

**ADCOM<sup>®</sup>**

**HIGH DEFINITION  
PREAMPLIFIER**

**GFP-345**

# INTRODUCTION

Please read thoroughly these operating instructions for the GFP-345 before connecting or attempting to operate this unit. For your own benefit, follow all the instructions in this manual and save it for future reference.

The ADCOM GFP-345 is a result of a thorough examination and reevaluation of all factors affecting the sonic performance of preamplifiers. A great deal of care was taken to insure that the audio performance of the GFP-345 could be maintained for years to come by the selection of top-quality components and circuit topologies. The result is a preamplifier which is as musical-sounding as, and which preserves the dynamic contrasts of, an original performance.

The installation and operation of the GFP-345 are described in the following pages. We sincerely hope you will value and enjoy the considerable attention we have given its design and construction. This manual has been written to help you understand the correct operation of the GFP-345. Please read it carefully to fully comprehend all its features and functions and thereby derive the maximum performance from its use in your system.

## FEATURES GFP-345

The GFP-345 is modeled after the highly innovative internal designs and circuit topologies of both the "Reference Standard" GFP-565 and GFP-555II preamplifiers — accordingly, it is setting new standards for products in its price category.

Many of the most significant performance characteristics of the GFP-565 and GFP-555II have been built into the GFP-345. The power supply and low impedance outputs were designed to preserve music dynamics. The amplification stages employ direct-coupled, custom-designed, linear-gain amplifiers operating in full Class A to insure the minimum distortion and low-noise required for digital-source material. Buffered tape outputs insure input-signal integrity, and preclude interference with the main-source signal in the preamplifier's circuits when digital or cassette tape recorders are connected (even when these are not operating).

The optional phono preamplifier (available as a plug-in board: the PHO-802A) delivers the quietest obtainable performance with unmatched record-equalization accuracy and lowest distortion. Operating in full class A, its unrestricted dynamics and musical accuracy are delivered at surprisingly modest cost.

The GFP-345 contains the highest-quality components; never before available in a component of such moderate cost. This should insure stable, dependable operation and long, trouble-free life.

- Low-impedance power supply for best regulation and optimal circuit performance. This type of design insures that music dynamics are delivered through the preamplifier without compression.
- Thick power-supply traces on printed circuit board for minimal losses and improved voltage stability. This technique insures constant voltage to all the circuitry, regardless of volume or dynamic demands of the music.
- All capacitors are state-of-the-art electrolytics and film capacitors with very low ESR and unsurpassed sonic purity. This design feature provides an audible benefit, the lowest possible distortion of music signals.
- Overdesigned mu-metal-shielded power transformer for better regulation. This transformer design eliminates stray hum fields for lowest noise and provides undiminished voltage to circuits for best performance under any demands for level.
- Precision, programmable regulators for stabilized, constant DC voltages, regardless of load. This type of regulator insures stable operation of all circuits regardless of the dynamic demands of the music being played.
- Amplifier stages use ADCOM premium-grade ICs selected for their linear operation and sonic quality. These linear amplifiers insure extremely low noise, low distortion and low DC offset for best performance with either set of preamp outputs.
- Amplifiers are operated in pure Class-A mode to insure lowest distortion regardless of the signal level or setting of the level control.
- Entire signal path is direct-coupled from input to output. Direct coupling minimizes the number of components signal must go through, preventing degradation of the music.
- Two sets of outputs: OUTPUTS LAB are direct-coupled. They provide a signal in the most straightforward, simplest path. OUTPUTS NORM are capacitor-coupled using precision, high-grade film capacitors for power amps which can not accept ultra-wide bandwidth inputs.

- Low-output-impedance (100 ohms) from both sets of outputs to reduce interaction of connecting cables and other equipment and preserve music dynamic contrasts.
- Five sets of inputs, front panel controlled, including TAPE IN; six sets if the EXTERNAL PROCESSOR IN jacks are used also as an auxiliary input.
- Low-impedance tape outputs (100 ohms) to perfectly interface with any type of tape recorder. This technique allows the preamp to mate with any type recorder, including DAT and DCC, and insures the best recording characteristics independently of the cable used and the load impedance of the tape recorder inputs.
- Buffered tape outputs to preserve input-source-signal integrity and preclude "loading" of the signal-source components and distortion. Buffering prevents the degradation of the source signal caused by most tape recorders when they are connected to the tape outputs. The buffers insure that the integrity of the internal signal path will not be affected by the tape recorder used.
- Front-panel-switchable processor loop. Shortens the signal path by switching the processor in and out of the circuit directly on the main circuit board. Allows the processor to be removed totally from the circuit when not needed.
- All high-grade construction parts including 1%, Roederstein metal-film resistors and all metallized-film, precision capacitors throughout. These components helps the GFP-345 achieve lower noise levels and lower signal degradation than preamps selling for many times its price.
- Extremely-low-noise, optional phono preamplifier board (PHO-802A) with virtually zero RIAA error, optimized for high-output moving-coil and moving-magnet cartridges plus direct-coupled signal output for maximum bass impact and dynamic response. These features will provide the flattest, lowest-noise, lowest-distortion response from a phono cartridge and musically satisfying reproduction from any vinyl record.
- Low-impedance, RIAA-equalization network. This unique network insures the lowest achievable noise level in a phono preamp.

