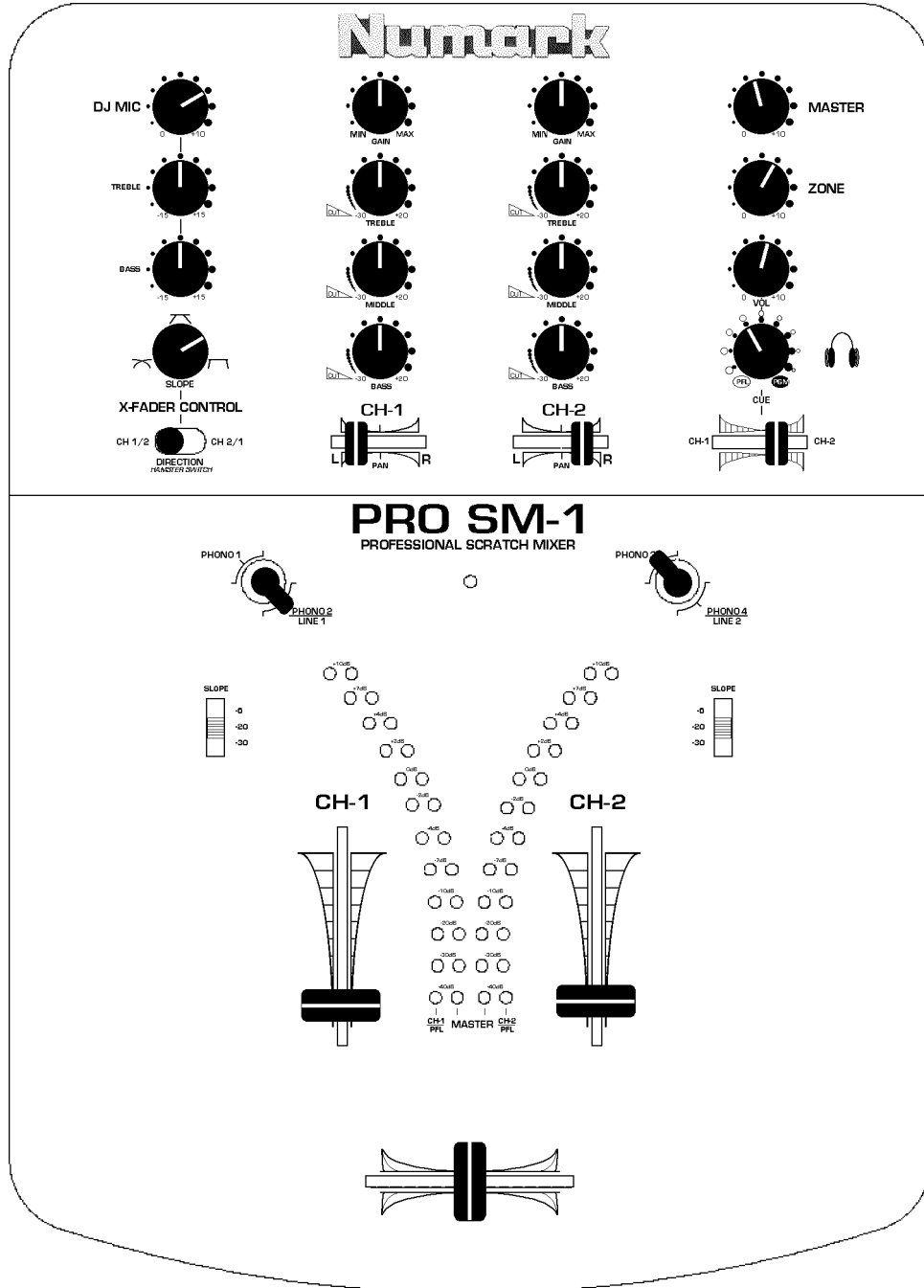


Numark®

Professional Disc Jockey Products

PRO SM-1 PROFESSIONAL SCRATCH MIXER OWNER'S MANUAL



Numark PRO SM-1 Professional Scratch Mixer

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IMPORTANT INFORMATION...

