

USER'S MANUAL

Lanzar MAX PRO



AMPLIFIERS:

MAXP 2760/MAXP 2960/MAXP 4260

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INTRODUCTION

Thank you for purchasing the Lanza MAXP PRO series amplifier. Rest assured you have purchased a quality product designed and engineered to give you many years of uncompromised musical service.

The MAXP PRO series amplifier has been designed using the latest in electronic technology available today

This mono subwoofer amplifier is the result of advanced high speed switching technology that overcomes the less-efficient classAB design. The MAXP PRO series amplifier reflects your true appreciation for powerful bass reproduction in the mobile environment.

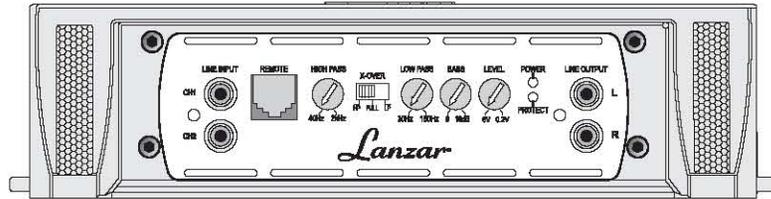
This amplifier is designed for low-frequency information only and it is not capable of reproducing any mid/high-frequency information.

This is due to the noise introduced into the signal by the switching speed of the power supply, which must be filtered out of the audio signal.

The power supply incorporated into MAXP PRO series amplifier is a DC to DC switching power supply designed to have adequate headroom for even the most demanding peak and dynamic range found on today's CDs and recording.

AMPLIFIER FEATURE DESCRIPTIONS

MAXP2760/MAXP2960 2 CHANNEL AMPLIFIERS



The **X-OVER** slide switch selects the internal crossover functions:

- The input signal is routed directly to the **LINE OUT** RCA jacks, regardless of the **X-OVER** setting simplifying daisy chaining of amplifiers.
- **HP:** Selects the built in **HIGH PASS** filter, variable from 40 Hz to 2KHz.
- **FLAT:** Bypasses all crossovers for full frequency range operation.
- **LP:** Selects the built in **LOW PASS** filter, variable from 30 Hz to 150Hz.

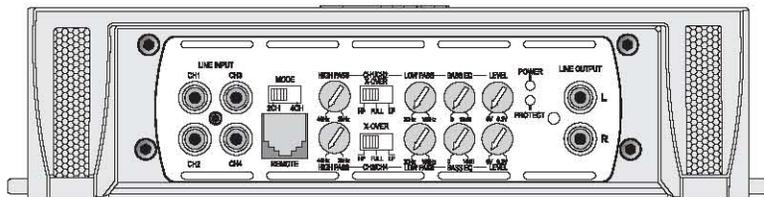
Note that the LOW PASS signal is **MONO**

- In the **LP** position, the **HIGH PASS** filter acts as a subsonic filter.

When the **LP** mode is selected, a 0 to +10 dB, at 45 Hz, **BASS EQ** is also switched in.

The **REMOTE** jack enables dash mount level control of the LOW PASS signal.

MAXP4260 4 CHANNEL AMPLIFIERS



The **AMPLIFIER CH 1/2CH X-OVER** slide switch selects the input signal for channel pair 1 & 2:

- **HP:** Selects the built in **HIGH PASS** filter, variable from 40 Hz to 2KHz.
- **FULL:** Bypasses all crossovers for full frequency range operation.
- **LP:** Selects the built in **LOW PASS** filter, variable from 30 Hz to 150Hz.

Note that the LOW PASS signal is **MONO**.

- In the **LP** position, the **HIGH PASS** filter acts as a subsonic filter.
- When the **LP** mode is selected, a 0 to +10 dB, at 45 Hz, **BASS EQ** is also switched in.

The **AMPLIFIER CH 3/CH 4 X-OVER** slide switch selects the input signal for channel pair 3&4

- **HP:** Selects the built in **HIGH PASS** filter, variable from 40 Hz to 2KHz.
 - **FULL:** Bypasses all crossovers for full frequency range operation.
 - **LP:** Selects the built in **LOW PASS** filter, variable from 30 Hz to 150Hz.
- Note that the LOW PASS signal is **MONO**.
- In the **LP** position, the **HIGH PASS** filter acts as a subsonic filter.
 - When the **LP** mode is selected, a 0 to +10 dB, at 45 Hz, **BASS EQ** is also switched in.
 - Full range signal from channels 1 / 2 inputs are routed to the **Line OUT RCA** jacks, regardless of the setting of the **X-OVER** switches.
 - The **REMOTE** jack enables dash mount level control of the LOW PASS signal, CH3/4 only.

