Herman van den Dungen: **PrimaLuna** → *in Italian language is* **"First Moon"**. *My grandfather was the first* **"Herman"**. *My grandmother, an aristocratic lady in a small Dutch village, had a special name for her husband:* **"Maantje"**, *which means* **Little Moon** (*which is now also the name of our small dog),* **van den Dungen**. *The people in the village adopted that name, and having a strong accent, they soon called him* **"Maontje"** *van den Dungen. My father's first name was Cor, but in the village it was of course* **"Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of course* **"Herman from Cor from Maontje van den Dungen"**. *I was of* 

Loris Arrigucci: **PrimaLuna** > believe it or not ... I discovered a small town located 50Km north of Milano called **Primaluna**!!! Please get yourself a map from Italy. You'll find **Primaluna** town near the upper-right corner. It is located 50Km north of Milano near the Lake of Como. This should eliminate every doubt regarding "italian" origin of **Primaluna** name. I've read the "history" section of the **Primaluna** village web site and found the following (literally translated):

One probable interpretation of the name of the village comes from latin "**Primum Lumen**", which means "**First Light**" of Christianism, since the very first evidence of Christianism in this region dates 495 Annus Domini. "**First Light**" translates into "**Prima Luce**" in Italian and this seems very interesting to me: **PrimaLuce (FirstLight)** is the first light that we, hi-fi lovers with small budgets, can see in this world of darkness populated by way too expensive esoteric gears ...... 4

### 5

Please contact us for registering your PrimaLuna DiaLogue Premium Poweramplifier. We will keep you updated of upgrades or any other information related to your amplifier. If you wish to comment on your PrimaLuna DiaLogue Premium Poweramplifier, please do. If you want to send us a review of your experience with the amplifier, you are more than welcome to. If you have any technical questions, please don't hesitate to contact us. We thank you upfront for your time and attention.

Local distribution:

Worldwide distribution: Durob Audio BV P.O. Box 109 5250 AC Vlijmen The Netherlands

Email: primaluna@primaluna.nl Website: www.primaluna.nl



### PrimaLuna®

**DiaLogue Premium** 

### Poweramplifier



Serialnumber

### THANK YOU!

We would like to thank you for choosing our PrimaLuna DiaLogue Premium vacuum tube Poweramplifier as part of your music system. The DiaLogue Premium Poweramplifier is the third member of the new DiaLogue Premium series of affordable, high-quality tube products. In fact it is a combination of our DiaLogue Premium Stereo Amplifier and our DiaLogue Premium Mono Amplifier. Both their functionality in one new model. The designers and builders of the PrimaLuna equipment all have a long history in high-end audio. We feel we have shown with PrimaLuna that we are able to offer a range of affordable audio instruments that can easily compete with today's most expensive brands and assure you we will continue that way. We firmly believe that our quality level will set the bar at a difficult height for other products to match.

This PrimaLuna DiaLogue Premium Poweramplifier features:

- Hand-made construction with the finest point-to-point wiring, using workmanship that is equal to or better than any product you can buy at any price.
- A heavy-gauge, fully-vented steel chassis with a five coat finish. Each coat is hand-rubbed and polished.
- Premium parts that include a toroidal transformer for power supply; custom designed -in conjunction with one of the most prestigious transformer designers in the USA- encapsulated output transformers for lowest hum; wide bandwidth for great bass and extended highs; ceramic tube sockets; Nichicon, Solen, Swellong and DuRoch capacitors; superfast Philips-diode-circuitry; gold-plated heavy duty WBT style speaker terminals (all speakerconnectors are solid shaft, without hole, for better conductance, better sound and higher reliability); gold-plated panel mounted input jacks.
- SoftStart™ circuit for extended life of sensitive components, plus a reduced chance of tube failure from thermal shock.
- A new generation Adaptive AutoBias<sup>™</sup> exclusive to PrimaLuna. This circuit monitors and smoothly adjusts bias constantly and instantly, reducing maintenance and increasing performance due to the dramatic reduction in distortion. It comes with a new extensive output stage protection circuitry with +B relay to protect output transformers, resistors and high voltage power supply in case a tube fails. In all DiaLogue Premium Amplifier models the new generation Adaptive Auto Bias Board comes with our new BTI<sup>™</sup> circuit. BTI<sup>™</sup> stands for Bad Tube Indication (by LEDs), making tube-life again a bit easier.
- All DiaLogue Premium Amplifiers come with an EL34/KT88 bias switch. This means that with the flip of a switch you can choose for the optimum bias setting for EL34 type of tubes or KT88 type of tubes. No hassle with screwdrivers, no messing around with meters etc. Just switch tubes, switch bias!
- This DiaLogue Premium Poweramplifier comes also with a mono/stereo switch giving it the functions of both the DiaLogue Premium Mono Amplifier as well as the DiaLogue Premium Stereo Amplifier.

