USER MANUAL

V76-Pre

ARTURIA©

YOUR EXPERIENCE • YOUR SOUND

Special Thanks

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Thank you for purchasing V76-Pre!

This manual covers the features and operation of V76-Pre.

Be sure to register your software as soon as possible! When you purchased V76-Pre you were sent a serial number and an unlock code by e-mail. These are required during the online registration process.

Special Messages

Specifications Subject to Change:

The information contained in this manual is believed to be correct at the time of printing. However, Arturia reserves the right to change or modify any of the specifications without notice or obligation to update the hardware that has been purchased.

IMPORTANT:

The software, when used in combination with an amplifier, headphones or speakers, may be able to produce sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high level or at a level that is uncomfortable.

If you encounter any hearing loss or ringing in the ears, you should consult an audiologist.

Introduction

Congratulations on your purchase of Arturia's V76-Pre

Since the late 1990s, Arturia has received acclaim from players and reviewers alike for designing state-of-the art software emulations of the venerable analog synthesizers from the 1960s to the 1980s. From the Modular V, back in 2004, to Origin, a modular system that was introduced in 2010, to the Matrix 12 V (2015), the Synclavier V (2016), and most recently the Buchla Easel V, the DX7 V and the CMI V, Arturia's passion for synthesizers and sonic purity has given demanding musicians the best software instruments for professional audio production.

Arturia also has a growing expertise in the audio field, and in 2017 launched the AudioFuse, a pro studio quality audio interface that features two proprietary DiscretePRO® microphone preamplifiers and a set of top-notch AD/DA converters.

The Arturia V76-Pre is the culmination of over a decade of experience in recreating the most iconic tools of the past.

Arturia has a passion for excellence and accuracy. This led us to conduct an extensive analysis of every aspect of the V76 (and V612) hardware and its electrical circuits, even modeling the changes in behavior over the course of time. Not only have we faithfully modeled the sound and behavior of this unique preamp, we have added some features that were unimaginable in the days the Telefunken V76 was being manufactured.

V76-Pre runs as a plug-in in all major formats inside your DAW. It has easy MIDI learn functionality for hands-on control of most parameters, and as a plug-in also allows parameter automation for greater creative control.

DISCLAIMER: All manufacturer and product names mentioned in this manual are trademarks of their respective owners, which are in no way associated or affiliated with Arturia. The trademarks of other manufacturers are used solely to identify the products of those manufacturers whose features and sound were studied during V76-Pre development. All names of equipment inventors and manufacturers have been included for illustrative and educational purposes only and do not suggest any affiliation or endorsement of V76-Pre by any equipment inventor or manufacturer.

The Arturia team

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1. WELCOME

As part of the rebuilding effort after World War II, the Northwest German Radio (Nordwestdeutsche Rundfunk or NWDR) was established in 1948, as a public corporation.

The NWDR faced the need to develop a complete new equipment standard for the German radio network. This was done in cooperation with the Institute of Broadcast Technology of Hamburg, and one of the results of their work was the V72, developed between 1949 and 1952 as a microphone and main studio amplifier, under the technical supervision of Professor Nestler. Nestler had previously been the head of R&D for the Telefunken Electro Acoustic Lab. Telefunken itself was a joint-venture of two other German companies, AEG and Siemens, and was established in 1903.

It should be mentioned that Telefunken was granted exclusive and unlimited access to scientific resources from state universities, private companies and all branches of the military regarding radio broadcast and audio production, and this led them holding almost all of the European patents relating to radio and audio electronic circuits up into the early 1960s.

Modeled after the pre-war V41 (created in 1928), the V72 had many circuits that were almost identical, but incorporated some modern advancements. After using EF40 tubes in the earlier models, manufacturers quickly changed to the sonically superior EF804 and EF804S. Early V72 models were built by a company called Maihak, and also by Telefunken. In 1954, Siemens and Tonographie Apparatebau (TAB) became sub-contractors and took over the manufacturing of the V72 line.

The V72 wasn't a single model. Actually, there was an entire family of V72 tube amplifiers, all built around the same V72 circuit: the V71, the V76, the V77 and the V78, and also many variations, as the V72a, the V72b, the V72s, the V74a, the V70 and the V77b.

Besides the German radio broadcast, the V72 was used by most of the European recording companies like EMI, Decca/Telefunken and others. Siemens designed the V72s to accommodate the specific needs of these recording studios. These units featured a fixed gain of 40dB and lower input impedance. Apparently, it was EMI who commissioned Siemens to build the special 40dB gain V72s modules ("s" stands for studio), opposed to the 34dB gain of the V72 which was the standard throughout the German broadcast industry. Around three-hundred V72s modules were manufactured in total.

The V76 was two V72 cascaded in series, with additional control features. The unit was capable of achieving 76dB of gain and driving a signal farther with little to no loss. More importantly, the unit came with a switchable input pad. This allowed the user to change the gain in 6dB steps across 12 positions - much more control than the original V72 had. Additionally, the V76 typically came with either an 80Hz or 120Hz High Pass filter allowing the user to get rid of rumble from the mic stand when recording voice. There was a special V76m version though that had no filters and a full frequency response from 20Hz to 20kHz. This version was regarded more as a reference amplifier.

The V76 was designed for applications where the "standard" V72 could not provide enough gain (like for example, dynamic mics) and where it was essential to have a switchable variety of gain steps plus some selectable high and low frequency pre-filtering. Although the high end frequencies sound muffled when compared to a V72, many engineers preferred the V76 due to the extra controls, increased gain and huge bass sound it was capable of delivering.

The main versions of the V76 available were:

- V76/80, with a switchable High Pass Filter at 80Hz and 300Hz (and a third position with the two filters coupled), and a Low Pass Filter with a fixed frequency of 3kHz. Both filters could be turned Off. Besides these, they also had additional fixed input filters at 40Hz and 15kHz.
- V76/120, with a switchable High Pass Filter at 120Hz and 300Hz (and a third position with the two filters coupled), and a Low Pass Filter with a fixed frequency of 3kHz. Both filters could be turned Off. Besides these, they also had additional fixed input filters at 40Hz and 15kHz.

In 1960, a special V76s version was introduced. The "s" originally stood for "Schallplatte" (Vinyl Disk), indicating "Studio use", and in 1965 it was even officially changed to "Studio". The V76s version may be regarded as a successor to the V72s, and was quite different from the other V76 units, since both the High Pass and Low Pass filters featured multiple switchable frequencies. Filter inductors were made from a Nickel/Iron alloy, and allegedly offered a better sound performance than the standard ferrite cores in the 80/120 units.

