tempo Difference Graph has a Red LED illuminated on the left channel, indicating the song on the left channel is faster than the right channel, either slow down the left channel, or speed up the right channel.The second step involves the bottom graph, the Beat Offset Graph. This graph indicates how close the individual beats are. Both BPMs may be the same but the beats may not be in sync. This is often described as the "ping-pong" effect. If the beats are matched, the GreenLED in the middle lights up. If the beats of one input are earlier than beats of the other input, the Beat Offset Graph will shift toward the song with the earlier beats.

To align the Beat Offset Graph when using CD Players, adjust the appropriate pitch bend. If you are using turntables, hold or apply pressure to the record/turntable and then release to "shift" the beat.

If the Beat Offset graph is shifted toward the right channel, either use the minus ("-") pitch bend for the right channel CD player (with vinyl, apply pressure to slow the turntable) or use the plus ("+") pitch bend for the left channel CD player (with vinyl push the turntable ahead).

Intuitively, if either bar graph is shifted towards a channel, this indicates that the song on that channel is "ahead" of the other one. Either the tempo is faster (top graph), or the beats come sooner (bottom graph).

When both bar graphs are in the Green, you are ready to perform your mix!

Don't forget you can always resync to the beat, if it ever shifts off, by tapping the Beat Assist button.

If the beats start to drift, you'll be able to easily adjust the music before your audience can hear it. No other beat counter or automatic mixer can give you the power to make a more accurate mix!

NOTE: *The Beat Offset bar graph either indicates beat-to-beat offset, or beat-to-halfbeat offset, whichever is closer. This allows the DJ the option of mixing on the beat or on the half beat.*

Channel Mixing

One exciting feature of your Beatkeeper built into your mixer is the option to visually beat mix more than 2 sources at the same time. Once you have synced a channel of the Beatkeeper, the unit will continue to track it even if you should decide to change channels. Up to all four channels can be in sync simultaneously. By selecting different channels, you can cross-compare the mix of any 2 channels instantly.

In order to perform a 3-way mix, you first will need to set up a 2-way mix as described in the previous section.

NOTE: *Multiple source or "layer" mixes should be performed with a minimum of vocals otherwise the music will clash when mixed for a long period of time.*

The next step will be to decide which input channel you would like to use as a reference for beat mixing. **While your 2-way mix is ongoing, change the channel**, on the side you have **not** chosen as a reference to the next song you plan to mix into. **Now sync and mix this song like you did for the 2-way mix.** After you have synced up the new song you should continue to check your original mix by switching between channels. When you have properly aligned the new song, you are ready to perform a 3-way mix.

To perform a 4-way mix, just do the same thing again.

Prepping For A Mix

You may also choose to prep the Beatkeeper for an actual mix. To prep the Beatkeeper, first match the two song's tempos by adjusting the pitch so that the Tempo Difference LED graph displays Yellow or GreenLEDs. Next, hit the Cue button of your CD player, or lift your record needle. The Red "beat" LED will remain solid alerting you to which input is ready to start. When the music starts again, the Beatkeeper begins right on the beat and indicates how well the two songs are synced within seconds.

Syncing To Off Beats

Now if you really want to be fancy, you can actually use the Beatkeeper to sync to the off- beats. You can have two songs going "Boom - Cha - Boom - Cha". Normally, you would sync the "Booms" of both songs (beat-to-beat mixing). But you can also sync the "Boom" of one song to the "Cha" of the other (beat-to-half beat mixing). The Beatkeeper's Beat Offset graph will display whichever offset is smaller. This allows the DJ the flexibility to mix with the beat or the off-beat.

BEATKEEPER TROUBLESHOOTING

T1 The BPM goes way off when using the search button on my high tech CD mixer.

Some high tech CD mixers have a cueing feature which allows you to cue precisely to an exact spot in the music so you can slam mix. The only problem is that this mode repeats the first beat of the music at a rate which is unrelated to the actual BPM of the music. As a result, the BPM goes off track. The best way to avoid this is to restart the music after a search. Make sure the Beatkeeper is resynced to the music and then press the Cue button on the CD player. The Beatkeeper will remember the BPM and track the music once it starts.

T2 The Beatkeeper doesn't resync to the downbeat of the music when the music restarts.