## UNPACKING THE GFP-345

Before each GFP-345 left the factory, it was carefully inspected for physical imperfections and electrical performance as a routine part of ADCOM's systematic Quality Control. This, along with full operational and mechanical testing, should insure a product flawless in both appearance and performance. After you have unpacked the GFP-345, inspect it for physical damage. Save the shipping carton and all packing materials as they are intended to reduce to a minimum the possibility of transportation damage, should the product ever need to be shipped again. In the unlikely event damage has occurred, notify your dealer immediately and request the name of the carrier so that a written claim to cover shipping damage can be initiated.

**THE RIGHT TO A CLAIM AGAINST A PUBLIC CARRIER CAN BE FORFEITED IF THE CARRIER IS NOT NOTIFIED PROMPTLY IN WRITING AND IF THE SHIPPING CARTON AND PACKING MATERIALS ARE NOT AVAILABLE FOR INSPECTION BY THE CARRIER. SAVE ALL PACKING MATERIALS UNTIL THE CLAIM HAS BEEN SETTLED.**

## INSTALLING THE GFP-345

Although the GFP-345 does not generate much heat, you will help insure its long-term, trouble-free operation if you keep it away from external sources of heat, such as radiators or hot-air ducts, and provide reasonable ventilation. The GFP-345 should never be placed with other heat-producing components in a cabinet or enclosure lacking free air flow. If placed near or above any heat-producing component, such as a power amplifier, please allow a minimum of three inches between the components.

For use in professional installations, the GFP-345 may be mounted in a standard 19-inch rack using the optional RM-3 rack-mount adaptors available through ADCOM dealers.

## CONNECTING THE GFP-345

The performance of the GFP-345 will depend on the quality of the interconnection of both the preamplifier and its associated equipment. All the input- and output-signal connections should be made only with high-quality, low-loss audio cables. LEFT CHANNEL and RIGHT CHANNEL inputs and outputs are clearly labelled on the rear panel.

## NOTE

WHENEVER CONNECTIONS TO OR FROM THE GFP-345 ARE BEING MADE, BE CERTAIN ALL ASSOCIATED COMPONENTS ARE TURNED OFF.

### GND ①

Ground connection to chassis is provided primarily to connect phonograph (turntable) ground terminals. Most turntables are supplied with a separate ground wire to help eliminate hum. Connect the separate ground wire, if supplied with your turntable, to the GND ① terminal. The GND ① terminal can also be used to connect the chassis of the GFP-345 directly to the center screw of your AC wall outlet or other good "earth" connection such as a water pipe or radiator. This earth connection may be useful in areas of high RF interference, and may help to minimize noise particularly when playing low-output-level phonograph cartridges (see section PHONO (PHO-802A OPTION) ② following).

## NOTE

Although the GND ① connection is probably the best place at which to connect your system to a good earth ground, it should be pointed out that only **one** connection to an earth ground is to be made in any system. Otherwise what is commonly known as a "ground-loop" will be caused and hum and noise may increase sufficiently to become a nuisance. In any system, only **one** ground connection can be made to earth. If one of your components is supplied with a three-prong AC connector which is plugged into the AC wall outlet, earth connection will be made through this plug and additional ground connections are not recommended. Similarly, if the system's units are mounted in a rack and ground connection between chassis is made through the rack mounting, special techniques must be undertaken to minimize ground-loops and subsequent noise. A detailed discussion of ground-loops with methods for their elimination is beyond the scope of this manual.

### AUX 1 ②

This set of input jacks is for use with a high-level signal source, such as a tape player, the audio signal from a video-disc player, or video-cassette recorder (VCR). The load impedance of this input is approximately 22,000 ohms. This input can also be converted for use with an analog disc turntable if the optional PHO-802A board is installed onto the main PCB of the GFP-345. This is a procedure best left to your dealer, or ADCOM authorized service personnel. It is not recommended you undertake the installation of the PHO-802A board within the GFP-345 yourself.

