

Owner's Manual

PEAVEY[®]



DPC[™] **750**

Digital Power Converter

WARNING: TO PREVENT ELECTRICAL SHOCK OR FIRE HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. BEFORE USING THIS APPLIANCE READ THE OPERATING GUIDE FOR FURTHER WARNINGS.



CAUTION: Risks of electrical shock - DO NOT OPEN.



CAUTION: To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer Servicing to qualified service personnel.

Introduction

Congratulations on your purchase of the DPC™ 750. You have just bought an amplifier which is the first of an innovative new breed of amplifiers that represents a significant departure from conventional amplifiers.

The DPC 750 is a highly efficient switching amplifier using a **phase modulated** concept. The advantages of this concept are: higher efficiencies, lighter weight, and a more reliable unit than has previously been possible. Internally the circuit partitioning becomes much less complex since the power amplifier and power supply sections now become fully integrated with each other, which leads to greater reliability and improved serviceability.

The DPC 750 is a highly efficient (greater than 90% at all output levels) power converter capable of delivering up to 350 watts RMS (continuous) and up to 500 watts (program) into a 4 ohm load with both channels driven. The DPC 750 can be run in a bridged mono mode which is capable of delivering up to 700 watts RMS (continuous) and up to 1000 watts (program) into an 8 ohm load.

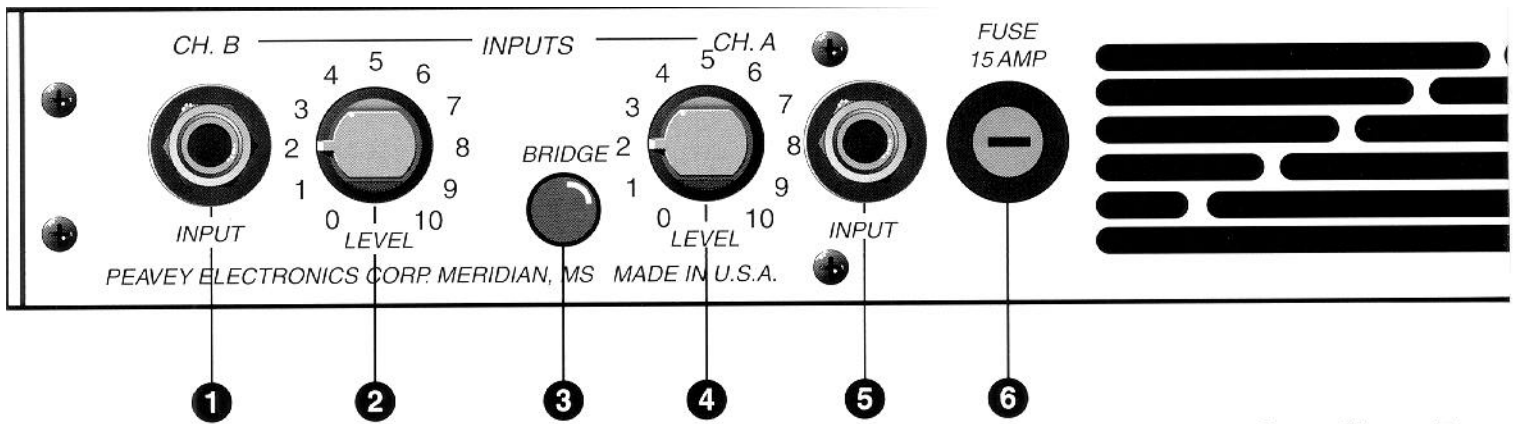
Features

In the event of abnormal conditions the DPC 750 is equipped with **thermal, short circuit,** and overload protection against amplifier system failure. The DPC 750 features a modified version of Peavey's patented **DDT™ Compression** circuitry to minimize distortion due to clipping at the maximum energy transfer levels. **Signal** and **DDT** indicators have been combined into a single bi-colored LED for each channel. An input signal is indicated by the signal LED turning green. Whenever the DDT circuit is activated, the signal LED will turn red. When the signal returns to a level below the danger of clipping, the signal LED will return to green. Status LEDs have been included to indicate normal (green) and fault (red) conditions. In Bridge mode the Channel B status LED will turn off; however, the signal LED will still be active.

Common Terms

These are brief descriptions of some commonly used terms for your familiarity.

- | | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Balanced Input | - Poor, improper, or inadequate grounding practices in a sound system often result in objectionable levels of hum and noise . A balanced input will minimize this by attempting to cancel out common mode signals. |
| Bridge Mode | - When the bridge mode is engaged the output of the amplifier is mono and the full output power of the amplifier is available to one speaker. (see wiring diagrams) |
| Clipping Distortion | - The failure of the amplifier to faithfully reproduce the input signal. This type of distortion can cause damage to speakers. |
| Continuous | - This is a non-changing uninterrupted duty cycle signal (e.g. a sine wave) which is typically used for reference. |
| Headroom | - This is the reserve power above the rated power of the amplifier. |
| Input Sensitivity | - This is the RMS voltage level required at the input to produce full power into the rated load at the output. (On the DPC 750 the Input Sensitivity control is calibrated as a volume control. For reference, an input sensitivity of 10 on the DPC 750 corresponds to an input sensitivity of +0 dBv.) |
| Line Level | - Approximately 1 volt RMS. This means that an amplifier with an input sensitivity of dBv will need 1 volts at the input to produce the rated output. (350 watts RMS stereo with the DPC 750). |
| Program | - This is a changing or variable signal (e.g. music). |



Cooling Fan

Back Panel Layout

Devices that produce suitable line level output used for the amplifier input are:

1. All types of Pre-Amps
2. Mixers
3. Crossovers
4. Equalizers
5. Keyboards / Synthesizers

See figures for wiring options.

1. Balanced Input (Channel B)

A 1/4" stereo (RTS) jack is provided for input connection.

2. Input Sensitivity (Channel B)

This controls the level at which the input signal will enter the amplifier and how sensitive to distortion the signal will be. A setting of zero will not produce any output, while a setting of 10 will produce the maximum output.

3. Bridge Mode Selector

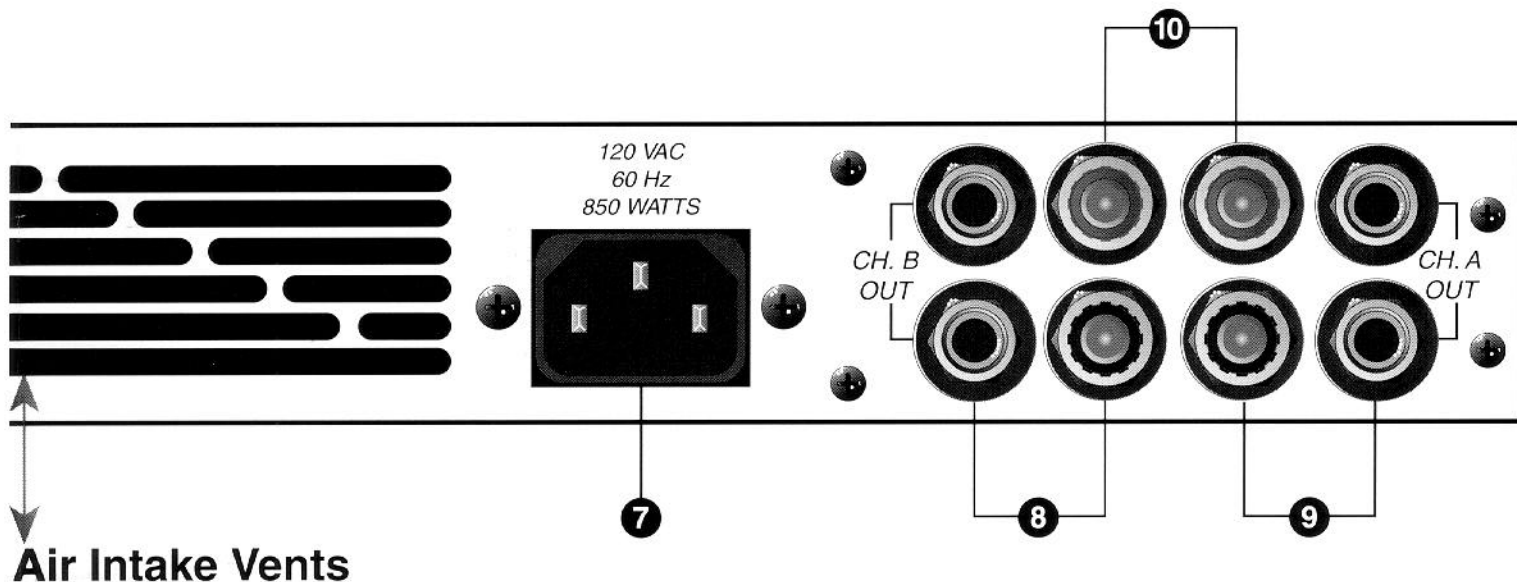
This button is provided to choose between stereo operation and bridged mode (mono) operation. To select the bridge mode the button should be in the 'in' position.

4. Input Sensitivity (Channel A)

This controls the level at which the input signal will enter the amplifier and how sensitive to distortion the signal will be. A setting of zero will not produce any output, while a setting of 10 will produce the maximum output.

5. Balanced Input (Channel A)

A 1/4" stereo (RTS) jack is provided for input connection.



6. Fuse

WARNING: THE FUSE SHOULD ONLY BE REPLACED WHEN THE POWER CORD HAS BEEN DISCONNECTED FROM ITS POWER SOURCE.

The fuse is located within the cap of the fuse holder. *It must be replaced with the same type and value in order to avoid damage to the equipment and to prevent voiding the warranty.*

If the amplifier repeatedly blows fuses, it should be taken to a qualified service center for repair.

