Fender®

BXR

DUAL BASS 400
OWNER'S MANUAL

P/N 027622

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The DUAL BASS 400 AMPLIFIER is the most recent effort in state-of-the-art bass amplifier technology, and is a member of the FENDER BXR series. The design execution of the DUAL BASS 400 was carried out with the aid of some of today's best players, and represents years of thought and consideration in the determination of features and specifications. The features included in the DUAL BASS 400 will provide a forum for almost every conceivable playing style from "contemporary" to those yet to come.

Much attention has been given to those who would like to take advantage of the new signal processing devices which have appeared in recent time. A special MULTI-LEVEL effects loop allows the use of external processors from simple battery powered devices to professional rack mounted studio types. Two additional patch points have been provided such that separate HI-RANGE and LO-RANGE processing may be accomplished. Alternately, these points allow the use of FULL STEREO signal processing.

The preamp section of the DUAL BASS 400 features two inputs, of differing sensitivity. A pair of buttons called "ENHANCE" are provided to allow enhancement of the low or high end of the spectrum. An ELEVEN band graphic equalizer starting at 40 Hz, and extending to 10 kHz allows easy tailoring of your instrument's personality.

Two line out connections are included, one transformer balanced, and one unbalanced. The transformer balanced line out is very useful in large P.A. applications or in the studio. A front panel button allows the line feed to be taken before the preamp (pre) or after the preamp and multi-level effects loop (post).

For high level players who need the BI-AMP mode, a continuously variable electronic crossover is available at the push of a button. The crossover "FREQUENCY" is adjustable from 200 Hz, to 2.2 kHz. With the BI-AMP MODE employed, the two power amplifiers are now separated to provide 200 Watts for the high end and an additional 200 Watts for the low end. In the STEREO MODE, the same full range signal is sent to both power amplifiers, with stereo signal generation available through the use of external signal processing.

The dual 200 Watt power amplifiers were designed to give reliable service under all conditions and are equipped with our exclusive DELTACOMP adaptive compression system. When DELTACOMP engages, it is practically impossible to cause the power amplifiers to clip (distort). With DELTACOMP, apparent compressor release time is kept short yet waveform distortion is kept to a minimum at low frequencies.

The DUAL BASS 400 is designed to perform well with almost any high quality speaker system, but performs best when used with members of the FENDER BXR series. Speakers in this series are the BXR-115, with a single fifteen inch FENDER special design driver, BXR-410 with four ten inch FENDER special design drivers or the BXR SPECTRUM, employing one eighteen inch and two ten inch FENDER special design drivers and a BI-AMP ready crossover network.

That is why we say, proudly...FENDER, The Sound That Creates Legends.

WARNING: TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE AMPLIFIER TO RAIN OR MOISTURE.

SUGGESTED FIRST TIME OPERATION

If this is the first time you've used a FENDER DUAL BASS 400 we suggest that you try the following first time control setting procedure.

If the speaker you're using is capable of BI-AMP operation, refrain from attempting it for now. Turn the gain to "0", set all eleven equalization controls to their mid position ("0"). Be sure the crossover button is out, and the volume is at "0". With the speakers connected through a suitable cable, NOT AN INSTRUMENT CABLE, and your bass plugged in to input 1, turn the power switch to ON. You should hear a very slight "thud".

Now turn the volume to "5", and advance the gain to the desired position. If the sound you hear does not suit you, try using the LOW and/or HIGH ENHANCE buttons first, and move on to the equalization controls. When using the equalization controls, proceed with caution, so that you don't confuse yourself with the almost infinite number of possible settings. Refrain from using more than five sliders simultaneously. Eleven sliders are provided so that a nearly infinite variety of sounds may be created. Don't try to create them all at the same time!

OPTIMIZING DELTACOMP PERFORMANCE

With the volume at "5" as described under "suggested first time use" you have reduced the DELTACOMP range by about 6dB. This is acceptable, provided the DELTACOMP indicators are not being triggered too often. If they are, you may get to the point where the preamp will start to distort. To avoid this, advance the volume to maximum and reduce the gain a like audible amount. Playing hard into DELTACOMP is harmless but will result in a "compressed" sound and will eventually result in preamp distortion which may sound unpleasant.

