St. Mary, Portsea

Sample Set

User Guide · Version 1.0

J.W. Walker & Sons, 1889/1892 · Portsmouth, England

Contents

1. Introduction

Thank you very much for purchasing the St. Mary's Church, Portsea organ sample set. This guide covers everything you need to get started, from installation through to the finer details of the virtual organ. I hope that you will have many hours of enjoyment exploring and playing this instrument. It is a fantastic organ in all aspects, and it has been a joy to make it available for people just like you to experience.

If you have any further questions or feedback about anything relating to this sample set, please contact me through my website and I will be happy to help you.

Acknowledgements

I would like to thank the Church, PCC and Brian Moles, the Director of Music at St. Mary's, for his enthusiasm for allowing me to work on this project.

Thank you to Jeremiah Martin for his brilliant advice with the coding side of the sample set.

A very special thank you to Matt Dixon, who is the curator of the organ at St. Mary's, for his patience and hospitality during this project and whose help I am incredibly grateful for.

2. The Church and Organ

The Church

St Mary's stands on the oldest church site on Portsea Island, where a church is recorded as early as 1164. The present building — the third on the site — is one of the largest Anglican parish churches in England. Designed by Sir Arthur Blomfield and built between 1887 and 1889, its foundation stone was laid by Victoria, Princess Royal. Much of the cost was met by William Henry Smith, better known today for the family firm that became the retailer WHSmith. Smith, then First Lord of the Admiralty, had anonymously offered to double whatever the parish raised, and by his death in 1891 had contributed some £28,000 — his identity as the mystery donor only emerging after his death. The church is a Grade II* listed building and has been described as the finest Victorian building in Hampshire.

© Tim Sheerman-Chase, St Mary's Church at dawn, Fratton (CC BY 2.0)

Its dominant feature is the 167-foot west tower, which on completion made St Mary's Church the tallest building in Portsmouth. Such was the scale of the church that when the Diocese of Portsmouth was created in 1927, St Mary's was considered as a possible pro-cathedral; the church of St Thomas, chosen instead, had to be doubled in size before it matched St Mary's. The parish has an impressive pedigree, too: regular worshippers in the previous church included Charles Dickens and Isambard Kingdom Brunel, and its vicars

have gone on to become Archbishops of Canterbury (Cosmo Gordon Lang) and York (Cyril Garbett).

Altarpiece

The tower houses a ring of eight bells, four of which originated in a 1764 Whitechapel peal cast for the old church. The original 1889 installation proved notoriously difficult to ring, and in 1933 all eight were recast by John Taylor & Co and rehung lower in the tower — a transformation so successful that they were hailed as among the finest rings of eight anywhere.

During the Second World War, two bombs fell just behind the church in the Portsmouth Blitz of 1940. The building survived, though the blast shattered most of the great east window, whose glass was not replaced until 1952.

The Organ

The organ at St. Mary's was built by J.W. Walker & Sons and installed in two stages, in 1889 and 1892. It is a fine example of late Victorian organ building. Despite being in a large church, the specification appears slightly modest with the number of stops available. Walker experimented with a large amount of Diapason tone to provide the power to carry through the church building. The Great Open Diapason Large 8′ is of significant proportions and grows exponentially in the bottom octave. The late 1880s were an experimental period for Walker, who chose to provide brilliance to the Great chorus through a 'Clarion Mixture' – a high-pitched mixture of 3 ranks, instead of a reed stop of 4′ pitch. The Swell also has no 4′ reed – but a bright 3-rank mixture alongside the graver 4-rank mixture. A 4′ reed is not particularly missed in place of these mixtures.

Great pipework – showing (closest to farthest) Harmonic Flute 4′, Stopped Bass Wald Flute Treble 8′, Principal 4′, Open Diapason Medium 8′, Double Diapason 16′, Open Diapason Large 8′.