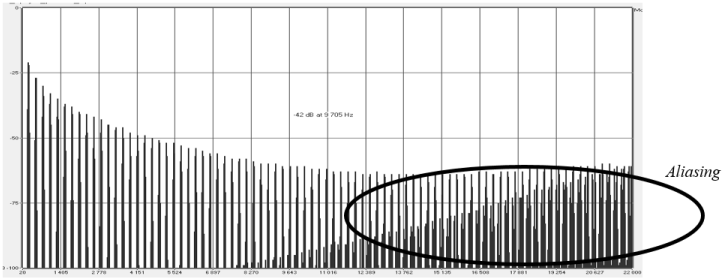
There were also a few custom versions made over the years. We may consider the famous EMI REDD.47 as a V72s version with a few different options, but with the same transformers. This EMI made preamp equipped the famous REDD.51 consoles, used in all Beatles recordings from 1964 up to 1968. Remember that the previous REDD.17 and REDD.37 consoles were powered by Siemens V72s units, as we mentioned above. One of the EMI REDD.37 consoles was used in all Beatles recordings up to 1964, when they changed to the REDD.51.

Telefunken used the V72 units as standard preamplifiers for their broadcast division. The company (which became AEG-Telefunken in 1967) sold many units to radio stations in South America, Africa and the Middle-East, where most of them are still in use today, but despite that stopped the production of the V72 in 1966. Siemens had already stopped their production in 1964, but built the V72b version until 1966. TAB was the only company that built the V72a up into the 70s. In the second half of the sixties, vacuum tube devices were being replaced by transistor-based units everywhere, because the former were more expensive and difficult to maintain.

Arturia's version that is now presented to you is based on the V76/80. Since these units didn't have an EQ (just input filters), it is coupled with another classic unit of the same period, the V612 EQ. This was a simple 2-band EQ, featuring High Shelf and Low Shelf bands with fixed frequencies.

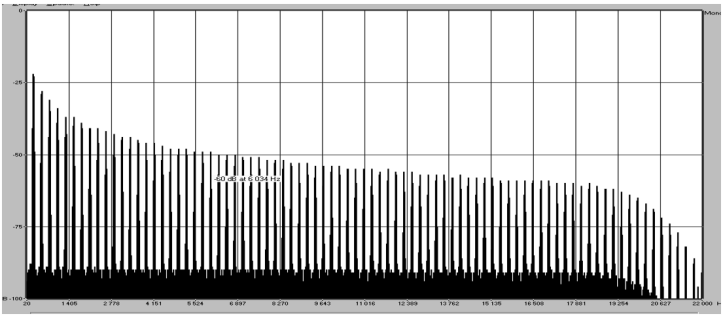
1.1. Arturia's secret ingredient: TAE®

TAE® (True Analog Emulation) is Arturia's outstanding technology dedicated to the digital reproduction of analogue circuits used in vintage synthesizers.



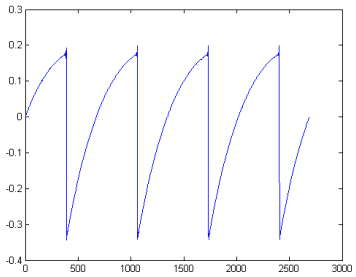
Linear Frequency spectrum of a well known software synthesizer

TAE®'s software algorithms result in spot-on emulation of analogue hardware. This is why V76-Pre offers an unparalleled quality of sound, as do all of Arturia's virtual synthesizers and plug-ins.

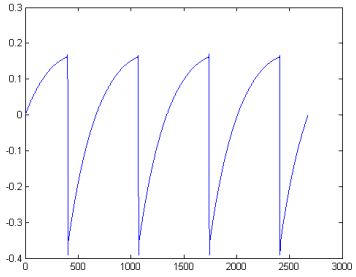


Linear frequency spectrum of an oscillator modeled with TAE®

TAE® combines major advances in the domain of synthesis:



Temporal representation of the 'sawtooth' waveform of a hardware synthesizer



Temporal representation of a 'sawtooth' waveform reproduced by TAE®

1.2. Arturia's V76-Pre

So, what is and what do we get with the V76-Pre preamp and EQ plug-in?

The goal of Arturia was to model the sound of this famous vacuum tube preamp, which is still a sought-after piece of equipment, as well as add some new features that are helpful in a modern workflow. For example, an EQ unit of the same period was added, to round the package and to remain faithful to the approach followed in the other units of this line - preamp and EQ. We also have a Phase Reverse switch, which didn't exist in the original.

Therefore, we have the amplification circuit, which features a vacuum tube emulation, capable of very nice and tolerant saturation, and the High Pass Filter, with three filter choices: 80Hz, 300Hz or both frequencies coupled (as was the case with the original V76/80). The filter can also be turned Off, by selecting the Flat option. The EQ is a simple two band EQ with very broad, gentle Baxandall curves and fixed frequencies, around 100Hz for the Low Shelf, and around 5kHz for the High Shelf. It can be switched Off by clicking the EQ switch and changing it to the Off position.

Baxandall curves are named after Peter Baxandall, an English audio engineer who first came up with audio circuits featuring this kind of curve in the 1950s. These are soft sweeping curves in the bass and treble shelf EQs that give a broad yet musical adjustment. The slope is lower than usual, and that contributes to the curves' sweetness, since they sound smoother and more natural.

The plug-in has Single Channel and Double Channel versions. The Double Channel version can work in three different modes. The default mode is Stereo, which means the Stereo Link button is the Stereo position and the Stereo Mode switch is in the L/R (Left/Right) position. When we change this switch to the M/S position, the plug-in enters the Mid/Side mode. This automatically disables (turns Off) the Stereo Link button.

When the Stereo Link switch is Off, and the Stereo Mode button is in the L/R position, the plug-in is in Dual Mono mode. In this mode, each channel works independently, which means we can have the EQ switched On in one channel and Off in the other, for example, and the phase switched On in one and Off in the other.

2. ACTIVATION AND FIRST START

V76-Pre works on computers equipped with Windows 7 or later and macOS 10.10 or later. You can use the V76-Pre as an Audio Unit, AAX, VST2 or VST3 plug-in.

2.1. Activate the V76-Pre License

Once the software has been installed, the next step should be to activate your license,so that you can use it without limitations.

This is a simple process that involves a different software program: the Arturia Software Center.

2.1.1. The Arturia Software Center (ASC)

If you have not already installed the ASC, go to this web page:

https://www.arturia.com/support/updates&manuals

Look for the Arturia Software Center at the top of the page, and then download the version of the installer that you need for your system (macOS or Windows).

Follow the installation instructions and then:

- Launch the Arturia Software Center (ASC)
- Log into your Arturia account
- Scroll down to the My Products section of the ASC
- Click the Activate button

That's all there is to it!

2.1.2. V76-Pre as a plug-in

V76-Pre comes in VST, AU and AAX plug-in formats for use in all major DAW software such as Ableton, Cubase, Logic, Pro Tools and so on. You can load as many instances as you find useful, and you will also find some other useful features:

- You can automate numerous parameters using your DAW's automation system;
- Your settings and current plug-in state will become recorded in your project, and you can pick up exactly where you left off the next time you open it.

2.2. QuickStart: A basic patch

The patch below is an ideal starting point for getting to know the V76-Pre plugin. We will use the sequencer to modulate some parameters of the plug-in. It illustrates how you can use V76-Pre to process sound. In the example below, we'll use Cubase, but it will work in a similar way in other DAWs.

Please load the default factory preset. This ensures that you have all knobs in the correct starting position.

