

USER MANUAL

GOLDMUND TELOS 500
Universal Power Amplifier



Thank you for purchasing the GOLDMUND TELOS 500.
You have acquired the best Universal Power Amplifier ever made for professional and domestic uses.

Please take some time to read this manual. It will provide you with useful information to make your pleasure of listening to the TELOS 500 even higher.

INTRODUCTION

GOLDMUND TELOS 500 – Universal Power Amplifier

Goldmund was founded in 1978 and has ever since been dedicated to the accurate reproduction of sound and image.

At Goldmund, we strive to lead in the creation, development and manufacture of the industry's most advanced technologies, including audio and video systems, home - networking and music distribution.

The guiding principle at Goldmund is to produce a precise sound with the least possible loss of quality through the different stages. Goldmund will never adopt a technology before it is sufficiently developed to satisfy the high quality standards we set. This is why Goldmund has often rejected mainstream technologies and developed its own.

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W A R N I N G !

No connection or manipulation must be done before reading these instructions. Damage to the amplifier may result if the following instructions are not consciously understood and applied.

These extremely high quality amplifiers possess new technical features which are a necessity for accurate sound reproduction in the best audio systems.

Only careful installation and use can provide the satisfaction you are expecting.

The installation instructions must be carried out in full and the mentioned precautions taken to get the expected result and to avoid impairing the amplifier's performance.

1

UNPACKING

You will find in the GOLDMUND TELOS 500 box:

- The amplifier
- The power cord
- This manual

ATTENTION

IF YOU NEED TO RETURN THE TELOS 500 TO THE FACTORY OR TO YOUR LOCAL REPRESENTATIVE FOR A WARRANTY REPAIR, **PLEASE NOTE THAT IT MUST BE REPACKED IN THE ORIGINAL PACKAGING.**

THIS PACKAGING HAS BEEN DESIGNED SPECIFICALLY TO PROTECT YOUR TELOS 500 IN TRANSIT.

USE OF ALTERNATIVE PACKAGING IS LIKELY TO RESULT IN DAMAGE, INVALIDATING WARRANTY COVER.

Please keep the packaging in case you need to transport the amplifier at a later date.

The GOLDMUND TELOS 500 amplifier as all high quality amplifiers generates a large amount of heat when driven at high levels and must be vented properly. It is mandatory to allow a proper cooling of the heat sinks. Do not put temperature sensitive equipment on top of the amplifier.

Due to its weight, and to maximize the effect of the built-in "Mechanical Grounding" construction, the TELOS 500 is better located on the floor. Other very strong supports can be used if they offer rigid transmission to the floor.

The TELOS 500 is built on four very hard conical feet to ensure proper vibration transmission to the amplifier support. This evacuates all detrimental vibrations inside the amplifier, following the famous GOLDMUND "Mechanical Grounding" principle.

If you use more than one TELOS 500 at any location, you may decide to stack them. Be careful that the conical feet of the top amp are inserted properly on the top of the steel bars of the amplifier located below. You may stack up to 3 amps provided extra care is taken to ensure proper air circulation vents the rear heat-sinks.

Depending on the flatness of the surface where the amplifier will be located, you will adjust the four round flat feet of the amplifier to allow full contact of the points with the support.

3

LINE VOLTAGE ADJUSTMENTS

A voltage selector is provided inside the amplifier.

If your line voltage is not adapted to the voltage indicated on the serial plate of the amplifier, please consult your local GOLDMUND dealer for internal adjustment.

ATTENTION

On the 220V configuration, the GOLDMUND TELOS 500 amplifier will function properly for main line voltage between 211V and 257V. On the 110V configuration, the main line must deliver between 105 and 129V. If your main line is usually out of these tolerances, please consult your GOLDMUND dealer.

Please check the value of the main line fuse. This fuse is located on the back panel of the amplifier, above the two power cord receptacles.

Use a 16A delayed fuse.

4

CONNECTIONS

Connect the power cord to the back of the amplifier and plug it into the nearest wall plug. Use only a 3 lugs grounded plug, for safety reasons. To get the best sound from the amplifier, avoid any multiple plug or extension cord.

If used with an analog signal, connect the interconnect between the preamp and each power amp and position the Analog/Digital input switch to analog. You may either use the RCA female socket or the XLR. The XLR socket, especially useful in professional installations, is wired as follows:

1. Grounding, Shielding
2. Hot
3. Cold

ATTENTION

If you want to use a symmetrical 4 wire cable, never maintain the ground/earth switch to "Float" or you may damage your amplifier.

When used with a digital input signal, connect the digital input cable to the digital input and switch the input switch to digital. Since a digital Spdif cable carries 2 channels you may link the digital output to the next amplifier to transfer the second channel.

Connect the speaker cable to the red and black terminals in the back of the amplifier, or, if you use a Goldmund High Definition speaker cable, you can connect directly from the speaker cable to the coaxial plugs on the back panel of the amplifier, bypassing the amplifier adapter module of the speaker cable.

The output (5 way post and coaxial) are connected internally in parallel. They are provided to facilitate the connection in bi-wiring systems.

