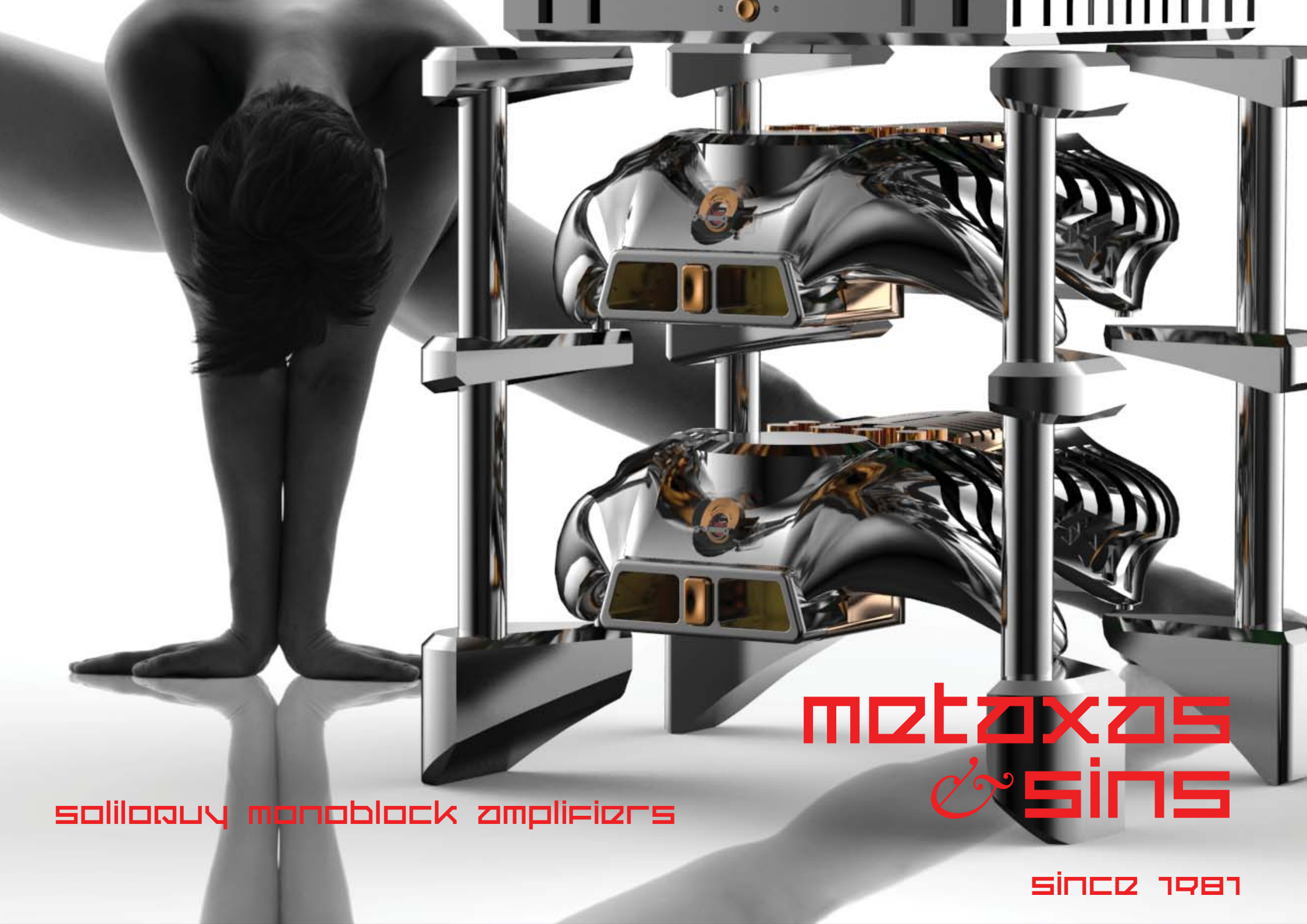
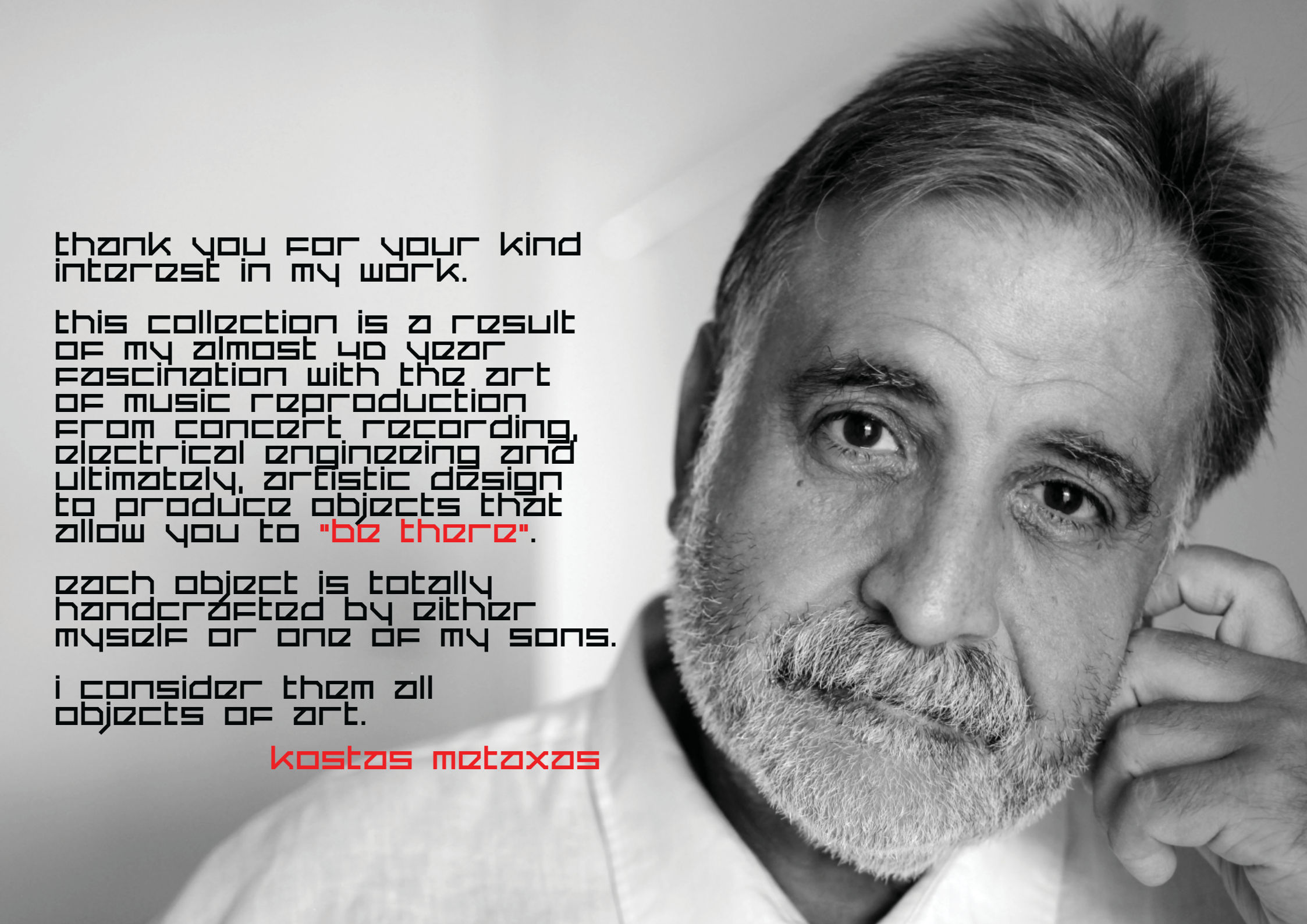

