A User's Guide to

GARRITAN
CLASSIC PIPE ORGANS
Including the ARIA™ Player

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ORGAN

Welcome to Garritan Classic Pipe Organs

Make a Joyful Noise!

It is quite an experience to hear a large pipe organ in a concert hall or a cathedral. From the softest whisper of a flute rank to the ground-shaking rumble of a 32-foot-long pedal pipe, one cannot help but be moved in awe by the grandeur of a glorious Pipe Organ. The pipe organ is often referred to as "The King of Instruments," and rightly so. Its dynamic range and vast array of tonal colors elevate this instrument above all others and inspire awe and wonder in listeners.

The organ is one of the oldest instruments and has evolved into a musical and technological marvel. Resonating through the centuries, the pipe organ has projected its power and majesty to audiences around the world. The organ harkens important life occasions - weddings, convocations, funerals, worship, and holidays. It lifts the spirit and transports the listener's emotions to a glorious experience.

If you think about it, we all owe a debt of gratitude to the pipe organ. For centuries, the pipe organ stood as a monument of human technological achievement. Its sheer size and complexity inspired and challenged organ makers to continually push the envelope of existing music technology. Our MIDI and digital keyboards, from which we trigger our sampled and modeled sounds, had their origins in the organ. And now with this library, we have come full circle back to the organ.

As a child I would marvel at the sounds of the pipe organ almost every Sunday, and the instrument has captured my imagination ever since. This library grew out of a personal "pipe dream" (pardon the pun) to pack the full power of a massive pipe organ into a library that is affordable and portable. Unlike other musical instruments that can typically be carried by a musician, pipe organs are stationary and cannot move with the musician.

With this library we are also offering not just one pipe organ, but various pipe organs spanning nearly 400 years of organ-making. My goals were to archive the sound of these historical organs for future generations and to bring the splendor of the mighty pipe organ into the hands of any musician.

The majestic sound of the pipe organ is now accessible and can be reproduced on your personal computer or laptop and brought into your studio, rehearsal room, place of worship, or home. The breathtaking power and majesty of the organ, with its various glorious colors and opulent timbres, are yours to enjoy. It is our hope that Garritan Classic Pipe Organs will create greater awareness for the pipe organ and will inspire you to make great music, give you artistic joy, and propel you and your music to lofty heights.

Gary Garritan

Garritan Classic Pipe Organs At a Glance

Thank you for choosing Garritan Classic Pipe Organs. The following summary presents some of the outstanding features of the Garritan Classic Pipe Organs:

- **Historic Pipe Organs Spanning Various Eras** - Garritan Classic Pipe Organs is the only library of its kind to offer a choice of multiple historic pipe organ spanning over four hundred years. Baroque, Classical, Renaissance, Romantic, and two Modern pipe organs are represented in this collection. You can play music from the early music repertoire, Bach, lush romantic music, or post-modern music.

- **75 Stops with Stop Mixing** – There are seventy-five different stops/combinations in this collection. Stops from different organs can be mixed freely, allowing you to build your organ sound the way you want. Control the mix level, panning, and routing of the stops to customize the relative levels and positions of the various ranks, which you cannot do with a real pipe organ. With this approach you can combine, rearrange, and blend stops from different organs in unique ways. Ensemble files provide an easy way to load preset combinations of stops that are ready to use, save your favorite stops, or create your own personal pipe organ.

- **Easy to Play and Control** – Create majestic organ music quickly and easily. Just load your stops and play. Standardized controls allow you to become familiar with the library quickly and master the stops easily. Volume, swell, tremulant, chiff, pipe air noise, and pedal fundamental level are all controllable with standard MIDI controllers. MIDI channel routing and customization allow organ stops to be triggered on discrete, coupled, or combined MIDI channels. Users can also choose and adjust the organ's acoustic environments.

- **Sample Player with Disc Streaming Included** – The entire Pipe Organ collection is integrated into the ARIA Player and works as a software musical instrument. There is no need to purchase a separate sampler. Garritan Classic Pipe Organ also features the Conexant® Endless Wave™ technology for hard disc streaming with quick loading of multiple stops and ranks.

- **Historically Informed** – Garritan Classic Pipe Organs serves as an archive for rare and extraordinary pipe organs of various periods. It also allows you to play in the various temperaments of earlier eras. You can hear not only the type of organ stops that Bach or Mozart may have played, but also, for even greater authenticity, the temperaments (Equal, Mean Tone, Werckmeister II ... and many others) they may have played. This library can also aid in historical organ study and research.

- **Universal Format** – You can play great-sounding organ music as a standalone application, as a plug-in with your sequencer, or directly from the score of major notation programs. Garritan Classic Pipe Organs supports all popular formats (VST, RTAS, and OSX AudioUnits) on both Mac and PC. You can "pull out all the stops" and load multiple organ stops on a single desktop or laptop computer.

- **Release Decay Technology** – The stops in Garritan Classic Pipe Organs use specialized Release Decay Technology that was developed specifically for this library. The release triggers supply the characteristic pressure drop of the actual end of each organ note (not simulated).

- **Suited for Every Musician** – This collection brings the power and majesty of the pipe organ into your studio, place of worship, rehearsal room, or home - at a fraction of the cost - and takes up far less room. Composers can use this collection for inspiration to capture creative ideas and sketch organ arrangements quickly. Hobbyists can use it for adding organ sounds to their tracks. Beginners, organ enthusiasts, and music students can use it to learn, study, and practice organ music at home. The organs in this collection can also be used to supplement Garritan Personal Orchestra and other libraries.

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"It roars louder than the lion of the desert, and it can draw out a thread of sound as fine as the locust spins at hot noon on his still tree-top. It imitates all instruments; it cheats the listener with the sound of singing choirs; it strives for a little purer note than can be strained from human throats, and emulates the host of heaven with its unearthly "voice of angels." Within its breast all the passions of humanity seem to reign in turn. It moans with the dull ache of grief, and cries with the sudden thrill of pain; it sighs, it shouts, it exults, it wails, it pleads, it trembles, it shudders, it threatens, it storms, it rages, it is soothed, it slumbers."

- Oliver Wendell Holmes

What the Classic Pipe Organs Package Includes

This Classic Pipe Organs library includes the following:

- The "Garritan ARIA Player" installer file that contains the ARIA Player software and the ARIA User's Manual in PDF form. *
- The "Garritan Classic Pipe Organs" installer file that contains the Garritan Classic Pipe Organs sound library and Garritan Classic Pipe Organs User's Guide in PDF form.
- If you have not received an Activation Keycard by e-mail, a unique serial number is provided so that you can register the product and receive a keycard. Don't lose this—store it in a safe place! You may have received this serial number through a reseller if you ordered a download version through them.

   * **Note:** Please make sure to get the latest ARIA Player update. Periodic updates are always being made. Log onto your account at **www.garritan.com** to get the very latest.

Before you begin the installation, make sure you have read the End User License Agreement in the preceding pages. By installing the software you are indicating you agree to the terms of the license.

"Stop & Reed" This Manual

The goal of this manual is to help you learn how to use the various instruments contained in Garritan Classic Pipe Organs and use the controls to play the instruments. Although many dislike reading manuals, if you wish to get the most out of this new library it is essential to read this manual. Doing so will help you understand how to use this software library. The operation of many of the essential features is not obvious and we realize many are not music technologists.

The ARIA Player has a separate manual that can be found in the same directory as this file. Please refer to the separate ARIA Player User's Guide to find out how to register, activate, and use ARIA. The ARIA User's Guide is an important part of the documentation.

We'll do our best to make it easy for you to use this manual and to provide information about the various pipe organs, stops, and modes of control. And, of course, by no means can playing pipe organ music or specific techniques be taught from this or any other manual. Individual study and research will enhance your ability to use this library.

You can refer to this manual whenever you wish. It is provided in digital form as an Adobe Acrobat document file (also known as a PDF) that can be viewed on a computer monitor or printed. If you do not have the Adobe Acrobat Reader, it is available free from **www.adobe.com.** A digital manual is eco-friendly and can be easily updated. If you need to have a paper copy, you can print this document or order one at **www.lulu.com**. A printed copy can be a handy reference.

The easiest way to obtain the information you seek is to use the Bookmarks pane along the left side of this PDF document. By opening the Bookmarks pane, you can go to the various topics from the section names. With a PDF document, you can also zoom in to make the page larger to see more details or zoom out to see multiple pages at once.

Further Documentation and Resources

For the latest information, including additional documentation and updates, visit our support pages at **www.garritan.com/support.** There you can find updated information provided after the manual was written, corrections or additions to this manual, FAQ pages with answers to common questions, suggestions from the users of Garritan software, and news about upcoming Garritan releases. Please also refer to the separate ARIA Player manual that contains important information about using the ARIA Player. You can also visit the Garritan Forums for up-to-date information at: **www.garritan. com/forum.html**. Please send any reports of errors in this manual or suggestions for improvement to **garritan@makemusic.com**.

Specifications & Computer System Requirements

The following table lists the computer and hardware requirements for using Garritan Classic Pipe Organs. You can use Garritan Classic Pipe Organs on most modern personal computers that meet the specifications listed below. These specifications provide the minimum standards. For optimal functioning, we recommend you have a powerful enough computer with a fast CPU (Core 2 Duo or more recommended), a fast hard drive, and a sufficient amount of RAM. Please also observe the system requirements of your host application, notation program, or sequencing program, if applicable. See the Garritan forum or website if you are looking for recommendations or more information.

Computer System Requirements		
Computer	*Operating System*	*Hardware*
Windows PC	Microsoft Windows 7 Microsoft Windows XP (SP2 or SP3 recommended) Microsoft Windows Vista	• Core 2 Duo CPU or better recommended • 1 GB Minimum, 2 GB RAM recommended to play complex stop combinations. There is a direct correlation between the number of stops that can be loaded and the amount of available RAM. • 3 GB of free hard drive space • Hard drive speed of at least 7200 RPM preferred • Internet connection for download version, DVD-ROM drive required for boxed version installation • Monitor with 1,024x768 resolution or better • A sound card compatible with ASIO 2 • A MIDI interface may be required if you are using a MIDI keyboard. Many keyboards now use USB. • A volume pedal and ability to assign controllers within your keyboard, music program or sequencer. • High-quality speakers and amplifier, or high-quality headphones. A subwoofer is recommended for the pedal stops. • Internet connection for downloads, updates, and online registration.
Mac	Mac OS X 10.5 minimum	• Mac Intel CPU or better, Mac OS X10.5 minimum • 2 GB RAM recommended to play complex stop combinations. There is a direct correlation between the number of stops that can be loaded and the amount of available RAM. • 3 GB of free hard drive space • Hard drive speed of at least 7200 RPM preferred • Internet connection for download version, DVD-ROM drive required for boxed version installation • Monitor with 1,024x768 resolution or better • A sound card compatible with Core Audio • A MIDI interface may be required if you are using a MIDI keyboard. Many keyboards now use USB. • A volume pedal and ability to assign controllers within your keyboard, music program, or sequencer. • High-quality speakers and amplifier, or high-quality headphones. A subwoofer is recommended for the pedal stops. • Internet connection for downloads, updates, and online registration.
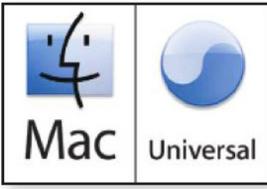
If you are using Garritan Classic Pipe Organs within a host music program (such as a notation program, DAW, and/or sequencing program), there may be additional resource requirements. Please also observe the system requirements of your host application, if applicable. The demands of various other processing software (including the sequencer, audio and effects processors, other plug-ins, and so on) can affect functionality.

Updating to Latest Version

Be sure to check the Garritan website for any possible updates that have occurred since the time your software was manufactured. Software is frequently updated and a more recent version may be available. After the library has been installed, it needs to be activated. You are given a 30-day grace period for each library before activation is required, but it is recommended that you activate as soon as possible.

Goals and Future Plans

The Garritan Classic Pipe Organ was developed to introduce musicians to the world of pipe organs and to make pipe organs accessible to anyone, just as Personal Orchestra made a symphony orchestra available to everyone.

This library is a first step and there is more that could be done. If this first release is well received and there is a demand for more, we will add more organs, stops, and combinations in the future. Future versions may also include designing a dedicated graphical user interface with virtual stops as well as convolution and other features. If you have suggestions for future features or improvements, please let us know.

Regarding Sound Cards, Audio & MIDI Interfaces

The quality of the audio interface will have a significant effect on the quality of the sound you will hear from Garritan Classic Pipe Organs. It will also have a substantial effect on performance (both latency and polyphony). Therefore, a good sound card is one of the most important components in optimizing the sound and performance of Garritan Classic Pipe Organs.

In theory, any audio or sound interface that the manufacturer supports for your operating system and computer, and that has good drivers, should work. However, you are unlikely to get the best sonic results from a sound card designed for computer games or system sounds. Most computers come with a consumer-grade sound card, and we recommend that you get a good quality sound interface beyond the one built into your computer. Older SoundBlaster sound cards (that do not support multiple sample rates) and gamer-oriented or home system sound cards may be problematic. It is not possible for us to test all built-in or third-party sound cards, and some interfaces do have problems on some platforms, so please see the specifications page on the Garritan website if you are considering buying a new sound card to run Garritan Classic Pipe Organs.

A low-latency audio interface with ASIO 2.0 or WDM/WaveRT drivers (Windows) or Core Audio drivers (Mac) is required for Classic Pipe Organs to work as a standalone program. These drivers are normally installed with the audio interface, or the most recent versions can be acquired from the manufacturer's website. Contact the manufacturer of your interface for more information.

Any MIDI interface the manufacturer supports for your system should also work with Garritan Classic Pipe Organs. There are a few dedicated organ MIDI controller setups on the market that may be worthwhile exploring.

Please note:

When Garritan Classic Pipe Organs is running as a plug-in, it uses the audio driver selected by the host's setup. If the host (typically your sequencer or notation program) is set up properly and works well, then the ARIA Player plug-in should pass through the same audio and MIDI setup. For this information, please refer to your sequencer's, notation program's, or host's manual.

Regarding Speakers, Amplification, and Headphones

The quality of the audio amplifier and speakers is extremely important; there is little point in expending a great deal on a high-end computer system and audio interface but using inferior personal computer speakers.

Good quality speakers are important for faithfully reproducing the sound of a pipe organ. The pipe organ has the widest dynamic range of any musical instrument. Some of the low notes of the pedal board may be below the range of consumer-grade speakers so a good subwoofer is recommended.

Regarding 64-bit Computing

Garritan Classic Pipe Organs with the ARIA Player is 64-bit compatible and takes full advantage of the new 64-bit operating systems, processors, and hardware that are now available. The Garritan ARIA Player is also fully 32-bit compatible. At the time of this writing, 64-bit computing is gaining popularity, but 64-bit hosts, audio, and MIDI drivers have not fully penetrated the entire market. To be true 64-bit the entire audio path must be 64-bit, including sampler, host, operating system, audio, and MIDI hardware. As hosts, operating systems, and hardware become 64-bit enabled, Garritan Classic Pipe Organs will work with those 64-bit platforms. Please also consult the Garritan website for further information and updated recommendations.

INSTALLATION
and ACTIVATION

Quick Reference Installation

Below is just a quick reference for installing Garritan Classic Pipe Organs. For a complete reference and guide to installing the ARIA Player, please refer to the separate ARIA User's Guide included with Garritan Classic Pipe Organs.

Installing Garritan Classic Pipe Organs is a three-part process:

> *3 Steps for Installing Garritan Classic Pipe Organs:*
> * **Step 1. ARIA Installation**
> * **Step 2. Sound Library Installation**
> * **Step 3. Activation**

Installing the ARIA Player and the sound library are now two separate processes. ARIA first is installed, then the Classic Pipe Organs sound library.

PC Setup: To begin, extract the contents of the zip file you downloaded to a folder of your choosing, then click on the .exe application icon and follow the on-screen prompts. If you have the DVD version just double-click the .exe file.

Mac Setup: To begin, open up the mpkg installer from the installation zip file and follow the on-screen prompts. If you have the DVD version, double-click on the installer icon.

You will be given the option to install several components:

* **Standalone** will load the Garritan ARIA Player as its own software program. You can play instruments, record basic MIDI, and render audio files.
* **VST Plug-in** will let you load Garritan ARIA Player as a VST plug-in to use with sequencers such as Cubase, Sonar, and Reaper, as well as notation programs such as Finale.
* **AU Plug-in** (Mac only) will let you load Garritan ARIA Player as an Audio Units plug-in within hosts such as Logic and Digital Performer.
* **RTAS Plug-in** will let you use Garritan ARIA Player in Pro Tools M-Powered, LE, and HD.

Once you have selected your plug-in installation options, you can specify which parts of the library you want installed. We recommend you install the entire library.

At this point, you can sit back and let the installer do the work. If you have the download version, you can delete the extraction folder once Garritan Classic Pipe Organs is successfully installed. Before doing so, however, we suggest you make a backup copy of the installation zip file and put it in a safe place. If anything happens to your computer, you can reinstall Garritan Classic Pipe Organs from the discs or the backup file.

IMPORTANT!

Please do not cancel setup after installation begins, otherwise a partial, broken installation may result.

Quick Reference Activation

Garritan Classic Pipe Organs features an innovative Drag and Drop authorization system. Upon launching Classic Pipe Organs for the first time you will be asked to activate it. Clicking yes will launch your browser and bring you to the www.garritan.com website. Here are the steps to activate Garritan Classic Pipe Organs.

- Create an account on www.garritan.com if you have not already done so, and log in to your account. (**Note:** If you have purchased Garritan Classic Pipe Organs directly through Garritan you already have an account and received a keycard.)
- A unique serial number is provided by your reseller (if you did not buy direct), so that you can register the product and retrieve your activation keycard PNG image. Follow the on-screen instructions to enter your serial number and proceed to download your keycard.
- Save the keycard PNG to your desktop and launch the ARIA Player in standalone mode.
- With ARIA Player's screen open, literally click and drag the keycard PNG icon from the desktop onto the ARIA Player screen. You will see the successful authorization!