Please read this entire manual before connecting the PRO SM-1 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 will 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 **PRO SM-1** to your dealer or to an authorized **Numark** Service Center.

A NOTE ON 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 unsure which cables to use.

SYSTEM PRECAUTIONS

- Use appropriate cables throughout your system: Quality shielded audio cables and terminated shielded video cables, low-capacitance preferred. Speaker cables must be at least 14-gauge; 12 or 10-gauge is preferable.
- 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.
- Connect only one cable at a time, paying close 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 by moving them slowly. Rapid adjustments may 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 any beverage or anything wet on top of the mixer!**

CONGRATULATIONS!

You are now the owner of a **Numark** PRO SM-1 Professional Scratch Mixer, the ultimate tool for today's skilled turntablist. The PRO SM-1 has been designed with the finest components to give you better reliability than ever before. The PRO SM-1 features ultra-smooth active optical faders that are designed to deliver reliable, long-life. They utilize super quiet photo couplers to deliver the cleanest possible sound. The **Numark** PRO SM-1 has been designed by **DJs for DJs**. It is the professionals' dream machine with absolute total mix and effect control.

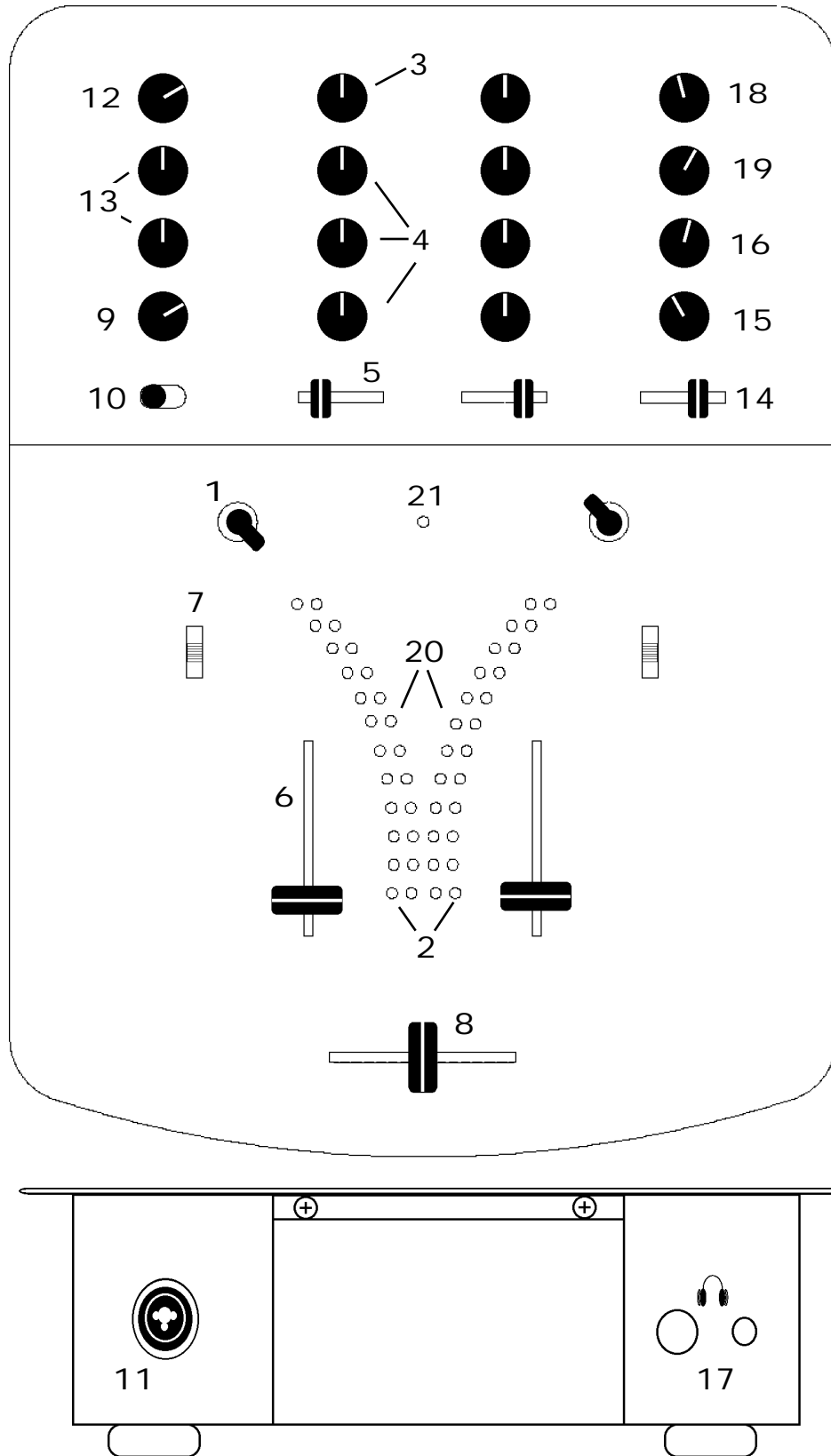
FEATURES...

