Aavik
ACOUSTICS

U-150 Integrated Amplifier | User's guide

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Specifications:

Output:	2×300W/8 Ohm, 2×600W/4 Ohm Distortion: <0.05% (THD+N: 1-100W / 8 Ohm) IMD <0.008% TIM <0.002% (10W 8 ohm)
Phono:	Floating RCA (1 set) Load-impedance adjustable from 50 Ohm to 10 kOhm Frequency response: +/-0.5dB (20Hz-20kHz) Signal/noise >90dB @ 2V out Distortion <0.02% (20Hz-20kHz) RIAA correction curve Gain: 71-81dB
Line:	Input impedance: 10 kOhm Gain adjustable in 2dB steps Gain line 1 and line 2: 5-15dB Gain line 3: 1-11dB
Digital:	2 x BNC S/P-DIF (32-192kHz, 16-24 bit) 2 x TOSLINK optical (32-96 kHz, 16-24 bit) 1 x USB fully isolated, UAC 2, asynchronous (PCM 32-192kHz, 16-24 bit and DSD64/DSD128)
Volume control:	Volume adjustable from -80dB to 0dB in 1dB steps
Dimensions:	95 x 440 x 410mm
Weight:	15.2kg

Contents:

Caution:

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose the amplifier to rain or moisture.

⚡ The lightning flash with an arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
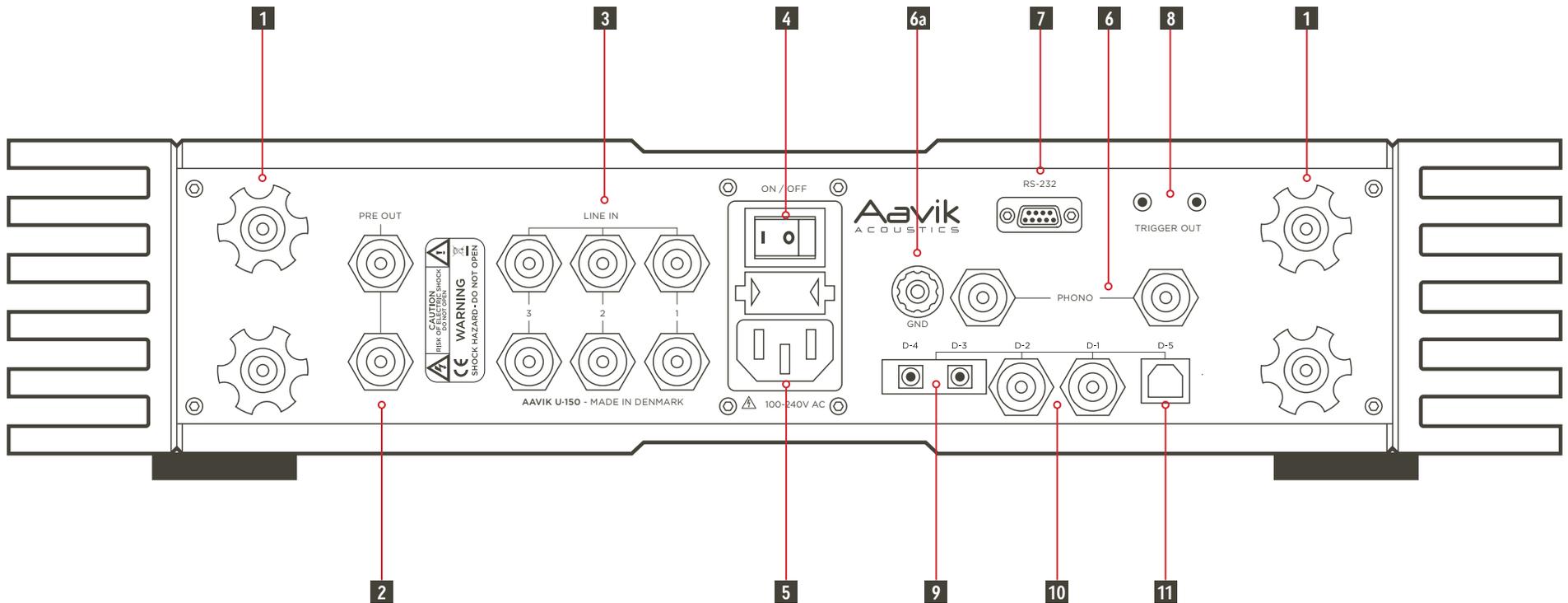
Safety instructions

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Clean the amplifier only with a dry, lint-free cloth. For more thorough cleaning, unplug the amplifier from the mains supply and go over it lightly with a damp, lint-free cloth. Do not use any type of chemical solvents or other cleaning products for cleaning.