Drag and Drop Keycard PNG icon from the Desktop onto the Garritan Classic Pipe Organs ARIA Player
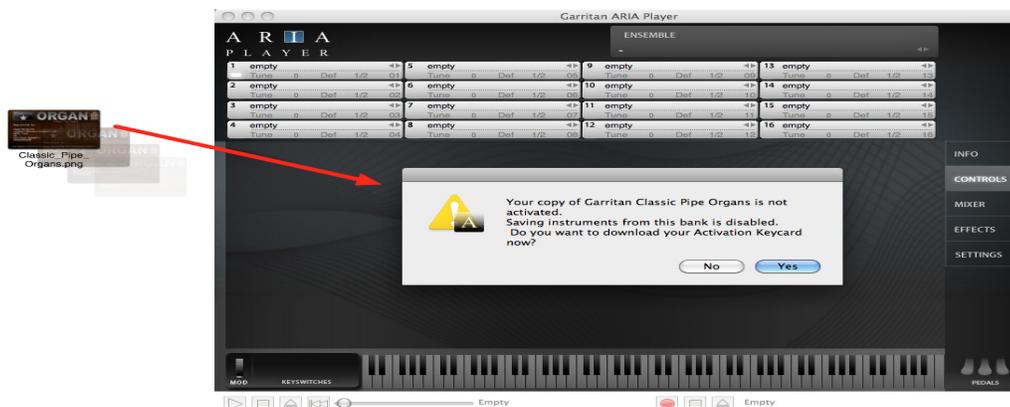
Alternative: Drag and Drop from your Browser

Another method would be to drag and drop the personalized keycard PNG image from your browser (when logged into your account) onto the ARIA Player. Dragging and dropping your keycard may not work with all browsers and you should first try the previous method.

Another Alternative: Import the Keycard

You can also use the import option of an instrument selection slot and select the keycard PNG image. You will see the successful authorization after import.

Note: You can transfer your keycard PNG image file to a flash drive if your music computer does not have internet access. It will also be e-mailed to you.

IMPORTANT!

The keycard has your personal information. Don't lose this—we recommend saving your personalized keycard to a safe place for future installations.

For more information about installation and activation, please refer to the ARIA User's Manual.

ARIA PLAYER

BASICS

Getting Around the ARIA Player Interface

1. The **active instrument** light shows you which instrument's stop parameters you are changing. Click this area on another instrument stop to change the focus of the controls.

2. The **instrument display** features a drop-down menu for loading that appears when the field is clicked.

3. **MIDI channel assignment** is quick and clear.

4. **Tuning controls** help you to control fine tuning.

5. **Stereo output assignment** allows you to route stops to as many as 16 unique stereo output channels when ARIA runs as a plug-in.

6. **Per-instrument sends** let you apply the perfect amount of reverb to each instrument or stop.

7. **Mute and Solo** buttons allow you to silence or solo the individual channels so you hear only certain parts in a mix.

8. **A keyboard** shows the range of notes that can be played on that stop (indicated by the white notes), keyswitches in pink, and the selected keyswitch in beige.

9. **Keyswitch window** typically displays the active keyswitch. There are no keyswitches present in Garritan Classic Pipe Organs

10. **Graphical faders** give you a quick idea of a stop's presence in the mix. The faders respond to CC#7 commands.

11. **Window Selection** allows you to select between the Info, Controls, Mixer, Effects, and the Settings windows.

12. **Ensemble Presets** allow you to quickly load stop groups and combinations. Please refer to the section on Ensemble Presets later in this manual for a list of presets.

For more information about the features of the ARIA Player, please refer to the separate ARIA User's Manual.

Using the ARIA Player

Once installed and activated, you can load Garritan Classic Pipe Organs into the ARIA Player. There are several ways to use Garritan Classic Pipe Organs with the ARIA Player: you can play it "live" as a standalone application, as a plug-in within a sequencer, or with a supported notation program.

Using ARIA as a Standalone

If you have installed the standalone version of the ARIA Player, you can find it in your Applications folder or Program menu. ARIA will attempt to determine the best audio playback configuration to use on your machine. You can access ARIA's playback system from the Tools > Preferences menu.

To use a MIDI keyboard with Garritan Classic Pipe Organs, make sure to have the device drivers installed and the unit turned on before starting the ARIA Player Standalone. Your MIDI control device should appear in the MIDI Input Devices menu of the Preferences dialog.

The Ensemble Manager allows you to use preconfigured or user-created templates, such as a small baroque organ or a large concert pipe organ. Using existing templates or creating your own can save a lot of setup time. You can also load instruments yourself and use the File>Save command. The File>Save As Default command will automatically load all settings and instruments that are currently present each time you start the program.

The Standalone program also features a MIDI and audio recording system located on the bottom of the screen. With these controls you can load existing MIDI files for the ARIA Player to play back as well as record yourself playing live.

Using ARIA as a VST, AU, or RTAS Plug-in

Depending on your system and the options you selected at installation, you may have one or more of these plug-in formats available.

Configuring VST

At installation you will be prompted for the vstplugins folder directory. The installer will attempt to locate an existing vstplugins folder, or you can specify your own. You can always

find the VST in the Garritan/ARIA Player/VST directory. The VST plug-in ends in a .dll extension. In your host's VST plug-in configuration menu, ensure that the specified installation directory is included in the list of VST directories. You may need to re-scan the folders to have ARIA Player VST appear in the list of software instruments.

From there, just load the ARIA Player and go! You will find the VST listed as ARIA Player VST.dll, which contains a single stereo output, and ARIA Player Multi VST.dll, which allows you to assign up to 16 stereo outputs.

Important Notes for PC Users:

To use the ARIA Player with more than one VST application, you need to manually copy the ARIA Player VST_x86.dll, installed into the chosen folder during installation of the library, to the appropriate VST-compatible host application's VST folder. Please refer to your particular application's user's guide and the Garritan support site for more information.

Regarding 64-bit hosts: Some hosts have one common VST folder for both x64 and 32-bit plug-ins; please only use the version of the plug-in that is native to your host, e.g. for the x64-bit version of Sonar, use the ARIA Player VST_x64.dll. Mac OSX has standard folders for both VST and Audio Units plug-ins and does not require this extra step.

Configuring AU (Audio Units—Mac Only)

The ARIA Player will install into the default Mac OSX AU plug-ins folder, after which it will be readily available to your applications.

Configuring RTAS (Pro Tools systems only)

The ARIA Player will automatically install the RTAS plug-in to its proper location to work with Pro Tools.

For more information about using the ARIA Player, please refer to the ARIA User's Manual.

ABOUT PIPE ORGANS

A Brief Overview of the Parts of the Pipe Organ

Pipe organs have long been considered one of the most impressive and complex musical instruments. Each organ is a unique instrument and no two organs sound exactly alike. They usually are individually handcrafted instruments made by expert organ craftsmen and, unlike most instruments, are not standardized and mass produced. Pipe organs are custom-ordered and are designed uniquely for each customer's needs and for a unique space.

There seems to be an aura of mystery in the making of these instruments. Like the celebrated violinmakers, organ makers have guarded their building secrets and entrusted them only to apprentices and successors.

An organ-builder is both architect and acoustician and must build the organ with an eye and ear focused on the space. There could be hundreds or thousands of pipes that must integrate into the space, both visually and acoustically.

The pipe organ is a keyboard musical instrument that produces sound by directing air through various resonant pipes selected by notes on a keyboard (or manual). The organ has a continuous steady sound as long as the keys are pressed, unlike a piano, where the sound starts to decay right after you strike the key.

A pipe organ consists of various parts: pipes that produce the sounds, a wind system to provide a supply of air, stop controls, and manuals (keyboards). An action connects the pipes and the manual(s). The "stops" allow the organist to control which ranks of pipes will sound. The organist operates the manuals and the stops from the console. The popular phrase "pull out all the stops" has its origin with the pipe organ. To pull out all the stops means to use all the pipes on the organ. When you play combinations of a vast array of pipes, with two hands playing on multiple manuals and two feet playing the pedalboard, the resulting sound is magnificent.

Pipes

Pipe organs are known for their pipes, of course. Each pipe is usually hand-made, with its own design, size, and thickness. The number of pipes can vary greatly and can produce a vast variety of tonal colors. Small pipe organs may have only one or two dozen pipes with a single keyboard, but a large pipe organ can have over ten thousand pipes with six or seven keyboards.

Some pipes are small and some are large, and the length of each pipe determines its pitch. These different pipe sizes make for enormous dynamic range – from barely-audible tiny pipes to gargantuan 32-foot pipes blown at high pressure, producing an enormous sound capable of shaking an audience to its very bones.

Each pipe corresponds to one pitch. This differs from orchestral instruments that can change pitches through the use of keys or valves that alter the airflow through the instrument. Since each pipe corresponds to each note on a keyboard, many pipes are necessary to play the entire range of the keyboard.

A pipe's timbre is the result of many factors, including the material it is made of, its thickness, its shape, its scaling and diameter, whether it is a flue pipe or a reed pipe, whether it is stopped or open, and other factors. Some pipes are made of wood and some of metal (usually a combination of tin and lead). Each pipe plays at only one pitch, determined by its length. The larger the pipe is, the lower the pitch. A pipe can be open or stopped. Open pipes have an opening at the top and stopped pipes are closed at the top. The pipe's volume depends on the pressure of the air flowing to the pipe.

Many pipes are named with their size (16', 8', 4', etc.) referring to length of the pipe. In the case of open flue pipes, this refers to the length of the resonant part of the largest pipe. An 8' rank means eight feet long. A 4' pipe would sound an octave above an 8' pipe, a 2' pipe an octave above the 4', and so on.
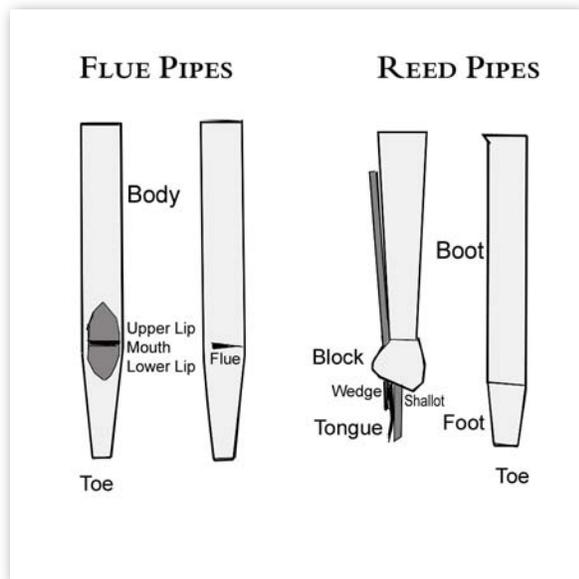
Organ pipes are often divided into flue pipes and reed pipes. Flue pipes are most common and produce sound by moving air through a fipple, like a whistle or recorder. A flue pipe has a toe, mouth, upper lip, lower lip, and body. As air flows across the mouth of a pipe, it hits the lip, which causes the column of air inside the pipe to vibrate and produce sound. Common flue pipe names are Flutes, Principals, and Strings. Although they are not meant to reproduce the sounds of orchestral strings or flutes, they do suggest them.

"Diapasons" are flue pipes and represent the basic organ stop. You can mix different lengths of diapasons, for example 8' and 4', to give a fuller, characteristic pipe organ sound. Several diapasons played together are known as a "diapason chorus" – a very common sound of the pipe organ.

Flue pipes can be open or stopped. A stopped flue is covered with a cap that drops its sound an octave. Thus, a stopped flue playing in the 8' pitch range is actually only 4' in length. Since there are fewer overtones, the sound is usually softer than an open flue pipe.

Reed pipes produce sound by moving air across a reed, much like a clarinet. The reed pipe has a reed (or metal tongue) nestled against a shallot with a small wedge connected to a block. This apparatus fits inside a boot of the reed pipe. When air enters the bottom of the pipe, it causes the reed to vibrate.

Common reed names are Posaune, Bombard, Clarinet, English Horn, Bassoon, Fagott, and Oboe. Ensemble reeds are reed pipes designed to be combined with diapason flue pipes. Solo reeds are designed to be played on their own in a solo context.

Organs rarely have only one set of pipes and pipes are grouped in sets based on the types of pipes. Pipes are arranged by "ranks." A rank is a complete set of pipes, one pipe for each note on the keyboard or pedalboard, with the same timbre or sound characteristic. One rank often equals one stop.

"Divisions" are ranks of pipes organized into groups. Each division is usually played from its own designated manual or pedalboard.

Action

An action is a system of moving parts associated with the pipe organ. The key action admits air to a pipe. The stop action will control which ranks are engaged. See the section below for a more detailed description of the stops.

The key action connecting the keys and the wind chests on some organs is known as a tracker action. When an organist presses a key on the manual, the corresponding tracker allows wind to enter into the pipe.

With a stop action, each stop control is physically connected to a rank of pipes. When the organist engages a stop control, this allows air to flow into the selected rank. This type of control is typically a stop knob. An organist pulls the stop towards himself or herself to select the rank. You may have heard the expression "pulling out all the stops," which is just what an organist can do. The stop action can be activated by mechanical, pneumatic, or electric means.

Stops

Stops allow the organist to control which ranks or pipes are selected at any given time. For a particular pipe to produce sound, the stop controlling the pipe's rank must be engaged and the note on the keyboard corresponding to its pitch must be pressed.

Stop controls are usually drawknobs that engage the stops when pulled out from the console. Pulling the stop knob activates louvered shutters located underneath the pipes to either allow or block (stop) air from entering the desired pipes.

A stop often controls one particular rank of pipes, although some organs allow the control of a mixture of ranks. Stop controls give the organist many possible rank combinations and timbre choices, all from the same organ. The selection of stops is called the registration.

Stops are identified by a label on the stop knob that indicates the stop's length and timbre name. Stop names are not standardized and two otherwise identical stops on different organs could have different names. The names often depend on the country or region in which the organ was built and the preferences of the organ maker.

Stop size identifications are usually standardized. An 8' (pronounced eight-foot) stop identification refers to the length of the lowest-sounding pipe in that rank, which is eight feet. A stop that sounds an octave higher is at 4' pitch, and an octave lower is at 16' pitch. A stop identified as 2' pitch is two octaves higher and a 32' pitch sounds two octaves lower.
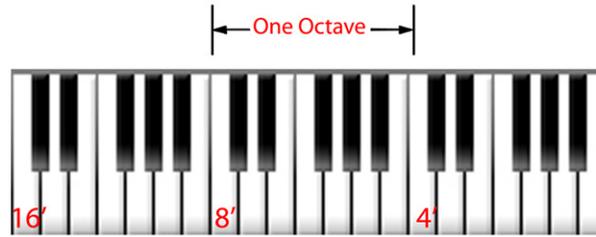
Some stops do not produce a unison or an octave, but produce an intermediate pitch such as a 2-1/3 (which plays a fifth higher). These stops are called mutation stops (or "aliquots"). They are not designed to be used on their own, but as colors to combine with unison and octave stops.

Toe stops, situated above the pedalboard, are stops that the organist engages with his or her feet to change stops while playing a piece.

Combination Stops - Mixtures, Couplers, & Pistons

Most organs have a way to store and recall a combination of stops. This is particularly helpful when you have a sizable repertoire requiring many different settings.

Large organs have a large number of stops, and using individual stops one at a time is time-consuming. There are varying means of selecting stops. One common method is manually selecting combinations of stops in order to produce a required sound. A "mixture" has more than one rank of pipes sounding when you strike a note. A mixture may include unison and non-unison stops to give an edge to the sound and provide rich and complex harmonic content. Some mixtures and combinations are capable of producing an undulating "beating" sound.

The number of ranks in a mixture is identified by a Roman numeral on the stop knob. For example, a stop labelled "Mixture IV" would be a mixture of four pipes for every note. Therefore, one stop would allow four different pipes to sound for every key pressed.

Many organs incorporate "couplers" that allow the stops of one division to be played from the manual of another division. They even resemble stops, but instead of pulling one stop, they pull several stops together. With coupling, the organist can access many stops of the organ and combine divisions to create various tonal effects. Some organs have a device to add an octave above (super-octave) or an octave below (sub-octave) what the fingers are playing. These couplers allow for greater timbral color and variety.

Some organs have a combination action that allows organ stops to be combined in numerous arrangements. Buttons called "pistons" are pressed by the player to switch instantaneously from one combination of stops, or registration, to another. Pistons are usually located between manuals (thumb pistons) or above the pedalboard (toe pistons).

Console

The pipe organ is played from the console, a unit that has everything that the organist needs to control the organ - the keyboard(s) or manual(s), stops, pistons, couplers, and other controls.

Some consoles are non-movable and built to conform to a case or particular space, but many are detached and movable. Some large churches may have multiple consoles that allow the organ to be performed from different locations.

Manuals

While the piano has only one keyboard, the organ can have many. Two to five manuals are common. Multiple keyboards allow the player to switch quickly to different sounds. The collection of ranks controlled by a particular manual is known as a division.

The names for a division vary based on geographic location. There is typically a common order in the keyboard divisions. For example, in English organs, the main manual (usually middle keyboard) is known as the Great, the upper manual is known as the Swell, and the Choir is situated below the Great. If there is a fourth manual, it is placed above the Swell.

Some common names are:

- Great, Swell, Choir, Solo, Orchestral, Echo, Antiphonal (America/UK)
- Hauptwerk, Schwellwerk, Rückpositiv, Oberwerk, Brustwerk (Germany)
- Grand Choeur, Grand Orgue, Récit, Positif, Bombarde (France)

A manual's range can vary depending on when and where the organ was built. Early organs may have a limited range of a few octaves, whereas modern organs may have manuals that rival the range of a piano. Most modern manuals usually have 61 notes, two and a half octaves less than a piano. A a pipe organ is often identified with a numerical indicator depicting the number of keyboards and ranks it possesses. An organ described as a 3/50 instrument, for example, has 3 keyboards controlling 50 ranks of pipes.