### PHONO (PHO-802A OPTION) ②

To use an analog disc turntable with the GFP-345 requires installation of the optional PHO-802A phono preamp board onto the main PCB of the GFP-345. Once the PHO-802A board is installed, the input jacks marked AUX 1 ② are then usable with any high-output moving-coil or moving-magnet phono cartridge. These two standard RCA jacks will accept all common RCA plugs, one for each channel, left and the right, usually supplied at the ends of the turntable's cables. LEFT CHANNEL and RIGHT CHANNEL inputs are clearly labelled and their routing, even when the PHO-802A board is installed, will remain left and right as indicated. Determine the exact color coding or markings on your turntable's cables for left and right channels in order to insure the correct connections. The PHO-802A circuit is designed to accept the signal from any high-output moving-coil, moving-magnet, induced-magnet, moving-iron or variable-reluctance cartridge, the output from which is rated at 2.2 mV/cm or higher. The PHO-802A-input electrical impedance characteristics are the standard 47,000 ohms with 100pF shunt capacitance. ADCOM high-output moving-coil cartridges, for example, are ideally suited for use with this phono preamplifier. Low-output moving-coil cartridges which normally require a pre-amplifier (sometimes referred to as a "head-amp"), or step-up transformer must have these auxiliary devices connected **before** the RCA jacks feeding the input to the PHO-802A board. A pre-amplifier, or step-up transformer provides the additional gain required by very-low-output moving-coil cartridges to operate with a standard preamplifier circuit. A pre-amplifier, or step-up transformer, is not necessary and must **not** be used with high-output moving-coil cartridges or moving-magnet, induced-magnet, etc. cartridges. If you are uncertain as to which type of cartridge you will be using, please consult the instruction manual or specification sheet which was included with your cartridge, or contact the dealer from whom you purchased the cartridge, or the cartridge manufacturer.

Some turntables are supplied with a separate ground wire, which must be connected to ground, to reduce hum. If the turntable is provided with this separate ground wire simply connect it to the GND ① screw on the rear panel of the GFP-345 directly to the left of the AUX 1 inputs (now converted to PHONO).

There are simplified instructions on the main PCB of the GFP-345 to facilitate installation of the PHO-802A board. Detailed instructions are also supplied in the section INSTALLING THE PHO-802A BOARD IN THE GFP-345 at the end of this manual.

## CD ③

This set of input jacks is for use with a Compact Disc (CD) player or other similar high-level signal source, such as a tape player, the audio signal from a video-disc player, or video-cassette recorder (VCR). The load impedance of this input is approximately 22,000 ohms.

## TUNER ④

Although this pair of inputs is provided for your tuner, they may be used with any other high-level source such as a tape player, an additional Compact Disc (CD) player or other similar high-level signal source. The load impedance of this input is identical to that of the CD ③ input.

## AUX 2 ⑤

This pair of inputs is provided for any other high-level source you may have available such as a tape player, an additional Compact Disc (CD) player or other similar high-level source. The load impedance of this input is identical to that of the CD ③ input.

## TAPE IN ⑥

This set of tape inputs is identical in sensitivity and electrical characteristics to the CD ③ inputs and the comments made about the CD ③ inputs apply. These may be used not only for cassette or other audio tape recorders (such as DAT or DCC), but also with any high-level signal source such as a VCR's audio outputs, etc.

If you desire simple playback of prerecorded tapes, plug the left and right outputs of your tape machine labelled "tape out" or "line out" into the TAPE IN ⑥ jacks using a set of good-quality, low-loss audio cables. To select playback of tape, push in the TAPE MON ⑱ switch on the front panel of the GFP-345. Whenever the TAPE MON ⑱ is activated the LED directly above it will glow. Also, whenever the TAPE MON ⑱ switch is pushed in the INPUT ⑲ selector will be disconnected from the circuit. That is, whatever source has been selected through the INPUT ⑲ selector will be disconnected from the circuits of the GFP-345 and will be supplanted by the source, or tape recorder, plugged into the TAPE IN ⑥ jacks on the rear panel of the preamplifier.

## TAPE OUT ⑦

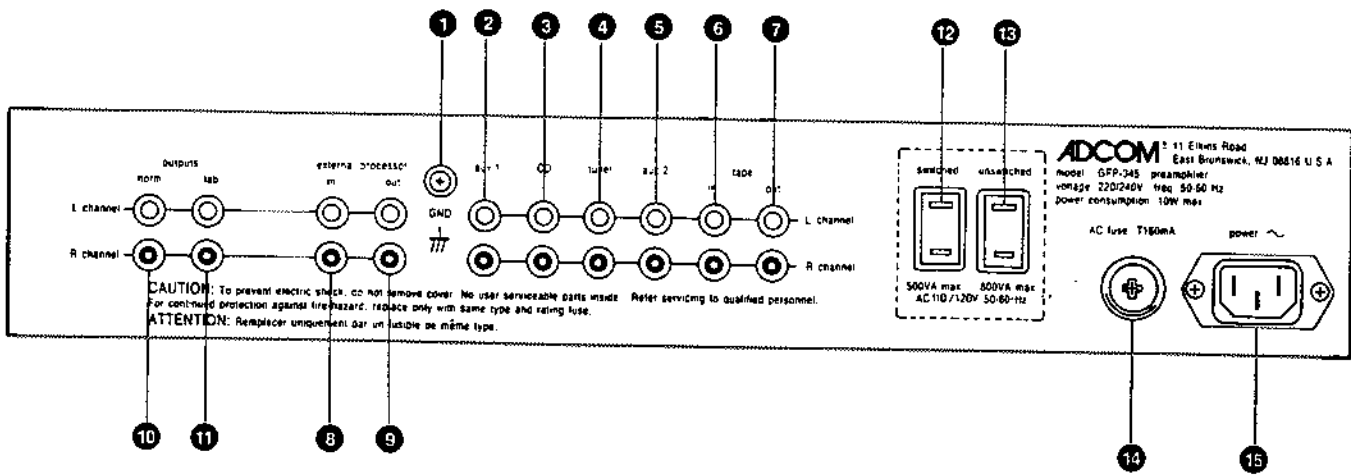
Whichever input is selected via the INPUT ⑲ selector knob will appear at the TAPE OUT ⑦ jacks. It should be pointed out that regardless of the position the TAPE MON ⑱ switch is in, whatever source is selected via the INPUT ⑲ selector will still appear at the TAPE OUT ⑦ jacks. The TAPE MON ⑱ switch only controls the playback circuits of the GFP-345. Also, please note that if you are monitoring a recording which is being made on a tape or cassette machine, by using the TAPE MON ⑱ function, you must leave the INPUT ⑲ selector on the source selected for recording or the recording process will be interrupted; that is, the changing of source selection through the INPUT ⑲ selector switch will interrupt the signal being fed to the tape or cassette recorder via the TAPE OUT ⑦ jacks. To hook-up the TAPE OUT ⑦ to your cassette or tape recorder, connect the right and left jacks on the cassette or tape recorder labelled "line in" or "record in" to the corresponding LEFT CHANNEL and RIGHT CHANNEL TAPE OUT ⑦ jacks on the rear panel on the GFP-345. It is very important that you use only high-quality, low-loss interconnecting cables in order not to degrade the quality of the recording.