Let's give it try:

- Load a four-beat clip into an audio track in your DAW (a drum track is ideal for testing the EQ and saturation).
- Load an instance of V76-Pre as an insert on that same track.
- Make the interface of the V76-Pre visible by clicking its name in the Mixer.
- Now start your DAW and play the loop. It will sound the way it was recorded. By default, all parameters are in a neutral position. There is still some minor harmonic distortion, but that's OK with our demonstration.

V76-Pre configured to add some "loudness" to the sound. The High Pass filter is also switched to cut frequencies below 80Hz

- Set the Gain to +40dB and take a listen. If the sound is good, you can leave it at that position. If you notice some distortion, the Gain may be too much. Although harmonic distortion can be used as a sound design tool, you may want to reduce it. By raising the Gain, you added some saturation to your signal.
- You may also want to try use the High Pass filter. By default it is flat, but you may try to use the 80dB low cut, to get rid of some sub-bass frequencies. If not, just leave it at the Flat position.
- Now increment the High Shelf EQ band (This is labeled High Tone, and also with a treble clef). Remember that this band is set to a relatively high frequency (5kHz). However, the EQ curves are very soft so, you should be able to boost generously. Try a boost of 9. If you think it's too much, reduce the boost until you are pleased with the result.
- You may also want to boost the Low Shelf EQ band. This one is labeled Low Tone, and also with a bass clef. Again, since the EQ curves are soft, you should be able to raise it generously. Try a value of 6. If it's too much, reduce it until you find a good tone result.
- By incrementing both bass and treble tone, you achieved what is called a "loudness" curve.
- When you conclude that the parameter settings have achieved the desired sound, it's time to define some MIDI modulation. For that, you need to click the MIDI icon in the right side of the upper toolbar.

V76-Pre ready for MIDI learning. Notice the MIDI control setup window over the selected control, which is already assigned (when assigned, the color changes to red).

- Now, many of the controls in the V76 V become purple, which means they are ready to "learn" MIDI automation controls.
- Click one of the Output Trim pots. A pop-up window like the one in the picture above will appear.
- Remember that, since we are working in Stereo Mode (the Stereo Link button is pointing to Stereo) any changes made on one channel will be reflected on the other as well.
- Now move the controller knob/fader you want to use to control that parameter. If the connections are well established, you should see the parameter assigned to the Input Level. If your controller is able to, and the control you selected is of the right type, you should select "Is Relative", to make sure that when you touch that parameter the control will not jump suddenly. For more information about this feature, refer to the section Relative Control option [p.15] in the USER INTERFACE chapter.
- Now select the Input Gain of one channel. Repeat the operation above, for the knob to "learn" which MIDI control it should respond to.

3. USER INTERFACE

The V76-Pre is packed with great features, and in this chapter we'll take a tour and show you what it can do. We think you'll be amazed by the range of audio processing options this plug-in is capable of.

This plug-in is more flexible than you probably would expect at first sight, due to the relative simplicity of its User Interface. That will always be the main focus of every Arturia product: to unleash your creativity while remaining easy to use.

3.1. The Control Panel

We will have a detailed look at the Control Panel in the V76-Pre CONTROL PANEL Chapter [p.27]

3.2. The Toolbar

The plug-in GUI (Graphical User Interface) has the usual Arturia toolbar that runs across the top edge, with the Arturia logo / plug-in name on the left (the colored part), followed by the Library button, the Library selection filter button, the Preset name on the center, and the MIDI button on the right. This toolbar is common to all current Arturia plug-ins, and gives access to many important functions. Let's look at them in detail.

The first seven of these options can be found by clicking on the Arturia V76-Pre button at the top left-hand corner of the plug-in window. Since these options are also common to all current Arturia plug-ins, they may be already familiar to you.

3.2.1. Save

This option will overwrite the active preset with any changes you have made, so if you want to keep the source preset also, use the Save As option instead. See the next section for information about this.

3.2.2. Save As...

If you select this option, you are presented with a window where you can enter information about the preset. In addition to naming it, you can enter the Author name, and select a Type. You can even create your own Type, by entering custom names in the respective place. This information can be read by the preset browser and is useful for searching the preset later.

3.2.3. Import Preset

This command lets you import a preset file, which can be either a single preset or an entire bank of presets. Both types are stored in .vprx format.

After selecting this option the default path to these files will appear in the window, but you can navigate to whichever folder you are using to store presets.

3.2.4. Export Menu

You can export presets in two ways: as a single preset, and as a bank.

- **Export Single Preset:** Exporting a single preset is handy when you want to share a preset with someone else. The default path to these files will appear in the "save" window, but you can create a folder at another location if you like. The saved preset can be reloaded with the import preset menu option.
- **Export Bank:** This option can be used to export an entire bank of sounds from the instrument, which is useful for backing up or sharing presets.

3.2.5. Resize Window options

The V76-Pre window can be resized from 60% to 200% of its original size without any visual artifacts. On a smaller screen such as a laptop, you might want to reduce the interface size, so it doesn't dominate the display. On a larger screen or a second monitor, you can increase the size to get a better view of the controls. The controls work the same at any zoom level, but they can be harder to see at the smaller magnification values, or when using high resolution monitors (like HD monitors or higher). The higher the resolution, the bigger the size that should be used.

3.2.6. Preset Selection

The Preset browser [p.17] can be opened by clicking the library symbol on the toolbar. The filter, name field and left / right arrows in the toolbar all assist with preset selection.

3.3. MIDI Learn assignment

The MIDI plug icon at the far-right side of the toolbar places the instrument in MIDI learn mode. MIDI-assignable parameters will be shown in purple, which means you can map physical controls to those destinations inside the instrument. A typical example might be to map a real expression pedal to the Output Trim control, or knobs and faders on your controller to the different virtual knobs and switches of the plug-in.

MIDI Learn assignment mode in the V76-Pre

In the image above one of the parameter dials is red. That means it has already been assigned to an external MIDI control. It can be reassigned, though.

> ♪: Remember that you can also assign the Preset Forward and Backward arrows to an external control.

3.3.1. Assign / Unassign controls

If you click on a purple area, you'll put that control into learning mode. Move a physical dial, fader, or button and the target goes red, indicating that a link has been made between the hardware control and the software parameter. There's a popup window that displays which two things are being linked and an Unassign button that will disconnect the two.

3.3.2. Min / Max value sliders

There are also minimum and maximum value sliders that you can use to restrict the parameter change range to something other than 0%-100%. For example, you might want the Output Trim knobs to be controllable via hardware from 30% to 90%. If you make this setting (Min set to 0.30 and Max set to 0.90) your physical dial will be unable to alter the volume lower than 30% or higher than 90%, no matter how far you turn it. This is very useful to prevent you from accidentally make the sound too quiet or too loud when performing.

In the case of switches which only have two positions (On or Off – like the PREAMP IN and the EQ IN switches), those would normally be assigned to buttons on your controller. But it is possible to toggle those with a fader or other control if you like.

3.3.3. Relative Control option

The final option in this window is a button labeled "Is Relative". It is optimized for use with a specific type of control: one which sends only a few values to indicate the direction and speed at which a dial is turning, as opposed to sending a full range of values in a linear fashion (0-127, for example).

