USER MANUAL

Pre TridA

ARTURIA®
YOUR EXPERIENCE · YOUR SOUND

Special Thanks

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Thank you for purchasing Pre TridA!

This manual covers the features and operation of Arturia's Pre TridA.

Be sure to register your software as soon as possible! When you purchased Pre TridA 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 Pre TridA

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 Pre TridA 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 Trident® A 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 mixer channel, we have added some features that were unimaginable in the days the Trident® A was being manufactured.

Pre TridA 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.

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The Arturia team

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1. WELCOME

Trident® consoles, together with Neve and Helios, may be considered as the ruling triumvirate of the golden years of rock in the UK, with an undeniable impact in the sound of that era. Born out of a "happy accident", the Trident® A consoles had a "signature" that was imprinted in countless hit albums.

Trident® history started as a recording studio in London, built in 1967. Many famous artists recorded in there, including The Beatles, Manfred Mann, Marc Bolan/T-Rex, Nilsson (Without You), and Mary Hopkins (Those Were the Days). Trident® Studios could be considered the most up-to-date recording facility in London at the time, by featuring things like Dolby noise reduction and 8-track recording equipment (the EMI studios at Abbey Road only had 4-track, and that's one of the reasons The Beatles chose Trident® to record the White Album, including Hey Jude). This success story continued through the 70s, with artists like Queen, David Bowie, Elton John and the Genesis of Peter Gabriel era (and post-Gabriel, up to "And Then There Were Three"). Among producers, we can spot names like Glyn Johns and Eddie Kramer.

Malcolm Toft became the studio manager in 1971. After taking over, he felt the need of a new recording desk that could facilitate the up-and-coming 24-track recording machine he wanted to start using too. After concluding that there was no answer on the market (including from Rupert Neve) Toft proposed to the studio owners to build a console themselves.

After getting the owners' approval, he and Barry Porter took the solution in their own hands, and started planning the new console. This was the genesis of the first Trident® A Range® console, which was built by and for Trident® Studios. The console was created with sound as the main goal, and many components were tried and rejected, until the right combination was achieved. After a year of experimentation, design and building, the first Trident® was ready and installed. More than a work of engineering (which it also was) it was a work of love – the love for sound.

Since Trident® Studios were so famous at the time, news that they were building a new console started to call the attention of many others, and demand to build more, as well as a scaled down version, immediately came after. Trident Audio Developments® (TRIAD) was formed after that, to deliver consoles to the many that became interested.

The Trident® A Range® achieved a near-mythic status, despite only 13 consoles ever built. Particularly noted and praised by the industry were its fantastic preamps and the unusual and colorful EQ. A unique characteristic was a series of three high pass filters at -18 dB per octave and three low pass filters at -12 dB per octave arranged at the ends of the EQ section. The switches to those filters could be pushed in simultaneously, offering distinct filter cut combinations with unusual curves. The rest of the EQ section allows four frequencies at any one time, with switchable but fixed values. Low Shelf: 50, 80, 100 or 150 Hz; Low-Mid Bell: 250, 500, 1k or 2k Hz; High-Mid Bell: 3k, 5k,7k or 9k Hz; High Shelf: 8k, 10k, 12k or 15k Hz.

In those days, there were no sweepable frequencies and Q controls, but that was one of the charms of these consoles, coupled with the peculiar sound that was in part the result of the odd peaks and quite heavy phase-shift and coloration that came from the design of the EQ. Malcolm Toft even referred to the EQ as "kind of a cross between a Pultec and a Neve module".

Hit records done with the Trident® console at Trident® Studios include David Bowie's Ziggy Stardust and Aladdin Sane, Elton John's Goodbye Yellow Brick Road, Blue Move, and A Single Man, Queen's Sheer Heart Attack, Supertramp's Crime of the Century and Carly Simon's You're So Vain.