### NOTE

The TAPE OUT ⑦ circuits are actively "buffered" in order to insure that the signal within the circuitry of the GFP-345 will not be compromised regardless of whether the tape recorder is in use or not. Therefore, you can listen to the source which you are recording without fear of degrading the signal either in the recording or the listening mode. In addition, the buffered outputs will prevent the normal degradation that tape recorder inputs cause an audio signal in a preamplifier when the tape recorder circuits are turned off and not in operation.

## EXTERNAL PROCESSOR IN ⑧ / EXTERNAL PROCESSOR OUT ⑨

This set of inputs and outputs is provided for use with any "signal processor" such as an equalizer, time-delay unit, surround-sound decoder, etc. The EXTERNAL PROCESSOR IN ⑧ / EXTERNAL PROCESSOR OUT ⑨ jacks are selected and controlled by the front-panel button labelled EXT PROC ⑳. Pushing in the EXT PROC ⑳ button will connect whatever processor is plugged into the EXTERNAL PROCESSOR IN ⑧ / EXTERNAL PROCESSOR OUT ⑨ jacks to the circuitry of the GFP-345. Whenever the EXT PROC ⑳ button is pushed in, activating this circuit, the red LED above it will glow. Pushing and releasing the EXT PROC ⑳ button will disconnect the EXTERNAL PROCESSOR IN ⑧ / EXTERNAL PROCESSOR OUT ⑨ jacks from the circuitry of the preamplifier. It is important to note that when the EXT PROC ⑳ button is released, both sets of jacks (EXTERNAL PROCESSOR IN ⑧ / EXTERNAL PROCESSOR OUT ⑨) are electrically removed from the circuitry of the preamplifier (and, so, consequently whatever processor is plugged into these jacks) to prevent any possible degradation of the signal selected through the INPUT ⑲ selector switch.



GFP-345 Rear Panel Diagram

To connect the processor, equalizer or surround-sound decoder, etc., to the GFP-345 always use high-quality low-loss audio cables. Plug the jacks on the signal processor labelled "input", "in", "line-in", or "source" into the EXTERNAL PROCESSOR OUT 9 jacks on the rear panel of the GFP-345, observing the left and right labelling on both sets of jacks. Plug the jacks on the signal processor marked "output", "out" or "line-out" to the GFP-345 jacks labelled EXTERNAL PROCESSOR IN 8. Once these connections have been effected simply pushing in the EXT PROC 20 button on the front panel of the GFP-345 will bring the processor into the circuit.

