



MODEL 2602[©]
BI-AMP 120 WATT AMPLIFIER
(1986-MSRP \$399.00)

**OWNER'S MANUAL AND
INSTALLATION GUIDE**

INTRODUCTION

Congratulations on your decision to purchase the **Linear Power™ Model 2602[©]**. A built in electronic crossover allows 60 watts of dedicated subwoofer power, combined with 60 watts of detailed highs, perform music in your car that, until now, you could only dream about. Add in the reliability and quality service you have come to expect from **Linear Power™** and you will be at ease for many years of listening enjoyment.

The **LINEAR POWER™ Model 2602[©] Bi-Amplifier** is the smaller brother of the **2120[©] Bi-Amplifier** and employs the same sophisticated design combining reliability, high power, low distortion, and freedom from external noise. When properly installed, it will give long and faithful service. When combined with other high quality components, it will be the heart of a superb system.

WE STRONGLY RECOMMEND THAT THE INSTALLATION BE DONE BY A PROFESSIONAL AUTOSOUND INSTALLER.

TECHNICAL DESCRIPTION

POWER SUPPLY: Self oscillating for reliability and efficiency. The transformer is epoxy dipped for extreme vibration resistance.

OUTPUT STAGES: Transformer less, direct coupled and fully complimentary. Output transistors are high current and low distortion devices, operating at a fraction of their limitations. Total power dissipation potential of the output transistors is 150% of the intended use.

PROTECTION: Our stable amplifier design is made virtually indestructible by two separate forms of protection. First is an all-new Thermal Protection Circuit, which is designed to prevent damage from high frequency oscillations or excessive ambient temperature. The second form of protection protects the amplifier from short circuits in the installation. Both circuits are automatically resetting.

CONSTRUCTION FEATURES: The infinitely variable input sensitivity control permits optimal signal matching for lowest noise and lowest distortion with virtually any source. All components used are rated for at least 150% of their intended use, and are mounted on double-sided fiberglass epoxy circuit boards.

QUALITY CONTROL: In-house construction of critical components like transformers and chassis pieces, as well as total assembly, allows **LINEAR POWER™** to maintain uniform quality. 100% of the finished units are tested, then burned in for four hours, and tested again. Amplifiers, which pass these rigorous controls, have truly earned the **LINEAR POWER™** Logo.

INSTRUCTIONS

Read the following instructions through completely. If they appear too complicated we recommend you have an authorized **LINEAR POWER™ Dealer** do the install.

MOUNTING

1. The amplifier will work best if it is kept cool as possible. Mount in a position that allows air to flow freely through the black fins. Be sure there is ample space above the amplifier to avoid trapping heated air rising from the amplifier. The amplifier should not be mounted upside down. Avoid mounting upside down. Avoid mounting the amplifier in the dash or on the firewall to avoid noises being radiated directly into the case.
2. Mount your amplifier in a position that allows ample room for gain adjustments, and the installation, removal and attachment of leads.
3. The case of your amplifier is designed to act as a noise shield. To maintain this protection, be sure the metal case of the amp does not touch the metal of the car. Do not remove or damage the rubber grommets, which provide electrical insulation and vibration isolation.

WIRING

1. Disconnect the negative ground cable from your vehicle's battery before making any power connections to your amplifier.
2. Connect the negative power wire from the amp to a solid frame member via a bolt or self-tapping screw. This connection must be a clean, unpainted surface. Always attach the ground wire first when installing this amplifier, and disconnect the ground last when removing this amp from the system.
3. A fuse of the proper size must be installed in line with the main power in order to prevent damage to your wiring. It should be connected to the battery's positive terminal, or as close to the battery as possible. Use the fuse holder and fuse provided, and replace only with the same size fuse. **Model 2602**® uses an **AGC 20**-type fuse.
4. The other end of the fuse holder should be connected to the positive power wire from the amplifier. To extend the length of the power lead, use 6 gauge wire or larger to reduce power loss.
5. The red and white wire acts as an electrical switch to turn the amplifier on and off. It should be connected to the power antenna lead from the radio. Where no power antenna lead exists, a source of 12 volts, connected through a toggle switch, will do. Do not connect directly to a source that will leave the amplifier permanently on as this will drain the battery.