You may notice that the ground of the input plug and the black speaker terminal are the same polarity. The amplifier is non-inverting in phase (see page 12).

5 AMPLIFIER CONTROLS

As soon as the amplifier is connected to AC line and the amplifier has not detected an error previously, the yellow light on the amp front panel is ON.

The TELOS 500 may be powered on either manually (Manual Operation) or automatically when receiving a signal (Auto-Power Operation). This is selected internally by the small white 10-position circular selector located on the top circuit of the amplifier, close to the big capacitors.

There is one position for Manual Operation and 9 for Auto-Power Operation with various delays to power a number of amplifiers without a big surge on the AC line.

- Position 0: Manual Operation
- Position 1: Power after 200ms
- Position 2: Power after 400ms
- Position 3: Power after 600ms
- Position 4: Power after 800ms
- Position 5: Power after 1s
- Position 6: Power after 1.2s
- Position 7: Power after 1.4s
- Position 8: Power after 1.6s
- Position 9: Power after 1.8s

MANUAL OPERATION

On the front plate of the GOLDMUND TELOS 500 amplifier you will find only two POWER keys.

In the Manual Operation mode, the two POWER keys have to be activated simultaneously to power the amplifier on.

This security feature is provided to avoid accidental POWER ON or POWER OFF.

When the two keys are pressed simultaneously, the amp switches on in "Operating" mode and the center green led lights on showing the amp is POWERED ON.

If the digital input is used, the yellow led may flicker, showing there is no lock and the amplifier remains muted until a lock is found.

With an analog input, the amplifier is immediately operational.

By pressing the right key once, the amplifier is put in Mute mode, and the green led flickers.

By pressing the right key once again, the amplifier returns to "Operating" state.

The amp may be POWERED OFF by pressing the two POWER keys simultaneously at anytime.

AUTO-POWER OPERATION

In AUTO-POWER mode, the amplifier is turned on automatically when receiving an audio signal.

This mode is useful when several amplifiers are used together in a multi-amp system or when the power amplifiers are not easily accessible.

When the amplifier is in AUTO-POWER mode and is operative, it may be muted by pressing the right key, as in the normal mode.

OTHER DISPLAY

If an abnormal situation is found by the TELOS 500, one of the front panel red lights may turn ON, and the power of the amplifier is instantaneously set OFF.

The left red led indicates an over temperature situation.

The central red Led indicates that HF oscillation or DC signal has been detected.

The right red Led indicates that the amplifier has detected an overload (for example when output is short-circuited).

Before re-starting the amplifier, detect what caused the problem and remove the cause first.

The amplifier will remain OFF with a red led on until the user intervenes.

To unlock the amplifier from one of the above status, press the 2 power keys simultaneously. If the perturbation has been removed, the red led will stop and the yellow led will glow again, the amplifier is now operating.

WARM-UP SONIC EFFECT

When the amplifier has not been used recently it will take 10 to 15 minutes for the amplifier to reach optimum operating temperature, as the circuits have to warm up to around +55 degrees Celsius.

SPEAKER POLARITY

Even if you have a phase inverter on your preamplifier and have carefully selected the proper line phase (see next paragraph below), there is a possibility to further increase the sonic quality of your speakers by reverting the polarity of the speaker cable amplifier termination. Line phase and speaker polarity interfere with each other however. We therefore advise careful experimentation with all the combinations in order to arrive at the best solution for your installation.

If your preamplifier has an absolute phase inverter, this will interfere too. If it has not, don't forget the result will depend on the source, as most records and CDs have been recorded without care for the absolute phase. Be patient...

MAIN LINE PHASE INVERSION

To select the proper phase, you have to select, by trying, one of the two power cord positions.

We recommend that you proceed carefully when trying this. You must do it in combination with the speaker polarity and/or with absolute phase switching to be sure of the result.

6 SOUND QUALITY OPTIMIZATION (Ctd.)

THE GOLDMUND EXCLUSIVE "*MECHANICAL GROUNDING*"

In the GOLDMUND TELOS 500 amplifier, GOLDMUND has, as in other of its Ultimate Line components, fully implemented an optimized vibration evacuation path. This is called by GOLDMUND: "*Mechanical Grounding*". The perfect adjustment of this evacuation provides the Telos 500 with an extraordinary dynamic capability and transparency, especially on low efficiency speakers.

To get all the benefits of this design, the TELOS 500 must be located on a very rigid support, or better directly on the floor, to be directly coupled with the building's rigid construction. Try various locations until you find the most rigid one. Avoid any decoupling material, carpet especially, even between the furniture and the floor. Use the four pin-point feet to couple the amplifier to the supporting furniture or to the floor.

With a very top system, the sonic improvement when the proper grounding is found is obvious and worth the effort.

The GOLDMUND TELOS 500 amplifier provides sophisticated features to protect the amplifier and the speakers against all mishandling or component failure. However precautions must be taken to avoid problems with a very high power amplifier.

PROTECTION AGAINST DC

The TELOS 500 is a DC-coupled amplifier. If the associated preamplifier is badly designed or defective (often true for the tube preamplifiers), the speakers could be damaged.

