



MARGULES

**Amplifier
U280-SC
Black**



IMPORTANT SAFETY INSTRUCTIONS

CAUTION: To reduce the risk of electric shock, do not remove the cover. There are no user-serviceable parts inside; it is recommended that only qualified personnel service this component.



1. **OWNER'S MANUAL:** Before powering up the equipment, read all safety and operating instructions and follow them as instructed. Retain the safety and operating instructions for future reference.

2. **ATTACHMENTS:** Use only those attachments recommended by the unit manufacturer, as others may cause hazards.

3. **ACCESSORIES:** Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing injury to a person or damage to the unit. Mount the unit according to the manufacturer's instructions with the suggested mounting accessory.

4. **WATER AND MOISTURE:** Do not use the unit near water (for example, near a swimming pool, bath tub, wash bowl, kitchen sink, or laundry tub) or in a damp environment (like a basement or outside in the rain).

5. **WALL OR CEILING MOUNTING:** Mount the unit to a wall or ceiling only in the manner recommended by the manufacturer.

6. **OBJECT AND LIQUID ENTRY:** Do not push objects of any kind into the unit through openings as they could touch dangerous voltage points and short-out parts, possibly resulting in a fire or electric shock. Avoid spilling liquid of any kind on the unit. If water or any metal object (such as a paper clip, coin, or staple) accidentally falls inside the unit, disconnect it from the AC power source immediately and contact Margules Audio for further instructions.

7. **HEAT:** Position the unit away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.

8. **VENTILATION:** Slots and openings in the cabinet create ventilation to protect the component from overheating. Allow at least 6 inches (16cm) of clearance above the unit and an opening behind the unit for airflow. Do not place the unit on a bed, sofa, rug, built-in bookcase, or rack without adequate ventilation.

9. **GROUNDING OR POLARIZATION:** As a safety feature, the unit may be equipped with a polarized alternating current line plug in which one blade is wider than the other. This plug will fit into the power outlet only one way. If you cannot insert the plug fully into the outlet, try reversing the plug. If the plug still will not fit, contact a licensed electrician to update your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

10. **POWER SOURCES:** Operate the unit only from the power source indicated on the marking label. If you are unsure of the type of power supplied to your home, consult your unit dealer or local power company.

11. **POWER CORD PROTECTION:** Arrange power supply cords so that they do not suffer from foot traffic or pinching by items placed on or against them. Pay close attention to cords where plug enter the AC outlet and where they exit from the unit.

12. **LIGHTNING:** For added protection during a lightning storm or when the component is idle for long periods of time, unplug the unit from the wall outlet and disconnect the antenna or cable system. This will help protect the unit from lightning and power line surge damage.

13. **POWER LINES:** Do not locate an outside antenna system in the vicinity of overhead power lines or other electric light or power circuits. When installing an outside

antenna system, take extreme care to avoid touching the power lines or circuits; contact with them could be fatal.

14. **OVERLOADING:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this increases the risk of fire or electric shock

15. **REPLACEMENT PARTS:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or those having the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock or other hazards.

16. **SAFETY CHECK:** Upon completion of any service or repairs to the unit, ask the service technician to perform safety checks to ensure the unit is in proper operating condition.

17. **IMPORTANT SAFETY NOTE:**

- Before connecting a new product such as the U280-SC to your audio or home theater system, turn off all other equipment (preferably unplugging them from the AC power source). Many audio components feature automatic turn-on circuits that may activate during an installation, potentially causing damage to electronic components and/or speakers. This type of damage is not

covered by product warranties, and Margules Audio specifically disclaims responsibility for any such damage.

- **Power Cord:** The removable power cord provided with your player was specifically designed for use with this product, but other AC cords may be used. Consult your dealer for advice on AC power cords and high quality wire in your system.

- **AC Fuse:** The fuse is located inside the chassis and is not user serviceable. If the unit does not power up, contact an authorized service representative



- **Wiring:** Cables running inside walls should have the appropriate markings to indicate compliance and listing by the UL, CSA or other standards required by the UL, CSA, NEC or your local building code. Questions about cables inside of walls should be referred to a qualified custom installer, a licensed electrician, or low-voltage contractor.

18. **RECORDING COPYRIGHT:** Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.

