ADVANCED
FIVE CHANNEL AMPLIFIER
GFA-5705

The contents of this manual are subject to change. Please check our website www.adcom.com or www.adcom-usa.com for the most current version.

Important Safety Instructions

Basic safety precautions should always be followed when using your GFA-575SE amplifier, to reduce risk of fire, electric shock, and injury to persons:

1. **Read** and understand all instructions.
2. **Retain** these instructions for future reference.
3. **Follow** all warnings and instructions in this manual and marked on the product.
4. Any service or repair required must be performed by qualified factory-authorized personnel.
5. Do not use the amplifier in a high-humidity environment or near water — for example in a wet basement, or near a wet bar or swimming pool.
6. Always provide adequate ventilation for the amplifier. Allow a minimum of four (4) inches on all sides of the amplifier. Do not block the cooling vents on the amplifier case.
7. The amplifier should be situated away from heat sources such as heat registers, radiators, stoves, or other appliances that produce heat.
8. The amplifier should only be connected to a power supply of the type marked on its back panel. The power supply cord should be routed to avoid damage from contact with sharp objects or being stepped on.
9. Unplug the amplifier during thunderstorms or when it will be unused for extended periods of time.
10. Exercise care to avoid spilling liquids on or in the amplifier.
11. Do not place the amplifier on an unstable table, stand, or cart. Improper placement of the amplifier may cause it to fall on an adult or child causing serious injury, as well as damage to the amplifier.

12. Do not expose the amplifier to dripping or splashing. Do not place objects filled with liquids, such as vases, on the amplifier.
13. Cleaning: To clean the amplifier, wipe it with a soft cloth. Do not use solvents, as they may damage the amplifier.
14. Non-Use Periods: Unplug the amplifier's power cord from the electrical outlet when the amplifier will be unused for a long period of time.
15. Damage Requiring Service: The amplifier should be serviced by qualified service personnel when:
    A. The power cord or plug has been damaged
    B. Objects have fallen, or liquids have been spilled into the amplifier
    C. The amplifier has been exposed to rain.
    D. The amplifier does not appear to be operating properly or exhibits a marked change in performance.
    E. The amplifier has been dropped or appears to have been damaged.
16. Servicing: The user should not attempt to service the amplifier beyond that described in these instructions. All other servicing should be referred to qualified service personnel.
17. Storms: To prevent damage to components, unplug all electronic equipment during thunderstorms.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. THE APPLIANCE SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING. NO OBJECTS FILLED WITH LIQUIDS SHALL BE PLACED ON THE APPLIANCE.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER OR BACK. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO AUTHORIZED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INTRODUCTION

Please read these operating instructions for the GFA-5705 before connecting or attempting to operate it. The installation and operation of the GFA-5705 are described in the following pages. We sincerely hope you will value and enjoy the attention we have given its design and construction. This manual will help you understand the correct operation of the GFA-5705. Please read it carefully to fully understand the features and functionality of the GFA-5705 and to derive maximum benefit from its use in your system. Keep this manual handy for future reference, it can provide answers to many of your questions.

PREFACE

WARNING

The GFA-5705 is a very powerful amplifier capable of delivering substantial power into low impedance loads; power can exceed 50 amperes per channel. Therefore, be certain to exercise **extreme** caution when making connections to and from the amplifier. **Always make certain that the amplifier is disconnected from the AC outlet, and its large filter capacitors are discharged.** Note that the power supply capacitors can take more than **12 minutes** to discharge**. Failure to observe this precaution may result in damage to the loudspeakers and/or blowing of the amplifier's AC RAIL FUSES, conditions which are NOT covered by the warranty.**