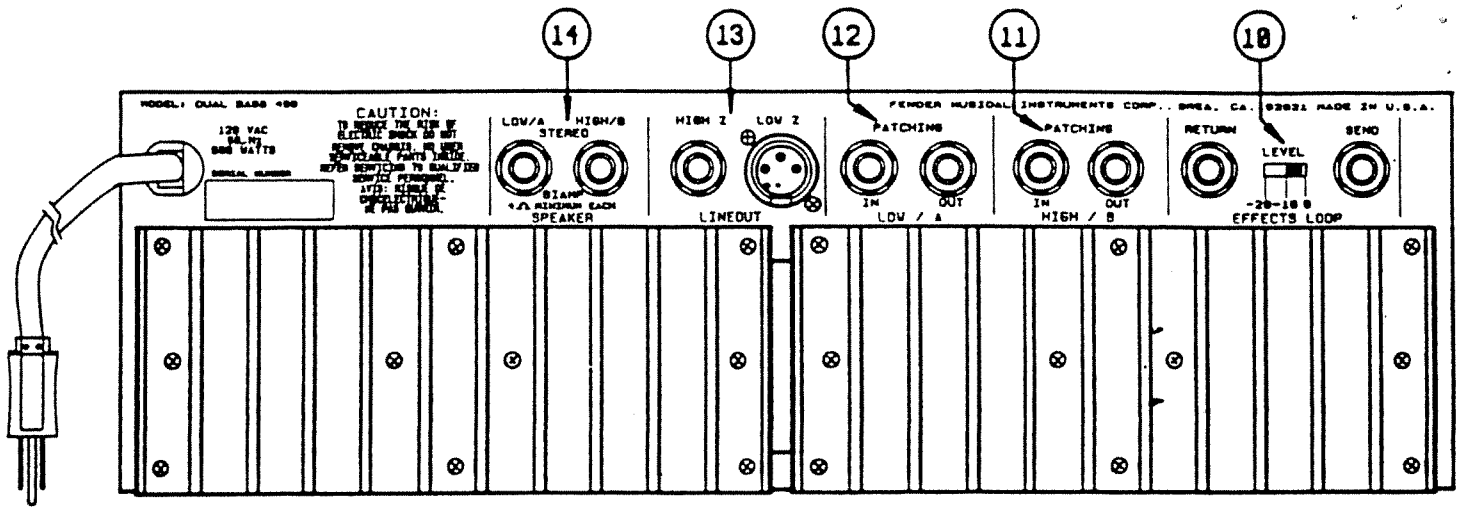
SETTING UP EXTERNAL SIGNAL PROCESSING

External signal processors may be used as previously described. Devices used in the multi-level effects loop may be set up as follows:

Connect the device to the effects loop so that the send jack is connected to the input of the external processor, and the return jack is connected to the output of same. Set the level switch to "0". With the volume at "10", adjust the gain to performance volume and note if the external processor distorts or clips (some devices have a warning light). If any of these things occur, adjust the effects loop level switch to -10 or -20, but always try to stay as near to "0" as possible.

Some processors such as FLANGERS are best used in the "HIGH/B" patching path while in the BI-AMP MODE. Doing this will preserve low frequency fundamentals, which are often notched out by FLANGERS.

Stereo chorus is well suited by using both the HIGH/B and LOW/A patching points. Connect the input of the chorus to either patching out jack and return the stereo chorus outputs to the two "in" jacks (it doesn't matter how you assign the output jacks of the chorus to the patching inputs). Set the CROSSOVER button in the STEREO MODE.



REAR PANEL DESCRIPTION

10. EFFECTS LOOP: The effects loop send is an output used as a signal source to an external signal processing device. The effects loop return is an input used to receive the return signal from the external signal processing device. The effects loop level adjusts the level sent to and expected from the external processing device. Adjustment of this switch WILL NOT cause an apparent level shift. In the "0" position, the loop level is 1 volt R.M.S. When at "-10dB" the level is .316 volt R.M.S. With the level switch at "-20dB" the loop level will be .100 volt R.M.S. For most "rack mount" type effects the "0" position should be ideal. Floor type effects boxes may need either the -10dB or -20dB settings. Experiment until you achieve the sound you want.

