

*Beyond  
Your  
Expectations  
Within  
Your Reach*

# **DNA-250**

**Power Amplifier**



**McCORMACK**  
AUDIO CORPORATION OF VIRGINIA

*Thank you* for purchasing a McCormack Audio DNA-250 Power Drive. This amplifier was hand crafted with top quality, highly reliable component parts. We are confident that you will be well satisfied with its sonic performance and find pleasure in its functional beauty. Before you enjoy these experiences, however, please take a few minutes to read this Owner's Manual and acquaint yourself with the instructions for optimal operation. This will ensure your listening pleasure today, and for many years to come.

## **INSTALLATION**

We recommend that you save the box and packing materials. Store them in a dry environment. It is best to use the original package should you need to transport your DNA-250 Power Drive.

Place your DNA-250 Power Drive on a stable surface in a location which allows adequate ventilation. If it is sitting on a carpet, use either a flat board or Tip Toes underneath to keep the ventilation slots unobstructed. Do not locate it in direct sunlight or expose it to extremely high temperatures (above 70 degrees centigrade/154 degrees Fahrenheit). Allow at least four inches of open space on each side, and six inches of open space both above and behind. Do not block the ventilation slots on the top or bottom, or the heat sinks on each side.

All DNA-250 Power Drives sold in the United States are configured for operation on a 60Hz ac power line producing between 108 and 126 volts. Export versions of the DNA-250 will have the correct operating voltage and frequency clearly marked on the back panel of the unit, near the ac power cord. In all cases, the actual line voltage should be within + 5/- 10% of the nominal rated voltage.

### ***Electromagnetic Interference (EMI)***

Considerable care has been taken in the design of the DNA-250 to minimize its susceptibility to radio frequency interference and other forms of EMI. Choice of materials, physical layout, grounding practice, and power supply design have all been specified with a view to reducing the impact of electromagnetic fields on the performance of this unit. At the same time, however, our primary goal is the accurate reproduction of recorded music in the normal home environment, and we have elected not to compromise this objective by the application of heavy-handed RFI filters, or by using grounding practices that reduce RFI at the expense of degraded audio performance. We find that the approach we have taken has worked extremely well, resulting in only rare instances of EMI problems which could be treated locally as needed, rather than compromising the performance of our product in the 99.9% of installations where EMI is not a problem.

Care in installation can often avoid EMI induced problems. The following practices should generally be observed in any application, and will be especially important where EMI may be a problem.

Interconnect cables should be kept as short as possible (3 meters or less), and shielded cable should be used (cable which has two center conductors, and a separate external shield connected at only one end).

Physical location and cable "dress" can be an important factor in minimizing hum pickup. The installation should situate the preamplifier well away from the power amplifier, and power (ac mains) cords should be dressed to remain at least 4" (100mm) away from input/output cables.

## CONNECTIONS

The DNA-250 Power Drive uses standard RCA phono jacks for input connectors and binding posts for output connectors. Please remember that selecting high quality cables for use with this revealing component will result in superior sonic performance from your system.

Position the DNA-250 Power Drive as close as possible to its final installation location, while allowing access to the back panel connectors.

1. Install inter-connect cables from the main output of your preamplifier to the input RCA jacks located on the rear panel. Please note the channel designators, and be certain the plugs are fully inserted, making a tight connection. **IMPORTANT!** Always install the interconnect cables first when connecting an amplifier, and remove them last when disconnecting an amplifier. This will prevent potential damage to the loudspeakers in case the power supply has not fully discharged.
2. Check again to be certain the DNA-250 Power Drive's power switch is turned off.
3. Install suitable speaker cables from your speaker's input connectors to the output connectors located on either side of the rear panel.\*\* When finished, recheck that all connections are correct and tight.

\*\*The two channels should be connected in correct "relative phase". This means that when the same signal is applied to both channels, the right and left channels speaker diaphragms will move synchronously - in and out together. Terminals on speakers are usually coded - one designated "C", "ground", "-" or black, the other designated "+" or red. "In phase" connection of the speakers can normally be achieved by taking care to connect the wire from the "+" amplifier terminal to the red or "+" coded terminal on each speaker, and connecting the "-" terminal to the black or "-" coded terminal on each speaker. In phase connection of the speakers can be readily ascertained by ear. Listen to a recording of a solo vocalist (use a mono recording if available). With the speakers in phase the voice should be clearly focused between the two speakers. With the speakers connected out of phase, the voice will be diffused, with no identifiable source. Relative phase may be reversed by switching the "+" and "-" leads at one speaker only.

4. Check that the power switch on the front panel is in the off position. Plug the AC power cord into the DNA-250 Power Drive, then plug the other end into an appropriate wall outlet.
5. Move the DNA-250 Power Drive to its permanent location. Check that your system's volume control is turned down all the way. Turn on the front panel power switch. Your DNA-250 Power Drive is ready for operation.

## Questions

If you have questions about the installation or function of your DNA-250 do not hesitate to call Customer Service at (703) 698-8581.

## **GETTING THE MOST FROM YOUR DNA-250**

In a system of high quality components, the McCormack DNA-250 Power Drive offers a remarkable level of sophistication and refinement in music reproduction. To get the best performance out of any audio system, there are a number of important details that must be attended to.