7. Line Cord (120 V Products only)

For your safety, we have incorporated a 3-wire lines (mains) cable with proper grounding facilities. It is not advisable to remove the ground pin under any circumstances. If it is necessary to use the equipment without proper grounding facilities, suitable grounding adaptors should be used. Greatly reduced shock hazard exists when the unit is operated with the proper grounded receptacles.

8. Speaker Outputs (channel B)

There are two 1/4" jack and one binding post outputs provided for the connection of external speaker(s). Minimum total impedance is 4 ohms.

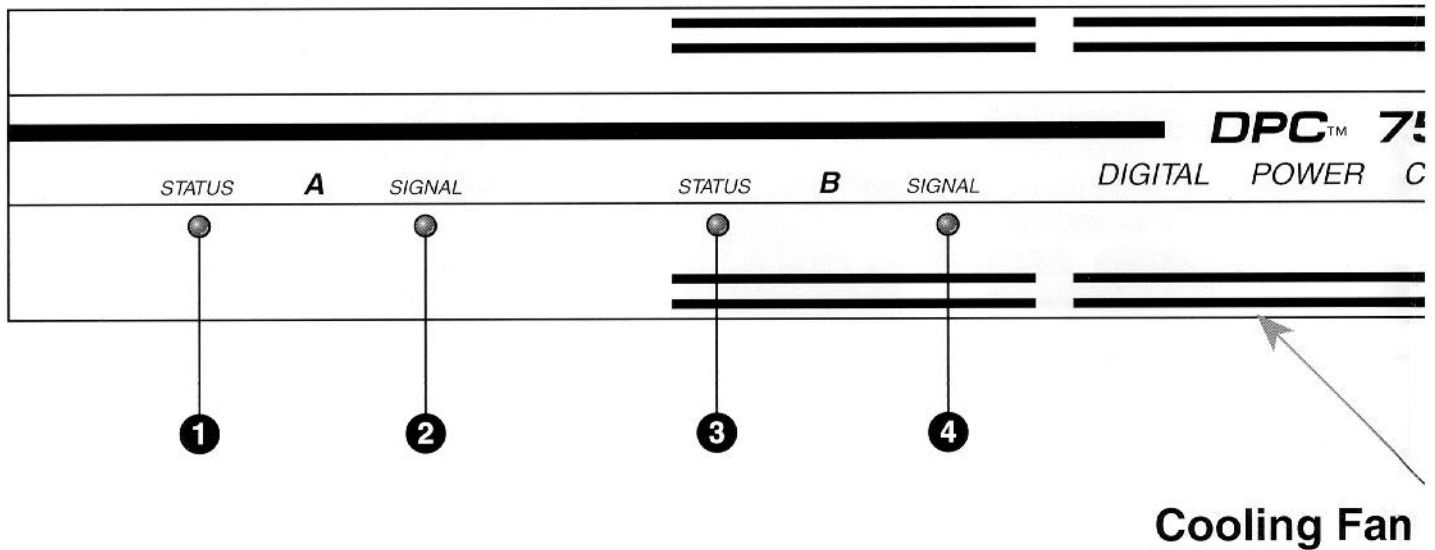
9. Speaker Outputs (channel A)

There are two 1/4" jack and one binding post outputs provided for the connection of external speaker(s). Minimum total impedance is 4 ohms.

10. Red Colored Binding Posts

Use the banana plug in the *red binding posts* when in the bridged mode of operation.

When in bridge mode, the positive terminal is Channel A's binding post. (see bridge mode figure)



Front Panel Layout

1. Status (Channel A)

This is a bi-colored LED used to indicate the status of channel A. If you turn on the amplifier and BOTH status LEDs are not lit, follow the procedure to check if the fuse needs replacing.

If you turn on the amplifier and only the channel A status LED is on, check to see if you are in the bridge mode.

If the LED is green, this indicates that the amplifier is operating properly.

If the LED glows a steady red, the amplifier has overheated and will shut down. If this happens you can expect the amplifier to start operating in approximately 5 minutes or less.

If the LED pulsates red, this indicates that there is an internal problem with the amplifier and it should be serviced by a qualified service technician.

