SCHERTLER®
ACOUSTIC FIDELITY

ARTHUR
ART48 - SPRING

USER MANUAL

Assembling instruction on ART48-L/Rmast manual

WARNINGS

PRECAUTIONS

WARNINGS

Please read this manual carefully before using your ROY amplifier and observe all safety precautions

Keep this manual for future reference

Do not pour any liquids onto this device, or operate it in excessively humid conditions.

Do not use or install this device near sources of excessive heat. Do not expose it to direct sunlight, or position it in a dusty environment without any form of protection.

Ensure that the mains voltage does not exceed the value indicated on the back panel.

Do not use this device if either the mains cable or its plug is not in perfect condition. (Replace if necessary.)

If the mains cable needs replacing, it must be done by an appropriately qualified person. The replacement cable must be exactly the same as the original.

To avoid interference, do not use this device near power transformers, TVs, RF transmitters, electric motors or any other source of electrical energy.

Do not point a microphone towards any speakers as this could result in feedback (Larsen effect) and ultimate damage to your device.

Only use the original connection cables – if supplied with the device. Otherwise this could prove both costly and inconvenient.

To completely disconnect this device from the AC mains, remove the power cable plug from the mains socket.

When cleaning, do not use solvents (e.g acetone or alcohol). These could damage the external finish and the serigraphy.

Do not attempt to service this device. If any malfunction is detected, call the nearest technical assistance centre, or a specialist technical centre.

To maintain good ventilation, never cover or obstruct the heat sink with blankets, sofas or any other furnishings.

Always leave sufficient clearance between the heat sink and any other surface.

No flammable sources, i.e. candles, should be placed on or near the device.

This device should never be exposed to water, even in small amounts. No object containing liquids should be placed on or near the device.

This device should only be connected to a mains socket outlet that has a protective ground.

When using or installing this device, always make sure that the mains socket and the mains cable plug are easily accessible.

IMPORTANT SAFETY INSTRUCTIONS

THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT ENCLOSURE THAT MAY BE OF A SUFFICIENT MAGNITUDE TO CONSITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.

THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE PRODUCT.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK
DO NOT EXPOSE THE APPLIANCE TO RAIN OR HUMIDITY

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

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

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

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

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

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

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as 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.

ART48 - SPRING

The architecture of ARTHUR's spring unit reverb offers the best of both worlds: digital delay and analog decay. Digital delay provides a simple and efficient solution for delay lines that retard or echo the signal before being sent to the spring. However, when it comes to the more complex matter of reverberation, the good old spring still provides a more "natural" and musical solution. The spring unit includes six springs to give a rich reverb effect that also has a time-adjustable decay.

In addition to its function as an ARTHUR mixer module, the spring unit can also be used as a stand-alone unit, providing reverb for a signal from another mixer, or a guitar pedal, for example.

Positioning the spring unit

The spring unit has been configured to sum the signal from the AUX 1 bus. All input units mounted to the left of the spring unit will therefore flow to it. On its right side, the spring unit interrupts the AUX 1 bus, so the AUX 1 signal from any subsequent input units on this side will be summed by a second spring reverb, or by the original AUX 1 master on the L/R Master unit.
This enables you to create several independent AUX 1 lines.

As an example, working from the left side of the ARTHUR mixer, you could start by mounting a mic in unit, then add a spring unit followed by all the other input and output units. In this particular case, only the first mic unit (e.g. for a lead vocal) will benefit from the spring unit's reverb. All other input units (mounted to the right of the spring unit) will be summed through the L/R Master (fig. 1) and will receive their reverb from another (external) effects unit. Should you prefer to use the spring unit reverb on all the input units, you must mount it right next to the L/R Master, on the left hand side.

Important: If you want to have your spring unit as the final unit on the right side of the mixer - as many users prefer - you must first deactivate the summing amp on the L/R Master (fig. 2). This is done by depressing the respective blue button (fig. 3) on the L/R Master circuit board, which is positioned just under the fader next to the bus connector.