FEATURES

- Bass Boost Circuit
- Variable Low Pass Crossover
- Anti-Thump Turn-On
- Tri-Mode Configurable
- Soft Turn On/Off
- RCA Line Input
- Blue Light Illuminated Lanzar Logo
- Power Protection LED Indicators
- Advanced Protection Circuitry
- Bass Boost Remote Control
- T.H.D: <0.05%
- S/N Ratio: >95dB
- Frequency Response: 10Hz-40KHz

MAXP2760/MAXP2960 2 CHANNEL AMPLIFIER APPLICATIONS

FULL RANGE STEREO

This is the most basic application for the MAX PRO Series 2 channel amplifiers.

1. Interconnect cable checklist:

Connect the **LINE INPUTS** to the Radio/CD with good quality RCA cables.

2. Crossover Switch:

The **X-OVER** switch must be in the **FLAT** position.

3. Crossover frequency control checklist:

N/A for full range operation.

4. Line level:

Refer to the section "Setting up systems after installation for best performance"

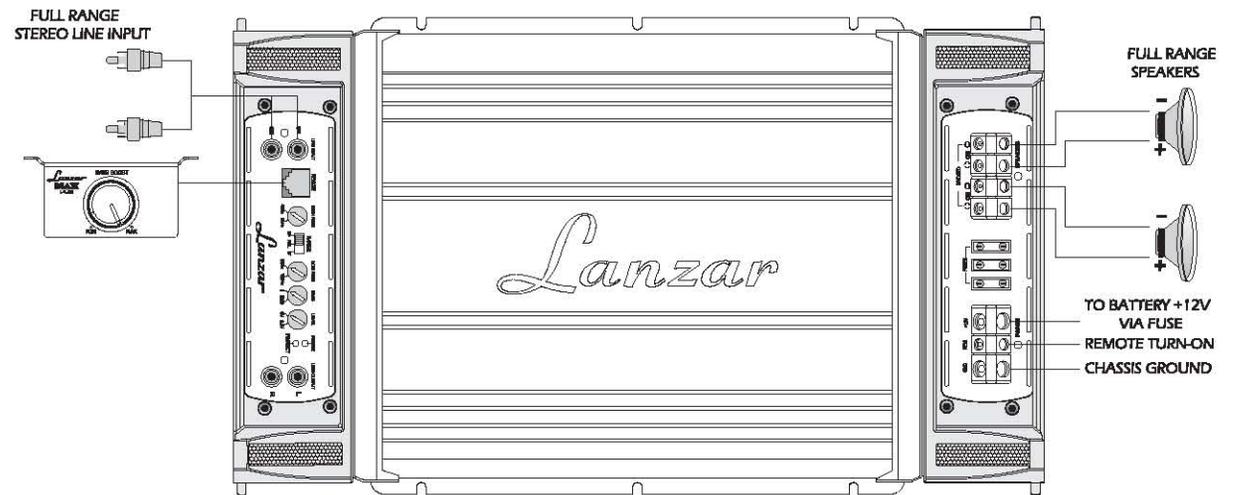
5. Bass Remote:

Plug in the Bass Remote to the amplifier "REMOTE" jack.

NOTE: Minimum final loudspeaker impedances:

4 & 2 Ohms stereo mode or 4-Ohms mono mode

This amplifier will not do 1 Ohm stereo or 2/1 Ohm mono operation.



FULL RANGE MONO

This application illustrate the basic mono bridging method for all Lanzar amplifiers.

Interconnect cable checklist:

A MONO signal source is required, such as would be available from the mono sub bass output of an active crossover, whether stand alone, or built into a head unit or equalizer. **Important:** Do not be tempted to connect the hot, or positive outputs, from any source together to obtain a mono signal, as this could very well damage the output stage of that source. It is necessary to feed the SAME signal to both left and right inputs via a Y-adapter RCA cable. Connect the mono speaker positive terminal to the LEFT+, and its negative terminal to RIGHT-.

Switch setting checklist:

-The **AMPLIFIER X-OVER** switch must be in the **FULL** position.