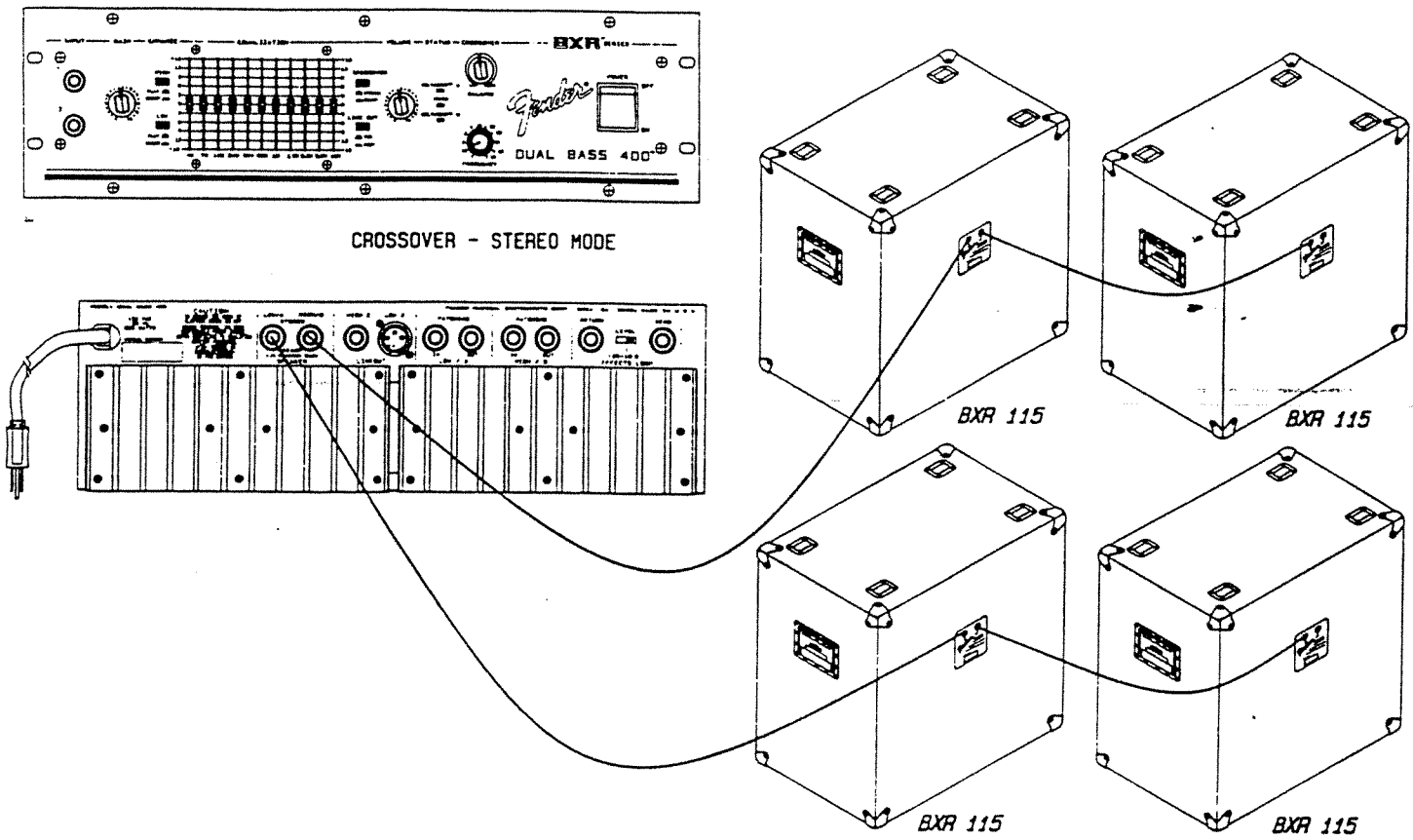
11. PATCHING HIGH/B: The patch jacks labeled "HIGH/B" are used to connect an external signal processing device into the signal path connected to the HIGH/B Speaker Jack. This power amplifier receives either a full range input (crossover set to stereo) or high range (crossover set to BI-AMP).

