ADCOM®
TUNER/PREAMP
GTP-400

FEATURES

- Very-low-impedance Main Out (100Ω)
- Very-low-impedance power supply for best decoupling and bypass
- Direct-coupled outputs with very-low DC offset
- Very-wide dynamic range for compatibility with digital sources
- Full-Class-A phono preamplifier and high-level circuits
- Very-fast, linear-gain proprietary semiconductors operating in full Class A
- Feedback Bass and Treble tone controls
- Full electronic isolation of Tape Outputs to preserve signal integrity, prevent interaction, and insure best signal quality from both Main and Tape Outputs
- Separate Recording and Listening selectors which allow you to simultaneously record one input while listening to a different input
- Digital FM/AM tuner section with presets and memory for eight FM and eight AM stations
- Built-in protection from AC-line spikes and surges

IMPORTANT NOTICE

The GTP-400 is covered by a valuable limited Warranty, which assures you of factory-sponsored service during its applicable period. The considerable benefits of this Warranty and its few reasonable limitations are spelled out in the enclosed multi-part Warranty Card. Should you ever have any questions about this product or wish to be advised of future modifications and accessories for it, it will be indispensable for us to have the return portion of the Warranty Card on file. Please be sure to fill out and return the appropriate portion of the Warranty Card to ADCOM Service Corp., being sure to fill in the serial number which you will find printed on the rear panel of the unit, and all other pertinent information. Should you find any discrepancy, or if the Warranty Card is missing, please notify us immediately so that your rights under the Warranty may be protected.

INTRODUCTION

Please read thoroughly the operating instructions for the GTP-400 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.

Your ADCOM GTP-400 incorporates some of the most advanced thinking in linear-gain, very-fast semiconductor design. Its superior performance is the result of a thorough re-evaluation of all factors affecting analog audio performance in the Digital Age; factors such as headroom, dynamic range, input-output linearity and others. The installation and operation of the GTP-400 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, and your familiarity with it, is essential to the correct operation of the GTP-400. Please read it carefully to fully understand all its features and functions and to derive maximum performance in your system.

UNPACKING

Before each GTP-400 left the factory, it was carefully inspected for physical imperfections 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 GTP-400, 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 ANY 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. SAVE ALL PACKING MATERIALS UNTIL THE CLAIM HAS BEEN SETTLED.

INSTALLING THE GTP-400

Although the GTP-400 does not generate much heat, you will 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 GTP-400 should never be placed with other heat-producing components in a cabinet or enclosure lacking free air-flow.

For use in professional installations, the GTP-400 may be mounted in a standard 19-inch rack using the optional RM-3 rack mount adaptors available through ADCOM dealers.

CONNECTING THE GTP-400

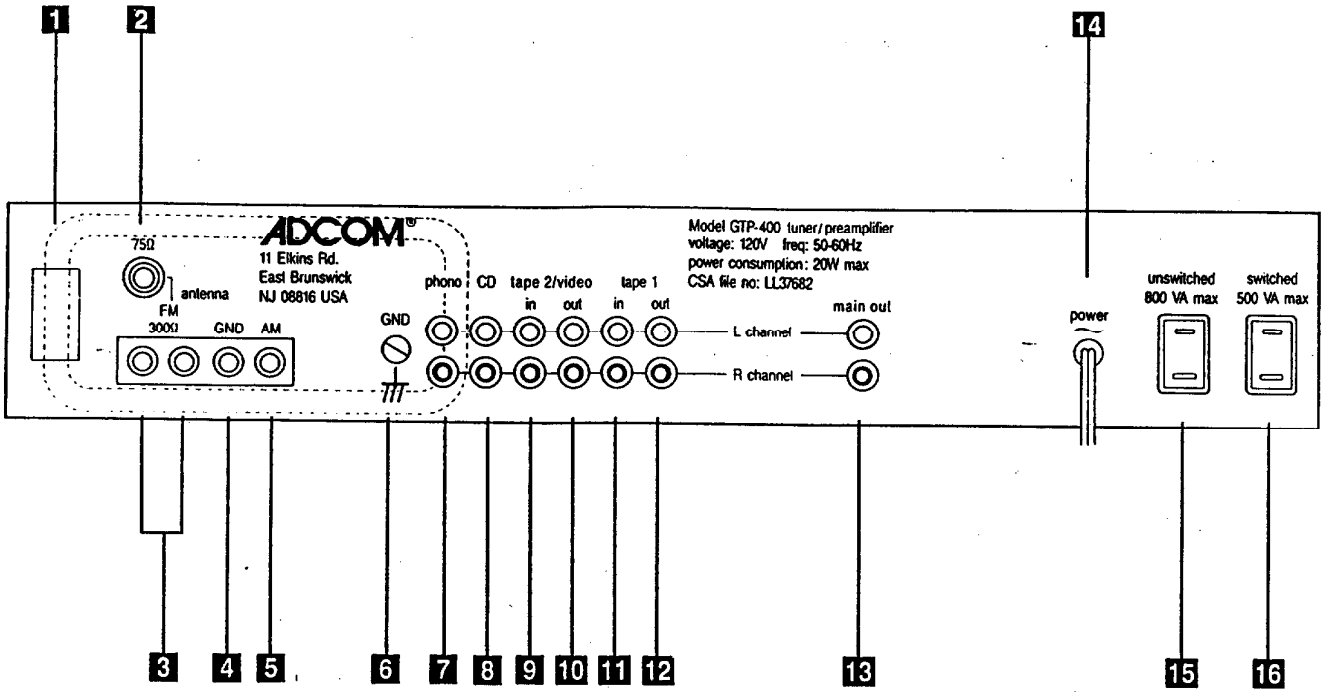
The performance of the GTP-400 depends on the quality of the interconnection of both the Tuner/Preamplifier and its associated equipment. All the output signal connections should be made only with high-quality, low-loss audio cables. LEFT and RIGHT inputs and outputs are clearly labeled.