19. **NOTE TO CATV SYSTEM INSTALLER:** This reminder is provided to call the CATV system installer's attention to article 820-40 of the NEC, ANSI/NFPA 70,

which 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.

20. FCC INFORMATION FOR USER:

- **CAUTION:** Any changes or modifications not expressly approved by Margules Audio could void the user's authority to operate the equipment.



- These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy, and if not installed and used in accordance with the instructions it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

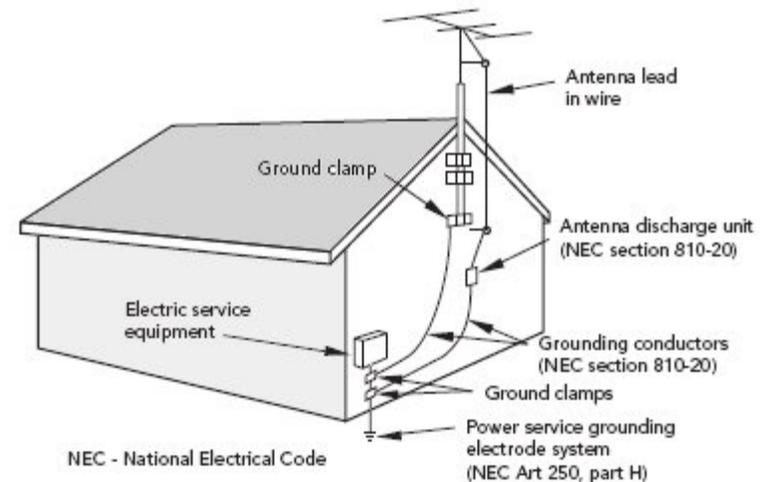
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from where the receiver is connected.

21. OUTDOOR ANTENNA INSTALLATION/SAFE ANTENNA AND CABLE CONNECTION:

- If an outside antenna or cable system is connected to the equipment, be sure the antenna or cable system is grounded in order to provide protection against built-up static charges and voltage surges. Article 810 of the National Electrical Code, ANSI/NFPA 70 (in Canada, Part 1 of the Canadian Electrical Code) provides information regarding 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.

- Outside antenna system should be located well away from power lines, electric light or power circuits and where it will never come into contact with these power sources if it should happen to fall. When installing an outside antenna, extreme care should be taken to avoid touching power lines, circuits or other power sources as this could be fatal. Because of the hazards involved, antenna installation should be left to a professional.



Congratulations!

The Margules U280-SC Black Stereo Tube Amplifier combines the superior sound of vacuum tubes with new and innovative technology. The results are clearly apparent in its quick detailed dynamics and ultra-smooth transient response. Unusual versatility and unprecedented reliability provide an exceptional performance upgrade to an already remarkable amplifier.

Class-A Output Stage & Active-Servo Bias

Vacuum tube power amps with class-A outputs are rare. Class-A operation causes the tubes to run quite hot, and increases the chance of saturating the output transformer. Margules has resolved this problem by incorporating an Active Servo Bias (patent pending). The bias actively tracks the input signal, permitting full class-A output, without overdriving the tubes, The Black has a new active servo that allows a faster and more precise frequency response.

Active Servo Bias also sets DC bias and AC drive levels, assuring optimum electrical and sonic performance. Throughout the useful life of the output tubes, no drive or bias adjustments are ever needed. New tubes can be installed without test equipment or time-consuming setup. Active Servo Bias also makes it possible to use a variety of output tubes. The 6550, KT88, KT99, KT100, KT 120, KT150 can be interchanged without modification.

Active Servo Bias is implemented with semiconductors, which are designed for the aerospace industry, assuring long, trouble-free operation.

The New U280-SC Black Stereo Tube Amplifier includes a new and improved differential output and servo circuit for further reduction of the THD and transient distortion.

Ultralinear / Triode & Strapped Operation

Audiophiles have argued the merits of Ultralinear vs Triode operation for 50 years. Triode operation provides lower distortion, at the price of reduced power output.

The U280-SC resolves this predicament by providing switchable Triode / Ultralinear operation. For those listening sessions where you prefer a more soft sound, you simply switch to Triode Mode. And when more power, dynamics, detail and punch is needed, you simply switch to Ultralinear Mode.