12. PATCHING LOW/A: As above but for the "LOW/A" power amplifier and associated crossover signal source.

13. LINE OUT: Low Z output is at -10 dBm at full output power (DELTACOMP threshold), suitable for P.A. mixer line input or a microphone channel with the attenuator pad set to at least -10dB of input pad. The high Z line out is suitable for connection to unbalanced line inputs employed on typical P.A. mixers. The output level is 1 volt R.M.S. at full output power (DELTACOMP threshold).

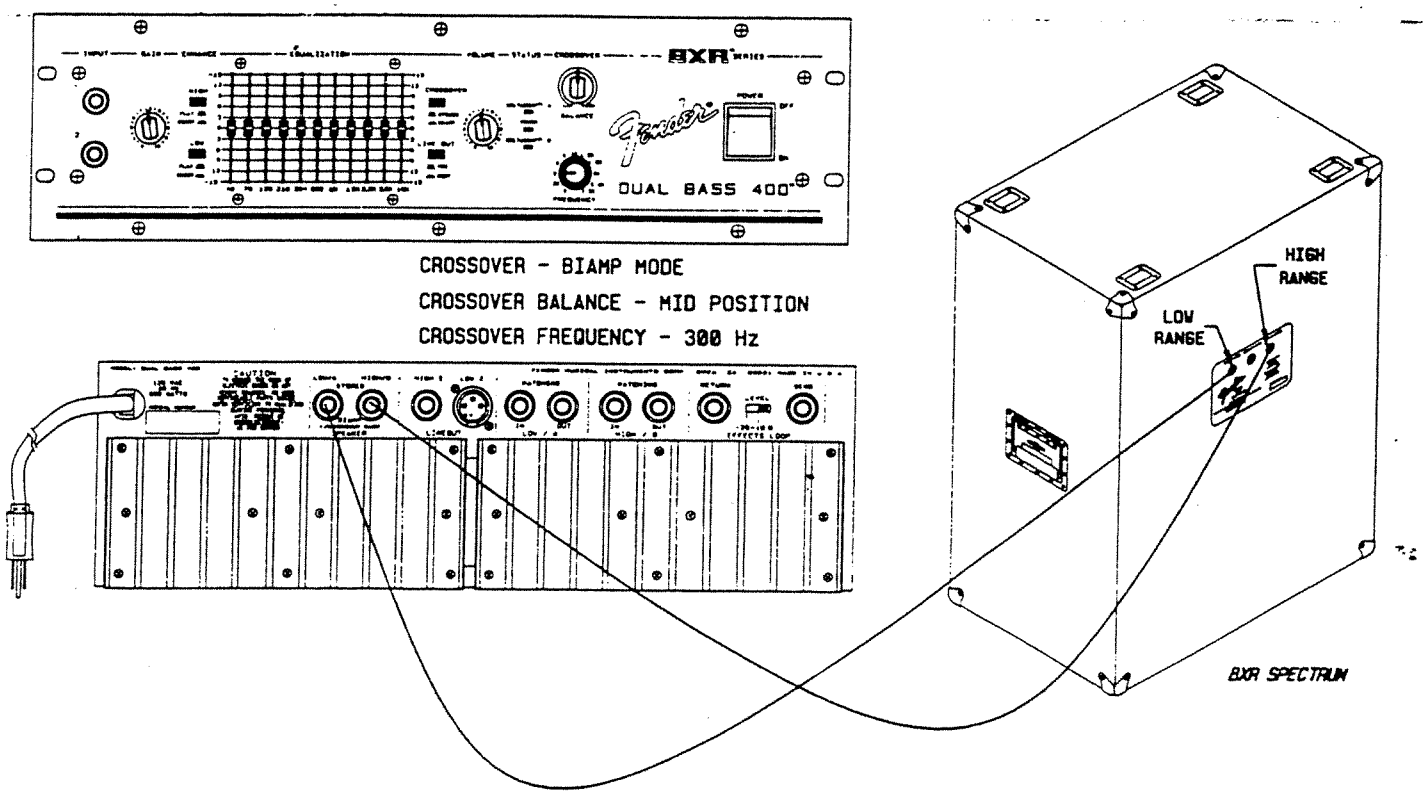
14. SPEAKER: Speaker connections are four ohms minimum each, and are full range in the crossover STEREO MODE, or are divided into high range and low range when in the BI-AMP MODE.