metaxas
&
sins
soliloquy monoblock amplifiers
since 1981



thank you for your kind interest in my work.

this collection is a result of my almost 40 year fascination with the art of music reproduction from concert recording, electrical engineering and ultimately, artistic design to produce objects that allow you to "be there".

each object is totally handcrafted by either myself or one of my sons.

i consider them all objects of art.

kostas metaxas

K-DESIGN AWARD'18

May 30, 2018

METAXAS

AWARD **WINNER**
TITLE **METAXAS STATEMENT**
COUNTRY **NETHERLANDS**
AFFILIATION **METAXAS & SINS**

This certificate of award is presented in recognition of submission of works with creativity and efforts to the K-DESIGN AWARD 2018.

PROFESSOR **KEN NAH**
PROFESSOR **ANDY LAW**
PROFESSOR **SHINGO ANDO**
PROFESSOR **SUNAH KIM**

2018 WINNERS
PRODUCT DESIGN

Presented to
Metaxas & Sins Bv

Design
Metaxas & Sins Statement
Amsterdam, Netherlands

Client
Metaxas & Sins

Lead Designer
Kostas Metaxas

Metaxas & Sins Statement has been identified as one of the leading product design by the professional jury of APDC*IDA. Kostas Metaxas is a winner of the APDC*IDA 2018 Design Excellence Awards.

*IDA APDC
Design Excellence Awards

Astrid Hebert
Vice President
International Design Awards (IDA)

Hossein Farmani
President
International Design Awards (IDA)

Jason Wang
Secretary-General
Asia Pacific Design Center (APDC)