NOTE

Whenever connections to or from the GTP-400 are being made, be certain all associated components are turned **off.**

AM LOOP 1 4 5

The GTP-400 is supplied with a high-sensitivity ferrite-loop antenna that, for most convenient use, simply snaps into the bracket 1 on the rear panel of the GTP-400. Once you have mounted the ferrite loop on the bracket, connect the spade lugs on the two wires affixed to the ferrite loop to the two screws labeled GND 4 and AM 5. It does not matter which wire goes to which of the two screws. By swinging the ferrite loop out and away from the rear panel of the GTP-400, you can "orient" the antenna for best reception of desired stations with minimum noise. In some very noisy locations, it may be necessary for best reception to remove the antenna from its bracket and position it away from the chassis of the GTP-400. The length of the wires



Determine the exact color coding or markings on your turntable's cable for left and right channels in order to insure correct connection.

The PHONO circuitry 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 millivolts or higher. The PHONO input electrical impedance characteristics are the standard 47,000 ohms with a 100 pF shunt capacitance.

CD 8

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 videodisc player, or videocassette recorder (VCR). The load impedance of this input is 18,000 ohms.

TAPE 2/VIDEO IN 9 TAPE 1 IN 11

The two sets of tape inputs are identical in sensitivity and electrical characteristics to the CD 8 inputs and the comments made about the CD 8 inputs apply. These may be used not only for cassette or other audio recorders but also with any high-level signal source, such as a VCR's audio outputs, etc.

The two sets of tape inputs are also part of a "cross dubbing" tape circuit. Refer to TAPE 2/VIDEO OUT 10 and TAPE 1 OUT 12 below for interconnection of the tape-dubbing facility.

If you desire simple playback of prerecorded tapes, plug the left and right outputs of the tape machine labeled "tape out" or "line out" to either set of TAPE 2/VIDEO IN 9 or TAPE 1 IN 11 using a set of good quality audio cables.

TAPE 2/VIDEO OUT 10
TAPE 1 OUT 12

The outputs from these jacks are selected by the RECORDING 25 selector on the front panel. Whichever input is selected via the RECORDING 25 knob will appear at the TAPE 2/VIDEO OUT 10 and TAPE 1 OUT 12 jacks. It should be pointed out that when the RECORDING 25 selector is placed in the TAPE 1 position,

the TAPE 1 IN 11 input will appear **only** at the TAPE 2/VIDEO OUT 10 jacks. Similarly, if TAPE 2/VIDEO IN is selected by the RECORDING 25 knob, the TAPE 2/VIDEO IN 9 inputs will appear **only** at the TAPE 1 OUT 12 jacks.

This type of system permits "cross dubbing" from one cassette deck to another or from one audio recorder to another without having to disconnect, or change connections from, either cassette or tape recorder.

To hook-up the TAPE 2/VIDEO OUT 10 to your cassette or tape recorder, connect the right and left jacks on the cassette or tape recorder labeled "line in" or "record in" to the corresponding LEFT and RIGHT TAPE 2/VIDEO OUT 10 jacks on the rear panel of the GPT-400. To connect the TAPE 1 OUT 12 jacks to another recorder proceed in the same manner outlined above. It is very important that you use only high-quality interconnecting cables, since the ultimate quality of the recordings will be affected by the characteristics of the cables.