The GFA-5705 amplifier can drive a very broad range of loudspeakers. including those with very low impedances, at sustained high-power levels, even when the impedances are highly reactive. Great care was taken to insure distortion in the amplifier would remain extremely low, particularly when driving highly reactive loads in which the phase angles of the voltage and the current are substantially different. A little-known fact is that amplifiers which measure extremely well on the test bench into a resistive load may not develop the same amount of power into a loudspeaker. Depending on the amplifier's design, sometimes as little as one third of the power which the amplifier develops into a resistor is delivered to a speaker load. Also, the distortion level measured when the amplifier is driving a resistive load is degraded. in some cases, quite substantially, when driving the loudspeaker. It is, however, very difficult to measure the performance of an amplifier into a loudspeaker. One reason why this information is not widely known is because during such high-power tests, destruction of the loudspeaker is often the result. To determine the performance of the GFA-5705, ADCOM developed a "computer model" of a "difficult" loudspeaker load. A computer model "mimics" the reactance of the very difficult speaker and duplicates the actual phase angles of the voltage and current throughout the entire audio range. In this manner, high-power testing of amplifier parameters could be undertaken without repetitive destruction of the loudspeakers.

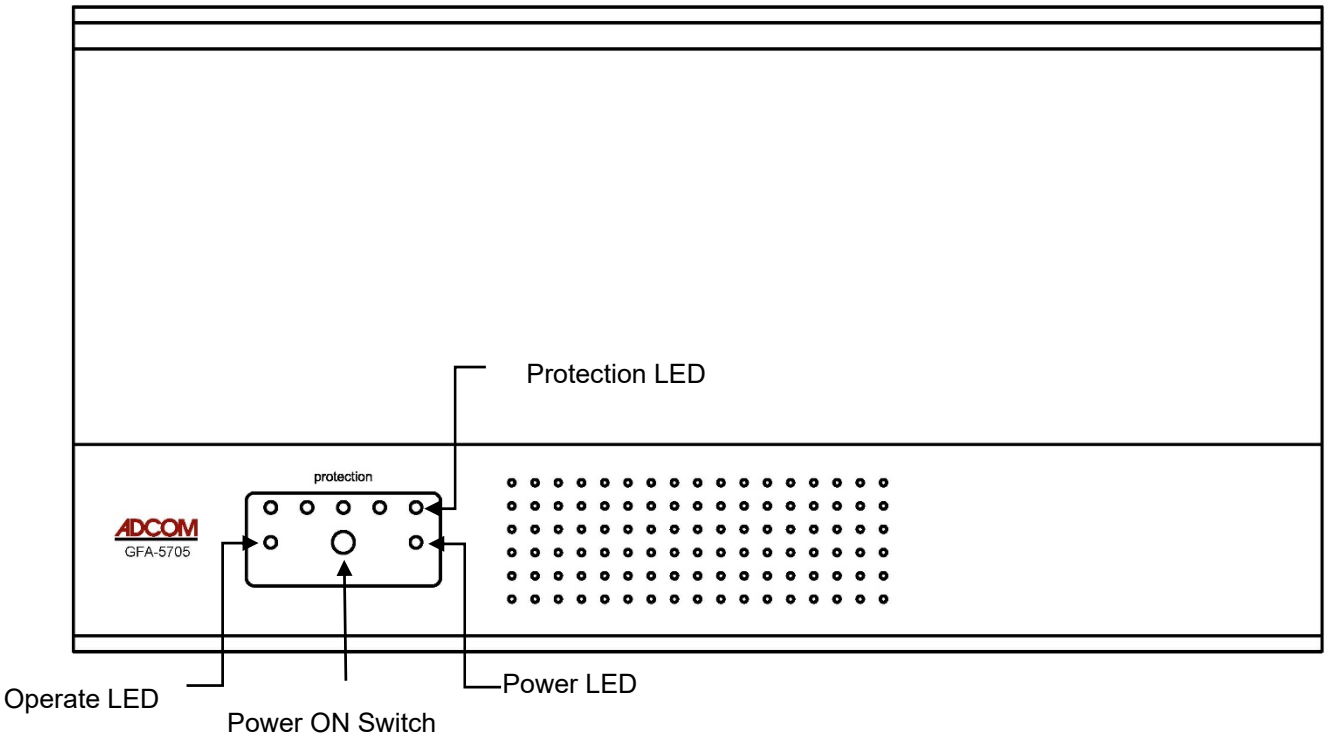
To achieve the above, 3 pairs per channel & total of 15 pairs of specially selected TO3-type, metal-cased bipolar output transistors are used in the GFA-5705 in a triple-Darlington configuration of its driver and output stages. The safe operating area of these transistors, along with their circuit topology, insures very efficient power delivery to reactive loads, regardless of the phase angle of voltage and current. For safety, protection & current-limiting circuitry is used in the GFA-5705.