### NOTE

1. Please be advised that if no processor is plugged into the EXTERNAL PROCESSOR IN 8 and EXTERNAL PROCESSOR OUT 9 jacks, and the EXT PROC 20 button is pushed in, all the inputs of the GFP-345 will be **disconnected** and no output signal will be present at either the OUTPUTS NORM 10 or the OUTPUTS LAB 11 and, consequently, no sound will be heard through the system. Whenever a signal processor is not being used, the EXT PROC 20 button should always be in the out position.
2. However, it is possible when no processor is connected to the EXTERNAL PROCESSOR IN 8 and EXTERNAL PROCESSOR OUT 9 jacks, to use the EXT PROC 20 button as a mute function. By pressing in the EXT PROC 20 button the signal will be interrupted until the EXT PROC 20 button is, once again, pushed in and released.
3. Normally, the GFP-345 does not invert polarity; that is, if a positive-going signal is present at any of its inputs, it will appear as a positive-going signal at the outputs. However, if a signal processor is connected to the EXTERNAL PROCESSOR IN 8 and EXTERNAL PROCESSOR OUT 9 jacks, and its circuitry inverts polarity, the signals present at the OUTPUTS NORM 10 and OUTPUTS LAB 11 will also be inverted in polarity (check the Instruction Manual of your signal processor to determine if it does or does not invert polarity).
4. Usually, there should be no appreciable level difference whenever a signal processor is connected into or out of the circuitry of the GFP-345 (through the use of the EXT PROC 20 button), so long as the processor was designed with an absolute gain of 1 and adequate input and output impedances to fulfill this function. If a level difference can be detected when switching a processor in and out of the circuit, and this is disturbing to you, please contact the manufacturer of the processor you are using to see if a correction of this level difference can be effected.
5. It is also possible to employ the EXTERNAL PROCESSOR IN 8 jacks as an additional set of inputs, since these jacks are located, in the circuitry, before the LEVEL 22 and BALANCE 23 controls. If you wish to use the EXTERNAL PROCESSOR IN 8 jacks as an additional input, simply plug the signal source into the EXTERNAL PROCESSOR IN 8 jacks as you would any of the other inputs (CD 3, TUNER 4, etc.) and select that source by pushing in the EXT PROC 20 button. Whatever other selection of sources has been made through the INPUT 18 selector will be disconnected and the source plugged into the EXTERNAL PROCESSOR IN 8 jacks will then be fed through the circuits of the GFP-345 and out of the OUTPUTS NORM 10 and OUTPUTS LAB 11.

Whatever processor is connected to the EXTERNAL PROCESSOR IN ⑧ and EXTERNAL PROCESSOR OUT ⑨ jacks will not be operative at the TAPE OUT ⑦ jacks. If you wish to insert an equalizer into the tape recorder circuits this must be done through the specific TAPE IN ⑥ and TAPE OUT ⑦ jacks along with the particular recorder. In such an instance, this processor will not operate on any other source selected through the INPUT ⑱ selector but will operate only on the tape loop to which it has been connected. Similarly, because of the design of the circuitry in the GFP-345, and when the EXTERNAL PROCESSOR IN ⑧ jacks are used an additional high-level input, this individual signal will not appear at the TAPE OUT ⑦ jacks, nor can it be selected through the INPUT ⑱ selector. Therefore, tape recordings cannot be made of the signal source plugged into the EXTERNAL PROCESSOR ⑧ jacks. To return to usual operation of the preamplifier, push and release the EXT PROC ⑳ button and the operation of all the switches and selectors will return to normal and the source plugged into the EXTERNAL PROCESSOR IN ⑧ jacks will be disconnected from the circuitry of the GFP-345.

### OUTPUTS NORM ⑩

The OUTPUTS NORM ⑩ are capacitively coupled using very-high-grade metallized film capacitors. It is ideal for use with power amplifiers which require a bandwidth-limited signal which does not extend to DC. Although these capacitively-coupled outputs do restrict, somewhat, the extremely low frequencies, around 5 Hz or 10 Hz, it does not, in any way, degrade the quality of the signal from the preamplifier. Great care was taken in the selection of capacitors to preclude any sonic deterioration.

To connect these outputs to your power amplifier, simply interconnect the LEFT CHANNEL and RIGHT CHANNEL OUTPUTS NORM ⑩ jacks to the corresponding left and right input jacks on the amplifier. To preserve the extremely high quality of the circuitry in the GFP-345, it is recommended that you use as high a quality cable as possible to make this interconnection.

#### NOTE

Both the OUTPUTS NORM ⑩ and the OUTPUTS LAB ⑪ may be used simultaneously should you wish to bi-amp your speakers, or drive more than one amplifier. When using both of these outputs simultaneously, there will be no "loading" effects on the preamplifier.

### OUTPUTS LAB ⑪

The OUTPUTS LAB ⑪ is direct-coupled, with no capacitors, and was designed to provide an output voltage ideally matched for operation with the ADCOM brand of amplifiers. It can be used, however, to drive almost any power amplifier presently available with input sensitivities ranging from below 500mV (0.5V) to well above 2.0V. To connect this output to your power amplifier, please follow the instructions in the section above OUTPUTS NORM ⑩.

It should be pointed out that, since the OUTPUT LABS ⑪ is direct-coupled, it is an extremely broadband circuit which responds down to DC (direct current). Therefore, it requires that your power amplifier (if it is not an ADCOM-brand amplifier) be able to handle this extremely broadband signal.

#### NOTE

Although the GFP-345 was designed primarily for use with stereo power amplifiers, it can operate just as well with two mono power amplifiers. When two mono amplifiers are used for stereophonic reproduction, it is strongly suggested that they be a matched pair with respect to brand, model, input sensitivity and power output.