Pedalboard

It is fascinating to watch an organist's feet dance over the pedalboard. Most pipe organs also include a pedal keyboard (pedalboard) played by the organist's feet, triggering its own pipes that usually produce low-pitched bass sounds. The range of the pedalboard also depends on time period and location of the building, but most modern pedalboards usually have a range of two and a half octaves, or 32 notes.

Case

The various components of a pipe organ - pipes, action, and wind system - are housed in a case. The case is usually designed to integrate with the building's architecture and also serves to aid in blending and projecting the sound of the pipes. The facade, often ornate and decorated, is the visible portion of the case that prominently displays the pipes. Some modern organs are housed in one or more rooms called organ chambers.

Wind system

The wind system produces, stores, and delivers air or wind to the pipes. A motor blows air into a reservoir. From the reservoir, the air moves into the wind chest, a box with rows of holes on the top to which the pipes connect (one pipe to a hole). When a key is pressed on a manual, a valve is pulled down inside the wind chest, allowing air to flow freely to the note's corresponding pipes. A pipe

organ's continuous supply of air allows it to sustain notes indefinitely for as long as the corresponding keys in the manual are depressed.

The volume of the sound produced by a pipe depends on the pressure of the air flowing to the pipe. Prior to electricity, a person was needed just to operate the bellows. In the nineteenth century, bellows began to be operated by steam or gasoline engines and then electric motors. The manually-operated bellows organs produced very low pressures, whereas organs with motor-powered blowers provide much higher pressures and an endless supply of wind. Most organs today, both new and restored historic organs, use electric blowers and regulators. A regulator maintains a constant air pressure in a windchest until the action directs air to flow into the pipes.

Pedals

The volume and dynamics of the pipe organ have no relationship to how hard the keys on the manual are pressed. The volume will be the same whether the organist depresses the keys gently or aggressively. The pipe organ's tone will also remain constant in volume, pitch, and timbre until the the organist lifts his or her finger from the key. It is the pedals that give the organist dynamic control over the volume of the instrument. On medium and large pipe organs, there are often two pedals - the expression pedal and the crescendo pedal- one controlling air volume and the other bringing all stops into play.

The expression pedal is a pedal that gives the organist dynamic control over the amount of wind, and thus the volume, of the instrument. This pedal opens and closes shutters to regulate volume of air into pipes. When more air enters, it allows more sound to be heard. Some of the larger pipe organs have multiple expression pedals that allow the volumes of various divisions to be individually controlled. The expression pedal is sometimes referred to as the swell pedal.

The crescendo pedal progressively adds or subtracts stops to increase volume and timbre in a step-wise fashion. Engaging the crescendo pedal incrementally adds all the stops of the organ, beginning with the quieter stops and ending with the most powerful. This creates the effect of a crescendo (or diminuendo when the stops are disengaged). The crescendo pedal is usually located to the right of any expression pedal.

Classifications of Stops

There are numerous different stop names. Stop names are usually indicative of the tone of the pipes they control. Some are present in many pipe organs, and others are indicative of a certain period or place or seldom encountered.

You may notice that some of the organ stop names resemble orchestral instruments: Flutes, Strings, Clarinet, Trumpet, etc. These musical instrument names are meant to suggest orchestral sounds rather than imitate them. Below are some of the most common organ stops.

Flutes:

Flute stops attempt to imitate or suggest the sound of the flute family of woodwind instruments in an orchestra. Flutes usually have a soft, clear sound with some overtones, similar to their orchestral counterpart.

Flutes have the widest diameter pipes in proportion to their length. Flute pipes can be made of wood or metal, and can be open, stopped, or tapered. Stopped flutes possess a hollow characteristic. Some common examples of flutes are:

- *Flute (or Flöte)*
- *Traverse Flute (or Transverse Flute)*
- *Piccolo*
- *Stopped Diapason (or Stopped Flute)*
- *Bourdon*
- *Gedeckt (or Gedackt)*
- *Cor de Nuit (or Night Horn)*
- *Flautino*
- *Rohrflöte and Spitzflöte*
- *Octavin*
- *Nazard*
- *Tierce*
- *Flûte Harmonique (or Harmonic Flute)*
- *Sub Bass (or Subbass or Sousbasse)*

Principals:

The Principal sound is a hallmark sound unique to the pipe organ. It is a sound that one recognizes in the context of traditional church music.

Principals are generally metal flue pipes. They are more narrowly scaled than flute stops and produce a brighter sound. Some common names for principals are Principal, Montre, Prestant, and Octave. They do not generally adopt the names of orchestral instruments as they do not attempt to mimic any particular orchestral instrument. Some common examples are:

- *Principal (also Diapason, Open Diapason, Prestant, or Montre)*
- *Octave*
- *Super Octave (also Doublette or Fifteenth)*
- *Mixture (also Fourniture, Cymbale, or Sharp)*

Strings:

String stops represent some of the narrowest pipes and produce a thinner sound with a harder attack. Although they are designed to suggest their orchestral counterparts, in no way do they remotely resemble actual stringed instrument sounds. The string pipes do, however, produce a pleasing and warm sound. In the Romantic Period, it was customary to include historic stringed instrument names such as Viole de Gambe, Violone, and Quintadon. The celeste stop is included as a string stop and tuned slightly sharper than the other pipes. Some common examples of Strings are:

- *String*
- *Viola*
- *Gamba (or Viola da Gamba)*
- *Céleste and Voix Céleste (slightly detuned)*
- *Violina*
- *Dulciana (very narrow pipe)*
- *Quintaton (stopped)*
- *Cello or Violoncelle*

Reeds:

Reed pipes possess a strong, distinctive sound. Although designed to imitate the sound of brass and reed instruments, they generally lack the reedy or brassy sound of their orchestral counterparts. Some of the softer organ reeds do vaguely resemble orchestral instruments. Some common examples of Reeds are:

- *Trumpet (or trompette en chamade or fanfare trumpet)*
- *Trombone*
- *Tuba*
- *Oboe (or Hautbois)*
- *Fagotto (or Bassoon)*
- *Crumhorn (or Krummhorn)*
- *Vox Humana (or Voix Humaine, Musette, Regale)*
- *Bombarde*
- *Ophicleide*
- *Posaune*
- *Clarinet (or Chalumeau, or Schalmei)*

Hybrid Stops:

Hybrid stops contain one rank of pipes that allows the organist to create new sound colors by combining the tones of two other classifications of stops. Common examples include Principal + Flute, Principal + String, or String + Flute.

FLUE PIPES

Principal (Open Diapason)

Flute (or Flöte)

Viole

Spitzflöte(Spire Flute)

Koppelflöte (Koppel Flute)

Quintaton

Bourdon (Stopped Diapason)

Rohrflöte

Spitzbourdon

Flute (Open Wood)

Flute (Stopped Wood)

Trumpet(Trompete)

REED PIPES

Clarinet (Schalmei)

Oboe (Hautbois)

Cor Anglais (English Horn)

Crumhorn (Krummhorn)

Dulcian (Dulzian)

Musette

Regale (Regal)

Vox Humana

Bärpfeife

A Brief History of the Pipe Organ

The pipe organ is one of the oldest keyboard instruments and its sound has been perfected through the centuries. Long before digital keyboards, samplers, and synthesizers, pipe organs were the most technologically innovative and versatile instruments. For over half a millennium, they have stood at the height of mankind's musical achievements.

The pipe organ stood out in a number of ways. Good pipe organs can have as much dynamic range and tonal color as a symphony orchestra, but an orchestra could require up to a hundred musicians whereas the pipe organ only requires one player.

During centuries past, music was not instantly accessible and mobile. Concerts were a rare privilege and people usually had to travel to the music. All music was heard in the space in which it was created and the stationary pipe organ was ideal for that as it was crafted for its particular space.

As with many musical instruments, the exact invention date of the organ is uncertain, but records show a form of the organ (hydraulos) dating back to the 3rd century BC in Alexandria. Early organs were known to exist in Roman times and were used in ampitheatres and circuses, but knowledge of the organ was lost with the fall of the Roman Empire. In the sixth and seventh centuries, organs reappeared using smith's bellows. In 757, the King of the Franks received an organ from the Emperor Constantine, which some historians believe was the introduction of the organ in Europe.

The Pipe Organ was very important in the development of western music and was once the center of musical life. Organs began to be used in western European churches in the eighth century, and by the 10th century were used in church rituals. In the 11th century, details on organ construction and the scaling of pipes were being written by Benedictine monks.

During the Middle Ages, small portable organs (Portatives) came into use and were used as continuo instruments to accompany singing and chanting. In these early organs, human-controlled bellows supplied air through the instrument, allowing a note to be played continuously. These organs played a single melodic line only. At about the first Millennium AD, churches began adopting the organ as a standard instrument of worship. Organs became an important fixture in churches and cathedrals. The church was an important part of a town or village and as towns grew and flourished, the organ proliferated throughout Europe. As cathedrals became larger, the organ grew in size and complexity.

Pipe Organ building has undergone vast transformation over the centuries. While many musical instruments have standard methods of design and building, organ making is quite different. The art of organ making developed differently in various countries and each country had differing schools of organ building.

For centuries the organ remained the most technologically advanced musical instrument. It has evolved from a one-stop instrument with a small number of pipes to a gargantuan instrument containing many manuals and thousands of pipes. Today, sampling technology owes some of its key concepts to the king of instruments. The ideas that a keyboard instrument could be used to emulate other instruments, and could change its sounds in real time, have their roots in the pipe organ. These capabilities have been expanded and perfected with today's technology.

Below are some of the main periods of organ development. Please note that this section is intended as a *very* brief history and by no means gives justice to the rich history of the pipe organ.

Gothic: 1100-1500

The Gothic Period lasted from about 1100 A.D. to 1500 A.D. The earliest organ music manuscript known to exist is the Robertsbridge Codex of 1360. A Gothic organ usually accompanied a choir or provided background to the chanting clergy. It was not used as a solo instrument as it is today.

The traditional pipe organ came into being during the Gothic period. Organs from this period are almost obsolete today. The Halberstadt Blockwerk organ, built in 1361, is still in use to this day. The Gothic organ was the first instrument known to have a chromatic key layout across its manuals and pedalboard.

Probably the most significant evolution of the organ during this period was the development of "stops" that allowed the organist to play on only some of the ranks of the Blockwerk. Prior Medieval organs were based on the Blockwerk principle (an undivided group of pipes all under one control) and did not have individual stops. This breakthrough led to combinations of different sounds with different divisions of pipes. This development led to mixtures and served as the forerunner of modern stop actions, and also resulted in the distinctive sound of the traditional pipe organ that is characteristic from this period until the present.

Despite the advances, the organ was still relatively simple and rough compared to the later renaissance and baroque instruments. There was no swell control and the organ sounded either very soft or loud.

During this period, the Reformation led to the destruction of monasteries and diminished the number of organs in many institutions as mere relics of the Roman church.

Renaissance: 1400-1600

The Renaissance era encompasses Western music history from 1400 to the beginning of the 1600s. This period in time marked the rebirth of humanism and the revival of cultural achievements for their own sake in all forms of art, including music. The word "Renaissance" itself is defined as a rebirth or a reconstruction.

Organs and keyboards, still mostly found in churches and cathedrals, were the primary keyboard instruments used during the Renaissance. Organs still only had a few stops, and most only had one division. The Renaissance organs were reputedly tuned to the historical quarter-comma meantone temperament.

Baroque Era: 1600-1750

The Baroque era is the period of European music between the years 1600 and 1750. Baroque music is regarded as being highly ornate and characterized by rich counterpoint and a highly decorated melodic line. A defining characteristic of this period is the use of the basso continuo.

The pipe organ became a masterpiece in its own right, both in terms of craftsmanship and sound. Schools of organ building flourished, with each country or region having its own unique style and art. Organ building became a matter of national pride. During this period, these tracker-action instruments featured well-balanced mechanical key actions, more divisions and ranks, and independent pedal divisions. Wind pressure in these early instruments was relatively low compared with later organs. Other important organ innovations produced later in this period were the introduction of the swell box (1712) and the independent pedal.

Baroque organs are usually smaller instruments with a smaller sound than their later counterparts. During the Baroque era, the organ's tonal timbres and colors became more varied. Organ builders developed stops that attempted to imitate various instruments, such as flutes, reeds (crumhorn, oboe,

and trumpet are most common), and several string stops (most commonly the gamba). Baroque organs generally had superior intonation as the main objectives were clarity and the individual character of the stops rather than blending.

The Baroque period is often thought of the organ's "Golden Age" and the organ made great advancements during that period. The music of Johann Sebastian Bach (1685-1750) typifies this period. J.S. Bach had an enormous impact on the organ world and wrote numerous masterpieces for the instrument that are still regarded as among the best of the organ literature.

Late Baroque/Classical: 1730s-1820s

The Classical era spans a relatively short time span between the Baroque and the Romantic periods. The best known composers from this period are Haydn, Mozart, and Beethoven, all of whom wrote minor works for the organ. Mozart was employed as the court organist in the household of the Archbishop of Salzburg and wrote a few works for the instrument. Although organ improvisation was in general practice, organ music was not a main focus of the great composers of that period. Their focus was on symphonic and chamber music.

During this time there was a substantial change in music. There was a greater stress on form, balance, and control. Sonata form (ABA form) was the dominant musical form used during that time. There were few extremes – neither too loud nor too soft. This was about to change when Beethoven introduced Sturm und Drang ("storm and stress"), ushering in the Romantic period.

Organ development during this period, like the music in vogue at the time, was standardized and sophisticated throughout Europe. Pipe organs had several manuals, a swellbox, and more consistency in tone. There was a great deal of focus on design – cases were ornately hand-crafted with gold leaf, with carvings of angels and various creatures, and majestic guilded pipes. Organ building grew and each region in Europe developed its own style of organ building and musical practice.

The Romantic Era: 1815-1910

During the Romantic period, the organ became grander and more symphonic – even larger, with more stops, more variety in timbres, more divisions, and the ability to create crescendo and decrescendo. Pipes grew larger with the use of more 16' or larger stops and wider scale ranges, resulting

in a much fuller sound. It also became easier to manage a host of stops. Organs during this period moved from the primary domain of the church to concert halls. The organ during this period has been characterized as more lush and opulent than in previous periods. Composers such as Saint-Saëns and Mahler used the organ in their orchestral works.

The Romantic organ was more aimed at simulating the orchestra. The clarity and uniqueness of the stops gave way to the blending character of the stops and how they worked together. Romantic organ stops also tended to have a thicker sound.

The Romantic era was a period of change and ushered in artistic freedom and greater creativity. Music became more expressive during this period and the pipe organ became more symphonic, capable of more expression as well.

Romantic organs had similar stops to their Baroque predecessor (but with a different intonation) plus many more string and reed stops. The 32' stop also came into vogue with the Romantic organ. They also incorporated mechanical action, but pneumatic devices made the action lighter. Some Romantic organs also incorporated electric action.

Organ and harpsichord music, which were popular in past eras, began to diminish in importance. A new instrument, the piano, became the dominant keyboard instrument.

Modern: 1900-2000

During the late nineteenth century, the development of pneumatic and electric key actions made it possible to place the console away from the pipes, which made for new possibilities in organ design. As electric stop actions were developed, more sophisticated combination actions became possible. In America, there was less tradition to live up to and organ building became more creative and energized.

The pipe organ was no longer an instrument associated with religious music and proliferated outside the church - in town halls, cinemas, theaters, department stores, auditoriums, concert halls, and other secular venues. Some cities and municipalities justified the expense of building large pipe organs by reasoning that it was less costly than maintaining an orchestra. After all, pipe organs were played with orchestras and could rival the symphony in expressiveness and tonal range, and some saw it as a source of local pride and inspiration. The race was on to build larger and larger pipe organs with

many thousands of pipes, with each new mammoth pipe organ trying to outdo its predecessors. The 1920s was a golden age for pipe organs and there were reputedly sixty-three organ-building companies in the United States alone.

This all changed with the stock market crash of 1929 and the Great Depression. Many organ-building companies went bankrupt and folded and large organ projects were abandoned. Silent movies were no longer accompanied with organ as "talkies" incorporated soundtracks. Victrolas and radios no longer required people to travel to where the music was made. Instead, the music travelled to the people. World War II dealt another blow to organ building as manufacturing plants were repurposed for building spare parts for the military. Over in Europe, many of the great organ pipes were melted down for their tin and many organs were destroyed in bombings. To make matters worse, a 10% luxury tax was imposed on organs and even the wealthy avoided these instruments. The landscape for pipe organs was diminishing dramatically and the pipe organ faithfully retreated back to houses of worship. But even churches began looking to other alternatives for music.

In the mid-twentieth century, there was also a revival to build historically-inspired instruments modeled after Baroque and Romantic era organs. These retro instruments reintroduced mechanical key actions, lower wind pressures, and thinner pipe scales. This became known as the Organ reform movement. E. Power Biggs did much to popularize the pipe organ and rekindle interest in the organ music of pre-Romantic composers. In contrast, Virgil Fox pushed the limits of the pipe organ and was known for his flamboyant performances and interesting musical interpretations. Although this created controversy among organists and organ builders, both approaches to the organ popularized the instrument among audiences everywhere.

Post-modern musicians began experimenting with the pipe organ and began pushing the limits of the instrument with avant-garde and other creative styles. In the twentieth century, many composers no longer looked to tradition for musical guidance but created music freely and used new sounds.

Electronic organs with transistors and speakers gave pipe organs competition. These new instruments were more portable, less costly, and more suited to popular music, therefore attracting the endorsements of well-known organists. As electronic and digital organs gained wide popularity, interest in pipe organs waned. Nevertheless, a renewed interest in pipe organs emerged later and attracted a new generation of enthusiasts around the world.