FIGURE #3



CROSSOVER - STEREO MODE

FIGURE #4



CROSSOVER - BIAMP MODE

CROSSOVER BALANCE - MID POSITION

CROSSOVER FREQUENCY - 300 Hz

SUGGESTED SPEAKER ARRANGEMENTS

There are an almost infinite number of speaker setups possible, what with the variety of speaker systems available. We will attempt to describe four typical situations.

FIGURE 2 shows a common BI-AMP connection using two FENDER BXR-115's and two FENDER BXR-410's. This configuration is a good all around HIGH LEVEL system to cover the needs of most players.

FIGURE 3 is another common connection favored by the bassist who wants extremely high level, and the ability to accommodate stereo signal processing. It should be noted that four 15" speakers have 50% more cone area than two 18" speakers.

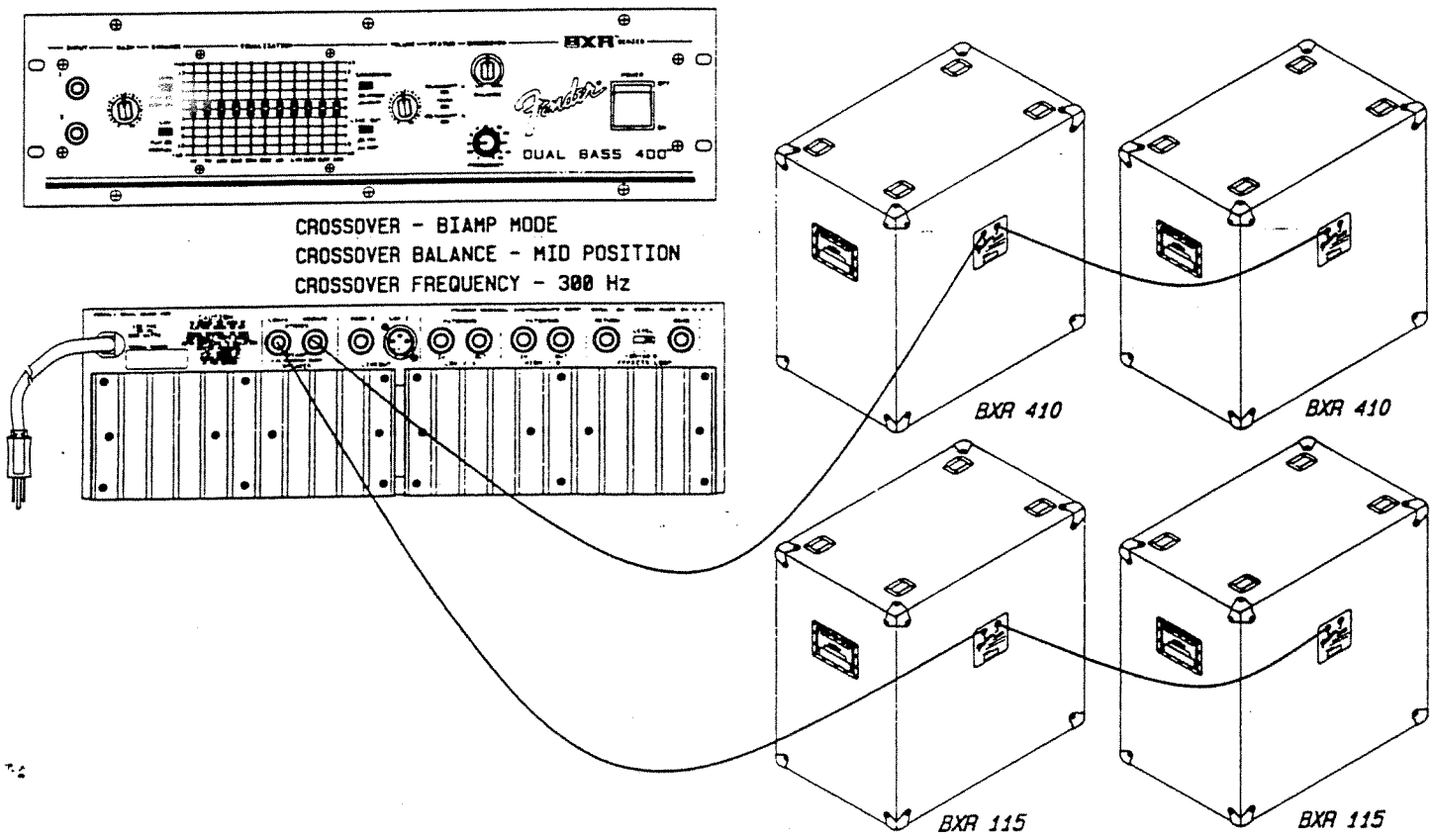
FIGURE 4 illustrates one FENDER BXR SPECTRUM system operating in BI-AMP mode. With its 18" woofer, the SPECTRUM is ideal for five string bass.