Besides the Trident® Studios, other famous studios that used the Trident® A are the famous EastWest Studio 3, which is equipped with a classic Trident® A Range® Console (40 Channel with Neve Flying Faders Automation), the "original" and one of 11 surviving in the world. Names like Herbie Hancock, Blondie, Donna Summers, Stevie Nicks, The Rolling Stones, Muse and Rihanna, among many others, recorded in this studio with this console.

Also the Cherokee Recording Studios in Hollywood are equipped with Trident® A Range® consoles.

Cherokee Studios credits include names like David Bowie (again), Frank Sinatra (who recorded Sinatra Christmas Album in this studio in 1975), Ringo Starr (who recorded Stop and Smell the Roses there in 1980) and Michael Jackson, who recorded there the album Off the Wall in 1979. Rod Stewart was also one of the first names to record a hit in these studios with the Trident® A console.

It is this "happy moment" in the history of music technical innovations that Arturia is now recreating.

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.
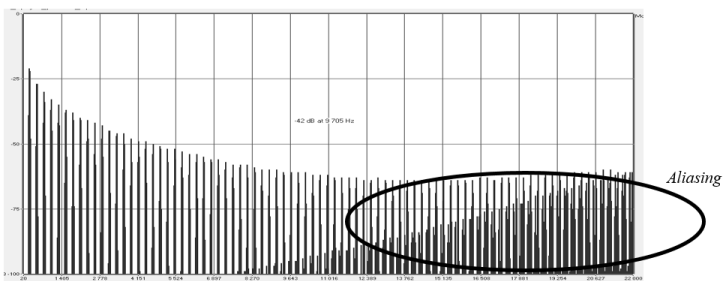
Linear Frequency spectrum of a well known software synthesizer

TAE®'s software algorithms result in spot-on emulation of analogue hardware. This is why Pre TridA offers an unparalleled quality of sound, as do all of Arturia's virtual synthesizers.
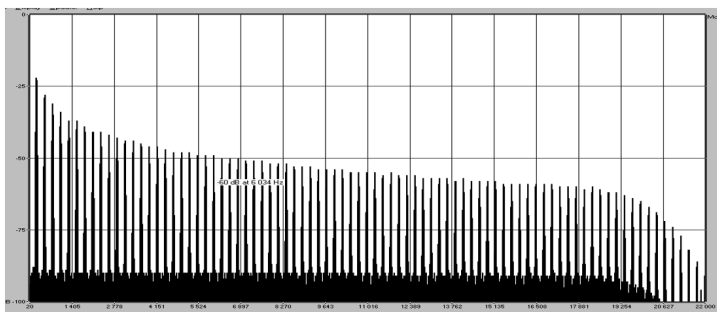
Linear frequency spectrum of an oscillator modeled with TAE®

TAE® combines major advances in the domain of synthesis:
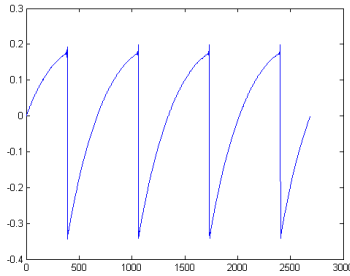
*Temporal representation of the "sawtooth"
waveform of a hardware synthesizer*
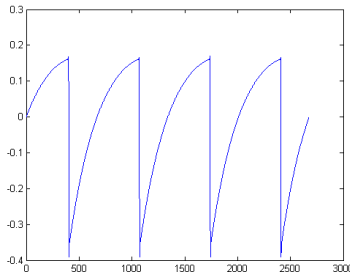
*Temporal representation of a "sawtooth"
waveform reproduced by TAE®*

1.2. Arturia's Pre TridA

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

The goal of Arturia was to model the sound of this vintage preamp and EQ unit, as well as add some new features that are helpful in a modern workflow.

Therefore, we have a 4 band EQ with a High and Low shelf and 2 Midrange peak (bell) bands. The EQ was inductor based and can add some phase-shift at different frequencies which is part of the character. Also, the buttons for the low pass and high pass filters can be pressed simultaneously and that adds the circuits together for increased slope cutoffs, another of the odd characteristics the Trident® A Range® was known for.