"It is crucial to a major symphony orchestra and a major concert hall to have at its disposal an organ of world-class quality" - Henry Fogel, President, Chicago Symphony.

Post-Modern and Sampling Technology:

The world has changed and today's personal computers have multiplied in processing power and capabilities, bringing whole new technologies to music production. MIDI (Musical Instrument Digital Interface) has been incorporated in many pipe organs to provide additional sounds to broaden the choices of tone color. Sampling technologies are now being built into some post-modern organ consoles. These hybrid systems can mix actual pipe sounds with digital sampled sounds to do more than traditional pipe organs could.

In addition to pipe organs adopting MIDI, the latest advances in sampling technology allow you to make digital recordings of each individual pipe, then load them into your computer and play them back in real-time using a MIDI keyboard connected to a personal computer or laptop.

Sampling is ideally suited for reproducing the sounds of pipe organs. Each and every pipe, with its own individuality and unique characteristics, can be recorded in high-fidelity audio and then reproduced. Sampled stops can indeed sound surprisingly close to actual wind-blown organ pipes, especially if they are high-quality recordings of each individual pipe.

It is now possible to have the grandeur of a glorious pipe organ, without the need of a cathedral or a concert hall, and pack it into a small space. Who ever would have thought that less than a century from its pinnacle of popularity, the sounds of a colossal pipe organ would be accessible from a desktop computer, laptop, or modern tablet computer?

We have briefly surveyed centuries of pipe organ history. Garritan Classic Pipe Organs is a sampling of pipe organs from various periods in music history – Baroque, Classical, Renaissance, Romantic, and Modern. Perhaps this library in a small way has helped preserve the sounds of these old treasures, even if only by taking sonic snapshots. The pipe organ led the way in music technology and now we have come full circle with Garritan Classic Pipe Organs.

Acoustical Space Considerations

"Resonance is the priceless ingredient which gives the organ and its music character and splendour" - E Power Biggs

It has often been stated that the most important stop in any pipe organ is the room into which it speaks. A typical pipe organ is often a permanent architectural fixture because it is actually built on the building's walls themselves. The rich reverberation of a large space greatly enhances the organ's sound. With a pipe organ, you are also, in effect, playing the building itself. The vibrations from each pipe reflect differently from the building's floors, ceiling, walls, pews, and other surfaces.

Each organ is unique not only because each is individually custom-made, but also because the building that houses it resonates with the instrument, much like the body of a violin or the curved body of a piano. The size, shape, and acoustic properties of the room are all important factors in an organ's design.

Organ building and architecture often go hand in hand. Specialized craftspeople known as pipe voicers custom design pipes so they blend with other pipes and give the best possible sound in an organ's particular physical space.

Organs in the older European cathedrals benefitted from the reverberance of their large size and their towering stone and masonry construction. Churches and halls in North America, however, tend to have carpeting, padded pews, and drapery that absorb sound, producing a more subdued atmosphere compared to their old-world counterparts.

Recent developments in computer processing, sampling, and speaker technologies now allow organs to escape their physical limitations, and also allow users to have control over the space.

Garritan Classic Pipe Organs allows you to create your own ambient space with Convolution Sampled Reverb and with Ambience Reverb. A resonant space with a long reverberation time (usually well over 3 seconds) is typical and optimal for the sound of a pipe organ in a resonant cathedral.

Scales and Temperaments

Garritan Classic Pipe Organs enables you to play in tunings that were common during the time periods of the legendary organists and composers.

Organs were built according to the temperament of the time. The tracker organs that the Silbermann family built in the eighteenth century used the old unequal temperaments. Pipes also had different pitches and were tuned sharper or flatter according to the temperament. Temperaments and tunings usually varied from country to country and time period to time period.

In prior centuries, the octave was not divided into equal semitones, but some intervals sounded in tune while others sounded odd or dissonant, and with untempered scales, certain keys did not modulate well. Composers just avoided certain intervals or keys to eliminate dissonance.

Bach was one of the most famous organists of all time. When he wrote his famous Well-Tempered Clavier to explore all the possible key colors, Bach most likely used Mean-tone, and "well temperament." Well temperament possesses a vibrant attribute missing in today's equal temperament, which could be thought of as key color. The key of C has harmonious intervals that might be described as calm and innocent, while the same intervals in F# might be described as in motion and passionate.

During Bach's time, equal temperament was not used on keyboard instruments. Theoreticians were aware of equal temperament, but there were as many critics deriding equal temperament as praising it. Nevertheless, no one was able to finally develop a workable system of equal temperament on keyboards until near the end of the 1800s. Equal temperament made chromatic music possible and Romantic and later composers made full use of these expanded possibilities.

If Bach wrote the Well-Tempered Clavier for a keyboard tuned to a well temperament, then we might wish to try playing a Bach piece in well temperament. Likewise, with other composers we can move a step further towards authenticity and try playing other compositions in the tunings used during the composer's lifetime.

With a real pipe organ, it is almost an impossible task to tune and retune every pipe to try different historical tunings, but with Garritan Classic Pipe Organs it is extremely easy to call up a historic temperament of your choosing.

Garritan Classic Pipe Organs makes it easy to play in the tunings commonly used in a particular time period. The ability to play in the tuning in which a work was originally written can more accurately reflect the intentions of composers, can offer new insight into a piece, and can inspire new creativity. Temperaments gave the great composers options for expression, and having temperament choices can be just as useful today in your own playing and creativity.

A Brief History and Discussion of Temperaments

The following tunings are included in Garritan Classic Pipe Organs

1) **Equal Temperament** - Equal temperament, the standard for keyboard music for almost all of the last century, is the tuning used by technicians today almost without exception. It divides the octave into twelve exactly equal semitones, giving it its name. It is the safest tuning to use by default since all modern ears are accustomed to it. It sounds the same in every key, all intervals are fairly harmonious, and all semitones are the same size, which allows for smooth chromatic melodies.

2) **One-Quarter Comma Meantone** - One-quarter comma meantone is also known as Pietro Aaron's meantone (described in his writing in 1523). Most musicians from the Renaissance used it and it's a good representative tuning for music from the sixteenth to seventeenth centuries. It features perfectly in-tune major thirds in the key of C and keys close to C (quite unlike equal temperament) at the cost of slightly detuned fifths. One-quarter comma meantone has a regularly-spaced diatonic scale, but a noticeably uneven chromatic scale.

Technically, the term "one-quarter comma" refers to the difference between a pure in-tune major third and a "Pythagorean third." A Pythagorean third is the result of playing four perfectly pure fifths in a row (C to G to D to A to E, all with purely tuned fifths). There is a difference in the pitch between the perfectly in-tune major third and the Pythagorean third, and this difference is called a syntonic comma. One-quarter comma meantone divides this comma, or difference in pitch, by four, and flattens what would otherwise be its perfectly in-tune fifths by this quarter comma. When you stack four of these detuned meantone fifths in a row (again using C to G to D to A to E as an example) the resulting third is a perfectly in-tune major third.

3) One-Sixth Comma Meantone - Near the end of the seventeenth century it was becoming common for tuners to change Pietro Aaron's quarter-comma meantone by making the detuned meantone fifth flat by only 1/6 comma or 1/5 comma rather than Aaron's 1/4. These tuners favored relatively pure thirds, though no longer perfect, while gaining increased purity in the fifths over 1/4 comma meantone. The 1/6 comma meantone was used fairly often in the eighteenth century, along with well temperament and "temperament ordinaire." Like quarter-comma meantone, 1/6 comma meantone has a very out-of- tune wolf fifth, and four out-of-tune thirds. It also has the same limitation on the number of ordinarily playable keys, with the good keys centering around C.

4) One-Fifth Comma Meantone - One-fifth comma meantone temperament spreads the syntonic comma over five fifths, sounding somewhat between 1/4 and 1/6 comma meantone. It was a common meantone temperament during the 1700s, though perhaps not as often used as 1/6 or 1/4 comma meantone.

5) Rameau's Temperament Ordinaire - During the eighteenth century, tuners in France and occasionally elsewhere in Europe often modified normal meantone by spreading the out-of-tuneness of the meantone wolf fifth over a number of different notes. This created a tuning that was playable in many keys, arguably in all keys (even if dissonantly in the remote keys). It also created a sense of key color for each key center, which had previously been missing from the regular meantones. Jean Philippe Rameau's temperament begins as 1/4 comma meantone for the diatonic C scale, and then distributes what would be the wolf fifth across all the black keys.

6) Temperament Ordinaire II - Temperament Ordinaire II is a French 18th-century temperament following the same principles as Rameau's Temperament Ordinaire and, like Rameau's, would also have been used as a temperament method in the 1700s, particularly in France. It starts with a base diatonic scale of 1/6 comma meantone rather than the 1/4 comma of Rameau. The result is smoother across all the keys than Rameau, but has less color contrast among the different keys.

7) Werckmeister III - in the early 1700s, Andreas Werckmeister was one of the first writers to discuss well temperament. The systems of well temperament differ from meantone by having fifths that vary in size, being playable in any key, and possessing differing key colors. Well temperament was known to tuners before Werckmeister's publications but came into general use around his time, and continued to be used in successively more refined forms until the end of the nineteenth century. Werckmeister III is probably one of the best-known well temperaments and is considered

representative of early period tuning practice.

8) Kirnberger III - Johann Philipp Kirnberger, a tuning student of Bach at one time, developed a temperament in 1779 similar to Werckmeister III, but improving its flaws. This tuning is sometimes known as Prinz or Neidhardt temperament.

9) Young I - Thomas Young described his Temperament No. 1 in 1799, a refined well temperament following the same base principles as Werckmeister III. It provides an excellent balance of key colors, with the thirds and fifths changing evenly from the most harmonious key of C to the most dissonant key of F#. It is a good representative of the late eighteenth and nineteenth century well temperament.

10) Broadwood Best - In 1885, Alexander John Ellis analyzed the results of tuners at the Broadwood Piano factory, and this tuning came from a tuner that the factory considered one of its finest. The tuning falls between well temperament and equal temperament and demonstrates the transition period between well temperament and equal temperament at the end of the nineteenth century. Although this type of temperament may have been commonplace even into the start of the twentieth century, equal temperament (or very close approximations) rapidly displaced all other temperaments by the early twentieth century as both an ideal and a practical tuning.

11) Pythagorean - Pythagorean tuning was the method used most commonly before the Renaissance, and continued in use well into the sixteenth century. It has all fifths tuned pure, which results in all thirds being quite sharp above pure, sharper than even equal temperament. It also results in a wolf fifth at Ab. It arguably provides a good intonation for melody since the sharp leading thirds and sevenths "lean" into their resolution notes, but the major thirds are relatively dissonant in harmony.

12) Just Intonation - Just intonation uses all pure intervals to create its scale. Harmonically it has the great advantage of a set of perfectly in-tune intervals, although this set is of limited size. Melodically it has the disadvantages of a diatonic scale with two noticeably different whole tone sizes, and chromatic scales with many differently sized semitones. Just intonation is extremely restrictive in the keys in which it can be played without wolf intervals. Although interesting, it has never been commonly used as a keyboard tuning.

13) Carlos Optimal Circular - Wendy Carlos created this temperament, a mathematically optimal version of a well temperament. It smoothly and even-handedly trades consonance for dissonance among the key centers. C major is the most consonant, F# major is the most dissonant, and Eb and A are nearly the same as equal temperament. This tuning could be used for any music for which you would wish to use well temperament. Used with permission from Wendy Carlos.

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The GLORIOUS INSTRUMENTS in
GARRITAN CLASSIC PIPE ORGANS

RENAISSANCE PIPE ORGAN

Built: Circa 1583
Organ Builder: Unknown
Location: Church of the Holy Trinity, Smečno, Czech Republic

This organ is one of the oldest playable instruments in Central Europe and the oldest preserved organ in the Czech Republic. This organ is located in the Church of the Holy Trinity in Smečno, Czech Republic, situated about 50km north of Prague. The original instrument was built in1583 and the organ builder remains unknown.

The organ was rebuilt and expanded several times. According to historic records the organ was damaged in the 1620s during war and soon rebuilt and greatly expanded with ranks from the Renaissance period. . In 1775, the organ underwent another rebuild. A small Rückpositiv was added and some stops were changed.

Photo courtesy of Frantisek Mike

The instrument was overhauled several years ago by Dusan Doubek, a master organ restorer. The original form of the instrument was restored to its Renaissance state as more of the original pipes were found inside the organ and put into use. This organ provides the distinctive qualities (colorful, sometimes sharp and exotic sound) of the Renaissance organ. One if its stop, the blockwerk stop, can approach the sound character of the older Gothic Blockwerk organs.

This Renaissance organ was reputedly tuned to the historical quarter-comma meantone temperament.

RENAISSANCE PIPE ORGAN Stop List

RENAISSANCE ORGAN:	
Stop Name:	**Description:**
Ren Blockwerk	Combination of Octava Principalis 4', Quinta 3', Super Octava 2', and Mixtura stops. This stop suggest the sound of the older Gothic blockwerks organs.
Ren Stopped Flutes 8' 4'	Combination of Copula Major 8' and Copula Minor 4'.
Ren Quintadena 8' 4'	Combination of Salicional 8' and Quintadena 4' (second windchest).
Ren Renaissance 8' 4'	Combination of Copula Major 8', Quintadena 4, and Cimbel stops.
Ren Diapason 8'	Principal 8' stop. The diapason represents the quintessential tone of the pipe organ.
Ren Pleno Comb	Full organ combination using a large number of the organ's stops and mixtures, to produce a full, rich and massive sound. Ranks include Principal 8', Octava Principalis 4', Quinta, Super Octava 2', Mixtura, Cimbel.
Ren Ripieno Comb	Combination of Principal 8', Octava Principalis 4', Quinta 3', and Super Octava 2'. Ripieno is Italian for "filled up".
Ren Bass Comb	Bass stop combination of the lower pirched stops - Subbassus 16', Octav Bassus 8', Super Octav 4'. Pedals did not come into vogue until the baroque organs.
Ren Blower Noise	Blower Noise from the Renaissance Organ.

BAROQUE PIPE ORGAN

Built: Circa 1730s
Organ Builder: Vaclav Starck, Loket Organ-building School
Location: Deanery Church of the Assumption of the Virgin Mary, Most, Czech Republic

This instrument is a small Early Baroque Pipe Organ located on the right side of the altar at the Deanery Church of the Assumption of the Virgin Mary, in Most, Czech Republic (Kostel Nanebevzetí Panny Marie).

The organ was built by the Loket organ-building school (Loket is a small Czech historical city known for its organ builders). The Starck family were the most prominent organ builders and founded the renowned Loket School.

In 1975, when the Communist government decided to abandon the city where the cathedral was located, the cathedral was moved a distance of over a half-mile using 53 transport trucks set on special rails. This building was mentioned in the Guinness Book of World Records as the heaviest building ever moved on wheels. The historic cathedral building is now a museum.

BAROQUE PIPE ORGAN Stop List

BAROQUE ORGAN:	
Stop Name:	*Description:*
Baroque Flauto Octava 4' 2'	Flauta 4' and Octava 2'. A combination of diapason pipes with a relatively pure sound mixed with a stop at a pitch one octave higher.
Baroque Principal 4'	Principal 4' stop. Principal is often synonymous with Open Diapason and is considered to be one of the basic voices of the organ.
Baroque Copula Maj 8'	Copula 8'. This 8' stop is a valuable stop in the older organs and produces a gentle flute-like sound.
Baroque Forte Comb	Combination of stops of the Baroque organ producing a forte sound. Diapason-oriented.
Baroque Plenum	Full organ, using a large number of the organ's stops to produce a full, rich sound.
Baroque Ripieno Comb	Ripieno is Italian for "filling up" and consists of various stops containing mutations with breaks.
Baroque Blower Noise	Blower Noise from the Baroque Organ.

CLASSICAL (Late Baroque) PIPE ORGAN

Built: Circa 1748
Organ Builder: Ignacius Pleyer
Location: Deanery Church of the Assumption of the Virgin Mary, Most, Czech Republic

This pipe organ from the late Baroque period is located on the rear center of the Deanery Church of the Assumption of the Virgin Mary, in Most, Czech Republic (Kostel Nanebevzetí Panny Marie).

The Late Baroque organ is considered representative of the sound of the organ during Bach's time. Bach is considered the best organist and organ composer of this period and he wrote many works for this type of organ. Bach reputedly played this type of organ himself and the stops may have been familiar to him. This organ at the Most Church is a typical middle-sized Central-European baroque organ, suitable for baroque and classical music. The stops typically used for this period were a mix of all stops from all keyboards (pleno).

CLASSICAL (Late Baroque) PIPE ORGAN Stop List

CLASSICAL ORGAN:	
Stop Name:	**Description:**
Classical Forte 8' 4' 2'	Combination of ranks producing a forte sound. Diapason with 8', 4', & 2' pipes.
Classical Strings 8' 4'	Strings stops represent some of the narrowest pipes. Although suggestive of their orchestral counterparts, they do not resemble stringed instruments. Gamba 8' and Fugura 4'.
Classical Flute 8'	Flute 8'. The flute stop has a soft, clear sound. Flute pipes have broad scales and high mouths and are broader than diapason pipes.
Classical Principal 8'	Principal 8'. The name Principal is synonymous with the Open Diapason and is an essential sound in pipe organs.
Classical Quintadena 8'	Quintadena 8'. A stopped flute sound in which the 3rd harmonic (twelfth) is prominent.
Classical Pleno Comb	Full organ using a large number of the Classical organ's stops to produce a full, rich, loud sound.
Classical Pedal Forte	Combination of pedal ranks producing a forte sound. Diapason-oriented with 8' and16' lengths.
Classical Pedal Pleno	Full pedal stops, using Subbass apertus 16', Subbass clausus 16', Octavbass 8', Flauta 8', and Posaune 16' stops.
Classical Blower Noise	Blower Noise from the Classical/Late Baroque Organ.