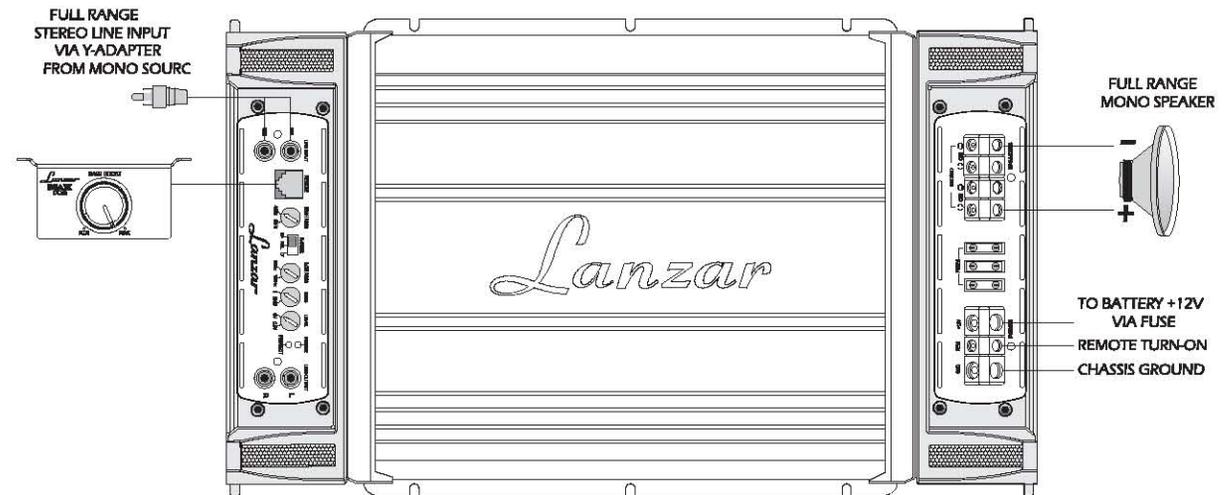
Crossover frequency control setting checklist:

N/A for full range operation.

TIP: If you are using the mono sub bass output of an active crossover, there is nothing wrong with switching in the low pass filter in these amplifiers for a steeper low pass rolloff.

Minimum final loudspeaker impedance:

- 4 ohm mono.



MAXP4260 4 CHANNEL AMPLIFIER APPLICATIONS

4 CHANNEL FULL RANGE SYSTEM

Here we show how to use the 4 channel amplifiers as straightforward discrete 4 channel full range units.

Interconnect cable checklist:

- Connect the four inputs of the amplifier to a Radio/CD with quality RCA cables.

Switch setting checklist:

-1/2CH X-OVER: FULL -3/4CH X-OVER: FULL

Crossover frequency control checklist:

Channels 1/2:

Channels 3/4:

-HIGH PASS: N/A

-HIGH PASS: N/A

-LOW PASS: N/A

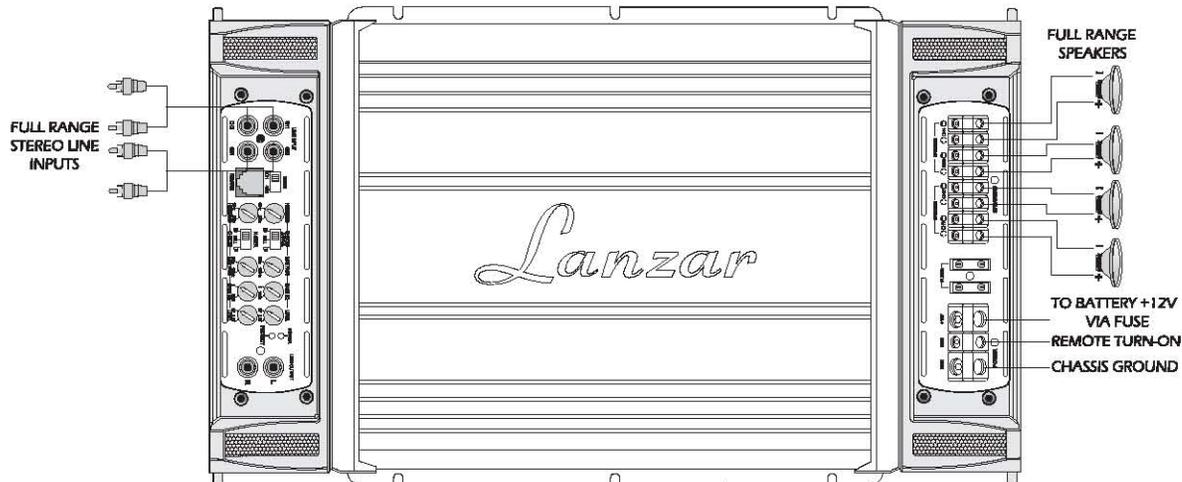
-LOW PASS: N/A

Level control checklist:

- Refer to the section "setting up systems after installation for best performance"

Minimum final loudspeaker impedances:

- 2 ohm per channel.