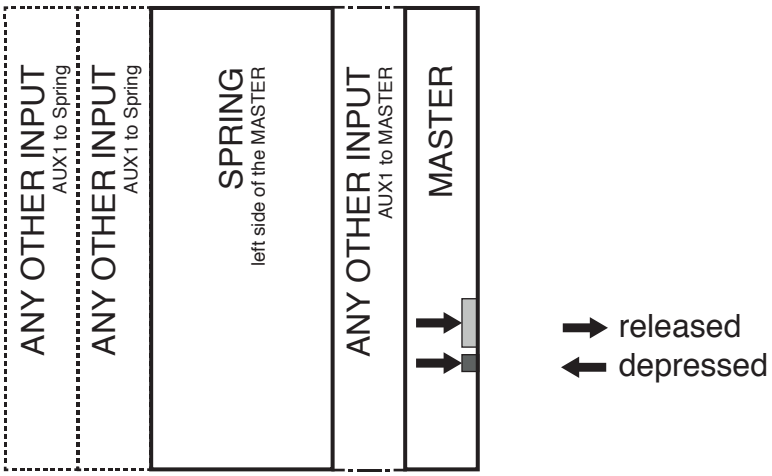


Fig. 1

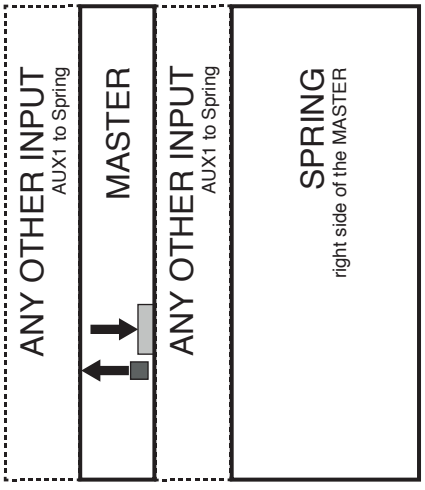


Fig. 2

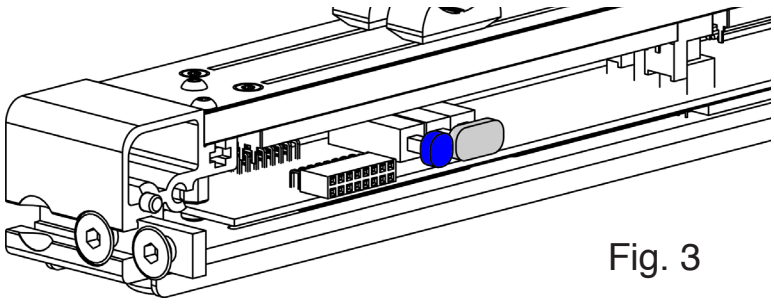
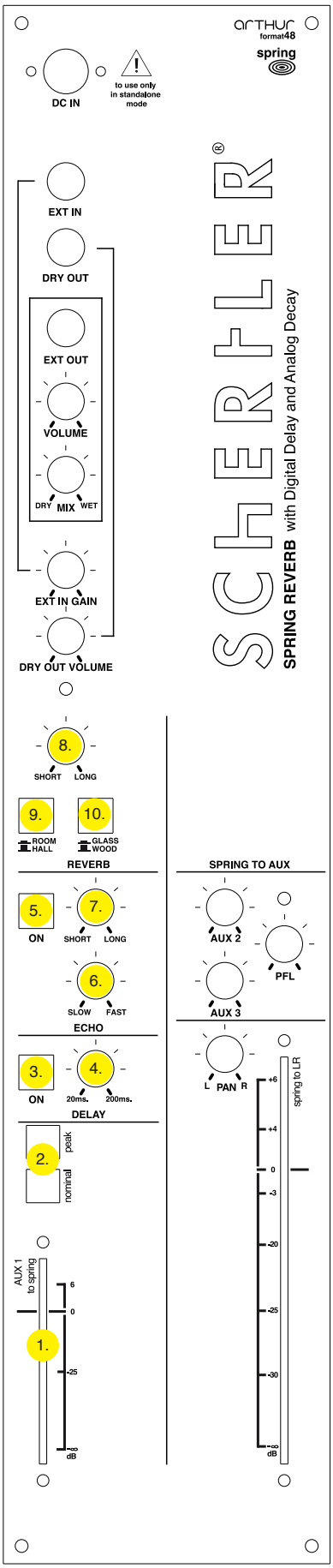


Fig. 3

Now let's take a look at some of this unit's innovative features.

