Unico Due

UNISON RESEARCH

INDEX

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USER MANUAL

Introduction

Congratulations on your purchase of a *Unison Research® - A.R.I.A. Advanced Research In Audio S.r.l.* audio component.

Every *Unison Research* product is the accomplishment of our long experience in electronic design and our expertise of vacuum tubes and the way to obtain the best performance from them, something we acquired over our decades of activity. Each one of our products is the fruit of our passion for building unique and valuable pieces of audio equipment in which traditional craftsmanship and advanced electronics join together in harmony.
Unison Research uses only the finest components and materials. Each product is carefully inspected and tested at various stages of the production process to satisfy our own high reliability and quality standards.

Please read and follow all warnings and instructions in this owner's manual and all those indicated on the unit to get the best performance from your new ***Unico Due*** for many years to come.

1. UNPACKING

Please make sure that the packaging is undamaged and the product has not suffered from rough handling during transportation, otherwise we highly recommend to contact your Authorised Dealer for advice before proceeding to install the unit.

Carefully remove your amplifier and all the accessories from the carton.
Inside the package you will find:

- 1 ***Unico Due*** amplifier
- 1 power supply cable
- 1 user manual
- 1 remote control handset

IMPORTANT! After unpacking, please allow some hours before operating the device in order to let it adapt to the room temperature. This time is needed to prevent any possible damage due to the condensation which can eventually form during transportation. Please note that condensation can form every time the amplifier is moved from a cold to a warm place.

Keep all packing materials: every time you will need to transport your ***Unico Due***, its original purpose-designed carton will provide the safest packing.

2. INSTALLATION

The ***Unico Due*** should be positioned in a safe place on a flat surface, out of reach of children.
Adequate clearance (at least 5cm) must be left above and around the device to guarantee good ventilation.
We also suggest to leave enough free space behind your ***Unico Due*** to allow the connecting cables sufficient room to bend without forcing or straining them, and we strongly recommend not to place the device directly on the top of a power amplifier or, in general, close to a source of heat.

3. CONNECTION TO MAINS

The ***Unico Due*** is set at the factory to the appropriate mains voltage of the country it is shipped to. Before switching on the amplifier, please check that the mains voltage indicated on the rear panel corresponds to the mains voltage in your area.

IMPORTANT! The voltage setting may not be changed by the user.
Never connect the *Unico Due* to AC mains if the local voltage doesn't match the value indicated on the rear panel!

The mains fuse is located in the fuse-holder integrated in the IEC mains socket.

IMPORTANT! Always replace fuses with new ones of the same type and value.

4. OPERATION

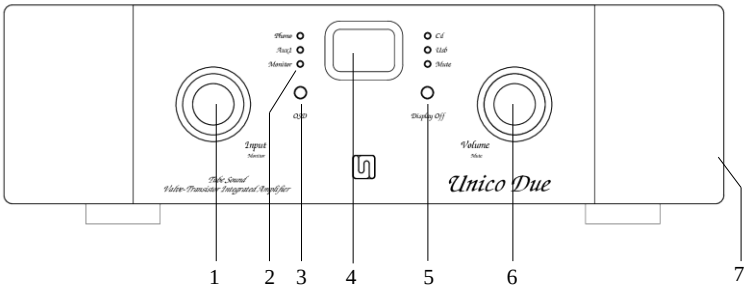
SWITCHING ON AND WARM-UP

<u>WARNING!</u> Switch on the *Unico Due* only after all the connections have been made and checked.

Just after switching on, ***Unico Due*** starts a warm-up phase. During this phase, a counter on the display on the front panel counts down, showing the time remaining until the end of the warm-up phase. The output stages are disabled and the unit is in mute until the countdown terminates.