MAIN OUT 13

The MAIN OUT 13 of the GTP-400 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 500 mV (0.5V) to well above 2V. The output level from the MAIN OUT 13 (and PHONES 19 jack) is controlled by the volume control 27 on the front panel.

To connect the MAIN OUT 13 jacks to your power amplifier, simply interconnect the LEFT and RIGHT MAIN OUT 13 jacks to the corresponding left and right input jacks on the amplifier. To preserve the extremely high quality of the circuitry in the GPT-400, it is recommended that you use as high a quality cable as possible to make this interconnection.

Although the GTP-400 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 input sensitivity and power output.

POWER 14

This cord provides AC power to operate the GTP-400's circuits and energize the UNSWITCHED 15 and SWITCHED 16 accessory outlets. The AC linecord should be plugged into any standard wall outlet providing 120VAC, 50-60 Hz.

NOTE

The GTP-400's power cord is supplied with a "polarized" AC plug as required by UL/CSA standards and local electrical codes. To minimize the risk of electrical shock, and to insure minimal hum from the system, do not defeat the polarity-insuring feature of the plug (one wide blade and one narrow blade). To prevent electrical shock, do not use this polarized plug with an extension cord or receptacle, or other outlet, unless the blades can be fully inserted to prevent blade exposure.

UNSWITCHED 15 OUTLET

The UNSWITCHED 15 outlet can supply the AC power requirements of any accessory source used with the GTP-400, such as a CD player or analog turntable. The AC line cord of the accessory may be plugged into this outlet. The UNSWITCHED 15 outlet is **not** controlled by the power switch 18 on the front panel of the GTP-400 and 120VAC will always be available at this outlet so long as the GTP-400 is plugged into an energized wall outlet regardless of the position of the main power switch 18. The total power drawn through the UNSWITCHED 15 outlet must never exceed 800 Watts.

SWITCHED 16 OUTLET

The SWITCHED 16 outlet is controlled by the power switch 18 on the front panel of the GTP-400. 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 18 on the front panel of the GTP-400. The current-carrying capacity of the power switch 18 is sufficient to handle the inrush current of power amplifiers up to the 100-watt-per-channel class. It is not recommended that very large power amplifiers, of the 200-watt class or larger, be plugged into this outlet. The total power drawn through the SWITCHED 16 outlet must not exceed 500 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 15 outlet or the SWITCHED 15 outlet. Most large power amplifiers should be plugged directly into an AC wall outlet for overall maximum performance and best power delivery.

CONTROLLING THE GTP-400

Please refer to the diagram of the front panel of the GTP-400 to identify all the controls and their function.

AC ON/OFF SWITCH 18

The push-on/push-off AC power switch 18 controls power to the GTP-400 circuits and to the SWITCHED 16 outlet on the rear panel of the GTP-400. Whenever the GTP-400 is energized, the DISPLAY 29 will light.

PHONES 19

The headphone jack is a standard, ¼-inch, 3-contact type which will operate with any conventional set of stereo headphones. If you have a set of light-weight stereo headphones, which are generally supplied with a mini-phone plug, you may use a stereo phoneplug-to-miniplug adaptor.

The PHONES 19 jack is powered by its own high-quality stereo amplifier, the level from which is governed by the setting of the volume control 27.

NOTE

Since the volume control 27, BASS 21, TREBLE 22, CONTOUR 23, etc. affect both the level from the MAIN OUT 13 jacks and PHONES 19 jack, it is advisable to unplug any set of headphones connected to the PHONES 19 jack whenever they are not in use and you are listening to your speakers. Conversely, if you are listening to your headphones, it is recommended that you turn off your power amplifier to inactivate your loudspeakers, thereby preventing possible interference between the two listening modes or inadvertent damage to either.

BALANCE 20

The BALANCE 20 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 in 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 20 control will be at or near its 12 o'clock position.

To adjust for optimum balance between channels, first turn 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 20 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.

Once the correct setting is chosen, it will need to be changed only to compensate for unequal signal levels from an outside music source (CD, cassette, etc.).