2 or 3 CHANNEL FULL RANGE SYSTEM

Here we show how to use the 4 channel amplifiers as full range 2 or 3 channel units by taking advantage of the mono bridging capability of all Lanzar MAX PRO series amplifiers.

The following example shows how to create a 3 channel system by mono bridging channel pair 3 / 4. In order to create a 2 channel system, simply follow the example to also mono bridge channel pair 1/2.

Interconnect cable checklist:

- Connect the inputs of channel pair 1/2 to a suitable stereo source, e.g. a head unit with good quality RCA cables.

- A MONO signal source is required to bridge channel pair 3/4, such as would be available from the mono sub bass output of an active crossover, whether standalone, or built into a head unit or equalizer.

Important: Do not be tempted to connect the hot, or positive outputs, from any source together to obtain a mono signal, as this could very well damage the output stage of that source.

- It is necessary to feed the SAME signal to both left and right inputs via a Y-adapter RCA cable.

- Connect the mono speaker positive terminal to the RIGHT +, and its negative terminal to LEFT - as shown.

Switch setting checklist:

-1/2CH X-OVER: FULL -3/4CH X-OVER: FULL

Crossover frequency control checklist:

channels 1/2:

channels 3/4:

- HIGH PASS: N/A

- HIGH PASS: N/A

- LOW PASS: N/A

- LOW PASS: N/A

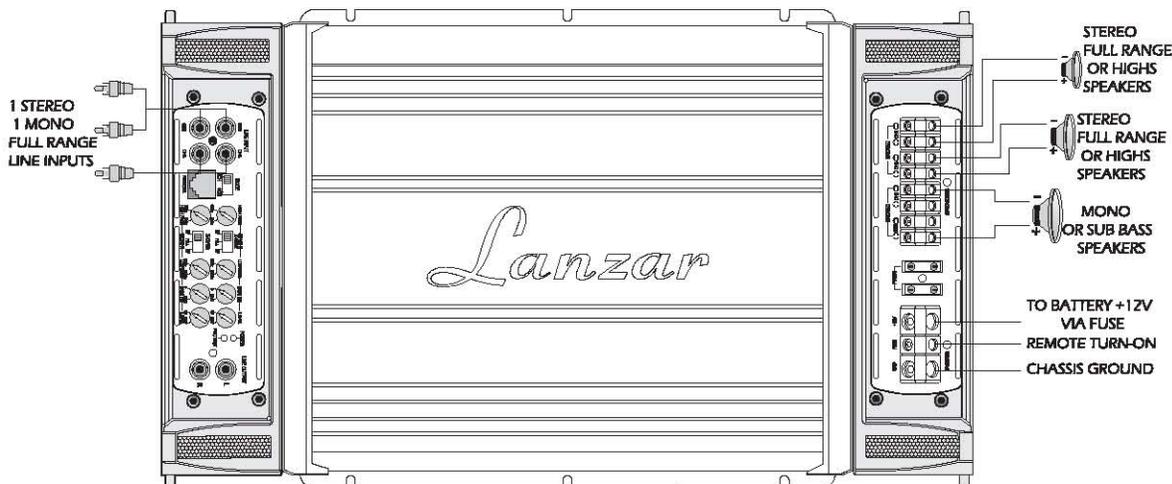
TIP: If you are using the mono sub bass output of an active crossover, there is nothing wrong with switching in the low pass filter in these amplifiers for a steeper low pass rolloff.

Level control checklist:

- Refer to the section "Setting up systems after installation for best performance"

Minimum final loudspeaker impedances:

- 2 ohm per channel in stereo mode. - 4 ohm mono bridged.



MAXP4260 4 CHANNEL AMPLIFIER APPLICATIONS

2 way active, or bi-amplified system with mono bass

This application shows how easily a 2 way active system can be implemented using a MAX PRO series 4 channel amplifier. Channels 1 and 2 will be used for highs, and channels 3 and 4 for mono bass.

Interconnect cable checklist:

- We need to feed the same signal to both sets of channels, so must use 2 Y-adapters, one to feed the LEFT signal to channels 1 and 3, and the right signal to channels 2 and 4, as shown.

Mono bass woofer wiring

- Connect the mono speaker positive terminal to the RIGHT +, and its negative terminal to LEFT -.