FIGURE 5 is an example of two FENDER BXR SPECTRUM's in the STEREO MODE, the ultimate system for the five string artist.

PARALLEL SPEAKERS

When speakers are connected in parallel, as in the example of FIGURE 2 (top BXR-410's or bottom BXR-115's), the impedance for two equal systems will halve, (system impedance divided by the number of systems in parallel equals the new impedance.) The minimum for the FENDER DUAL BASS 400 is 4 ohms per speaker jack. There is no maximum (if no speakers are connected, no harm will result).

FIGURE #2



POWER AMPLIFIER SECTION

Power output both channels simultaneously ..... 200/200 Watts
Rated load impedance ..... 4 Ohms
Distortion at rated power ..... Less than .25%
Damping factor, at 4 Ohms ..... Greater than 100
Power bandwidth ..... 20 Hz - 20 kHz
Input sensitivity ..... 1 Volt R.M.S.
Input impedance 10k
Slew factor ..... Greater than 1
Signal to noise ratio ..... -100dB below rated output
DELTACOMP range 20dB

EFFECTS LOOP

Output impedance 1k
Input impedance 30k
Level at "0 LEVEL" position ..... 1 Volt R.M.S.

CROSSOVER

Type ..... Three pole Butterworth
Frequency range ..... 200 - 2.2 kHz
Balance range 15dB