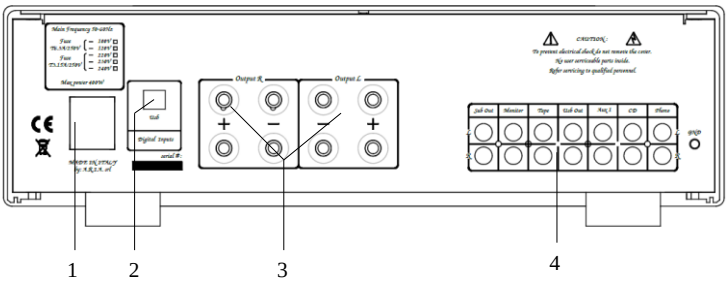
The optimal temperature for the valves is reached less than 40 seconds after switching on but best results will be obtained after approximately 10 minutes after switching on.

FRONT PANEL



1) INPUT SELECTOR KNOB
2) STATUS LEDS
3) OSD BUTTON
4) DOUBLE DIGIT DISPLAY
5) VOLUME KNOB
6) DISPLAY OFF BUTTON
7) MAINS SWITCH (ON THE SIDE)

REAR PANEL



1) MAINS SOCKET
2) USB DAC INPUT
3) SPEAKER TERMINALS
4) LINE INPUTS AND OUTPUTs

5. OPERATING THE UNICO DUE

INPUT SELECTOR	You can select the desired input source by rotating the knob named "selector" or pressing the corresponding buttons on the remote handset. The selection sequence is cyclic; the selected input is indicated by the front panel LEDs.
ADJUSTING THE VOLUME	The volume level can be adjusted by rotating the "volume" knob or pressing the corresponding buttons on the remote handset; the level is indicated on the front panel display which shows a number between 0.0 (minimum) and 9.9 (maximum).
TAPE/MONITOR	Selecting tape/monitor makes another line-level input available (see Notes about inputs); it is selected with a brief press of the selector knob. Another short press returns the unit to the previously selected input.
MUTE	The mute function immediately sets the volume level to minimum. Pressing the volume knob toggles the mute on or off. The level shown on the display doesn't change but the mute condition is indicated by the status LEDs. Disengaging mute returns volume to the previous level.
OSD	The OSD function sets the output power stages to stand-by mode, leaving the input and valve stages in function. When the OSD function is disengaged, the unit returns to normal working mode without any warm up delay. The DAC line output is always active.
DISPLAY OFF	When the display is set to off, the LED display turns off after 20 seconds of inactivity and turns on automatically when any function is activated.

6. SPECIAL FUNCTIONS

BALANCE	Pressing and holding the volume knob for a few seconds allows the channel balance to be adjusted. The display shows the current balance setting as follows: the first digit shows the left channel level and the second digit shows the right channel level. Turn the volume knob to modify the balance levels.
AV MODE	The AV function allows you to connect your ***Unico Due*** to an AV playback system. You can select the AV input and set a pre-set volume level. Once set, pressing the "Push" button on the ***Unico Due*** remote control will switch the unit to the AV input selected at the volume level previously stored.

Setting the AV function:

- Select the desired channel and volume using the input selector and volume knobs.
- Press and hold the selector knob, activating the monitor
- Press the OSD button until the display flashes
- Release the OSD button

The AV input is now set. Pressing the "push" button on the ***Unico Due*** remote control will automatically switch to the selected channel at the selected volume.

Disabling the AV function:

- Put the ***Unico Due*** in mute with a short press of the volume knob
- Press and hold the selector knob, activating the monitor
- Press the OSD button until the display flashes
- Release the button

Now pressing the push button on the remote will not do anything.

7. NOTES ABOUT INPUTS

Maximum input voltage:
The particular input stage and volume control circuit design requires that the following maximum signal levels must not be exceeded:

Line inputs:	$15V_{pk}$
Monitor input:	$5V_{pk}$

The differences in the way the signal inputs are managed result in a different maximum level for the "Monitor" input, and a different sonic response.
In the ***Unico Due***, the volume control is managed by a purpose-specific integrated circuit: this IC contains a programmable precision resistor network that can supply the desired attenuation level. The same IC also contains an active stage that can provide gain and low output impedance.
In the configuration used in the ***Unico Due***, the active stage has 0dB gain and acts only as an output buffer.
The control software that manages the resistor network IC has been designed in a way that the relationship between attenuation and the level indicated follows a logarithmic curve, typical of the ALPS potentiometers used in traditional Unison Research products.