The power supply in the GFA-5705 has enormous reserve power with an extremely large transformer feeding a storage bank of 30000uF per channel & total of 150,000uF of filter capacitance. The transformer itself was designed for extremely good regulation, insuring stable voltages regardless of the power demands from the amplifier. Its higher efficiency was insured by using a toroidal design. Additionally, thermal and dynamic tracking of the bias for the triple-Darlington driver and output stages is provided to ensure that the amplifier operates in its optimal range regardless of the length of time and the level of operation.

All internal point-to-point wiring uses the highest-quality parts, consistent with their application and voltage requirements. In especially critical circuits, the finest quality film capacitors have been used. Among its other design improvements are the following:

- 150,000UF Rubycon filter capacitors in power supply
- 1.7kVA shielded toroid power transformer
- 25A AMETHERM NTC Resister for surge suppression
- 20A speaker relay to protect custom speaker system
- 20A UL power On/Off relay
- PP.PS.MPE.MPP plastic capacitors inside
- heavy bottom Chassis
- Aluminum Top cover
- 5U Chassis design
- Extra-large integrated heat sinks
- 15 matched pairs of TO3 metal cased bipolar output transistors
- 24K gold 5-way speaker terminal
- Over current protection
- Over temperature protection
- DC servo & DC current protection
- Auto audio signal ON/OFF & 5V-12V DC trigger ON/OFF

FRONT PANEL



AC ON/OFF SWITCH (front panel)

The switch on the front panel is to power on the GFA-5705 for use. Please make sure the AC switch on the back panel is in the “ON” position, or the amplifier can’t be powered on / off with the front panel switch.

POWER LED

This LED will glow whenever the switch is turned on and the GFA-5705 is energized. If the AC LINE FUSE blows, the POWER LED will cease to glow.

THE LIMIT PROTECTION LED

There are five statuses for the LIMIT PROTECTION LED.

First, when you power on the amplifier, the Limit protection LED will light 8 +/-2 seconds and then go out, the amplifier has no output during this time period. You may also hear the left & right channel output relays turn on and go into operation mode.

Second, the GFA-5705 is provided with an overload protection circuit to protect the amplifier when a speaker short circuits or DC voltage occurs on the amplifier output stage. If such events occur, the LIMIT PROTECTION LED will light and the output relay will open immediately to prevent the output transistors or other parts from failing.

The GFA-5705 is provided with a thermal protection circuit which will shut down the amplifier if the temperature of outside heatsinks reaches 70°C and internal heatsinks reaches 90°C. The THERMAL PROTECTION LED will light whenever the thermal protection circuit on either channel, or both channels, has been triggered; the amplifier will be inoperable. You will know that the heatsink temperature has become unacceptably high and the circuitry is protecting the amplifier. Please note that the POWER LED will remain on and the amplifier will still be energized. Once the temperature of the heatsinks drop to a safe operating level, the amplifier will automatically return to operation.