### PrimaLuna® DiaLogue Premium

### Warranty Information

Two-year limited warranty

Six-month warranty on stock vacuum tubes

### **Terms & Conditions**

- **1. Limited to original purchaser.** This warranty is for the sole benefit of the original purchaser of the covered product, and may not be transferred to a subsequent owner.
- 2. Conditions & Limitations. This warranty is subject to conditions and limitations, as follows. This warranty is void and inapplicable if the product has not been used in accordance with the instructions found elsewhere in this manual, or if it has been misused, abused, damaged by accident or neglect, or in transport once in possession of purchaser. The warranty is also void if the product has been tampered with or has been repaired or modified by anyone other than Durob Audio BV or its specifically authorized representatives.
- **3. Remedy.** If this product contains material, manufacturing, or workmanship defects, it must be packed in original packaging and returned to Durob Audio BV or its authorized representative via insured freight, at the owner's expense. Returned products must be accompanied by written description of the defect, and a return authorization number (available from Durob Audio BV or the authorized representative via e-mail). Upon receipt of the defective product, Durob Audio BV or the authorized representative agrees to repair the product without charge for parts (except vacuum tubes if the unit is more than 6 months old), or labor. The product will then returned via prepaid, insured freight, with carrier at the sole determination of Durob Audio BV or the authorized representatives the purchaser's sole remedy.
- **4. Design change.** Durob Audio BV and its partners reserve the right to modify their products or change specifications at any time without obligation or liability to previous purchasers.
- 5. Miscellaneous. Any implied warranties relating to the above product shall be limited to duration of this warranty. This warranty does not extend to any indentical or consequential costs or damages to purchaser or third-parties. Our liability will be no more than the amount you paid for the product that is the subject of a claim. This is the maximum amount for which we are responsible. This warranty gives you specific legal rights. You may also have other rights which vary from country to country and state to state.

### Specifications

Power Ultralinear Stereo / Mone	0 42 / 83 Watts per channel	
Power Triode Stereo / Mono	25 / 50 Watts per channel	
Frequency Response Stereo / I	Mono12Hz – 75kHz +/- 1 dB / 9Hz – 85kHz +/- 1 dB	
THD with AABB Stereo / Mono	< 0,1% @1W; 2% at rated power / < 0,17% @1W; 2% at rated power	
S/N Ratio Stereo / Mono	94 dB / 93 dB	
Input Impedance	100 kOhm	
Input Sensitivity Stereo / Mono870 mV / 880 mV for rated power at maximum volume setting)		
Gain Stereo / Mono	26,1 dB / 29,2 dB	
Power Consumption	280 Watts	
Net Weight	63.8 lbs / 29 kg	
Shipping Weight	70.5 lbs / 32 kg	
Dimensions	15.9" x 15.2" x 8.1" / 405 mm x 385 mm x 205 mm (L x W x H)	
Shipping Dimensions	22.7" x 18.4" x 12" / 577 mm x 468 mm x 305 mm (L x W x H)	
Inputs Stereo / Mono	1 pair RCA / 1 piece RCA	
Outputs Stereo / Mono	4, 8 & 16 Ohm Speaker Taps / 2, 4 & 8 Ohm Speaker Taps	
Tube Complement	4 x EL34, 6 x 12AU7	
Remote control	Heavy Metal UL-TR Remote Control	

