

COPLAND

CTA 407

USER GUIDE



What's in the Box

AMPLIFIER
POWER TUBES – 4 pcs.
POWER CORD
REMOTE CONTROL
USER GUIDE

GETTING STARTED

Open the carton and remove the amplifier from its plastic bag. Before placing the unit in your home, read this carefully.

CAUTION!

Various regulation agencies require us to bring the following information to your attention. Please read carefully.

WARNING ! To prevent fire or shock hazard, do not expose this unit to rain or moisture.

! Check that your supply voltage is the same as indicated.

! Dangerous voltage inside. Do not open the cabinet without disconnecting the mains power cord.

! There are no user serviceable parts inside. Repairs should be carried out by qualified service personnel only.

! Ensure that no objects or fluids pass through the ventilation openings.
If liquid is spilled into the amplifier, disconnect from the mains and consult a qualified service technician.

Do not subject the amplifier to high mechanical vibration, the tubes are sensitive to this.

Allow adequate clearance so that cool air can enter at the chassis ventilation holes.

Never place the amplifier on a carpet or similar surface that obstructs air circulation through the unit.

The trouble-free life of an amplifier is greatly extended by providing sufficient ventilation to prevent build-up of high internal temperatures that cause deterioration.

The recommended minimum ventilation space is 50 cm wide and 40 cm high.

Installation

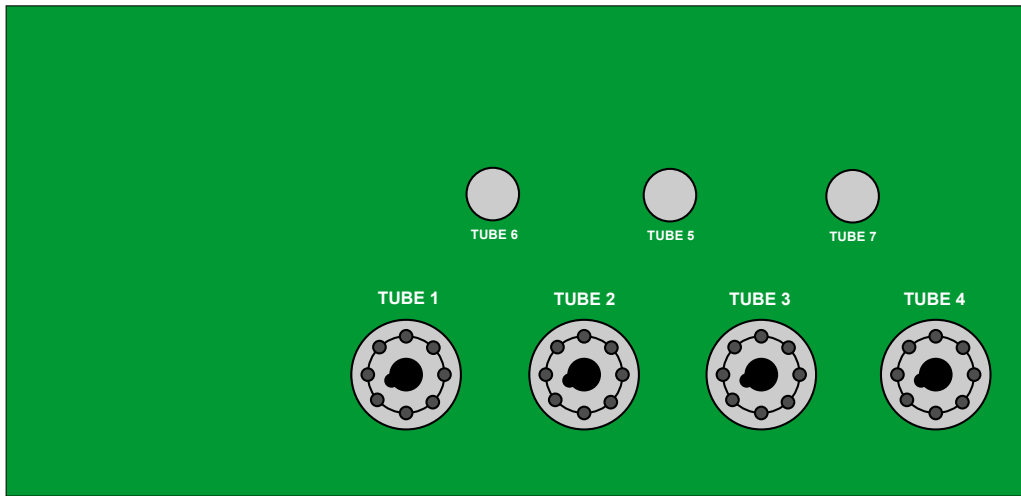
To prevent the output tubes from damage and disconnecting, the power tubes are not installed during transport.

Before use, the four power tubes should be placed in the free octal sockets on the main circuit board inside the amplifier marked **V1, V2, V3, V4**. The tubes have been matched at the factory and are delivered as matched pairs.

Place one pair in the left channel octal sockets (**V1 & V2**).

The other pair in the right channel octal sockets (**V3 & V4**).

! BE CAREFUL THAT THE POWER TUBE PIN ALIGNMENT TAP MEETS THE MATCHING GROOVE ON THE TUBE SOCKET BEFORE PRESSING THE TUBE DOWN THE SOCKET.



Automated bias adjustment

Traditionally tube amplifiers need manually adjustment of the so-called bias voltage. The bias setting ensures that the currents through the power tubes are in balance and consistent with the electrical operational points the amplifier has been designed for.

The CTA407 employs an intelligent bias adjustment. Each output tube having its own dedicated bias circuit. Throughout their lifespan, the CTA407 is constantly monitoring the bias status of the power tubes and automatically adjusting their bias voltage. It ensures trouble free usage and optimal sound quality without ever needing manual adjustments.