IMPORTANT NOTICE

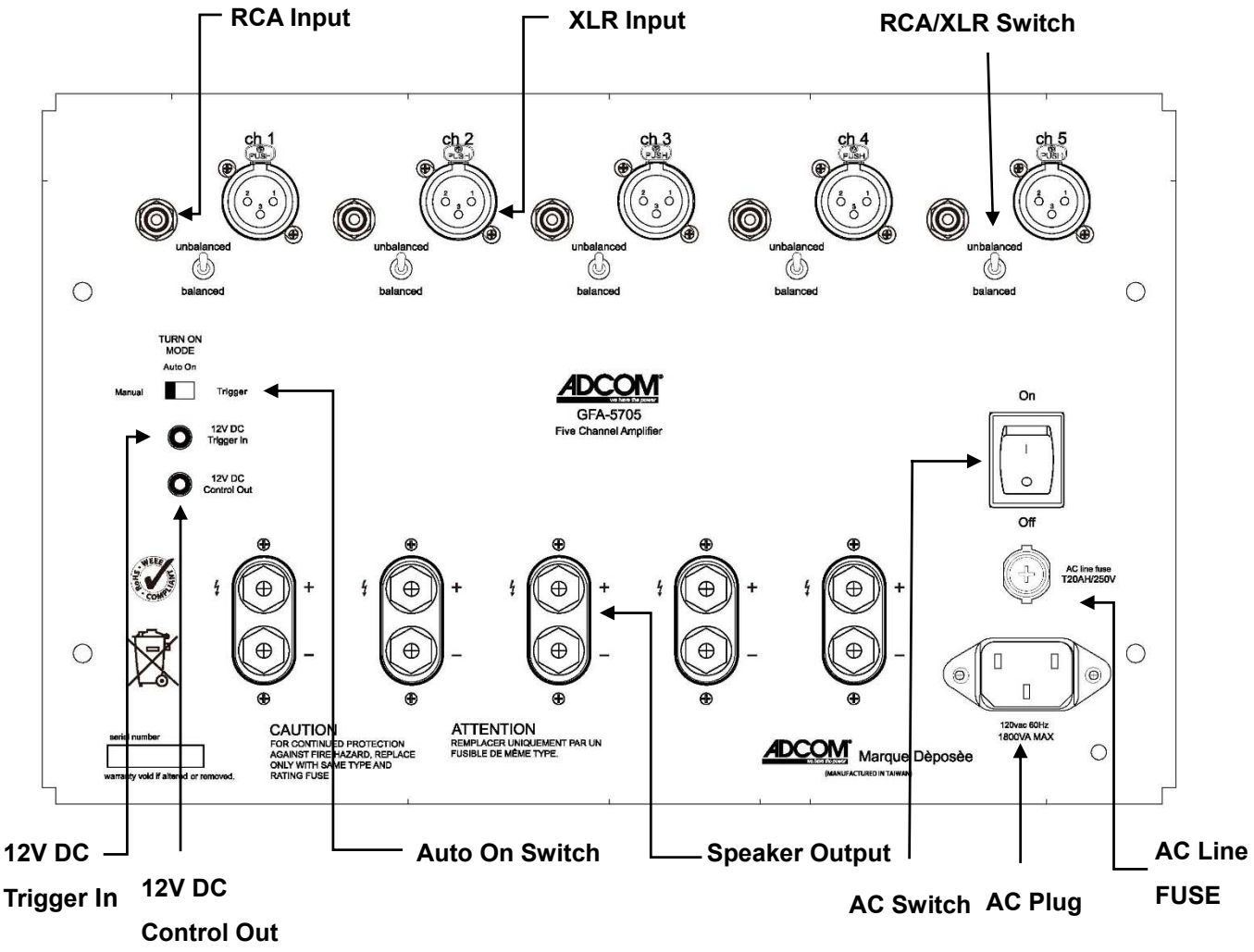
ADCOM PROTECTION PLAN

(U.S.A ONLY)

ADCOM offers a Limited Warranty. Please read the details on the Warranty card carefully to understand the extent of the protection offered by the Warranty, its reasonable limitations, and what you should do to obtain its benefits. Please register your warranty online at www.adcom.com or www.adcom-usa.com

Be sure to verify that the serial number printed on the rear panel matches the serial number on the outer carton. If any number is altered or missing, you should notify us immediately in order to ensure that you have received a genuine ADCOM product which has not been opened, mishandled or tampered with in any way.

REAR PANEL



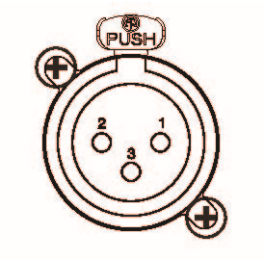
AC ON/OFF SWITCH (back panel)

The AC ON/OFF switch controls main power to the power transformer and circuits of the GFA-5705. When in the OFF position, there is no power to operate the amplifier.

XLR INPUT (Balanced)

The audio inputs to the GFA-5705 are through five high-quality, Balanced XLR jacks to minimize high-frequency losses, noise, etc. They will accept standard XLR-type plugs, one for each channel. To ensure that the performance designed into the GFA-5705 is preserved, you should use high quality plugs and cables. There are many cables specifically designed for this application. Your ADCOM dealer can help select the best cables for your needs.

