

The voice for your tone



POMPEII | PE  
FOUR HEAD SONIC ECHO | 603

User's manual

# POMPEII PE603 Model

Cicognani engineering like to congratulate you on your purchase of your new Pompeii PE603. It is one of most advanced Echo unit ever created. We hope this would help your creativity and better your sound. The Glorious Old Italian Echo at the today time.

The great experience and knowledge of Guglielmo (The Guru) has been made available to create not a simple "relic" of that fantastic PE603 echo but a modern vision of the most beautiful sounds of past.

Some guidelines to design this unit:

- \* No mechanical part in movement; no maintenance needed; robust metal case in pedal size.
- \* Extreme Audio Quality: Great linearity of the signal designed with a new valve preamplifier combined with a cascode Jfets. The sound has excellent benefits.
- \* The VARISPEED, born in the past as a modification to reduce the speed of motor; has been redesigned keeping unchanged the concept of lengthening the time keeping the heads synchronized. With good quality we managed to reach 660mS in combination with the head 4.

Vintage model of PE603 echo, has been used by many bands as an effect on vocals, instruments, PA. Needless to say, many musicians have used it in different styles. It is a "creative machine" that enriches the sound thanks to its unmistakable "feedback halos". Many different effects can be had by selecting combinations of the 4 replay heads via the "switch" control.

The Echo/Repeat function, switch between a single or multiple repeats. With the Length Of Swell pot. controlling the amount of feedback; from minimal subtlety to frenzied cosmic mayhem....and this makes it truly unique and creative.

# A Bit of Echo History

The Italian Echo Units were produced by the famous Italian company in Milan since the 60s. They were soon appreciated all over the world and used by many artists including: Pink Floyd, Led Zeppelin, The Shadows, etc. Even today it is much appreciated. In several years of my career, I have had the opportunity and the pleasure of repairing, and restoring many, so that I can understand the product well. The operating principle is based on the "filophone" magnetic wire recorder. This aluminum drum with some coils of magnetic wire wound around it and are positioned around it: demagnetizer, recording head, play heads. The historic echo models of the famous Italian company worked with 4 play heads; some models from the 70s were then expanded and equipped up to 6. This process required constant maintenance of cleaning and lubrication of the touch parts. A technical feature that saw assigning the longest time was the maximum space between the recording head and the most distant play in about 300ms.



Measured many units and the average of them offered these delay times:

First Tap = 74mS

Second tap = 148mS

Third tap = 222 mS

Fourth tap = 296mS

It should also be kept in mind that the motor speed in a European main power will be about 20% compared to that America.



# Introduction:

The Echosex 2°, Echosex 2°LTD, Echosex T7E and Echofet Baby projects, conceived by Guglielmo of Cicognani engineering factory, have been appreciated worldwide receiving many awards.

With POMPEII PE603, we have recreated the sonic details of the old historic Italian echo while preserving the most important principles.

Thanks to today's techniques and maintaining the vast majority of the analog circuit, Pompeii offers:

- 1) Better and more defined sounds
- 2) No maintenance required
- 3) Robust metal case in pedal size

This was caused by:

New tube / jfet cascode preamplifier that in addition to great linearity improves the headroom compared to the designs of my previous models.

Best audio components; extreme evolution of the circuit.

No moving parts, no rubber parts that can wear out.

The chassis has been completely redesigned in order to be more beautiful, robust and easy to assemble and disassemble. This allows the valve to be replaced with greater comfort.

Creating "Pompeii" was very demanding. I performed many test analyzed the direct and recording signals. We have checked and rechecked the average delay time and synchronized on the subject of a real evolution of the product.

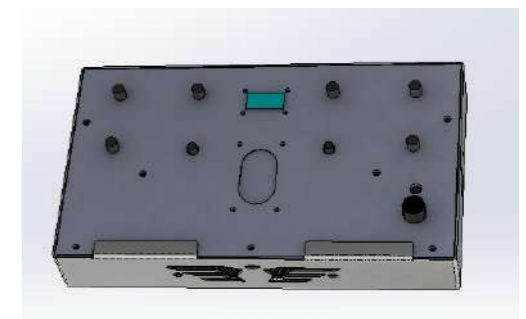
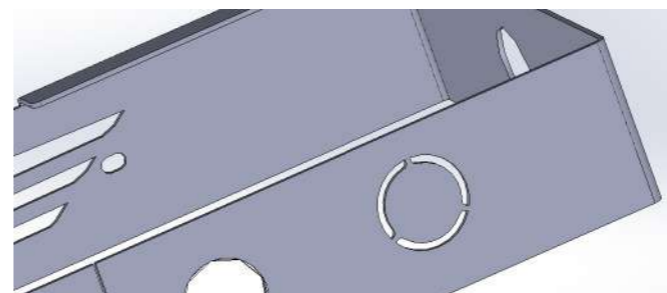
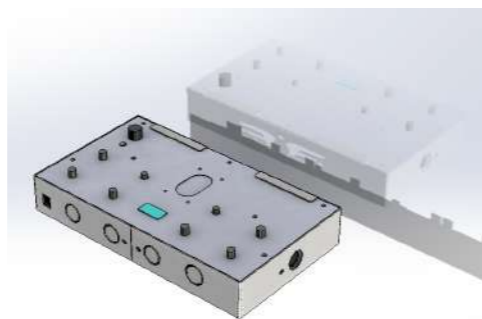
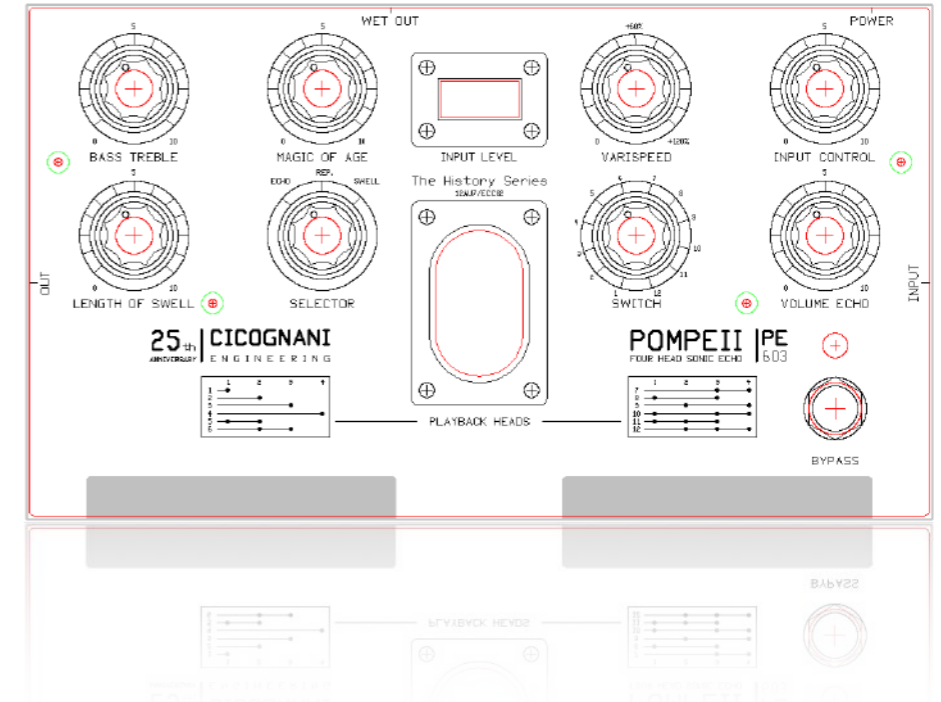
# Design:

## Andrea Cicognani Head of Design

Pompeii PE603 was born to celebrate the 25th Anniversary of Cicognani engineering. Unlike the LTD of the 20th Anniversary it will not be built in a limited edition but guaranteed the production in Italy.