Input / Outputs

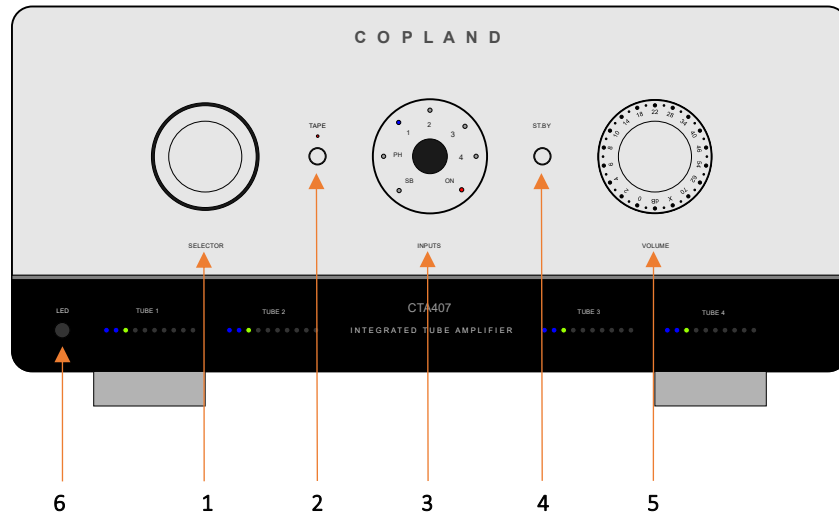
Use shielded cables to connect the signal source to the amplifier input. To minimise the possibility of hum, the shielded cables should run parallel to each other or loosely twisted together. Locate the cables away from speaker leads and AC power cords.

AC Power

The amplifier AC power cord is plugged into an 115V/120V/230V/240Volt 50/60 Hz. Wall-outlet. The right voltage is indicated on the back panel next to the AC power inlet.

! Check that your supply voltage is the same as indicated.

Front Panel



1. **Source Selector:** Selects the appropriate input signal source.

2. **Tape Monitor:** If you have connected a tape recorder to the “tape in” on the back of the unit, then switching ‘Tape’ will make it possible to listen to tapes.

If your tape recorder has a monitor capability (usually requires a separate playback head), you can monitor your tape recording as it is being recorded by switching the tape button.

The Tape Monitor function can also be useful when adding an Equalizer / Room-correction unit in the signal chain.

A red lamp right above the tape key indicates Tape Monitor activated.

NOTE: When the Tape Monitor is engaged, it bypasses the Selector Switch. Regardless of which source the selector is set for, you only hear the tape input.

If the Tape Monitor is accidentally left on, none of the inputs on the Source Selector will operate.

3. **Display:** The display shows the selected source input.

A flashing ‘ON’ lamp indicates that the amplifier is under its 30 seconds start up procedure. When the ‘ON’ lamp stops flashing, the amplifier sound stages start operating after another 20 seconds.

A continuous flashing ‘ON’ lamp for more than 35 seconds. Indicates that the amplifier is in ‘protection mode’ and needs to be reset by turning the back panel AC-power switch off a few seconds and then on again.

(More information about the ‘protection mode’ to be found on next page of this manual)

4. **Power Switch:** Pressing this key, the amplifier will switch cyclically between operation and standby mode. Power On and Stand By are indicated in the display.

5. **Audio Level:** To adjust the volume to the desired listening level, turn the control clockwise to increase the volume.

6. **LED:** Reducing the numbers of lighting bias LEDs to only green ones on

Diagnostic LED panel



The position of the four power tubes, inside the amplifier, is marked with the numbers one to four.

Tube number **1 & 2** is left channel power tubes. Tube number **3 & 4** is the right channel.

Correspondingly, the operational status of each tube can be seen on the bottom LED panel of the CTA407 when the amplifier is turned on and have finished its approximately two minutes warm up procedure.

The four groups of ten LEDs, related to each tube, are ordered in the following way.

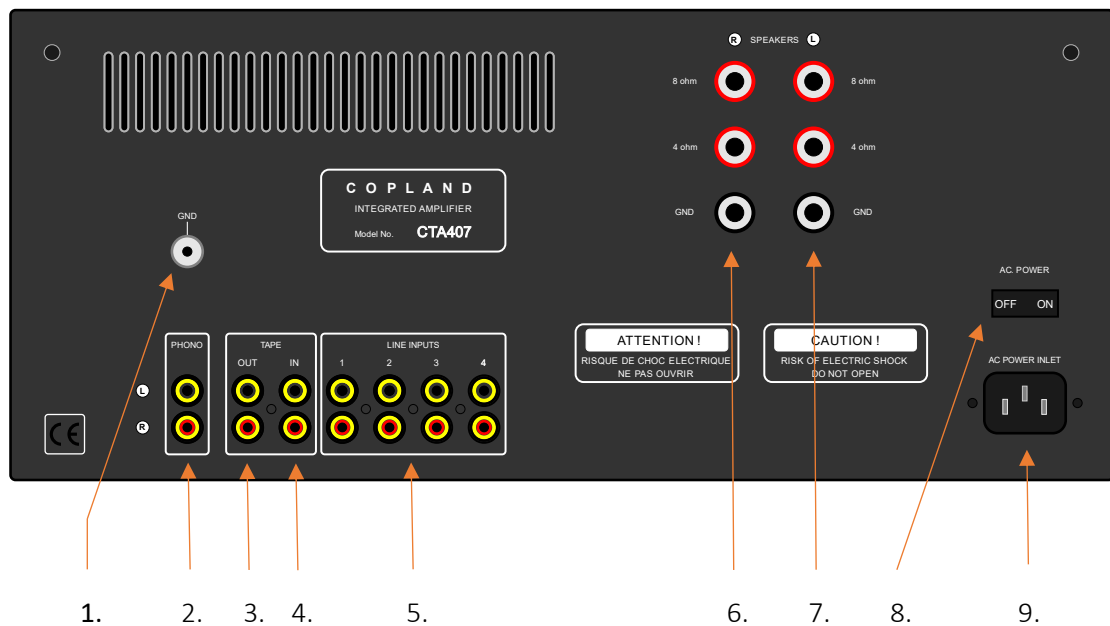
- * The two first **blue** colour LEDs shows that current is running through the tube. However, below its desired operational point.
- * The **green** colour LED indicate that the tube has reached its correct bias operational point.
By pressing the left corner 'LED' push button, only this LED will illuminate.
- * When the amplifier is on and no signal is present, only the **green** and the two **blue** LEDs are lighting up, indicating that the output stages of the amplifier are running fine and ready to play music.
- * The **orange** colour LEDs, number four to nine in the line, shows that the current through the tube is extending its quiescent bias point. When a music signal is present and the averaged signal to the speakers exceeds 20 W, the **orange** LEDs will start flashing like a VU-meter. - more LEDs indicating increased output power.
- * If the **orange** LEDs stays lightening up when no signal is present, it is an indication that the tube is operating. However, defect or out of specifications.
- * Last in line, the single **red** colour LED, indicate that the tube has reached its maximum current and the maximum output power has been exceeded.