A solo division of 4 stops – Harmonic Flutes at 8′, 4′, 2′ and a Tuba were planned, however due to funds were never originally installed. The solo manual, built in preparation for this addition, was used as a bookshelf until being removed in the 1965 rebuild. A new console was constructed, along with a new electropneumatic action which over the years proved to be unreliable. In 2022, Nicholson & Co. organ builders completed a comprehensive restoration of the organ, which included a new console in the original style, but with several concessions which include an electric action, as the original 1889 mechanical action was lost and with no reliable evidence as to how to recreate it. In addition, it was originally reported to be quite unreliable!

A summarised timeline is provided below to show the life of the organ through the years:

1889	The new Parish church designed by Arthur Blomfield was completed and consecrated by the Bishop of Winchester on October 20th. Part of the organ built by J.W. Walker & Sons was installed and playable for the consecration service. The incomplete organ was already proclaimed to be 'one of the finest instruments in the South of England' - The Evening News, October 10th 1889.
1892	The completed organ, albeit excluding the proposed Solo organ and organ screen, was dedicated in October. A recital followed in November, given by Dr George Martin.
1895	Due to flooding, the organ blower apparatus was moved from its current cellar to the heating cellar.
1901	Gifted as a memorial to those who fell in the Boer War, the intricate oak organ case was built and dedicated at a service of music and dedication on October 12th.
1916	The Gas Engine power source for the blower was replaced by a modern electric motor.
1920	Schemes were invited to modernise and complete the instrument.
1939	With the Great Depression and the onset of another World War, elaborate schemes were abandoned, with a simple overhaul and cleaning undertaken by J.W. Walker & Sons.
1962	J.W. Walker & Sons were invited to tender for extensive modernisation in the contemporary style.
1965	Due to limited finances, a substantially less-extensive overhaul was undertaken by J.W. Walker & Sons; the reeds were revoiced, all actions changed to electro-pneumatic type, a new blower installed, console rebuilt with lighter inserts and three manuals, balanced Swell pedal fitted.
1981	Cleaning and overhaul undertaken by the local firm of George Martin and Partner, including the installation of a solid-state two-channel piston capture system, upgrades to the divisional pistons and eight new general thumb pistons. The pitch was lowered to A=440Hz.
2022	A restoration was completed by Nicholson & Co. organ builders, reverting much of the organ to its original 1889/1892 state.

3. About the Sample Set

Recording

The samples were taken over a week of overnight recording in June 2026. St. Mary's Church is located on a very busy road, which does not quieten much even during the early hours of the morning – and major road works were taking place overnight just down the road, which didn't help either! Meticulous noise removal was necessary to clean the samples so that the original character of the pipes was not lost, and the result has been entirely successful.

All samples were recorded at 24-bit/48 kHz. Four microphone perspectives are included, giving a range of listening positions from close to the pipes through to the far end of the nave:

- Direct – a single microphone moved around inside the organ chamber to capture maximum 'dry' pipe detail. This is panned centrally in the sample set and is ideal mostly for using the sample set in a live venue. See the section below for suggestions.
- Close — a couple of metres in front of the organ casework, which captures a large amount of pipe clarity.
- Main — the 'optimal' listening position for the organ, balancing pipe detail with the building's reverb.
- Rear — situated far down the nave, which captures the full acoustic of the church – this is the most spacious and reverberant perspective.

The Main perspective alone gives a well-balanced result. If you are restricted by computer memory (RAM), I recommend only loading this perspective. By adding the Close and Rear perspective alongside the Main, the versatility is increased, and finally adding a small amount of Direct perspective adds focus and clarity.