All PrimaLuna products come with PrimaLuna SilverLabel tubes which are pre-selected by us following our simple 60 out of 100 rule (PTS<sup>™</sup> - Premium Tube Selection) and as such, are already "special" when compared to other standard tubes on the market. Additionally, for certain models we have our GoldLabel tubes, which are available from us if you wish to upgrade.

## PrimaLuna® DiaLogue Premium

- No more 12AX7 tubes in the DiaLogue Premium range of products. Instead of a 12AX7/12AU7 combination in each channel, we use a double 12AU7 combination. Lower distortion levels, higher level of sound quality. Distortion levels in the first stage have dropped with a factor of 5 at low levels to at least 20 at higher levels, above 1V.
- All new PrimaLuna PTP™ (Power Transformer Protection) circuit. When the power transformer overheats due to environmental circumstances, overloading or some problem in the unit, an internal thermal switch breaks the primary, allowing the unit to cool down before harm is done. After it's cooled, contact is restored and if nothing is broken, the amp will repower and function properly.
- All new PrimaLuna OTP™ (Output Transformer Protection) circuit which further protects the amplifier.

PrimaLuna SilverLabel tubes are pre-selected by us following our simple 60 out of 100 rule (PTS<sup>™</sup> - Premium Tube Selection) and as such, are already "special" when compared to other standard tubes on the market. Additionally, for certain models we have our GoldLabel tubes, which are available from us and several other parties if you wish to upgrade. In the USA, Upscale Audio's inventory of New Old Stock tubes (which is another thing you might want to experiment with) is the largest you can find. Elsewhere, independent suppliers can assist you to make your best choice.

We hope that the PrimaLuna DiaLogue Premium Poweramplifier will make you want to follow our next steps in expanding this new range of products. If you have any questions or comments, don't hesitate to contact us. You can also share your thoughts with others at <u>www.audioreview.com</u> or other review sites. On the <u>www.primaluna.nl</u> website you will find links to these and other websites. We keep our prices low by relying on word-of-mouth and customer feedback, and we would appreciate hearing what you have to say about our product. Finally, if you need service during or after the warranty period, please don't hesitate to contact us.

Thanks again for your support!

Herman van den Dungen DUROB AUDIO BV

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The information in this manual is subject to change without further notice.

## PrimaLuna® DiaLogue Premium

### Troubleshooting

### Some tips:

- No output. Power is on, but power LED is off and tubes do not light up. AC cable makes bad connection in IEC connector. Please check.
- No output. Power is on, but power LED is off and tubes do not light up. PTP<sup>™</sup> protection may have switched off power transformer. If so, the amplifier will switch on again after internal temperature of power transformer returns to normal. Overheating might be caused by higher environment temperature than normal or heavy use.
- BTI switch-off. BTI switched off the high voltage supply to the power output tubes. This can
  happen when one (or more) output tube(s) draw(s) significantly more current than normal, like
  what can happen when a loudspeaker terminal is short circuited with volume turned up. Or, in
  case of an internal output tube failure, the BTI™ circuit understands that there is a new situation
  which can cause harm to the amplifier or the loudspeaker, and the high voltage power supply to
  the output tubes is interrupted as a protective measure. To reset, switch the amplifier's power off
  for at least two minutes, then switch back on. Of course this should only be done after the cause
  of the failure has been identified and resolved. Switching the power back on too early can fool the
  BTI circuit into acting as though the problem has not been totally resolved and it may put the amp
  back into protection mode again. So be sure to give it enough time to reset.
- No output. Power is on, but power LED is off and tubes do not light up. Mains fuse is out. Replace fuse as per instructions on page 10.
- Noise coming from one channel in case of use as stereo amplifier. The easiest is to try a full set of
  new tubes and see if the problem disappears or stays. If that is not possible try to find if there is
  maybe one problematic tube.