To be specific, a "relative" dial will send values 61-63 when turned in a negative direction and values 65-67 when turned in a positive direction. The turn speed determines the parameter response. Refer to the documentation of your hardware controller to see if it has this capability. If so, be sure to switch this parameter on when setting up its MIDI assignments.

When configured this way, movements of the physical control (usually a dial) will change the software parameter by starting at its current setting, rather than being an "absolute" control and snapping it to some other value as soon as you start to move it.

This can be a great feature when controlling things like volume, filter, or effect controls since you won't usually want them to jump noticeably from their current setting when they are modified.

> ♪: Pitch Bend, Mod Wheel and Aftertouch are reserved MIDI controllers that cannot be assigned to other controls.

3.4. MIDI controller configuration

There's a small arrow at the far right-hand side of the toolbar (after the MIDI icon) that deals with MIDI controller configurations. This allows you to manage the different sets of MIDI maps you may have set up for controlling the instrument's parameters from MIDI hardware. You can copy the current MIDI assignment setup or delete it, import a configuration file or export the currently active one.

This is a quick way to set up different hardware MIDI keyboards or controllers with V76-Pre without having to build all the assignments from scratch each time you swap hardware.

Note the check mark on the bottom of the menu: that indicates that the configuration with that name is the one currently active. Empty means that there's no configuration loaded.

3.5. The lower toolbar

When you are changing a parameter, you will see a readout showing the value or state of whatever control you are modifying at the left-hand side of the lower toolbar. It will also display the current value of a parameter when you place the mouse pointer over that parameter control in the control panel. This is handy, because you don't need to touch the parameter control to read the current value.

At the right-hand side of the lower toolbar are several small windows and buttons. These are very important features, so let's take a closer look at them.

3.5.1. Output LED Sensitivity

The V76-Pre has two Glowing Output Lamps (one when in Single Channel configuration) at the top-right of the control panel. By clicking this button, we can access a menu where we can calibrate their sensitivity.

We have three options: High, Medium, and Low. By default, High sensitivity is the one selected.

3.5.2. Bypass

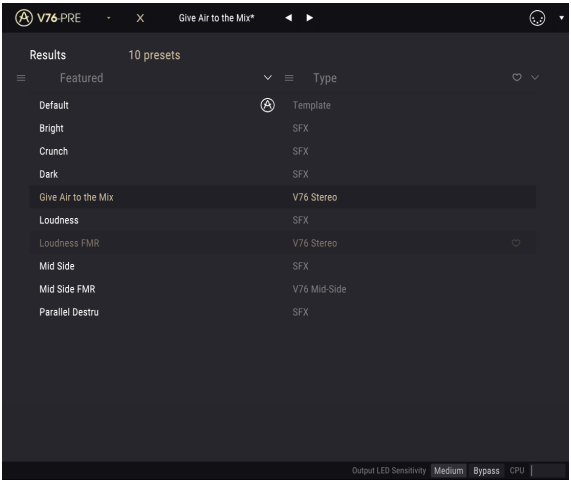
This one is obvious. Activating the bypass option will disable V76-Pre processing.

3.5.3. CPU meter

The CPU meter is used to monitor how much of your computer's CPU is being used by the plug-in. If you stress your computer too much, the global performance of your system and the audio may suffer.

3.6. The Preset browser

The preset browser enables you to search, load and manage preset configurations in V76-Pre. Although this looks and is based on the usual Arturia Preset Browser, it is simpler, and even easier to work with. You access the preset browser by clicking on the library symbol next to the Arturia logo on the left.



When you click on the library symbol, you will see a screen with all the Presets you have saved. You can sort the list by several different criteria, to make it easier to find the right preset. There are two columns. The first one lists the Presets by Name or by "Featured". Featured are presets that were classified as important by Arturia. The second one lists the Presets by Type, or Designer.

There is only one attribute visible, which is the one you select by clicking the column title. By default, Type is the attribute selected. When you select the Designer attribute, the list changes, and that attribute appears in the second column, in the place where the Type field was before.

If we want to delete a preset, we may do that by selecting it, and then, by clicking in the name field, choose the option "Delete current" that's in the bottom of the list.

4. V76-PRE OVERVIEW

As we said already in the Introduction, the Telefunken V76 was particularly noted and praised for the pleasant sound created by the induced vacuum tube saturation. One of Its predecessors, the V72s, was even used in the Beatles' recordings up to 1964.

Characterized by a somewhat "muffled" sound, the V76 had however a powerful bass response. This, coupled with the switching input filters and the capability to raise the power in 6dB steps across twelve positions, added an extra level of control when compared with the previous units, making it a sought-after classic, not only in broadcast but also in recording.

Arturia coupled this vintage preamplifier with an EQ unit of the same period, the V612, based on germanium transistors that gave it a distinctive sound. It also featured two broad Baxandall EQ bands with fixed frequencies, and another level of saturation. This allows the V76-Pre to remain faithful to the spirit of this line (preamp and EQ) and also gives more flexibility to the user, and a complementary tool to help shape the sound.

The plug-in works as a Single Channel or as a Double Channel, according to the audio channel it is inserted on. In Single Channel we just have Mono mode, but in Double Channel, we can use the plug-in in Stereo mode, Mid/Side mode and Dual Mono mode.

4.1. What is a preamp?

A preamplifier (preamp or simply "pre") is a device that takes care of the first stage of amplification. It is usually designed to boost a weak electrical signal to "working level", to make it strong enough to be noise-tolerant and for further processing, for example in a mixing desk. The working level is usually called "line level".

Many of us probably still remember the days of vinyl records. Vinyl records were played by turntables, a device which had an output with a completely different impedance than, for example, a tape recorder. The turntable output signal was much weaker. To drive it to a level strong enough to be audible meant that it had to pass through a circuit that would amplify it to a level where it could be passed to the main audio amplification circuit. More than that, the circuit also had to transform the tone, in order to decode the special RIAA encoding tone curve. Without this previous stage, the signal would be weak and distorted harmonically.

This circuit was (is) a preamplifier, and was usually part of any Hi-Fi amplifier (those special inputs labeled "phono", which seem to be coming back as of lately). It should be mentioned that Arturia's AudioFuse audio interface also features a microphone preamp circuit, and it even features the special RIAA preamp we just mentioned.

But there are other kinds of preamplifiers, that do other things. The preamp devices that brought us to this point are those typically used to amplify signals from audio sources such as microphones and instrument pickups. Because of this, preamplifier circuits are now usually built into audio mixers (and are included in many computer audio interfaces too).

But it wasn't always like this. There was a time when preamps were separate units that received the signal from microphones and delivered it to the mixing circuit. The V76 was one of those units. Then they became modules that could be plugged into those mixers (like the Neve units). Now, they are simply standard equipment. But there are still many other devices that use preamp circuits besides mixers, as electric guitar and bass players know very well.