The front panel is made of PMMA and personally designed by me. Cutting and writing is done using our CNC laser. All the commands are there; all at your fingertips. The texts recall the original ones of the time with added VARISPEED (born to vary the motor speed in order to lengthen the echo delay in a synchronized way on the heads) and MAGIC OF AGE (a particular modulation once due to the wear of the mechanics that moved the “drum”). The head matching tables are specially placed near the source that illuminates the panel green so as to be more visible.

The metal chassis is completely new and made in just two pieces. This time the well-known engineer and dear friend Marcello Zama has really surpassed himself. Its principles are compact, durable and easy to assemble. The parts bent to the foot switch side, have been specially created with two features: the first panel protection and the second to better diffuse the back lighting of the panel.



**The hammered silver paint** is made by artisans as it used to be. These paints in the past were used in Italy on industrial machines because more resistant than the standard ones.

This means that each product, while maintaining a similar appearance, cannot be the same as the other, since the particular "hammered" effect occurs in a different way in drying.



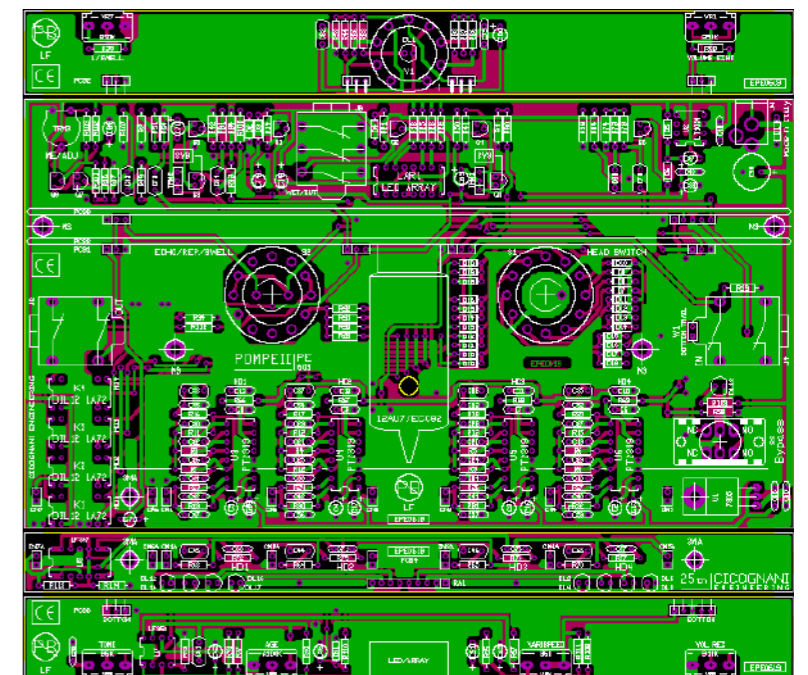
### **My PCB design:**

I was born a few years ago and worked in my first career in "point to point" built electronics now known as "hand wired". I have drawn by hand a number of circuits that I don't even remember anymore! Then comes the computer with ever better technologies and software able to do so many beautiful things automatically. One of my secrets is that I continue to draw the circuits by hand because I have a better view of the passage of audio signals. This allows me to pay more attention to the quality of the sound, and to the aspect of the positioning of the components which facilitates repair. Usually I have in mind the functions it has to perform and how once mounted it will have to play. I believe that this type of production must be done in Italy because it follows a typical culture that can hardly be delegated to other countries mainly due to a meticulous assembly.

Of course, it is thought to be a "Boutique", no compromises product and I know that everything will not be built in many thousands of pieces.

The components are of the highest quality and chosen to last over time.

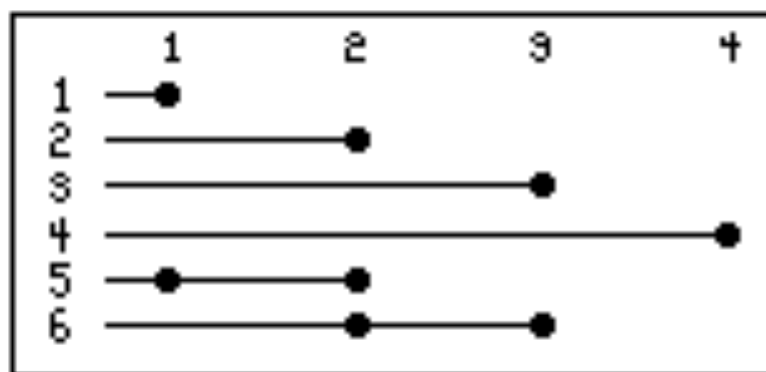
The circuits are tested after assembly and then undergo the final PDC (pre delivery check). The tests we perform are not just about functionality but include a complete view: Functionality, check on the valve triode balanced and microphonicity, tolerance of digit-head delay times and sound. **Only in this way Pompeii can enter to the sale.**



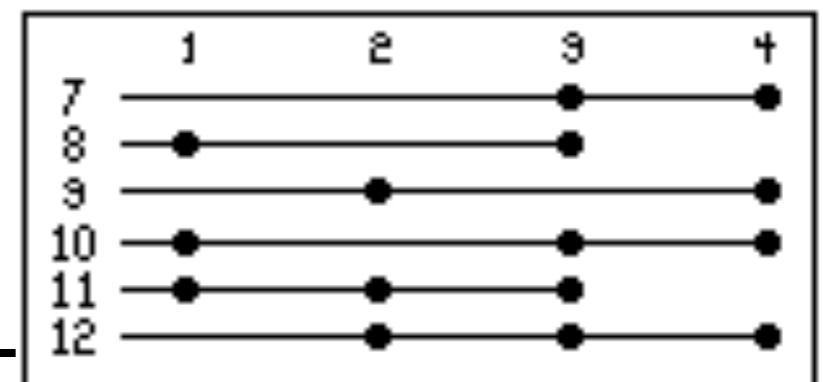
**The Guru**

# The Guru's Advice

- 1) Connect the main power to 12Vdc (min 500mA). Make sure the power supply is negative tip.
- 2) Connect the "Output" to the amplifier "Input".
- 3) Connect the "Input" to the instrument.
- 4) Set the "Input Volume". The input volume is displayed by "Input Level" and can be adjusted from super clean to overdrive. (this function is assigned only to repetitions)
- 5) The bypass foot switch is factory set ON / OFF. It is however possible to set the "fade-out" mode by removing the jumper located on the opposite side to the front panel.
- 6) Choose the Echo mode by the 3 position mode "Selector".
  - \* Echo: Classic 60's "slapback echo". One single repeat from the selected head (no feedback available)
  - \* Rep.: Normal echo mode with selectable heads in feedback combinations.
  - \* Swell: The typical Old Italian reverb effect made with the use of all the heads simultaneously.
- 7) "Switch", the selector has the task of choosing the heads and their combinations. The combinations are exactly the first 12 positions of the vintage PE603.