2. Signal (Channel A)

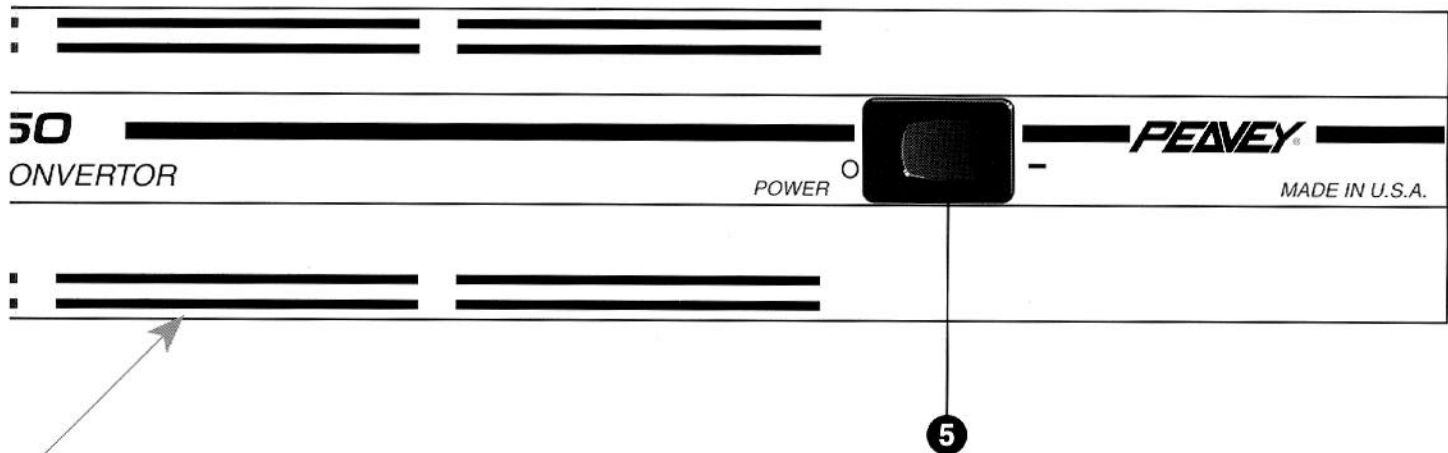
This is a bi-colored LED to indicate the signal status of channel A.

If the LED is not lit, this indicates that there is not an input signal. This could happen two ways:

1. Nothing is plugged into the channel A jack, **OR**
2. The Input Sensitivity is set on (0) zero.

If the LED is green, steady, **OR** flickering, this indicates that a signal is present.

If the LED is red, this indicates that the DDT circuit is active.



Exhaust Vents

3. Status (Channel B)

This is a bi-colored LED used to indicate the status of channel B. If you turn on the amplifier and BOTH status LEDs are not lit, follow the procedure to check if the fuse needs replacing.

If you turn on the amplifier and only the channel B status LED is on, check to see if you are in the bridge mode.

If the LED is green, this indicates that the amplifier is operating properly.

If the LED glows a steady red, the amplifier has overheated and will shut down. If this happens you can expect the amplifier to start operating in approximately 5 minutes or less.

If the LED pulsates red, this indicates that there is an internal problem with the amplifier, and should be serviced by a qualified service technician.

4. Signal (Channel B)

This is a bi-colored LED to indicate the signal status of channel B.

If the LED is not lit, this indicates that there is not an input signal. This could happen two ways:

1. Nothing is plugged into the channel B jack, **OR**

2. The Input Sensitivity is set on (0) zero.

If the LED is green, steady, **OR** flickering, this indicates that a signal is present.

If the LED is red, this indicates that the DDT circuit is active.

5. Power Switch

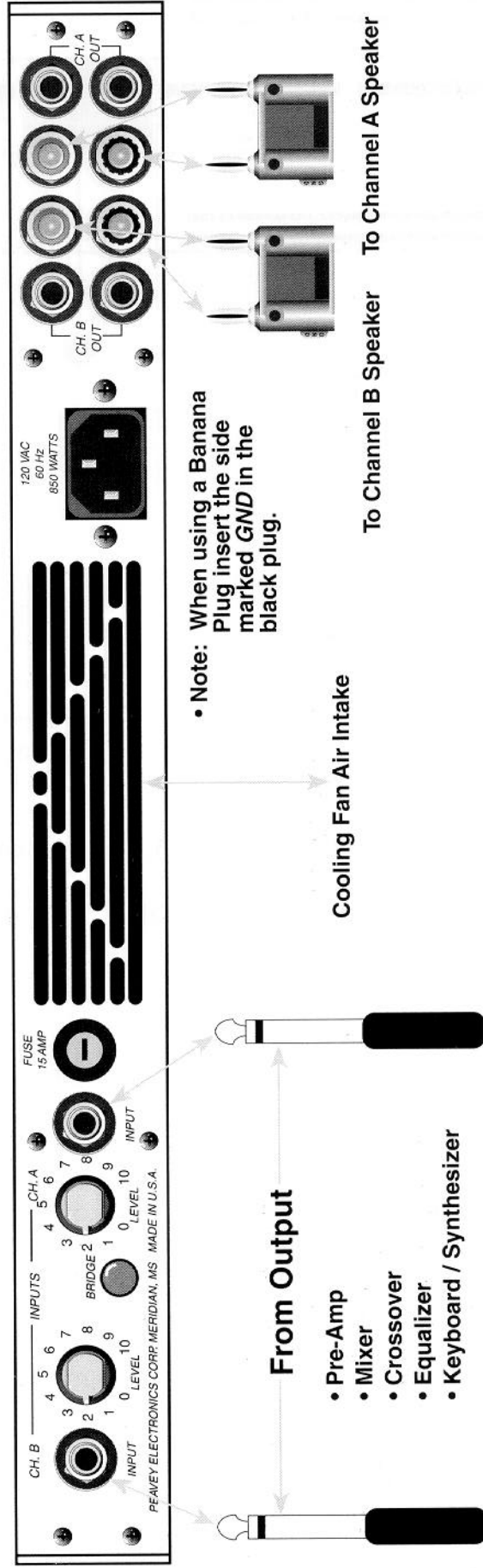
DDT™ Compression

Each of the two internal power amplifiers is equipped with Peavey DDT circuits which will automatically engage to prevent clipping distortion within the power amplifier.

