

**Vienna Instruments**  
**Solo Download Instruments**  
**Contrabass**  
**Trombone**  
**Full Library**

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## Introduction

Welcome to the Vienna Symphonic Library, and thank you for purchasing one of our Solo Download Instruments! This document contains the mapping information for the "Full" version of the Vienna Instruments Contrabass Trombone. You will find in it a comprehensive survey of the articulations/Patches content, a listing of abbreviations, and the mapping list proper which gives details for every Patch, Matrix, and Preset.

## "Full" Library

As opposed to the "Standard" versions of our Solo Download Instruments, the "Full" versions are identical with the corresponding instruments of a DVD Collection, i.e., they contain exactly the same samples, Patches, Matrices and Presets as the latter without any restrictions.

Installing a Download Instrument's Full version copies that instrument's sample content to a separate folder on your hard disk, so that it is not necessary to keep its Standard version installed – you may either delete it from your hard disk or at least remove it from the Directory Manager's list of activated instruments. In the Vienna Instruments Browser, the path of the Full version will be the same as that of the corresponding DVD Instrument, so that you can still see both versions as separate entries if you keep the Standard version installed.

## Data paths and Patch name conventions

Since the Full versions of Download Instruments conform to the corresponding DVD Instruments, the data paths in your Vienna Instruments browser will be different than those of Standard Download or Special Edition Instruments. For instance, the path of the Standard Download Library of Flute 1 is "02D Flute-1", and all Patches can be found in this folder regardless of the articulation group they belong to. The Patch number is also marked with a "D" so that you immediately know it is a Download Instrument. In the Vienna Special Edition, Flute 1 is located in the folder "11 Flutes" together with the other flutes. Here, the Patch number is marked with an "S". The Full Download of Flute 1 is located in the subfolder "32 Flute" of the section "Woodwind Patches", which again contains subfolders grouping the Patches according to type, e.g., "01 SHORT + LONG NOTES", "02 DYNAMICS", etc. Patch names of the Full Download Library may differ from the corresponding ones of the Standard Download Library.

While Full Download Instruments contain all articulations of the corresponding DVD Instruments, their Patches are not divided into Standard and Extended content. The list of articulations further down which gives a summary of the Library's contents.

Special Patch configurations which sometimes are part of a Standard Download Instrument may be found in a reserved folder called "98 RESOURCES" in the Full Instrument. E.g., Flute 1 Standard contains the Patch "22D FL1 legato-sus"; in Flute 1 Full, this Patch is called "01 FL1\_perf\_leg\_sustain" and is located in the Resources' subfolder "03 Perf Speed variation". (Apart from that, it also contains more samples.) Other articulations that can be found in the Resources folder are isolated dynamics repetitions in the subfolder "01 Perf Rep dyn" – e.g., the five repetitions of a legato crescendo, divided into separate Patches – and extracted velocity layers of sustained notes in the subfolder "02 Long Notes – Single Layer".

## Patch information

The Patch information includes articulation type, playing range, number of samples used, RAM requirements, the number of velocity layers and alternations, AB switching possibilities, etc., as well as Patch specific information if necessary.

Where the type of articulation requires a special mapping (e.g., natural harmonics patches), the mapping layout will be shown in a detailed graphic.

**Major and minor runs** are always mapped to the keys of their scale, as are **arpeggios** to the keys of the broken chord played. **Grace notes** and **mordents** are mapped to their target note, i.e., the note the articulation ends with. Due to their nature, all **upward and downward articulations** (e.g., fixed glissandos and octave runs) have different mapping ranges – the upward movements ending the involved interval below the Patch's upper mapping range, while downward movements end the interval above its lower mapping range. (Please note that not all of the articulations mentioned above may be contained in your Collection.)