Noisy tube. First swap the two inner 12AU7 tubes left to right. If noise follows tube swap, than you have found the problem tube. If noise does not follow, swap the two outer 12AU7 tubes left to right.• Hum coming from one channel. Possible bad output tube. Swap the output tubes in pairs from right to left. If hum follows the swap, swap the far left and far right tubes. If the hum returns to the original problem channel, you have found the problem tube. If not, swap the inside output tubes left to right. If still you did not find a problematic tube, you retry the same with the power tubes.

- Noise/distortion coming from both channels in stereo mode.
   Tubes may be in need of replacement. Read page 11 for tube basics and replacement options.
- In case you use the amplifier as mono amplifier and have a hum problem, try to replace all tubes by a new set and see if the problem goes or not. In case you want to try to find the possible one problematic tube, connect and use the amplifier in stereo mode and follow the earlier described procedure.

If you try these possible solutions and problems persist, contact us or your local distributor for further investigation.

#### PTS<sup>™</sup> - Premium Tube Selection<sup>™</sup>

Our "standard" PrimaLuna SilverLabel tubes are pre-selected using our simple 60 out of 100 rule and as such, are already "special" when compared to other standard tubes on the market. Out of 100 tubes which have passed the final quality control from the manufacturer, we are allowed to select and keep the 60 best pieces. The other 40, which are in no way defective (these just do not belong to the best 60), go back to the manufacturer and are used to supply other clients.

Additionally, we keep an eye on all tubes still manufactured today and if special, high quality tubes become available, we consider them as candidates for our GoldLabel tubes. Normally these are tubes which are still in production—we don't want to offer minor quantities of N.O.S. (New Old Stock) tubes as PrimaLuna GoldLabel tubes.

Currently we have available 12AX7 and 12AU7 Goldlabels tubes.

### PrimaLuna<sup>®</sup> DiaLogue Premium

### Warning

To prevent serious injury, electrical shock or fire:

- · Do not operate with bottom plate removed.
- Keep away from rain and moisture.
- Always disconnect all cable connections to and from amplifier before changing fuses and/or tubes.
- Do not replace fuses with any fuse other than the same type and rating as used by the factory.
- Do not replace tubes without reading instructions.
- Do not replace fuses or tubes if you have any doubt about your ability to do so. We accept no responsibility for any personal or material damage due to incompetent use or users.

#### **Package Contents**

DiaLogue Premium Poweramplifier	1
PowerCord	1
This Owner's Manual	1
White Gloves	1 pair
Tube Complement	4 x EL34 6 x 12AU7
Main Fuse	1 x Littelfuse <sup>®</sup> 213 Series 3.15A Slo-Blo <sup>®</sup> 5 x 20 mm fuse for 100-120VAC and Littelfuse <sup>®</sup> 213 Series 1.6A Slo-Blo <sup>®</sup> 5 x 20 mm fuse for 200-240VAC

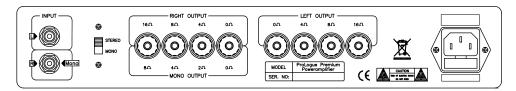
### **Initial Setup**

- Carefully remove the DiaLogue Premium Poweramplifier from its packaging. Use the white gloves to prevent fingerprint smudges.
- · Remove the tube cage by carefully pulling it up and away from the amplifier.
- · Remove the protective foam surrounding the tubes.
- · Tubes are already installed. Check that each tube is firmly seated in its socket. Use gloves.
- Replace cage back in its place if desired.
- Check to see the power switch is off (down).
- Connect output of preamp with input of power amp.
- · Connect your speaker wires, positive to positive, negative to negative. This unit is non-inverting.
- Plug the power cord into the amplifier, then into the wall socket.
- Switch the preamplifier on and wait for 1 minute to stabilize the circuit.
- Switch the Poweramplifier on.
- The tubes will be warmed up and ready to use in about 60 seconds.