4.2. What does a preamp do?

A preamp usually is designed and used to do one or more of the following actions:

- Increase the gain from an audio source (for example a microphone)
- Changing the tone (by using filters, for example)
- Lowering the output impedance
- Converting from unbalanced to balanced

One of the most important controllers in a preamp is Gain. Gain just means the amount your signal level is increased by the circuit. The amount a specific preamp increases your gain is of utmost importance, because every device your signal will be sent to (in our case probably the mixer) has an ideal range of signal level it expects in order to operate best. Not every preamp can effectively drive a power amp, for example. The preamps we are looking into were usually built to feed the mixing circuit, therefore they usually had a fixed gain amount.

Impedance can be described as the efficiency of the signal transferring from one piece of gear to another. It is the opposition of a circuit to the flow of alternating current, a result of the complex sum of resistance and reactance. A good illustration of this is cycling uphill. If you are in the right gear, pedaling requires some energy; but if you are in the wrong gear, it requires a lot more energy. An ideal impedance relationship is a very low output impedance number connecting to a very high input impedance. That is being "in the right gear". If your instrument or device has an output impedance that is too close to the input impedance of the device you're connecting it to, you will be in the wrong gear, and your signal will be too weak. That weakness may result in a lower signal level and/or a dull tone.

Preamps are usually "active", meaning they require a power supply. This is because it requires energy to boost a signal. Currently, the preamps get the energy from the main power circuit of the mixer. Older preamps like the V76 had their own power circuit built-in.

A balanced circuit is a signal-carrying circuit with two active electrical conductors of equal impedance with respect to a common reference point, which is usually ground. Each conductor carries the signal with a polarity that's the inverse of the other one. Usually, both conductors are enclosed within an overall metallic shield, which does not carry the signal.

Balanced circuits can be found on professional-level microphones, XLR inputs on a mixer, and balanced connections between an amplifier and speakers. The advantage of these circuits is that the two signals are going to be decoded in the destination (remember they were polarity-inverted), and the audio signal will be the difference between the two identical signals. Any interferences picked up in transit will presumably not be polarity-inverted, and therefore will have little to no difference between the channels. These will be eliminated, resulting in an interference-free signal.

An unbalanced circuit is a signal-carrying circuit with only one electrical conductor and an overall metallic shield. It is usually used in domestic connections, like Hi-Fi, for example. Although there will be little to no problem in closer connections (input and output are near to each other, therefore minimizing the risk of possible interferences), they would be problematic in longer connections (a long wire basically works like an antenna).

That's why when we use microphones or other sound sources that are distant from the mixer, we have to use balanced connections, and when they don't have them, we have to connect them to a closer device that will convert the signal from unbalanced to balanced.

4.3. What is an EQ?

The equalizer allows you to cut or boost any frequency, or group of frequencies, within the audio spectrum.

It was one of the first signal processing devices to enter a recording studio. Actually, even the old domestic radios had some kind of EQ built-in. Usually, besides the control for the volume, we also had a control for the Bass and another for the Treble. These Bass/Treble EQs were also usual in Hi-Fi amplifiers.

Of course, in a studio the devices are more complex than that, and usually have more controls. But in the beginning, they didn't have many of those, either.

Since the equalizer modeled in this plug-in is very old, it is one of those kind of simpler EQ units, with just a control for Bass and another for Treble.

4.4. What does equalization do?

Equalization usually is used to correct a sound timbre and its harmonic balance. We can use EQ, for example, to correct a particular sound in a mix, allowing it to "breathe" by boosting the frequencies that are more important, and sometimes also by decrementing those same frequencies in other instruments.

We may also use it as a creative tool, for example by manipulating the timbre of a certain instrument to better match another one during overdubs, or (again) to better fit in the whole mix.

We can finally use equalization to position an instrument in a three-dimensional stereo image, increasing the separation between the different timbres.

Of course, this comes at a price, and the price is that every time we adjust frequencies we create some phase shifting and discrepancies that may deteriorate the original sound.

It's up to us to balance the use of equalization in order to get a final result that sounds good and musical. Like with almost everything, EQ must be used only when and where it's necessary.

4.5. A V76 preamp and a V612 EQ in a plug-in

The Arturia V76-Pre plug-in is not only a preamp, but also an EQ, since Arturia coupled it with another classic unit of the same period, the V612 EQ.

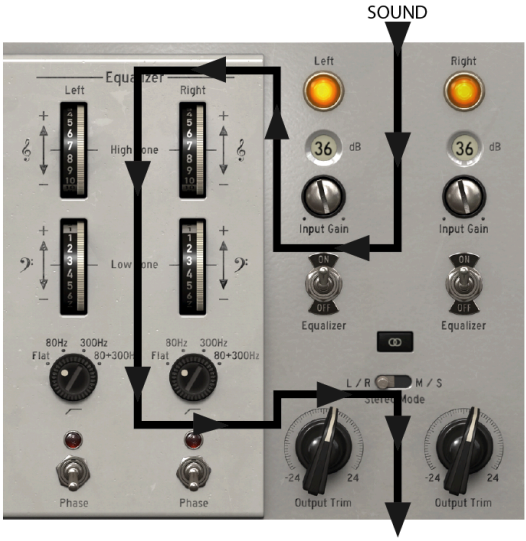
This means that not only it works as an amplifier, providing you with that pleasant vacuum tube (valve) saturation effect, it also has an EQ section, which provides further controls to shape the sound.

That said, if we are going to use the V76-Pre preamp and EQ plug-in, we must be aware that this is a device with a strong coloration, and that is its main strength. The EQ is very simple, and it is there just to add a little extra tone control to the sound. This plug-in is mainly justified by the changes it makes in the timbre, which have been highly praised by audio professionals for many decades now.

Anyone involved in audio is probably aware or has already heard about the pleasant saturation effect induced by vacuum tubes (also called valves) in the sound. It's this kind of saturation effect that, more than anything else, you should expect from the V76-Pre, and the main reason to use it will be the desire to achieve that effect in the sound.

4.5.1. Signal Flow

The signal flow of the V76-Pre follows the logical path for this type of devices. Therefore, the audio enters through the preamp section, controlled by the Input Gain knobs. This section adds saturation and harmonic distortion to the signal.



After this stage, the signal enters the EQ section, where it will be further transformed by boosting or cutting the high and low frequencies. Since the two bands are fixed, we just have a control to boost or cut the high and low frequencies.

We can also filter the lower bass frequencies, by activating the High Pass filter. The entire EQ section can be bypassed, by turning Off the Equalizer switch.

The signal is then directed to the main output, where we have the Output Trim knobs to control the final level.

There is a switch to invert the phase of the audio (globally).

There are also two other global switches that affect the way signal is routed and processed when in Double Channel, as explained below. These are the Stereo Link and the Stereo Mode switches.

4.5.2. The preamp section

The preamp section is the first section the audio signal passes through when it is received by the plug-in.

The Input Gain control knobs (potentiometers) are placed at the top right, below the Glowing Output Level "lamps". Contrary to the original, which had discrete 6dB step values, here we have continuous values, ranging from +3dB to +76dB. This is quite extreme. However, you will notice that the tube modeled circuit is quite tolerant. It may be possible to distort nevertheless, so be careful.