GOOD DESIGN

GOOD DESIGN AWARD

2018

The Statement

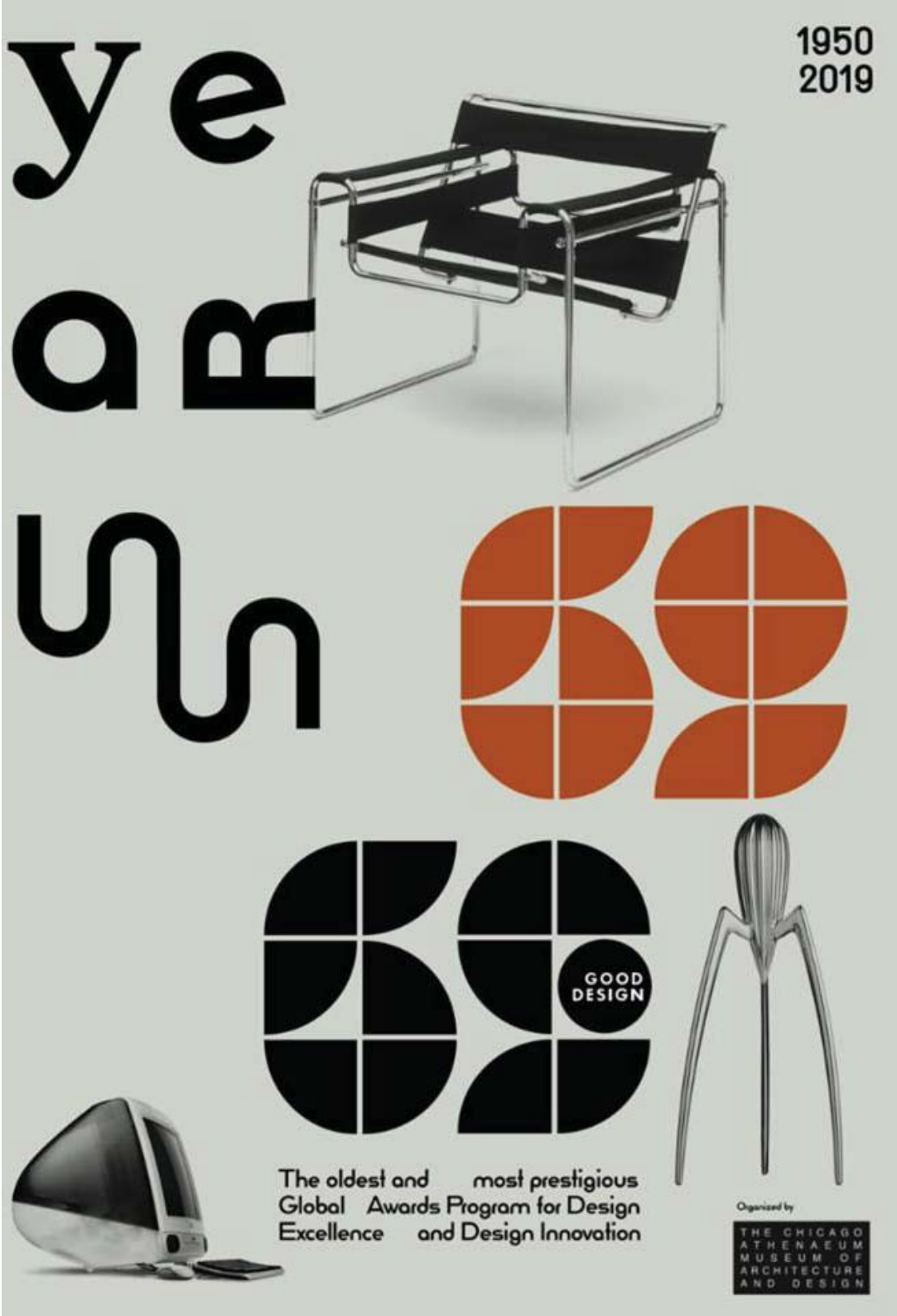
Designed by

Kostas, Andreas and Alessandros Metaxas

Manufacturer

Metaxas & Sins

THE CHICAGO ATHENAEUM
MUSEUM OF ARCHITECTURE AND DESIGN




ASIA DESIGN PRIZE 2019
CERTIFICATE OF APPRECIATION
JURY
KOSTAS METAXAS
FOREMAN OF A JURY
KARIM RASHID
Thank you for your efforts the judge Asia Design Prize 2019.
Officially, This certification certify for your activities as a jury.
29 March 2019, Seoul / Korea
PROFESSOR
HYUNSUN KIM
DIRECTOR
TETSUYA MATSUMOTO
PROFESSOR
BUMKYU KANG
ASIA
DESIG
PRIZE
2019

about

Kostas Metaxas is an articulate and forceful champion of audio without comprise. He is a connoisseur of fine music, a man for whom second best isn't good enough. In September of 1981, Kostas formed the company which bears his name. Known all over the world today simply by its initials, M&S, Metaxas & Sins was founded for several reasons.

The most immediate of these was to begin producing, his first product, the CP-1 preamplifier in commercial quantities. Whilst studying in Heidelberg, West Germany having transferred from the University of Melbourne, Kostas showed several of his prototype amplifiers to an important German Hi Fi Dealer. He was sufficiently impressed with what he heard to give him a little capital in the form of deposits to reserve the finished products. Thus M&S was born. And the rest as the saying goes, is audiophile history.

Back in Australia, new designs flowed from Kostas' workshop. The PP-1, a moving coil preamplifier appeared early in 1982. Reviewed by Klaus Renner in Das Ohr, the German audiophile publication, it was praised as the finest preamplifier available at the time. Accordingly, a flood of orders from the German audiophile who are known to purchase only the number 1 product in its class, firmly established M&S as a manufacturer of only the highest quality audio equipment.

In February 1988, the GERMAN 'Stereoplay' magazine rated the OPULENCE [Opus] PREAMPLIFIER its absolute reference against amplifiers from the US, Japan and Europe.

The OPUS preamplifier is a unique audio product. Apart from its outstanding musicality it combines the state-of-the-art in high-technology with an incredible array of options which would excite a Recording Engineer.

Kostas is also a familiar sight at local jazz and classical concerts with his prized Stellavox tape recorders in tow. Built with the exacting precision of a PATEK watch, these state-of-the-art models are indeed rarities and are normally the exclusive province of the professional recording studio. The recordings Kostas makes using Stellavox serve as reference for the design of future M&S systems.

M&S products embody not simply audio excellence but a stylistic design sense that would not be out of place in the Museum of Modern Art. M&S products are not meant to be hidden away like traditional sound systems. They are meant to be appreciated both stylistically as well as musically. Science approaches art for the sheer love of music and for that M&S make no apology.

Similarly, Kostas is unapologetic about the market he serves. He aims, quite simply, to provide the "finest objects money can buy." And what sort of people are M &S customers? Generally they view audio as a well-deserved indulgence. But no matter what their occupation, their preoccupation is to know and appreciate the difference between better and best , to listen with their heart and ears and blissfully "get lost in the music"..

Each amplifier is entirely handmade by the Master and his sons [sins] in a similar manner to the meticulous assembly of historic Bugatti automobiles.

To put it mildly, Metaxas & Sins is unlike any other audio business.

"Flagwaving? Why Not?" wrote Ralph Neill reviewing the MAS PP1 in Australian Hi-Fi in the early eighties. "Australia II proved in a big way that Australian technology can take on the world and win. M&S is doing just the same – on a smaller scale, to be sure, but it's doing it!"

XAS STATEMENT

NG ROBOT

LEKEE TECHNOLOGY CO., LTD.