Either the downbeat isn't strong enough to be detected, or the music was started well before a strong downbeat. You can easily resync to the downbeat by tapping the Beat Assist button once with the beat.
Alternatively you can cue the music to a strong downbeat so that the Beatkeeper starts on this downbeat.

T3 Either the BPM display is blank, or it is noticeably off.

This is common at the beginnings of songs where the beat is not well defined. To sync simply tap the Beat Assist button two or more consecutive times on the downbeat. The Sync Lock LED turns on automatically, indicating that the Beatkeeper is now tracking the beat of the music.

T4 The BPM display is correct, but the beat LED isn't flashing on the downbeats of the music.

If this happens tap the Sync Lock button (turning the Sync Lock LED on) and tap the Beat Assist button once to make the Beatkeeper track the downbeat. You can also use this to force the Beatkeeper to track an offbeat for more advanced mixing.
Alternatively you may sync manually by tapping the Beat Assist button 2 or more times on the beat.

T5 The Beats per minute number seems to jump all over the place.

The Beatkeeper is analyzing different sections of the music to find the BPM. If there is a temporary suspension of a distinct beat or if the rhythm is too complex, this number may not follow the actual BPM.
a) You can wait for a passage of music with a steady beat for a more accurate BPM indication.
b) Hit the Sync Lock button once the Red beat LED starts following the beat
or **c)** Tap the Beat Assist button at least twice along with the music beat.
Either method (b or c) will cause the Sync Lock LED to turn and lock on, indicating that the Beatkeeper is now tracking the music.

T6 It takes too long for the Beatkeeper to find the beat on its own.

To speed up the BPM detection process, tap the Beat Assist button at least twice. At this point, the Beatkeeper will turn on the Sync Lock LED, immediately providing a BPM estimate, while resynchronizing to the beat you tapped.

T7 I hit the Sync Lock button, but the flashing Red beat LED doesn't seem to follow the beat.

This means you hit the Sync Lock button before the Red beat LED actually started tracking the tempo. You can easily fix this by tapping the Beat Assist buttons as many times as necessary to resync to the beat of the music.

T8 The beat tracking suddenly gets off track.

This may happen if the music has several beats missing, or the rhythm suddenly becomes extremely complex or variable. You can either resync the beat using the Beat Assist button or wait a few seconds for the Beatkeeper to automatically recover.

T9 The Beatkeeper seems to track the music for a short time right after using the Beat Assist and then drifts off.

This could be one of two things:
a) The Beatkeeper is averaging the time between each of your Beat Assist button taps. If the first tap is way off, the tempo will be way off.
b) The Beatkeeper was synced during a section of the music without a well defined beat.
In either case, the problem can be overcome by waiting a few seconds before preceding to tap the Beat Assist button two or more times with the beat of the music.

T10 Either the BPM number or Red beat LED doesn't track the music fast enough while using the pitch bend on my CD player (or speed control on my record player).

You may have exceeded the tracking capability of the Beatkeeper. The Beatkeeper can normally handle speed changes of +/- 5% per beat if the music's rhythm is steady. If the rhythm is complex (or some of the beats are missing) the Beatkeeper will require more gradual changes to track properly.
* If you are using a record player or a wide range pitch bend on a CD player, note that the Beatkeeper only tracks +/- 11.5% from the tempo at which it was synced. You may need to resync the Beatkeeper if you exceed this range while attempting to align tempos.
** You can also manually resync the beat using the Beat Assist button.*

T11 Neither the Tempo Difference graph or the Beat Offset graph seem to work.

The bar graphs are only operational when both Sync Lock LEDs are illuminated. This ensures that you don't inadvertently try to mix two songs without their tempos being synced.
To make the bar graphs operational, either:
a) Wait for the Red beat LED's to follow the music and tap the respective Sync Lock button or
b) Tap the Beat Assist button twice with the beat of the music.
Either method will cause the Sync Lock LED to illuminate.