### Inputs & Controls

PrimaLuna's front panels are made from machined aluminum, finished to match the black/blue metallic chassis. No controls are available from the front. The power switch is located on the left side of the amp, just behind the front plate, the EL34/KT88 switch on the right side of the amp, just behind the front plate.

Rear Panel



Looking at the rear panel, you will note the input section and the set of speaker terminals. The input section can be used as mono input or stereo input. The speaker terminals also can be used as mono or stereo output(s). Make sure that the mono/stereo switch is in the correct position. Do NOT use this switch while the amplifier is switched on. If the switch is in mono position, use the input and output connections marked "mono". If the switch is in stereo position, use the input and output connections marked "stereo".

In case of use as a mono amplifier, attach the positive (+) from your loudspeaker to the 2, 4 or 8 ohm terminal that most closely matches the average impedance of your loudspeakers according to their manufacturer's specifications. In case of use as a stereo amplifier, attach the positive (+) from your loudspeakers to the 4, 8 or 16 ohm terminal that most closely matches the average impedance of your loudspeakers according to their manufacturer's specifications.

The negative (-) cable from your loudspeaker attaches to the 0 Ohm terminal of the amplifier.

*Tip: It's important to experiment with different positive terminals. If your speaker is listed as* 8 *Ohm, also try 4 Ohm. Speaker impedance rises and lowers. It's never constant. The speaker taps are there to help you to get the best sound. Trust your ears.* 

Some preamplifiers invert the audio signal. Check with the manufacturer. If your preamp does, reverse the positive and negative speaker wire at either the amplifier end or speaker end. PrimaLuna preamplifiers are non-inverting.

### PrimaLuna® DiaLogue Premium

### **Tube Basics**

Small-signal tubes such as 12AU7 will have a life of about 5,000 to 10,000 hours. Power tubes like EL34, KT88, etc are typically 2500 to 3000 hours, but we have reports of much longer due to PrimaLuna's low-stress designs.

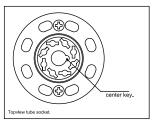
Here are some other guidelines about tubes:

- · Do not use treatments on tube pins or in sockets.
- If you decide to experiment with other tube types, it's best not to swap tubes in and out
  repeatedly as you can loosen tube sockets and cycle the amp on/off too quickly. Try a tube for a
  few days, then compare them to another for a few days playing the same music and same
  volume. Just relax.
- Do not leave the amplifier on 24 hours a day. Just a short warm-up is required for the PrimaLuna to get into its groove.
- Every new tube needs break-in time. This typically takes about 50 hours for large tubes and 200 hours for small tubes.
- Please note that tubes can vary electrically, and by plugging in the wrong type of tube you can damage the amplifier and void your warranty.

### **Common Replacements:**

- For 12AU7: ECC82, ECC802S, E82CC, 5814, 6189, CV4003
- For the KT88 switch position: 6550 and KT88. You may also use KT90, KT120, KT150.
- For the EL34 switch position: 6CA7, E34LS, E34L. You may also use 6L6GC, 7581A and KT66 though power will drop slightly.





Some tubes and tube sockets have a "center key" which must line up! If you misalign them and use brute force, you will damage important and expensive parts of your amplifier!!

### OTP<sup>™</sup> - Output Transformer Protection<sup>™</sup>

In rare circumstances, it's possible to damage one of the two output transformers by improper hook-up, or other mistakes like changing speakers with the amplifier on. PrimaLuna's Output Transformer Protection ™ circuit is designed to minimize the chances of that happening. And the best news is, it's not in the signal path so it does it's job with no sound degradation.