BASS 21

This control emphasizes the bass frequencies when turned in the clockwise direction and deemphasizes them when turned counterclockwise in both left and right channels simultaneously. The normal position of the BASS 21 control will be at or near its 12 o'clock position. In many cases, however, it will be useful in compensating for inadequate or overprominent low bass that is due to poor program sources, inadequate speaker placement, etc. You will very seldom, if ever, need to set this control at its maximum clockwise or counterclockwise position. Please note that the maximum clockwise setting emphasizes extreme low frequencies by a factor of 10 which, when playing music at normal or loud levels, may exceed the power-output capabilities of your amplifier and/or speakers - particularly when playing music of very wide dynamic range.

NOTE

The tone-control circuitry of the GTP-400 was very carefully designed to provide subtle, but effective, low- and high-frequency equalization without affecting unduly the critical midrange frequencies. Careful circuit damping prevents any action of the BASS 21 or TREBLE 22 controls on the frequency response or any other parameter of the GTP-400 when either control is in the normal, centered, 12 o'clock position. Do not expect to hear the drastic, non-musical boosts or attenuations of bass and treble usually encountered with less sophisticated tone-control circuits.

TREBLE 22

This control emphasizes treble frequencies when turned clockwise. It deemphasizes them when turned counterclockwise. The control affects both left and right channels simultaneously. Its normal position is the center, or 12 o'clock, setting. The TREBLE 22 control will be primarily useful in taming musical source material which is strident and/or in adding "sparkle" to older analog recordings or broadcasts of similar material. You may also find it useful to correct for slight speaker deficiencies in their extreme high range or to compensate somewhat for inadequate room acoustics. If your listening room has "dull" acoustics, due to heavy carpeting, upholstered furniture, etc., a small amount of treble boost may achieve better overall balance. Conversely, a "live" room with hard surfaces and sparse furnishings may benefit from a judicious reduction of treble.

CONTOUR 23

The CONTOUR circuit in the GTP-400 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 20-100 Hz 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. Pushing in the CONTOUR 23 switch activates this function.

MONO 24

Pushing in this switch mixes the left- and right-channel signals. This combined signal is then fed to both MAIN OUT 13 jacks. The MONO 24 switch is useful to reduce FM noise and distortion on weak stations, when playing older analog mono recordings, or to check relative phasing of your speakers.