- Highly Reliable, Long-Life, Active Optical Crossfader with super quiet photo coupler
- Crossfader Reverse (Hamster) Toggle
- Crossfader Slope Control
- 8 Position Rotatable Input Selector Toggles
- Active Channel Faders with 3-Position Contour Adjustment Switch
- 4 Phono Inputs with low-noise RIAA preamps
- 2 Optional Line Inputs
- Bass, Middle & Treble controls on each channel with -30dB "Cut" & +12dB "Boost"
- Individual PFL Gain Controls on each Channel
- High-Resolution Linear Fader Style Balance Control on each channel
- 4 Bar 12-Segment Display graph on both Stereo Master output and PFL (Pre-Fader Listen) for each input channel
- Combination XLR-1/4" Neutrik™ Microphone input with Treble and Bass EQ
- Slider Cueing with PFL (pre-fader listen) and Program Blend
- Gold Plated Headphone Jacks for Both 1/4" and 1/8" Headphones Plugs
- Balanced 1/4" TRS and Unbalanced RCA connection Master Outputs
- Monitor/Zone Level Control with Mono/Stereo Switch
- Smooth Screwless Faceplate
- Hard Rubberized Knobs for Quick Non-Slip Gripping.
- Extra Wide Rubber Feet for Maximum Stability
- Same Height as **Numark** PRO TT-1 turntable
- All Gold Plated Connectors
- User Replaceable Faders
- High Quality, Double Sided, Glass Epoxy Circuit Boards with Extra Thick Copper Ground Planes for Exceptionally Quiet Operation
- Carbon Composite Resistors for more Natural Warm Sounds (perfect for vinyl)
- Dual Gold Plated Grounding Screws

Thank you for buying Numark DJ products!

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FRONT PANEL DIAGRAM...



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FEATURES AND OPERATING INSTRUCTIONS...

Please read this entire manual before beginning operation of the **Numark PRO SM-1** as there are new features you will need to read about to use properly. This mixer can be 10" rack-mounted or used as a free-standing unit.

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. Connect the stereo outputs to the power amplifier(s) and/or audio sources. Using the AC adapter plug the power source for the **PRO SM-1** into the unit. Now you are ready to switch it on.

CHANNEL CONTROL FEATURES

1. **Rotatable Input Toggle Switches** select which source will be active to that channel based on what you have connected to the rear panel input section.

To rotate or replace the toggle

- a. **Turn off all power!**
- b. Remove 3 lower panel fader knobs
- c. Unscrew 4 lower front panel screws found on mixers sides and remove panel
- d. Remove toggle switch retaining screws
- e. To rotate, lift toggle and place in it's new position.
If you are replacing the toggle switch, unplug the old unit and plug in the new one.
- f. Screw toggle back into place.

2. **PFL Meters** are 12-segment individual displays for the input level of the corresponding channel. This allows the DJ to accurately match channel levels with the Pre-Fader gain controls before mixing them together. The idea is to properly match PFL inputs, not the input with the stereo output meter!