— — **PLAYBACK HEADS** — —



**One example in Rep. mode:** If you select the “5 position” switch, call together the fourth and third heads, it will mean the 4th Head considered as an 8th note, and 3rd head is equal to a dotted 8th. If you use the “varispeed” you can keep the synchronism by increasing the delay time over 100%.

The Length of swell (feedback) and Tone:

Use the feedback control to create the tridimensional carpet of sound. The “tone” control is strictly connected to the feedback and its task is to change the tonality of the oscillations. With this command you can repeat the most brilliant or darkest notes to infinity. The Tone control is then assigned only to repetitions.

The Magic of Age:

This simulates the mechanical aging of the glorious Old Italian Echo. Is a particular modulation that acts on the echo delay. Actually it happens in the same way as an old worn out mechanic. The "Magic of Age" control creates a unique and sexy effect that can be adjusted to your personal taste.

The Volume Echo:

Is the parallel mix of the effect. It can be adjusted from 0% to 50% of the 50% dry signal. This analog mixer has been completely redesigned to keep pure performance in all conditions of use. (The Volume Echo does not work in the “wet-out” socket.

**Again, thank you for purchasing and welcome to “The Best Voice for Your Tone”.**

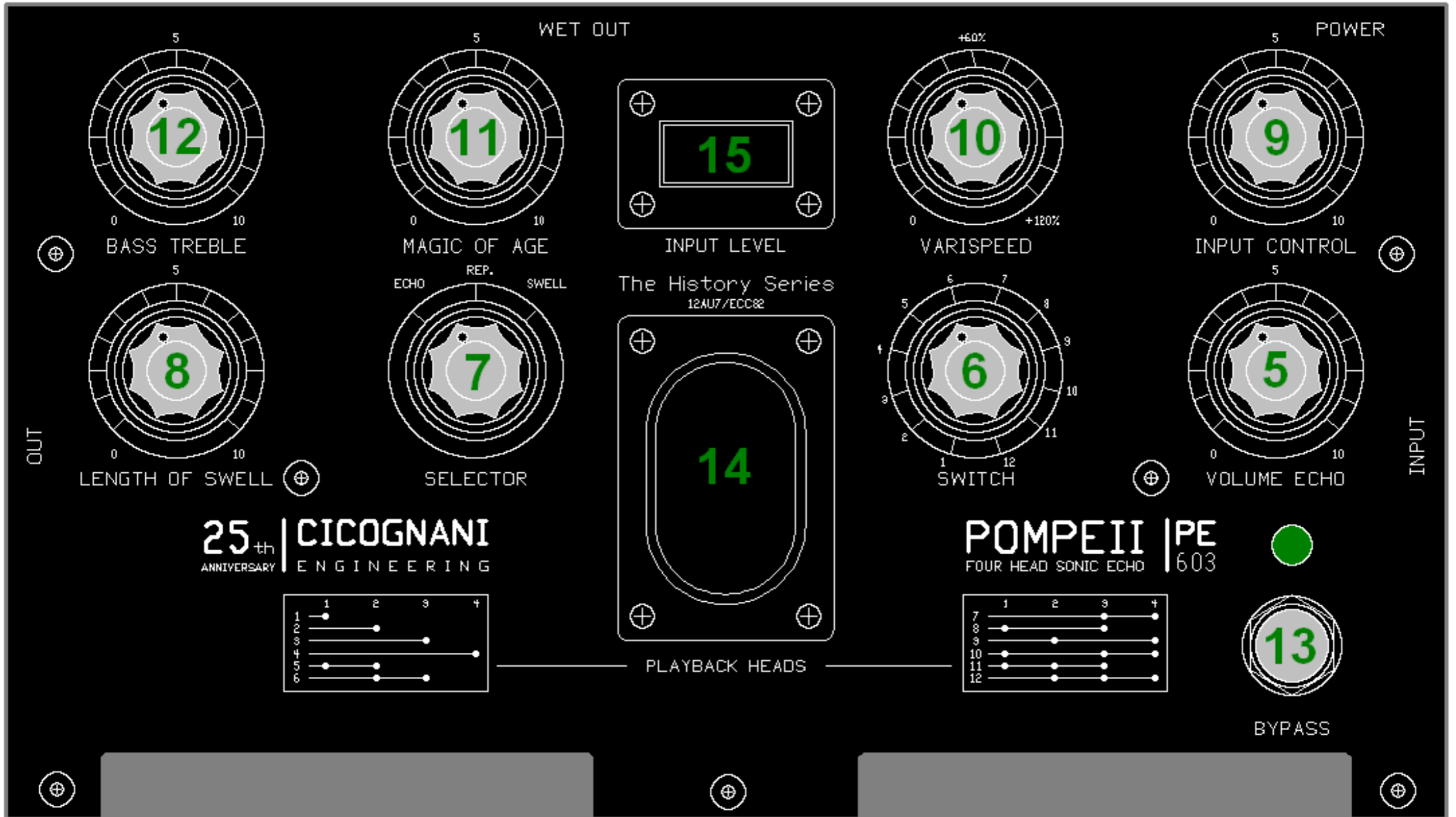
A handwritten signature in black ink, appearing to read 'Bosch' or similar, with a stylized flourish at the end.



# Controls:

4

1



2

3

- 1) Main Power: DC plug 5,5 x 2,1mm. 12Vdc min. 350mA (0,35A) - suggested 12Vdc 500mA.
- 2) Instrument Input: Standard 1/4" (6,3mm.) mono jack.
- 3) Out: Standard 1/4" (6,3mm.) mono jack.
- 4) Wet-Out: Unbalanced Lo Z 100% effect out. Standard 1/4" (6,3mm.) mono jack able to connect to mixing consoles.
- 5) Volume Echo: Set the mix of Volume Echo.
- 6) Switch: Heads selector; 12 position switch to select the head combinations.  
(as playback heads shown in the map)
- 7) Selector: Three mode selector; Echo (single rep. without feedback); Rep. (Classic Echo with feedback); Swell (Reverberation created by all the heads simultaneously)
- 8) Length of swell: More known as feedback. From one to infinite repetitions.
- 9) Input Control: Setting the input volume that you can checking to the "Input Level" (The magic eyes).
- 10) Varispeed: Change the base delay time - from 300mS of Classic Old Italian Echo to max 800mS.
- 11) Magic of Age: Modulation that simulates the status of mechanical degradation.
- 12) Bass/Treble: Is the tone of repeats.
- 13) Bypass: Effect ON/OFF
- 14) 12AU7B/ECC82 Tube: The dual triode tube preamp.
- 15) Input level: The solid state "Magic eyes"

# Combinations Playback Heads:

	HEAD 1	HEAD 2	HEAD 3	HEAD 4
1	74 > 148mS			
2		148 > 296mS		
3			222 > 444mS	
4				296 > 592mS
5				
6				
7				
8				
9				
10				
11				
12				

The minimum values shown in the table are with "varispeed" rotated in the 0% position, while the maximum values are 100%. The minimum values are with a 1% THD tolerance, while the maximum ones are 5%. However the synchronism of the heads remains very precise. The harmonic distortion ranges from 1% on the delay time 348mS to 5% in the maximum condition of 592mS.

The heads are made with 4x PT2399. These well-used components offer great performance and above all can be found anywhere in the world. The different filters of each head are calibrated to recreate the same sound conditions as the old Italian echo.

The feedback generated by Pompeii PE603 returns in the style of the award-winning LTD model in order to favor those beautiful sound carpets often used in the past to compose the most beautiful arpeggios and psychedelic sounds.