ROMANTIC PIPE ORGAN

Built: Circa Late 1800s
Organ Builder: Emanuel Šimon Petr.
Location: St. Bartolomeo Church, Rakovník, Czech Republic (Bohemia)

The St. Bartolomeo pipe organ is located in Rakovník, Czech Republic (Bohemia) and is from the Romantic period. It was built in the late 1800s by organ maker Emanuel Šimon Petr, a well-known organ maker in Bohemia during the nineteenth century.

This pipe organ is representative of the typical organ of the period and was used for orchestral accompaniment as well as for church services during the Romantic era.

The sound of a 'symphonic' organ is most familiar to audiences, as it represented the organ sound of many popular symphonic works featuring organ.

ROMANTIC PIPE ORGAN Stop List

	ROMANTIC ORGAN:
Stop Name:	*Description:*
Rom Harm Flute 1 8'	Harmonic Flute 1 - 8' stop. A flute stop with pipes twice the length and overblown to produce harmonics.
Rom Harm Flute 2 8'	Harmonic Flute 2 - 8' stop. Another harmonic flute stop of the Romantic organ.
Rom Clarinet 8'	A reed stop voiced to imitate a clarinet.
Rom Fortissimo 8'	Combination of 8' reed and diapason ranks producing a fortissimo sound.
Rom Gamba 8'	Gamba 8' stop. A main string stop, also called Viola da Gamba, produced by open metal pipes of a medium scale.
Rom Forte Comb	Combination of ranks producing a forte sound. Diapason-oriented.
Rom Pianissimo Comb	Combination of ranks producing a pianissimo sound. Entirely flutes with only a few ranks.
Rom Strings Comb	Strings stops represent some of the narrowest pipes and produce a pleasing warm sound (although not resembling string sounds). Stops include a combination of Salicional 8', Gamba 8', Cello 16', Vox Celeste 8', and Fugara 4'.
Rom Tutti Comb	Full organ combination using all of the organ's stops and mixtures.
Rom Blower Noise	Blower Noise from the Romantic Organ.

MODERN PIPE ORGAN 1 (European Reform)

Built: 1958

Organ Builder: Rieger-Kloss

Location: Built in Germany and transported to St. Joseph's Oratory, Montreal, Canada

This majestic organ is now in the St. Joseph's Oratory in Montreal. It was designed and built in Germany by the celebrated organ builder Rudolf von Beckerath of Hamburg in 1958, and then subsequently transported to Montreal. This "reform" pipe organ is one of the largest mechanical-action organs in the world. It has 78 stops, 118 ranks, and 5,811 pipes activated by five manuals and a pedal board. It is also one of the rare instruments with a 32' pedal open diapason in the facade. This superb instrument is considered one of the world's outstanding organs.

MODERN PIPE ORGAN 1 STOP LIST

MODERN ORGAN 1:	
Stop Name:	Description:
Mod1 Nasat 2 2-3'	Nasat 2 2/3'. A mutation stop of 2-2/3' with a flute tone that reinforces a harmonic of the fundamental pitch.
Mod1 Koppelflöte 4'	Koppelflöte (Positiv) 4'. A short conical metal flute with a bright tone.
Mod1 Flutes 8' 4' 1'	Combination Flutes (8', 4', 1'). The flute stop has a soft clear sound. Flute pipes have broad scales and high mouths and are broader than diapason pipes.
Mod1 Crumhorn 8'	Crumhorn 8'. This is one of the oldest organ stops and takes its name from the instrument of the same name. The sound has a muffled, buzzing tone.
Mod1 Gemshorn 8'	Gemshorn 8' (Positif). A stop whose pipes are conical in shape and have a tonal characteristic of both strings and flute stops. Believed to imitate the instrument of the same name that was made from an animal's horn.
Mod1 Prinzipal 8'	Prinzipal 8'. The principal tone of the pipe organ and considered to be its most important stop.

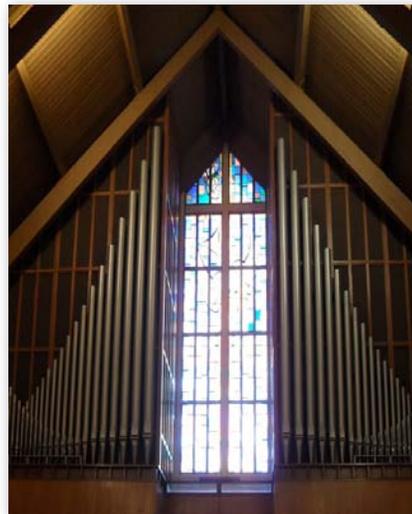| MODERN ORGAN 1:	
Stop Name:	**Description:**
Mod1 Bar Plenum plus Reed	Full reed stops, or plenum with reeds, using a large number of the Modern 1 organ's baroque-sounding reed stops resulting in a full, rich sound.
Mod1 Baroque Plenum	Plenum without reeds, or full stops, using a large number of the Baroque-sounding stops to produce a full, rich, loud sound. In early organ development, all stops took part in the global sound, or the "Plenum."
Mod1 Brustwerk Tutti	The brustwerk manual 3 has its own set of stops. The brustwerk pipes are located in front of other ranks, often encased above the keyboard, in the 'breast' of the organ. Because it represents the stops out in front, it often has a sharp, clean, and bright sound.
Mod1 Hauptwerk Tutti	All stops on the hauptwerk manual (manual 1, Great). Hauptwerk (like the Brustwerk) is a manual with its own set of stops. The Hauptwerk often has the most powerful stops and the greatest number of stops.
Mod1 Hauptwerk Mixture	Stops on the hauptwerk manual without reeds.
Mod1 Scharf IV	Scharf IV. A mixture of four pipes. Scharf is a name of a mixture stop and the Roman numerals mean how many pipes sound together on every note you play.
Mod1 Symphonic Plenum	Combination stop using a large number of the of various flutes and reeds stops to produce a full, rich, and powerful sound. The "Plenum" is the sound produced by the organ with a large number or all its stops.
Mod1 Dulzian 16'	Dulzian 16' (Positiv). A soft-toned reed stop intended to resemble the sound of an old double-reed instrument that was similar to the bassoon.
Mod1 Pedal Rauschpfeife IV	Rauschpfeife IV. A compound pedal stop of four metal ranks. The Rauschpfeife was also a pre-Baroque wind instrument.
Mod1 Pedal Trompette 8' 4'	Trompette 8' (Solo Trumpet 4'). The Trompette is usually a versatile stop, usable either as a solo stop or in combination.
Mod1 Bar Plenum plus Reed Pedal	Full reed pedals, or pedal plenum with reeds, using a large number of the organ's baroque reed pedal stops to produce a powerful and deep sound. Stops include Bombarde 16'/32', Basson 16', Trompette 8'.
Mod1 Baroque Plenum Pedal	Baroque Pedal Plenum without reeds, or full pedals, using a large number of the organ's baroque pedal stops including Montre 32'/16'/8', Flûte 16', Soubasse 16', and Prestant 4'.
Mod1 Pedal Posaune 32'	Posaune 32' (Pedal). Posaune is German for Trombone. This stop is a chorus reed and is intended to sound brassy.
Mod 1 Blower Noise	Blower Noise from the Modern 1 Organ.

MODERN PIPE ORGAN 2 (American)

Built: 1966
Organ Builder: Schantz Organ Company
Location: Riverside First Baptist Church, Riverside, California

This modern American pipe organ was built in 1966 by the Schantz Organ Company of Orrville, Ohio. It is housed at the First Baptist Church of Riverside, California. This pipe organ has three manuals and numerous stops.

MODERN PIPE ORGAN 2 STOP LIST

MODERN ORGAN 2:	
Stop Name:	Description:
Mod2 Great Clarion 4'	Clarion 4'. A chorus reed stop of 4' pitch.
Mod2 Great Octave 4'	An Open Diapason of 4' pitch. An important stop on the organ. It is usually the first stop to be tuned and other stops are then tuned to it.
Mod2 Great Quintadena 4'	A stopped flute of 4' pitch made of metal.
Mod2 Great Spitzflöte 4'	Spitzflöte 4'. This stop has the tone of the Diapason with a strong fundamental and a sharper chiff.
Mod2 Swell Rohr Schalmei 4'	Rohr Schalmei 4'. A short-resonator reed stop producing a hollow, nasal tone quality.
Mod2 Choir Clarinet 8'	Clarinet 8'. This is a favorite solo stop on many organs and one of the better organ imitations of an orchestral instrument.
Mod2 Choir Gemshorn 8'	Gemshorn 8'. Gemshorn pipes are conical and originally intended to imitate the Gemshorn, a fipple flute with a closed end.
Mod2 Choir Vox Humana 8'	Vox Humana 8'. Vox Humana means "human voice" and is one of the oldest organ stops. It is often used with tremulant.
Mod2 Great Principal 8'	Principal 8'. An Open Diapason of 8' pitch. The name Principal is more properly used as a synonym for the Open Diapason.
Mod2 Great Tromp En Cham 8'	Trompette en Chamade 8'. A Trompette (trumpet) stop with the pipes mounted 'en chamade' or horizontally rather than vertically, producing a bright fanfare sound.

MODERN ORGAN 2:	
Stop Name:	**Description:**
Mod2 Swell Trompette 8'	Trompette 8 (or Trumpet). A common reed stop that is versatile and can be used as a solo stop or in chorus with principals, mixtures, and/or with other reeds.
Mod2 Great Cornet IV	Cornet IV. A wide-scaled compound stop of four voices with mutations. It was originally intended to imitate a Renaissance Cornett.
Mod2 Great Flute Harm	Flûte Harmonique. Harmonic flutes are constructed from open pipes that are twice the normal length and overblown to sound the first harmonic (the octave).
Mod2 Great Mixture IV	Modern 2 Great Mixture IV. These are generic names for compound stops containing mutations, usually with breaks.
Mod2 Swell Contre Tromp 16'	Contre Trompette 16'. A Trumpet stop pitched an octave lower than normal.
Mod2 Pedal Choral Bass 4'	Choralbass 4'. The Choralbass is voiced for playing the melody in chorale works, hence its name.
Mod2 Pedal Mix IV	Pedal Mixture IV. A pedal mixture composed of four various pedal stops.
Mod2 Pedal Nachthorn 8'	Nachthorn 8'. A stopped flute of very wide proportions with a soft tone.
Mod2 Pedal Octave 8'	Octave 8'. Octave Bass is a Bass Flute stop.
Mod2 Pedal Tromp 8'	Trompette 8'. A Trumpet pedal stop in the Modern 2 organ.
Mod2 Pedal Bourdon 16'	Bourdon 16' pedal stop. A 16' stopped wooden diapason flute. It is possibly the single most common 16' pedal stop.
Mod2 Pedal Fagotto 16'	Fagotto 16' pedal stop. An imitative reed pedal stop designed to suggest the Bassoon.
Mod2 Pedal Principal 16'	Principal 16' pedal stop. An Open Diapason of 16' pitch. The name Principal is more properly used as a synonym for the Open Diapason.
Mod2 Pedal Contre Bourd 32'	Contre Bourdon 32' pedal stop. The Bourdon stop pitched an octave lower than the Bourdon 16'.
Mod2 Pedal Contre Fagotto 32'	Contre Fagotto 32'. A Bassoon stop pitched an octave lower than the Fagotto 16'.
Mod2 Blower Noise	Blower Noise from the Modern 2 Pipe Organ.

PLAYING GARRITAN CLASSIC PIPE ORGANS

Playing Garritan Classic Pipe Organs

Basic Controls:

With Garritan Classic Pipe Organs it is possible to start making music within moments after installing the library. Some of the concepts/controls presented here are different than those found on a typical pipe organ and may be unfamiliar at first. This may be more challenging for the professional organist accustomed to the more familiar stops, but the system in Garritan Classic Pipe Organs is fairly easy to master and offers some additional capabilities.

Organ stops are selected and loaded into channel slots and can be turned on or off with Solo/Mute buttons or controlled with volume sliders. Volume/dynamics are controlled on a global level with a volume pedal and each stop can be controlled via sliders. After stops are loaded there are various ways of controlling them.

The five basic controls are On/Off buttons, Swell Control, Volume, Chiff Attack, and Tremulant. In addition to these basic controls, Garritan Classic Pipe Organs features other possibilities for even greater control over your stops, such as crescendo pedal, EQ/timbre, release triggers, scala file support, and room simulation. There is also a separate blower noise layer.

There are two types of stops programming in this library: standard stops and pedal stops. All pedal stops have the word "Pedal" in their name. Standard stops will have Swell control, a 'chiff' layer that is velocity sensitive, tremulant speed and intensity controls, and swell knobs. Pedal stops will have swell, bass fundamental, and tremulant controls. There is no chiff in the pedal stops.

Standard Stops basic controls:	Pedal Stops basic controls:	Blower Noise
Solo/Mute = Stop on/off CC #01 = Tremulant Amount/Intensity CC #02 and/or CC#11 = Swell control CC#07 = Volume Velocity = Chiff strength CC #12 = Relative chiff level CC #17 = Tremulant speed	Solo/Mute = Stop on/off CC #01 = Tremulant Amount/Intensity CC #02 and/or CC#11 = Swell control CC #07 = Volume CC #17 = Tremulant speed CC #20 = Fundamental level	CC #13 = Blower Noise

There are also specific ARIA Ensemble Files that emulate the behavior of the crescendo pedal by cumulatively adding organ stops to your mix when performing.

Loading Stops

There are two basic ways to load stops, manually or with the use of Ensemble templates.
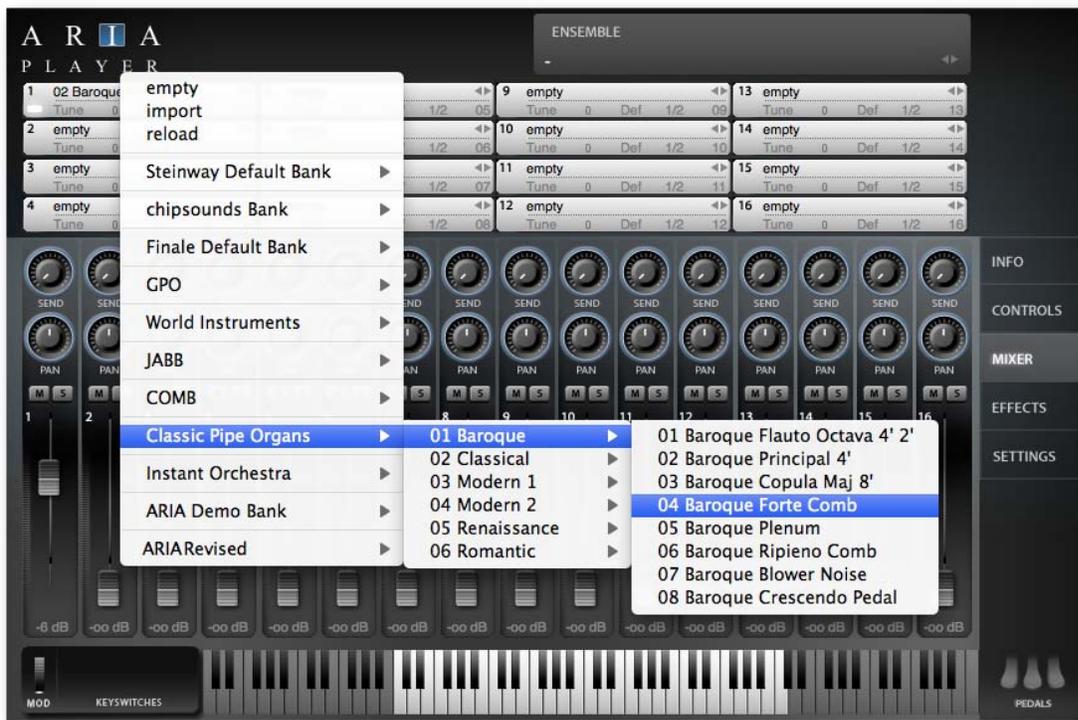
Load Instrument: Clicking the instrument slot in the ARIA Player brings up a dialog box from which you can load the stops of your choosing. Selecting "Empty" will remove an assigned stop from a channel and choosing "Reload" will restore the default parameter settings for that stop.

The stops will be grouped in a simple hierarchical menu by library. You can choose your stops by pipe organ type: Baroque, Classical, Renaissance, Romantic, Modern 1, and Modern 2.

When ARIA is used as a plug-in within a host program, you can also load a stop by a "drag and drop" method from Windows Explorer into an ARIA player slot.

You can load up to sixteen stops for each instance of the ARIA Player (Slot 1 - 16). For more slots call up additional instances of ARIA in your sequencer or notation program. The number of instances is limited only by the power and resources of your computer and host program.

MIDI Channel Assignment: Each stop can be given the same (or a different) MIDI channel. Grouping stops by MIDI channel could be useful for a multiple keyboard (perhaps with pedals) setup or for splitting a single keyboard by range/MIDI channel.

MIDI channel assignments can be chosen by clicking on the assignment number for the slot. This will bring up the dropdown menu shown on the right. Just click on the desired MIDI channel. More than one slot can be assigned to the same MIDI channel for combinations and mixtures.

Garritan Classic Pipe Organs also includes a folder/directory called "Ensembles" that contains a collection of useful, pre-configured combinations of stops for the convenience of the user. Simply select the preconfigured ensemble presets you wish to load or recall. Loading an Ensemble can give you a head start to setting up a useful collection of ready-to-play stops.