6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

7. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

8. Unplug this apparatus during lightning storms or when unused for long periods of time.

9. Do not defeat the safety purpose of the polarized or grounding-type plug.

10. Only place apparatus horizontally and on a suitable table or rack.

11. Refer all servicing to qualified service personnel.

12. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

The equipment should be serviced by qualified service personnel

when:

A. the power-supply cord or the plug has been damaged, or
B. objects have fallen, or liquid has spilled into the equipment, or
C. the equipment has been exposed to rain, or
D. the equipment does not appear to operate normally or exhibits a marked change in performance, or
E. the equipment has been dropped or the enclosure damaged.

1. WARNING – Take care that objects do not fall and liquids are not spilled into the enclosure through any openings. The equipment shall not be exposed to dripping or splashing. Liquid-filled objects such as vases should not be placed on the equipment.

2. The equipment has been designed for use in moderate climates and in domestic situations.

3. Only connect the equipment to a power supply of the type described in the operating instructions or as marked on the equipment.
The primary method of isolating the equipment from the mains supply is to remove the mains plug. The equipment must be installed in a manner that makes disconnection possible.

4. If an abnormal smell or smoke is detected from the equipment, turn the power off immediately and unplug the equipment from the wall outlet. Contact your dealer and do not reconnect the equipment.

Rear panel

PRE OUT

LINE IN

3

2

1

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING
SHOCK HAZARD·DO NOT OPEN

AAVIK U-150 - MADE IN DENMARK

ON / OFF

100-240V AC

Aavik
ACOUSTICS

GND

PHONO

RS-232

TRIGGER OUT

D-4   D-3   D-2   D-1   D-5

Rear panel functions

1 SPEAKER TERMINALS

The U-150 amplifier accepts speaker cables terminated with spade connectors and 4 mm banana plugs.

To connect speaker wires terminated with spades, loosen the isolation knob and insert the spade between the isolator and copper terminal. Tighten the isolation knob to secure the spade.

To connect speaker wires terminated with banana plugs, insert the banana plug into the centre hole of the copper terminal.

2 PRE OUT

The U-150 amplifier is equipped with a single pre out (pre-amplifier output) connection. This connection can be used for an active subwoofer, a separate power amplifier or a headphone amplifier. For some uses, such as a headphone amplifier, you may need to mute the speaker outputs, but not the pre outs. This can be achieved by changing the "Pre Out Mute" setting. See "MENU FUNCTIONS" for guidance.

3 LINE INPUTS

The U-150 amplifier is equipped with three single-ended, RCA line inputs. The input impedance of the three inputs is 10 kOhm.
The gain of the line inputs can be changed to equalise the volume of different signal sources. The range is between 5 and 15 dB for input 1 and 2, and between 1 and 11 dB for input 3. The default gain for all three inputs is 9dB. Please see "MUTE, GAIN, CARTRIDGE LOADING AND BALANCE SETTINGS" or "MENU FUNCTIONS" for guidance.

4 POWER ON/OFF SWITCH

Toggle the switch to switch between fully off and standby mode.
When the amplifier is in standby mode, the power consumption is less than 1W.

When the amplifier is on and idling, the power consumption is less than 65W.

5 POWER INLET (CAUTION!)

The U-150 amplifier accepts mains voltages from 100 to 240VAC 50-60Hz.
The power inlet accepts power cables with an IEC 60320-C13 female connector.

To ensure the best performance, please consult your Aavik Acoustics dealer for a suitable mains cable.