LINE OUT

High Z ..... 1k, 1 Volt
Low Z ..... 600 ohm, -10 dBm

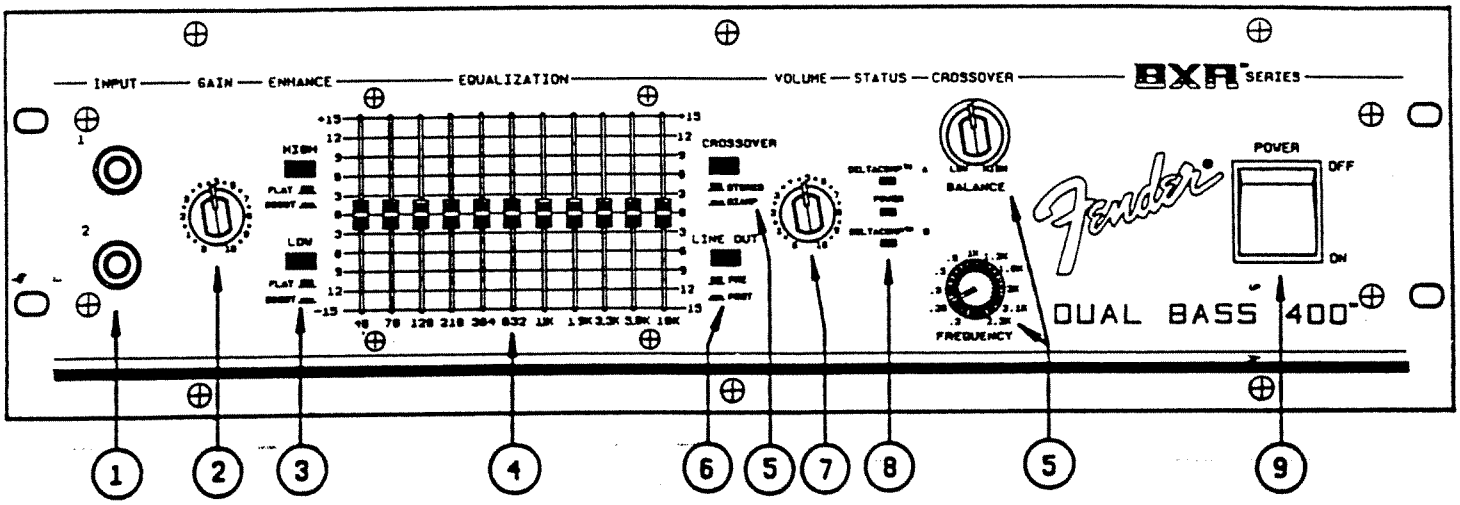
EQUALIZATION

Eleven bands, centered at 40, 70, 120, 210, 364, 632, 1.1k, 1.9k, 3.3k, 5.8k and 10k.
Range ..... ± 15dB

PREAMP

Input impedance ..... Input 1 = 280k
Input 1 = 84k

Overall signal to noise ratio, volume at max, gain at min,
equalizer at "0", enhance buttons out ..... -95dB below rated output



FRONT PANEL DESCRIPTION

The front panel contains twenty-five items for system operation and observation. These items are broken into nine groups as shown in the illustration below.

1. **INPUT:** Two inputs are provided: Input 1—High gain
   Input 2—Low gain

The high gain input (INPUT 1) should be used for most instruments. This input can handle as much as 3.5 volts R.M.S., while the low gain input (input 2) accepts 7 volts R.M.S. without audible distortion. For both cases this is greater than any active bass with a 9 volt battery can produce. If you are using a bass with dual 9 volt batteries, or a "hot" passive bass it might be wise to try input 2. For the rare case where two players want to use one amplifier, or where two instruments are to be used during the performance, both inputs may be used. In this mode both inputs will now accept 7 volts R.M.S.

2. **GAIN:** This control sets the gain of the preamp and will serve as an adjustment for the "loudness" of the amplifier.

3. **ENHANCE:** HIGH ENHANCE provides high frequency boost.
   LOW ENHANCE provides low frequency boost, while eliminating sub-sonic noises below 40 Hz.

4. **EQUALIZATION:** 11 band graphic equalizer (40 Hz to 10 kHz). Each slider will boost or cut its particular frequency 15dB. Experiment with each slider to hear the effect of boost and cut on the sound of your instrument. The EQUALIZER is most effective when the majority of the sliders are left in the "0" position and selected frequencies are changed. Setting all sliders up or all sliders down does not cause a relative change in the sound of the instrument, but rather merely causes a change in the level.

5. **CROSSOVER:** STEREO MODE (button out) provides the same signal to both Speaker Jacks.
   BI-AMP MODE (button in) activates CROSSOVER.

In the BI-AMP MODE the Frequency Control will adjust the point where the split between high and low takes place. The Crossover Balance Control adjusts the balance between the high and low frequencies.
Refer to the operation manual for your speaker enclosure for recommended crossover settings.