4.5.3. The EQ section

The EQ section of the V76-Pre (which is inspired in another unit of the same period, the V612) is very simple. We have just two Shelf Bands, with fixed frequencies, one for the highs and another for the lows.

The High Shelf is labeled with a Treble clef, and also High Tone, and the shelf frequency is around 5kHz. The Low Shelf is labeled with a Bass clef, and also Low Tone, and the shelf frequency is around 100 Hz. The EQ curves are the very broad and gentle Baxandall-types, and we have a boost/cut control with a range of +/- 10dB.

We also have an High Pass Filter, which is located below the two Equalizer bands, in the left part of the control panel. This filter was part of the original V76 preamp, and has selectable 80Hz, 300Hz and 80+300Hz positions. The last position sums the two previous filters, for an increased slope effect and a more broad frequency cutoff.

The filter can be turned Off, by positioning the switch at the Flat position.

Below the Input Gain controls, we have switches to bypass the EQ section entirely. This will affect both the EQ bands and the High Pass filter.

4.5.4. Output and global controls

The output level is controlled by the Output Trim controls (potentiometers).

We also have some global controls switches which affect the plug-in behavior globally. Those are the already mentioned Equalizer On/Off switch, the Phase switch (which inverts the signal phase when lighted), and, probably the most important ones, the Stereo Link and Stereo Mode switches.

These ones are only present when we are using the Double Channel configuration, and it's with them that we choose between the three modes we can use in that configuration.

We have two switches for this: The first one is to activate/deactivate Stereo Link. The second one is labeled Stereo Mode, and switches between L/R and M/S.

With these two switches, we can choose between the three modes the plug-in works on when in Double Channel configuration: Stereo, Mid/Side or Dual Mono.

Stereo mode is achieved only if the Stereo Link button is On and we have the second switch in L/R (Left/Right) position. In this mode, any changes we make to one channel are reproduced in the other channel as well.

If we switch the Stereo Link to the Off position, we enter the Dual Mono mode. In this mode, each channel works independently, as if we had two mono channels.

There is a third mode that is activated by changing the Stereo Mode switch to the M/S position. This mode is called Mid/Side, and in this mode, although we are still in Stereo, the channels work in a way that is completely different than the traditional Left/Right way. For this mode each channel has to be independent, which is why the Stereo Link button is automatically switched Off when we select M/S.

4.5.5. Mid/Side mode

Mid/Side mode is a highly effective way of making adjustments to the spacialization of a mix or master. In Mid/Side, the Mid channel is the center of a stereo image, while the Side channel is the edges of that same image. When we make adjustments in the Mid channel, this is perceived in the centered image of the stereo spectrum (we can think of it as the mono compatible image). For example, a boost in the Mid channel will make the sound more "mono" (both channels will sound more equal).

On the other hand, when we make adjustments in the side channel, this will have an impact on the width of the stereo image, and a boost in this channel will be perceived as a more spacious (wider) stereo sound.

For M/S purposes, the controls on the left side will affect the Mid channel, while the controls on the right side will affect the Side channel. Also, when in M/S mode the Glowing Output Level lamps represent the output level of the Mid for the first one (Left), and the output level of the Side for the second one (Right).

While we're at it, there is a simple test that you can run to check the difference between stereo, Dual Mono and mid/side processing. Here are the steps to do it:

- Load your favorite DAW;
- Create a new project, and create a stereo audio track;
- Load a stereo clip in that track. A full mix or a sub-mix would be better for the test we want to do;
- Load an instance of V76-Pre as an insert in that track. Open the V76-Pre window;
- Check that you have the Default preset loaded. You should have the plug-in set for Stereo, with the Stereo Link button pointing to Stereo, Input Gain at +3dB, all filters in Flat position, all the EQ section settings at their default values (which means that, with these settings, the influence of V76-Pre in your track should be almost neutral), and the Output Trim at OdB;
- Start the DAW. The stereo clip should sound as you recorded it. You may check by clicking the Bypass button in the lower toolbar and compare;
- You may try some processing, just to check if the V76-Pre is working. For example, you may raise the Input Gain to add some saturation (you will not perceive any change in the overall volume, due to a feature called Autogain Compensation), and boost the High Tone by turning its knob to +6dB (this will give a little more "air" to the mix, by reinforcing the high frequencies);
- You may also turn the High Pass Filter to the 8OHz setting. This will cut the bottom lows;
- Now press Bypass again. You will already be able to notice some differences in the mix. You probably also noticed that each time you made a change in one channel it was reflected in the other. This is because we are working in Stereo mode (the Stereo Mode switch is on the L/R position, and the Stereo Link button is On);

- We will now work in M/S mode. To do this, we'll click the Stereo Mode button to toggle it to the M/S position. The Stereo Link button should automatically turn Off. The V76-Pre is now in M/S mode;
- Since no controls have changed, we will not notice any changes in the audio, for now;
- Let's turn one of the Output Trim knobs to the minimum (-24dB) position. We'll start with the left, which is now the Mid channel;
- Since we reduced the output of the Mid channel by 24dB, we are now listening to a very different signal. We almost have no signal in the middle of the spectrum, and the perceived sound is now located in the edges of the spectrum band (which are controlled by the Side channel). You may even want to try this with headphones, which will give you an even better perception;
- Double click the left Output Trim knob. It will return to its default position, and the sound will return to "normal";
- Now let's reduce the output of the Side channel, by turning the right Output Trim knob all the way to the left (-24dB position). Now, we almost have no signal in the edges of the spectrum signal (which are controlled by the Side channel) and are left with what is almost a mono signal (the Mid channel);
- Note that, even though we turned each of the two channels almost off, we still got sound on both left and right speakers. This is because we are making changes in the stereo spectrum and not in the Left or Right channels alone;

- Double click the right Output Trim knob. It will return to the default position, and the sound will be back to "normal" again;
- Now, while leaving the Stereo Link button Off, toggle the Stereo Mode button again to the L/R position. The V76-Pre is now in Dual Mono mode;
- In this mode, Left and Right channels are completely independent - they work as if they were two mono tracks;
- Now turn the left Output Trim knob again to the -24dB position. You'll notice that, this time, the sound on the left speaker will decrease to almost silence, while the right will remain as it was;
- Double click on the left knob, and do the same with the right knob. This time, the right speaker will become almost silent, while the left one will play unaltered. Double click the knob again, to get it back to the default position;

And with this last action, we have concluded our test. By now, you hopefully became familiar with the three working modes of the V76-Pre in double channel configuration, and will have a clear idea of what you can do in each of them.

5. V76-PRE CONTROL PANEL

The V76-Pre plug-in can be used as a Single Channel (mono) plug-in or as a Double Channel plug-in. When in Double Channel, we can use it in the traditional Stereo mode (Left/Right) or the special Mid/Side mode (M/S). We can also use it as a Dual Mono (each of the two channels works independently).

When in Single Channel configuration, both the preamp and EQ sections have just one column of controls. The Output section also has just the volume sensor light and the Output Trim knob.

5.1. Single Channel (Mono)

5.1.1. Single Channel Preamp Section

The Single Channel configuration is automatically loaded when we use the plug-in with mono channels. The preamp section in the Single Channel configuration is simpler, as are all the other sections. It is located on the right side of the control panel. The significant elements start with the Gain control knob at the top.