3. **PFL Gain Controls** are for accurately matching input levels of the channels.

4. **Treble, Middle, and Bass Controls** are for setting appropriate equalized levels for the music you are playing. When turned all the way left they "CUT" the signal of the associated frequency range by -30dB for special effects mixing.

5. **Balance Controls** are for adjusting the stereo signals intensity from right to left. Moving the slider to the left will allow only the left side to be heard, moving the slider to the right will allow only the right side to be heard, leaving it in the middle creates an even stereo balance. The high-resolution linear faders are great for creating quick effects.

6. The **Active Channel Faders** are highly reliable, long-life, Alps™ optical faders. These control individual source levels in the mix after processing by the input gain and channel EQ.

Note: The input faders are user replaceable in the unlikely case of failure. Simply unscrew the four lower faceplate screws and remove the faceplate. Then unscrew the 2 screws which hold the fader in place, lift it out and disconnect it's cable. Re-attach the new fader and screw the face plate back onto the unit. You're back in business!

7. The **Channel Contour Control** slide switch allows the DJ to customize the way the Channel fader affects the channel signal as it is used.

30dB creates an even increase in volume as the fader is moved upward

20dB creates a more gradual volume increase

6dB creates a very slow change at first and then very rapid at the top of the fader

CROSSFADER SECTION

8. The **Active Crossfader** achieves clean segues between the two input channels. "Hard left" selects Channel 1. "Hard right" selects Channel 2. With the crossfader centered, both channels are live and equal. Use the crossfader for fast and seamless segues from one selected channel to the other.

Note: The crossfader is user replaceable in case of failure. Simply unscrew the four lower faceplate screws and remove the faceplate. Then unscrew the 2 screws which hold it in place, lift it out and disconnect it's cable. Re-attach the new crossfader and screw the face plate back onto the unit.

9. The **Crossfader Slope Adjust** changes the rate at which the two channels are blended together. Rotating to the left creates an even blend of the two channels as the crossfader is moved. Rotating all the way to the right creates a very quick activation of the opposing channel's signal by the crossfader. This "**QUICK CUT**" is ideal for creating transform effects with the crossfader.

10. The **Crossfader Direction (Hamster) Toggle** allows the DJ to reverse direction of the crossfader. By reversing direction, Channel 2 will be on the left and Channel 1 will be on the right. This toggle may also be used for various tricks.

MIC CONTROL SECTION

11. The **Microphone Connector** is located on the front panel of the unit. It is a combination XLR-1/4" Neutrik™ jack for flexible connection options.

12. The **Microphone Gain Control** adjusts the input level of the microphone.

13. The Microphone **Treble and Bass Controls** are for EQing your voice through the sound system. The controls are detented for setting tone "flat". For best results, use a dynamic cardioid microphone.

HEADPHONE/CUE SECTION

14. The **Channel Cue Slider** allows the DJ to preview the pre-fader channels material through headphones. Sliding this to the left plays the left channel and sliding to the right plays the right channel. You can blend them in the headphones by moving the slider to the middle.

15. The **Program Mix (PGM) Control** allows the DJ to blend the cue slider material with the final output mix including the microphone. When the knob is rotated left all you will hear is the channel slider cue source, when the knob is all the way right you will hear what is playing through the master output. By blending, beats can be matched exactly and segues can be smooth when a song is cued.

16. The **Headphone Volume** control adjusts the level of the music heard in the headphones

17. The **Headphone Connectors** are located on the front of the unit. Connect headphones with a standard 1/4" stereo plug or 1/8" mini headphone plug.

MASTER/BOOTH OUTPUT SECTION

18. The **Stereo Master Fader** controls the overall output level. This signal is sent to both the balanced and unbalanced master output on the rear panel.

19. 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. The Zone output can be switched from stereo to mono by use of a special rear panel switch. This enables the use of just one speaker to hear the total output.