The Patch information also lists a Patch's velocity layers in detail. Velocity layer switches generally are the same for patches with the same number of layers but may occasionally be adapted to the instrument's requirements:

Layers	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Layer 6
2	1-88	89-127				
3	1-55	56-88	89-127			
4	1-55	56-88	89-108	109-127		
5	1-24	25-55	56-88	89-108	109-127	
6	1-24	25-55	56-88	89-108	109-118	119-127

## Interval performances

Interval performances are one of the outstanding features of our Vienna Instruments. They allow you to play authentic legato without any programming tricks. In our Silent Stage, all intervals from minor second to the octave were recorded for every instrument – up and down, of course; that makes 24 interval samples per note for one velocity alone! When you load an interval performance Patch and play a line on your keyboard, the software automatically joins the right samples with their interval transitions again, and you hear a perfect legato. By the way, this technique is not only used for legato but also for other articulations like the strings' portamento, marcato, or détaché and spiccato articulations.

Interval performances also contain at least two legato repetitions for every note which alternate automatically whenever you strike a key more than once. There also are preconfigured thresholds for legato and repetition notes: The legato threshold – i.e., the maximum break between notes where legato is played – is 50 ms. Otherwise, a sustained starting note will sound so that you can easily start a new phrase without leaving the legato Patch. For note repetitions, the threshold is 200 ms: a break up to that duration will yield a legato repetition; if the break is longer, a new starting note. But of course, it's mingling legato with other articulations which makes a piece really come alive.

Due to their nature, all interval performances are monophonic; otherwise, the software would have to be able to decide which source note belongs to which target note. To circumvent this, you can open two VI instances of the same instrument on separate MIDI tracks without any additional strain on your RAM.

*Note:* the Vienna Instruments PRO player software also allows you to play polyphonic Interval performances.

Another variety of interval performance you will come across is the "perf-leg\_sus" Patch. These Patches also contain normal legatos, only the target note of each interval is crossfaded into a looped sustain. They can be used for slower pieces with long notes; however, you should use them with circumspection, since plain legatos sound more lively because they not only render the interval transitions as they were played, but also have different target samples for every interval instead of the same sustained note: When you play, e.g., c-e and then c#-e with normal legato, you will get two different "e" tones; with sus-legato you won't.

## Matrix information

Each Matrix listing contains information regarding the Patches used for the Matrix, the number of horizontal and vertical dimensions, and switching properties. A mapping table shows the Cell positions for each of the Matrix' Patches.

**A/B switching** normally is set to A0 for upward/crescendo, and B0 for downward/diminuendo. However, some bass instruments go below that range so that the A/B keys have to be adapted accordingly. For example, the A/B switches for double bass are A0 and A#0 because the instrument's lower range extends to B0.

In order to facilitate working with **MIDI controller switches** like the Modulation wheel, the switching positions are not distributed equally across the controller range if they control more than two Matrix rows or columns; generally, the switching range will be narrower at the extreme positions because they are easy to set, and wider in the middle where it is harder to find the desired setting.

**Speed controller switches** naturally are adjusted to the Patches involved, and have been tested carefully as to their playability. However, if you find that they do not fit your playing, or want to try out other settings, you can change this as well as any other controller's settings at the **Control edit** page, and save the result in your Custom Matrix folder.

## Preset information

The Preset information lists the Matrices used in the Preset as well as its keyswitches. All other information can be gathered from the Matrix and Patch listings, so there's not really much to say here. Please note that the Matrices of a Preset can also be switched with MIDI Program Changes (VI: 101–112; VI PRO: 1–127) instead of keyboard notes, and if you like to keep your keyboard free for playing instead of switching, you can disable Preset keyswitching and only use MIDI Program Changes. Vienna Instruments PRO also allows you to define a MIDI Control for Preset keyswitching.

## Abbreviations

Here's a list of abbreviations in Patch names, which will help you to determine a Patch's content even without the help of the Vienna Instruments browser. Please note that not all of the abbreviations may occur in the manual on hand.