The original unit had a discrete control, that moved in 6dB steps, but in the Arturia plug-in version the Input Gain control is continuous, with a range that goes from +3dB up to +76dB. This is quite an extreme gain range, and although the tube preamp model is extremely tolerant, it is still possible to create some unpleasant artifacts, nevertheless. At the right amount, a pleasant saturation is induced. Default value is -3dB (full left).

V76-Pre Single Channel Preamp gain control and Output

You will probably notice that when increasing gain, there isn't an increase in the overall perceived volume. This is due to the fact that the V76-Pre plug-in has an Automatic Gain Compensation, which balances the gain induced in this stage so that we don't have to bother with differences in volume, and can concentrate on the real deal, which is the audio saturation.

5.1.2. Single Channel EQ Section

As with the preamp section, we also have just one column of controls for the EQ (V612) section. Let's take a look at all the controls.

The EQ section of the plug-in is very simple and straightforward. It's a classic two-band EQ, with High and Low Shelf bands. This is the type of EQ that started it all, and the same type of EQ that we can find in Hi-Fi devices even today.

V76-Pre Single Channel EQ bands and High Pass filter

The two bands have very smooth and gentle Baxandall curves, with fixed frequencies: 100Hz for the Low Shelf and 5kHz for the High Shelf. Since both the frequencies and the bandwidth are fixed, we have just one control for the boost/cut amount. There is one boost/cut control for each band, naturally, and they are labeled with a Treble Clef and a Bass Clef. The range is between +10dB and -10dB. Default position is 0.

The High Pass Filter positioned below the two EQ bands was part of the original V76. This is a High Pass Shelf Filter, with gentle curves.

This filter has several choices. We start with the Flat position (filter Off).

Besides that one, we have the 80Hz position (this was the frequency that differentiated this model from the V76/120), which cuts off frequencies below 80Hz. The other position cuts off frequencies below 300Hz. There's a third position that sums the two filters, for a more effective filtering (higher slope). It's labeled 80+300Hz. Default is Flat (filter bypassed).

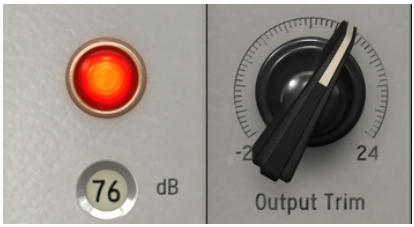
Below the filter controls, we have the Phase Reverse switch. This switch reverses the audio phase, as its name implies. This is actually a feature added by Arturia, since the original didn't have it.

The EQ section can be bypassed, by turning Off the Equalizer switch that is positioned right below the Input Gain control. Default position is On.

5.1.3. Single Channel Output Section

The Output section is dominated by the prominent Glowing Output Level lamp indicator positioned at the top of the control panel. This indicator, which replaces the usual VU meter, glows in a way resembling the vacuum tubes. It will change color continuously, from green (lower gain volume) to orange (between reference level and -1dBFS) and bright red when the signal reaches the analog clipping level.

The glowing sensitivity may be calibrated using the option in the right-hand part of the lower toolbar.



Single Channel Glowing Output Lamp (reaching analog clipping) and Output Trim Knob

The Single Channel Output only has another control, which is the Output Trim knob. This knob controls the Output Volume, and the Glowing Output Level indicator will reflect its action. The range varies between -24dB and +24dB, with the default value at OdB (middle position).

5.2. Double Channel

The Double Channel configuration is the one we use to process stereo tracks. We don't need to select it, since the plug-in automatically recognizes if the audio track is mono or stereo, and opens the proper configuration accordingly.

However, the Double Channel configuration doesn't operate exclusively in Stereo mode. In fact, we have three modes to work with in this configuration. The default one is, of course, Stereo mode. We can confirm this because the sections are tied between left and right channels (the Stereo Link button is On). So, when we move a control in the left channel, the corresponding control in the right channel follows, and vice-versa.

But we can also work in Mid/Side (M/S) mode and in Dual Mono mode.

An audio tool that supports M/S processing (such as the V76-Pre) creates two separate processes, one for the Mid channel (the center of the stereo image) and one for the Side channel (the edges of the stereo image), as we explained before [p.24].

To work in this mode, we have to adjust the corresponding switch (which is only present in Double Channel configuration) to the M/S position. By default it is positioned in the L/R position, for Left/Right, or Stereo mode.

In this mode the Mid and Side channels work independently, so any changes you make on one channel are NOT followed by the other channel, as it happened in L/R mode. That's why, when we switch the Stereo Mode to the M/S position, the Stereo Link button is automatically turned Off.

As we said, in Mid/Side mode changes in the channel on the left (the Mid Channel) affect the way we perceive the sound in the center of the stereo spectrum, while changes in the channel on the right (the Side channel) affect the way we perceive sound in the edges of the stereo spectrum.

We also have a third mode, which is Dual Mono. In this mode, each of the two channels works independently, as if they were mono channels. Therefore, any adjustments we make on one channel will not be followed by the other, and will affect ONLY that channel. This may seem similar to the behavior of the M/S mode, but it is different because, in this mode, we are processing each channel in Mono mode, while in M/S mode the processing done on each channel has influence on the stereo image.

This mode is activated when the Stereo Link button is Off and the Stereo Mode button is in the L/R position.

By default, the plug-in works in Stereo mode (the Stereo Link button is On and the Stereo Mode button is in L/R position).

Now, let's examine each control in Double Channel configuration:

5.2.1. Double Channel Preamp Section

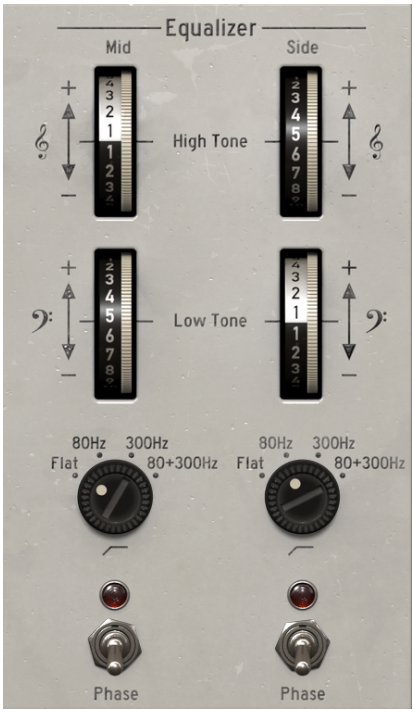
The preamp section in the double channel configuration is similar to the one we have in Single Channel, except that we have almost every control doubled.

So, we have two Input Gain control knobs on top. The original unit had a discrete control that moved in 6dB steps, but in the Arturia plug-in version the Gain controls are continuous, with a range that goes from +3dB up to +76dB. This is quite an extreme gain range, and although the tube preamp model is extremely tolerant, it can distort nevertheless. At the right amount, a pleasant saturation is induced. Default value is -3dB (full left).