### Soft-start™

When a failure occurs with a light bulb, or anything electrical, it's usually when you turn it on. To help guard against that PrimaLuna has a feature called Soft-start<sup>™</sup> which will turn on power to critical components and tubes gently and slowly rather than with a hit, with the goal of making your PrimaLuna last a lifetime.

### Fuse Protection -

A note on fuses: If "someone who knows" tells you to wrap fuses with aluminum foil to avoid wasting money on new ones, it's best not to take his advice. Fuses are safety valves. They should always be replaced with the exact same value and type.

*Warning*: Never attempt to check or replace a fuse while the amp is plugged in. Turn it off and unplug all speakers, components and AC cords before continuing. Wait 10 minutes to let tubes cool down and the circuit to fully discharge.

PrimaLuna recommends Littelfuse® for the best performance at a reasonable cost. There are more expensive audiophile grade fuses on the market, and PrimaLuna has no opinion on who is best. But

The mains fuse is located on the rear of the amplifier, just below the power cord socket (see picture on this page). The fuse rating is 1 x Littelfuse® 213 Series 3.15A Slo-Blo® 5 x 20 mm fuse for 100-120VAC and Littelfuse® 213

Series, 1.6A Slo-Blo® 5 x 20 mm fuse for 200-240VAC. Replace with the

same type and value fuse! The fuse holder can be snapped out using a small



#### Mains Fuse:

slotted flat blade screwdriver.

no-name fuses may or may not be made to the most exacting standards.

PrimaLuna<sup>®</sup> DiaLogue Premium

### EL34/KT88 Switch

The DiaLogue Premium Poweramplifiers—as well as the Premium Integrated Amplifier—come with an EL34/KT88 bias switch. This means that by the flip of a switch you can choose the optimum bias setting for EL34s or KT88s. No hassle with screwdrivers, no messing around with meters etc. If you swap tubes, simply flip the switch for optimum bias!

And should you use the "wrong" bias setting for the tubes in use, don't worry. It just means you did not choose the "optimum" bias setting as decided by the PrimaLuna design team. Some PrimaLuna owners even like to "play" with this switch to see what is the optimum bias setting for their circumstances and some go even further and play with this switch while having a mix of EL34 and KT88 within one channel. All is possible due to the PrimaLuna Adaptive AutoBias Circuit.

#### Ultralinear - Triode Switching

Your DiaLogue Premium Poweramplifier affords you the opportunity of switching between Ultralinear and Triode modes by remote control. You need not turn off the amp to do so; you can switch while the unit is operating. Although a faint click might be heard through your speakers, it is in no way harmful.

Your DiaLogue Premium Poweramplifier always starts in Ultralinear mode when powered up. Centered behind the front panel is a two-color LED which indicates the mode in which the amp is functioning: Red—Ultralinear; Green—Triode.

The choice between Ultralinear or Triode modes is a matter of taste, influenced by your speakers and the recording.

#### **Ultralinear Mode**

The term ultralinear applies quite literally here. The design exerts a tighter grip on the speakers and produces music more likely to be described as accurate, dynamic, with great inner detail. The top and bottom end take on more "pop" and excitement.

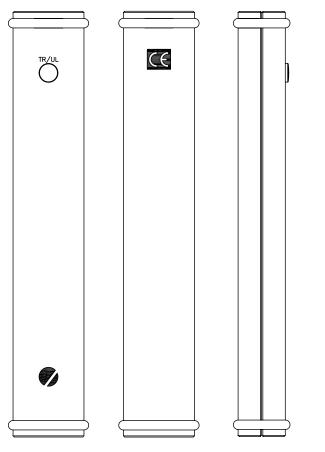
#### **Triode Mode**

Take your KT-88 or EL-34 and wire it like a 300B! Triode sound is best described as warmer on top and bottom, a little compressed, with the midband now slightly more pronounced. Your shoulders drop as the sound is more relaxed. In absolute terms it will not play as loud as maximum power drops by roughly half compared to Ultralinear.