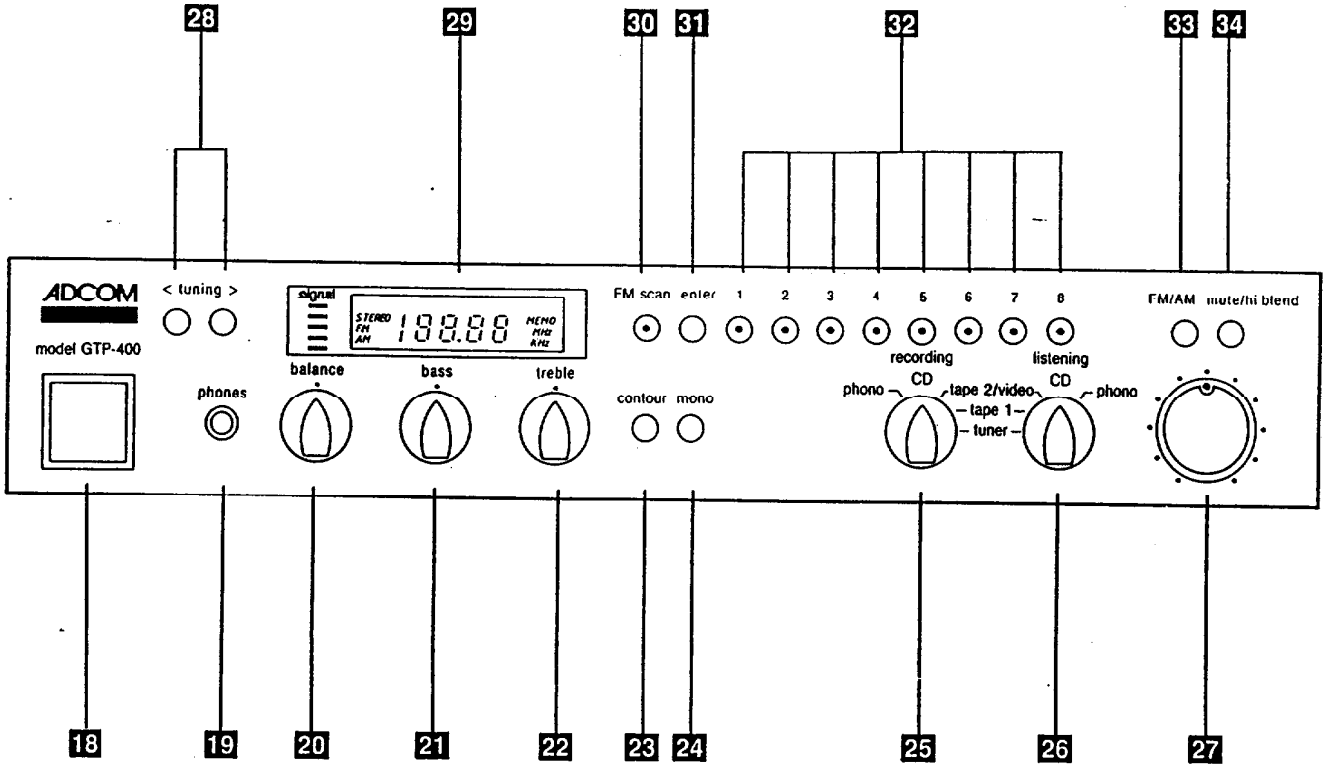
RECORDING 25

This rotary selector switch permits you to choose any input connected to the GTP-400 and feed it directly to the TAPE 2/VIDEO OUT 10 and TAPE 1 OUT 12 jacks for recording the selected input. With the GTP-400 selector system it is possible to record one source (say, CD 8 or PHONO 7) while listening to a different source such as the FM tuner. Please refer to section TAPE 2/VIDEO OUT 10, TAPE 1 OUT 12 above for proper use of the RECORDING 25 selector in conjuction with these outputs.

Neither the volume control 27, nor any of the other controls on the front panel of the GTP-400 affect the output at the TAPE 2/VIDEO OUT 10 or TAPE 1 OUT 12 jacks.

LISTENING 26

This rotary selector lets you choose any input connected to the GTP-400 and feed it, through the circuitry of the GTP-400, to the MAIN OUT 13 jacks (and PHONES 19 jack) and, then, through your amplifier and speakers. The LISTENING 26 selector operates independently from the RECORDING 25 selector (above); therefore, you can listen to one source while recording another, different source. All the controls on the front panel of the GTP-400 will affect the signal present at the MAIN OUT 13 jacks, and the sound through your amplifier and speakers.



VOLUME 27

This rotary control sets the level at both the PHONES 19 jack and MAIN OUT 13 jacks and, consequently, the level heard through the headphones, amplifier and speakers. Turning this control clockwise will raise the level of the signal chosen via the LISTENING 26 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 volume control 27 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 GTP-400 (cassette machine, tape recorder, CD player, etc.); the modulation level of the station being received by the tuner; etc. The position of the volume 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 volume control 27 settings of the GTP-400.

It is also quite common to have to set the volume control 27 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 may require adjustment of the volume control 27 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 volume control 27 before changing the LISTENING 26 selector to another input. It is also advisable to unplug headphones from the PHONES 19 jack when using your loudspeakers or turn-off your power amplifier through its on/off switch when listening to headphones. See LISTENING 26 above.

The design of the GTP-400 makes it usable with the gamut of power amplifiers presently available, as well as with all loudspeakers presently in use. The volume control 27 was designed to be fully operable throughout its complete rotation.

TUNING 28

These two buttons permit you to change the quartz-synthesized frequency shown on the display panel 29 and to which the FM and AM sections are tuned. Pushing the left button will shift the tuned frequency to the next lower frequency. Pushing the right button will shift the frequency to the next higher frequency. The buttons work similarly for both the FM and AM bands. However, when the FM SCAN 30 button is pushed in (the LED in the center of the button will then illuminate), the tuner will automatically scan the dial (either up or down in frequency, depending on which of the two TUNING 28 buttons is pushed) until the next station with a good receivable signal is encountered. Whenever the LED in the center of the FM SCAN 30 button is out, the scan function is inoperative and the normal mode is engaged. Please note that the FM SCAN 30 is operative only on the FM band; it will not permit scanning of the AM band.

In the normal mode, if either of the TUNING 28 buttons is depressed, the tuner circuitry will shift to the next frequency, up or down. If either button is depressed and held the display will index quickly, up or down in frequency until the button is released.