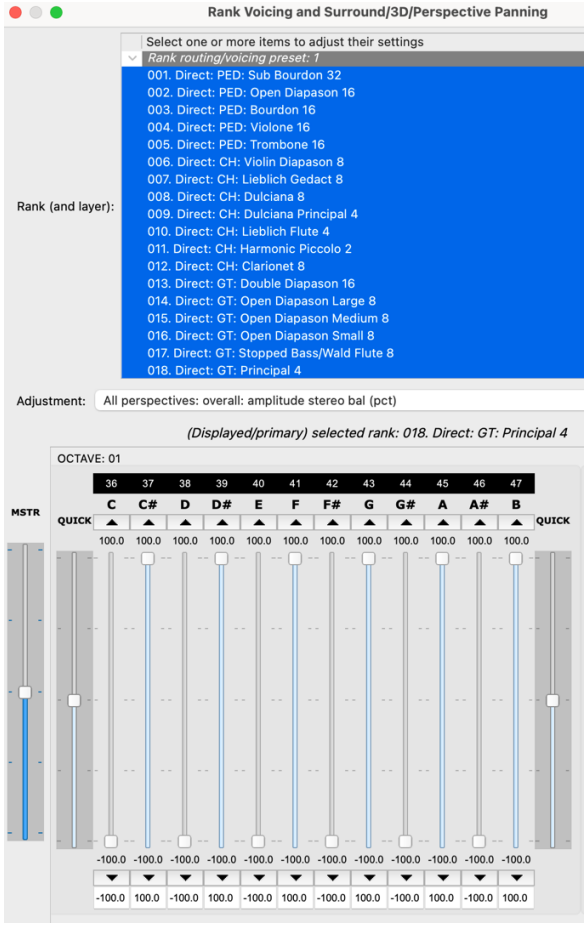
Direct samples

These samples will naturally sound narrow on a stereo speaker system or headphones because they were recorded with one microphone, so by default both speakers will play the same sound, creating a 'phantom center'. In reality, an organ pipe is a single 'mono' source of sound, which reflects off the room surfaces it sounds in, to create the sense of space you perceive. This is the intention of this direct perspective – to be played from speakers in a space with its own acoustic to make it appear like it is sounding in that space, instead of using other perspectives (which already include the St. Mary's acoustic).

If you plan to use this sample set in a live space with its own acoustic, using a majority mix of Direct perspective and perhaps a small mix of Close for a slightly more 'live' sound (with releases truncated to roughly 500ms or lower) could provide a satisfying result. This is by no means a one-size-fits-all situation so a lot of adjustments will be needed.

The Direct samples are panned centrally by default. If you will be playing the organ on a stereo system or headphones, you may wish to select all the pipe ranks in the voicing menu and pan them as shown in the screenshot below, alternating left and right, to create a more spacious sound when combining the direct perspective with other perspectives. Without

going into too much detail, if you had enough speaker channels, you could try and replicate the organ layout as if pipes were situated on a real windchest by routing and panning individual pipes and divisions.



Tremulant

The swell tremulant's effect on each note has been captured as part of the sampling. On the Settings page of the organ, there is an option to swap the Tremulant model from 'Sampled' to 'Artificial'. This removes the need for the tremulant samples to be loaded in the Rank Loading list and therefore reduces the memory (RAM) requirements. The artificial model has been adjusted per pipe and stop to give the best result however the sampled tremulant will always sound superior.

Tuning

The organ was sampled at its natural pitch, but due to the heatwaves when sampling it was slightly lower than A=448 Hz. On the Settings page, there is an option to 'tune' the Flue and Reed pipework separately. At 0%, the organ will sound with the tuning as it was when sampled. At 100%, the pipework will be 'perfectly' in tune at A=448 Hz. The organ was not enormously out of tune with itself during sampling – so for the most realistic sound, both should be left at 0%.

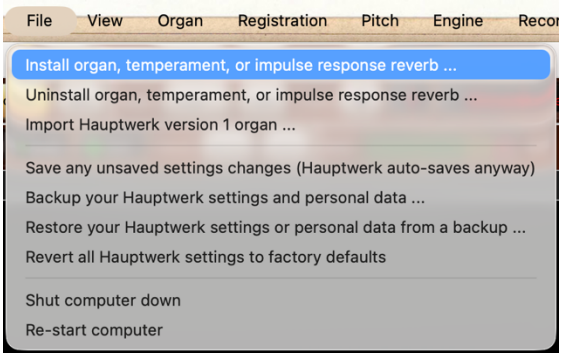
N.B. The tuning between the mixture ranks on single notes will always remain natural. This is due to multiple ranks sounding simultaneously which cannot be separated.