ART48 - SPRING



Driver section

The spring unit includes three output and input amps.
Please note that all three phone connectors are intended for sending balanced signals, using space-saving stereo phone plugs. The tip connects as usual to the hot signal (+), the ring to the cold (-) and the sleeve to the ground.
One advantage of using phone plugs is that you can also connect an unbalanced music signal, via a mono jack, to any of the outputs.

The spring unit receives and sums the AUX 1 from the bus.
Setting the AUX 1 knob on each individual input channel (mic In, yellow instrument in, or stereo in) lets you send the desired amount of signal to the spring unit.

The “AUX1 to spring” level fader(1.) lets you control the amount of signal being sent to the spring reverbs. The two “nominal and peak” LED VU (2.) controls will help you determine the best position for this fader.

However, driving the actual springs is also a matter of taste:

Keeping the signal down on the send level fader creates a smoother reverberation effect with slightly longer delay. Pushing the signal on the send level fader makes the reverberation sound richer and shorter, but also slightly more metallic.

Activating the delay section - by depressing the Delay On(3.) switch (green light) - lets you add a retard or delay before the signal is sent to the springs. This effect imitates the room acoustic of a concert hall or church, where an instant may pass before you can hear the reflections from the ceiling and walls (100 ms for example). The knob labeled 20ms/200ms(4.) reacts on the delay time, which is adjustable from 20 ms to 200 ms.

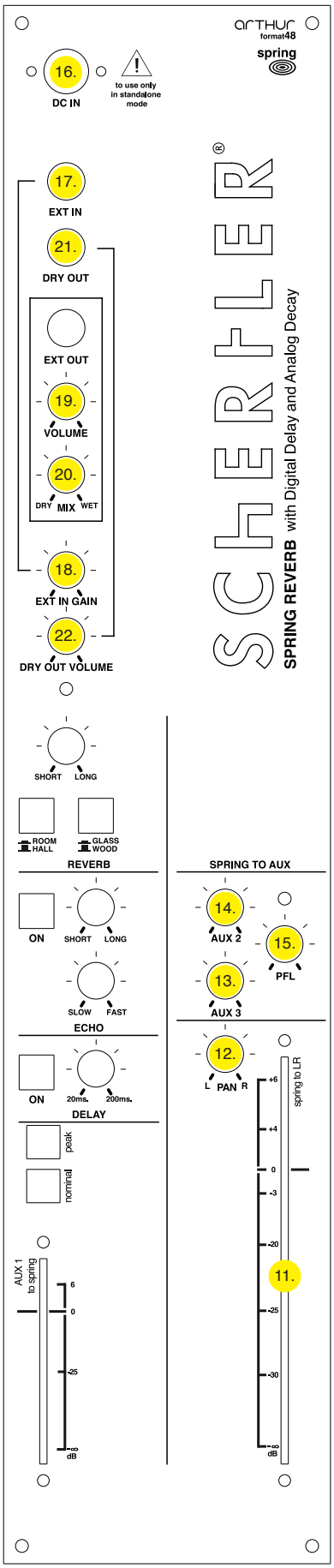
The echo puts a soft echo on the springs, imitating a room acoustic with added echo effect such as a big bathroom, a car park with a long echo, or a concert hall with a short echo.

Activate this section using the Echo On(5.) switch (green light). Use the Slow/Fast knob(6.) to set the speed of the echo repetitions and the Short/Long knob(7.) to set the length of the echo before it fades away.