Cooling Fan

To protect against possible overheating, the amplifier is supplied with an internal fan. The fan will operate at all times when the amplifier is turned on. To ensure efficient operation, the fan exhaust port and intake ports should be unobstructed at all times.

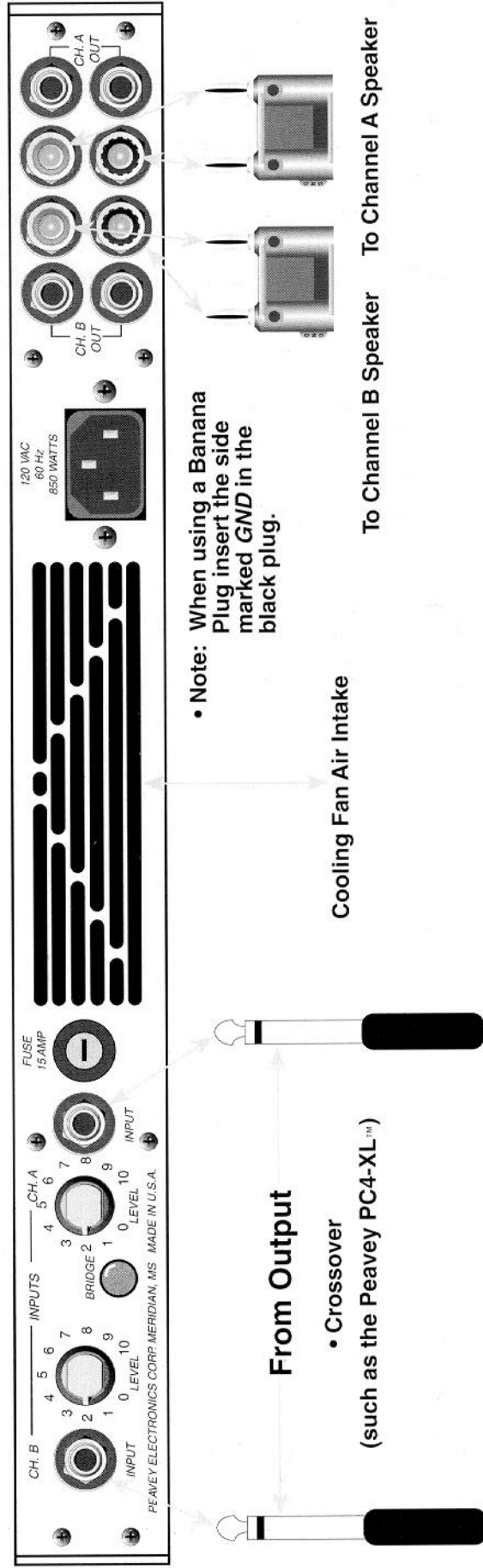
Stereo Diagram



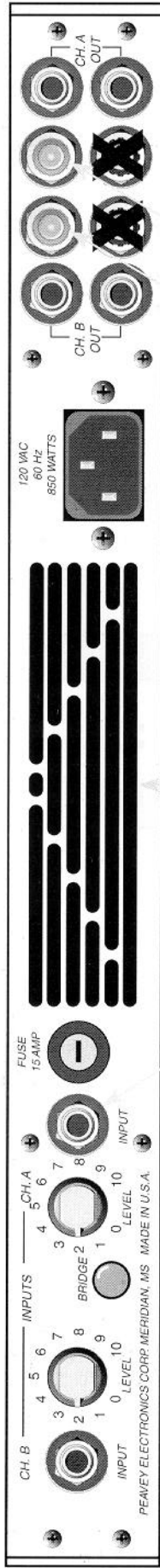
BI-AMPING

There are many good reasons for using a bi-amplified professional system as opposed to a system with traditional high-level crossovers. One reason is that a bi-amplified system can actually provide more headroom with the same power amplifier complement than a system using high level passive crossovers. This term "headroom" deserves some consideration. Program material (music or speech) is made up of many different frequencies and harmonics. Most music, especially popular music, is bass heavy; that is, the low frequency material contains much more energy than the high frequency material. When both high and low frequency material, such as voice and bass guitar, are present in a program, the high-energy bass frequencies can "use up" most of the power available from the power amplifier leaving little power for the high frequencies. The result can be severe clipping (distortion) of the high frequency material. In the bi-amplified system, the high frequency material can be routed to its own power amplifier, which minimizes the clipping problem. This results in an effective increase in headroom that is greater than would be obtained by simply using a single larger power amplifier. (see Bi-Amping Diagram.)