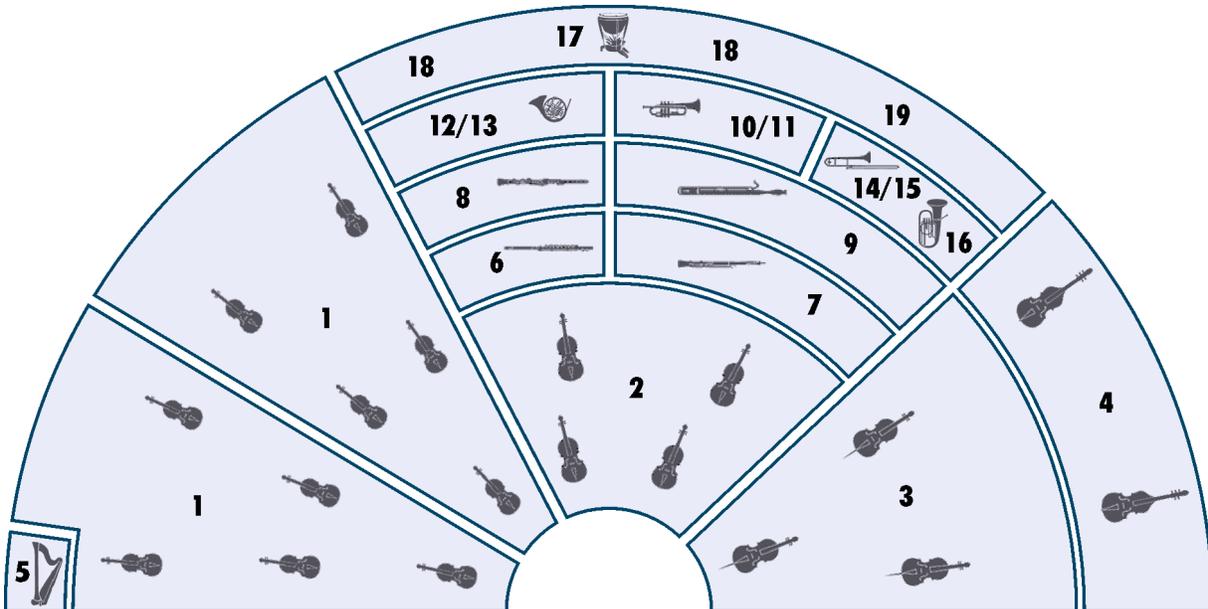
Abbreviation	Meaning	Abbreviation	Meaning
+	faster articulation (runs and arpeggios)	lo	long
150, 160, ...	150, 160, ... BPM (beats per minute)	ma	major
1s, 2s, ...	tone length 1 sec., 2 sec., ...	marc	marcato
acc	accelerando	me	medium
all	combination of all Patches of a category	mi	minor
arp	arpeggio	mord	mordent
blare	"blared" tones (horn)	mu	muted
cre	crescendo	muA, muB	muted, variation A/B
dim	diminuendo	nA	normal attack
dm	diminished (arpeggios)	noVib	without vibrato
dyn	dynamics (crescendo and diminuendo)	perf-rep	repetition performance
dyn5, dyn9	dynamics, 5/9 repetitions	por	portato
fa	fast	run	octave run
faT	fast triplets	sA	soft attack
fA	fast attack	sl	slow
fA_auto	attack automation (normal/fast attack)	sta, stac	staccato
fast-rep	fast repetitions	sto	stopped (horns)
flutter	flutter tonguing	str	strong
fx	effect sound	sus	sustained
gliss	glissando	T	triplets
hA	hard attack	tune	"tuning in" articulation
leg	legato	UB	upbeat
li	light	UB-a1, -a2	1, 2 upbeats
		v1, v2 ...	1st, 2nd, ... variation
		Vib	with (medium) vibrato
		Vib-progr	progressive vibrato
		XF	cell crossfade Matrix

<b>Articulations</b>
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<b>58 Contrabass trombone</b>	
<b>01 SHORT + LONG NOTES</b>	Staccato Portato medium, normal and marcato Portato long Sustained
<b>02 DYNAMICS</b>	Light crescendo and diminuendo, 1, 1.5, and 2 sec. Medium crescendo and diminuendo, 3, 4, and 6 sec. Strong crescendo and diminuendo, 3 and 4 sec. pfp, 4 and 6 sec. Fortepiano, sforzato, sforzatissimo
<b>03 FLATTER + FX</b>	Flutter tonguing normal and crescendo Arpeggios, up/down and down/up Duophonic playing, var. A and B
<b>10 PERF INTERVAL</b>	Legato, normal and with sustain crossfading Marcato
<b>11 PERF REPETITION</b>	Portato slow and fast, normal and dynamics Staccato
<b>12 UPBEAT REPETITION</b>	1–3 upbeats, 80–150 BPM
<b>13 GLISSANDI</b>	Performance glissandos, minor 2nd to major 3rd Fixed glissandos, minor 2nd to 4th, up and down

## The orchestra

There are several ways of setting up an orchestra, depending on the era of the piece played, the type of the piece and the instruments it requires, and even on the preference of the conductor. The figure below shows one of the more common setups, which can be taken as a guideline for mixing a composition, properly positioning the instruments in the stereo field and adding reverb according to the size of the concert hall you want your piece to be played in.