6 PHONO INPUT

The U-150 amplifier is equipped with one RCA phono input. The phono input is fully balanced with floating ground. The ground reference is found on the ground terminal (6a). To ensure the best performance, use a phono cable with a separate ground wire. The phono section of the U-150 amplifier uses the RIAA equalization curve. The gain of the phono section is 71-81dB, which makes the U-150 phono section suitable for most low to medium output MC cartridges. The cartridge load impedance is adjustable in 18 steps from 50 Ohm to 10 kOhm. Please see "MUTE, GAIN, CARTRIDGE LOADING AND BALANCE SETTINGS" or "MENU FUNCTIONS" on page 7-9 for guidance.

Rear panel functions

7 RS-232, FIRMWARE UPDATE

The U-150 amplifier RS-232 terminal is used mainly for firmware updates.
You can check for U-150 firmware updates on the Aavik Acoustics homepage.

8 TRIGGER OUTPUTS

The U-150 amplifier is equipped with two DC trigger outputs. These can be used to power-on power amps, subwoofers and other equipment together with the amplifier. When the amplifier is switched on (not in standby mode), the trigger outputs will supply 12VDC. They can supply up to 40mA total.

9+10+11 DIGITAL INPUTS

The U-150 is equipped with the following digital inputs: USB input, TOSLINK optical S/P-DIF inputs, and BNC electrical S/P-DIF inputs.

9 TOSLINK OPTICAL INPUT

The U-150 comes equipped with two optical S/P-DIF (32-96kHz, 16-24 bit) TOSLINK inputs.

10 BNC DIGITAL INPUTS

The U-150 comes equipped with two electrical S/P-DIF (32-192kHz, 16-24 bit) digital inputs.

11 USB INPUT

The U-150 comes equipped with one fully isolated, UAC 2, asynchronous USB input. It supports 32-192kHz, 16-24 bit PCM and DSD64/DSD128 using DoP encoding.

When connecting a computer running Mac OS X or Linux, no drivers are needed. For Windows a driver can be downloaded from the Aavik Acoustics website. Note: When playing music in PCM format from a computer, it is possible to select sample rates as high as 384kHz. The PCM DAC in the U-150 however, only supports sample rates up to 192kHz.

Ver	←	Tem	←	Dim	←	DBr	←	POM		Bal	←	Gain	→	Rin	→	DAC
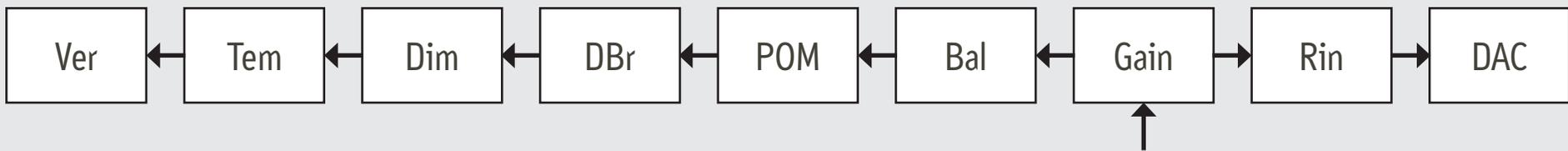
Menu functions

Using the remote control, you can change many settings of the U-150 amplifier. Press the "Menu" button to enter or exit the menu. When you enter the menu, the gain setting of the current input will be shown on the displays. The left side display shows the current option ("Gain" when you enter the menu), and the right side display shows the current setting. Use the INPUT + (right) and INPUT - (left) buttons to cycle through the options, and the VOLUME UP and VOLUME DOWN buttons to change the settings. When you navigate right from the entry point (Gain), you get to the options specific to the current input. When you navigate left, you get to the options that are common to all inputs. Once in the menu, you can cycle through all options in the order shown in the diagram above.

Settings for individual inputs

Gain
Using this function you can set the gain of the selected input.
The gain number shown, is the gain between the input and pre out. The power amp adds 26dBs of gain.

Rin (phono input)
Using this function, you can set the loading resistor on the phono input. The range is 50 ohms to 10 kOhms.

DAC (digital inputs)
You can switch the DAC between four settings. The default setting is "U-S". The U stands for Upsampling, and the S for Slow filter. The other settings are N for Non-upsampling and F for Fast filter. Which setting provides the best performance, depends on the signal source connected to the input.

Settings common to all inputs

Bal - Balance
Using this function, you can change the left/right balance in 6 1dB steps.