## Technical Details:

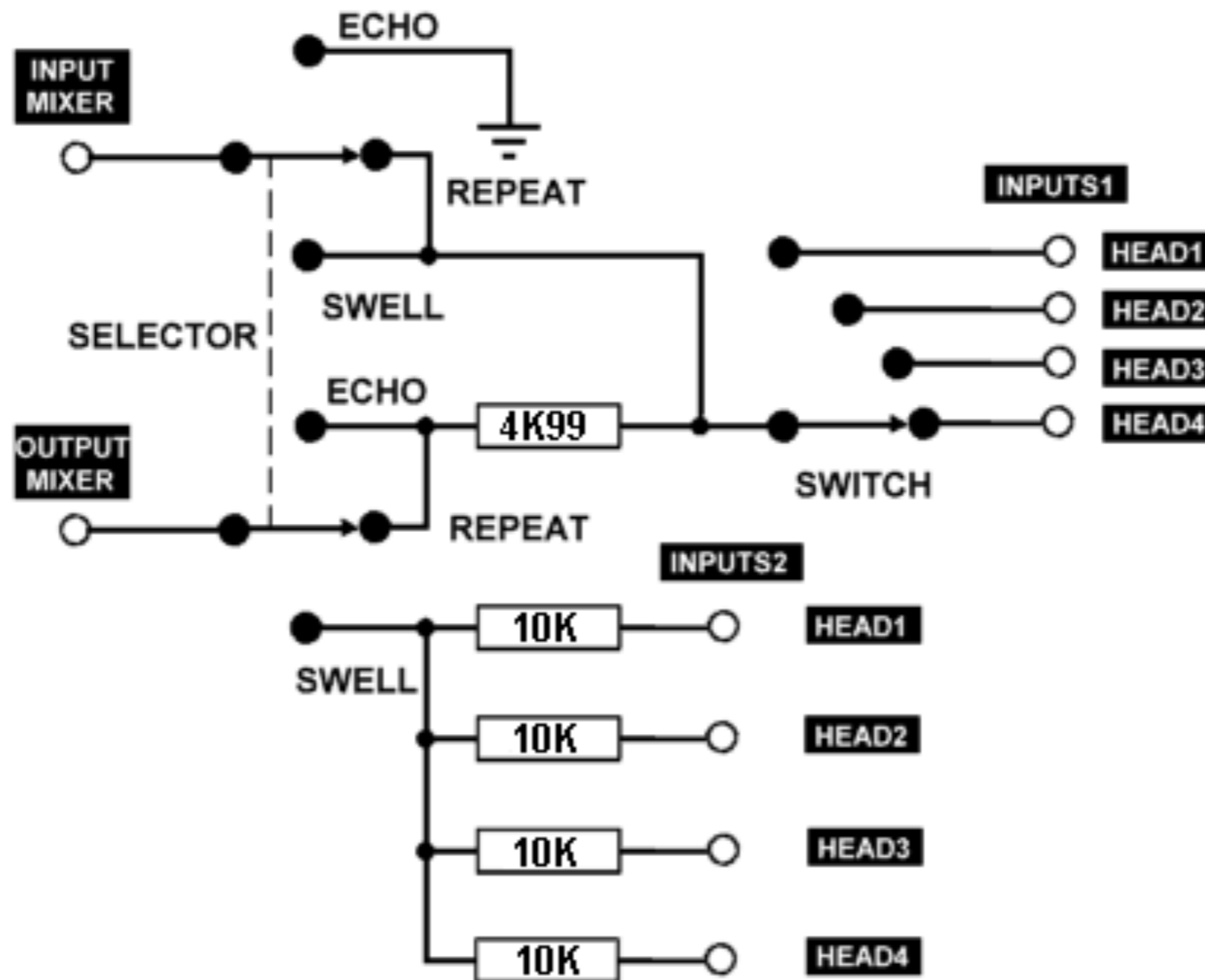
<b>POWER IN</b>	9 to 12VDC (NEGATIVE TIP)
<b>CONSUMPTION</b>	FROM 350 TO MAX 500mA
<b>INPUT IMPEDANCE</b>	< 1M OHM
<b>INPUT SENSIVITY</b>	1 Vpp MAX
<b>OUTPUT IMPEDANCE</b>	< 47K OHM
<b>WET OUT IMPEDANCE</b>	< 47K OHM
<b>LINEARITY RESPONSE</b>	7Hz TO 200Khz @ 1db
<b>S/N RATIO PREAMP</b>	< 91db
<b>S/N RATIO HEADS</b>	- 90dbV
<b>EFFECT MIX LEVEL</b>	MAX 50%
<b>WET OUT MIX LEVEL</b>	100% WET
<b>HEADS TIMES</b>	874 - 148 - 222 - 296mS

<b>VARISPEED MAX TIME</b>	+ 100% MAX (592mS)
<b>HEADS DISTORTION</b>	MAX 5% THD
<b>tone FREQUENCY</b>	ROLL OFF 1Khz @ 6db/oct
<b>SWITCHING MODE</b>	REED RELAYS
<b>INPUT BUFFER</b>	1/2 12AU7B
<b>OUTPUT BUFFER</b>	1/2 12AU7B
<b>INT. WORKING VOLTAGE</b>	MAX 24VDC
<b>ESTIMATED TUBE LIFE</b>	UP TO 3000 HOURS
<b>WIDTH</b>	MAX 220mm. (8,6")
<b>LENGTH</b>	MAX 130mm. (5,1")
<b>HEIGHT</b>	MAX 50MM. (1,96")
<b>WEIGHT</b>	0,7Kg. (1,5 lbs)



# Block Diagram:

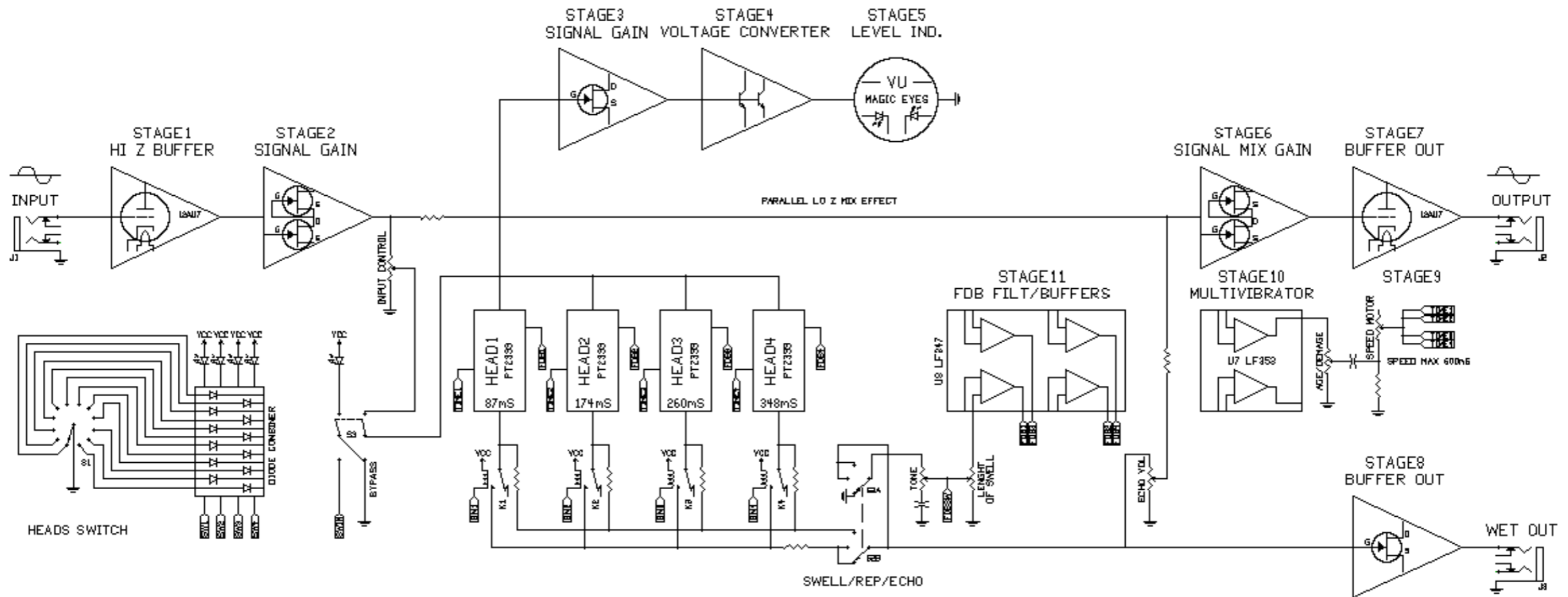
The diagram 1 represents the principle mode of the function selector (Echo- Rep. - Swell) and the head selector. It must be considered that the latter works in relays interfacing to provide a quieter commutation.