The balanced inputs of the GFA-5705 use XLR connectors that conform to the industry standard pin configuration:
Pin 1: Ground, Pin 2: Positive(+), Pin 3: Negative (-)



RCA CH1-CH5 INPUT (Unbalanced)

The audio inputs to the GFA-5705 are through five high-quality, gold-plated brass RCA jacks using high quality insulation to minimize high-frequency losses, noise, etc. They will accept standard RCA-type plugs, one for each channel, usually supplied at the ends of standard interconnecting cables. To ensure that the performance designed into the GFA-5705 is preserved, you should use the highest quality plugs and cables. There are many cables which are designed specifically for these applications and your ADCOM dealer can be of help in selecting the best cables for your application. Whatever cables you finally select, they should have low capacitance. This is particularly important if you use a long run between the preamplifier and the amplifier or if your preamplifier has a high output impedance. Cables with a capacitance of around **100pF** will work well.

The load impedance which the GFA-5705 inputs present to the source preamplifier is 22,000 ohms. This load impedance results in minimal amplifier noise and can be used with any source component regardless of its output impedance.

CH1-CH5 SPEAKER OUTPUTS

The GFA-5705's connections to the loudspeakers are made through the acrylic covered 24K gold 5-way speaker terminals located on the rear panel. These terminals will accommodate either bare wire, tinned wire, terminal pins or spade lugs. The output terminals are color-coded RED and BLACK to indicate polarity. To insure correct polarity, you must connect the RED output terminal (labeled "+") to the loudspeaker input terminal color-coded RED (usually labeled POSITIVE, "+", POS, 8 OHMS or 4 OHMS). The BLACK binding post terminal on the amplifier (labeled "-") should be connected to the BLACK loudspeaker terminal (usually labeled NEG, "-", C, COM, COMMON, G, or GROUND).

POWER MODE- MANUAL/AUTO ON or TRIGGER

1. Manual- When you wish to manually turn the amplifier ON or OFF by using the front panel power button
2. Auto On- If you want the amplifier to turn on when the amplifier receives an audio signal. When either the left or right input jack receives a signal, the amplifier will turn

on. The amplifier will automatically turn off 5 minutes after the signal stops.

3. Trigger- If you want the amplifier turn on when it receives voltages (5V-12VDC) from an external source and turn off once that voltage has stopped. The voltage source must be connected to the trigger input 3.5mm jack on the back of amplifier.

12V DC CONTROL OUT

DC 12V 100mA 3.5mm output jack to trigger other devices.

AC RAIL FUSES

The AC RAIL FUSES provide protection for the output stages and power supply in the event of excessive current demands from the amplifier, either long-term or short-term.

If the amplifier ceases to operate on one or both channels, particularly during high-level passages, or long-term high-volume playback, and the POWER LED glows while the THERMAL PROTECTION LED is out, the chances are that one or both of the AC RAIL FUSES on that channel, or both channels, are blown.

If the current drawn by this stage exceeds a safe level due to a load impedance below 1 ohm or short circuit at the speaker terminals, the LIMIT PROTECTION LED glows, it means the output relay will open immediately to prevent the output transistor or other parts from failing.

NOTE

In the event that the AC RAIL FUSES need to be replaced, only one of the fuse types listed in the table below should be used. Please note that the fuses listed in the table, and their time-current blowing points, have been carefully selected and thoroughly tested to del*iver* optimal performance while still accomplishing their protective functions. Replace these fuses, individually, only with the specific types listed. **DO NOT USE ANY SUBSTITUTE FUSES WITH DIFFERENT RATINGS, TIME-CURRENT CURVES OR VALUES.** Failure to observe this precaution may cause serious damage to the amplifier circuits, **MAY CREATE A FIRE HAZARD, AND MAY VOID YOUR WARRANTY.** For your convenience, a replacement set of two of the correct AC RAIL FUSES is supplied with each amplifier to facilitate restoration of the amplifier to operation in the event of a blown fuse.

The GFA-5705 has a massive power supply which remains charged for up to **12 MINUTES** after the amplifier is *turned* off and the POWER LED ceases to glow. It also remains energized when the POWER. LED glows even if the THERMAL PROTECTION LED is **ON**.