CHINA

175

K-DESIGN AWARD'18

METAXAS

AWARD WINNER
TITLE METAXAS STATEMENT
COUNTRY NETHERLANDS
AFFILIATION METAXAS & SINS

This certificate of award is presented in recognition of submission of works with creativity and efforts to the K-DESIGN AWARD 2018.

PROFESSOR KEN NAH

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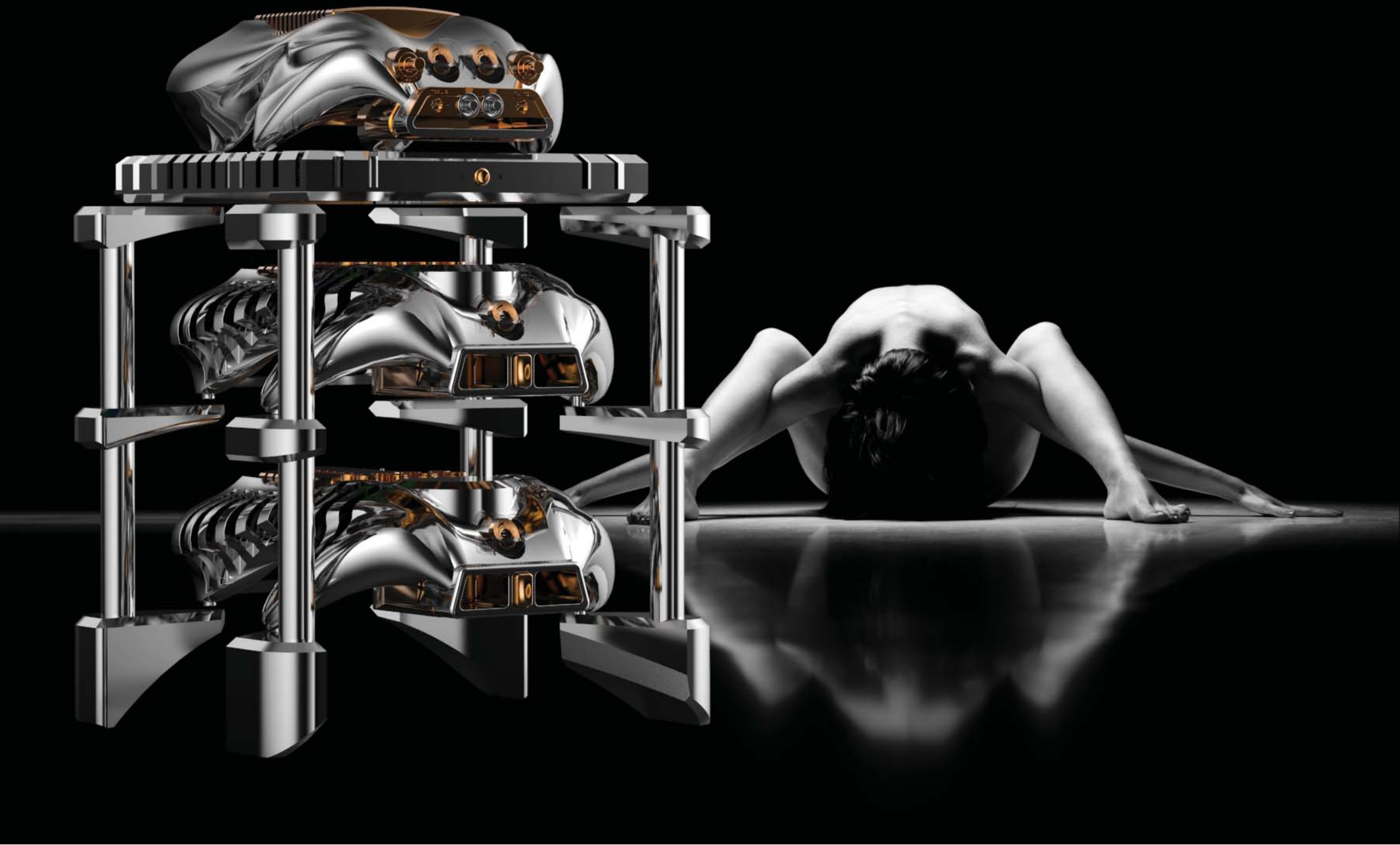
PROFESSOR SUNAH KIM

DIRECTOR AJAX LAW LING

DIRECTOR AN LUO

the soliloquy mono-block pair



Starting its commercial life as the MAS A1 amplifier in 1979, The SOLILOQUY has been continually refined as faster output transistors and better components have become available.

In its present form, each channel is made up of essentially five complete amplifier circuits, encompassing the linear gain input stage with high current output stage and four amplifier circuits whose role is to supply an absolutely stable voltage and current source irrespective of A.C. line condition.

The U.H.F. and R. F. circuit board techniques have been essential to ensure that the amplifier is unconditionally stable into any known loudspeaker load, including inductive electrostatics or low impedance ribbons.

Each mono-block amplifier features two massive 800W mumetal toroidal transformers and a separate 200W mumetal toroidal to ensure that the high current output stage does not affect the low current input stage. All connectors are of the highest quality, and every component, including the 40,000uF computer grade capacitors are directly connected to the printed circuit "high-current" board or separate "future-proof" input voltage amplifier/discrete voltage regulator board for ease of servicing and to maintain the shortest possible signal path.

What the critics said...

" So neutral though, is the Metaxas Opulence/Soliloquy set up that I could have used just about any sources I liked once the interconnecting cables were sorted. All I'd be hearing were the individual characteristics of the source components. However neutral or 'naked' the sound, the MAS doesn't come off as 'transistory' or clinical ... it had a feather-light touch and a way with tiny details that suggest either a pedigreed 60W or 70W per channel tube amp of recent vintage ..."
Ken Kessler, HI FI NEWS& RECORD REVIEW, England.