DISPLAY 29

The multifunction fluorescent readout will display:
1. Your selection of either FM or AM band
2. The frequency of the station to which you are tuned
3. Whether an FM station is broadcasting stereo (when the signal received by the tuner is in stereo, the STEREO indicator will light in the display). Please note that if the MONO 24 button is depressed, it will permit only mono reception and the STEREO indicator will not light, even if the broadcast is originally in stereo.
4. The relative signal strength of the station being received on both FM and AM. The SIGNAL strength indicator is divided into 5 segments. The greater the number of segments lit, the stronger the received signal. You can use the SIGNAL strength indicator to orient both FM and AM antennae for maximum signal and lowest distortion and noise.
5. MEMO indicator will light whenever the ENTER 31 button is pressed to show that the station-preset memory is ready to receive instructions. (See ENTER 31 and station presets 32, below.)

FM SCAN 30

Depress this button to select the FM SCAN mode or the manual tuning mode. When the FM SCAN mode is activated, the LED in the center of the FM SCAN button will light. Once the FM SCAN mode is selected, pressing either of the TUNING 28 buttons will cause the tuner to scan the FM band, up or down in frequency, depending on which button is pressed, until a station with a good receivable signal is reached; the scan function will then stop. If you do not want to listen to the now-tuned station, press one of the tuning buttons and the scan function will be initiated once again.

NOTE

The FM SCAN 30 function will operate only on the FM band; its function is not available on the AM band. AM stations can be selected only using the manual mode. Whenever the AM band is chosen through the FM/AM 33 button, the LED in the center of the FM SCAN 30 button will not light and the FM SCAN function will be defeated. To reactivate the FM SCAN, you must push the FM SCAN 30 button once again when you return to the FM band.

Whenever the LED in the center of the FM SCAN 30 buttons is **not** illuminated, the tuner is in the manual mode. In the manual mode, each time one of the TUNING 28 buttons is momentarily pressed, the tuner, and the DISPLAY 29, will shift to the next higher or lower frequency, depending on which of the TUNING 28 buttons is pushed. If one of the TUNING 28 buttons is pressed and held down, the tuner will index quickly, up or down in frequency, until the button is released. This manual function is available on both the FM and AM bands.

ENTER 31

This button is used in conjuction with the station presets 32, below, to enter selected FM and AM stations into the GTP-400's memory.

STATION PRESETS 32

The GTP-400 has capability to store 8 separate FM and 8 separate AM stations in its memory. The stations in the memory bank of the GTP-400 can be changed at will, and at random, any time you desire. To program stations in the memory:

1. Select either the FM or the AM band through FM/AM 33 button.
2. Tune to the frequency of the station you desire to program into the memory through TUNING 28 buttons. If you are programming stations on the FM band, you may find it more convenient to search for the specific station by using the FM SCAN 30 function.
3. Press ENTER 31 button. MEMO will light up in the DISPLAY 29 to show memory is ready to accept instructions.
4. Press one of the 8 buttons in the station-preset rack. The MEMO indicator will disappear from the DISPLAY 29 and the LED in the center of the selected button will glow to show that the memory has been programmed for that station's frequency. Now, each time that specific button is pressed, the tuner will automatically return to the programmed frequency and station. The presets do not have to be programmed in any sequence, numerical or otherwise. They can be programmed in any desired order on either FM or AM bands.
5. Repeat steps 2 to 4 to program any other stations in which you are interested up to a total of 8.

FM/AM 33

Press this button to switch from FM to AM and vice-versa. The selected band will be indicated on the DISPLAY 29. Whenever you change bands, the tuner will automatically return to the station (frequency) or PRESET 32 to which the band was tuned previously.

> **NOTE**
>
> The memory of the GTP-400 will remain intact and preserve the information programmed into it (that is, all the stations selected and their frequencies), so long as the unit is turned on and used frequently. If the GTP-400 is not turned on for long periods of time, the memory bank will discharge and the programmed information will be slowly erased. To activate and charge the memory bank, it is recommended you turn on your GTP-400, via its AC on/off switch 18, every week to ten days. (Only momentary turn on is necessary, no prolonged listening to the tuner is required.) Otherwise, you may have to reprogram the entire memory.