- |   |                         |       |                              |
|---|-------------------------|-------|------------------------------|
| 1 | 1st and 2nd violin      | 9     | Bassoon, contrabassoon       |
| 2 | Viola                   | 10/11 | Trumpet                      |
| 3 | Cello                   | 12/13 | Horn                         |
| 4 | Double bass             | 14/15 | Trombone                     |
| 5 | Harp                    | 16    | Tuba                         |
| 6 | Concert flute, piccolo  | 17    | Timpani                      |
| 7 | Oboe, English horn      | 18    | Drums, cymbals               |
| 8 | Clarinet, bass clarinet | 19    | other percussion instruments |

## Pitch

For designating pitch, the Vienna Symphonic Library uses International Pitch Notation (IPN), which was agreed upon internationally under the auspices of the Acoustical Society of America. In this system the international standard of A=440 Hz is called A4 and middle C is C4. All pitches are written as capital letters, their respective octave being indicated by a number next to it. The lowest C on the piano is C1 (the A below that is A0), etc.

You can tune your Vienna Instruments to other players, or adjust it to tunings of earlier musical periods by setting the Perform page's Master Tune option within a range of 420 to 460 Hz.

# 58 Contrabass trombone

## The instrument

### Description

The contrabass trombone was created to provide sufficient volume for a stable and supportive foundation to the four-part trombone section while blending with its homogeneous overall sound, which was something the tuba could not do. It is used principally for the great octave and the contraoctave.

### Range and notation

The contrabass trombone has a range of Ab<sub>0</sub>–C<sub>5</sub>. Music for the contrabass trombone is written in bass clef with no transposition. The notation in the upper register is in tenor clef.

### Sound characteristics

Hard, metallic, penetrating, powerful, dark, taut, intense, dramatic, heroic, eruptive.

It sounds more intense than the bass trombone. Compared to the tuba the contrabass trombone sounds far more concise, definite and metallic. The sound has a dark and metallic timbre and ranges from a melodious and subdued piano to massive explosions. It is the notes of the low register that are most often used in the orchestra. The upper register (C#<sub>4</sub>–C<sub>5</sub>) corresponds to the tenor trombone's pitch. At this pitch the contrabass trombone is more powerful.

### Combination with other instruments

The instrument plays the deepest part (4th trombone) in the four-part trombone section, making it possible in orchestral writing to write for a four-part trombone section and include lower pitches. Functions include fundamental bass, thematic tasks, doubling an octave below.

## Patches

### 01 SHORT + LONG NOTES

Range: A0–D4



#### 01 CTB\_staccato

Samples: 234

RAM: 14 MB

Staccato  
3 velocity layers  
4 Alternations

#### 02 CTB\_portato\_medium

Samples: 240

RAM: 15 MB

Portato, short medium  
3 velocity layers  
4 Alternations

#### 03 CTB\_portato\_medium\_marc

Samples: 156

RAM: 9 MB

Portato, medium, marcato  
2 velocity layers  
4 Alternations

#### 04 CTB\_portato\_long

Samples: 238

RAM: 14 MB

Portato, long  
3 velocity layers  
Release samples  
2 Alternations

#### 11 CTB\_sus

Samples: 238

RAM: 14 MB

Sustained  
3 velocity layers  
Release samples

### 02 DYNAMICS

Range: A#0–D4



#### 01 CTB\_dyn-li\_1s

Samples: 222

RAM: 13 MB

Light crescendo and diminuendo, 1 sec.  
3 velocity layers  
AB switch: crescendo/diminuendo

#### 02 CTB\_dyn-li\_1'5s

Samples: 222

RAM: 13 MB

Light crescendo and diminuendo, 1.5 sec.  
3 velocity layers  
AB switch: crescendo/diminuendo