8. SAFETY AND MAINTENANCE

Never operate the device with either the bottom or top covers removed. Inside the unit, there are high voltages present that can be dangerous.

Do not open the amplifier! There are no user serviceable parts inside.
For technical assistance please contact an Authorised Unison Research Dealer or an Authorised Unison Research Service Center.

Do not spill liquid into the amplifier.
If liquid should be accidentally spilled into the amplifier, immediately disconnect the mains plug from the wall socket and seek assistance from an Authorised Service Center before attempting to operate it again.

Before inserting the mains plug into the wall socket, ensure that the mains switch on the amplifier is in the "OFF" position.

Valve replacement should be carried out using only valves of the same type and matched in pairs.
The ***Unico Due*** uses two ECC83 (12AX7) type valves. The amplifier has been designed for maximum valve life: in laboratory tests, 1500 hours life was exceeded.

IMPORTANT! Before attempting valve replacement make sure that the amplifier is switched off and remove the mains power cord from the amplifier. If in doubt, your Authorised Dealer or Service Centre will be able to assist with this operation.

Cleaning the *Unico Due*
Cleaning must be done after switching off the amplifier and allowing it to cool down. Use a soft dry cloth. Do not use solvents or alcohol-based detergents. Do not rub hard on the screen-printed legends.

Adequate ventilation should be assured by leaving at least 5cm above and at the sides of the ***Unico Due***.
Never operate the amplifier when covered! Adequate ventilation is essential at all times! Do not place other units or sources of heat above or below the ***Unico Due***.

Thermal protection
The temperature inside the device is always monitored internally. In case of excessively high temperatures, the power stage will be disabled and a dot on the front panel display will flash quickly. This condition lasts until the temperature returns to a normal value, or until the user powers the amplifier off.

Power protection
Unico Due is equipped with a sophisticated microprocessor-controlled system that monitors the power output. In case the power output is excessive and protracted over time, ***Unico Due*** gradually decreases the volume until the power output level is suitable for long term reliable operation.
This system does not intervene in the case of music transients but prevents the amplifier from being damaged in the event of "improper use" of amplifier or speaker damage.

REMOTE CONTROL

Unison Research® amplifiers are supplied complete with an infrared remote control. Your remote control handset is fitted with a battery type CR2032 - 3V (lithium battery).

9. FUSES

Inside the ***Unico Due*** there are six fuses:

On the "CT" board:	**F3, F6 = 1AT / 250V**
On the main board:	
	F3, F4 = 1,6AT / 250V
	F1, F2 = 6.3AT / 250V

The value for the main fuses is:
10AT / 250V (mains voltage 100V/120V) or
6.3AT / 250V (mains voltage 220V/230V/240V).

These fuses are all 5 x 20mm glass fuses. If one of these fuses should blow we advise you to consult your Authorised Dealer or Service Centre for advice.

10. TECHNICAL SPECIFICATIONS

Output power:	100+100 W RMS at 8Ω
	180+180 W RMS at 4Ω
	290+290 W RMS at 2Ω
Capacitor bank value:	80,000uF
Frequency response:	-1dB @ 12Hz and 100kHz
Input impedance:	47kΩ
Input stage:	Pure class A, 2 ECC83 double triode valves
Output stage:	Dynamic Class A power BJT double complementary pair
Inputs:	3 line RCA, 1 USB, 1 monitor
Line outputs:	1 tape RCA, 1 DAC, 1 subwoofer (volume controlled)
Output connectors:	4 + 4 bi-wiring
THD:	<0.25@ 1kHz, 10W
Power Consumption:	360W (at max power on 8Ω)
Dimensions:	43.5cm x 18 cm x 44 cm
Net weight:	16 kg

PHONO STAGE

Input impedance:	47kΩ / 220 pF (MM) - 100Ω / 440pF (MC)
Gain:	MM 40 dB, MC 50 dB
Gain Selection:	+0 dB / +10 dB
Maximum input voltage:	120 mV @ 1kHz (MM)
RIAA Equalization:	active at low frequencies, passive at high frequencies
THD:	0.09% @ 5 mV, 1kHz, MM

Technical specifications may vary without notice