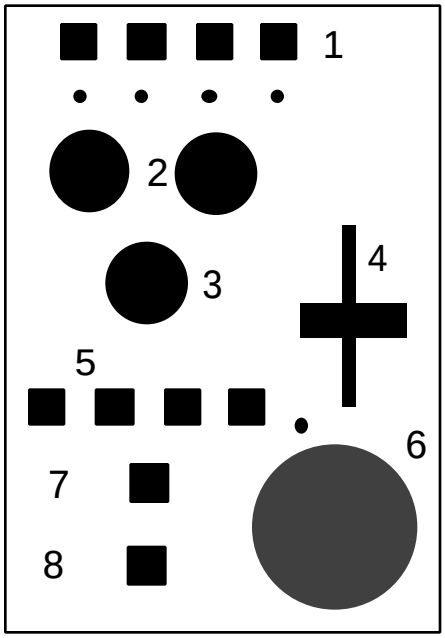
T12 The Beat Offset graph is not illuminated, but the Tempo Difference graph is.

This indicates that one or both of the inputs are not playing. The Beat Offset graph turns off when there are no beats available for tracking on either or both inputs. The graph automatically restarts once both inputs become active again.

T13 The Beat Offset graph has the GreenLED illuminated when the Red beat LEDs are a half beat off from each other.

This indicates that the songs are synced at their half beats. With rap music and some house, mixing is often done on the half beats rather than the down beats themselves. The Beatkeeper intentionally syncs this way to give the DJ the option of beat-to-beat mixing or beat-to-halfbeat mixing.

DM1285 with DIGITAL SAMPLER



The DM1285 **Sampler** uses dynamic RAM with a 16-bit microprocessor controller. The same digital signal processing components used in professional audio equipment deliver CD-quality samples.

1. The **Mode Pushbuttons** switch from effect to effect. The accompanying LEDs illuminate to show you which specific mode you are in at any time.

   Modes are:

   • **Repeat** sets the unit to play back a sample and automatically repeat (loop) when it gets to the end of the sample.

   • **Single** sets the unit to play back a sample once.

   • **Edit** sets the unit to sample edit. This activates the **Intro** and **Outro** editing controls as described in #2. **Edit** can be used at the same time as **Single** and **Repeat** so that editing of the sample can be done while your program output is playing on the dance floor.

   • **Write** sets the unit to sampler record ready. After selecting a bank, hit the **Start/Stop** button (#6) 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 - note that you must do this manually by hitting the correct Mode Pushbutton.

TO RECORD A SAMPLE

a - Press the **Write** button once to go into stand by mode. The Red LED will go on.

b - Select the bank (or multiple banks) into which you want to record. Any bank can be selected. Each bank contains 3 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.

e - Hit the **Start-Stop** button to begin recording. Its Red LED will light.

f - 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, the sampler will automatically switch to Single playback mode and light the Single LED. The sampler is now ready for playback.

2. **Intro and Outro** editing controls are used when **Edit** mode is selected to fine-tune the beginning (**Intro**) or ending (**Outro**) of your samples. These "trim" the unwanted sound while in **Single** or **Repeat** playback modes. Turn the controls inward to trim more - return them to their full outside position to return to your full sample. Once trimmed, turn **Edit** off to lock-in your settings. Now every time you select the sample it will be the perfect length. **Note:** Trimmed samples are not erased - they can be heard again by going back into **Edit** and undoing the trim. This powerful new feature allows you to start a sample early or end it late and still trim it to the perfect length without having to re-record. Since these controls can be active while the sample is "live", you can even fine-tune samples on the fly. A way of efficiently trimming samples is by engaging the **Stutter** button and repeatedly hitting the **Start-Stop** button as you adjust the **Intro** knob.

3. 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.

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

5. **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.).

6. 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). Once the **Effects Indicator** LED goes out, the Write LED goes out and the Single LED turns on.

- *In **single** or **repeat** 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 **Repeat** 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-R-Rock --
  Rock-Rock-Rock it - Rock it Rock it -
  Rock - - Rock it - rock the house!

  by simply "drumming" with your fingers.

7. The **Stutter Pushbutton** lets you choose between two playback styles, Trigger and Non-Trigger, when in **Single** or **Repeat** modes.

- When the Stutter is Out and the sampler is set to **Single** or **Repeat** mode, each time you tap the **Start-Stop** button the sample starts to play. The next tap stops sample playback. The next time play starts, the sample re-starts at the beginning.

- When the Stutter is In and the sampler is set to Single or Repeat mode, each time you tap the Start-Stop button the sample re-triggers.