Block diagram 1

The diagram 2 is the complete operating system. As you can see the valve returns to be used both on the input and output stage, with great benefits on the sound. The dynamics of the signal was more high, thanks to the voltage doubler, which in this way allows not to saturate the input in combination with a big signals.

The block diagram is an evolution of the T7E project where many changes take place: The switching system, the signal path, the adjustment of the head map to the PE603 model, the feedback mix system, the bypass where the mute relay is been deleted.

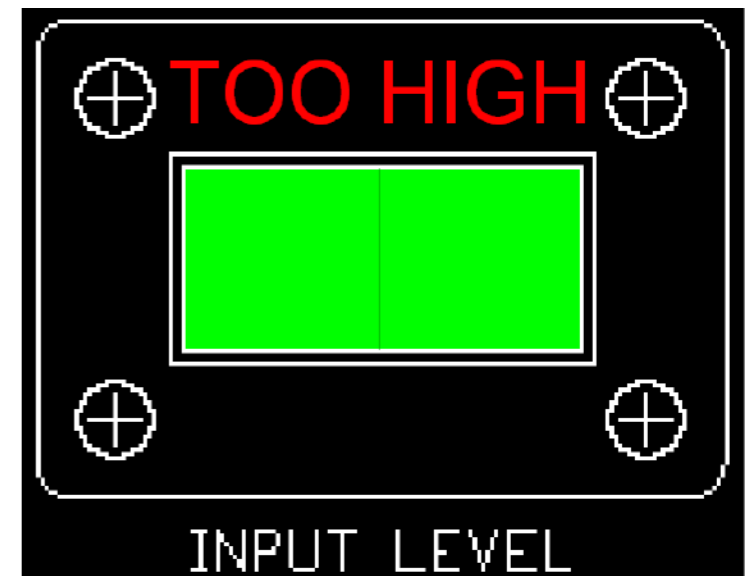
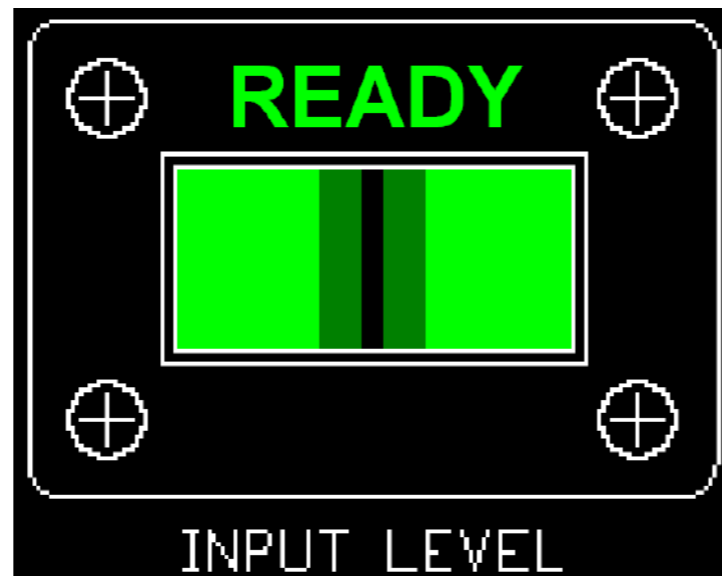
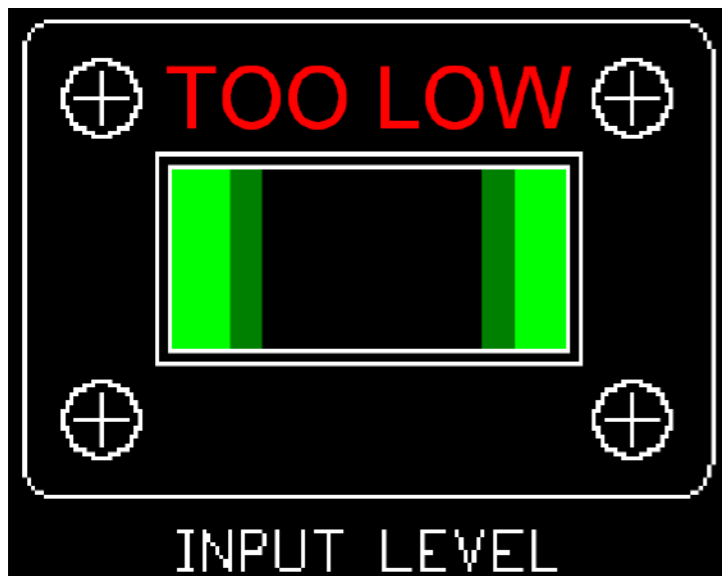