#### 03 CTB\_dyn-li\_2s

Samples: 222

RAM: 13 MB

Light crescendo and diminuendo, 2 sec.  
3 velocity layers  
AB switch: crescendo/diminuendo

<b>11 CTB_dyn-me_3s</b>		<b>Samples: 74</b>	<b>RAM: 4 MB</b>
Medium crescendo and diminuendo, 3 sec. 1 velocity layer AB switch: crescendo/diminuendo			
<b>12 CTB_dyn-me_4s</b>		<b>Samples: 74</b>	<b>RAM: 4 MB</b>
Medium crescendo and diminuendo, 4 sec. 1 velocity layer AB switch: crescendo/diminuendo			
<b>13 CTB_dyn-me_6s</b>		<b>Samples: 74</b>	<b>RAM: 4 MB</b>
Medium crescendo and diminuendo, 6 sec. 1 velocity layer AB switch: crescendo/diminuendo			
<b>21 CTB_dyn-str_3s</b>		<b>Samples: 74</b>	<b>RAM: 4 MB</b>
Strong crescendo and diminuendo, 3 sec. 1 velocity layer AB switch: crescendo/diminuendo			
<b>22 CTB_dyn-str_4s</b>		<b>Samples: 74</b>	<b>RAM: 4 MB</b>
Strong crescendo and diminuendo, 4 sec. 1 velocity layer AB switch: crescendo/diminuendo			
<b>31 CTB_pfp_4s</b>	<b>Range: A0–D4</b>	<b>Samples: 37</b>	<b>RAM: 2 MB</b>
Crescendo-diminuendo, 4 sec. 1 velocity layer			
<b>32 CTB_pfp_6s</b>	<b>Range: A0–D4</b>	<b>Samples: 37</b>	<b>RAM: 2 MB</b>
Crescendo-diminuendo, 6 sec. 1 velocity layer			
<b>41 CTB_fp</b>	<b>Range: A0–D4</b>	<b>Samples: 39</b>	<b>RAM: 2 MB</b>
Fortepiano 1 velocity layer 2 Alternations			
<b>42 CTB_sfz</b>	<b>Range: A0–D4</b>	<b>Samples: 39</b>	<b>RAM: 2 MB</b>
Sforzato 1 velocity layer 2 Alternations			
<b>43 CTB_sffz</b>	<b>Range: A0–D4</b>	<b>Samples: 39</b>	<b>RAM: 2 MB</b>
Sforzatissimo 1 velocity layer 2 Alternations			

<b>03 FLATTER + FX</b>			
<b>01 CTB_flatter</b>	<b>Range: A1–C5</b>	<b>Samples: 70</b>	<b>RAM: 4 MB</b>
Flutter tonguing 1 velocity layer Release samples			
<b>02 CTB_flatter_cre</b>	<b>Range: A1–C5</b>	<b>Samples: 35</b>	<b>RAM: 2 MB</b>
Flutter tonguing, crescendo 1 velocity layer			
<b>11 CTB_arpeggio</b>	<b>Range: F2–F3</b>	<b>Samples: 24</b>	<b>RAM: 1 MB</b>
Effects: Arpeggios, up/down and down/up 1 velocity layer AB switch: up/down			
<b>12 CTB_duophonic-A</b>	<b>Range: C2–G#3</b>	<b>Samples: 19</b>	<b>RAM: 1 MB</b>
Effects: Duophonic playing (tone and voice), variant A 1 velocity layer			
<b>13 CTB_duophonic-B</b>	<b>Range: C2–C3</b>	<b>Samples: 11</b>	<b>RAM: 1 MB</b>
Effects: Duophonic playing, variant B 1 velocity layer			
<b>10 PERF INTERVAL</b>		<b>Range: A0–C4</b>	
<b>01 CTB_perf-legato</b>		<b>Samples: 951</b>	<b>RAM: 59 MB</b>
Legato 2 velocity layers Release samples			
<b>02 CTB_perf-legato_sus</b>		<b>Samples: 972</b>	<b>RAM: 60 MB</b>
Legato Sustain crossfading 2 velocity layers Release samples			
<b>03 CTB_perf-marcato</b>		<b>Samples: 974</b>	<b>RAM: 60 MB</b>
Marcato 2 velocity layers Release samples			