4. Installation

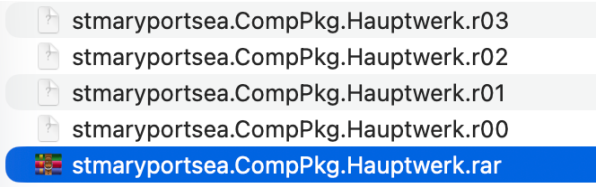
After purchasing the St. Mary, Portsea sample set, you will receive several download links by email. Download each file in turn. Please note for the full version of this sample set, each download link will last for 3 days from the first download, up to a maximum of 5 downloads. This should be sufficient to download each part in case of any internet issues, but if you require a new link for any part, please contact me through my website.

Once all files are downloaded onto your computer, open Hauptwerk and navigate to:

- **File → Install organ, temperament, or impulse response reverb …**



Navigate to the folder containing the downloaded files and open the file labelled 'stmaryportsea.CompPkg.Hauptwerk.rar'. Hauptwerk will locate and install the remaining parts automatically.



Installation may take some time depending on your computer – Hauptwerk should display a percentage of progress. No iLok or dongle activation is required for this sample set as it is unencrypted.

Note: Keep all downloaded parts in the same folder before beginning installation.

5. Loading the Organ

System Requirements

Computer memory (RAM) requirements depend on the bit depth and number of perspectives loaded. As a guide:

- All four perspectives at 24-bit: approximately 39.2 GB RAM
- All four perspectives at 16-bit: approximately 21.1 GB RAM
- Single (Main) perspective at 24-bit: approximately 13.6 GB RAM
- Single (Main) perspective at 16-bit: approximately 7.8 GB RAM

You should allow approximately 5 GB on top of these figures to calculate the amount of total RAM your computer should have installed.

For best results load at 24-bit quality. If RAM is limited, reducing some ranks or perspectives to 16-bit, not loading unused perspectives, or by not loading the sampled tremulant makes the most practical difference. The samples have been engineered in a way that if you load the organ sample set in 16-bit, the degradation of quality is kept to a minimum.

First Load

Go to **Organ → Load organ, adjusting rank audio memory options …** and select '**St. Mary, Portsea – J.W. Walker, 1889**'. This will bring up a screen showing all the ranks of the organ.

The ranks are displayed in order of perspective, then division, then typical layout. The miscellaneous noises (blower, tremulant etc.) are located at the bottom of each perspective. Select which ranks you choose to load and on the right-hand side some options will appear on how you wish to load each rank.

Provided only in the full version of this sample set is a rank on each perspective labelled 'Special'. This is an addition to the sample set, activated by a hidden button on the console.

On first load Hauptwerk will build a sample cache, which may take several minutes, but subsequent loads will be considerably faster.

Once loaded, right-click any control on the virtual console and select the auto-detect option to assign your MIDI keyboards, pedalboard, stops, swell pedal, etc. A piston page is included for convenience of assigning general, divisional, and reversible pistons.