Bi - Amp. Diagram



Bridge Mode Diagram



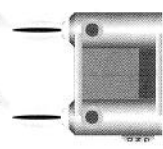
• Note: During Bridge Mode operation Channel B input is not used.

From Output

- Pre-Amp
- Mixer
- Crossover
- Equalizer
- Keyboard / Synthesizer

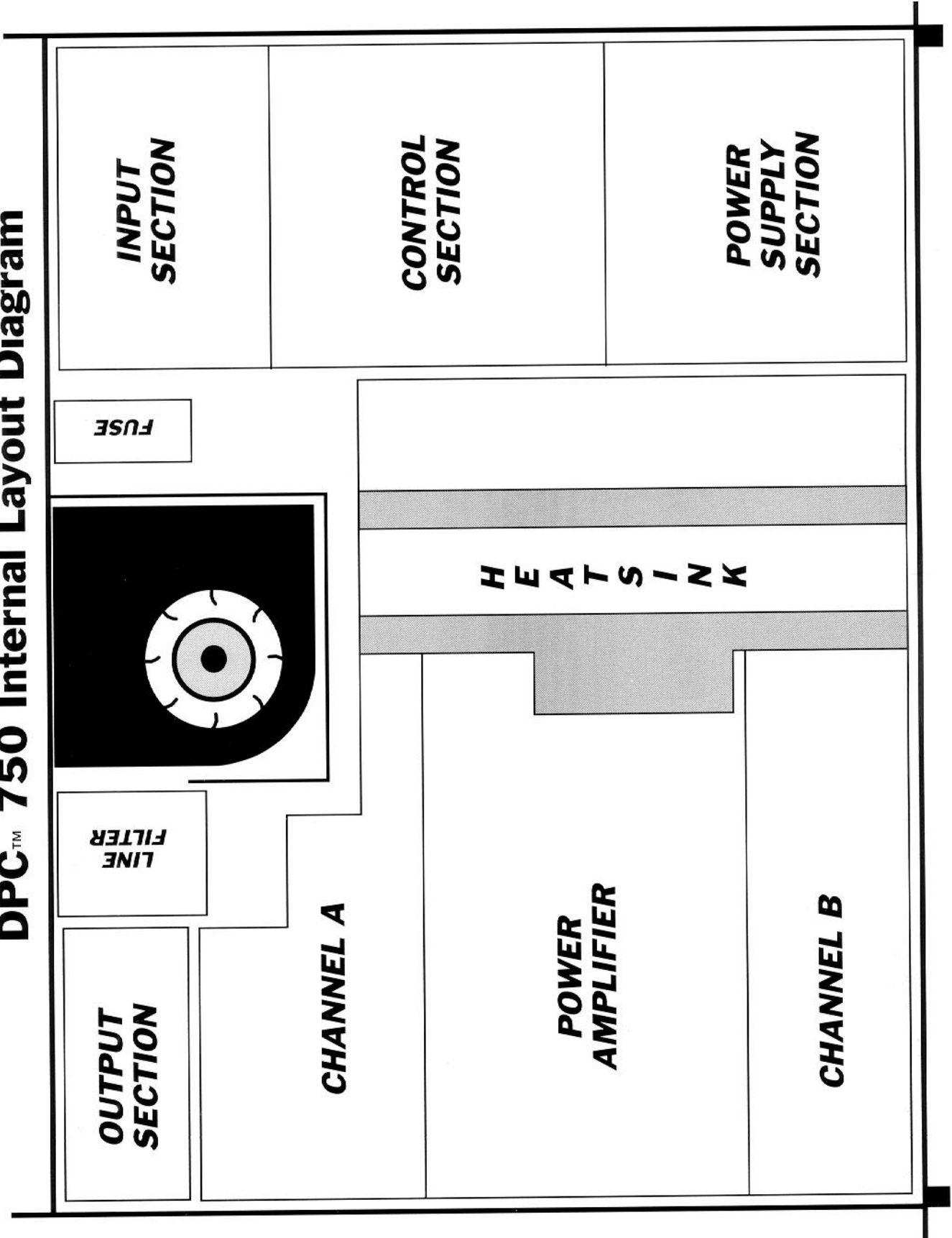


Cooling Fan Air Intake



To Speaker

DPC™ 750 Internal Layout Diagram



SPECIFICATIONS

Frequency Response

+0, -1.5 dB 20 Hz to 20 kHz @
1 W RMS into 4 ohms

Rated Power

400 W RMS (1 channel driven) into 4 ohms
350 W RMS per channel (both channels driven)
into 4 ohms
700 W RMS (Bridge mode mono) into 8 ohms

Total Harmonic Distortion

Less than .2 % @ 325 watts RMS per channel
into 4 ohms

Transient Intermodulation Distortion

None present (0 % TIM)

Output Slew Rate

The amplifier output slew rate is internally controlled to optimize phase linearity and improve transient response. Due to the nature of the amplifier design and the internal signal conditioning circuitry, it cannot slew rate limit.