The plug-in has Single Channel and Double Channel versions, or configurations. The Double Channel configuration can work in three different modes. The default mode is Stereo, which means the Stereo Link button is On 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 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

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

2.1. Activate the Pre TridA 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!

2.2. Initial Setup

2.2.1. Pre TridA as a plug-in

Pre TridA comes in VST2, VST3, AU and AAX plug-in formats for use in all major DAW software such as Live, Cubase, Logic, Pro Tools and so on. You can load as many instances as you find useful, and you 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.

2.3. QuickStart: A basic patch

The instructions below are an ideal starting point for getting to know the Pre TridA plug-in. We will use your DAW to modulate the Input Level and the EQ amount of one or two bands. It illustrates how you can use Pre TridA to process sound. The example below was tested in Cubase Pro, 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 the saturation of the preamp).
- Load an instance of Pre TridA as an insert on that same track.
- Make the interface of the Pre TridA 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.
- Set the Input Level to -50 and observe what happens on the VU meters; if a dot signal appears on the right, that means the signal is reaching the "analog" power supply level, and clipping occurs. Arturia carefully recreated the original analog saturation effect of the unit, and the induced harmonic distortion can be used as a sound design tool. By raising the Input Level, you added some saturation to your signal.

Pre TridA Stereo Presence

- Now try switching On the Low Pass Filters on top of the EQ section. If the drum track has prominent cymbal sounds, these will probably decrease substantially.
- Now increment the High Shelf and/or the High Mid Bell EQ bands. For better results, you have to previously select the base frequency to one of the higher values (maybe 9k).
- You will probably notice that the cymbals now appear again, but the timbre has changed.
- You can now experiment with the Bass Drum, using the switches for the High Pass Filter (one, two or three - try each combination and keep the one that sounds better to you). Probably, the Bass Drum will now sound much weaker than before.
- Now choose a frequency in the Low Shelf EQ (maybe around 100 or 150Hz) to boost frequencies around that point. The Bass Drum will now appear more prominently, but with a different timbre.

3. USER INTERFACE

The Pre TridA 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 Pre TridA CONTROL PANEL chapter [p.25]

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 Pre TridA 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 .taprx 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 Pre TridA 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.13] 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. 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.

3.3.1. VU Calibration

The Pre TridA has two VU meters (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 response. By default, they are calibrated for -18dBFs but we can change this to -14dBFs, or -8 dBFs.

3.3.2. Bypass

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

3.3.3. 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.

3.4. The Preset browser

The preset browser enables you to search, load and manage preset configurations in Pre TridA. 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.
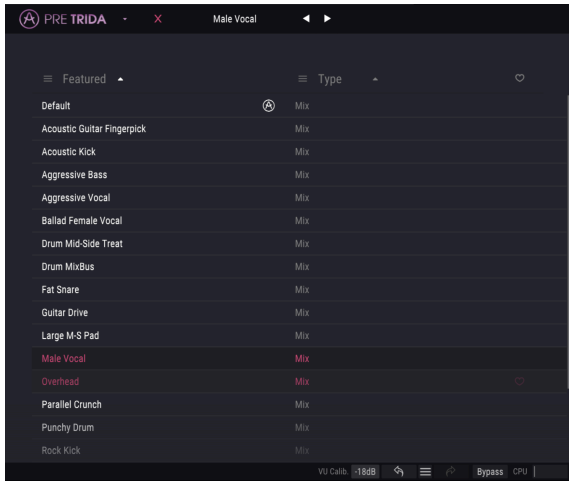
Picture of the Pre TridA Preset browser

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 clicking in the name field, and choose the option "Delete current" that's in the bottom of the list.

4. PRE TRIDA OVERVIEW

As we said already in the Introduction, the Trident® A was particularly noted and praised for its preamps and the unusual and colorful EQ. A unique characteristic was a series of three high pass filters at -18dB per octave and three low pass filters at -12dB per octave, arranged at the ends of the EQ section. The switches to those filters could be pushed in simultaneously, offering distinct cut filter combinations with unusual filter curves.