MUTE/HI BLEND 34

The GTP-400 features a "muting" circuit to reduce, or eliminate, the normal FM noise present between stations. Were it not for the muting circuit the loud "rushing" noise between stations would soon become annoying. The muting circuit, however, may make it difficult to receive very weak stations which are near the level of the interstation noise. In such instances, the muting circuit will mute, not only the noise but the weak station as well. To defeat the muting circuit, simply push-in the MUTE/ HI BLEND 34 button. This switch will automatically defeat the muting circuit and insert a "high-frequency blend" network which will substantially reduce the high-frequency noise present with very weak stations. Due to the formatting of FM stereo signals onto the FM carrier, weak signals permit a considerable amount of noise to creep in and confuse the stereo signal. The ADCOM HI BLEND circuit reduces the high-frequency separation of the stereo signal, without compromising the majority of the stereophonic information, and thereby cancels out much of the hiss and high-frequency noise in the signal. It is a phenomenon of FM that noise injected into the stereo-channel information is mostly out-of-phase, and simply "blending" the channels partially will cancel out and reduce the noise significantly, without sacrificing signal fidelity. Should you find that even with the HI BLEND circuit the received signal is too noisy and further noise reduction is required, depress the MONO 24 button. This will automatically remove the stereo information and decrease the noise substantially, although at the expense of the stereophonic information. Please note that when the MONO 24 button is depressed, the STEREO indicator in the DISPLAY 29 will **not** light.

CARING FOR YOUR GTP-400

Great care has been taken by ADCOM to assure that your Tuner/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. If the front panel, top and 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 GTP-400.

SERVICING

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 cannot be resolved through our combined efforts, we may refer you to an authorized repair agency, or authorize return of the unit to the factory. To aid us in directing you to a convenient service station, it would be helpful if you indicate which major city is accessible to your home.

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

For telephone inquiries call:
Monday through Friday
9 AM to 4 PM Eastern Time
(201) 390-1130 - ask for Technical Service.

When calling or writing about your GTP-400, be sure to note and refer to the serial number of your unit, as well as the date of purchase and the dealer from whom the unit was purchased. In the event that the unit must be returned to the factory for service, you will be instructed as to the proper procedure when you call or write for Return Authorization.

UNDER NO CIRCUMSTANCES SHOULD YOUR UNIT BE SHIPPED TO THE FACTORY WITHOUT PRIOR AUTHORIZATION, OR PACKED IN OTHER THAN ITS ORIGINAL CARTON AND FILLERS.

If the original shipping carton and its fillers have been lost, discarded, or damaged, a duplicate carton may be obtained from our Service Department for a nominal charge. Inquire as to the procedure when requesting a Return Authorization.

Always ship PREPAID via United Parcel Service (UPS) or other approved carrier. DO NOT SHIP VIA PARCEL POST, since the packing was not designed to withstand rough Parcel Post handling. We are forced to refuse many Parcel Post shipments which arrive in very poor condition. FREIGHT COLLECT SHIPMENTS CANNOT BE ACCEPTED.

SPECIFICATIONS
GTP-400

Preamplifier Section

Output Impedance	
Main Out	100Ω
Tape Out	500Ω
Output Level (Rated)	
Main Out	2V
Output Level (Maximum)	
Main Out	≥10V
Frequency Response (±0.5dB)	
High Level	10Hz-100kHz
Phono	20Hz-50kHz
THD + Noise	
High Level	≤0.009%
Phono	≤0.08%
IMD (SMPTE)	
High Level	≤0.005%
Phono	≤0.008%
Signal-to-Noise (Rated Output, Weighted)	
High Level	≥95dB
Phono	≥80dB
Input Impedance	
High Level	18,000Ω
Phono	47,000Ω
Input Sensitivity (Rated Output)	
High Level	310mV
Phono	3.3mV
Tone Controls	
Bass (@20Hz)	±10dB
Treble (@20kHz)	±10dB
Loudness (Volume @ 9:00 o'clock)	
100Hz	+5dB
20Hz	+10dB
Crosstalk (@1kHz)	80dB

FM Tuner Section

Usable Sensitivity (Mono)	1.9μV/11dBf
Quieting Sensitivity (50dB)	
Mono	2.5μV/13.5dBf
Stereo	38.5μV/36.8dBf
Signal-to-Noise(@ 65dBf, Weighted)	
Mono	≥80dB
Stereo	≥75dB
THD + Noise (@ 1kHz, 65dBf)	
Mono	≤0.08%
Stereo	≤0.1%
Capture Ratio	1.7dB
Alternate Channel Selectivity (±400kHz)	≥75dB
IF Rejection	≥90dB
Image Rejection (±400kHz)	≥80dB
Separation (@ 1kHz)	≥50dB
Frequency Response (±0.5dB)	30Hz-15kHz

AM Tuner Section

Sensitivity	300μV/m
Selectivity (±10kHz)	40dB
Image Rejection	42dB
IF Rejection	70dB
Signal-to-Noise (@5mV/m, Weighted)	45dB

General

Power (available in other voltages on special order)	120VAC/50-60Hz
Power Consumption	20 Watts
Chassis Dimensions	17"(432mm) x 11⅜"(289mm) x 3"(76mm)
Maximum Dimensions	17"(432mm) x 12¾"(324mm) x 3⅛"(81mm)
Weight	11.5lbs.(5.2kg)
Weight, Packed	15lbs(6.8kg)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

THE FOLLOWING PRECAUTIONS AND SAFETY INSTRUCTIONS ARE REQUIREMENTS OF UL AND CSA SAFETY REGULATIONS.