After you load your organ stops, you can control the sound in various ways.
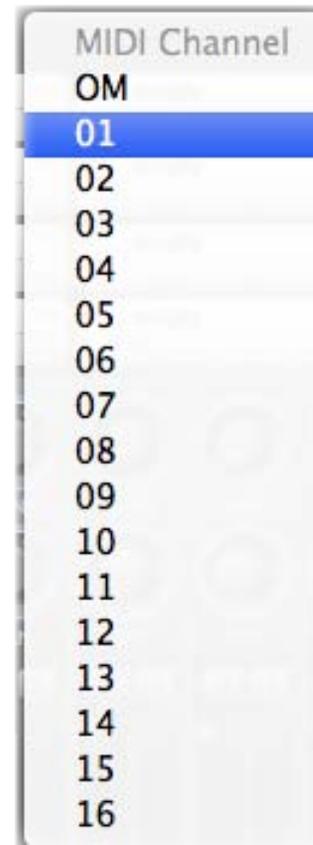
Controlling Stops

On/Off Stops

In a real pipe organ, stops are either "on" or "off."   In Garritan Classic Pipe Organs, stops can be turned on or off with solo and mute buttons.

Mute and Solo buttons will open or close the stops at will.

Optional Volume Control Slider

You also have more functionality than just an on/off stop. Below the Solo/Mute buttons are the volume control sliders where you can adjust the relative volume level of each stop. There are also knobs to control panning for that rank and send knobs for reverb contribution. You don't have this control with a real pipe organ!

Sliders control volume

Feel free to set the sliders to the volume that best suits your needs.

Note: The slider will turn the Stop off (minus infinity) or adjust the relative volume level to your liking.

Note: When a stop is engaged by solo or mute buttons while a key is being held, the full attack of the sample is played as if it were initially keyed. With slider control you can "fade in" stops.

Mixing Stops

Being able to mix relative levels of the stops with the sliders gives you more control than just an "on/off" control as the typical stop does.

Feel free to experiment with the stops from the different organs and combine them. Combining the organs will allow you to have a vast array of choices and be more creative.

Virtual Manual

The bottom of the window features a virtual onscreen keyboard that indicates the range of notes that can be played for the selected standard or pedal stop. When a channel with an instrument assigned to it is selected, a section of the keyboard will be highlighted. Keys that are being played will be shown in real time.

INSTRUMENT CONTROLS:

Swell Pedal / Swell Box Effect (CC#02 and/or CC#11)

There are two types of volume control. There is a master volume that is controlled by CC#07 volume control and a swell control (CC#02 and/or CC#11) that adjusts the volume of the currently selected stop.   The actual amount of volume change from closed shutters is more modest.

The swell control mimics the organ shutter system to open and close the stop shutters on a pipe organ. In addition to adjusting the relative volume of the stops, the swell pedal also simulates changes in high frequency content and tone color.

Note: Other Garritan libraries have usually given the volume/timbre function to the Mod Wheel (CC#01). In the case of a pipe organ library, it makes more sense to depart from this model and place the tremulant function on the modulation wheel, which is in line with the standard vibrato-like function of the mod wheel in the regular world of MIDI.

Chiff Noise (CC#12):

The chiff is the sound created as air first enters a pipe, before the airflow is sufficient to create a steady pitch. Organ builders can decrease the amount of chiff created in each pipe by making small nicks in the lip of the pipe, but they generally allow some chiff to remain. The chiff allows for better articulation, much like the initial consonant created by the tongue preceding the enunciation of the word..

Standard stops have a "chiff" layer that is velocity sensitive. MIDI controller CC#12 controls the level of the chiff noise. This type of noise is sometimes heard in organ works, but a little of this goes a long way and judicious use can add that extra realism to your performance.

Tremulant Control (Mod Wheel & CC#17):

Garritan Classic Pipe Organs allows you to add beautiful tremulant quality to the voices. Tremulant is a very common effect in pipe organs through which the wind supply to the pipes of one or more divisions is varied and modulated. This causes the pitch to drop or rise slightly as pressure is reduced or increased, thus producing a vibrato effect. A large organ may have several tremulants affecting different ranks (sets) of pipes. Many tremulants are variable, allowing for the speed and depth of tremolo to be controlled by the organist.

For most stops, the player can decide whether to add the tremulant effect of not, depending on the work being performed or the interpretation of the player. For certain combinations where you can hear the tremulant inherent in the sample, it cannot be attenuated and is best left switched off.

There are two tremulant controllers: Mod Wheel controls tremulant intensity and controller CC#17 controls tremulant speed. By default the tremulant intensity and speed are off or set to zero.

- **Mod Wheel Tremulant Intensity:** The Mod Wheel (CC#01), or modulation wheel, is used to adjust the tremulant intensity. Mod Wheel controller data can also be "drawn" into MIDI sequencer tracks manually.
- **Tremulant Speed Controller (CC#17):** This controller will vary the speed of the tremulant. Tremulant speed is controlled by adjusting CC#17 from value 0 (no tremulant) to 127 (maximum tremulant). CC#17 can also be assigned to an available slider or knob on a hardware keyboard to give real-time control. This controller data can also be "drawn" into MIDI sequencer tracks manually.

Pedal Bass Fundamental (CC#20):

Bass fundamentals in the pedal tones are what can make a place rumble. With Garritan Classic Pipe Organs, you can adjust how loud the fundamental is in the bass pedal tones. This is especially useful for the 32' pipes and can produce a powerful sound if used with a good speaker system.

CC#20 allows you to control the depth/intensity of the pedal bass fundamental.

Warning! – Pipe down and go lightly on this control and use a good speaker system, especially one with a good subwoofer.

Crescendo Pedal (Advanced Feature):

The Classic Pipe Organ Crescendo instruments emulate the crescendo pedal commonly found on medium sized and larger pipe organs. The Crescendo pedal incrementally activates stops as it is pressed forward and removes stops as it is depressed backwards. Traditionally the addition of stops are in order from the quietest to the loudest. This is a quick way for the organist to achieve a desired sound or advance to a full tutti organ sound.

There are six Crescendo Pedal instruments within the Garritan Classic Pipe Organ collection, one for each Organ. You can find these within the ARIA Player bank menu at the bottom of each Organ folder, respectively. Each Crescendo Pedal instrument may contain a different amount of stops, depending on the size of the source organ.

To use the Crescendo Pedals simply load them from the ARIA Player bank menu as desired. The Crescendo Pedal Instruments load with the minimum default Crescendo Pedal settings, so they may sound quiet by default, until the Pedal MIDI CC# is engaged. We have assigned MIDI CC#4 to engage the Crescendo. Engaging MIDI CC#11 will add more organ stops sequentially from the smallest stop to the largest.

Utility Sine Oscillator Stop (Advanced Feature):

The Classic Pipe Organ Utility folder contains a basic Sine waveform patch. This Utility allows you to mix together 3 sine waveform oscillators at various emulated stop lengths. This utility patch is intended to be mixed with other existing stops, use volume sparingly. It can be very useful for precise boosts on any of the pedal stops for enhanced bass response. You may also find it useful for embellishing higher ranked gap registrations as well. The virtual pipe lengths available from lowest to highest are: 32', 16', 8', 5 1/3', 4', 2 2/3', 2', 1 1/3',1 3/5', and1'.

To use the Utility Sine patch simply load it from the Classic Pipe Organ bank. Then adjust and set your desired emulated stops on the ARIA Player Controls page. There is a drop down menu for each of the three sine waveform oscillators.

Blower Noise Layer (CC#13)

The Blower Noise (Blr Ns) controller is distinct from the chiff sound. It controls the sound of the air column from the blower through the pipes. This can be used to create a "breathy" sound for the softer stops or a more powerful tutti sound.

There are blower noise patches for each of the pipe organs. The blower noise is added to a separate channel as it is a global control and not integrated into the individual stops. They are to be loaded as any other stop patch. Adding stops together would only multiply the noise and have a cumulative noise buildup for each stop introduced. By using a separate blower patch, the blower noise remains consistent no matter how many stops are playing – as in actual pipe organs. The programming also maintains the blower noise level independently of polyphony. Each organ has a blower noise patch and each patch uses the corresponding "chiff" sample.

Timbre (EQ) Controls

Controlling timbre/EQ can enable you to produce a clearer sound. When many stops are added and played at once, the sound can become muddy. Judicious mixing and EQ can reduce sonic clutter so that combinations have better clarity and transparency, creating breathing room for the voices, so parts can be heard distinctly and clearly. In addition, the EQ controls can extend tonal range and allow better matching of sounds across the various organs and their stops.

The EQ section is a three-band equalizer, with each band having a separate gain knob (-24dB to +24 dB). The "Low" controls the filter's gain for the bottom of the spectrum, the "Mid" controls the midrange frequencies, and the "High" controls the top end of the frequency spectrum. You can adjust these by placing your cursor over the desired knob, left clicking/holding, and moving the mouse forward or backward. Release the mouse button at the desired number.

Precision EQ Controls

The Precision EQ controls offer even more control over the contour and frequency spectrum of the organs. The controls are almost identical to Global EQ mid control with the addition of Q bandwidth over the EQ's filter. This allows for more precise frequency range control over the EQ's filter.

- **Gain (CC#25)** - Turn this control to cut or boost the selected EQ frequencies up to -12dB/+12dB range.
- **Freq (CC#20)** - This control selects the EQ filter frequency, between 100 and 8000Hz.
- **Q (CC#27)** -The EQ bandwidth control affects the range of the effected frequencies of the EQ. Move to the right to widen the range, or move all the way to the left to create a very narrow range.

Release Decay Technology

The instruments in Garritan Classic Pipe Organs use specialized Release Decay Technology that was developed specifically for this library. After a key is struck and the finger comes off the key on a real organ, one hears the characteristic pressure drop of the actual end of the note.

The release triggers supply the characteristic pressure drop of the actual end of each organ note (not simulated) as well as the subtle pipe chest valve release and other pipe organ characteristics. The release trigger samples are also able to retain all of the sound of the pressure drop while removing most of the room decay. This provides the flexibility to create the desired decay characteristic and acoustical environment for each organ.

The acoustic environment could be anything from a small chapel to a large stone cathedral, which results in greater realism for your mix and musical productions. We hope you'll find that this Release Decay Technology adds a tangible three-dimensionality to the organ stops, even in more intimate environments, that can't be achieved with artificial amplitude envelopes.

Reverberation

Reverberation describes the phenomenon that occurs whenever a sound is made in an ambient space. Whenever a sound is produced in an enclosed space it radiates in all directions. When these radiated sounds hit a surface such as a wall or ceiling, they are either reflected or absorbed. The first reflected sounds are usually stronger and become more and more diffused as the sound bounces around the room. Our ears and our brain recognize these signals and let us know about the type and size of space we are in. Of all the effects that can be applied to music, reverb is perhaps the most widely used most likely because it emulates the sound that's heard literally everywhere around us.

Since the early cathedrals that were once a focal point for musical performance, the sound of reverberation seems to impart a sense of awe and wonder. The acoustic environment is integral to the overall sound of a pipe organ. The architecture and acoustics of the space are important and are meticulously factored into the organ's design. How the pipe organ resonates and projects to the listener can be vital to the musical performance.

Today's pipe organs are often heard in a cathedral or concert hall. The resonant space, with long reverberation time, wraps and captivates the listener in sound.

- **TIP:** When playing the keyboard, let go of the top notes first, like a reverse arpeggiation, to create an illusion of a more reverberant space. High frequencies tend to attenuate first in a larger space.

- **TIP:** Using a surround sound speaker array with a good subwoofer can also aid in creating a more spacious sound. A subwoofer will be helpful for the bass pedal stops.

The ARIA Player integrates two types of reverb - Convolution (sampled reverb) and Ambience Reverb (algorhythmic reverb).

AMBIENCE REVERB

Ambience is a great-sounding algorhythmic reverb that rivals the quality of the best commercial reverbs. Just as various libraries represent "virtual instruments" designed to simulate musical instruments, Ambience allows you to simulate the reverberation of a cathedral, concert hall, and many other spaces.

Ambience is turned ON by default and to deactivate it you must click the ON/OFF button in the Effects window in the ARIA Player interface. It may not be necessary to use Ambience Reverb if you have your own separate reverb or convolution program.

Note: When Ambience is turned ON, to control the amount of Ambience reverb for each stop patch, use the Sends in the Mixer window. The Send knob controls the amount of signal sent to the Ambience Reverb for each corresponding channel.

Ambience has a number of performing space presets to choose from. These presets have been custom-made and it is recommended that you first try out these presets. Presets include Ballroom 1 & 2, Cathedral, Concert Hall 1 & 2, Jazz Club 1 & 2, Parlor, Piano Hall 1 & 2, and Recital Hall 1 & 2. You can also edit these presets or experiment with the various settings to customize the acoustical environment as needed.

There are various knobs in the Ambience control panel that allow you to really shape your reverb. The most important parameters are reverb time (the time for the reverb to fade away), size (the size of the room), and the pre-delay time. Below are descriptions of the controls in Ambience:

- **DECAY** - This controls the time it takes for the reverb reflections to fade away into silence.
- **DIFFUSION** - Diffusion is the reflecting surface's ability to spread the reverb out. This control has a subtle effect on the sound and is especially noticeable with small room sizes.
- **SIZE** - This controls the size of the room. Note that long reverb time and small room size do not mix well. For natural sounds, a large room size such as a concert hall should be accompanied by a long reverb time, and vice-versa.

- PREDELAY - This controls the amount of time between the direct sound and the first of the reverb reflections. It is predelay that defines our perception of the size of the room.
- WIDTH - This controls the stereo spread from mono (0%) all the way to a wide stereo (100%). It is recommended that the width be set close to 100%.
- QUALITY - This knob allows you to trade off reverb quality for CPU usage. High quality equates to high CPU usage. You can make fun effects if you set it very low (try it!). If there is too much CPU demand on your machine, try turning down the quality.
- VARIATION - This control creates a new variant of the same room.
- LEVEL - This controls the amount of the processed reverberant sound.
- EQUALIZATION OUTPUT CONTROLS - These controls allow you to extend or attenuate the tonal range of the reverb output. In effect, performs traditional EQ on the reverb output with a smart emphasis on the ranges that are useful. **Lo Freq** sets the frequency, **Lo Gain** sets the gain for the EQ, **Hi Freq** sets the frequency, and **Hi Gain** sets the gain for EQ band.
- DAMPENING CONTROLS - Dampening is an algorythmic process on the reverb that controls how the reflections spread in the space. **Lo Freq** sets the damping low frequency, **Lo Amount** sets the damping amount for the set frequency (to dampen the reflections/reverb within that range), **Hi Freq** sets the damping high frequency, and **Hi Amount** sets the damping amount for the set High Frequncy (to dampen the reflections/reverb in that range).

CONVOLUTION SAMPLED REVERB

ARIA now includes an ultra-optimized convolution engine for high-quality sampled reverb and offers zero-latency processing with low CPU overhead. Just as the sounds of this library contain sampled musical instruments, convolution reverb is a process of sampling a physical space. Convolution involves the "sampling" of real acoustic spaces, such as concert hall or cathedral, that one wouldn't normally have an opportunity to record in. It then faithfully reproduces the natural-sounding reverberation that have been captured from these real acoustic spaces, down to its minutest detail and nuance. Because the acoustical space is sampled, and not synthesized like an algorhythmic reverb, convolution is well-known for its uncanny realism.
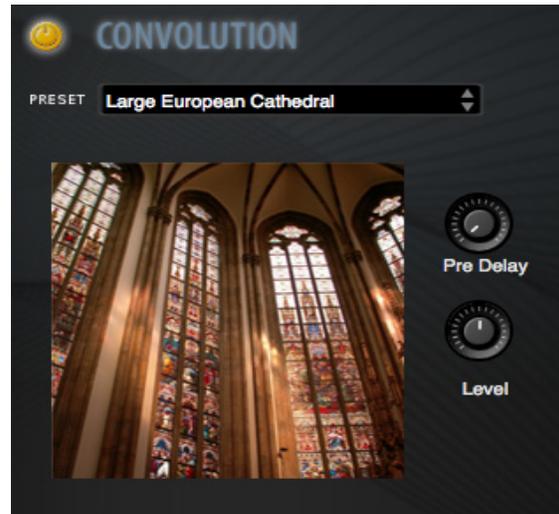
An impulse response is the recording of the reverberation that is produced in an acoustic space when an impulse sound is played in that space. It represents a sonic signature of that sampled space.

For the individual organ stops, Convolution Reverb is turned OFF by default and to activate it you must click the ON/OFF button in the Effects window in the ARIA Player interface. For the Organ Ensembles, Convolution are ON by default and Ambience Off

It may not be necessary to use Convolution Reverb when using Ambience, or vice versa, or if using a separate reverb or convolution program. And there are some situations where you may want to use both Ambience and convolution reverbs to exaggerate a certain space or element.

Note: When Convolution is turned ON, to control the amount of reverb for each stop patch, use the Sends in the Mixer window. The Send knob controls the amount of signal sent to the Convolution Reverb for each corresponding channel.

- LEVEL - This control adjusts the level of room contribution.
- PREDELAY - This controls adjusts the lenth of the reverbtail. or how fast the reverb dies down.

The Garritan Classic Pipe Organ library also includes an impressive collection of 12 impulse responses to choose from.   There are the glorious sounds of cathedral and churches as well as well-known symphonic concert halls and other stunning acoustic spaces.