Unlike most vacuum tube amplifiers, the U280-SC's outputs can be strapped, for twice the output. Start with a single amp and then add a second U280-SC for increased power—or to convert to triode operation at the same power level.

Separate gain controls for each channel make precise balancing easy. This simplifies the setup of bi-amped systems, as well.

Regulated Shunt Power Supply

The input stages of the new U280-SC Black include a special SHUNT power supply for these critical circuits. Shunt technology provides a dramatic improvement in Q damping, the key factor in regulating voltage for those stages.

Good regulation reduces the loss of signal integrity that occurs when the signal itself shifts the amplifier's operating point. Each channel uses separate regulators that further improve the U280-SC's already excellent imaging.

Damping is critical to overall performance including smoother transient response and overall staging. Further improvements in quickness, dynamics and the overall life-like listening experience result.

Our new Power Supply is virtually indestructible due to specially designed regulation technology that protects the amp from major tube failures.

Zero Feedback

The U280-SC does not use negative feedback as do most tube amplifiers. Negative feedback results in a loss of detail and sound richness. Margules has developed the BEFS (Back Electromotive Force Sensor), which changes the amplifier's output impedance per the load requirement. BEFS permits the amplifier to drive difficult speaker loads with exceptional efficiency, dynamics and extended controlled bass.

The U280-SC's innovative design is complemented with a fine new finish, new silver coated epoxy pc boards, military grade potentiometers, precision metal-film resistors and audio grade interstage capacitors.

SETUP

IMPORTANT: The amplifier should be unplugged from the wall outlet.

First, choose the proper output impedance accordingly to your speaker; both channels should be the same (1).

2 ohms from 1 to 2 ohms load
4 ohms from 4 to 8 ohms load
8 ohms from 8 up ohms load

In Mono mode always use both channels of the amplifiers in ultralinear or triode mode (2) in the same output impedance range.

The recommended settings are the following:

2 Ohms should not be used
4 Ohms from 2 to 4 ohms load
8 Ohms from 4 to up ohms load

If used as Stereo or Mono mode (3) the Triode/Ultralinear mode should be the same in both channels.

Next, connect the speakers to the output binding posts, red to red and black to black (4); the input signal of the amplifier to the output signal of the preamplifier (5), see also figure 1 for more details.

If you are not using a preamplifier set the level controls to minimum, otherwise full clockwise (6).

Check the power switch in the back of the amplifier to be off (7). Then connect it to the AC outlet of the wall, check that all connections are OK and flip the switch to on. Wait until the meter is set to approximate to the middle (8)

The panel meter is the actual current passing through the right front output tube. When overpasses full scale, you are overdriving the tubes; around 120ma, coincides with the maximum power.

It is not important if you overdrive the tube in short periods, but if you do it continuously, it will shorten the life expectancy of the tubes. To change the tubes just unplug the A.C. power line cord, pull out the old ones, and insert the new tubes; the active bias will balance them.

We recommend matched pair output tubes, but this is not indispensable.

Do not substitute with other type the two 12AU7 tubes in the back of the amplifier. You will unbalance the circuit and will raise the distortion.