The rest of the EQ section allows four frequencies at any one time, arranged as two Shelf bands and two Bell (Peak) bands, with switchable but fixed values.

Also, the EQ section was inductor-based and that design made it add some odd peaks and parasitic phasing-induced frequencies which are part of the character.

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. Then they became modules that could be plugged into those mixers. 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.

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. The Pre TridA preamp and EQ plug-in

The Arturia Pre TridA plug-in is both a preamp and an EQ. This means that it works not only as an amplifier section, which induces a natural and pleasant saturation to the sound, but also has an equalizer to further sculpt the spectrum content.

That said, if we are going to use the Pre TridA preamp and EQ plug-in, we must be aware that this is a device with a strong coloration, and that is its main strength. More than an EQ, of which we may have better and more precise units available, this plug-in is justified by the changes it makes in the timbre, which have been considered for almost four decades as very musical. So, although it is still considered a very musical EQ, the main reason to use it will be the desire to achieve the sound of a classic.

4.5.1. Signal Flow

The signal flow of the Pre TridA 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 groups of frequencies. Besides the four EQ bands, this section also features two groups of filters, one to cut the upper high frequencies (Low Pass) and another to cut the lower range of frequencies (High Pass).

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), and another that allows bypassing the EQ section.

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

4.5.2. The EQ section

The EQ section allows four frequency bands at any one time, with switchable but fixed values. So, it's what we call a switchable EQ (it has a fixed preset bandwidth, switchable frequencies, and selectable cut/boost). One of the reasons it sounds so musical is perhaps because of the frequencies chosen, and the way they interact, and also the fact that it combined Shelf and Bell equalization. The frequencies are, for the Low Shelf: 50, 80, 100 or 150 Hz; Low-Mid Bell: 250, 500, 1k or 2k Hz; High-Mid Bell: 3k, 5k, 7k or 9k Hz; and High Shelf: 8k, 10k, 12k or 15k Hz.

The TridA EQ section, with different settings for each channel

For those not familiar with the difference between a Shelf and a Bell (Peak) equalization band, the differences are as follows:

A Shelf band boosts (or attenuates) all frequencies equally, above or below a certain point. The frequency specified for a Shelf equalizer circuit is usually the point where it effectively reaches its "shelf" state. A High Shelf EQ band boosts or cuts high frequencies and a Low Shelf EQ band boosts or cuts low frequencies.

This is the type of circuit that's used in Hi-Fi systems, but it is also highly musical when applied in a recording environment.

On the other hand, a Bell (Peak) EQ band is one that, as its name implies, has a center frequency around which the boost or cut happens. The "bell" name derives from the type of curve drawn by the filter. The frequency range over which it reaches its bell peak and then falls down is known as the bandwidth (or Q).

Because this design reaches a peak and then falls away, it is possible to focus on a particular area of frequencies and make adjustments on that, without affecting those around them. This can be particularly useful when working with instruments such as guitars and snare drums, for example, and the Trident® A Range® became famous (among other things) precisely for the great sound that could be achieved when processing guitars with it.

By incorporating both Shelf and Bell equalization into the design of the Trident® A, the builders made it possible to get the best of both types of design.

Each of the four EQ bands has a rotary switch that selects any one of the four frequencies available for EQ. Alternatively, we can also click over the desired frequency label to automatically select it.

A novelty introduced in the Trident® A Range® consoles, and preserved in this plug-in, is the fact that it uses long faders for the EQ level (boost or cut) adjustment, rather than rotary knobs. The use of faders makes it very easy to see not only when equalization is being applied, but also the amount.

Besides these controls, we have two rows of filter switch controls – Low Pass Filters on top, to cut high frequencies, and High Pass Filters on the bottom, to cut low frequencies. Note that we used the plural. In fact, we have not one but three filters in a row.