As its name implies, the Short/Long(8.) time knob makes the reverberation time longer as it is turned from left to right i.e. short to long. Aside from determining the amount of reverberated signal applied to the original, it also forms an important “artistic” parameter: In a ballad or spacey piece of music, a long decay will fit well, giving depth to the overall sound. However, in a fast piece, a short decay will keep the result drier and less “confused”.

The reverb mode section lets you choose between four different spring characteristics. These will either result in richer or more transparent reflections (ROOM - HALL)(9.), or in warmer or harsher ones (WOOD - GLASS)(10.). Note: This section does not apply the usual equalizer on the reverb’s output, but instead consists of four selectable drivers, which drive the springs in different ways.

ART48 - SPRING



Routing section

The routing section involves various reverb outputs.
The output fader(11.), when manipulated, sends the reverb signal to the master L and R outputs. The PAN knob(12.) alters the proportion of reverberated signal sent to the left or right channel.

The AUX 2(13.), AUX 3(14.) and PFL(15.) knobs control the amount of reverb signal sent to the respective auxiliary masters. The PFL, in this instance, has a slightly different function, being used more as a “volume” knob. For example, should the PFL master output be feeding an additional stage monitor, this controllable PFL allows you to add a gradual amount of reverb to the monitor line.
The spring unit also includes a separate AUX 1 output, referred to as the dry out. Directly connected to the summed signal of the AUX 1 bus, it enables the AUX 1 signal to be picked up parallel to the spring unit, in order to drive an additional outboard reverb or other effects unit. These additional effects devices will return via the return input on the L /R Master unit (mono), or via a separate Stereo In or Multiple unit. The level of the AUX 1 output is controlled by the dry out volume knob.

The spring unit as a stand-alone unit

As previously mentioned, the spring unit is also designed for use as a stand-alone reverb that can be connected to any mixing console, added to guitar pedals, or linked to a computer for home recording etc.

When connected to the ARTHUR mixer, the spring unit is powered by the mixer’s supply, via the bus. When used as a stand-alone reverb, a power supply (PS-12) must be connected directly to the unit’s DC In socket(16.).

The spring unit can receive a signal from two sources: the AUX 1 directly from ARTHUR’s bus when used together with the ARTHUR mixer, or from the external input, when used as a stand-alone unit.

The External Input(17.) includes a Ext In Gain(18.) control knob, which can be found under the external input phone connector. The gain is adjustable from -5dB to +20dB, enabling both line signals and weaker signals from pedals, computers and other devices to be accommodated. Having connected the signal source to the ext in, it will then appear at the send fader for processing as described above.