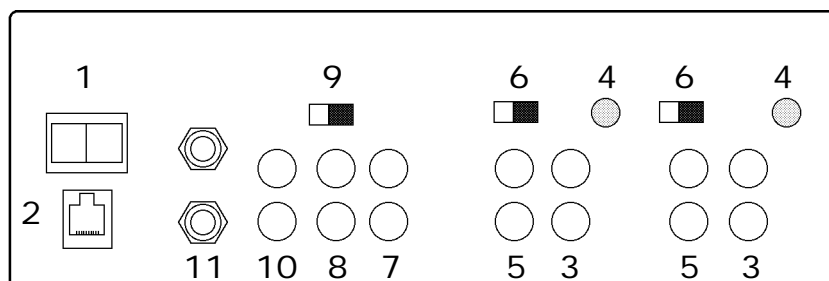
Note: This can also be used to supply line level audio to a lighting controller or to lights that are sound activated.

20. **Stereo Output Level Indicator.** This inner dual 12-segment stereo meter tracks the output level.

It is OK to be "in the red" occasionally, as long as +5dB or +8dB are not constantly lit. Set the crossover, equalizer and power amp inputs to avoid distortion at each step in the audio chain. Proper attention to the meter results in the best possible sound without any audible distortion.

21. **Power-On LED** indicates power is supplied to the mixer and the rear panel power switch is set to the on position.

REAR PANEL DIAGRAM...



1. The **Power Switch** should be turned on after you have turned on all input devices and before you turn on any devices attached to the output.

2. **Power Supply Input** Plug your power adapter in here before switching on power. See safety precautions on page 3 for proper treatment of power.

3. **Phono Inputs** use unbalanced RCA jacks. Your input signal is fed directly to the **PRO SM-1's** high-quality RIAA phono pre-amplifiers so use this input only for turntables. Line level sources will overload the sensitive phono pre-amps.

4. The **GROUND (GND)** are the grounding lugs for all turntables. Always use these connections with your turntables to avoid signal hum.

5. **Phono/Line Inputs** are unbalanced RCA jacks. The line input is selected with the slider switch (6) on the rear panel. When the slider is moved to the line position 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.

6. **Line/Phono Input Slider Switch.** Use this to allow line level equipment to be plugged into your phono inputs giving you a total of 5 line input options.

Warning: make sure the **LINE/PHONO input switch is set to line before playing any line input level devices through your mixer**

7. The **Record Output** is for attaching your tape deck. It can also be connected to light controllers or other external devices. The audio that passes through this connector is not controlled by the master so levels are set only by the channel and mic input faders.

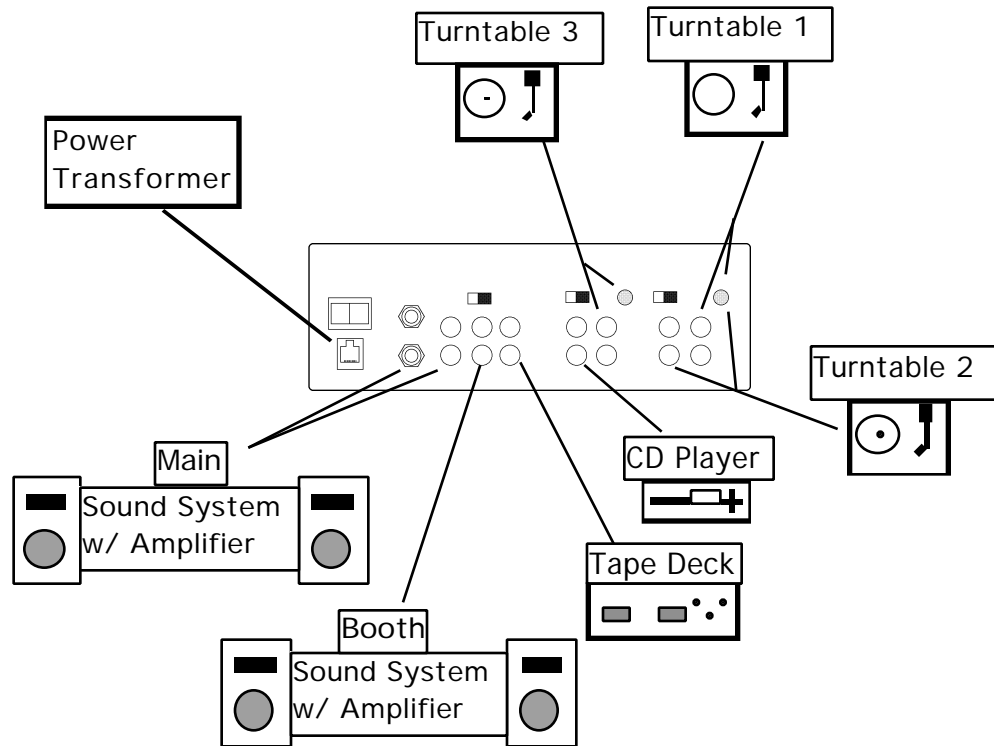
8. The **Zone Output** is unbalanced and controlled by **Zone Level** control on the face panel.