Each filter row has three individual push buttons that engage the three high pass and three low pass filters, each one activating filtering for a different frequency.

The EQ section can be switched On and Off by pressing the EQ labeled buttons on the right.

4.5.3. The preamp section

The preamp section has knobs (potentiometers) for the Input Gain, adjustable between -60 dB and -20 dB, positioned right below the VU meters. We also have buttons to invert phase on each channel, and buttons to turn the EQ section On or Off.

By adjusting the input gain, we change the color of the sound by adding harmonic distortion and saturation. Even at minimum input gain with EQ off, there is a very slight coloration as you would find on the original.

In the bottom, we have two other knobs (potentiometers) to control the Output level, (labeled Output Trim), with A Range® between -24dB and +24dB.

The TridA preamp section configured to work in M/S mode. Notice the Stereo Link switch turned Off and the Stereo Mode switch in the M/S position.

When operating in Double Channel configuration (two channels) the plug-in has two other switches. The first one is to activate/deactivate Stereo Link (the label is two intersecting circles). 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: Stereo, Mid/Side or Dual Mono.

Stereo mode is achieved only if the Stereo Link switch 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 button 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.

4.5.4. 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 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 VU meters show the output level of the Mid for the first one (Left), and the output level of the Side for the second one (Right).

The lower right section of the TridA control panel, showing the Output Trim knobs, and above them the two switches that control the behavior of the plug-in in Double Channel: the Stereo Mode and the Stereo Link.

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 Pre TridA as an insert in that track. Open the Pre TridA window;
- Check that you have the Init preset loaded. You should have Pre TridA set for Stereo, with the Stereo Link button On, Input Gain at -6OdB, Output Trim at OdB, and all EQ settings at their default values (which means that, with these settings, the influence of Pre TridA is only by adding some minor harmonic distortion);
- 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 Pre TridA 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 Shelf by raising the respective fader 3dB (this will give a little more "air" to the mix, by reinforcing the high frequencies);
- You may also press the Low Pass Filter 15K button, and the High Pass Filter 25Hz button. This will cut the top highs and 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 Mode button should automatically turn Off. The Pre TridA 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 are only left with sound 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. Pre TridA 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 Pre TridA in Double Channel configuration, and will have a clear idea of what you can do in each of them.

5. PRE TRIDA CONTROL PANEL

The Pre TridA 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 channel works independently).

When in Single Channel configuration, the plug-in has just one column of EQ controls, and the preamp section also has fewer controls. The Single Channel configuration is automatically loaded when we use the plug-in with mono tracks.

5.1. Single Channel (Mono)

5.1.1. Single Channel EQ Section

When working in Single Channel, we have only one column in the EQ section. This is the configuration that matches the channels of the Trident® A Range®, which were mono.

Now, let's take a close look at all the controls. On top we have the Low Pass Filters (to cut the highs). As we said above, we have not one but three filters, each one switchable by pressing the corresponding button. We can press one, two or all three of the switch buttons.

TridA Single Channel EQ upper bands (High Shelf and High Midrange Bell), and the three Low Pass Filter switches on Top

Each button activates filtering for one particular frequency: 9k, 12k and 15k. So, to cut frequencies above 15kHz, we press the button on the right. To cut frequencies above 12kHz, we press the button on the middle, and to cut frequencies above 9k we press the button on the left. By default, all filters are turned Off.

One could think that if we press just the 9k button we would have all frequencies above that one cut, but that's not exactly what happens. The filter doesn't exactly "cut" all frequencies above the cutoff point – it attenuates them, with a certain slope (as we said, the slope for the Low Pass Filters is -12dB per octave). So, the slope of the filters is soft, and is also program dependent. However, we can have a higher slope, by pressing two or all three filter buttons at the same time. So, by pressing all buttons, we obtain a higher cutoff slope. This also causes some frequency peaks that, although strange, were regarded as musical.