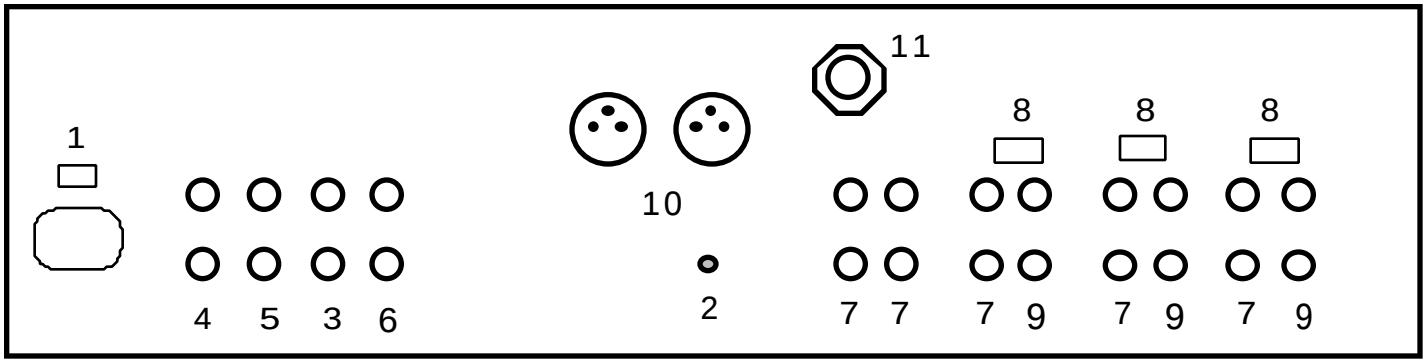
ABOUT STUTTERING

Expensive studio rack-mount samplers and sampling keyboards can re-trigger or stutter. This means "beginning at the start of the sample each time a key is pressed or a drum pad is struck".

Re-triggering creates the stuttering "rap" effect. The **DM1285** includes a manual stuttering feature. How fast can **you** tap? Try using two fingers for increased speed.

8. **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.

DM1200/DM1235/DM1285 REAR PANEL DIAGRAM …



REAR PANEL: INPUTS AND OUTPUTS

1. **Power Connector.** Plug in power cord here and check the voltage level to match your country's standard.

2. **GND** is the grounding lug for turntables 1, 2 and 3 (phono inputs on Channels 1, 2 and 3). 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. The **Send** can be attached to an external effects processor such as a sampler.

7. **Channels 1-5 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.*

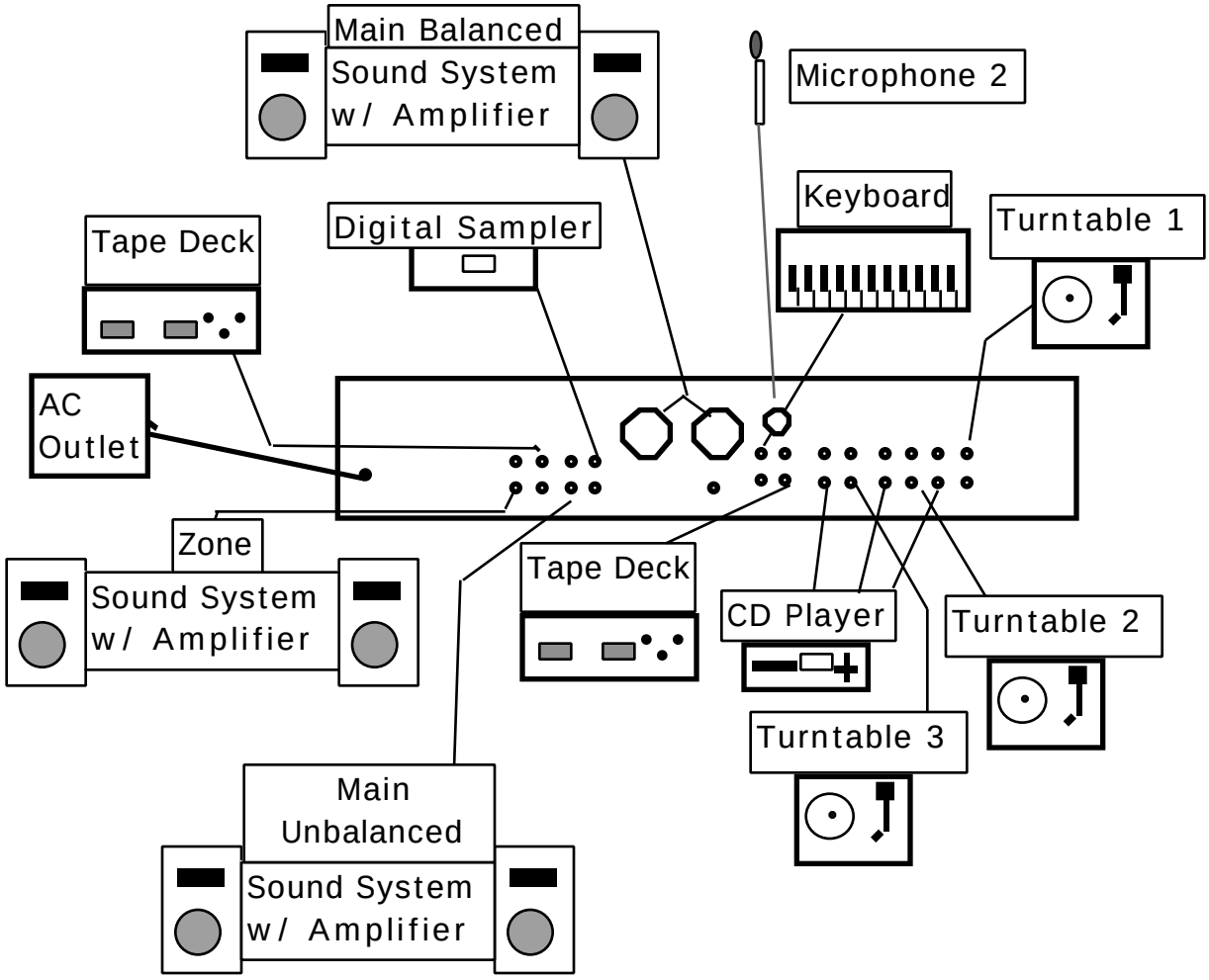
8. **Line/Phono Input switch.** Use this to allow line level equipment to be plugged into your phono inputs giving you a total of 8 line input options.