Switch setting checklist:

- **1/2CH X-OVER:** HP

- **3/4CH X-OVER:** LP

Crossover frequency control checklist:

channels 1/2

- **HIGH PASS:** 100 Hz

- **LOW PASS:** N/A

Channels 3/4:

- **HIGH PASS (subsonic):** 20 Hz

- **Low PASS:** 100 Hz

Please note that these frequency points only. Refer to the loudspeaker manufacturer specifications and the section "setting up system after installation for best performance"

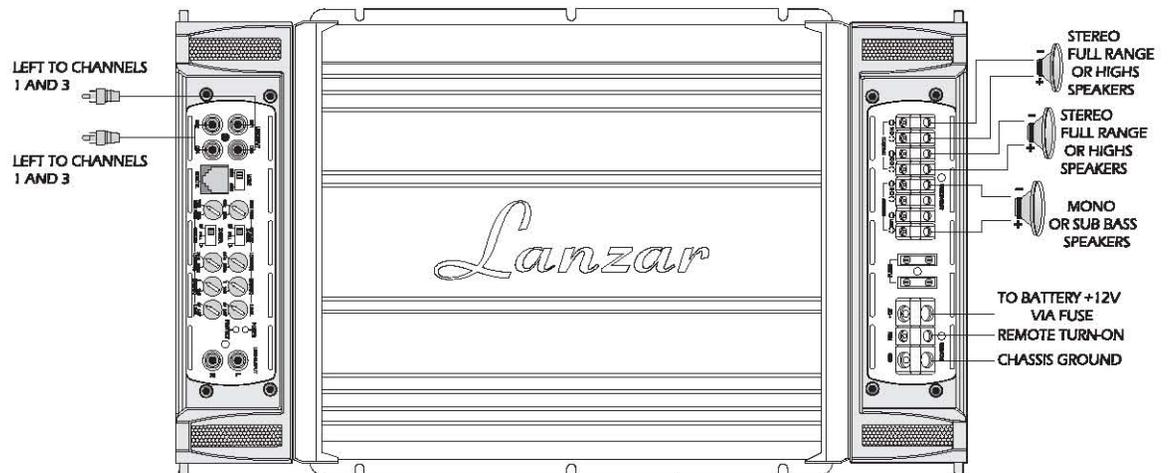
Level control checklist:

Refer to the section "setting up systems after in stall ation for best performance"

Minmum final loudspeaker Impedances:

- **2 ohm per channel in stereo mode**

- **4 ohm mono bridged.**



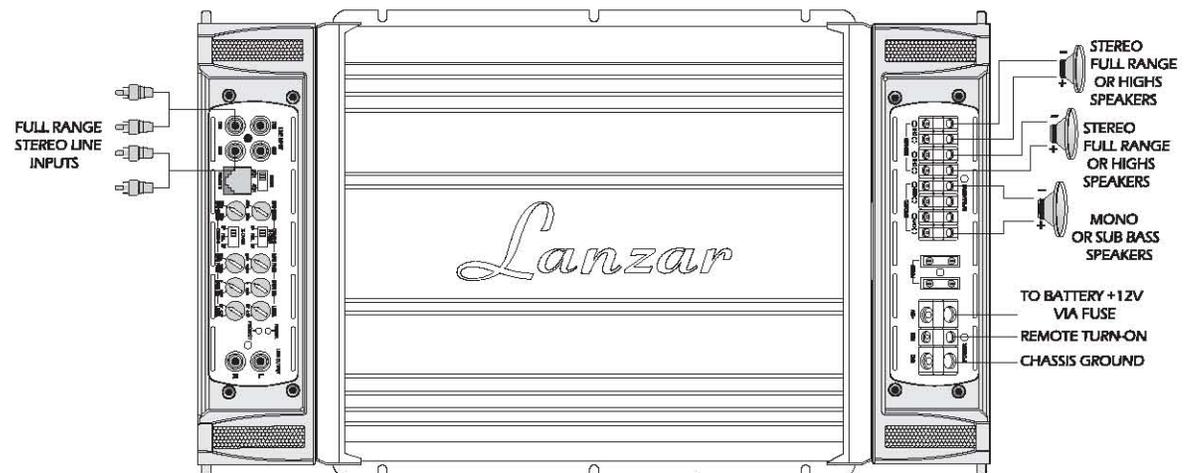
2 way active, or bi-amplified system with mono bass, and faded highs/ lows

Here we present a variation of the previous system. Since this is a 2 way system, we can use the front outputs from a head unit to drive the highs, and the rear output to drive the bass. This method allows the listener to easily adjust the relative levels of bass to highs, with the front to rear fade on the head unit. Channels 1 and 2 will be used for highs, and channels 3 and 4 for mono bass.

interconnect cable checklist:

- Use good quality RCA leads to connect the inputs of the amplifier to the source as shown.