" It would make a perfect tool to assess equipment by. If any component is not in the top league, the amps will betray the culprit with surprising honesty. Its other great strength is the speed of delivery. It can keep up with the fastes of guitar runs and tambla rolls with a speed normally associated with single-ended valve amplifiers".
Alan Sircom, HI FI CHOICE, England.

OPERATING INSTRUCTIONS

Connection of the SOLILOQUY into a typical system is relatively straight forward since it possesses only a set of inputs (which are connected to the respective channels of the preceeding preamplifier) and a set of speaker Terminals (Red and Black to indicate correct polarity).

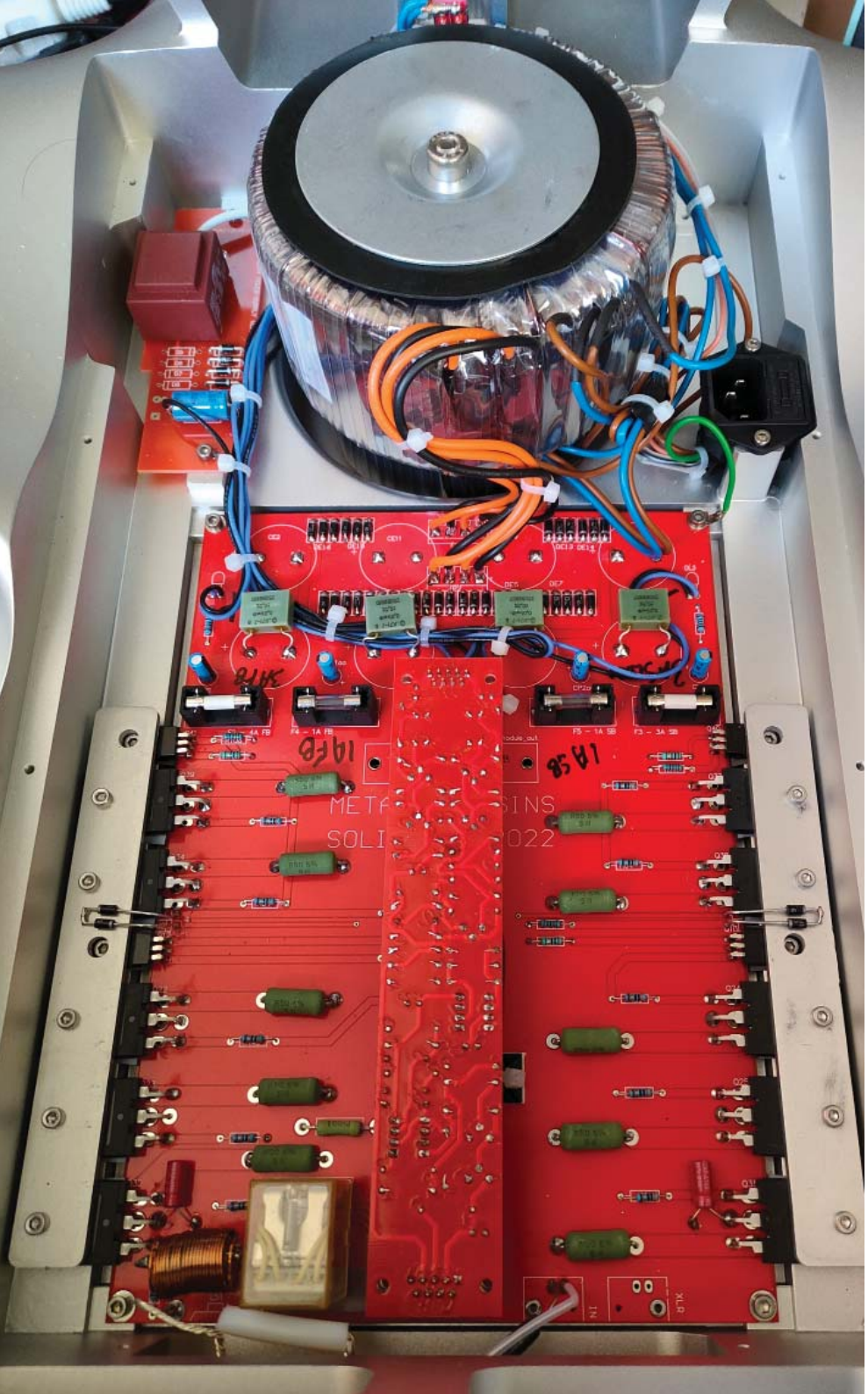
Ensure that the ON/OFF pushbotton on the FRONT PANEL is in the 'OFF' position before connecting the SOLILOQUY into the system. Once connected, ensure that there are no 'short circuits' in the speaker wires, then preceed to switch the system 'ON'. For best sound results, it is recommended that the unit is preheated for at least 15 minutes, before critical listening.

TECHNICAL DESIGN
Input Impendance

The 130kOhms/82pF input impedance using BIPOLAR inputs, ensures that there are no loading effects to the output stage of the preceeding Preamplifier and severe H.F. roll-off with long interconnect cables.
We use direct wiring to electrically connect the input to the Main Circuit Board.