POM - Pre Out Muting
This setting can be set either on or off. With the default setting (On), the pre out connectors are muted with the speakers, when muting is enabled. With Pre Out Muting off, the pre out connectors will stay on, when the amp is muted. This function can be used e.g. for running a headphone amp on the pre out connectors. With Pre Out Muting off, you can change inputs and volume setting with muting on. When you switch off muting again, the volume will return to the previous setting.

DBr - Display Brightness
You can change the display brightness in four steps: 10, 40, 70 and 100%

Dim - Display Dimming
Using this setting, you can set the display to switch off automatically after 1-5 seconds. The standard setting is off. When the display is off, a single dim LED will be lit in the lower right corner.
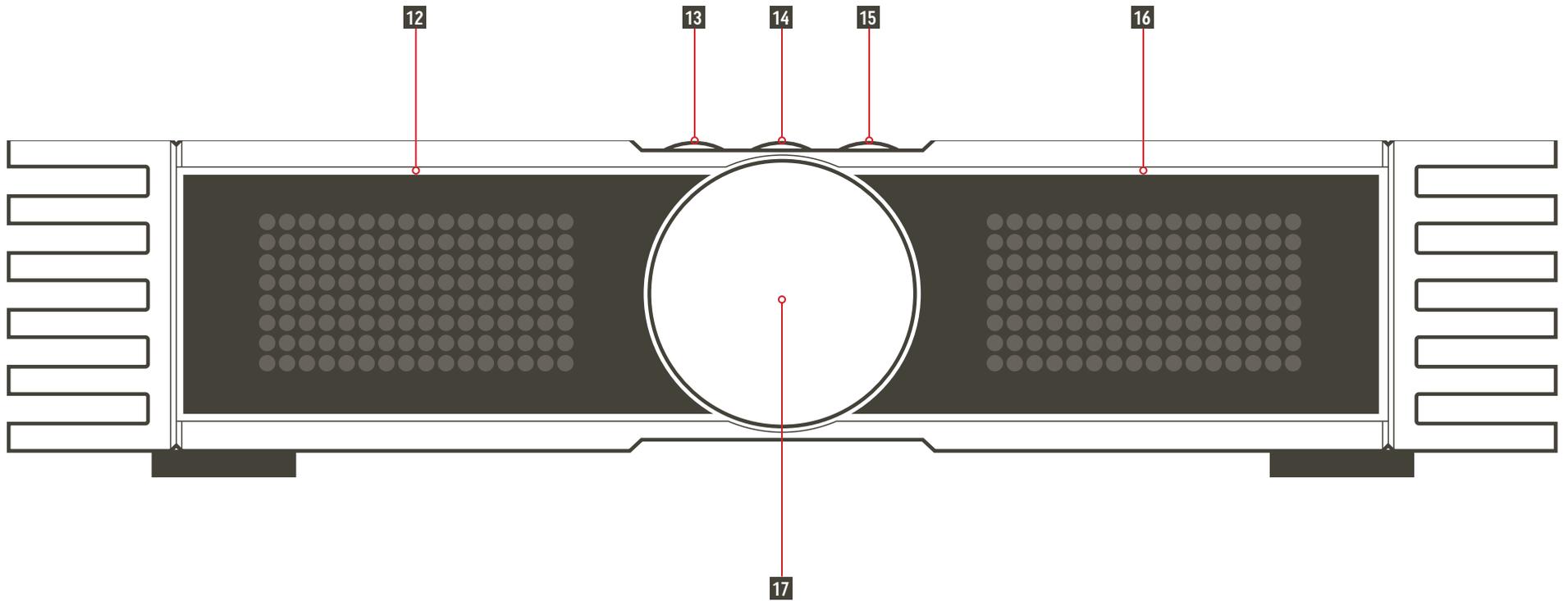
Tem - Temperature
This menu option shows the current operating temperature of the power amp.

Ver - Software Version
This menu option shows the current firmware version of the amplifier.

Front panel

Front panel functions

12 SOURCE INDICATOR

During normal operation the left side display shows the selected source. The line inputs are shown as L-1, L-2 and L-3. The phono input (if the phono module is fitted), is shown as P-1. The digital inputs (if the DAC module is fitted), are shown as D-1 to D-5.