9. The **Stereo/Mono Zone Switch** allows the user to make the signal.

10. The RCA **Stereo Main Outputs** are unbalanced connectors controlled by the **Master** fader knob.

11. These 1/4" **Stereo Main Outputs** are reliable Balanced TRS 1/4" connectors controlled by the **Master** fader knob. Power transformers and other devices which cause magnetic fields can induce hum in audio cables. This can be best resolved by using balanced lines where inputs and outputs permit. Balanced lines are also the most effective means of reducing or eliminating RF or "radio frequency" interference.

PRO SM-1 CONNECTION DIAGRAM...



SPECIFICATIONS...

Inputs:

- Line: 10K ohm input impedance
75mV rms sensitivity for 1.22V output
- Mic: 10Kohm input impedance unbalanced
2.5mV rms sensitivity for 1.22V output
50mV rms max input
- Phono: 47Kohm input impedance
1.2mV rms sensitivity @ 1KHz
for 1.22V output

Outputs:

- Line: 9V rms max
- Headphone: 0.5W into 47ohm

Distortion: less than 0.01%

Signal to Noise Ratio: (maximum output)

- Line: Better than 90dB
- Mic: Better than 78 dB
- Phono: Better than 76dB

Frequency Response:

- Line: 20Hz-22KHz +/-0.5dB
- Mic: 20Hz-20KHz +/-0.5dB
- Phono: +/-1dB except for controlled attenuation of
-3dB @ 20Hz to reduce rumble and
feedback

Channel EQ:

- Bass: +12/-30dB @60Hz
- Middle: +12/30 @ 1.36KHz
- Treble: +12/30 @ 15KHz

Channel Curve:

- 6, -20, -30dB at 50% fader position

Power Consumption:

- 17 Watt typical
- 28 Watt with full headphone output

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BLOCK DIAGRAM...



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LIMITED PRODUCT WARRANTY



- 1. What is covered and for how long?** NUMARK INDUSTRIES LCC ("NUMARK") warrants to the original purchaser that NUMARK'S DJ mixers and amplifiers are 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 and continuing for the following period of time after that date for **(2) Years**. The warranty is extended to **(3) Years** with the completion of the warranty card provided that the warranty card is completed and returned within (30) days from the date of purchase.
All other NUMARK products are warranted for **(1) Year** including but not limited to CD players, turntables, preamplifiers, beatkeepers, equalizers, microphones, headphones, and all other accessories.
- 2. What is not covered?** This Limited Warranty is conditioned upon proper use of the product by the purchaser.
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.
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.
- 5. 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.
This Limited Warranty gives you specific legal rights. You may also have other rights, which vary from one jurisdiction to another.

RETURN INFORMATION

1. A Return Authorization number must be obtained from Numark through the address or phone numbers below.
2. A copy of the original sales receipt must also be included for the equipment to be repaired under warranty.
3. The faulty equipment must be packed in its original packaging.
4. 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.
5. **Numark will not accept COD shipments and no call tags will be issued for merchandise return.**
6. 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.
7. 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
E-mail: numark@numark.com