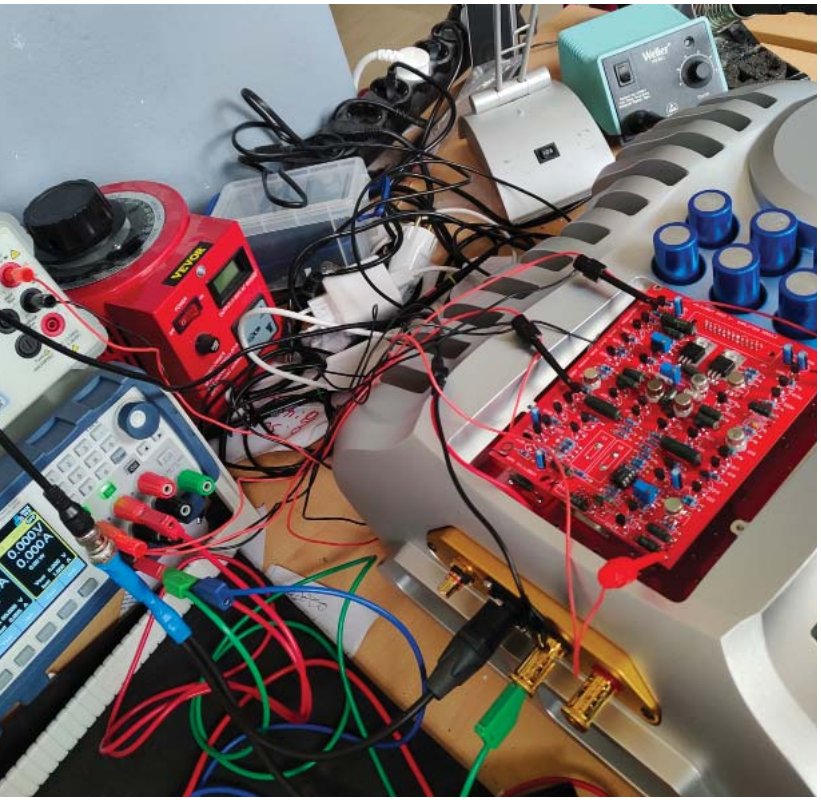
Power Supply
The SOLILOQUY uses one of the most sophisticated, over designed Power Supply systems in a commercial amplifier.
Transformers: Each chanel sports a 1,000W and 200Watt toroidal transformer with 12 Amps continuous current capability to the Output Stages and 2 Amps to the Input Stages.
Primary Filtering: This is then bridge rectified and fed to the +/-33,000uF Filtering Supplies for the OUTPUT STAGE and the +/- 10,000 Filtering supplies for the INPUT STAGE. The Voltage Gain Stage and Output Current Gain Stage operate independently.

Voltage Regulation:
The Regulation Circuits are formed by totally discrete, high speed bipolar devices (42 matched and selected devices), which differ only in their 'Series Pass' transistors based on the current requirements. The Output Stage Regulators use the same ultra-fast Bipolar Power Transistors as used in the Output Stage, with it's of 60 Megahertz and current capabilities of 12-15 Amps smaller Power Device with higher Master Circuit' features purely differential sensing elements with active current loading and a precision voltage reference. The negative circuit tracks the Positive 'Master' to ensure balanced operation under all condition. These circuits ensure ripple-free totally symmetrical and stable DC which is unaffected by current demands.



Voltage Amplifier
The Input Stage of the SOLILOQUY features a pure complementary cascoded differential BIPOLAR Stage with constant current regulating the biasing current. The devices utilise a considerable amount of 'emitter degeneration' (local feedback) which increases their input impendance, linearity and large signal slew rate.
The second voltage gain stage utilises complementary cascoded high speed BIPOLAR devices which drive their quiescent biasing from the input stage current source. The voltage amplifier consumes 12 selected and matched devices.

Current Amplifier
The Output Stage of the SOLILOQUY features a complementary Darlington Stage Triple idling at 30w in the Class A mode and switching to Class AB up to 100w. This biasing maintains the optimum heating temperature for the Power Devices to yield their maximum bandwidth and HFE. It utilises ultra fast (60 MegaHertz) Bipolar Devices which have low input capacitance (100pF) and high current capabilities (12-15 amps each). These devices eliminate the need for output ZOBEL networks, INDUCTORS or lag compensation normally required to slow down the input stage for use with slower BIPOLAR (3-5MHz) or MOSFETS (10-13MHz).



Protection Circuits

The SOLILOQUY features two modes of protection - one which is inherent in the operation of the design which acts as 'current' protection and the other which uses associated sensing circuitry to monitor the outputs for DC and deactivate if DC is present.
If a high current condition arises, the positive supply fuse (5A fast blow) will preferentially blow instead of the negative fuse (4A Slow blow). Because the negative supply 'tracks' the positive, if the positive fuse blows, the negative supply will always symmetrically discharge to avoid the possibility of DC voltage from reaching sensitive speakers.

If a DC voltage is sensed at the output (greater than 0.6V) a relay in series with the output will open until the condition is rectified.

Serviceability
The complete Active circuitry of the SOLILOQUY including the Regulation Circuits and Primary Filtering Capacitors are all mounted to the large single ground plane P.C.B. Easy access to the board is maintained by simply removing the lid to gain access to the 'component side' or the base to gain access to the 'underside' (the 'track' side) to change a blow fuse etc. The board slots into the two side panels which are extruded from thick aluminium and are also used as part of the heat sink assembly.

The output devices are bolted to the two sides. To remove the complete module for returning to the factory is very easy - simply remove the mounting bolts holding the heat sink assembly, the four bolts holding the back panel, desolder the transformer from the main board and slide the whole assembly out including the input and output terminations.

Service Details

To be carried out only by accredited M.A.S. Service Personnel. Unauthorised servicing will result in cancellation of Warranty.