### SWITCHED ⑫ OUTLET

The SWITCHED ⑫ outlet is controlled by the power switch ⑮ on the front panel of the GFP-345. You may plug the AC line cord of your power amplifier, or any other accessory, which you want to turn on and off with the power switch ⑮ of the GFP-345 into these outlets. The current-carrying capacity of the switch ⑮ is sufficient to handle the inrush current of power amplifiers up to the 200-watt-per-channel class. It is not recommended that very-large-power amplifiers, above the 200-watt class, be plugged into these outlets (see NOTE below following UNSWITCHED ⑬ outlet).

### UNSWITCHED ⑬ OUTLET

The UNSWITCHED ⑬ outlet can supply the AC power requirements of any accessory source used with the GFP-345, such as a CD player or analog turntable. The AC line cord of the accessory may be plugged into this outlet. The UNSWITCHED ⑬ outlet is not controlled by the power switch ⑮ on the front panel of the GFP-345, and power will always be available at this outlet so long as the GFP-345 is plugged into an energized wall outlet, regardless of the position of the main power switch ⑮. The total power drawn through the UNSWITCHED ⑬ outlet must never exceed 800 watts.

## NOTE

Most electronic or electrical devices state the maximum power drawn by the device on a plate, or label, on the rear panel of the unit, near the AC line cord which supplies power to the unit. It is a good idea to check these requirements before plugging an amplifier into either the UNSWITCHED 13 outlet or the SWITCHED 12 outlet. Most large-power amplifiers should be plugged directly into an AC wall outlet.

## AC FUSE 14

The AC line fuse protects the circuits of the GFP-345. This fuse should be replaced only with a fuse of the same current value, type and rating as that supplied with the preamplifier. The correct fuse type, current value and rating is printed directly above the AC FUSE 14 socket on the rear panel of the GFP-345. Replacements with fuses of higher value and/or different rating and/or type will not protect the GFP-345 circuits, **may void the Warranty and may cause a fire hazard.**

## NOTE

**Before checking or replacing a blown fuse, make certain you UNPLUG THE POWER CORD FROM THE AC WALL OUTLET TO PREVENT POSSIBLE ELECTRICAL SHOCK.**

## POWER 15 SOCKET

The POWER 15 socket permits connection of an AC cord and plug, suitable to your particular area or country, to provide AC power to operate the GFP-345 circuits and energize the SWITCHED 12 and UNSWITCHED 13 outlets. The AC line cord should be plugged into any standard wall outlet providing the correct operating voltage. To determine the voltage for which the GFP-345 has been set, check the voltage listing on the upper right-hand corner of the GFP-345's rear panel.

## NOTE

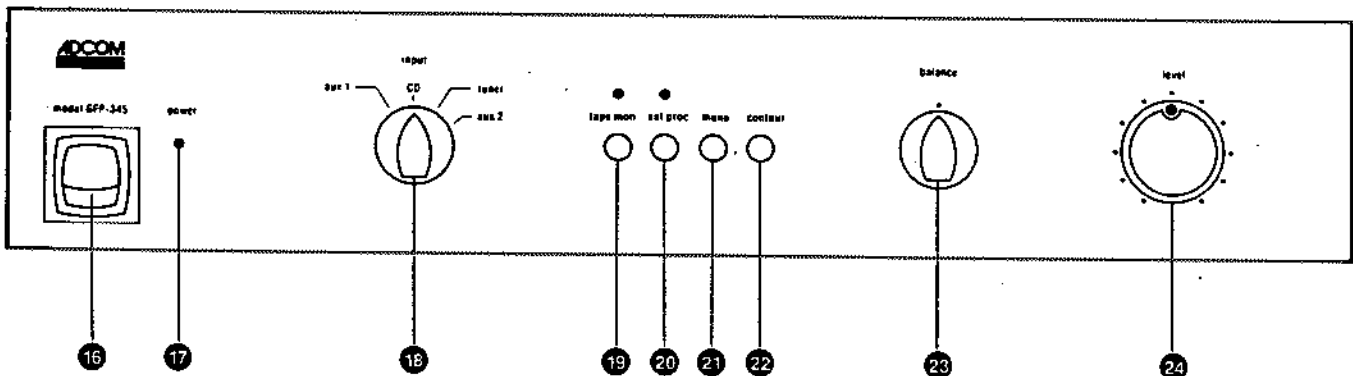
The GFP-345's POWER 15 socket is "polarized" and its lower, center pin is grounded as required by many standards and safety organizations. If at all possible, make certain that there is a matching, 3-prong plug on the end of the AC cord so that the chassis of the GFP-345 will be grounded to "earth". If a 3-prong plug is not available in your area, or in your specific circumstances, experiment with the "phasing", or reversing, of the AC plug to achieve minimal hum in your system and minimal noise as well.

## CONTROLLING THE GFP-345

Please refer to the diagram of the front panel of the GFP-345 to identify all the controls and their functions.

## AC POWER SWITCH 16 17

The "rocker" AC power switch 16 controls power to the circuits of the GFP-345 and to the SWITCHED 12 outlet on the rear panel of the GFP-345. Whenever the GFP-345 is energized, the red LED 17 will glow. Push the **top** of the rocker switch to energize the GFP-345. Push the **bottom** of the rocker switch to turn the unit off.