If a tube for some reason becomes over-stressed, the **red** LED corresponding to the tube will stay reed and the amplifier will go into protection mode.

All you need to do, is turn the amplifier OFF for a few seconds, using the back panel power switch, and then ON again to reset the amplifier and restore normal operation.

In the event of defect tube short circuitry, the amplifier will continuously go into protection mode again after it has been turned off and on. The **red** LED related to the defective tube will stay on indicating the tube needs to be replaced.

Back Panel



1. Ground: Earth connection for any device that needs to be grounded.
2. Phono/RIAA Section: Accepts input from a Turntable. The amplifier is designed for a MM magnetic pickup (cartridge) or high output MC (Moving Coil).
3. Tape Out: The record output jack permits recording directly any signal being reproduced by the amplifier.
4. Tape In: Connect with the playback outputs of a tape recorder.
5. A1, A2, A3, A4: Standard analog inputs.
6. Speaker Output Terminals: Right Channel
7. Speaker Output Terminals: Left Channel
9. AC Power: Mains power. I = ON. O = OFF
10. AC Power connector: 120V / 230V / 240V AC. depending on country.
The right voltage is indicated on the back panel next to the AC power inlet.
! Check that your supply voltage is the same as indicated.

Maintenance

The CTA407 is built for a long lifetime use, and no special care needs to be taken, except from what is already described under installation. However, the heart of the amplifier is the tubes, and like a light bulb, they have a limited lifetime. After a period, they may affect the performance of the amplifier. The tubes are operated below their full nominal power, which considerably increases their life expectancy. The lifetime of the tubes should be at least 4000 hours, assuming that the amplifier is switched on and off a couple of times per day.

Tube employment.

6550 / KT88	4pcs. (V1. V2. V3. V4)
12BH7 or ECC82/12AU7	2pcs. (V6 & V7)
ECC83/12AX7	1pcs. (V5)

The auto-bias system will adjust also for use with:
KT90 / KT100 / KT120 / KT150

Remote control

The CTA407 comes with the Copland **RC-102A** remote control. It operates all basic functions of the amplifier.

Due to environmental regulations, it is shipped without the battery.

The remote control employs one battery type: **CR2032**

Warranty and Service

Copland provides a warranty to the first purchaser for a period of two year.

Copland usually commissions the Copland agency in the country in which the amplifier was purchased to carry out any warranty work.

Following consent from Copland in a particular case, the warranty service may also be claimed at an agency in another country.

CTA407 Specifications

Tubes.	6550 / KT88	4pcs. (V1. V2. V3. V4)
	12BH7 or ECC82/12AU7	2pcs. (V6 & V7)
	ECC83/12AX7	1pcs. (V5)

The auto-bias system will adjust also for use with:
KT90 / KT100 / KT120 / KT150

Rated power. 50W / channel at 4 / 8 ohms.

THD. Less than 0.8 % at all levels

Frequency response. 10 Hz - 150 kHz - 3 dB

Power bandwidth. 20 Hz – 20 kHz. - 3 dB

Input sensitivity Line. 200 mV for rated power

Input sensitivity Phono. 2,5 mV for rated power

Input impedance Line. 50 K ohms

Input impedance Phono. 47 K ohms

S/N ratio (IHF-A): 100 dB

Power consumption. 300 W

Nominal mains voltage. 115V or 230V / 240V

Factory set for destination country only.

Mains voltage range. +/- 12 %

Dimensions (mm.) 435 (W) 215 (H) 420 (D)

Weight. 20 kg