

CLASSÉ AUDIO

P-403

POWER AMPLIFIER

P-403

OWNER'S MANUAL

## *CLASSÉ DESIGN PHILOSOPHY*

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### 1. REPEATED LISTENING DESIGN SESSIONS:

Fine tuning of sound by exchanging and mixing of parts (transistors, capacitors, wiring, PCB boards etc.), and adjusting many specific operating voltages within proper engineering ranges, producing an overall sonic recipe giving the most natural harmonic realism of music typical of instruments in a live performance.

### 2. CIRCUIT DESIGN:

The **P-403** is based on Classé's whole history of designing and building High End amplifiers. The **P-403** is an Ultra- High performance amplifier of incredible sonic realism capable of transmitting to the listener the emotional essence of the music. The **P-403** has a massive toroidal transformer totalling 3 KVA, each with their own power cords and a huge storage capacity which totals over 85000 uF per channel. The **P-403** has 12 high voltage/current Bi-Polar output devices per channel. Discrete high voltage/current voltage regulation for the pre-driver and input sections. Also featured are heavily gold plated bars connecting supplies of the output devices. Gold plated input and output connectors. Oxygen free copper wiring. All signal carrying cables are shielded and have Litz type configuration. The **P-403** is symmetrical from input to output

### 3. EXTREME LONG LIFE IN REAL WORLD CONDITIONS:

Choosing the best attainable quality parts and materials combined with the advantages of the two above-mentioned areas provides Classé owners with years of proven trouble free reliability and musical enjoyment.

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## ***UNPACKING & SET-UP***

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Your CLASSÉ **P-403** power amplifier is packed in high density, semi-rigid foam placed in a special cardboard box. To remove the unit, open and spread all the top flaps of the box and by its sides, lift out the entire unit and put it on a large flat surface. Take it out of the plastic bag and inspect the unit for any concealed damage. Apart from this owner's manual, please ensure the following has also been included:

- 1) One (1) detachable A.C. linecord
- 2) Nut driver for output connectors

**Please report any damage or missing parts to your dealer immediately.**

Place the **P-403** at or near its final set-up position, allowing 8 inches at the rear for tightening the speaker output connectors.

The power transformer in the **P-403** is located at the front-center of the unit. Ideally, a few feet should separate this area from components which potentially could pick up hum. These include preamplifiers, turntables, and interconnect cables. In terms of providing adequate airspace for cooling, a good rule of thumb is to allow 6 inches above and 3 inches on each side of the unit.

Check the Serial Number sticker on the back of the unit for the correct operating voltage. The **P-403** has one external AC fuse, the rating of which should be as follows:

<u>LINE VOLTAGE</u>	<u>FUSE RATING</u>
100 or 120 V.A.C.	AMP SLOW BLOW ,125 or 250 volts
220 or 240 V.A.C	AMP SLOW BLOW, 250 volts

## ***GENERAL CONNECTIONS***

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### **A.C. LINE**

Insert the linecord into the A.C. receptacle on the rear of the unit. **PLEASE MAKE SURE YOU HAVE PREVIOUSLY HOOKED UP THE SPEAKERS AND PREAMPLIFIER TO YOUR AMPLIFIER BEFORE CONNECTING THE AC POWER CORD TO THE AMPLIFIER.**

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### **IMPORTANT NOTE**

#### **CAUTION: SAFETY INSTRUCTIONS**

DISCONNECT THE AC LINE CABLE BEFORE MAKING ANY OTHER CONNECTIONS. **"FLOATING THE GROUND" OR DEFEATING THE GROUND ON A 3-PRONG LINECORD MAY CREATE A SHOCK HAZARD.** CONNECT ALL INTERCONNECT CABLES BETWEEN THE ELECTRONICS BEFORE CONNECTING THE A.C. LINECORD TO THE WALL OUTLETS. THIS WILL REDUCE THE POTENTIAL SHOCK HAZARD.

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### **STEREO**

Input and output connectors are clearly marked on the back of the amplifier. Left/Right connections are oriented from the front of the unit. Stereo output connections are marked above the connectors. Switch stereo/mono switch to STEREO position. (The P-403 is preset at the factory for STEREO.)

Use only high quality interconnect and loudspeaker cables, and make all connections tight. If the RCA input plugs are loose, remove them and pinch down the ground leaves slightly with pliers. Observe correct phasing of the loudspeaker connections, and tighten. **DO NOT**

### STEREO (CONTINUED)

OVERTIGHTEN the output connectors. When powering up the **P-403** in stereo mode, the left channel LED will blink for approximately 20 seconds, when the sequence is completed,

### MONO

Please read through the previous Stereo section for general notes on securing good connections, and safety tips. If the unit has been previously used in stereo, make sure it is OFF, and remove all connections, including the AC line cable. Make sure the STEREO/MONO switch is switched to the MONO position. NOTE: The Stereo-Mono switch will not operate if the amplifier is turned on, you will NOT be able to change from one mode to the other, as the mode is "locked" while the amplifier is on.