6. The Virtual Console

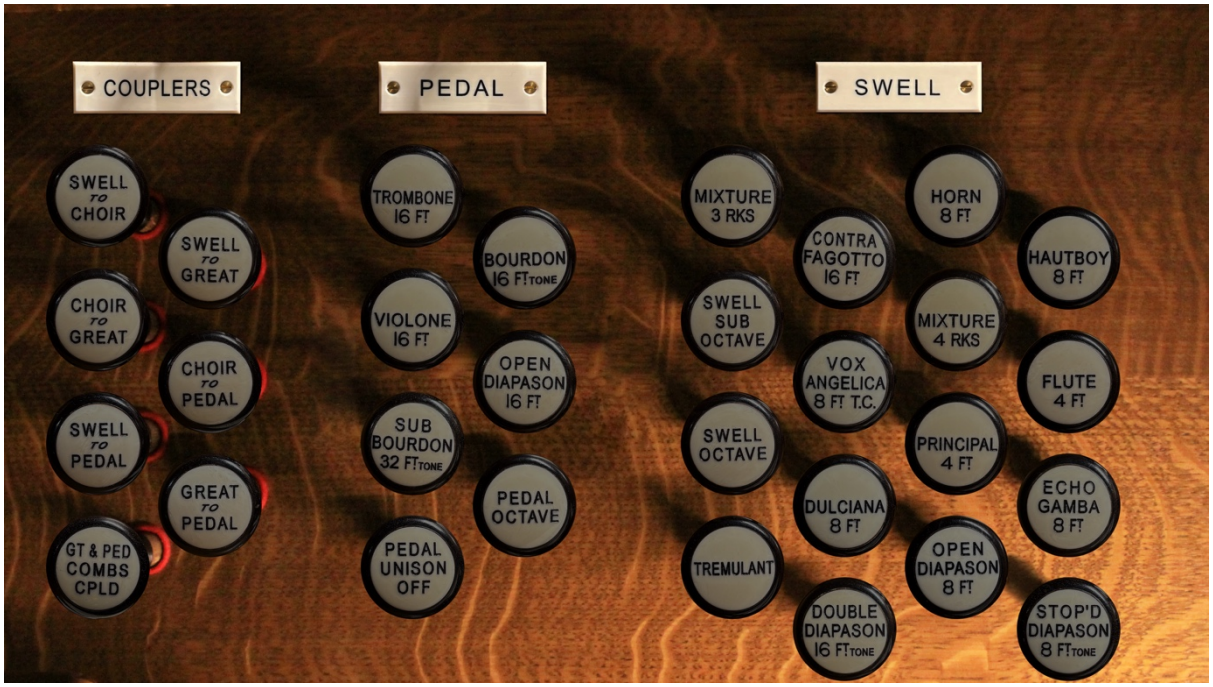
Several screen layouts are available via the tabs at the top of the Hauptwerk window.

Console

The main console screen shows the full virtual instrument — all keyboards, the pedalboard, swell pedal and both stop jambs. Stops, manuals, pedals and the swell pedal can be right-clicked for MIDI auto-detect assignment.

Left and Right Jambs

The left and right jamb screens provide enlarged views of the stop jambs and are well suited for use with touch screens placed to either side of a physical console. By default, on a landscape monitor they will appear sideways to real life, with the stops re-positioned for a more sensible layout. If you scale the Hauptwerk window vertically, the jambs will automatically become portrait and display the stops exactly how they are found on the real instrument.



Simple Jamb

A compact text-based view of all stops across all divisions on a single screen. This is useful for single-monitor setups or as a quick overview of the full specification. MIDI assignment is available here too. Like the Left and Right Jambs, both landscape and portrait views are included.

Settings

The Settings screen allows you to tailor the sample set to your own system. The following controls are available:

Audio Levels — Master faders for the four microphone perspectives: Direct, Close, Main and Rear. Adjust these to suit your room and playback system.