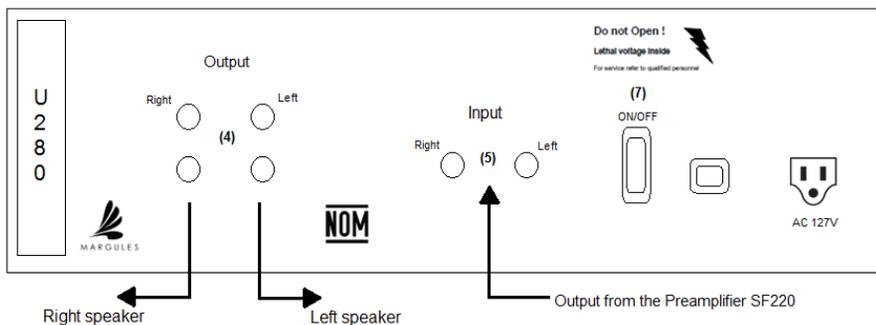


Figure 1. Interconnection diagram

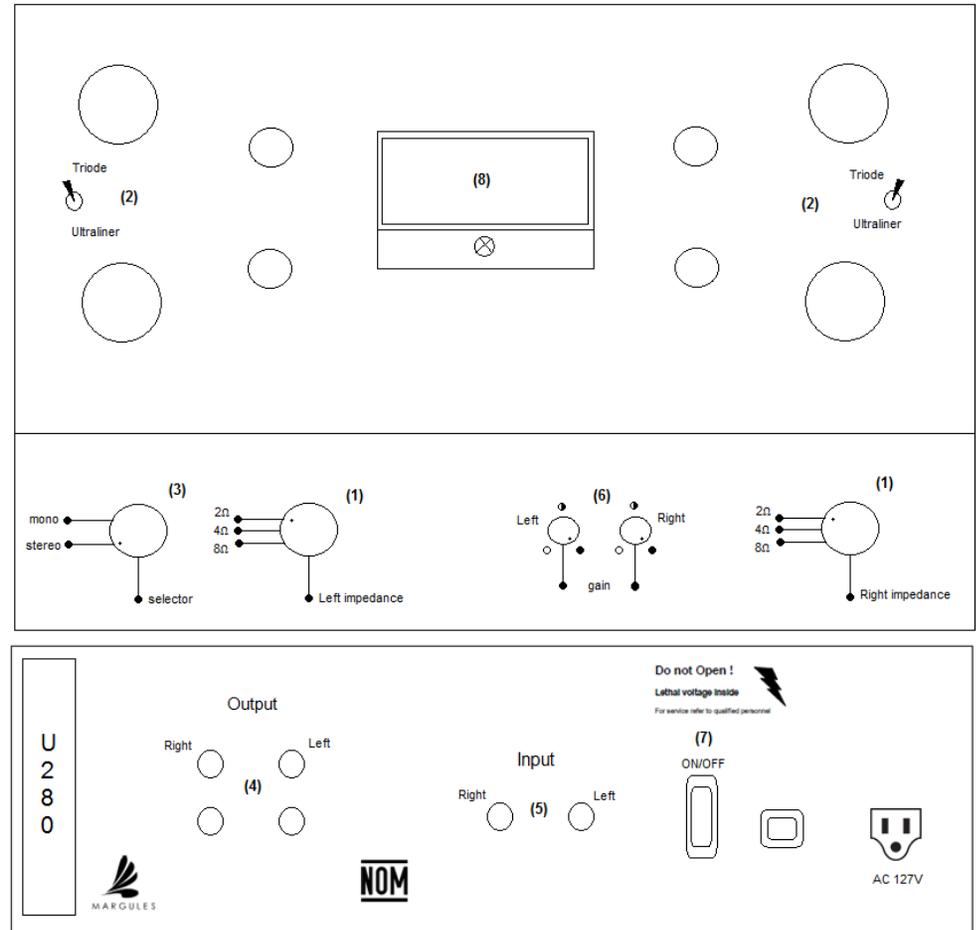


Figure 2. Front and back of the U280

Tube bias indicator

The new U280 Black has a set of bias and tube operation indicators; they are blue light LED in each output tube. When you just turn on the amplifier, these indicators won't light until the bias is set and the amp is ready to operate. If a tube has lost its emission and it is too low, the blue light won't turn on or won't have its regular intensity. Each tube has its own indicator and belongs to the tube it is lighting. Since the blue light is attached to the bias of the tube, it is normal and correct that will change its intensity with the level of the sound, if the level of volume increases and the indicator doesn't, and the sound is constipated the tube or tubes might be low on emissions.

Break-in

The break in period is about 150 hours of music reproduction.

Tube life expectancy

For optimal performance we recommend to change the set off tubes every two years, although they should last a much longer period.

Precaution and care

This product is intended to be plugged directly to the power supply line of your house. Although we have taken all the precautions to make your equipment completely safe and to comply with the safety standards, we recommend to unplugging it from the wall

outlet if you are not going to use it for an extended period of time.

Keep the equipment in a well-ventilated area and far away from materials that can be ignited. Do not expose to rain or direct sunlight.

Do not open. There are high voltage serviceable parts inside.

The voltage supply should be $\pm 15\%$ of the line nominal voltage specified in the product.

To clean, use a soft lightly humid cloth.

WARNING: Never take the tubes out while the amplifier is plugged!

It is important to substitute the tubes with the correct numbers.