The MONO "Input" is the "left channel input", as marked. The unused right channel input is automatically disconnected. Correct output phase MONO connections are marked below the connectors.

Repeat the above MONO settings and connections on the second **P-403** to be used for the other channel.

Please remember that the negative output connection of a bridged amplifier is NOT a ground. Do not use a "common ground" switch-box set-up. Do not use with electronic crossovers which have a common ground. Connecting two bridged amplifiers to a common ground device of any sort will cause the amplifiers to fail.

## MONO OPERATION

As stated above, either the regular or balanced inputs can be used in stereo or mono. Connect a single interconnect, either regular or balanced, to the left channel input of each amplifier. See the "Mono" section above for complete details. NOTE: Neither the Stereo-Mono switch nor the REGULAR/ BALANCED switch will operate while the amplifier is turned on. You will NOT be able to change from one mode to the other, as these modes are "locked" while the amplifier is on. To activate the circuit, turn off the unit and engage the STEREO/MONO switch to REGULAR. If the unit has not been turned off before engaging the switch, turn off the unit, wait for about 10 seconds, and turn the unit on again, the circuit will then engage.

## ***CONNECTIONS FOR REGULAR OR BALANCED INPUTS:***

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The CLASSÉ **P-403** power amplifier is equipped with both regular and balanced inputs. Either one may be used **SEPARATELY, BUT NOT SIMULTANEOUSLY**. The balanced inputs must be connected to a preamplifier which has balanced main outputs. Balanced interconnects with "XLR" connectors are also required. Regardless of the amplifier inputs used, stereo or mono operation is possible on the **P-403**.

### **REGULAR INPUTS**

Engage the REGULAR/BALANCED switch to the position marked "REGULAR". (The amplifier is factory set for "REGULAR".) **NOTE:** The REGULAR/ BALANCED switch will not operate if the amplifier is turned on; you will NOT be able to change from one mode to the other, as the mode is "locked" while the amplifier is on. To activate the circuit, turn off the unit and engage the REGULAR/BALANCED switch to REGULAR. If the unit has not been turned off before engaging the switch, turn off the unit, wait for about 10 seconds, and turn the unit on again, the circuit will then engage. Connect the regular interconnects to the RCA input jacks on the rear panels of the **P-403**. The balanced connectors are automatically disabled.

### **BALANCED INPUTS**

Switch the REGULAR/BALANCED switch to the position marked "BALANCED". A balanced preamplifier and balanced interconnects are also required. **NOTE:** The REGULAR/ BALANCED switch will not operate if the amplifier is turned on; you will NOT be able to change from one mode to the other, as the mode is "locked" while the amplifier is on. If the unit has not been turned off before engaging the switch, turn off the unit, wait for about 10 seconds, and turn the unit on



### BALANCED INPUTS (CONTINUED)

again, the circuit will then engage. For use with balanced preamplifiers other than Classé, the wiring of the 3-pin XLR connectors must be matched to that of the **CLASSÉ P-403** which is wired as follows:

PIN 1: SHIELD (Should be connected only at the preamplifier end of the cable)

PIN 2: POSITIVE (NON-INVERTED) SIGNAL, "HOT"

PIN 3: NEGATIVE (INVERTED) SIGNAL

All Classé preamplifiers and amplifiers are configured as above. Some preamplifiers from other manufacturers have PIN-3 set as the positive or "HOT" side. If this is true of your preamplifier, and you wish to maintain absolute phase throughout your system, the interconnects must have the wire which is connected to PIN-3 at the preamplifier output end switched to PIN-2 at the amplifier input end and the wire which is connected to PIN-2 at the preamplifier output switched to PIN-3 at the amplifier input end.

Having confirmed the correct connections, plug the XLR connectors of the balanced interconnects into the locking XLR connectors on the rear panel of the **P-403**. Push the connectors in until the locking mechanism clicks. (To remove the connectors, press the tab above the connector while pulling gently on the connector body.)

## PROTECTION CIRCUIT

A special circuit in the Classé **P-403** continuously monitors the output audio signal to detect output overload, clipping or DC content. In addition, each channel has two front end supply voltage fuses, located on the front end voltage regulation board, to protect the input circuitry from damage due to overload. There is a green LED for the negative voltage supply and a red for the positive. If a fuse fails, the corresponding LED goes out, alerting you of the fact. (These fuses are (see Nang) amp fast blow).

There is also an AC line fuse, located at the rear of the amplifier immediately above the IEC receptacle. There is no LED monitoring the condition of this fuse.

If the protection circuit of the unit is triggered or any of the protection fuses has blown, the FRONT PANEL POWER LED will go to BLINKING GREEN regardless if the unit is used in mono or stereo.