9. **Phono Inputs on Channels 1, 2 and 3** use unbalanced RCA jacks. Your input signal is fed directly to the **DM1200**'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.

10. The **Balanced Main Outputs** are low-impedance XLR type connectors controlled by the **Master** fader.

11. **Mic 2** is the mic input for Channel 4.

CONNECTION DIAGRAM...



SPECIFICATIONS…

INPUTS:

Line: 10kΩ input impedance
80 mV rms sensitivity (for 1.22 V output)

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

Phono: 47kΩ input impedance
1.5 mV rms sensitivity @ 1 KHz (for 1.22 V output)

OUTPUTS:

Line: 9V rms max (+20 dBm)
470Ω balanced. 3.5Vrms
100Ω balanced 1.12Vrms
Headphone Amp: .5 watt into 47Ω
Distortion less than .01%

EQUALIZER:

6-Band Stereo Graphic EQ
Band centers 42 Hz, 152 Hz, 480Hz, 1.52KHz, 4.8KHz, 15.36KHz +/- 15 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 ± .5 dB
Line:	20 Hz- 20k Hz ± .5 dB
Phono:	± 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

DIMENSIONS: 482mmx232mmx111mm
19" x9 1/8" x4 3/8"

WEIGHT:

	DM1200	4.3kgs 9.6lbs
	DM1235/DM1285	5.1kgs 11.2lbs

DM1235 with BEATKEEPER

Sync Lock Mode

BPM update rate	Every beat
BPM accuracy	+/- 1 BPM
BPM tracking range	50-199BPM
Bar graph update rate	Every beat

Tempo difference graph resolution
+/-1 BPM per LED, Green is +/-2 BPM
Beat offset graph resolution
+/-7.5msec per LED, Green is +/-15msec

Beat Assist Button

Minimum time between consecutive taps
0.3 seconds
Maximum time between consecutive taps
1.2 seconds
Consecutive taps averaging for BPM
Last 2 to 8 taps

DM1285 with SAMPLER:

FREQUENCY RESPONSE AND SAMPLING RATE:
Variable sampling rate 44.1 kHz with 16-bit sampling yields 20Hz-22 kHz.

MAXIMUM MEMORY TIME:
12 seconds

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 Avenue
North Kingstown, RI 02852. U.S.A.
Attention: Service Department

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