- Follow the instructions as per the previous system for switch and crossover settings.



MAXP4260 4 CHANNEL AMPLIFIER APPLICATIONS

Front/ear high pass, using a 2 channel amplifier for mono sub bass

The combination of a 2 and a 4 channel amplifier, utilizing their built in crossovers, makes it a snap to put together a full system with front and rear highs, with mono sub bass.

Interconnect cable checklist:

- Using good quality RCA cables, feed the front and rear outputs of a head unit to the inputs of the 4 channel amplifier as shown.
- Also connect the **LINE OUT** of the 4 channel amplifier to the **LINE INPUT** of the 2 channel amplifier as shown.

Mono bass woofer wiring:

Connect the mono speaker positive terminal to the LEFT +, and its negative terminal to RIGHT -.

Switch setting checklist:

4 channel highs amplifier:

- 1/2CH X-OVER: HP
- 3/4CH X-OVER: HP

2 channel bass amplifier:

- X-OVER switch: LP

Crossover frequency control checklist:

- 4 channel highs amplifier:

Channels 1/2

- HIGH PASS: 100Hz
- LOW PASS: N/A

Channels 3/4

- HIGH PASS: 100Hz
- LOW PASS: N/A

2 channel bass amplifier:

- HIGH PASS (Subsonic filter): 10 Hz to 40Hz

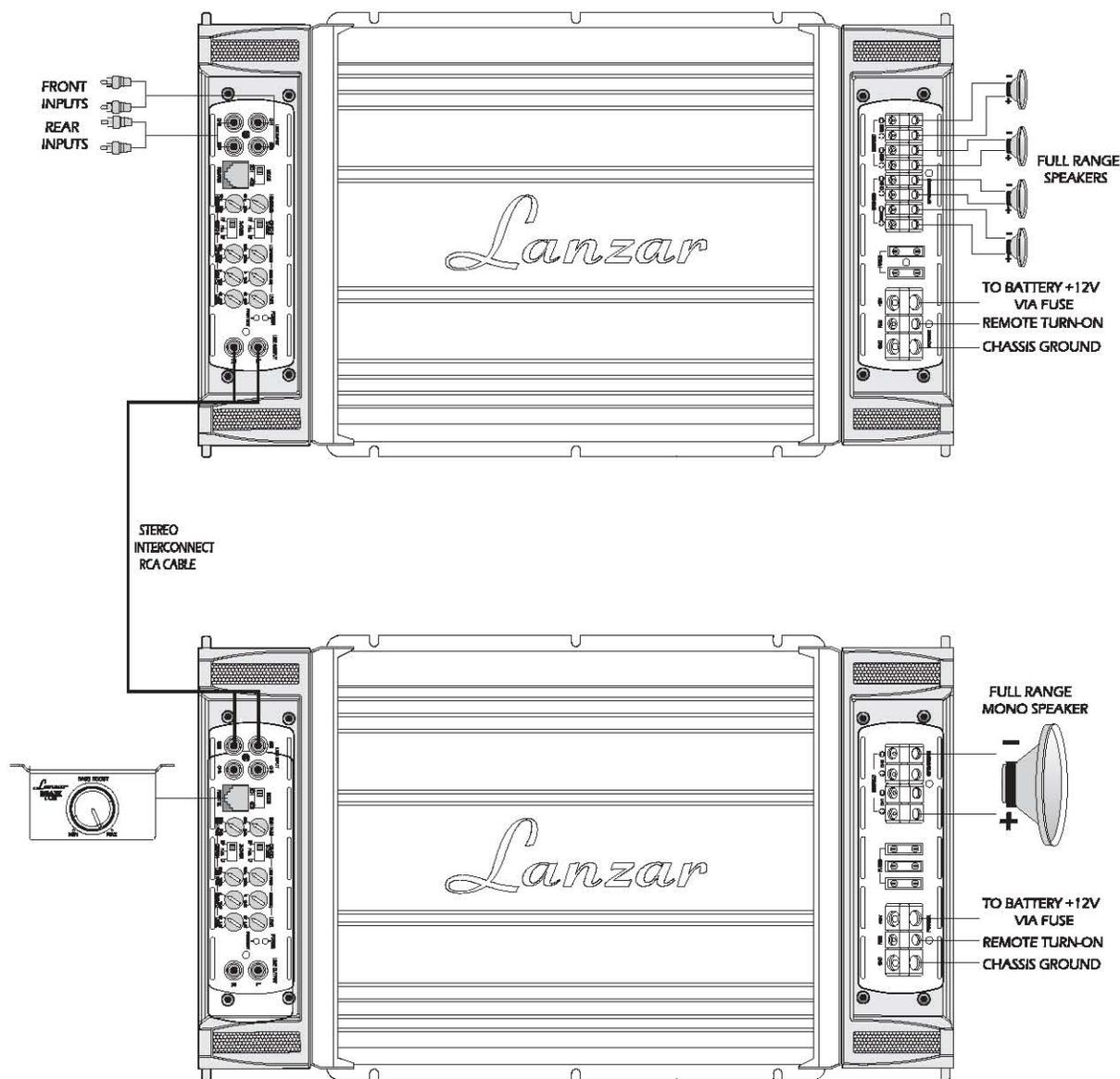
Please note that these frequency points are suggestions only. Refer to the loudspeaker manufacturer specifications and the section "Setting up systems after installation for best performance"