Block diagram 2

# Input Instruments Connection:

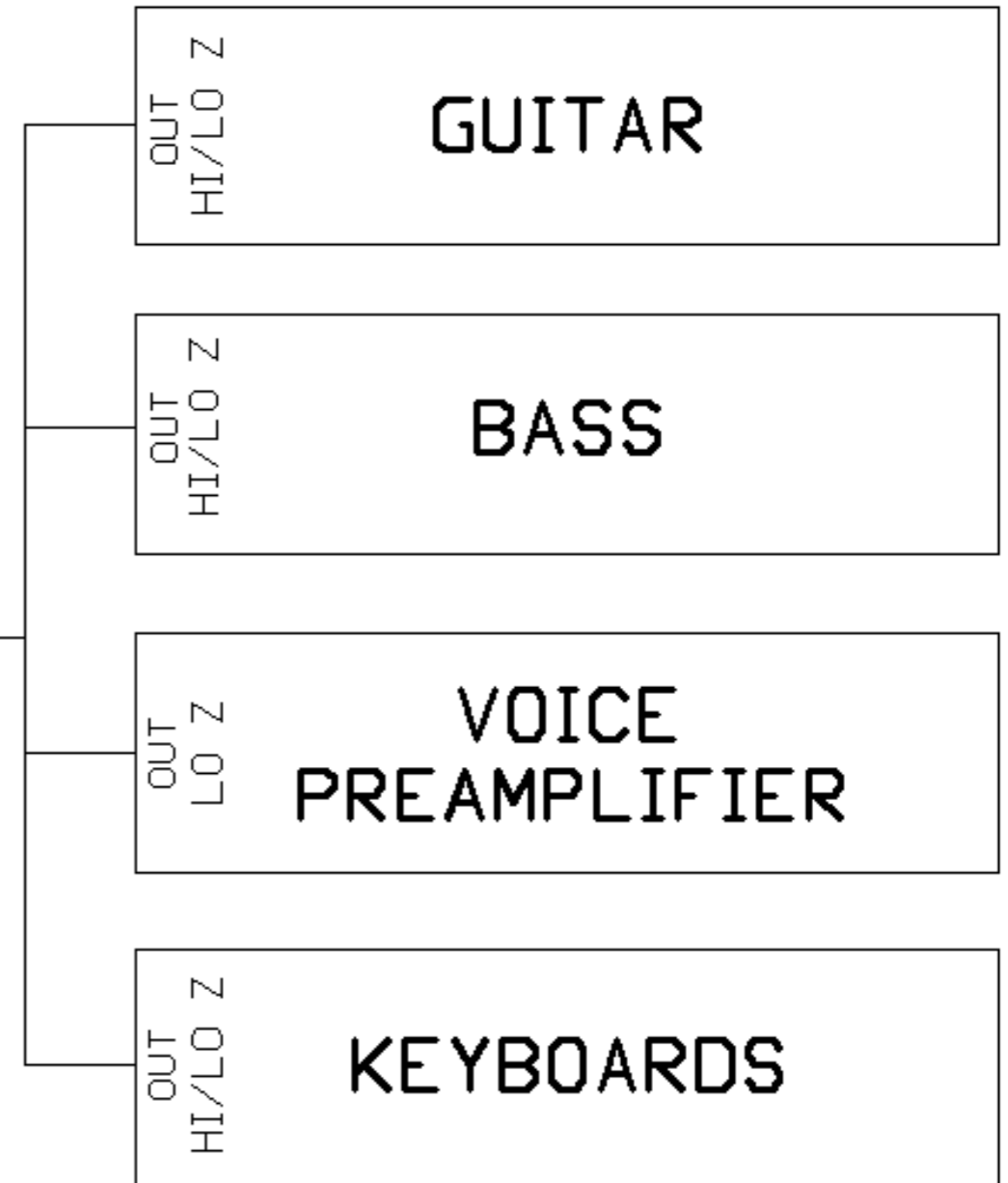
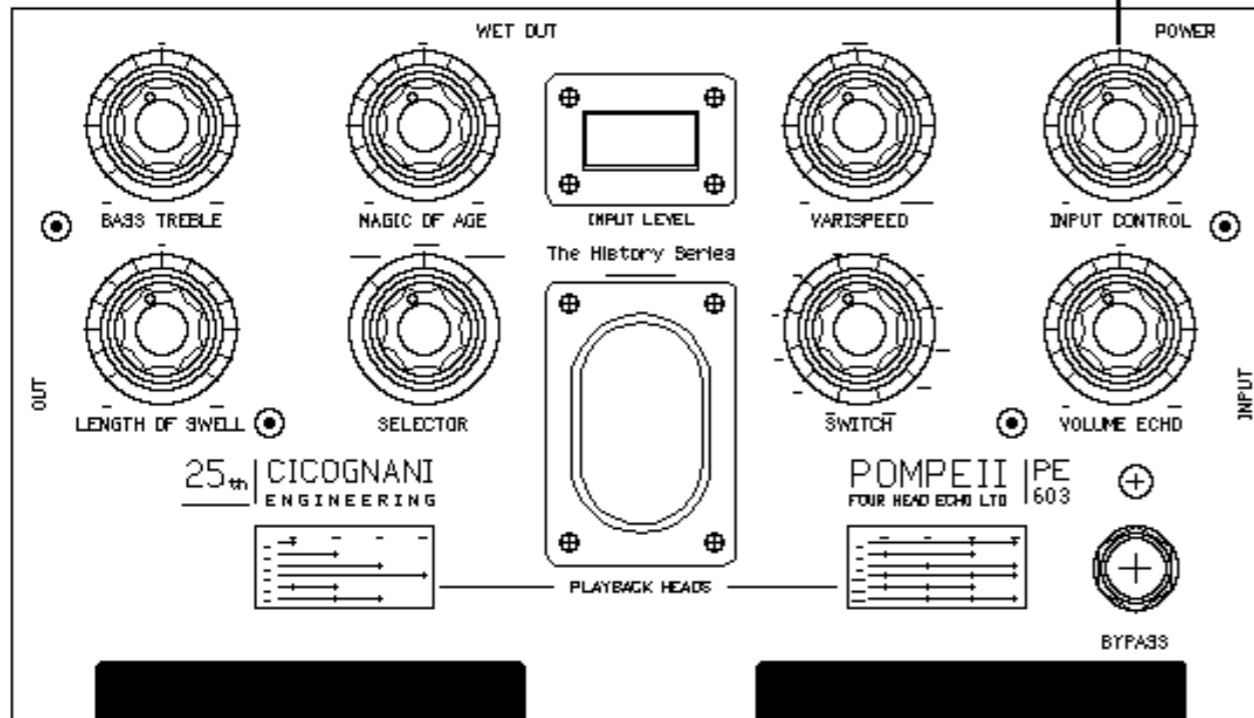
To the Input you can use many different instrument lo and hi impedance as: Guitar, bass, mic preamplifier, keyboards, etc. The **input control** must be adjusted so that you can use the right amount of signal. **The input level** (magic eye) will help you understand how to adjust the levels.

**Attention!!** The input level adjustment is very important as it affects the behavior of the echo sound. With low input levels the mix may not reach a good presence while high levels may introduce harmonic distortion on repetitions.



I do not recommend the use of echo in distortion due to high input levels as it is "not very musical". I think it is better to use an overdrive or fuzz between the instrument and the echo. The repetitions in this way are more precise and defined. It is only a personal opinion !!!!