## 11 PERF REPETITION

<b>01 CTB_perf-rep_por-sl</b>	<b>Range: A0–D4</b>	<b>Samples: 342</b>	<b>RAM: 21 MB</b>
Repetition performances: Portato, slow 2 velocity layers			
<b>02 CTB_perf-rep_por-fa</b>	<b>Range: C1–D4</b>	<b>Samples: 306</b>	<b>RAM: 19 MB</b>
Repetition performances: Portato, fast 2 velocity layers			
<b>03 CTB_perf-rep_sta</b>	<b>Range: A1–D4</b>	<b>Samples: 234</b>	<b>RAM: 14 MB</b>
Repetition performances: Staccato 2 velocity layers			
<b>11 CTB_perf-rep_dyn5_por-sl</b>	<b>Range: C1–D4</b>	<b>Samples: 170</b>	<b>RAM: 10 MB</b>
Repetition performances: Portato dynamics, slow, 5 repetitions 1 velocity layer AB switch: crescendo/diminuendo			
<b>12 CTB_perf-rep_dyn5_por-fa</b>	<b>Range: C1–D4</b>	<b>Samples: 170</b>	<b>RAM: 10 MB</b>
Repetition performances: Portato dynamics, fast, 5 repetitions 1 velocity layer AB switch: crescendo/diminuendo			

## 12 UPBEAT REPETITION



### A Single Upbeat

<b>01 CTB_UB-a1_80 (90/100)</b>	<b>Range: A1–D4</b>	<b>Samples: 50</b>	<b>RAM: 3 MB</b>
1 upbeat, 80–100 BPM 2 velocity layers			
<b>04 CTB_UB-a1_110 (120/130/140/150)</b>	<b>Range: A0–D4</b>	<b>Samples: 74</b>	<b>RAM: 4 MB</b>
1 upbeat, 110–150 BPM 2 velocity layers			



### B Double Upbeats

**Range: A0–D4**

<b>01 CTB_UB-a2_80 (90/100/110/120/130/140/150)</b>	<b>Samples: 74</b>	<b>RAM: 4 MB</b>
2 upbeats, 80–150 BPM 2 velocity layers		