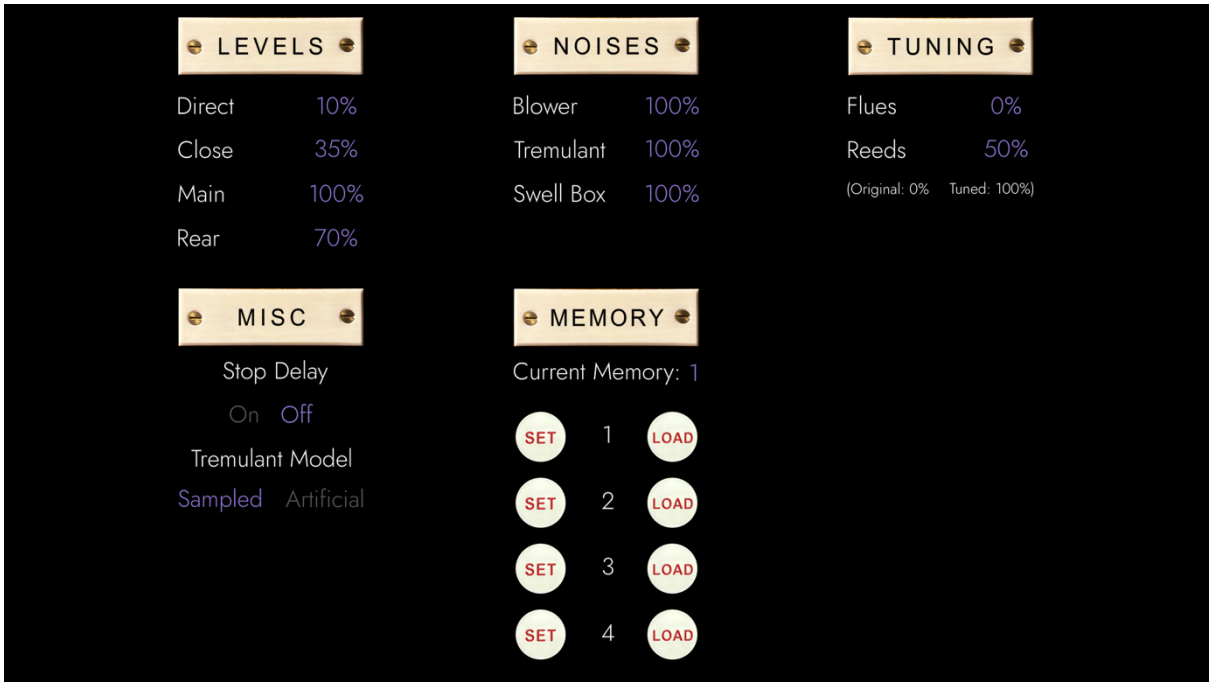
Organ Noises — Separate master level controls for Blower, Tremulant, and Swell Pedal effects.

Tuning — Independent adjustment for flue and reed ranks relative to the recorded pitch. A setting of 0% uses the original pitch.

Stop Delay — When engaged, draws and retirals of stops are subject to a short delay, replicating the feel of the electric action and how the real instrument behaves.

Tremulant Model — Switch between the sampled tremulant and Hauptwerk's artificial tremulant model, which can be adjusted in speed and depth.