Therefore, you should exercise great caution when connecting and/or disconnecting loudspeakers to or from the SPEAKER OUTPUTS. Should you inadvertently short out the RED ("+") and BLACK ("-") SPEAKER OUTPUTS, enough power may remain in the power supply to cause sufficient current to blow the AC RAIL FUSES on the affected channel. When connecting or disconnecting loudspeakers to or from the SPEAKER OUTPUTS, always be certain to wait at least 12 **MINUTES** after turning the amplifier **OFF** before undertaking any such procedure.

AC RAIL FUSES

BUSSMANN *MDA-8A/250V (for power supply)* *Time Delay / Slow Blow*

To remove a blown or suspect fuse from its fuse holder, use only a number 2 Phillips screwdriver to prevent damage to the fuse holder. Simply press IN lightly on the fuse-holder cap and turn counterclockwise. The cap will "pop" out after several turns. To replace the fuse-holder cap, once the fuse has been replaced and properly installed in its seat on the fuse-holder cap, press lightly inward, once the fuse and cap have been inserted in the fuse-holder body, and turn the cap clockwise until it is firmly seated in the fuse-holder body. Be certain not to cause cross-threading of the fuse-holder body and cap to prevent damaging the fuse holder. **DO NOT FORCE THE FUSE-HOLDER CAP INTO THE THREADS**. Seating of the cap in the fuse-holder *body should* be *easily accomplished* without excessive force.

AC LINE FUSE

The AC LINE FUSE protects the electronic circuits of the GFA-5705. *Normally, this fuse* will blow *only* if *there is* an overload within the GFA-5705. Since this fuse has been designed to protect the electronic circuits in the GFA-5705, it is recommended that it be replaced only with one of the fuses listed in the table below. Please note that the fuses listed are for operation of the amplifier on 120VAC/60Hz. For the correct fuse values to operate the GFA-5705 on other voltages and frequency, please consult the Service Manual for this amplifier available from the ADCOM Technical Service Department.

Whenever the POWER switch on the rear panel is in the ON position and the front panel power switch is turned ON the amplifier is energized and the POWER LED will glow. If turning on the amplifier does not cause the POWER LED to glow, it may be an indication that the AC LINE FUSE is blown. Unplug the AC LINE CORD from the AC wall outlet, turn the POWER switch off and check the fuse with an ohm meter. If the fuse is blown, replace it with one of the fuses listed in the table below. Plug the amplifier into the AC-wall outlet and turn on the amplifier. If after replacing the fuse, it blows immediately upon turning on the amplifier

(POWER LED does **not** glow), a failed electronic component or other internal malfunction must be suspected. Make no further attempts at fuse replacement or operation of the amplifier. **Refer the problem to competent ADCOM-authorized service personnel**.

NOTE

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

AC LINE FUSES

BUSSMANN *MDA-20A/250V (120V Area)*	*Time Delay / Slow Blow*
BUSSMANN *MDA-12A/250V (230V Area)*	*Time Delay / Slow Blow*
LITTELFUSE*326-20A/250V (120V Area)*	*Time Delay / Slow Blow*
LITTELFUSE*326-12A/250V (230V Area)*	*Time Delay / Slow Blow*

NOTE

The fuses listed above, and their time-current blowing points, have been carefully selected and thoroughly tested to deliver optimal performance while still accomplishing their protective functions. Replace the AC LINE FUSE only with one of the fuses listed above. **DO NOT USE ANY SUBSTITUTE FUSES WITH DIFFERENT RATINGS, TIME-CURRENT CURVES OR VALUES**. Failure to observe this precaution may cause serious damage to the amplifier circuits, **MAY CREATE A FIRE HAZARD, AND WILL VOID YOUR WARRANTY**.

CARING FOR YOUR GFA-5705

Great care has been taken by ADCOM to assure that your amplifier is as flawless in appearance as it is electronically. The front panel is a heavy- gauge, high-grade aluminum extrusion carefully finished and anodized for durability. The 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 Swifter® and/or a clean, soft, lintless, microfiber cloth, slightly dampened with a very mild detergent solution or non-ammonia glass cleaner such as ZEP®.