### So Which Is Better?

Decide with your ears but we will leave you with this thought: On the surface it would appear that if you wanted to play music louder, you would use the higher-powered Ultralinear mode; conversely, you would use the Triode setting for soft listening. Not always true! At low listening levels, you may need the "pop" that Ultralinear provides for top and bottom extension so the music sounds full. At higher listening levels, Triode operation will start to "compress" and allow you to crank it up more with less fatigue. The point is: have fun with it and never let people tell you what sounds right.

### **Remote Control**



The functions of the PrimaLuna DiaLogue Premium UL-TR Remote Control are self-explanitory. The remote controls Triode/Ultralinear switching.

The PrimaLuna DiaLogue Premium UL-TR Remote Control has two high quality silicon rubber rings on each end to protect against damage of the remote control itself as well as your furniture. These rings can be easily removed in case battery has to be replaced or if you plain just don't like them.

In the event your remote control does not function, please check battery and if necessary, replace with a new CR2032 model battery. To access the battery-compartment, remove the rubber rings and unscrew the back plate. If the remote still does not function, contact your dealer for further assistance.

# PrimaLuna® DiaLogue Premium

### AAB<sup>™</sup> - Adaptive AutoBias<sup>™</sup>

Adaptive AutoBias<sup>™</sup> is an exclusive PrimaLuna feature you won't find anywhere at any price. Superbly engineered, It closely monitors power output tubes and adjust them instantly to perfection in real time. You will never have to get a toolkit and meter out to adjust tubes yourself again. If one tube fails, you just replace one, unlike some amps that require replacing a whole matched set of four. NO MATCHING REQUIRED. In fact, in an emergency, you can even use a different tube type! Your PrimaLuna can even run a single EL34, KT88, KT120, and KT150 all mixed together if you had to! (Not recommended!).

The tubes operate in their perfect sweet spot. Musicality is improved dramatically and distortion levels drop by over 40%. And since it operates outside the signal path, there is no sonic degradation. The new, more developed Adaptive AutoBias™ circuit has another benefit. It will actually TELL you if a tube has failed. It's called BTI, and it's discussed below.

### PrimaLuna Special Protection Circuits"

### Soft-start™

Furthermore, the PrimaLuna Adaptive AutoBias<sup>™</sup> circuit is equipped with Soft-start<sup>™</sup>, which powers the amplifier up slowly to prolong the life of internal components, including the tubes. This makes the PrimaLuna a joy to own and operate.

### BTI<sup>™</sup> - Bad Tube Indication<sup>™</sup>

Adaptive AutoBias<sup>™</sup> keeps tubes in perfect tune. But now, it does much more. If a tube shows signs of failure, perhaps due to drawing excessive current, the BTI<sup>™</sup> circuit may put the amplifier into protection mode. In other brands, this may be the part of the story where you get the soldering iron out or take the amp to the shop for repair. And of course then you have to figure out which tube failed, which can be a real chore. But in your PrimaLuna, you are not only protected, but informed where the trouble tube is. The amplifier will protect itself from damage by opening a relay shutting off the sound. A red LED mounted next to the trouble tube will light up. Simply turn off the amp, let it rest two minutes, replace the bad tube next to the red LED, and turn the amp back on. That's it. Nothing is simpler.

Note: At power on and power off, one or more of the LEDs may light up for a second. This does not indicate anything at all. Tubes can often "burp" during this time. If a tube has a true problem, the LED will stay on, and the sound will mute.

### PTP<sup>™</sup> - Power Transformer Protection<sup>™</sup>

Continuing with PrimaLuna's impeccable reputation for reliability, we're constantly searching for ways to improve on what is arguably the best track record for dependability in the industry. Our PTP™ circuit is a demonstration of that commitment. In the unlikely event that the power transformer's internal temperature becomes too high, a thermal switch will cut off the main AC voltage. Once cool, turn the amplifier back on, and see if it functions normally. If it does not, have it checked immediately by your dealer.