Level control checklist:

- Refer to the section "Setting up systems after installation for best performance"

Minimum final loudspeaker impedances:

- 2 ohm per channel in stereo mode.
- 4 ohm mono bridged.



SETTING UP SYSTEMS AFTER INSTALLATION FOR BEST PERFORMANCE

General:

At this point you are ready to get more specific on the settings for your amplifier.

High Pass:

-When in Hi Pass operation, this setting acts as a low frequency cut off for your system reproduction. The point that you set it at cuts off any frequencies from reproduction beyond this point. The 12 o'clock position is a great starting point. EXAMPLE: If you adjust the High Pass to 100Hz, the amplifier will not play frequencies below 100Hz but will play frequencies from 100Hz to the chosen Low Pass frequency.

-When in Low Pass/Bandpass operation, this setting acts as a low frequency cut off for your system reproduction aka Subsonic Filter. The point that you set it at cuts off any frequencies from reproduction beyond this point. The 12 o'clock position is a great starting point. EXAMPLE: If you adjust the High Pass to 25Hz, the amplifier will not play frequencies below 25Hz but will play frequencies from 25Hz to the chosen Low Pass frequency.

-When in Flat/Full operation, the High Pass crossover is bypassed.

Bass EQ:

This setting is a fixed bass boost at 45Hz that is variable from 0-10dB. This feature provides impact to your bass, but if not adjusted correctly, it can be over used and cause damage to your speakers and amplifiers. It is best to slowly turn this setting clockwise until the desired punch is felt. It is not recommended to exceed the 12 o'clock position unless listening at a low volume or a low recording quality as this can result in high distortion and possibly clipping.

Low Pass:

The Low Pass control acts as a ceiling and doesn't allow frequencies to the right of the desired setting to be reproduced. Turning the potentiometer all the way to the right is a great starting point. EXAMPLE: If you adjust the Low Pass to 120Hz, the amplifier will not play frequencies above 120Hz but will play frequencies from 120Hz to the chosen Hi Pass or Subsonic frequency.

-When in Hi Pass operation, this setting is bypassed.

Level Control Setup:

Ensure that the Level is turned completely to the left prior to turning the system on. Next you should insert a CD or cassette that you are familiar with to use as a reference, and turn the head unit volume control to about 80% of its full setting. The system sound level will of course be very low, and the following procedures will help you to match the amplifier input sensitivities properly to the head unit output signal level.

It is important to match the amplifier **LEVEL** input sensitivity to the Radio/CD output sensitivity. This can be located in the Radio/CD manual.

If the Radio/CD output sensitivity is 2 volts, then adjust the amplifier **LEVEL** input to 2 volts.

If you are not sure what the Radio output sensitivity is, follow these general guide lines:

Turn the level control up slowly, till you hear distortion, then back off a few degrees on the control . If at any point your amplifier goes into protection, you will need to turn the Level to the left a bit and then try again. If you reach a point where the output does not increase, stop turning the Level control to the right as the amplifier/speaker combo has reached its max output in this application.

2 or 3 way active systems (all):

Always start with the bass, or low frequency amplifier as a reference, by turning its control up to the point where distortion is audible, and back it off some. Now adjust the level control for the highs or tweeter channels in a 2 way active system, to balance the highs to lows.

In a 3 way active system, match the midrange level to the bass, and then the highs to the midrange and bass. It may be necessary to perform a few iterations of the midrange and highs level control settings to achieve a satisfactory sound balance.

Sit back and enjoy the music!