In such a case, the DC protection circuit of the TELOS 500 will automatically turn off the amplifier. This detection circuit is totally immune to any sonic effect.

To indicate that the amplifier has been turned off by the protection circuit, a red led will be displayed on the front panel.

When the source of DC offset is suppressed, turn ON the amplifier again.

PROTECTION AGAINST HF OSCILLATIONS

In the same way, the speaker must be protected against a large amount of high frequency oscillation, if present, before and after to avoid any danger for the tweeters, even if these frequencies remain unnoticed.

The amplifier is by itself extremely stable. However some mishandling must be avoided in order to avoid any oscillation:

- Never plug an input cable into a power amplifier when it is turned on.
- Be careful to use only very high quality interconnects. If the ground connection becomes loose, there is a big danger of oscillation. Warranty is voided if this occurs.
- Never run the input and output (speaker) cables in parallel.

If the TELOS 500 detects excessive oscillation, the amplifier will be turned OFF automatically. You will have to suppress the source of oscillation and turn it ON again once the protection is activated.

OVERHEATING PROTECTION

If for any reason (malfunction, too high level, too low load impedance) the temperature of the amplifier could reach a dangerous level, the TELOS 500 could be damaged.

To avoid this type of damage, if the temperature rises too high, a protection circuit switches the amplifier OFF automatically. A red front panel light indicates that the amplifier has been turned OFF by the protection circuit.

If this happens, let the amplifier cool for some time. We strongly recommend investigating the cause of the temperature gain before operating the amplifier again.

PROTECTION AGAINST SHORT-CIRCUITS

If one output is short-circuited by accident and the current becomes too high, the TELOS protection circuit may be activated.

In such a case the Overload red led on front panel will turn on.

First carefully check why the overload occurred and remove the cause.

Then switch the power ON if the short-circuit has been detected and removed.

To avoid Overload occurring, always switch OFF the amplifier before trying any manipulation of the speaker cables.

There is no risk to leave the speaker terminals unconnected when the amplifier is ON.

8 MAINTENANCE

The GOLDMUND TELOS 500 amplifier usually requires no maintenance.

Always turn the power OFF before cleaning your amplifier. Use a clean, soft, damp cloth to clean the amplifier surface. Dampen the cloth with water or a mild detergent solution. Avoid abrasive or harsh cleansers (eg. products containing sodium carbonate).

9 TECHNICAL SPECIFICATIONS

POWER SUPPLY

- Nominal Line Voltage 117 ; 234V
- AC line range: 10%
- Fuse 16A for 115 and 230V
- 10 toroidal transformers
- Separated ground and earth signal
- Connection between earth and ground to cancel all ground loops

Rated power consumption:

- IEC 60065, 1/8 Output Power at 8 Ω : 210 W

Max power consumption:

- IEC 60065 at 8 Ω /1% THD: 550 W

FRONT PANEL

- 2 control keys
- Red led display for Over-heating, DC offset or HF protection and Overload
- Green led display for Power ON, operating mode
- Yellow led display for AC line connection and digital Lock
- Yellow led display for Standby Mode

REAR PANEL

- Power cord: universal socket 3 lugs
- Main fuse (16 A slow-blow)
- Green-yellow AC earth binding post
- Output speaker 1 x 5 ways post
- Output speaker 1 x coaxial connector
- Analog Input connector RCA
- Input connector XLR for analog balanced input
- Digital input and output RCA connector

INPUT**Max level before clipping:**

- Analog input: 1Vrms
- Digital input: - 6 dBFS

OUTPUT**Max level before clipping:**

- 1 % THD, unloaded: 153 Vpp

PERFORMANCE**Output power:**

- Power RMS (Goldmund FPP Standard): 350 Wrms on 8 Ω .
- Maximum power (IEC60065): 335 Wrms on 8 Ω / 1%THD

Bandwidth:

- 20Hz - 20KHz: +/-0,03dB, unloaded
- +/- 3dB: 0Hz to 100 kHz (limited by protection circuitry), unloaded

Note:

Information and product specifications contained in this manual are subject to change without prior notice. Updated versions of this manual will be posted on our website at www.goldmund.com.

Please visit our support page at <http://www.goldmund.com/support/register> to register your Goldmund product for warranty.

Slew rate:

- Unloaded, 18V/ μ S

Distorsion:

- IMD (SMPTE), unloaded: < 0.03 %
- THD+N, unloaded: < 0.06 % from 20 Hz to 20 kHz at 20 Vrms output

Output noise floor:

- Analog input terminated with RCA Shorting Caps, unloaded: < 3 μ V from 20 Hz to 20 kHz

Gain:

- 35dB

Dynamic range:

- 22 kHz measurement bandwidth (flat), true RMS unloaded: 110 dB

Damping factor:

- at 8 Ω : > 160 from 20 Hz to 20 kHz

DIMENSIONS

- 330 W x 470 D x 270 H (mm)

WEIGHT

- Weight: 65 kg

WARRANTY

- 3 years parts and labor