Below these buttons, we have the controls for the High Shelf band and the High Midrange Bell band. Shelf and Bell are the configurations of the respective EQ bands.

The controls on the right side below the Low Pass buttons are for the High Shelf band. First, we have the Frequency Switch knob, where we can choose between 8kHz, 10kHz, 12kHz and 15kHz. When changing this, we should take into account the effect of the filter mentioned previously. By default, the selected frequency will 12kHz.

Below that knob, we have a fader to control the boost/cut. The fader can boost or cut the selected frequency range by +/- 15dB approximately.

On the left side below the Low Pass we have the controls for the High Midrange Bell band. Again, we start with the Frequency Switch knob, where we have four frequencies to choose from: 3k, 5k, 7k and 9kHz. Here, the default selected frequency is 5kHz.

Below this knob, we have the fader to control the boost/cut of this band. Just like it happened with the previous band, the fader can boost or cut the selected frequency by +/- 15dB approximately. Be aware that, as this is a Bell band, the behavior will be different than what we have in the previous (Shelf) band. In this case, you will create a bell curve with the peak in the chosen frequency.
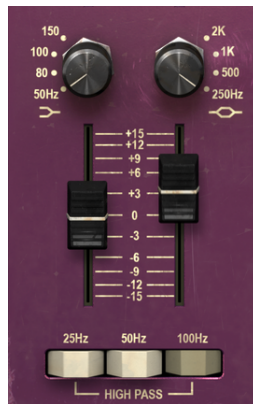
TridA Single Channel EQ lower bands (Low Shelf and Low Midrange Bell), and the three High Pass Filter switches on the bottom

The lower part of the control panel has the Low Midrange Bell on the right, and the Low Shelf on the left. The Low Midrange, as it happened with the previous bands, has four selectable frequencies: 250Hz, 500Hz, 1kHz and 2kHz. It's configured as a Bell (Peak) band, which means that it will boost or cut around the selected frequency. By default, the selected frequency is 1kHz.

Once more, below it we have the boost/cut fader, which, as with the High Midrange Bell, can boost or cut around the selected frequency by +/- 15dB approximately.

Finally, on the left, we have the Low Shelf band EQ. Once again, we have four selectable frequencies, this time in the low range of the spectrum: 50Hz, 80Hz, 100Hz and 150Hz. In this band, the frequency selected by default is 100Hz.

Note that, contrary to what happened between the High Shelf and the High Midrange Bell, which had some superposed frequencies, we don't have that between the Low Shelf and Low Midrange Bell.

Below the Low Shelf knob we have the fader that controls the boost/cut of this band. Like it happened with the High Shelf, this time the boost or cut will be applied to the range of frequencies that start at the chosen point, by +/- 15dB approximately.

In the bottom of this section, we have the High Pass Filters. As with the Low Pass Filters, we have again three switches that activate the filter for three different frequencies. So, from left to right, we have 25Hz, 50Hz and 100Hz. The slope for these filters is -18dB per octave, therefore, a little higher than what we have in the highs.

Nonetheless, what we said about the slope of the Low Pass filters also applies to these, which means that we can increment the global slope by activating two or even all three filter switches at the same time. By default, all filters are turned Off.

> ♪: Try activating one, two or three switches at the same time while listening to a track rich in low frequencies (for example a bass track) to check the effect of the different slope filtering.

5.1.2. Single Channel Preamp Section and Output

The preamp section in the Single Channel configuration is simpler, of course. It is located on the right side of the control panel. On top, we have a single VU meter. Right below it, we have the Input Gain knob. This knob controls the saturation level (drive) added to the sound. Its values go from -60dB to -20dB with the default position in -60dB. When we increase this value, we increase the saturation level.

TridA Single Channel preamp section and Output

However, we will not have an increase in the overall perceived volume. This is due to the fact that the Pre TridA 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.

Below this knob, we have the Phase Invert button, which defaults to Off.

Then we have the EQ button. When Off, the EQ section is turned Off. Default position is, of course, On.