Set the correct input level

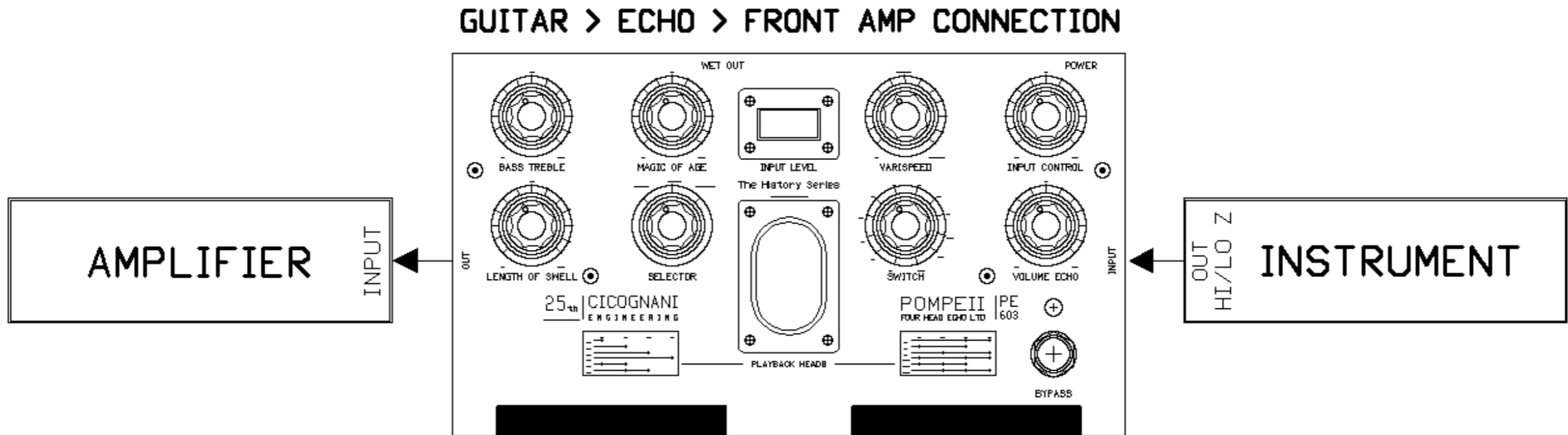


The Pompeii PE603 can be used with different types of instruments with output signals max 1Vpp and high or low impedances. The Old Italian echo was used as the main PA effect and shortly thereafter along with many instruments of the band. Today Pompeii wants to retrace those steps by offering wider compatibility even with the most modern instruments.

The new Pompeii PE603 offers unlimited possibility that you can needs both in live or in recording applications

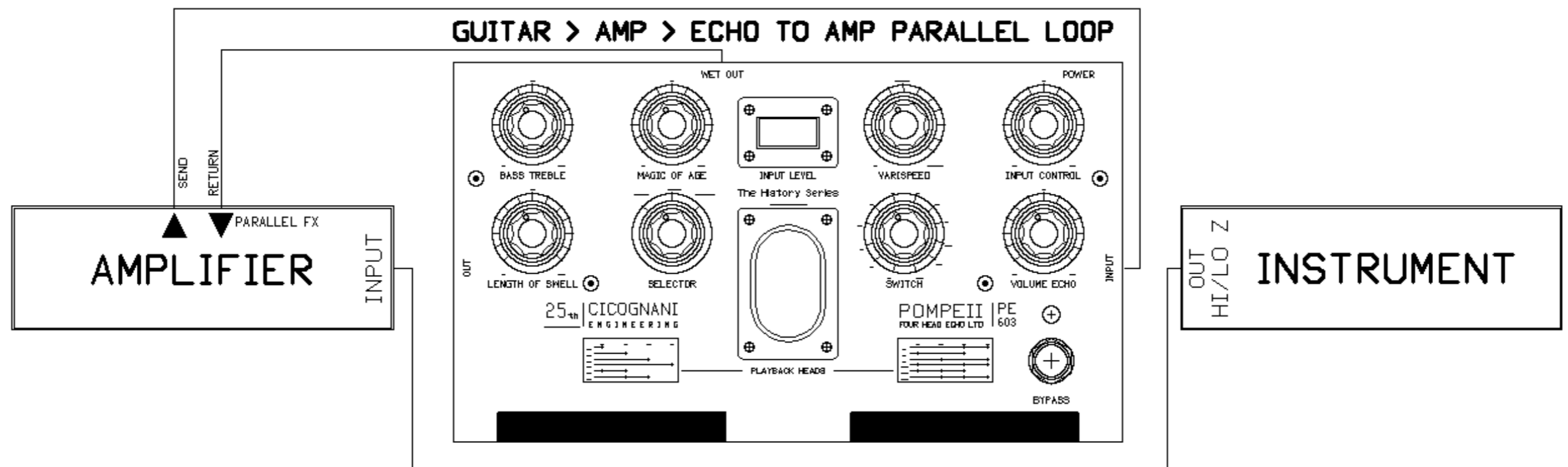
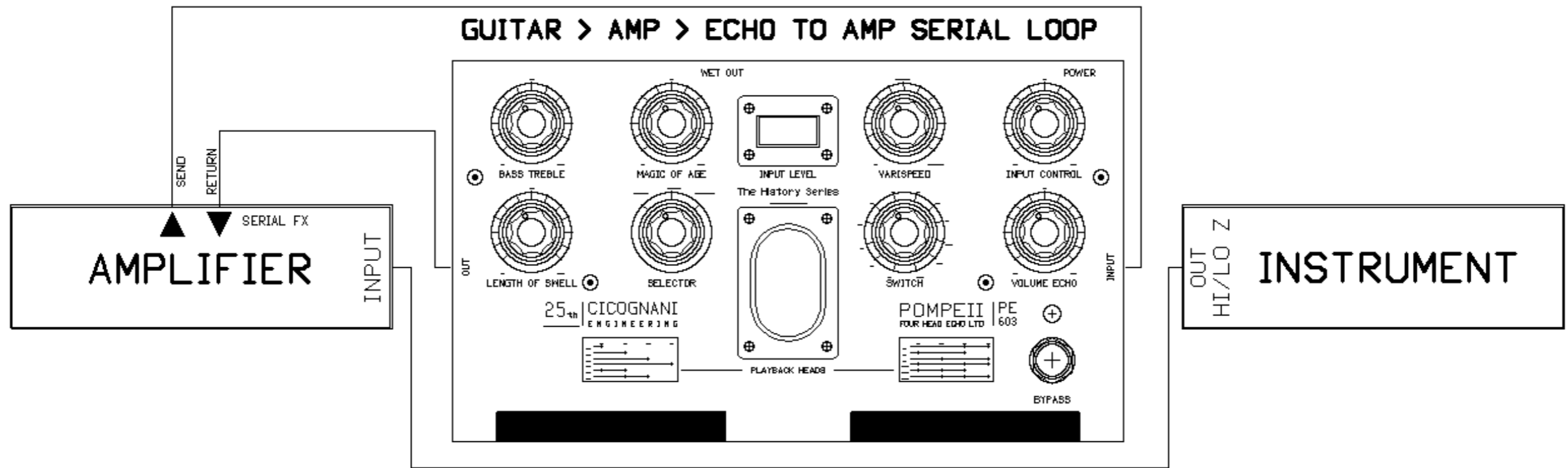