**IF THE PROTECTION CIRCUIT HAS BEEN TRIGGERED, TURN THE P-403 OFF.** .After the situation which has triggered the protection circuit has been clearly identified and corrected, attempt to re-start the unit. **IF THE UNIT STILL GOES INTO PROTECTION MODE, OR IF IT APPEARS THAT PROTECTION FUSES DID BLOW, CONTACT YOUR LOCAL DEALER. DO NOT TRY TO CHANGE A BLOWN FUSE. REPLACING A FUSE WITHOUT CHECKING FOR COMPONENT FAILURE COULD RESULT IN FURTHER, SERIOUS DAMAGE TO VITAL COMPONENTS IN YOUR AMPLIFIER. CONTACT YOUR LOCAL DEALER or Customer Service at the Classé Audio, Inc ---(514) 636 63 84.**

### **IR OUT and IN:**

The **P-403** may also be turned on and off using our **SSP-50** Surround Sound Processor, utilising the IR OUT and IN jacks. To turn on your **P-403** with the **SSP-50**, Disconnect you P-403 from the AC line completely, open the top cover and locate the 4 internal jumpers inside the P-403 (see fig. 2, page ) alongside the mosfet fuses. When facing the amplifier from the front, remove the jumper located completely to the right and save this jumper. Re-install the top cover. Install a mini jack into IR IN at the back of the **P-403** and plug the other end of the mini jack into the **5VDC** mini jack at the back of your SSP-50. When the Standby button of the SSP-50 is pressed, it will now activate the turn on turn off circuitry of your **P-403**. Several amplifiers may be turned on automatically in sequence or all at once, depending upon the configuration of the jumper settings in the amplifier. You will find these jumpers located inside the unit (same as above, see fig.2 page) alongside the mosfet fuses. The table below tells you which jumper should be inserted or removed to obtain the correct sequence on which you will want your amplifier to turn on.

<b>J3</b>	<b>J2</b>	<b>J1</b>	<b>J0</b>	<b>ADRESS</b>	<b>RC Button</b>	<b>Auto ON</b>
X	X	X	X	0	Amp 1	No
X	X	X	out	1	Amp 2	No
X	X	out	X	2	Amp 3	No
X	X	out	out	3	Amp 4	No
X	out	X	X	4	Amp 5	No
X	out	X	out	5	Amp 6	No
X	out	out	X	0	Amp1	No
X	out	out	out	0	Amp 1	Yes

## SEQUENTIAL TURN ON

Your **P-403** is factory set as being the 1<sup>st</sup> amp (AMP 1) to be turned on in sequence. To re-program your unit so that it would be the 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> or 6<sup>th</sup> amp to be turned on in sequence you have to follow this procedure. Push and **hold** the power button, when the LED becomes solid green, depress the button and then press again. The number of times you will press again will determine when the amplifier will turn on in the sequence. See example on the next page.

EX: Push and hold power button until solid green, when power LED is solid green, depress button and then push 2 times. Then your amplifier will be the 2<sup>nd</sup> one to turn on in the sequence.

The **P-403** may also be turned on and off using our **SSP-50** Surround Sound Processor, utilising the IR OUT and IN jacks. Several amplifiers may be turned on automatically in sequence or all at once, depending upon the configuration of the jumper settings in the amplifier. Please contact your dealer for set-up specific to IR operation.

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## CLASSÉ P-403

### *ULTRA HIGH CURRENT BALANCED POWER AMPLIFIER*

#### P-403 FEATURES:

Newly developed special Classé symmetrical circuitry from input to output. Current capacity increased above standard units. One massive toroidal transformer totalizing 3 KVA. Over 85000 uF storage capacity for each channel. Twelve high current/voltage Bi-Polar devices per channel. Discrete high voltage/current regulation for the pre-driver and input sections. Metalized polypropylene capacitors bypassing each output device. Heavily gold plated bars connecting all supplies for the output devices. Heavily gold plated input and output connectors. All signal carrying cables are shielded and have Litz type configuration. All other wiring is oxygen free copper.

#### P-403 SPECIFICATIONS:

Frequency response:	20 Hz to 20 KHz +/- 0.1 dB	
Sensitivity:	1.3 Volts in for rated output	
Input Impedance:	16 K ohms	
Output Impedance:	0.017 Ohm	
Gain:	29.02 dB	
S/N Ratio:	135 dBR	
THD+N:	0.002%	
Rated Output:	Stereo	Mono
8 Ohms:	450	1600 Watts
4 Ohms:	900	3000 Watts
2 Ohms:	1500	6000 Watts
1 Ohm:	3000	
Dimensions: Gross:	15" x 30" x 27"	
Net:	19.25" x 21.25" x 9.75"	
Weight:	130 lbs. gross, 147lbs. net	



**Notice to all Classé Product owners:**

Thank you for your purchase of a Classé Audio component.

All of us at Classé have taken extreme care to ensure that your purchase will become a prized investment. We are proud to inform you that all Classé Audio components have been officially approved for the European Community CE mark.

This means that your Classé product has been subjected to the most rigorous manufacturing and safety tests in the world, and have proven to meet or exceed all European Community CE requirements for unit to unit consistency and consumer safety.

All of us at Classé Audio wish you many years of musical enjoyment.

**As of July 18, 1996, Classé Audio has been granted Certificate No: C401CLA1.MGS, which indicates CE approval for all models of the Classé Audio product line.**