GFP-345 Front Panel Diagram



## INPUT 18 SELECTOR

This rotary selector lets you choose any input connected to the GFP-345 and feed it, through the circuitry of the GFP-345, to both the OUTPUTS NORM 10 and OUTPUTS LAB 11 jacks and, then, through your amplifier and loudspeakers. The INPUT 18 selector will also feed the signal you choose to the TAPE OUT 7 jacks on the rear panel of the preamplifier. All the controls on the front panel of the GFP-345 will affect the signal present at the OUTPUTS NORM 10 and OUTPUTS LAB 11 jacks. Please note that some of these controls will not affect the signal present at the TAPE OUT 7 jacks.

## TAPE MON 19

The TAPE MON 19 switch selects the TAPE IN 6 jacks on the rear panel of the GFP-345. This switch is meant to provide you with the capability of "monitoring" a recording you are making on a tape machine which is provided with 3-heads (that is, an erase head, record head and separate playback head). With 2-head machines, DAT recorders and DCC machines, it will permit you to verify that there is a signal being fed to the tape recorder and through its circuits into the TAPE IN 6 jacks. Whenever the TAPE MON 19 switch is pushed in, the red LED above this switch will glow and the signal selected by the INPUT 18 selector will be disconnected from the amplification circuits of the GFP-345. Please note that whatever source is selected via the INPUT 18 selector will still appear at the TAPE OUT 7 jacks.

## EXT PROC 20

Pushing in this switch connects the EXTERNAL PROCESSOR IN 8 and EXTERNAL PROCESSOR OUT 9 jacks on the rear panel of the GFP-345. Please refer to the section EXTERNAL PROCESSOR IN 8 /EXTERNAL PROCESSOR OUT 9 above for a complete explanation of the function of this circuit. Whenever the EXT PROC 20 switch is in the red LED above this switch will glow. Please note that whenever the EXT PROC 20 switch is in the out position, whatever processor is connected to the EXTERNAL PROCESSOR IN 8 /EXTERNAL PROCESSOR OUT 9 jacks will be completely disconnected from the circuit to prevent any possible degradation of the signal being amplified by the GFP-345.

## MONO 21

Pushing in this switch mixes the left- and right-channel signals. This combined signal is then fed to both OUTPUTS NORM 10 and OUTPUTS LAB 11 jacks. The mono switch does not insert switch contacts in series with the signal path but simply parallels the left and right channels. The MONO 21 switch is useful in reducing FM noise and distortion on weak stations, or when playing older analog mono recordings, or in checking relative phasing of your loudspeakers. It is also useful when setting the channel balance of your loudspeakers using the BALANCE 23 control.

## CONTOUR 22

The CONTOUR circuit in the GFP-345 differs markedly from conventional loudness compensation circuits. Recent studies show that conventional circuits overcompensate for natural low- and high-frequency hearing reduction at low signal levels. The studies of Robinson and Dadson of Harvard University have provided guidelines for a newer and more accurate curve for loudness compensation. In our judgement, a subtle boost of low frequencies (in the 20-100Hz range) and no boost at high frequencies, provides the ideal musical balance for listening at low to moderate levels. The effects of the circuit gradually diminish as the volume level is increased (that is, when the LEVEL 24 control is turned clockwise). Pushing in the CONTOUR 22 switch activates this function. Whenever the CONTOUR 22 switch is in the out position, the CONTOUR circuit will be disconnected from the circuitry of the GFP-345.

## BALANCE 23

The BALANCE 23 control permits you to adjust the level of the left channel versus the right channel and vice-versa. Turning the control counterclockwise will reduce the level of the right channel. Turning it clockwise will reduce the level of the left channel. At the maximum counterclockwise position, only the left channel will operate. Conversely, at the maximum clockwise position, only the right channel will operate. In most cases the proper setting of the BALANCE 23 control will be at or near its 12 o'clock position.

To adjust for optimum balance between channels, it is easiest to use a tuner tuned to a station in which the announcer is speaking. This will almost always be a mono signal. Place yourself in your normal listening position and adjust, or have someone adjust, the BALANCE 23 control until the announcer appears to be centered between the two speakers. This method will compensate for almost all the variations within your system, and the room, and is the easiest of all methods to use.

If your system does not include a tuner, the next best way is to select a CD, push in the MONO 21 button, place the INPUT 18 selector on CD and adjust the BALANCE 23 control as described above.

Once the correct setting is chosen, it will need to be changed only to compensate for unequal signal levels from an outside music source, such as a cassette, disc, etc.