Troubleshooting

Doesn't turn on

Look for:

- Proper connection to the wall outlet.
- The rear switch to be in on position.
- The U280 SC has a 3-minute delay pre warm up time. Wait until the current meter display reaches 43ma.
- The circuit breaker in the rear of the amplifier is probably activated, if you see the button ejected push it in.

One channel doesn't sound

Look for:

- The gain controls to be in the correct position.
- The connections to be properly set.
- A protection fuse can be blown, check



them and if is the case, replace it.
WARNING: HIGH VOLTAGE inside.

Be certain to have the amplifier unplugged from the power line.

If the fuse blows again one tube is in short or damage, replace it.

The amplifier does not sound properly.

Look for:

-The proper voltages supply.

-The amplifier output impedance selector to be in the proper position.

Check for further advises in the operation section of this manual.

Noise in your system.

Check for ground loops in the system.

No more than one physical ground should have the system.

Advises

Always mount your amplifier in a firm platform avoiding external vibrations from loudspeakers.

You can change the tonal characteristics by placing your amplifier in different type of supports like footer, spikes, etc.

To minimize unwanted noise in the system:

-Avoid excessive length in the interconnection cables.
-Avoid having AC line cables and strong electromagnetic fields near the signal ones.

Because you have a servo-controlled bias and the BEFS always use the best interconnections cables, AC power line and loudspeakers cables that you can get.

We recommend having the gain potentiometers at maximum level. In our opinion you will achieve the best sounding qualities.

WARNING

- **Electrical hazard! Misuse or failure to follow instructions properly may result in personal injury or death!**

CAUTION

- **No risk or personal injury; however, misuse or failure to follow instructions may result in damage to equipment.**

NOTE

- **No risk or personal injury or equipment damage; however, misuse or failure to follow instructions may prevent proper performance of the equipment.**

Characteristics

Frequency response	20-40KHZ
Power	
Ultralinear	50W/channel
Triode	25W/channel
Mono (Ultralinear).	100W.
Mono (triode).	55W.
Noise	1.2M.V.
Total harmonic distortion at 7vrms	
Stereo	0.08%
Mono	0.05%
Weight	30.5KG.
Power consumption	
Standby	160W.
Max at full output	585W.

(The specifications might change without notice)

LIMITED WARRANTY

What is Covered and What is Not Covered

Except as specified below, this warranty covers parts and labor to correct all defects in materials and workmanship. The following are not covered by the warranty:

1. Damage, deterioration, malfunction or failure to meet performance specifications resulting from:
 - a. Accident, acts of nature, misuse, abuse, neglect or unauthorized product modifications
 - b. Improper installation, removal or maintenance, or failure to follow instructions supplied with the product.

c. Repair or attempted repair by anyone not authorized by Margules Audio to repair the product.

d. Any shipment of the product (claims must be presented to the carrier).

e. Any cause other than a product defect.

2. Cleaning, initial set-up, check-ups with no defects found, or charges incurred for installation, removal or reinstallation of the product.

3. Any product, on which the serial number has been defaced, modified or removed.

4. Accessories, including but not limited to, batteries, cables, mounting hardware and brackets, cleaning accessories, antenna and detachable power cords.

5. Warranty is void if purchase was made from anyone other than an authorized Margules Audio dealer.

Who May Enforce the Warranty?

This warranty extends to products purchased directly from Margules Audio or an authorized Margules Audio dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

What Will We Pay For? We will pay for all labor and material expenses for items covered by the warranty. Payment of shipping charges is discussed in the next section of this warranty

How You Can Get Service?

In the event that the owner needs to return the unit to Margules Audio for service or repair of a possible defect, he must do the following:

- Contact Margules Audio at (525) 514 7448 in Mexico or at 707-5811830 in USA and ask for technical support.
- Or visit Margules Audio at the address in the end of this manual with your product. If you want to send it the cost is on your account.

Limitation of Implied Warranties

All implied warranties, including warranties of merchantability and fitness for particular purchase, are limited in duration to the length of this warranty.

Exclusion of Damages

Margules Audio's liability for any defective product is limited to repair or replacement of the product at Margules Audio's option. Margules Audio shall not be liable for damage to other products caused by any defects in Margules Audio products, damages based upon inconvenience or loss of use of the product, or any other damages, whether incidental, consequential, or otherwise.

How State Law Relates to the Warranty

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion

or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



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