It is possible to change the source with the rotating knob (17), when navigation mode is activated. When changing settings (see "MUTE, GAIN, CARTRIDGE LOADING AND BALANCE SETTINGS" and "MENU FUNCTIONS"), the source indicator display will show the current item being changed.
When playing digital sources, the line separating D and the number, will change to a number of dots depending on the format being played. Two dots with a space in between (*Fig. a*) means DSD (available on the USB input only). 1-4 dots without spaces indicate different PCM formats (*Fig. b, c, d, e*).

13 MUTE, GAIN, CARTRIDGE LOADING AND BALANCE SETTINGS

The mute button has multiple functions. When you press this button briefly, it will mute the speaker outputs of the amplifier, and also the pre outs with the standard configuration (see "MENU FUNCTIONS" page 7). A minus and a speaker symbol will be shown on the right side display, indicating that the outputs of the amplifier are muted.

The other functions of the mute button, allows you to set the gain of the input, to set the cartridge loading for the phono stage, and to adjust the left/right balance. These settings can also be changed using the remote control.
See "MENU FUNCTIONS".

13 INDIVIDUAL GAIN SETTINGS

Press and hold the mute button (13) one second to activate the individual gain setting mode. When activated, the left side display will show "Gain", and the current gain setting will be shown on the right side display (*Fig. c*). This mode will let you choose between 6 gain setting for the analogue inputs and 4 settings for the digital inputs. Turning the volume control knob (17) counter-clockwise will decrease the gain setting, whilst turning the knob clockwise increases the gain setting. Pressing the mute button (13) briefly will deactivate the gain setting mode, and the usual display will return.

13 CARTRIDGE LOADING ADJUSTMENT

With the RIAA/phono input selected, press and hold the mute button (13) for more than three seconds to enter cartridge loading adjustment mode. The left side display will show "Rin" and the right side display will show the current setting. Use the volume control knob (17) to set the cartridge loading. Deactivate the cartridge loading adjustment by pressing the mute button briefly.

NOTE!
Pressing and holding the mute button (13) for less than three seconds, with the RIAA selected, will activate the gain setting mode. The button needs to be held for more than three seconds to activate the cartridge loading adjustment mode.

13 BALANCE SETTING ADJUSTMENT

The balance between the left and right channel, can be adjusted in 1dB steps. The balance setting is common for all inputs. To enter the balance setting mode, press and hold the mute button (13) for more than five seconds. The left side display will
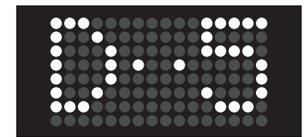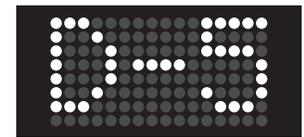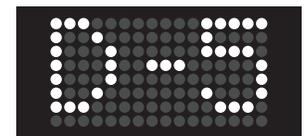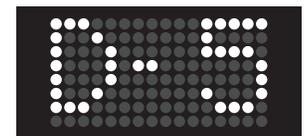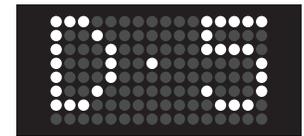

Fig. a

Fig. b

Fig. c

Fig. d

Fig. e

Front panel functions

show "Gain", and the right side display will show the current setting.
Use the volume control knob (17) to change the balance setting. Deactivate the balance setting adjustment by pressing the mute button briefly.

NOTE!
Pressing and holding the mute button (13) for less than five seconds, will cycle through off-set setting mode, and, with the RIAA selected, cartridge loading mode. The button needs to be held for more than five seconds to activate the balance setting adjustment mode.

14 STANDBY
Press the standby button (14) to place the amplifier in standby mode, or to switch on the amplifier from standby mode. When the amplifier is in standby mode, the only light showing on the amplifier will be a dim LED light in the lower left corner. When you switch on the amplifier, the outputs will be muted, and a line will illuminate at the bottom of the displays, starting in the lower left corner. During the start-up cycle, the circuits of the amp will stabilise, and any power amp(s) connected to the pre outs will have some time to stabilise. When using trigger cables between the amplifier and power amp(s), the power amp(s) will be switched on and off together with the amplifier.