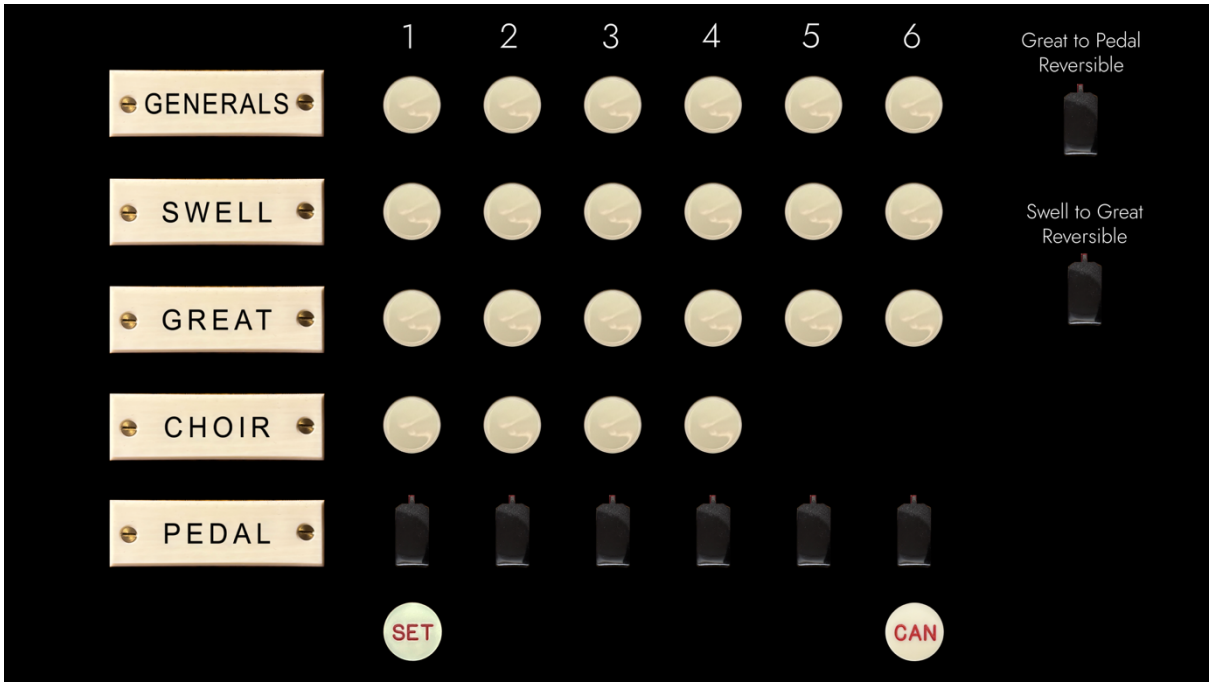
Memory — Four memory slots for storing and recalling all the Settings configurations. This might be useful, for example, if you use speakers as well as headphones and find you have a different preference for both - or prefer practising on a 'closer' mix and performing on a more 'diffuse' mix.



Pistons

The piston screen is primarily included for ease of assigning your console pistons to the sample set.

N.B. a stepper is not included here, as Hauptwerk provides its own built-in one.



7. The Combination System

The sample set includes divisional pistons for all four divisions:

- Pedal: pistons 1–6
- Great: pistons 1–6
- Swell: pistons 1–6
- Choir: pistons 1–4

and 6 generals, which store stops for the entire instrument.

Each divisional piston stores and recalls the stops of its own division, together with the relevant couplers where applicable.

A stop labelled 'Gt & Ped Combs Cpld' (*Great and Pedal Combinations Coupled*) on the left jamb links the Great and Pedal pistons. When engaged, pressing any Great piston will simultaneously activate the matching Pedal piston, and vice versa. If this stop is disengaged, it returns the two division pistons to independent operation.

N.B. Due to the nature of how Hauptwerk operates by default, when this stop is engaged, if you want to save the Great and Pedal stops currently engaged with the press of one button, go to:

General Settings → General Preferences → Main 2

and then untick the top two 'Cancel setter (capture mode) automatically whenever capturing to a combination?', and 'Cancel scope (range) mode automatically whenever scoping to a combination?'

This should allow you to save both divisions at once – alternatively, save pedal stops to pedal pistons and great stops to great pistons *without* 'Gt and Ped Combs Cpld' engaged.

8. The Wind Model

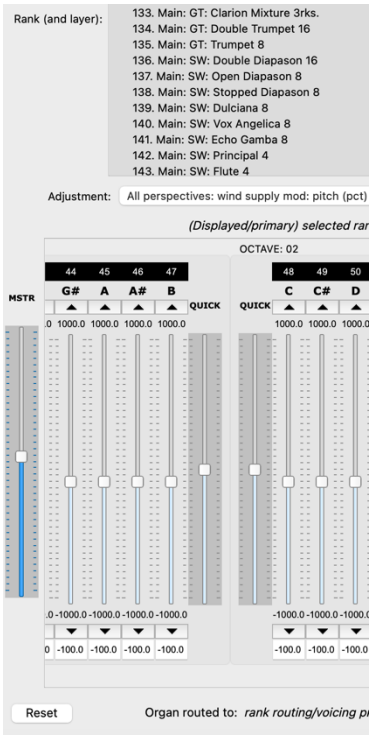
The wind model on the real organ is solid and is easily capable of supporting tutti. However, like any organ, it still 'breathes' slightly with wind demand, and this creates a 'singing' characteristic. This is something I have been keen to implement in this sample set. Wind draw has been calculated for each pipe (i.e. a large 16ft flue bass pipe will draw many times more wind than a small 2ft treble) and appropriate detuning is applied to each stop. It is a subtle but effective feature that enhances the realism of the sample set.