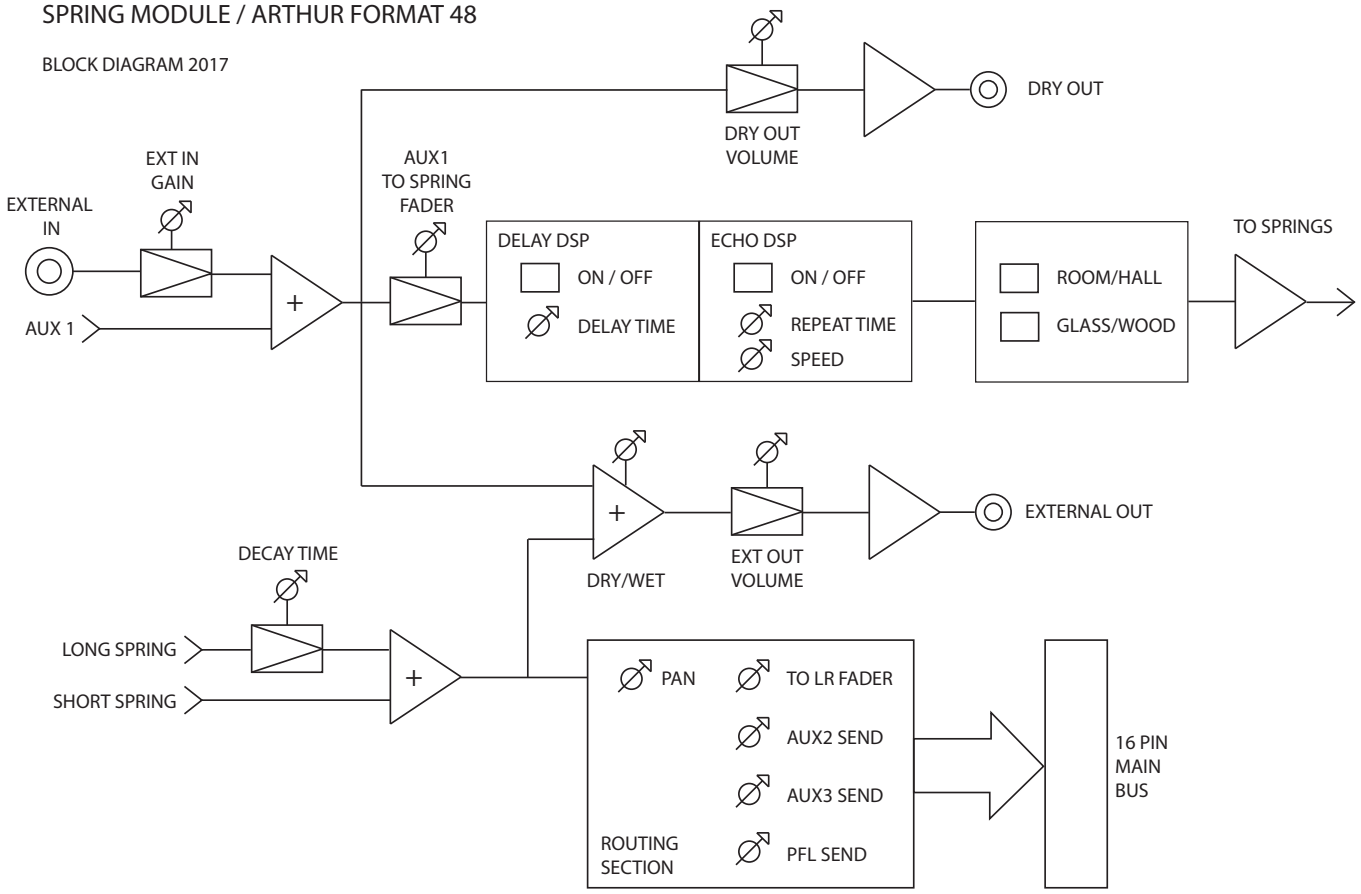
When used as a stand-alone unit, the spring unit’s routing section, L/R fader, AUX 1 and 2 and PFL will be out of action. This is because they normally “look” to the mixer’s bus, which will not be here in this instance.
So, the output from the spring unit will, instead, be routed through the reverb output section. The Volume knob(19.) sets the output level, while the proportions of original sound (dry) and reverberated sound (wet) are set using the Mix knob(20.).
If the spring unit is connected to a mixing console, you might set the mix knob to the right (wet) in order to add the original sound through your mixer’s loop. If using the unit with guitar pedals, where no parallel loop is provided, the mix knob will then prove extremely helpful.

The Dry Out(21.) - whose level is controlled by the Dry Out volume knob (22.) - drives the dry signal that is not influenced by the effect. This might be useful for feeding another external effect or a stage monitor.

TECHNICAL SPECS

External Input impedance:	48 kohm
External Output impedance:	270 ohm
Dry output impedance:	300 ohm
Gain range:	+8 to +24 dB
External out frequency response: (-3dB)	50 Hz - 50 kHz
Dry out frequency response: (-3dB)	5 Hz - 50 kHz
Equivalent input noise (EIN):	102,2 dB (24dB Gain, 150 ohm)
Delay Time:	40 ms - 600 ms
Echo repeat time:	40 ms (short) - 690 ms (long)
Power consumption:	120 mA
Size & Weight:	96x60x475 mm - 0.9 kg

SIGNAL FLOW



SCHERTLER®
ACOUSTIC AMPLIFICATION
SWISS MADE | schertler.com

TEL+41916300710
FAX+41916300711
info@schertler.com

SCHERTLER SA
Via Beroldingen 18
6850 Mendrisio