NOTE

DO NOT SPRAY OR USE LIQUIDS OF ANY KIND ON THE SURFACES OF THE GFA-5705. DO NOT EXPOSE THE AMPLIFIER TO LIQUIDS SUCH AS RAIN, WATER, SPILLED DRINKS OR MOISTURE OF ANY OTHER KIND.

SERVICING-North America

ADCOM has a Technical Service Department to answer questions pertinent to the installation and operation of your unit. In the event of difficulty, please contact us for prompt advice. If your problem can not be resolved through our combined efforts, we may refer you to an authorized repair agency, or authorize return of the unit to our facility. To aid us in directing you to a convenient service center, it would be helpful if you indicate which major city is accessible to your home.

Please address mail inquiries to:
ADCOM-USA/J&B DISTRIBUTION Inc.
PO BOX 54096
PHOENIX, AZ 85078
U.S.A.

Phone or Fax inquiries:
Monday through Friday
9:00AM to 5:00PM Arizona Time
Phone Number: 480-607-2277
email: support@adcom-usa.com

When calling or writing about your GFA-5705, be sure to note and refer to its model and serial numbers as well as the date of purchase and the ADCOM authorized dealer from whom it was purchased. In the event the unit must be returned for service, you will be instructed as to the proper procedure when you call or write. UNDER NO CIRCUMSTANCES SHOULD YOUR UNIT BE SHIPPED TO US WITHOUT PRIOR AUTHORIZATION, OR PACKED IN OTHER THAN ITS ORIGINAL CARTON AND FILLERS.

Always ship PREPAID AND FULLY INSURED *VIA* UPS, FEDEX OR OTHER APPROVED CARRIER. DO NOT SHIP VIA PARCEL POST, since the packing was not designed to withstand rough Parcel Post handling. FREIGHT COLLECT SHIPMENTS WILL NOT BE ACCEPTED.

GFA-5705 SPECIFICATIONS

Power Rating (To FTC Requirements)

200 watts @ 5 ch continuous average power into 8 ohms at any frequency between 20Hz and 20kHz with both channels driven at less than 0.05% THD.

300 watts @ 5 ch continuous average power into 4 ohms at any frequency between 20Hz and 20kHz with both channels driven at less than 0.07% THD.

IM Distortion (SMPTE)

1 watt to 200 watts into 8 ohms	≦0.03%
1 watt to 300 watts into 4 ohms	≦0.05%

IM Distortion (CCIF, Any Combination from 4kHz to 20kHz)

200 watts into 8 ohms	≦0.03%
300 watts into 4 ohms	≦0.03%

THD + Noise at 200 Watts into 8 Ohms all channel driven

20Hz	0.030%
1kHz	0.008%
10kHz	0.030%
20kHz	0.050%

THD + Noise at 300 Watts into 4 Ohms all channel driven

20Hz	0.05%
1kHz	0.01%
10kHz	0.05%
20kHz	0.07%

Frequency Response @ 1 Watt into 8 Ohms

10Hz to 20kHz	+0. -0.25dB

Power Bandwidth (-3dB) 5 Hz to 100kHz

Dynamic Headroom into 4 Ohms

1.2dB

Signal-to-Noise Ratio, "A" Weighted	
200 watts into 8 ohms	≧106dB
Gain	27dB
Input Impedance	22,000 ohms
Input Sensitivity	
200 watts into 8 ohms	1.8V rms
Damping Factor	>300
Rise Time	
5kHz,120V peak-to-peak square wave, 20% to 80%	2.3us

Power Consumption (Continuous, All Channels Driven)	
Quiescent	120VA
Maximum	1800VA
200 watts into 8 ohms	1350VA
300 watts into 4 ohms	1800VA

GENERAL	
Power	120VAC/60Hz
	230VAC/50Hz
AC Line Fuse	T20A/120V AREA
	T12A/230V AREA
Chassis Dimensions	8-3/4" (222mm) x 17” (432mm) x *17-3/4"* (450mm)
Packing Dimensions	10-3/4” (275mm) x 19" (480mm) x 19-*3/4"* (565mm)
Weight	81lbs.(37kgs)
Weight, Packed	90lbs.(41kgs)

Specifications subject to change without notice.