Amplifier Breakdown

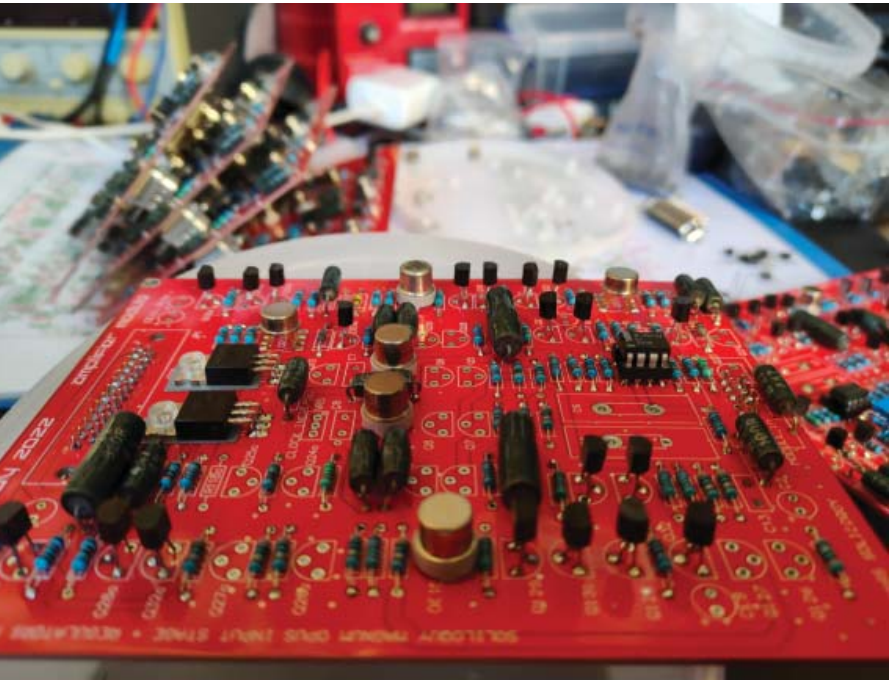
The SOLILOQUY was designed to be inherently self protective if externally abused. If a short circuit condition arises, there are three steps of protection.

1. A 5A Fast Blow fuse on the positive supply to the output stage regulator (the 'Master Circuit'). If a short circuit condition arises, this fuse will preferentially blow resulting in discharging of both positive and negative supplies so that there is no DC present across the speaker terminals which would destroy speakers. The negative fuse (4A slow blow) will only blow in severe cases. The negative supply tracks the positive supply, so when the fuse blows and the voltage or the positive supply starts decreasing the negative follows suit.

NOTE: Before replacing the 5A fuse, it is necessary to discharge the filtering capacitors with a 100 Ohm 5 Watt resistor for 10 seconds to eliminate any sparks that can arise when replacing the fuse. The heat discharge can burn fingers, so please hold the resistor with pliers.

2. The 0.51 Ohm 5Watt 'Emitter Resistor' will 'open circuit', so if when reinstalling the fuse and you find no voltage after the regulator circuits (45V DC), these resistors must be replaced. You can measure them with a multi meter [very rare].

3. The 'Series pass' transistors will 'short circuit'. If you measure a low resistance between the collector and base or emitter (less than 100 Ohms), you must replace the transistors. This is if a High Frequency transient (using cables which have the centre pin connecting but not the outer GND) is accidentally applied to the amplifier.



Steps for Servicing

1. Check all connection cables for open or short circuits.

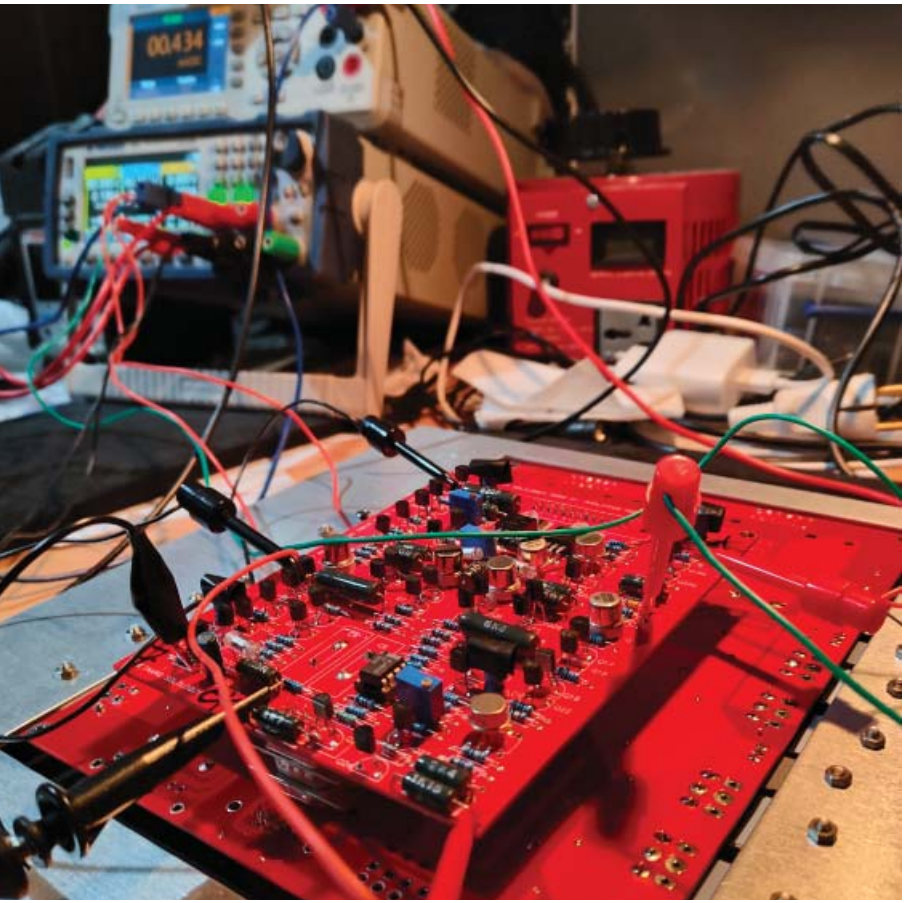
2. Remove lid and inspect the INPUT STAGE (1/2A Fast blow) and OUTPUT STAGE (5A Fast Blow on positive, 4A Slow Blow on negative) for blown fuses.