Lanzar MAX PRO SERIES AMPLIFIER FEATURES

MODEL	MAXP2760	MAXP2960	MAXP4260
Out Power Rating			
RMS at 4 Ohms	500Wx2	750Wx2	250Wx4
MAX at 4 Ohms	1000Wx2	1500Wx2	500Wx4
MAX at 4 Ohms Bridged	1200Wx1	3000Wx1	1000Wx2
RMS at 2 Ohms	800Wx2	1200Wx2	400Wx4
Miscellaneous Spec			
Soft Start Sound	Yes	Yes	Yes
Frequency Response -3dB	10Hz - 40KHz	10Hz - 40KHz	10Hz - 40KHz
Damping Factor	>200	>200	>200
S/N Ratio(A-Weight)	> 95dB	> 95dB	> 95dB
THD & Noise	< 0.05%	< 0.05%	< 0.05%
Channel Separation at 1KHz	> 70dB	> 70dB	> 70dB
Variable Input Level Control	0.2V-6.0V	0.2V-6.0V	0.2V-6.0V
Input Impedance	20kΩ	20kΩ	20kΩ
Power and Diagnostic LED	Power/Protect	Power/Protect	Power/Protect
Protection(DC, Short, Thermal, Overload)	Yes	Yes	Yes
Power Supply, all MOSFET PWM	Yes	Yes	Yes
MOSFET Outputs	Yes	Yes	Yes
Crossover and Swithcing			
Input Selector Switch			
Crossover S/W for 1+2 channel	Hp/FULL/LP-BP	Hp/FULL/LP-BP	Hp/FULL/LP-BP
Variable Hi-pass / Subsonic Filter	40Hz- 2kHz	40Hz- 2kHz	40Hz- 2kHz
Variable Low-pass (Mono 24dB)	30Hz- 150Hz	30Hz- 150Hz	30Hz- 150Hz
Bass Boost at 45Hz	0 - 10dB	0 - 10dB	0 - 10dB
Crossover S/W for 3+4 channel			
Variable Hi-pass	40Hz- 2kHz	40Hz- 2kHz	40Hz- 2kHz
Variable Low-pass / (Mono 24dB)	30Hz- 150Hz	30Hz- 150Hz	30Hz- 150Hz
Bass Boost at 45Hz	0 - 10dB	0 - 10dB	0 - 10dB
Line Output	Full Range	Full Range	Full Range
Unbalanced Input(RCA Jack)	Yes	Yes	Yes
Remote Control	Yes	Yes	Yes
Power Terminal	4-GA	4-GA	4-GA
Speaker Terminal	8-GA	8-GA	8-GA
Fuse Size	20Ax3	30Ax3	40Ax2
Dimensions (W x H x L) Inches	10.16"x2.56"x13.86"	10.16"x2.56"x15.83"	10.16"x2.56"x12.8"

Note: Features subject to change without notice

TROUBLESHOOTING

Before removing your amplifier, refer to the list below and follow the suggested procedures. Always test the speakers and their wires first.

AMPLIFIER WILL NOT POWER UP.

- Check for good ground connection.
- Check that remote DC terminal has at least 13.8v DC.
- Check that there is battery power on the +terminal.
- Check all fuses.
- Check that Protection LED is not lit. If it is lit, shut off amplifier briefly and then repower it.

HIGH HISS OR ENGINE NOISE (ALTERNATOR WHINE) IN SPEAKERS.

- Disconnect all RCA inputs to the amplifier(s)-if hiss / noise disappears, then plug in the component driving the amplifier and unplug its inputs. If hiss / noise disappears, go on until the faulty /noisy component is found.
- It is best to set the amplifier's input level as insensitive as possible. The best subjective S/N ratio is obtainable this way. Try to drive as high a signal level from the head unit as possible.

PROTECTION LED COMES ON WHEN THE AMPLIFIER IS POWERED UP.

- Check for shorts on speaker leads.
- Check that the volume control on the head unit is turned down low.
- Remove speaker leads, and reset the amplifier. If the Protection LED still comes on, then the amplifier is faulty.

AMPLIFIER(S) GETS VERY HOT.

- Check that the minimum speaker impedance for that model is correct.
- Check for speaker shorts.
- Check that there is good airflow around the amplifier. In some applications, an external cooling fan may be required.

DISTORTED SOUND

- Check that the Level control(s) is set to match the signal level of the head unit.
- Check that all crossover frequencies have been properly set.
- Check for shorts on the speaker leads.

HIGH SQUEAL NOISE FROM SPEAKERS.

- This is always caused by a poorly-grounded RCA patch cord.

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