- Chapel - Sampled reverb from a famous chapel in Cambridge Massachussets, USA.
- Film Score Space - Sampled reverb from a well-known film scoring space in the Seattle area that has been used for many popular movies.
- Large European Cathedral - Sampled reverb from a large cathedreal in the Czech Republic.
- Large Symphonic Concert Hall - Sampled reverb from a well-know large concert hall located in Seattle, USA.
- Medium Piano Concert Hall - Sampled reverb from one of the best piano halls located in Upstate New York.
- Modern Symphonic Concert Hall - Sampled reverb from a modern state-of-the-art concert hall located in Vancouver, Canada.
- Small Chamber Space - Sampled reverb from a small chamber recording space in Boston, USA.
- Small Orchestra Hall - Sampled reverb from a small concert hall located in Brno, Czech Republic.
- Traditional Symphonic Concert Halll - Sampled reverb from the Dvorak Hall (the Rudolphium). a large traditional concert hall in Prague, Czech Republic.
- Underground Cave - Sampled reverb from an undergound cave located in the Czech Republic.
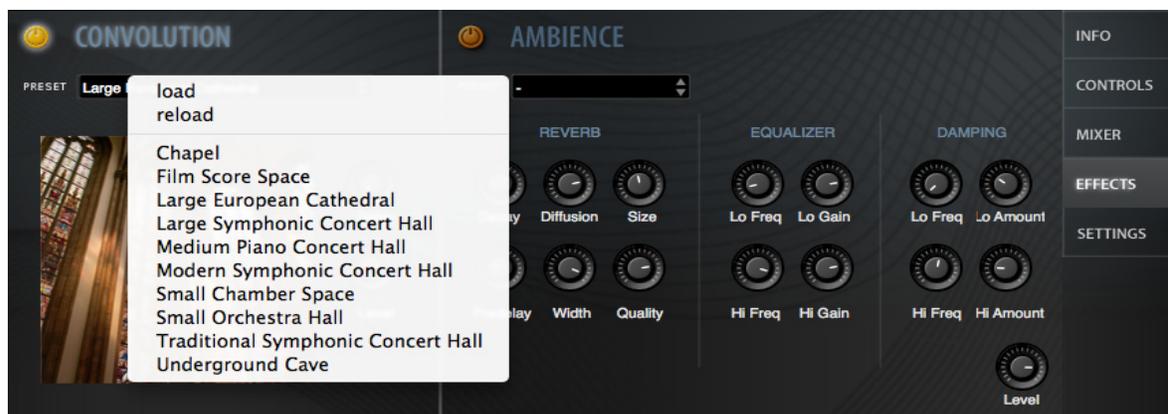
Note: You can use both Ambience Reverb and Convolution to shape your room sound. Both Ambience Reverb and Convolution must be set to ON. And when using separate plug-in reverbs/convolution in your sequencer or host program, it is important to bypass the on-board reverbs of the ARIA Player.

STEREO STAGE CONTROLS

When Stereo Stage is turned off, ranks can be panned from left to right in the usual way, positioning the ranks of pipes left to right by relative left/right volume intensity only. When Stereo Stage is turned on, it adds calculations that simulate the arrival times from the position of the instrumental sound source to a pair of virtual stereo microphones plus the first reflections from side walls, rear walls, and ceiling.

This can create a more three-dimensional image for positioning instruments on the stereo stage, both left to right and front to back.

There are two Stereo Stage controls available on the Controls page of the ARIA player..

1. On/Off button. This activates/disables Stereo Stage. The button lights when activated. This switch can also be controlled using CC#103.

2. Depth. This sets the position of the instrument front to back on the stereo stage. Small percentage numbers place instruments closer to the microphones; larger percentages place instruments farther back on the stage, with 100% being near the back wall of the stage. The Depth parameter can also be controlled with CC#36.

When Stereo Stage is activated, the panning knobs in the mixer section of ARIA still control the left to right positioning.

Note: As in real life, ranks of pipes placed near the microphones will display greater separation from left to right than instruments positioned near the back wall of the stage.

## Scala Files for Historic Tunings

The Scala import button provides a variety of other tunings that can be imported and used with Garritan Classic Pipe Organs. This can also be useful in playing historic pieces using a tuning appropriate to the era. Differing temperaments can also add extra color and warmth to the sound. Pipe Organs are rarely in perfect tune. Pipes change pitch depending on temperature and other factors, and Scala files can also provide detuning for more authentic sounds.

The Scala file import feature enables the use of thousands of other tunings that can be found on the internet.

The **Scala Center** box allows you to select the tonic base note (or center) of your scale.

The following menu appears when the "**Import**" button is clicked:
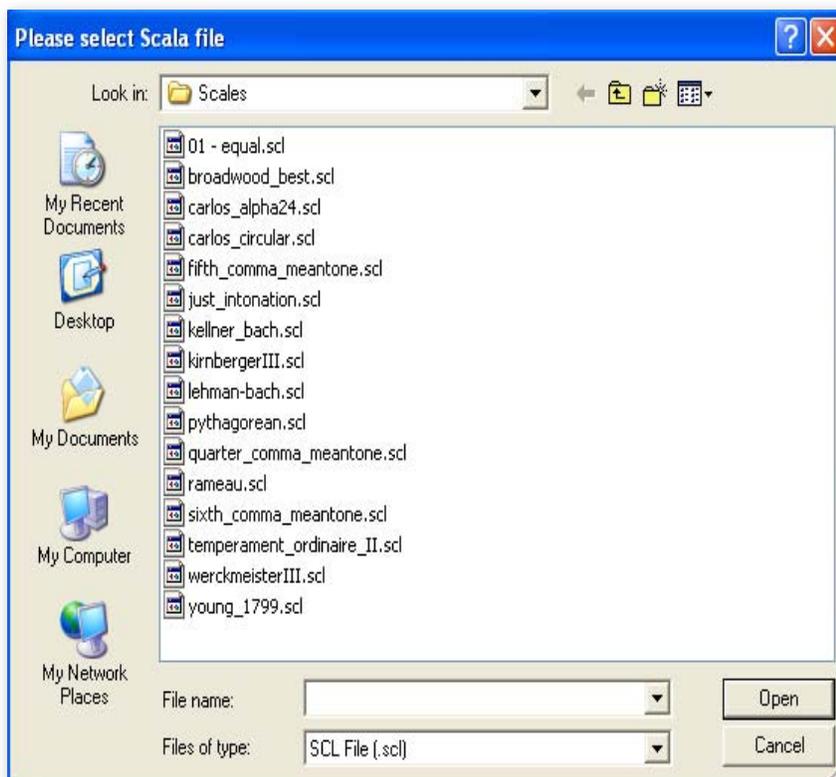
ORGAN

Quick MIDI Controller Reference Guide for

Garritan Classic Pipe Organs

Manual Stop Controls	CC#	Description
Swell	02 and/or 11	Activates the organ stop shutter system. Emulates the opening and closing of stop shutters on pipe organs. Technical details: adjusts relative amplitude while also increasing high frequency content via EQ.
Chiff	12	Natural sounding chiff and pipe air noise. Technical details: Organ blow noise samples vary between stops. Each stop has its own unique amplitude envelopes.
Tremulant Speed	17	Increases the speed of the current stop Tremulant (vibrato). Technical details: Tremulant LFOs affect both volume and pitch for a more realistic tremulant unique to the pipe organ.
Tremulant Intensity	Mod Wheel or 01	Increases the Tremulant intensity. Tremulant is off by default - moving the Mod Wheel up will gradually increase the effect. Technical details: Tremulant LFOs affect both volume and pitch for a more realistic tremulant unique to the pipe organ.

Pedal Stop Controls	CC#	Description
Swell	02 and/or11	Activates the organ stop shutter system. Emulates the opening and closing of stop shutters on pipe organs. Technical details: adjusts relative amplitude while also increasing high frequency content via EQ.
Bass Fundamental	20	Bass pedal tones, especially for the 32' pipes. Can adjust how loud the fundamental is. Technical details: Very powerful for good speaker systems. Users should be cautioned to use gently. Subwoofer needed.
Tremulant Speed	17	Increases the speed of the current stop Tremulant (vibrato). Technical details: Tremulant LFOs affect both volume and pitch for a more realistic Tremulant unique to the pipe organ.
Tremulant Intensity	Mod Wheel or 01	Increases the Tremulant intensity. Tremulant is off by default - moving the Mod Wheel up will gradually increase the effect. Technical details: Tremulant LFOs affect both volume and pitch for a more realistic Tremulant unique to the pipe organ.

ENSEMBLE PRESETS
as
REGISTRATIONS

Ensemble Presets as Registrations—Load Stops Easily

The Classic Pipe Organs installation includes a folder/directory called "Ensembles" that contains a collection of useful, pre-configured registrations for your convenience. Various stop groupings are listed in the table below. Loading an Ensemble can give you a quick "head start" to loading a registration. Each file loads a selection of stops along with pan, level, and other settings. The Ensembles folder can be found in the folder where the Classic Pipe Organs library was installed. The default location is: /Garritan/Classic Pipe Organs/Ensembles. There are wet and dry versions of each preset.

List of Presets	These presets are the complete organs in Omni MIDI routing. ARIA Instruments Slots are set to OMNI, so all of the stops can be triggered from the same keyboard/MIDI Channel. Useful for achieving a quick full Organ sound with a single keyboard setup.
Combination Ensemble Name:	Stops Included: Note: All Registration Preets have Wet and Dry versions. Wet is preferred)
Baroque Chapel	Baroque Flauto Octava 4' 2', Baroque Principle 4', Baroque Copula Maj 8', Baroque Forte Comb, Baroque Plenum, Baroque Ripieno Comb, Baroque Blower Noise
Baroque Church	Baroque Flauto Octava 4' 2', Baroque Principle 4', Baroque Copula Maj 8', Baroque Forte Comb, Baroque Plenum, Baroque Ripieno Comb, Baroque Blower Noise
Baroque Concert Hall	Baroque Flauto Octava 4' 2', Baroque Principle 4', Baroque Copula Maj 8', Baroque Forte Comb, Baroque Plenum, Baroque Ripieno Comb, Baroque Blower Noise
Baroque Large Cathedral	Baroque Flauto Octava 4' 2', Baroque Principle 4', Baroque Copula Maj 8', Baroque Forte Comb, Baroque Plenum, Baroque Ripieno Comb, Baroque Blower Noise
Baroque Small Chamber Space	Baroque Flauto Octava 4' 2', Baroque Principle 4', Baroque Copula Maj 8', Baroque Forte Comb, Baroque Plenum, Baroque Ripieno Comb, Baroque Blower Noise
Baroque Symphonic Concert Hall	Baroque Flauto Octava 4' 2', Baroque Principle 4', Baroque Copula Maj 8', Baroque Forte Comb, Baroque Plenum, Baroque Ripieno Comb, Baroque Blower Noise

List of Presets	These presets are the complete organs in Omni MIDI routing. ARIA Instruments Slots are set to OMNI, so all of the stops can be triggered from the same keyboard/MIDI Channel. Useful for achieving a quick full Organ sound with a single keyboard setup.
Combination Ensemble Name:	Stops Included: Note: All Registration Preets have Wet and Dry versions. Wet is preferred)
Classical Chapel	Classical Forte 8' 4' 2', Classical Strings 8' 4', Classical Flute 8', Classical Principal 8', Classical Quintadena 8', Classical Pleno Comb, Classical Blower Noise
Classical Film Score Space	Classical Forte 8' 4' 2', Classical Strings 8' 4', Classical Flute 8', Classical Principal 8', Classical Quintadena 8', Classical Pleno Comb, Classical Blower Noise
Classical Large Cathedral	Classical Forte 8' 4' 2', Classical Strings 8' 4', Classical Flute 8', Classical Principal 8', Classical Quintadena 8', Classical Pleno Comb, Classical Blower Noise
Classical Symphonic Concert Hall	Classical Forte 8' 4' 2', Classical Strings 8' 4', Classical Flute 8', Classical Principal 8', Classical Quintadena 8', Classical Pleno Comb, Classical Blower Noise
Mod1 Film Score Space	Mod1 Nasat 2' 2-3', Mod1 Koppelflote 4', Mod1 Flutes 8' 4' 1', Mod1 Crumhorn 8', Mod1 Gemshorn 8', Mod1 Prinzipal 8', MOd1 Bar Plenum plus Reed, Mod1 Baroque Plenum, Mod1 Brustwerk Tutti, Mod1 Hauptwerk Tutti, Mod1 Hauptwerk Mixture, Mod1 Scharf IV, Mod1 Scharf IV, Mod1 Dulzian 16' Mod1 Pedal Bar Pln Rd, Mod1 Blower Noise
Mod1 Modern Symphonic Hall	Mod1 Hauptwerk Mixture, Mod1 Scharf IV, Mod1 Scharf IV, Mod1 Dulzian 16' Mod1 Pedal Bar Pln Rd, Mod1 Blower Noise
Mod1 Large Cathedral	Mod1 Nasat 2' 2-3', Mod1 Koppelflote 4', Mod1 Flutes 8' 4' 1', Mod1 Crumhorn 8', Mod1 Gemshorn 8', Mod1 Prinzipal 8', MOd1 Bar Plenum plus Reed, Mod1 Baroque Plenum, Mod1 Brustwerk Tutti, Mod1 Hauptwerk Tutti
Mod1 Small Chamber Space	Mod1 Hauptwerk Mixture, Mod1 Scharf IV, Mod1 Scharf IV, Mod1 Dulzian 16' Mod1 Pedal Bar Pln Rd, Mod1 Blower Noise
Mod1 Small Orchestral Hall	Mod1 Nasat 2' 2-3', Mod1 Koppelflote 4', Mod1 Flutes 8' 4' 1', Mod1 Crumhorn 8', Mod1 Gemshorn 8', Mod1 Prinzipal 8', MOd1 Bar Plenum plus Reed, Mod1 Baroque Plenum, Mod1 Brustwerk Tutti, Mod1 Hauptwerk Tutti
Mod2 Large Cathedral	Mod1 Hauptwerk Mixture, Mod1 Scharf IV, Mod1 Scharf IV, Mod1 Dulzian 16' Mod1 Pedal Bar Pln Rd, Mod1 Blower Noise

List of Presets	These presets are the complete organs in Omni MIDI routing. ARIA Instruments Slots are set to OMNI, so all of the stops can be triggered from the same keyboard/MIDI Channel. Useful for achieving a quick full Organ sound with a single keyboard setup.
Combination Ensemble Name:	Stops Included: Note: All Registration Preets have Wet and Dry versions. Wet is preferred)
Mod2 Small Orchestra Hall	Mod2 Great Clarion 4', Mod2 Great Octave 4', Mod2 Great Quintadena 4', Mod2 Great Spitzflote 4', Mod2 Swell Rohr Schalmei 4', Mod2 Choir Clarinet 8', Mod2 Choir Gemshorn 8', Mod2 Choir Vox Humana 8', Mod2 Great Principal 8', Mod2 Great Tromp En Cham 8', Mod2 Swell Trompete 8', Mod2 Great Cornet IV', Mod2 Great Flute Harm, Mod2 Great Mixture IV, Mod2 Pedal Principal 16', Mod2 Pedal Bourdon 16'
Mod2 Symphonic Concert Hall	Mod2 Great Clarion 4', Mod2 Great Octave 4', Mod2 Great Quintadena 4', Mod2 Great Spitzflote 4', Mod2 Swell Rohr Schalmei 4', Mod2 Choir Clarinet 8', Mod2 Choir Gemshorn 8', Mod2 Choir Vox Humana 8', Mod2 Great Principal 8', Mod2 Great Tromp En Cham 8', Mod2 Swell Trompete 8', Mod2 Great Cornet IV', Mod2 Great Flute Harm, Mod2 Great Mixture IV, Mod2 Pedal Principal 16', Mod2 Pedal Bourdon 16'
Mod2 Underground Cave	Mod2 Great Clarion 4', Mod2 Great Octave 4', Mod2 Great Quintadena 4', Mod2 Great Spitzflote 4', Mod2 Swell Rohr Schalmei 4', Mod2 Choir Clarinet 8', Mod2 Choir Gemshorn 8', Mod2 Choir Vox Humana 8', Mod2 Great Principal 8', Mod2 Great Tromp En Cham 8', Mod2 Swell Trompete 8', Mod2 Great Cornet IV', Mod2 Great Flute Harm, Mod2 Great Mixture IV, Mod2 Pedal Principal 16', Mod2 Pedal Bourdon 16'
Renaissance Film Score Space	Ren Stopped Flutes 8' 4', Ren Quintadena 8' 4', Ren Renaissance 8' 4', Ren Diapason 8', Ren Blockwerk, Ren Pleno Comb, Ren Ripieno Comb, Ren Bass Comb, Ren Pleno Comb, Ren Ripieno Comb, Ren Blower Noise
Renaissance Large Cathedral	Ren Stopped Flutes 8' 4', Ren Quintadena 8' 4', Ren Renaissance 8' 4', Ren Diapason 8', Ren Blockwerk, Ren Pleno Comb, Ren Ripieno Comb, Ren Bass Comb, Ren Pleno Comb, Ren Ripieno Comb, Ren Blower Noise

List of Presets	These presets are the complete organs in Omni MIDI routing. ARIA Instruments Slots are set to OMNI, so all of the stops can be triggered from the same keyboard/MIDI Channel. Useful for achieving a quick full Organ sound with a single keyboard setup.
Combination Ensemble Name:	**Stops Included:** *Note: All Registration Preets have Wet and Dry versions. Wet is preferred)*
Renaissance Symphonic Concert Hall	Ren Stopped Flutes 8' 4', Ren Quintadena 8' 4', Ren Renaissance 8' 4', Ren Diapason 8', Ren Blockwerk, Ren Pleno Comb, Ren Ripieno Comb, Ren Bass Comb, Ren Pleno Comb, Ren Ripieno Comb, Ren Blower Noise
Renaissance Traditional Symphonic Concert Hall	Ren Stopped Flutes 8' 4', Ren Quintadena 8' 4', Ren Renaissance 8' 4', Ren Diapason 8', Ren Blockwerk, Ren Pleno Comb, Ren Ripieno Comb, Ren Bass Comb, Ren Pleno Comb, Ren Ripieno Comb, Ren Blower Noise
Romantic Chapel	Rom Harmonic Flute 1 8', Rom Harmonic Flute 2 8', Rom Clarinet 8', Rom Fortissimo 8', Rom Gamba 8', Rom Forte Comb, Rom Pianissimo Comb, Rom Strings Comb, Rom Tutti Comb, Rom Blower Noise
Romantic Large Cathedral	Rom Harmonic Flute 1 8', Rom Harmonic Flute 2 8', Rom Clarinet 8', Rom Fortissimo 8', Rom Gamba 8', Rom Forte Comb, Rom Pianissimo Comb, Rom Strings Comb, Rom Tutti Comb, Rom Blower Noise
Romantic Small Chamber Space	Rom Harmonic Flute 1 8', Rom Harmonic Flute 2 8', Rom Clarinet 8', Rom Fortissimo 8', Rom Gamba 8', Rom Forte Comb, Rom Pianissimo Comb, Rom Strings Comb, Rom Tutti Comb, Rom Blower Noise
Romantic Symphonic Concert Hall	Rom Harmonic Flute 1 8', Rom Harmonic Flute 2 8', Rom Clarinet 8', Rom Fortissimo 8', Rom Gamba 8', Rom Forte Comb, Rom Pianissimo Comb, Rom Strings Comb, Rom Tutti Comb, Rom Blower Noise
Romantic Traditional Symphonic Concert Hall	Rom Harmonic Flute 1 8', Rom Harmonic Flute 2 8', Rom Clarinet 8', Rom Fortissimo 8', Rom Gamba 8', Rom Forte Comb, Rom Pianissimo Comb, Rom Strings Comb, Rom Tutti Comb, Rom Blower Noise

Loading Ensemble Preset/Registration Files

In standalone mode there are two ways to load Ensemble Preset/Registration files:

- Load from the File menu (File/Load)
- Drag and Drop

When ARIA is used as a plug-in from within a host program the Drag and Drop method can be used to load ensemble files. This can be done as follows: With the ARIA player interface displayed, open the "Ensembles" folder/directory to display the numbered collection of ensemble files. Using the mouse button, click and hold on the registration preset file you wish to load. Drag it to the ARIA interface and release the mouse button. The instruments and their configurations will load automatically.