Finally, we have the Output Trim knob. This goes from -24dB to +24dB, and defaults to zero.

5.2. Double Channel

The Double Channel configuration is where we can use the plug-in 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 Pre TridA) 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.22].

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).

Of course, in this mode, Mid and Side channels work independently, so, any changes we make on one channel are NOT followed by the other channel, as it happened in L/R mode. The Stereo Link switch is automatically turned Off. As we said, 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. 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 switch is Off (by default it is On), and the Stereo Mode switch is in the L/R position.

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

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

5.2.1. Double Channel EQ Section

The EQ section is basically the same as it is in Single Channel configuration, except that we have two columns side by side (one for the Left, or Mid, or channel 1 in Dual Mono, and the other for the Right, or Side, or channel 2 in Dual Mono). So, everything is doubled. Note that the Trident® A channels were mono, so, when we are working in Double Channel configuration it's like we were using two channels of the mixer (and we also have some special configurations, as we saw).

TridA Double Channel EQ upper bands (High Shelf and High Midrange Bell), and the three Low Pass Filter switches on Top

Besides that, all the controls we have here (Low Pass Filters, High Shelf, High Midrange Bell, Low Midrange Bell, Low Shelf, and High Pass Filters) were already explained previously in the Single Channel configuration, so please read that description [p.25].
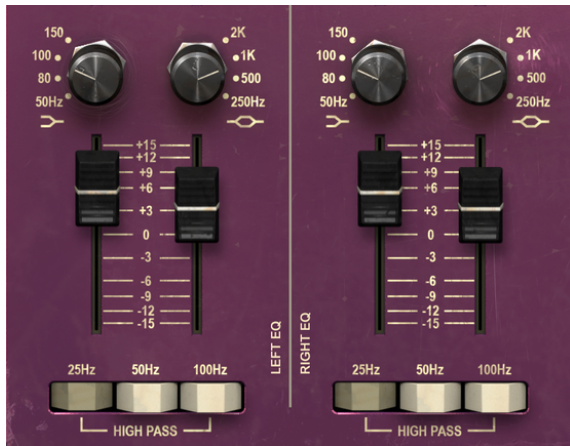
TridA Double Channel EQ lower bands (Low Shelf and Low Midrange Bell), and the three High Pass Filter switches on the bottom

5.2.2. Double Channel Preamp Section and Output

The preamp section in the Double Channel configuration, besides having doubled the controls we saw in the Single Channel configuration, also has some extra buttons to select the special working modes we have available with this configuration.

It is located on the right side of the control panel, as was the case with the Single Channel. On top, we have two VU meters, one for each channel. Remember that we can calibrate the VU meters by clicking on the corresponding window/button in the right side of the lower toolbar section of User Interface.

TridA Double Channel preamp section and the global Phase and EQ switches

Right below the VU meters, we have the Input Gain knobs. Again, we now have two, one for each channel. These knobs control the saturation level (drive) added to the sound. Their values go from -60dB to -20dB with the default position in -60dB. When we increase this value, we increase the saturation level.

Below the Input Gain knobs, we have the Phase Invert buttons, which default to Off. Right below these, we have another pair of buttons, the EQ switches. These allow you to switch the EQ section On and Off. Default position is On, of course.

So far, everything is the same as it was in the Single Channel, except that we have pairs for all of it.

TridA Double Channel Output Trim knobs and the switches to control the Double Channel behavior (Stereo Link and Stereo Mode)

Now, we have a control that's exclusive to the Double Channel configuration. It's the Stereo Link switch. This is a very important one. It changes the behavior of the Double Channel configuration. By default, it is On, which means we are working in Stereo mode. If we have it Off, we have Dual Mono mode (both channels work independently, as if they were two mono channels).

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.22] in the "Pre TridA OVERVIEW" chapter, so please refer to that part if you need 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

Finally, we have the two Output Trim knobs. These go from -24dB to +24dB, and default to zero.

5.2.3. 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 Pre TridA. 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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