V76-Pre Double Channel Glowing Output Lamps and Preamp gain controls

5.2.2. Double Channel EQ Section

As with the Preamp section, the EQ section in Double Channel configuration is basically the same one we have in Single Channel configuration, except that we have every control doubled. As we said, the EQ section is very simple and straightforward. It's a classic two-band EQ, with High and Low Shelf bands. This is the type of EQ that started it all, and the same type of EQ that we can find in Hi-Fi devices even today.



V76-Pre Double Channel EQ bands and High Pass filters

The two bands have very smooth and gentle Baxandall curves, with fixed frequencies: 100Hz for the Low Shelf and 5kHz for the High Shelf. Since both the frequencies and the bandwidth are fixed, we only have controls for the boost/cut amount. There is one boost/cut control for each band, naturally, and they are labeled with a Treble Clef and a Bass Clef, and also as High Tone and Low Tone. The boost/cut range is between +10dB and -10dB, and the default position is 0.

Below the EQ controls, we have the High Pass Filters that complement this section. These High Pass were part of the original V76 circuit, and are very smooth and gentle filters.

The filters have several choices. We start with the Flat position (filters Off).

Besides that one, we have the 80Hz position (this was the frequency that differentiated the V76/80 model from the V76/120), which cuts off frequencies below 80Hz. The other position cuts off frequencies below 300Hz. There's a third position that sums the two filters, for a more effective filtering (higher slope). It's labeled 80+300Hz. Default is Flat (filter bypassed).

Below the filter controls, we have the Phase Reverse switches. These switches reverse the audio phase, as the name implies. This is actually a feature added by Arturia, since the original didn't have it.

The EQ section can be bypassed, by turning Off the Equalizer switches that are positioned right below the Input Gain controls. When Off, both the EQ bands and the High Pass Filter are bypassed. Default position is On.

> ♪: Make some changes on the EQ bands. Now, press the EQ button to turn Off the EQ section, and turn it On again. Hopefully, you'll perceive a noticeable difference in the audio. Despite being just a two band EQ, each band has a large bandwidth, which means that they act in a large range of frequencies.

5.2.3. Output Section

The Output section, like we already said in the Single Channel description, is dominated by the prominent Glowing Output Level lamp indicators, which here replace the VU meters. Since this is a Double Channel configuration, we have not one but two "glowing lamps". They glow in a way resembling the vacuum tubes, and will change color continuously, from green (lower gain volume), to orange (between reference level and -1dBFS) and bright red when the signal reaches analog clipping.

Their glowing sensitivity can be controlled by the "Output LED Sensitivity" option in the right-hand part of the lower toolbar. We can choose between High, Medium, and Low, with High as the default option.

The lamps are positioned on the top right of the control panel, above the Input Gain controls. Besides them, the Double Channel Output only has another pair of controls, which are the Output Trim knobs in the bottom. These knobs control the Output Volume, and the Glowing Output Level indicator will reflect their action. The range varies between -24dB and +24dB, with the default value at OdB (middle position).

V76-Pre Double Channel Preamp and Output. Notice the Stereo Link and Stereo Mode switches, right above the Output Trim controls, and the Glowing Output Lamps on top

Since the Double Channel configuration has three modes, we have two extra switches, which allow us to change the working mode. These are positioned right above the Output Trim knobs, and are very important. Combined, they change the global behavior of the Double Channel configuration. They are the Stereo Link and the Stereo Mode switches.

The Stereo Link switch is the one right below the two Equalizer On/Off switches. By default, it is On, which means we are working in Stereo mode.

Below the Stereo Link, we have the Stereo Mode switch. This is another very important switch. It's where we change the behavior between True Stereo (L/R, which means Left/Right) or Mid/Side mode (M/S switch position). The Mid/Side mode has been described in detail in the "Mid/Side mode" entry [p.24] in the "V76-Pre OVERVIEW" chapter, so please refer to that part if you want to clarify something. Bear in mind, though, that it's with this switch that we change the mode configuration. Possible configurations are as follows:

- Stereo Link On and Stereo Mode at L/R - True Stereo mode
- Stereo Link Off and Stereo Mode at M/S - Mid/Side mode (Stereo Link is automatically turned Off)
- Stereo Link Off and Stereo Mode at L/R - Dual Mono mode

5.2.4. Some final words

Some final words to mention something very important. Usually, to change values in the plug-in controls, we click on the corresponding control and drag the mouse up or down. If the controls are switches, we simply click them to toggle On or Off. If we want finer editing values, we can use Ctrl+Drag (Cmd+Drag on macOS). Alternatively, we can mouse Right-Click and Drag. Using this key combination, the values change in a slower way, which allow us to get more precise values easily.

Double-clicking a control changes it automatically to the default value. This also works with Alt+Click (Opt+Click on macOS).

And that's it. We just finished describing all the controls you have at your disposal to process sound in your DAW using the V76-Pre. We hope you'll enjoy the plug-in and the results you get when using it, as much as we enjoyed making it.

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The product registration is possible during the activation process or at any time later through the Internet. In such a process you are asked to agree to the storage and use of your personal data (name, address, contact, email-address, and license data) for the purposes specified above. Arturia may also forward these data to engaged third parties, in particular distributors, for support purposes and for the verification of the upgrade or update right.

5. No Unbundling The software usually contains a variety of different files which in its configuration ensure the complete functionality of the software. The software may be used as one product only. It is not required that you use or install all components of the software. You must not arrange components of the software in a new way and develop a modified version of the software or a new product as a result. The configuration of the software may not be modified for the purpose of distribution, assignment or resale.

6. Assignment of Rights You may assign all your rights to use the software to another person subject to the conditions that (a) you assign to this other person (i) this Agreement and (ii) the software or hardware provided with the software, packed or preinstalled thereon, including all copies, upgrades, updates, backup copies and previous versions, which granted a right to an update or upgrade on this software, (b) you do not retain upgrades, updates, backup copies und previous versions of this software and (c) the recipient accepts the terms and conditions of this Agreement as well as other regulations pursuant to which you acquired a valid software license.

A return of the product due to a failure to accept the terms and conditions of this Agreement, e.g. the product activation, shall not be possible following the assignment of rights.

7. Upgrades and Updates You must have a valid license for the previous or more inferior version of the software in order to be allowed to use an upgrade or update for the software. Upon transferring this previous or more inferior version of the software to third parties the right to use the upgrade or update of the software shall expire.

The acquisition of an upgrade or update does not in itself confer any right to use the software.

The right of support for the previous or inferior version of the software expires upon the installation of an upgrade or update.

8. Limited Warranty Arturia warrants that the disks on which the software is furnished is free from defects in materials and workmanship under normal use for a period of thirty (30) days from the date of purchase. Your receipt shall be evidence of the date of purchase. Any implied warranties on the software are limited to thirty (30) days from the date of purchase. Some states do not allow limitations on duration of an implied warranty, so the above limitation may not apply to you. All programs and accompanying materials are provided "as is" without warranty of any kind. The complete risk as to the quality and performance of the programs is with you. Should the program prove defective, you assume the entire cost of all necessary servicing, repair or correction.

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