Warning: To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

AVIS: RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR.

The graphic symbol of a lightning flash with an arrow point within a triangle signifies that there is dangerous voltage within the unit and it poses a hazard to anyone removing the cover to gain access to the interior of the unit. **Only qualified service personnel should make any such attempt.**

The graphic symbol of an exclamation point within an equilateral triangle warns a user of the device that it is necessary to refer to the instruction manual and its warnings for proper operation of the unit.

Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to a child or adult, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the unit. Any mounting of the device should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

Read all the safety and operating instructions before connecting or using this unit.

Retain this notice and the owner's manual for future reference.

All warnings on the unit and in its operating instructions should be adhered to.

All operating and use instructions should be followed.

Do not use this unit near water; for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

The unit should be installed so that its location or position does not interfere with its proper ventilation. For example, it should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as bookcase or cabinet, that may impede the flow of air through its ventilation openings.

The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.

The unit should be connected to a power-supply outlet only of the voltage and frequency marked on its rear panel.

The power-supply cord should be routed so that it is not likely to be walked on or pinched, especially near the plug, convenience receptacles, or where the cord exits from the unit.

Clean unit only as recommended in its instruction manual.

The power-supply cord of the unit should be unplugged from the wall outlet when it is to be unused for a long period of time.

Care should be taken so that objects do not fall, and liquids are not spilled, into the enclosure through any openings.

This unit should be serviced by qualified service personnel when:
A. The power cord or the plug has been damaged; or
B. Objects have fallen, or liquid has been spilled, into the unit; or
C. The unit has been exposed to rain, or liquids of any kind; or
D. The unit does not appear to operate normally, or exhibits a marked change in performance; or
E. The device has been dropped, or the enclosure damaged.

DO NOT ATTEMPT SERVICING OF THIS UNIT YOURSELF. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

ATTENTION

POUR PRÉVENIR LES CHOCS ÉLECTRIQUES NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

CAUTION
POWER LINES

Any outdoor antenna must be located away from all power lines.

OUTDOOR ANTENNA GROUNDING

If an outside antena is connected to your tuner or tuner-preamplifier, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

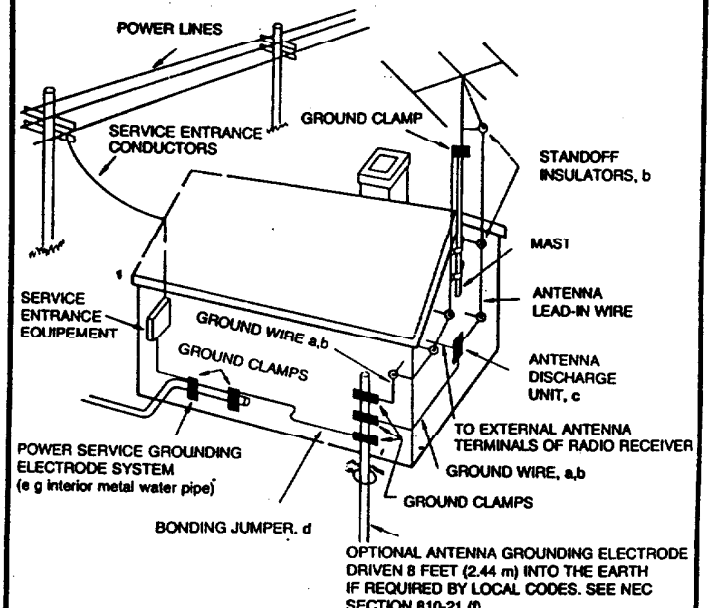
a. Use No. 10 AWG (5.3 mm^2) copper, No.8 AWG (8.4 mm^2) aluminum, No. 17 AWG (1.0 mm^2) copper-clad steel or bronze wire, or larger, as a ground wire.

b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4--6 feet (1.22--1.83 m) apart.

c. Mount antenna discharge unit as close as possible to where lead-in enters house.

d. Use jumper wire not smaller than No. 6 AWG (13.3 mm^2) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 - RADIO AND TELEVISION EQUIPMENT



NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 820-22 of the National Electrical Code that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.