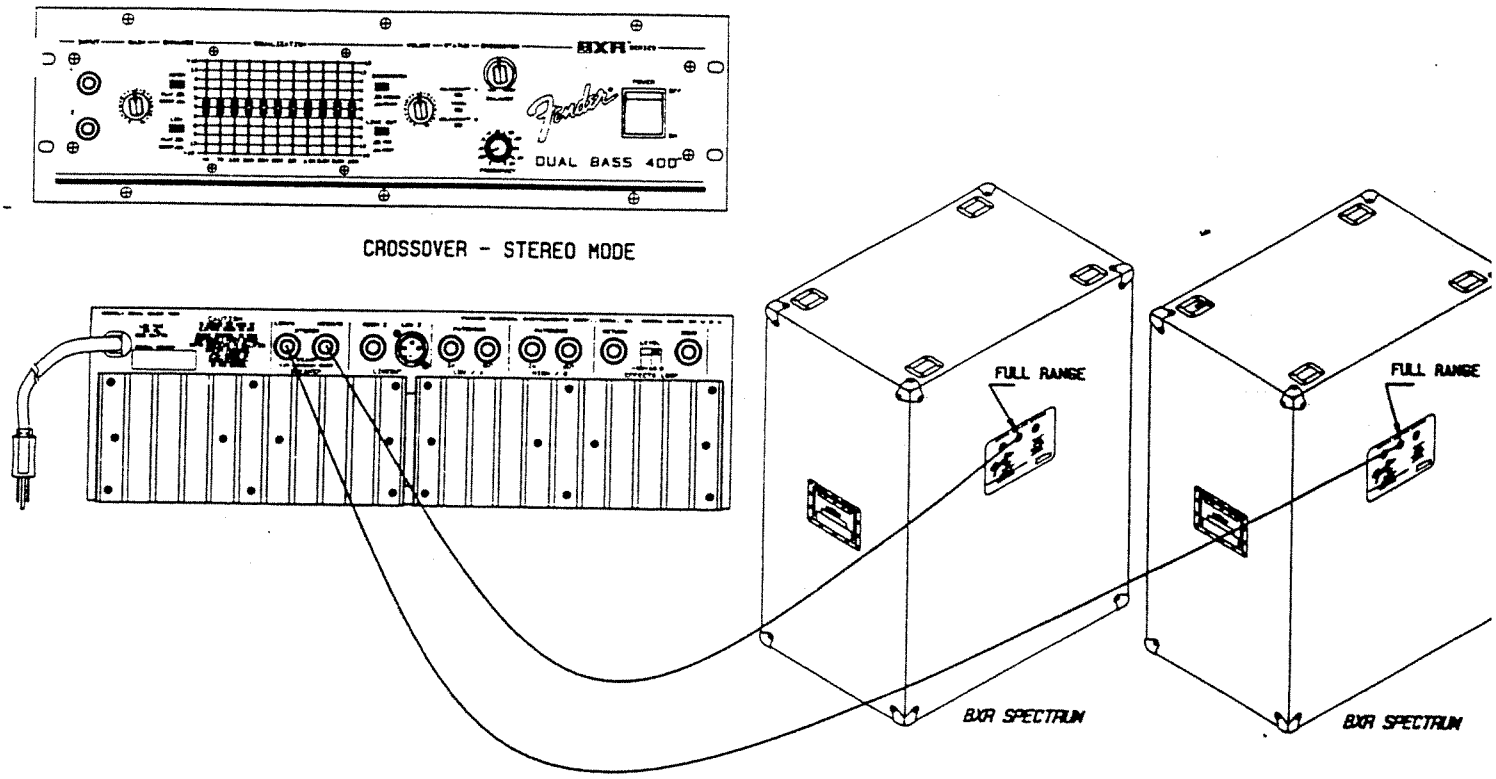
6. **LINE OUT:** The line out button selects line feed either before the preamp (pre) or after the preamp and multil-level effects loop (post).

7. **VOLUME:** The volume control sets the preamp output level. It should be left fully clockwise if possible, so that preamp clipping will not occur. The volume may be reduced in the studio where super low noise performance is required. Reducing volume will hinder the performance of DELTACOMP.

8. **STATUS:** Amber pilot lamps indicate when DELTACOMP A or B is active. Under normal playing conditions the DELTACOMP lights will be active. The red pilot lamp indicates when the unit is on.

9. **POWER:** Turns the DUAL BASS 400 on or off.

FIGURE #5



CROSSOVER - STEREO MODE