15 NAVIGATION / REMOTE CONTROL PAIRING
The navigation button lets you select the desired source. Pressing the navigation button (15) briefly will activate the navigation. The left side display will flash, while still showing the selected input. Turning the volume control knob (17) either clockwise or counter-clockwise lets you select the desired source. Press the navigation button again to deactivate navigation mode.

If you have more than one piece of equipment, that responds to the remote control, you can pair the pre-amp with one specific remote. In order to pair your remote control with the U-150 amplifier, press and hold the navigation button (15) for more than one second. When the amplifier is ready to pair, the displays will flash slowly. To pair, press the mute button (G) on your remote control facing it toward the amplifier.

If the amplifier is playing during the remote pairing, the music should mute. You can reset the pairing, so that the amp will respond to all compatible remotes again, by pressing the navigation button for more than five seconds. When the five seconds have passed, the displays will flash fast. Press the mute button (G) on the remote, to complete the procedure. Press the navigation button (15) again briefly to go back to navigation mode.

16 VOLUME DISPLAY
During normal operation the right side display shows the current volume setting. If the amplifier is muted, a minus and a speaker symbol is shown. When changing settings (see "MUTE, GAIN, CARTRIDGE LOADING AND BALANCE SETTINGS" and "MENU FUNCTIONS"), the volume display will show the current setting.

17 VOLUME CONTROL (ROTATING KNOB)
Use the rotating knob (17) to change the volume, source or other settings.

Remote functions
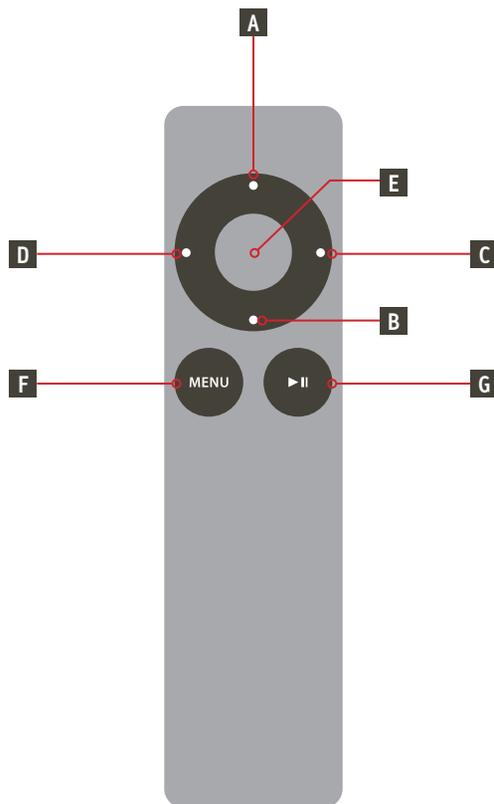
A VOLUME UP
Press this button to increase the volume setting.

B VOLUME DOWN
Press this button to decrease the volume setting.

C INPUT +
Press this button, to move to the next input. From Line 1 to Line 2 etc.

D INPUT –
Press this button, to move to the previous input. From Line 2 to Line 1 etc.

E STANDBY
Press this button to place the amplifier in standby mode, or to switch the amplifier on from standby mode.

F MENU
Use this button to enter the menu, or switch back to normal operation. Use the INPUT + and INPUT – buttons to cycle through the menu, and the VOLUME UP and VOLUME DOWN buttons to change a setting. See "MENU FUNCTIONS" for details.

G MUTE
Press the button to mute the outputs of the amplifier. A small light beneath the mute button of the front panel will indicate that the outputs of the amplifier are muted. Pressing the button again will reactivate the outputs of the amplifier.

FACTORY RESET

You can reset all settings back to factory defaults. This will erase off-set settings, the cartridge load setting, the balance setting, the DAC settings and the remote pairing settings. To do this, proceed as follows:

- Switch off the amplifier at the main power switch (Page 4, 4)
- Wait 30 seconds
- Press and hold the three front panel buttons (Page 8, 13, 14, 15)
- Switch on the main power using (Page 4, 4), while still holding the front panel buttons
- All LED indicators on the front panel will switch on, and stay on
- After approx. 8 seconds the LED indicators will switch off again.
- Release the front panel buttons, and switch off the amplifier using the main power switch (Page 4, 4)