3. Replace blown fuses and check voltage.
OUTPUT STAGE : at fuse holders - +/- 53VDC (+2.5V)
after regulators - +/- 45VDC (+1V)
INPUT STAGE : at fuse holders - +/- 60VDC (+2V)
after regulators - +/- 48VDC (+1V)

Ensure that the negative is tracking the positive after the regulator circuits (within 0.5VDC).

4. If the voltage after the regulators is not measurable, replacement of the 0.51 Ohm 'Emitter Resistors' will be necessary. This can be done without removing the board from the amp case. Measure the four resistors with a multi meter.
5. If the problem is still apparent after replacing the Emitter resistors, then the transistors may have blown. Use multi meter to measure the resistance between the Collector/Base, Collector/Emitter. (These should measure greater than 100 Ohms or even higher).
If these steps have not rectified the problem, the module should be removed the case for servicing by qualified personnel, or shipped back to M.A.S.

6. TO REMOVE THE MODULE
a. First desolder the transformer connecting cables from the P.C. board.
b. Desolder the mains wire which attaches to the rear I.E.C. socket.
c. Unscrew the bolts holding the Heat sink bracket and Heat sinks to the side panels.
d. Unscrew the bolts holding the back panel to the side panels.
e. Slide out complete module with back panel.
The module is now free for further servicing, or for shipment.



Biasing of the SOLILOQUY Module

After the SOLILOQUY module is fully assembled and tested, it is then 'BIASED' whilst installed in its HEAT SINK ASSEMBLY before being installed into the MAIN CASE.
There is one trimpot which facilitates the biasing of the quiescent current of the output stage.

NOTE: Ensure that the trimpot is adjusted fully anti clockwise (18 turns).

Biasing of the Output Stage

1. Connect DC supply before the Output Stage Regulator Circuits as well as the Input Stage Regulator Circuits. Ensure that this Trimpot is initially in the maximum anti-clockwise position.
2. Connect multi meter across one of the 0.51 Ohms 5W Output Resistors (not the regulator resistors, but OUTPUT STAGE EMITTER resistors). One side of the resistors is connected to the RED Speaker Terminal, so this could also be used as an anchor point for one of the probes.

3. Slowly turn the TRIMPOT in the clockwise direction until 0.05VDC is measured across the resistor.

Maintain for thirty minutes.

This module is then biased for approximately 15W Class A mode.

CHECKING THE MODULE AFTER SERVICING

Test Instruments Required:
MULTI METER and +/- 30V DC CURRENT LIMITING POWER SUPPLY.
1. Visually inspect the top and underside of the PC Board for any conductive debris which can be shorting out connections.
2. Ensure that the Biasing Trimpot is in the fully anti clockwise position and that all the fuses are removed.
3. Connect the DC Supply (observing correct polarity) across the Input Stage only. Set the positive supply to approx. 25V DC output and the negative to 30V DC output. This will test the negative tracks the positive. Program for 100mA - 200mA current limiting, then switch on. There should be no current limiting and the negative should be tracking the positive after the regulator circuits.
4. Repeat with Output Stage regulator only.
5. If both negative regulators are operating correctly proceed back to the Input Stage Regulator and remove the GND connection from the DC supply and in its place, correct the negative wire. This is to put at least 55V DC across the Positive Regulator to ensure that it is functioning correctly. When switching on, the voltage should be between 48 and 50 volts DC after the regulator.
6. Repeat with Output stage (independently - do not do both at the same time). This time the reading should be between 44 and 46V DC.
7. Connect a link between the regulator and adjust the external current limiting power supply to 200mA/+/- 30VDC. Because there is not enough voltage to turn the DC RELAY on, monitor the output after the 0.51R emitter resistors.
You should now be able to monitor the correct operation of the amplifier on switch on except for some crossover distortion.

Regulator Voltage Adjustment
The output stage regulator should never require adjustment, but if repairs have been made to the INPUT
STAGE REGULATOR, it might need adjustment.
Monitor the output voltage after the regulator to see whether it falls between the acceptance range of
46VDC - 48VDC.
To effect an adjustment, you must TRIM the resistor R154 until the correct output voltage is achieved.

Specifications
FREQUENCY RESPONSE : DC - 1.0MHz (-3dB) dictated by input filter (without filter 10 Mega Hertz).
POWER OUTPUT : 100WRMS per channel into 8 Ohms with no more than 0.05% T.H.D.
DYNAMIC HEADROOM: 0dB due to stiff regulated Power Supply
DAMPING FACTOR: Greater than 500 wideband
SLEW RATE: Greater than 1000V/us small and large signal
T.H.D. : Less than 0.05% wideband
I.M.D.(S.M.P.T.E.): Less than 0.05% wideband
SIGNAL/NOISE : -117dBV unweighed input shorted
SENSITIVITY: 0.08VRMS in for 100w out (28dB)
INPUT IMPEDANCE : 130kOhms in parallel with 82pF


be there

recordings

With over 35 years of concert recording experience we are able to produce amplifiers with unparalleled transparency and effortless realism which enable you to be there.

Reference Recordings [with videos]:
http://metaxas.com/recordings.html

Seminal recordings [downloadable wavs]
http://metaxas.com/concerts.html

Munich Hi End in 2012 about recording concerts:
https://vimeo.com/144719554

www.metaxas.com