### ***Absolute Phase***

Musical notes are heard through the ear's response to waves of alternating rise and fall of air pressure. Musical transients are almost exclusively positive: that is, the initial effect is a rise in pressure. The ear is capable of distinguishing these positive transients from the musically unnatural alternative of a negative transient (an initial fall in air pressure). In your stereo system, these transients are created by your loudspeakers. If the speakers respond to musical transients by first moving out, they are creating a rise in pressure, and the system is said to be phase correct. If they respond by moving in, they create a fall in pressure and the system is said to be phase inverting. Each component in the stereo system either preserves the phase of the incoming signal, and is said to be phase correct, or inverts the phase and is said to be phase inverting. It is unimportant whether an individual component is phase correct or phase inverting, as long as the system as a whole is phase correct. This will be the case if the number of phase inversions is even (or zero).

The DNA-250 is phase correct. If your system has an odd number of inversions, (for example, if you have a phase inverting preamplifier in your system) then you must add one phase inversion. This is conveniently done by reversing the positive and negative connections to your speakers (be sure to reverse both channels). If you are not sure about the phase of every piece in your system, you can establish correct absolute phase by careful listening. When the system is in correct phase, transients will be noticeably cleaner and more sharply defined. The effect is especially apparent on plucked string sounds. A final warning - not all recordings are phase correct (including some "audiophile" recordings), so listen to several before concluding your investigation of absolute phase.

### ***The Importance of Wires***

Interconnect and speaker wires are an important element in your stereo system. Interconnects are available which will permit a reference quality system to blossom and fulfill its promise of musical reality. Others will strangle the system to the point where it becomes little better than average. To complicate matters, our experience suggests that the choice of interconnects will be system dependent - those that are top ranked on one system may be a poor choice for a different system. Consult your McCormack Audio dealer for recommendations for your specific system.

### ***Performance Tip***

Warm up the DNA-250 Power Drive before serious listening: The sonic performance improves noticeably as the unit warms up. The midrange becomes more lucid, the highs smoother, and the soundstage expands. The warm up period can be expected to last about fifteen minutes.

## SPECIFICATIONS

**Output Power:** 250 watts per channel into 8 ohms, and 400 watts per channel into 4 ohms, both channels driven from 20 Hz to 20 kHz at 1% THD.

**Input Impedance:** 100 kOhms

**Input Sensitivity:** 1.95 Vrms

**Voltage Gain:** 27.4 dB

**Frequency Response:** -3dB @ .5 Hz, 80 kHz

**Signal-to-Noise:** 112 dB

**Harmonic Distortion (10 watts, 1 KHz, 8 ohm load):** .15%

**Signal Polarity ("Absolute Phase"):** Non-Inverting

**Power Requirements (117V/60HZ):** 0.7 Amps /84 Watts @ idle  
5.25 Amps/ 630 Watts @ clipping (8 ohms)

**Dimensions:** 19" W x 6 7/8" H x 15 D"

**Weight:** 51 lb.

## FUSES

**AC MAINS FUSE**—The ac mains fuse is located in a fuse holder near the ac power cord receptacle on the back of the amplifier. The correct fuse type and value depend on the ac mains voltage that the amplifier is wired for. The correct values are:

For 100/120V ac mains – 3AG 10 Amp, slow-blow

For 220/240V ac mains – 3AG 6 amp, slow-blow

Replace this fuse only with the correct type and value. If the fuse blows again immediately or after a short time, do not continue replacing it, as a fault condition exists which must be corrected.

**B+/B- POWER SUPPLY "RAIL" FUSES** --These are the four fast-blow fuses mounted on the bottom of the circuit board inside the chassis. The fuse clips accommodate two 3AG type fuses per channel (6 Amp). To replace these, first unplug the AC power cord from the DNA-250 Power Drive, then remove the screws holding the bottom cover in place and lift it off. Replace these fuses only with the same value and type (6 Amp, fast-blow).

## **TROUBLESHOOTING:**

*Problem: Amplifier does not operate; indicator light does not light at all.*

Check AC power cord connections (both ends). Check the AC outlet for power. If the AC connections are proper and the outlet is live, check the AC line fuse, replacing if necessary. Re-test the amplifier. If the AC line fuse blows again, contact your dealer for servicing information.

*Problem: Amplifier does not operate; indicator light comes on.*

Check the condition of the B+/B- rail fuses. Replace any blown fuses. Turn on the amplifier and check operation. IF the B+/B- rail fuses have blown again, contact your dealer for servicing information.

*Problem: Amplifier turns on normally, but no sound is produced.*

Check all connections carefully. Check your preamplifier's input, mute, and volume settings.

## **Service**

If your DNA-250 requires service, repack it using the original box and packing material and ship to the Service Department address below. Boxes and packing materials can be purchased through our service department if you no longer have yours. Include with the unit a note describing the problem you are having in as much detail as possible. It is especially important for our technician to know if the problem is intermittent. If you want an estimate of cost for out of warranty service, be sure to request it in this note. Be aware that requesting an estimate will delay service to your unit, as we will have to contact you for approval before commencing service.

**Service Department  
McCormack Audio Corporation of Virginia  
2733 Merrilee Drive  
Fairfax, VA 22031**

The service department can also be reached by e-mail at [service@mccormackaudio.com](mailto:service@mccormackaudio.com) by phone at 703-573-9665, or by fax at 703-560-5360.