**C Triple Upbeats**

Range: A0–D4

**01 CTB\_UB-a3\_80 (90/100/110/120/130/140/150)**

Samples: 74

RAM: 4 MB

3 upbeats, 80–150 BPM

2 velocity layers

**13 GLISSANDI****01 CTB\_perf-gliss**

Range: A0–G3

Samples: 450

RAM: 28 MB

Glissando, minor 2nd to major 3rd

1 velocity layer

Release samples

**11 CTB\_gliss-1**

Range: A0–D#3

Samples: 54

RAM: 3 MB

Glissando, minor 2nd

1 velocity layer

AB switch: up/down

**12 CTB\_gliss-2**

Range: A0–E3

Samples: 46

RAM: 2 MB

Glissando, major 2nd

1 velocity layer

AB switch: up/down

**13 CTB\_gliss-3**

Range: A0–E3

Samples: 30

RAM: 1 MB

Glissando, minor 3rd

1 velocity layer

AB switch: up/down

**14 CTB\_gliss-4**

Range: A0–F#3

Samples: 14

RAM: 1 MB

Glissando, major 3rd

1 velocity layer

AB switch: up/down

**15 CTB\_gliss-5**

Range: A2–G3

Samples: 2

RAM: 1 MB

Glissando, 4th

1 velocity layer

AB switch: up/down

**98 RESOURCES**

Isolated dynamics repetitions: Portato  
Single layer long notes

**01 Perf Rep dyn** **Range: C1–D4****01 CTB\_rep\_cre5\_por-1 (2/3/4/59)****Samples: 17****RAM: 1 MB**

Extracted repetitions: Portato, crescendo, 1st to 5th note  
1 velocity layer

**01 CTB\_rep\_dim5\_por-1 (2/3/4/59)****Samples: 17****RAM: 1 MB**

Extracted repetitions: Portato, diminuendo, 1st to 5th note  
1 velocity layer

**02 Long Notes - Single Layer** **Range: A0–D4****01 CTB\_sus\_p****Samples: 79****RAM: 4 MB**

Sustained, piano  
1 velocity layer  
Release samples

**02 CTB\_sus\_mf****Samples: 79****RAM: 4 MB**

Sustained, mezzoforte  
1 velocity layer  
Release samples

**03 CTB\_sus\_f****Samples: 80****RAM: 5 MB**

Sustained, forte  
1 velocity layer  
Release samples

**99 RELEASE**

This section contains release samples for various patches of the other sections. Please do not try to load them into a Vienna Instruments matrix – you will not be able to hear anything when you try to play them.

# Matrices

## Matrix - LEVEL 1

### L1 CTB Articulation Combi

**Samples: 969    RAM: 60 MB**

Single note articulations

Staccato, portato medium, sustained, crescendo-diminuendo 4 and 6 sec., fortepiano and sforzato, flutter tonguing normal and crescendo

**Matrix switches:** Horizontal: Keyswitches, C6–E6      Vertical: Modwheel, 2 zones

	C6	C#6	D6	D#6	E6
V1	staccato	sustained	pfp 4s.	fp	flutter
V2	port. medium	sustained	pfp 6s.	sfz	flutter cres.

### L1 CTB Perf-Legato Speed

**Samples: 972    RAM: 60 MB**

Interval performances

Legato with sustain crossfading and normal

Speed controller

**Matrix switches:** Horizontal: Speed, 2 zones

	H1	H2
legato	sus-XF	normal

### L1 CTB Perf-Repetitions Combi

**Samples: 648    RAM: 40 MB**

Repetition performances

Portato slow and fast

**Matrix switches:** Vertical: Modwheel, 2 zones

	repetitions
V1	portato slow
V2	portato fast

## Matrix - LEVEL 2 A - Advanced

### 01 CTB Perf-Universal

**Samples: 1827    RAM: 114 MB**

Interval performances

Legato with sustain crossfading and normal

Marcato

Speed controller

**Matrix switches:** Horizontal: Speed, 2 zones

	H1	H2
legato	sus-XF	normal
marcato	%	%

**02 CTB Short+Long notes - All****Samples: 985 RAM: 61 MB**

Single notes

Staccato, portato medium normal and marcato, portato long, and sustained

**Matrix switches:** Horizontal: Keyswitches, C6–E6

	C6	C#6	D6	D#6	E6
V1	staccato	port.med. normal	port.med. marcato	port.long	sustained

**Matrix - LEVEL 2 B - Standard****11 CTB Perf-Legato Speed****Samples: 972 RAM: 60 MB**

Interval performances

Legato with sustain crossfading and normal

Speed controller

**Matrix switches:** Horizontal: Speed, 2 zones

	H1	H2
legato	sus-XF	normal

**12 CTB Dynamics - Small****Samples: 339 RAM: 21 MB**

Dynamics

Medium crescendo and diminuendo, 3, 4, and 6 sec.

Fortepiano, sforzato, sforzatissimo

**Matrix switches:** Horizontal: Keyswitches, C6–D6 Vertical: Modwheel, 4 zones

	C6	C#6	D6
dyn.medium	3 sec.	4 sec.	6 sec.
fp	%	%	%
sfz	%	%	%
sffz	%	%	%

**13 CTB Dynamics - Large****Samples: 1227 RAM: 76 MB**

Dynamics

Light crescendo and diminuendo, 1, 1.5, and 2 sec.

Medium crescendo and diminuendo, 3, 4, and 6 sec.

Strong crescendo and diminuendo, 3 and 4 sec.

Crescendo-diminuendo, 4 and 6 sec.