# The Echo in Front the Amp:



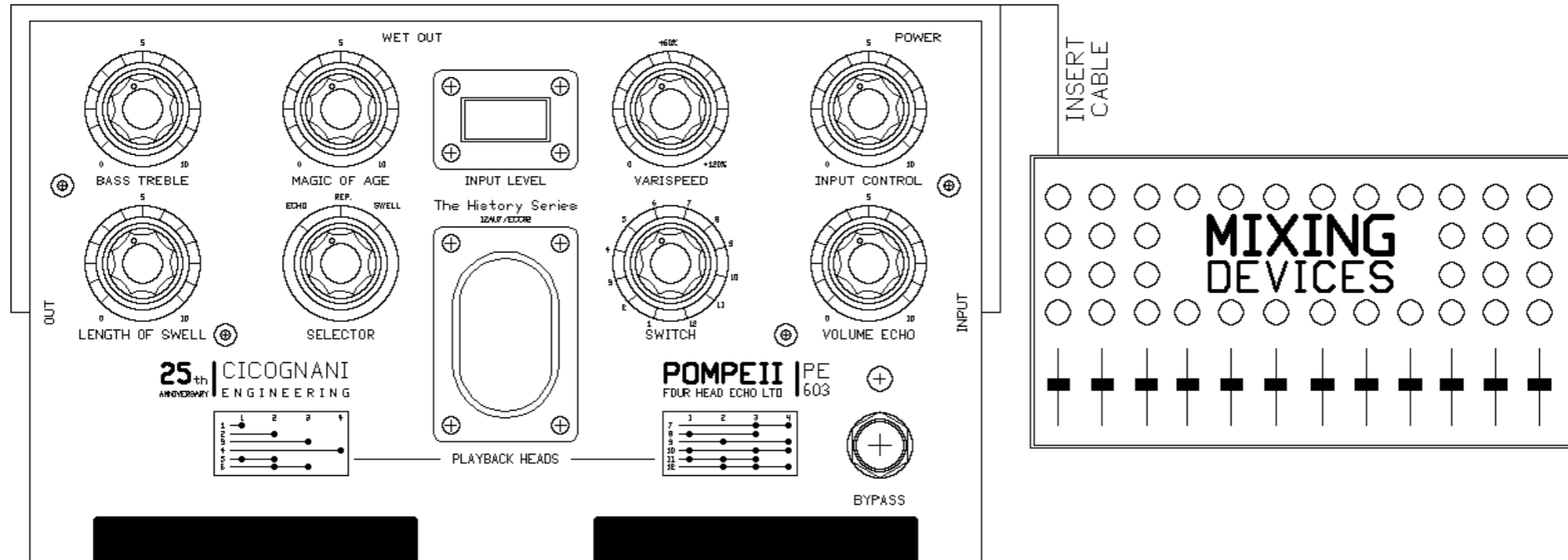
The use of the echo in front of the amplifier is one of the most classic configurations. Thanks to a powerful input and output buffer we can send a good and clean signal to the amplifier. The use of good quality cables is always recommended. If you use Fuzz, Od. or Dist. pedals move the echo to the end of the chain to obtain the best performance

# The Echo in Loop Effects:

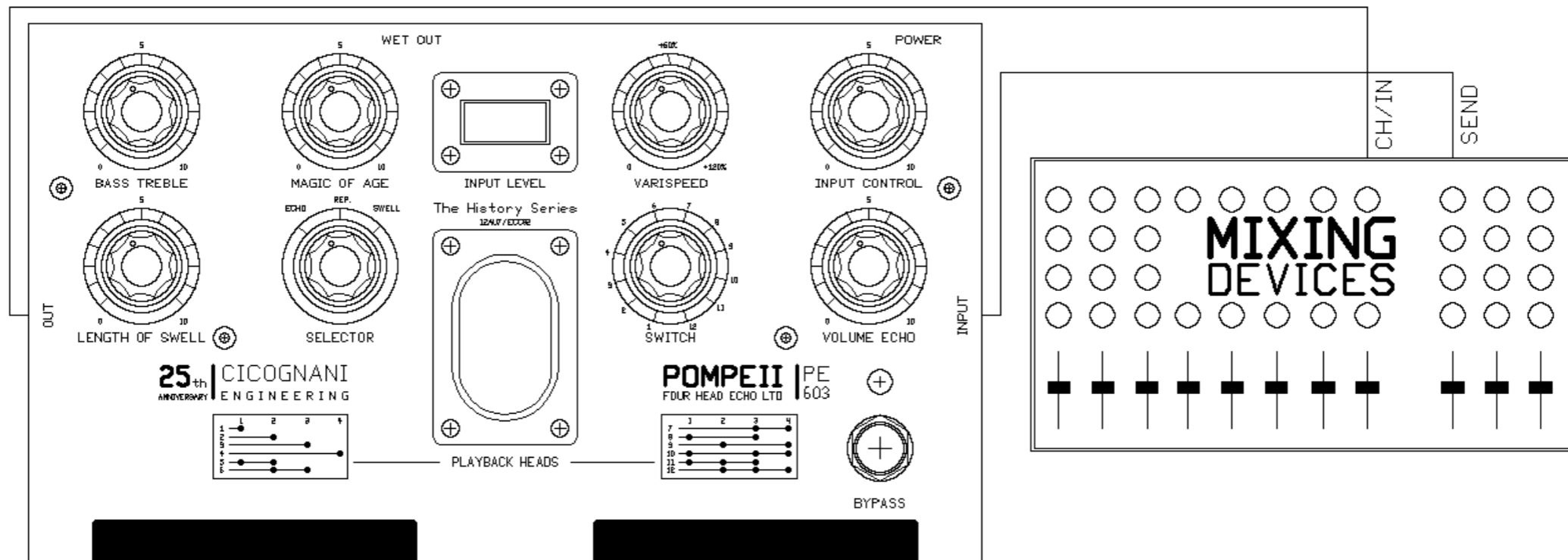


# The Echo in a Mixing Console

## ECHO TO MIXING DEVICE - INSERT MODE -



## ECHO TO MIXING DEVICE - CHANNEL MODE -



# Special feature and function:

The "Pompeii tube" is a 12AU7/ECC82 it guarantees a good duration and linearity. However, it can also be replaced with 12AX7/ECC83

On the underside of the pedal it is easy to see a small window where a jumper is housed. Removing this switch activates the **"tail fx"** function. A careful adjustment of the "length of swell" will be necessary to ensure that in the moment of bypass the "tail" is not excessive.

The working current of the marked pedal is 12VDC / 500mA as it is the best option for the best performance. It is also possible to use 9VDC / 500mA, taking into consideration that the performance will suffer a very slight degradation.

**Be very careful that the main power supply is correct.** If Pompeii is under-powered it is possible to notice malfunctions on the selection of the heads and an increase in the background noise.

The "Wet / Out" is a buffer-equipped output that provides a low impedance signal (line output). The connection is via 6.3mm mono jack.

The calibration of the feedback for each single head is fixed and made at the factory. Inside **Pompeii** the only possible settings are those of bias and vu. **Adjustment by unqualified personnel is not recommended.**



# Terms of Warranty:

**Cicognani Engineering** product warranty covers 2 years from date of purchase with the exception of moving mechanical parts such as foot switches, speakers and handles which have a 1 year warranty. The valves, lights and cables are guaranteed for 3 months from the date of purchase. The warranty does not cover damage caused by accident, misuse and / or neglect, failure to comply with the instruction manual, repair and attempted repair by personnel not authorized by Cicognani Engineering, any damage caused during transport and delivery, (claims must be presented to the carrier); damage to any product that has been altered or on which it has been removed, defaced or altered serial number; damage caused by faulty connections or connections to equipment failures and/or defective power cables. Responsibility of Cicognani Engineering for any defective product is limited to repair or replacement of the product at our discretion. The Cicognani Engineering not be liable for damages resulting from loss of use of the product, lost time operation interrupted by non-use of the product, loss of business or any other damages or incidental, consequential or otherwise; damage in transit or damage caused by inadequate packaging or of poor quality.

**Assistance:** Please contact us for information on how, where and when to ship the product after the return has been Authorized by Cicognani Engineering . The repaired goods should be packed carefully and we recommend not include any accessories such as cables, effects, manuals, etc. ..

Please attach a copy of the original receipt of purchase (invoice or receipt) together with a problem description and your personal data.

**THE WARRANTY IS NOT VALID 'WITHOUT A COPY OF YOUR RECEIPT OF SALE CERTIFYING THAT THE DATE OF PURCHASE.**

The costs of labor and material guarantee shall be borne by Cicognani Engineering

**Shipping costs are charged to you.**



**Cicognani Engineering** reserves the right to change technical features or look of his products in any moment without notice. This product is pursuant to European Directives 89/366EEC

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