## LEVEL 24

This rotary control sets the level at the OUTPUTS NORM 10 and OUTPUTS LAB 11 and, consequently, the level heard through the amplifier and loudspeakers. Turning this control clockwise will raise the level of the signal chosen via the INPUT 18 selector. Turning the control counterclockwise will reduce the level of the signal. Normally, when used with

standard amplifiers and speakers having medium-to-low sensitivities, the position of this control will be at its normal 12:30 to 1:30 o'clock position. There are many factors which will affect the position of the LEVEL 24 control for any given listening level. Among these are: the specific sensitivity of the power amplifier for maximum output; the sensitivity (or "efficiency") of the speakers being used; the size of the room in which the speakers are located; the output levels of the sources being used and plugged into the GFP-345 (cassette machines, tape recorder, CD player, etc.); the modulation level of the station being received by your tuner; etc. The position of the LEVEL 24 control is a relative indication to permit you to return to a similar level setting again and again. It is not an absolute indication of how much power the amplifier is delivering to the speakers or "how powerful" a system is. It is quite possible, with different component systems, to have the same power output from an amplifier, and sound level from the speakers, but with different LEVEL 24 control settings of the GFP-345. It is also quite common to have to set the LEVEL 24 control to a different position, when switching from one source (say CD) to another (such as a cassette machine), to achieve the same, or approximate volume level from the loudspeakers. Similarly, different FM and AM stations received by your tuner may require adjustment of the LEVEL 24 control depending on the amount of audio "limiting" and "compression" used by the particular station and/or the type of music it broadcasts.

#### NOTE

For the reasons described above, it is good practice to lower the LEVEL 24 control before changing the INPUT 18 selector to a different source.

The design of the GFP-345 makes it usable with the gamut of power amplifiers presently available, as well with all loudspeakers presently in use. The LEVEL 24 control was designed to be fully operable throughout its complete rotation.

## CARING FOR YOUR GFP-345

Great care has been taken by ADCOM to assure that your preamplifier is as flawless in appearance as it is electronically. The front panel is a heavy-gauge, high-grade, anodized-aluminum extrusion, bead-blasted for durability. The bottom cover, chassis, top cover and rear panel are of heavy-gauge steel, both painted and baked. If the front panel, top or sides should become dusty or fingerprinted, they can be cleaned with a soft, lintless cloth, slightly dampened with a very mild detergent solution.

#### NOTE

**DO NOT SPRAY OR USE LIQUIDS OF ANY KIND ON THE SURFACES OF THE GFP-345.**

## SERVICING

ADCOM has a Technical Service Department to answer questions pertinent to any difficulties you encounter in the operation of your unit. If you encounter problems obtaining advice or resolving your problems locally, please contact us by mail or fax for a prompt recommendation. If your problem cannot be resolved directly through instructions from us, we may refer you to an authorized representative near you for resolution.

Please address mail inquiries to:  
ADCOM Service Corp.  
11 Elkins Road  
East Brunswick, NJ 08816  
U.S.A.

Should you find it more expedient to contact us via fax, the number is (908-390-9152). Please include a return fax number so that we can reply.

## INSTALLING THE PHO-802A BOARD IN THE GFP-345

The PHO-802A phono preamp board replaces the standard AUX 1 ② input. Any high-level source connected to the AUX 1 ② input must be relocated to one of the other high-level inputs not already in use. The AUX 1 ② input must not subsequently be used for a high-level source unless the PHO-802A board is removed and the jumper wires, which must be cut for use with the PHO-802A, replaced.

1. Begin installation by unplugging the GFP-345 power cord from the AC wall outlet and remove its cover by unscrewing the six Phillips-head screws using a #2 Phillips screwdriver. The two hex-head screws securing the top cover to the front panel must also be removed. A 2mm hex-wrench is necessary for this operation.
2. Cut the jumper wires B1, B2 and B3 on the main PCB of the GFP-345 at the middle, raised portion, and fold away the cut ends to insure that the ends do not touch each other.
3. Remove the top cap-nut on each of the screw studs shown in figure below and position the PHO-802A board over the two 5-pin connectors so that the corresponding T11 and T12 sockets and 5-pin connectors mate properly and the large upright capacitors (black, 2200uF/16V) are positioned, as shown in figure below, nearest the RCA input jacks on the rear panel of the GFP-345. You can use the screw studs as guides.
4. Press the PHO-802A board down firmly onto the two 5-pin connectors.
5. Screw the two cap-nuts, back onto the screw studs and firmly secure the nuts onto the PCB with a 5.5mm nut-driver or similar tool. Please note that the bottom cap-nuts must not be removed. The bottom cap-nuts secure the screw studs to the main PCB and also act as spacers for the PHO-802A board. They are essential to prevent shorting between the PHO-802A board and the main GFP-345 PCB.
6. Replace the top cover on the GFP-345 making certain all the screws are tightened securely to be sure that proper shielding of the internal circuitry of the GFP-345 is effected.
7. There are two PHONO labels supplied with both the GFP-345 (in the plastic bag containing the instruction manual, etc.), and also in the packaging of the PHO-802A board. Affix one PHONO label on the front panel over the AUX 1 label at the INPUT ⑩ selector so that now it will read PHONO. The AUX 1 position is the maximum counterclockwise position of the INPUT ⑩ selector.
8. Affix the second PHONO label over the existing type above the RCA jacks on the rear panel which reads AUX 1 ② so that now it will read PHONO. Although this is not absolutely necessary, it will simplify identification of the now-PHONO input to the GFP-345.