Fortepiano, sforzato, sforzatissimo

**Matrix switches:** Horizontal: Keyswitches, C6–D6 Vertical: Modwheel, 5 zones

	C6	C#6	D6
dyn.light	1 sec.	1.5 sec.	2 sec.
dyn.medium	3 sec.	4 sec.	6 sec.
dyn.strong	3 sec.	4 sec.	4 sec.
ppf	4 sec.	4 sec.	6 sec.
fp/sfz/sffz	fp	sfz	sffz

**14 CTB Flatter****Samples: 105**    **RAM: 6 MB**

Flutter tonguing

Normal, crescendo, and normal/crescendo with Cell crossfading

**Matrix switches:** Horizontal: Keyswitches, C6–D6

	C6	C#6	D6
flutter	normal	crescendo	Cell XF

**15 CTB FX****Samples: 54**    **RAM: 3 MB**

Effects: Arpeggios, duophonic playing (voice and tone) variation A and B

**Matrix switches:** Horizontal: Keyswitches, C6–D6

	C6	C#6	D6
V1	arpeggio	duophonic-A	duophonic-B

**Matrix - LEVEL 2 C - Repetitions****31 CTB Perf-Repetitions - Combi****Samples: 882**    **RAM: 55 MB**

Repetition performances

Portato slow and fast, and staccato

**Matrix switches:** Horizontal: Keyswitches, C6–D6

	C6	C#6	D6
V1	portato slow	portato fast	staccato

**32 CTB Perf-Repetitions - Speed****Samples: 882**    **RAM: 55 MB**

Repetition performances

Portato slow and fast, and staccato

Speed controller

**Matrix switches:** Horizontal: Speed, 3 zones

	H1	H2	H3
V1	portato slow	portato fast	staccato

**33 BTB Upbeats a1****Samples: 520**    **RAM: 32 MB**

Repetitions: 1 upbeat, 80–150 BPM

**Matrix switches:** Horizontal: Keyswitches, C6–G6

	C6	C#6	D6	D#6	E6	F6	F#6	G6
speed/BPM	80	90	100	110	120	130	140	150

**34 CTB Upbeats a2****Samples: 592**    **RAM: 37 MB**

Repetitions: 2 upbeats, 80–150 BPM

**Matrix switches:** Horizontal: Keyswitches, C6–G6

	C6	C#6	D6	D#6	E6	F6	F#6	G6
speed/BPM	80	90	100	110	120	130	140	150

**35 CTB Upbeats a3****Samples: 592**    **RAM: 37 MB**

Repetitions: 3 upbeats, 80–150 BPM

**Matrix switches:** Horizontal: Keyswitches, C6–G6

	C6	C#6	D6	D#6	E6	F6	F#6	G6
speed/BPM	80	90	100	110	120	130	140	150

**36 CTB Upbeats all****Samples: 1704 RAM: 106 MB**

Repetitions: 1–3 upbeats, 80–150 BPM

**Matrix switches:** Horizontal: Keyswitches, C6–G6 Vertical: Modwheel, 3 zones

	C6	C#6	D6	D#6	E6	F6	F#6	G6
1 upbeat	80	90	100	110	120	130	140	150
2 upbeats	80	90	100	110	120	130	140	150
3 upbeats	80	90	100	110	120	130	140	150

**Matrix - LEVEL 2 E - Keyswitch Vel****71 CTB Portato - cre5****Samples: 115 RAM: 7 MB**

Portato notes: Crescendo, keyswitch velocity

Keyswitches control 5 dynamic steps

**Matrix switches:** Horizontal: Keyswitches, C1–E1

	C1	C#1	D1	D#1	E1
velocity	1st	2nd	3rd	4th	5th

**72 CTB Portato - dim5****Samples: 115 RAM: 7 MB**

Portato notes: Diminuendo, keyswitch velocity

Keyswitches control 5 dynamic steps

**Matrix switches:** Horizontal: Keyswitches, C1–E1

	C1	C#1	D1	D#1	E1
velocity	1st	2nd	3rd	4th	5th

**Presets****CTB VSL Preset Level 1****Samples: 2431 RAM: 151 MB**

L1 CTB Perf-Legato Speed  
L1 CTB Articulation Combi  
L1 CTB Perf-Repetitions Combi

**Preset keyswitches:** C7–D7**CTB VSL Preset Level 2****Samples: 3566 RAM: 222 MB**

01 CTB Perf-Universal  
01 CTB Perf-Universal  
L1 CTB Articulation Combi  
31 CTB Perf-Repetitions - Combi  
71 CTB Portato - cre5

**Preset keyswitches:** C7–E7