Hum and Noise

Greater than 85 dB below full power
(20 Hz to 20 kHz)

Input Sensitivity

1.0 V RMS for 350 watts into 4 ohms

Load Protection

Short circuit current limit. Thermal overload.
Turn on and turn off transient muting.

Load Impedance

4 ohms or greater (stereo), 8 ohms or greater (bridged mode). (Unconditionally stable into any load configuration or any signal condition and level at the input.)

Front Panel Indicators

Signal LED dual function indicators
Status LED dual function indicators

Power Consumption

850 watts, 120 V AC, 50/60 Hz (domestic)
850 watts, 240 V AC, 50/60 Hz (export)

Dimensions

19" W x 1.75" H x 14" D

Weight

12 lbs.

IMPORTANT SAFETY INSTRUCTIONS

WARNING When using electric products, basic cautions should always be followed, including the following.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the back of the unit.
4. All operating instructions should be followed.
5. This product should not be used near water, i.e., a bathtub, sink, swimming pool, wet basement, etc.
6. This product should be located so that its position does not interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as a stove, radiator, or another heat producing amplifier.
8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on the power supply cord. For more information on grounding, write for our free booklet "Shock Hazard and Grounding."
10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. If this product is to be mounted in an equipment rack, rear support should be provided.
13. Metal parts can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag, or an ammonia-based household cleaner if necessary. Disconnect unit from power supply before cleaning.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
15. This unit should be checked by a qualified service technician if
 - a. The power supply cord or plug has been damaged.
 - b. Anything has fallen or been spilled into the unit.
 - c. The unit does not operate correctly.
 - d. The unit has been dropped or the enclosure damaged.
16. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.
17. This product should be used only with a cart or stand that is recommended by Peavey Electronics.
18. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time.

The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures.

Duration Per Day In Hours	Sound Level dBA, Slow Response
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss.

Ear plugs or protectors in the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

SAVE THESE INSTRUCTIONS

THIS LIMITED WARRANTY VALID ONLY WHEN PURCHASED AND REGISTERED IN THE UNITED STATES OR CANADA. ALL EXPORTED PRODUCTS ARE SUBJECT TO WARRANTY AND SERVICES TO BE SPECIFIED AND PROVIDED BY THE AUTHORIZED DISTRIBUTOR FOR EACH COUNTRY.

Ces clauses de garantie ne sont valables qu'aux Etats-Unis et au Canada. Dans tous les autres pays, les clauses de garantie et de maintenance sont fixées par le distributeur national et assurées par lui selon la législation en vigueur.

Diese Garantie ist nur in den USA und Kanada gültig. Alle Export-Produkte sind der Garantie und dem Service des Importeurs des jeweiligen Landes unterworfen. Esta garantía es válida solamente cuando el producto es comprado en E.U. continentales o en Canada. Todos los productos que sean comprados en el extranjero, están sujetos a las garantías y servicio que cada distribuidor autorizado determine y ofrezca en los diferentes países.

**PEAVEY ONE-YEAR LIMITED
WARRANTY/REMEDY**

PEAVEY ELECTRONICS CORPORATION ("PEAVEY") warrants this product, EXCEPT for covers, footswitches, patchcords, tubes and meters, to be free from defects in material and workmanship for a period of one (1) year from date of purchase, PROVIDED, however, that this limited warranty is extended only to the original retail purchaser and is subject to the conditions, exclusions, and limitations hereinafter set forth:

PEAVEY 90-DAY LIMITED WARRANTY ON TUBES AND METERS

If this product contains tubes or meters, Peavey warrants the tubes or meters contained in the product to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase; PROVIDED, however, that this limited warranty is extended only to the original retail purchaser and is also subject to the conditions, exclusions, and limitations hereinafter set forth.

CONDITIONS, EXCLUSIONS, AND LIMITATIONS OF LIMITED WARRANTIES

These limited warranties shall be void and of no effect, if:

- a. The first purchase of the product is for the purpose of resale; or
- b. The original retail purchase is not made from an AUTHORIZED PEAVEY DEALER; or
- c. The product has been damaged by accident or unreasonable use, neglect, improper service or maintenance, or other causes not arising out of defects in material or workmanship; or
- d. The serial number affixed to the product is altered, defaced, or removed.

In the event of a defect in material and/or workmanship covered by this limited warranty, Peavey will:

- a. In the case of tubes or meters, replace the defective component without charge.
 - b. In other covered cases (i.e., cases involving anything other than covers, footswitches, patchcords, tubes or meters), repair the defect in material or workmanship or replace the product, at Peavey's option;
- and provided, however, that, in any case, all costs of shipping, if necessary, are paid by you, the purchaser.