SPEAKER WIRING INSTRUCTIONS

The **2602**® is designed to accommodate a **2 Ohm load on the SUB OUT channel**, and a **4 Ohm load each of the HIGH OUT channels**. This can be achieved by correctly wiring a single dual voice coil woofer, or a number of woofers equaling 2 ohms for the **SUB OUT** channel. For the **HIGH OUT** channels, a 4-Ohm coaxial speaker, or a midrange/tweeter combination equaling no less than 4 ohms should be used.

CROSSOVER FREQUENCY

The **MODEL 2602**® comes with stock crossover chip set at 75 Hz.

OPERATION/ADJUSTMENT

The output of most any car audio equipment will follow a common distortion curve. This curve will show that the distortion is at its lowest level right before it reaches full rated output. After that point, the distortion increases rapidly to unusable levels.

For any system to operate at minimum distortion with minimum noise and still reach full power output, the equipment should all be aligned to operate at the same point on the curve at the same time.

In a basic system, using a single amplifier, set the amp gain to minimum, turn the deck up until it just starts to distort, then back the deck down slightly. This is the point where the output of the deck is cleanest. Now, bring the gain of the amp up until it just starts to distort, and back it down slightly. This will allow the deck and amp to reach maximum useable output at the same time.

SYSTEM FINE TUNING

Now that the gain controls have been properly set, the system is ready to be "fine tuned". Always tune a multi-amp/driver system from the bass up. In a bi-amp system, the subwoofer crossover should be varied until the smoothest low frequency response has been obtained. Tri-amping is a more sophisticated process of sound reproduction and hence requires more time to properly design and fine tune. Keep in mind that a poorly designed tri-amplified sound system may yield lower sound quality than a well executed bi-amped system.

NOISE NOTES

Unwanted noise is the worst single problem encountered in automotive amplifier installations. Several basics must be kept in mind when preventing noise problems.

1. Use shielded cables whenever a preamp level music source is used.
2. All connections must be tight and free from corrosion, paint, etc., and insulated.
3. Route all signal cables away from existing wiring in the vehicle.
4. If possible, avoid mounting the amplifier in the dash or on the firewall, as noise may be induced due to the proximity of noisy wiring and switches.

GENERAL TROUBLESHOOTING

NO SOUND

Check all connections. Check main power fuse. Check accessory fuse. With a trouble light or meter, be sure +12V is present at the amplifier on the large positive cable and on the small red/white turn-on wire. Check for a good ground connection. Check by substitution or other method for proper operation of music source.

BLOWS FUSES

Check all connections to be sure all power wires and speaker wires do not touch ground or each other. Re-check polarity of main power wires.

SHUTS OFF

As this amplifier is equipped with a thermal and a short circuit shut-down system, in the unlikely event of excessive temperatures due to high ambient temperature or improper speaker impedance, the amp will turn itself off. To avoid damage to the speakers, turn the volume to a minimum while waiting for the amp to turn itself back on.

SERVICE OR REPAIR

To obtain modification, service or repair, please contact our **ONLY Authorized LINEAR POWER™ Product Service Center:**

T.I.P.S. INC.

3455 Lanell lane, Pearl, MS 39208

(601) 932-8477

E-mail: ray@tipsinc.net

LINEAR POWER™

3455 LANELL LANE, PEARL, MS 39208 (601) 932-8477

SPECIFICATIONS

2602[©]

Main Amplifier: 30 Watts per channel minimum continuous average power into four ohms. Both channels driven from 300Hz to 20KHz with no more than 0.04% total harmonic distortion.

Subwoofer Amplifier: 60 watts minimum continuous average power output into two ohms, mono from 20Hz to 200Hz with no more than 0.04% total harmonic distortion.

Inter-modulation

Distortion: 0.1%

Frequency Response: 20Hz – 79 Hz Sub 79 Hz – 20KHz High Out

Signal to Noise Ratio: 95dB or greater (A-Weight)

Slew Rate: 7 volts per microsecond

Crossover Phase Shift: +/- 2.8 degrees maximum

Current Draw: 1 amp at idle. 17 amperes at maximum RMS test conditions.

Input Signal for

Maximum Power: 150 MV at maximum gain setting. 5 volts at minimum gain setting.

Dynamic Headroom: 2dB

Damping Factor: 77 Sub 174 High Freq out

Dimensions: 2.75" x 8.0" x 9.875"

LINEAR POWERTM
3455 LANELL LANE, PEARL, MS 39208 (601) 932-8477