In Finale, you can load Ensembles by clicking on the Ensemble section of the Aria player and choosing the library and ensemble you want. You can also save these ensembles within Finale.

Note:

Note that in Standalone mode you can create customized ensemble files. Just load the stops you want, adjust their settings to your liking, and use the Save As command from the File menu to save the .aria preset.

DIRECTORY OF STOPS & COMBINATIONS
in
GARRITAN CLASSIC PIPE ORGANS

GARRITAN CLASSIC PIPE ORGANS STOP LIST

RENAISSANCE PIPE ORGAN STOP LIST

RENAISSANCE ORGAN:	
Stop Name:	Description:
Ren Blockwerk	Combination of Octava Principalis 4', Quinta 3', Super Octava 2', and Mixtura stops. This stop suggest the sound of the older Gothic blockwerks organs.
Ren Stopped Flutes 8' 4'	Combination of Copula Maior 8 and Copula Minor 4.
Ren Quintadena 8' 4'	Combination of Salicional 8 and Quintadena 4 (second windchest).
Ren Renaissance 8' 4'	Combination of Copula Major 8, Quintadena 4, and Cimbel stops.
Ren Diapason 8'	Principal 8' stop. The diapason represents the quintessential tone of the pipe organ.
Ren Pleno Comb	Full organ combination using a large number of the organ's stops and mixtures, to produce a full, rich and massive sound. Ranks include Principal 8, Octava Principalis 4, Quinta , Super Octava 2, Mixtura, Cimbel.
Ren Ripieno Comb	Combination of Principal 8, Octava Principalis 4, Quinta 3, and Super Octava 2. Ripieno is Italian for "filled up".
Ren Bass Comb	Bass stop combination of the lower pirched stops - Subbassus 16, Octav Bassus 8, Super Octav 4. Pedals did not come into vogue until the baroque organs.
Ren Blower Noise	Blower Noise from the Renaissance Organ.

BAROQUE PIPE ORGAN STOP LIST

BAROQUE ORGAN:	
Stop Name:	Description:
Baroque Flauto Octava 4' 2'	Flauta 4 and Octava 2. A combination of diapason pipes with a relatively pure sound mixed with a stop at a pitch one octave higher.
Baroque Principal 4'	Principal 4' stop. Principal is often synonymous with Open Diapason and is considered to be one of the basic voices of the organ.
Baroque Copula Maj 8'	Copula 8'. This 8' stop is a valuable stop in the older organs and produces a gentle flute-like sound.

BAROQUE ORGAN:	
Stop Name:	Description:
Baroque Forte Comb	Combination of stops of the Baroque organ producing a forte sound. Diapason oriented.
Baroque Plenum	Full organ, using a large number of the organ's stops to produce a full, rich sound.
Baroque Ripieno Comb	Ripieno is Italian for "filled up" and comprises various stops containing mutations with breaks.
Baroque Blower Noise	Blower Noise from the Baroque Organ.

CLASSICAL (Late Baroque) PIPE ORGAN STOP LIST

CLASSICAL ORGAN:	
Stop Name:	Description:
Classical Forte 8' 4' 2'	Combination of ranks producing a forte sound. Diapason with 8', 4', & 2' pipes.
Classical Strings 8' 4'	Strings stops represent some of the narrowest pipes. Although suggestive of their orchestral counterparts, they do not resemble stringed instruments. Gamba 8' and Fugura 4.
Classical Flute 8'	Flute 8' The flute stop has a soft clear sound. Flute pipes have broad scales and high mouths and are broader than diapason pipes.
Classical Principal 8'	Principal 8'. The name Principal is synonymous with the Open Diapason and are an essential sound in pipe organs.
Classical Quintadena 8'	Quintadena 8'. A stopped flute sound in which the 3rd harmonic (twelfth) is prominent.
Classical Pleno Comb	Full organ: using a large number of the Classical organ's stops produce a full, rich, loud sound.
Classical Pedal Forte	Combination of pedal ranks producing a forte sound. Diapason oriented with 8' and16' lengths.
Classical Pedal Pleno	Full pedal stops, using Subbass apertus 16, Subbass clausus 16, Octavbass 8, Flauta 8, and Posaune 16 stops.
Classical Blower Noise	Blower Noise from the Classical/Late Baroque Organ.

ROMANTIC PIPE ORGAN STOP LIST

	ROMANTIC ORGAN:
Stop Name:	*Description:*
Rom Harm Flute 1 8'	Harmonic Flute 1 - 8' stop A flute stop with pipes twice the length and overblown to product harmonics.
Rom Harm Flute 2 8'	Harmonic Flute 2 - 8' stop Another harmonic flute stop of the Romantic organ.
Rom Clarinet 8'	A reed stop voiced to imitate a clarinet.
Rom Fortissimo 8'	Combination of 8' reed and diapason ranks producing a fortissimo sound.
Rom Gamba 8'	Gamba 8' stop. A main string stop, also called Viola da Gamba, produced by open metal pipes of a medium scale.
Rom Forte Comb	Combination of ranks producing a forte sound. Diapason oriented.
Rom Pianissimo Comb	Combination of ranks producing a pianissimo sound. Entirely flutes with only a few ranks.
Rom Strings Comb	Strings stops represent some of the narrowest pipes and produce a pleasing warm sound (although not resembling string sounds). Stops include a combination of Salicional 8', Gamba 8', Cello 16', Vox Celeste 8' and Fugara 4'.
Rom Tutti Comb	Full organ combination using all of the organ's stops and mixtures.
Rom Blower Noise	Blower Noise from the Romantic Organ.

MODERN PIPE ORGAN 1 STOP LIST

MODERN ORGAN 1:	
Stop Name:	*Description:*
Mod1 Nasat 2 2-3'	Nasat 2 2/3'. A mutation stop of 2-2/3' with a flute tone that reinforces a harmonic of the fundamental pitch.
Mod1 Koppelflöte 4'	Koppelflöte (Positiv) 4'. A short conical metal flute with a bright tone.
Mod1 Flutes 8' 4' 1'	Combination Flutes (8', 4', 1'). The flute stop has a soft clear sound. Flute pipes have broad scales and high mouths and are broader than diapason pipes.
Mod1 Crumhorn 8'	Crumhorn 8'. This is one of the oldest organ stops and takes its name from the instrument of the same name. The sound has a muffled, buzzing tone.
Mod1 Gemshorn 8'	Gemshorn 8' (Positif). A stop whose pipes are conical in shape and having a tonal characteristic of both strings and flute stops. Believed to imitate the instrument of the same name that was made from an animal's horn.
Mod1 Prinzipal 8'	Prinzipal 8'. The principal tone of the pipe organ and considered to be its most important stop.
Mod1 Bar Plenum plus Reed	Full reed stops, or plenum with reeds, using a large number of the Modern 1 organ's baroque-sounding reed stops resulting in a full, rich sound.
Mod1 Baroque Plenum	Plenum without reeds, or full stops, using a large number of the Baroque-sounding stops to produce a full, rich, loud sound. In early organ development, all stops took part in the global sound, or the "Plenum" *i.e.* the sound produced by the organ with a large number or all its stops.
Mod1 Brustwerk Tutti	All stops on brustwerk (manual 3) have their own set of stops. The brustwerk are the stops in front of other ranks, often encased above the keyboard, in the 'breast' of the organ. Because it represents the stops out in front, it often has a sharp, clean and bright sound.
Mod1 Hauptwerk Tutti	All stops on the hauptwerk manual (manual 1, Great), Hauptwerk (like the Brustwerk) is a manual with its own set of stops. The Hauptwerk often has the most powerful stops and the greatest number of stops,
Mod1 Hauptwerk Mixture	Stops on the hauptwerk manual without reeds.
Mod1 Scharf IV	Scharf IV, A mixture of four pipes. Scharf is a name of a mixture stop and the Roman numerals mean how many pipes sound together on every note you play.

MODERN ORGAN 1:	
Stop Name:	**Description:**
Mod1 Symphonic Plenum	Combination stop, using a large number of the of various flutes and reeds stops to produce a full, rich, and powerful sound. The "Plenum" is the sound produced by the organ with a large number or all its stops.
Mod1 Dulzian 16'	Dulzian 16' (Positiv). A soft-toned reed stop intended to resemble the sound of an old double-reed instrument that was similar to the bassoon.
Mod1 Pedal Rauschpfeife IV	Pedal – Rauschpfeife IV. A compound pedal stop of four metal ranks. The Rauschpfeife was also a pre-Baroque wind instrument.
Mod1 Pedal Trompette 8' 4'	Trompette 8' (Solo Trumpet 4'). The Trompette is usually a versatile stop, usable either as a solo stop or in combination.
Mod1 Bar Plenum plus Reed Pedal	Full reed pedals, or pedal plenum with reeds, using a large number of the organ's baroque reed pedal stops to produce a powerful and deep sound. Stops include Bombarde 16'/32', Basson 16', Trompette 8'.
Mod1 Pedal Baroque Plenum	Baroque Pedal Plenum without reeds, or full pedals, using a large number of the organ's baroque pedal stops including Montre 32'/16'/8', Flûte 16', Soubasse 16', and Prestant 4'.
Mod1 Pedal Posaune 32'	Posaune 32' (Pedal). Posaune is German for trombone. This stop is a chorus reed and is intended to sound brassy.
Mod1 Blower Noise	Blower Noise from the Modern 1 Organ.

MODERN PIPE ORGAN II STOP LIST

MODERN ORGAN 2:	
Stop Name:	*Description:*
Mod2 Great Clarion 4'	Clarion 4'. A chorus reed stop of 4' pitch.
Mod2 Great Octave 4'	Octave 4'. An Open Diapason of 4' pitch. An important stop on the organ. It is usually the first stop to be tuned and other stops are then tuned to it.
Mod2 Great Quintadena 4'	A stopped flute of 4' pitch made of metal,
Mod2 Great Spitzflote 4'	Spitzflöte 4'. This stop has the tone of the Diapason with a strong fundamental and a sharper chiff.
Mod2 Swell Rohr Schalmei 4'	Rohr Schalmei 4. A short-resonator reed stop producing a hollow, nasal tone quality.
Mod2 Choir Clarinet 8'	Clarinet 8'. This is a favorite solo stop on many organs and one of the better organ imitations of an orchestral instrument.
Mod2 Choir Gemshorn 8'	Gemshorn 8'. Gemshorn pipes are conical and originally intended to imitate the Gemshorn, a fipple flute with a closed end.
Mod2 Choir Vox Humana 8'	Vox Humana 8'. The Vox Humana means "human voice" and is one of the oldest organ stops. It is often used with tremulant.
Mod2 Great Principal 8'	Principal 8'. An Open Diapason of 8' pitch. The name Principal is more properly used as a synonym for the Open Diapason.
Mod2 Great Tromp En Cham 8'	Trompete en Chamade 8'. A Trompette (trumpet) stop which the pipes are mounted 'en chamade' or horizontal rather than vertical, and producing a bright fanfare sound.
Mod2 Swell Trompette 8'	Trompette 8' (or Trumpet) A common reed stop that is versatile and can be used as a solo stop or in chorus with principals, mixtures, and/or with other reeds.
Mod2 Great Cornet IV	Cornet IV. A wide-scaled compound stop of four voices with mutations. It was originally intended to imitate a Renaissance Cornet.
Mod2 Great Flute Harm	Flute Harmonique. Harmonic flutes are constructed from open pipes which are twice the normal length. Overblowing speaks to the first harmonic (the octave).
Mod2 Great Mixture IV	Modern 2 Great Mixture IV. These are generic names for compound stops containing mutations, usually with breaks.

MODERN ORGAN 2:	
Stop Name:	Description:
Mod2 Swell Contre Tromp 16'	Contre Trompette 16'. A Trumpet stop pitched an octave lower than normal.
Mod2 Pedal Choral Bass 4'	Choralbass 4'. The Choralbass is voiced for playing the melody in chorale works, hence its name.
Mod2 Pedal Mix IV	Pedal Mixture IV. A pedal mixture composed of four various pedal stops.
Mod2 Pedal Nachthorn 8'	Nachthorn 8'. A stopped flute of very wide proportions with a soft tone.
Mod2 Pedal Octave 8'	Octave 8'. Octave Bass is a Bass Flute stop.
Mod2 Pedal Tromp 8'	Trompette 8'. A Trumpet pedal stop in the Modern 2 organ.
Mod2 Pedal Bourdon 16'	Bourdon 16 pedal stop'. A 16' stopped wooden diapason flute. It is possibly the single most common 16' pedal stop.
Mod2 Pedal Fagotto 16'	Fagotto 16' pedal stop. An imitative reed pedal stop designed to suggest the Bassoon.
Mod2 Pedal Principal 16'	Principal 16' pedal stop. An Open Diapason of 16' pitch. The name Principal is more properly used as a synonym for the Open Diapason.
Mod2 Pedal Contre Bourd 32'	Contre Bourdon 32' pedal stop. The Bourdon stop pitched an octave lower than the Bourdon 16'
Mod2 Pedal Contre Fagotto 32'	Contre Fagotto 32'. A Bassoon stop pitched an octave lower than the Fagotto 16'.
Mod2 Blower Noise	Blower Noise from the Modern 3 Organ.

ADDENDUM

The Garritan Community
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I invite you to join the Garritan Community.

Owning Garritan Classic Pipe Organs gives you much more than a product. One of the most valuable benefits is membership in the Garritan community of musicians.

The Garritan Forum is where Garritan users from around the world come to discuss everything related to soundware and music. It's the perfect way to find the latest news and announcements, ask questions, and share your music made with Garritan Classic Pipe Organs. If you want to browse, share your music, share your thoughts about the sounds, impart knowledge, listen to demos, learn, and interact with other users—this is the place! You can also communicate privately with other musicians, respond to polls, participate in real-time chats, read how-to tutorials, and get support and help from others. There is a wealth of information among the tens of thousands of posts in the forum and a convenient 'search' feature to find exactly what you are looking for.

The Garritan forum can be accessed at: **http://www.garritan.com/forum**. There is a special subsection dealing with Classic Pipe Organs on the Garritan forum.

You do not have to register to browse posts, but before you can post, you will have to sign up. Registration is fast, simple, and absolutely free, so please join our community today! In addition to the official Garritan Forum, there are other independent Garritan Communities where you can find valuable information and interact with other users. I urge you to contribute and be a part of the Garritan Community, where you will find an indispensable resource for musicians.

VISIT
THE
GARRITAN FORUM
www.garritan.com/forum.html

Getting Help

The first place to look for a solution to any problem you may be experiencing is in this manual. The next best place is the separate ARIA Player manual. Please read these manuals before contacting support. Next, check the readme files (if any) that contain important information and all last-minute changes that were not available when creating this guide. Whenever you encounter problems, you should also check if you have installed the latest updates. The version number of your software is displayed in the Settings tab. Updates are released regularly to fix known problems and improve the software.

Selecting the "Get Help" button in the "Settings" tab in the ARIA Player will link directly to the Support site. To better assist you, we will ask you for all information about your hardware and software environments. In your report, you should include a description of the problem, the steps you have taken to try to remedy the problem, the specs of your computer, and a description of your software and hardware.

If there is a severe technical issue (crash, empty UI), please go to the "Generate Logs" link. For Windows the link is in the Start Menu, and Mac users can find the Generate Log link in your library's folder. This link will open a window and will allow you to create a log on your desktop. Please attach the log to an e-mail and send it to us. That will help us identify the issue so we can get back to you.

If you are unable to find a solution to your problem by any of the above methods, please email us at **support@garritan.com**. The best way to get the help you need is by giving us plenty of detailed information about the problem you are having. We do ask you to read this guide thoroughly and exhaust the other avenues of support before contacting us.

> **Regarding Third-Party Customer Service:** Please do not call Garritan for technical support regarding any third-party application. Please contact the respective companies for support.

For the Latest… The ARIA Player is dynamic software that is evolving and growing. Please check the support area of our website at **www.garritan.com** for the latest up-to-date information, troubleshooting, FAQs, helpful hints, and tutorials. Another resource is the support forums, where you can discuss problems directly with other users and with experts from our forums.

Acknowledgements

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