THE WARRANTY REGISTRATION CARD SHOULD BE ACCURATELY COMPLETED AND MAILED TO AND RECEIVED BY PEAVEY WITHIN FOURTEEN (14) DAYS FROM THE DATE OF YOUR PURCHASE.

In order to obtain service under these warranties, you must:

- a. Bring the defective item to any PEAVEY AUTHORIZED DEALER or AUTHORIZED PEAVEY SERVICE CENTER and present therewith the ORIGINAL PROOF OF PURCHASE supplied to you by the AUTHORIZED PEAVEY DEALER in connection with your purchase from him of this product.
If the DEALER or SERVICE CENTER is unable to provide the necessary warranty service you will be directed to the nearest other PEAVEY AUTHORIZED DEALER or AUTHORIZED PEAVEY SERVICE CENTER which can provide such service.

OR

- b. Ship the defective item, prepaid, to:

PEAVEY ELECTRONICS CORPORATION
International Service Center
Highway 80 East
MERIDIAN, MS 39301

including therewith a complete, detailed description of the problem, together with a legible copy of the original PROOF OF PURCHASE and a complete return address. Upon Peavey's receipt of these items:

If the defect is remedial under these limited warranties and the other terms and conditions expressed herein have been complied with, Peavey will provide the necessary warranty service to repair or replace the product and will return it, FREIGHT COLLECT, to you, the purchaser.

Peavey's liability to the purchaser for damages from any cause whatsoever and regardless of the form of action, including negligence, is limited to the actual damages up to the greater of \$500.00 or an amount equal to the purchase price of the product that caused the damage or that is the subject of or is directly related to the cause of action. Such purchase price will be that in effect for the specific product when the cause of action arose. This limitation of liability will not apply to claims for personal injury or damage to real property or tangible personal property allegedly caused by Peavey's negligence. Peavey does not assume liability for personal injury or property damage arising out of or caused by a non-Peavey alteration or attachment, nor does Peavey assume any responsibility for damage to interconnected non-Peavey equipment that may result from the normal functioning and maintenance of the Peavey equipment.

UNDER NO CIRCUMSTANCES WILL PEAVEY BE LIABLE FOR ANY LOST PROFITS, LOST SAVINGS, ANY INCIDENTAL DAMAGES, OR ANY CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, EVEN IF PEAVEY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

THESE LIMITED WARRANTIES ARE IN LIEU OF ANY AND ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE; PROVIDED, HOWEVER, THAT IF THE OTHER TERMS AND CONDITIONS NECESSARY TO THE EXISTENCE OF THE EXPRESSED, LIMITED WARRANTIES, AS HEREIN ABOVE STATED, HAVE BEEN COMPLIED WITH, IMPLIED WARRANTIES ARE NOT DISCLAIMED DURING THE APPLICABLE ONE-YEAR OR NINETY-DAY PERIOD FROM DATE OF PURCHASE OF THIS PRODUCT.

SOME STATES DO NOT ALLOW LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THESE LIMITED WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

THESE LIMITED WARRANTIES ARE THE ONLY EXPRESSED WARRANTIES ON THIS PRODUCT, AND NO OTHER STATEMENT, REPRESENTATION, WARRANTY, OR AGREEMENT BY ANY PERSON SHALL BE VALID OR BINDING UPON PEAVEY.

In the event of any modification or disclaimer of expressed or implied warranties, or any limitation of remedies, contained herein conflicts with applicable law, then such modification, disclaimer or limitation, as the case may be, shall be deemed to be modified to the extent necessary to comply with such law.

Your remedies for breach of these warranties are limited to those remedies provided herein and Peavey Electronics Corporation gives this limited warranty only with respect to equipment purchased in the United States of America.

INSTRUCTIONS — WARRANTY REGISTRATION CARD

1. Mail the completed WARRANTY REGISTRATION CARD to:

PEAVEY ELECTRONICS CORPORATION
POST OFFICE BOX 2898
MERIDIAN, MISSISSIPPI 39302-2898

- a. Keep the PROOF OF PURCHASE. In the event warranty service is required during the warranty period, you will need this document. **There will be no identification card issued by Peavey Electronics Corporation.**
2. IMPORTANCE OF WARRANTY REGISTRATION CARDS AND NOTIFICATION OF CHANGES OF ADDRESSES:
 - a. Completion and mailing of WARRANTY REGISTRATION CARDS — Should notification become necessary for any condition that may require correction, the REGISTRATION CARD will help ensure that you are contacted and properly notified.
 - b. Notice of address changes — If you move from the address shown on the WARRANTY REGISTRATION CARD, you should notify Peavey of the change of address so as to facilitate your receipt of any bulletins or other forms of notification which may become necessary in connection with any condition that may require dissemination of information or correction.
3. You may contact Peavey directly by telephoning (601) 483-5365.

PEAVEY®

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