If for any reason you wish to turn the wind model off, the settings can be found in:

- **Organ Settings → Organ Preferences**

A small issue in Hauptwerk v5+ currently means that the pitch of pipes rises rather than falls when there is a pressure drop. To fix this, navigate to:

- **Organ Settings → Rank voicing …**
- Then select all ranks from the organ (Windows: Ctrl+A, Mac: Cmd+A)
- In the list of voicing adjustments, select: '**All perspectives: wind supply mod: pitch (pct)**'
- On the left-hand side, drag the master slider down so that instead of each pipe reading +100, it reads -100.



In Hauptwerk v10+, this issue should be fixed, so this is no longer necessary. It may be necessary for upgrading users to revert these changes by selecting all ranks and clicking 'reset'.

9. Specification

J.W. Walker & Sons, 1889/1892 · St Mary's Church, Portsea, Portsmouth · III/P · 38 stops · A=448 Hz

CHOIR 58 notes		GREAT 58 notes		SWELL 58 notes · (enclosed)		PEDAL 30 notes (42 pipes except 32′)	
Violin Diapason	8′	Double Diapason	16′	Double Diapason	16′	Sub Bourdon	32′
Lieblich Gedact	8′	Open Diapason Large	8′	Open Diapason	8′	Open Diapason	16′
Dulciana	8′	Open Diapason Medium	8′	Stopped Diapason	8′	Violone	16′
Dulciana Principal	4′	Open Diapason Small	8′	Echo Gamba	8′	Bourdon	16′
Lieblich Flute	4′	Stopped Bass Wald Flute Treble	8′	Dulciana	8′	Trombone	16′
Harmonic Piccolo	2′	Principal	4′	Vox Angelica (T.C.)	8′	*Great to Pedal*	
Clarionet	8′	Harmonic Flute	4′	Principal	4′	*Swell to Pedal*	
Swell to Choir		Twelfth	2⅔′	Flute	4′	*Choir to Pedal*	
		Fifteenth	2′	Mixture 15.19.22.26	IV	*Pedal Octave*	
		Mixture 15.19.22	III	Mixture 22.26.29	III	*Pedal Unison Off*	
		Double Trumpet	16′	Contra Fagotto	16′		
		Trumpet	8′	Horn	8′		
		Clarion Mixture 22.26.29	III	Hautboy	8′		
		Swell to Great		Tremulant			
		Choir to Great		*Swell Octave*			
				Swell Sub Octave			

Couplers shown in italics. Combinations: Pedal 1–6, Great 1–6, Swell 1–6, Choir 1–4. 6 Generals. Combinations stop links Great and Pedal pistons when engaged.

10. Licence

The following terms govern your use of the St Mary Portsea sample set.

Permitted uses

- Use the sample sets to make non-commercial recordings for any purpose.
- Use the sample sets for church services and public events.
- Create a backup copy of the sample set files for personal use.
- Make a composite organ referencing these sample sets by file path, provided the composite does not include the sample files themselves. If the composite is distributed, all users must obtain every required sample set — whether paid or free — by downloading them individually from sesquialteraorgans.co.uk. The sample files themselves must never be bundled with or included in the composite.

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- You shall not sell free sample sets or free demos of paid sample sets, in whole or in part.

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