Vienna Instruments
Solo Download Instruments
Tenor 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 Tenor 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
+	faster articulation (runs and arpeggios)
150, 160, …	150, 160, … BPM (beats per minute)
1s, 2s, …	tone length 1 sec., 2 sec., …
acc	accelerando
all	combination of all Patches of a category
arp	arpeggio
blare	"blared" tones (horn)
cre	crescendo
dim	diminuendo
dm	diminished (arpeggios)
dyn	dynamics (crescendo and diminuendo)
dyn5, dyn9	dynamics, 5/9 repetitions
fa	fast
faT	fast triplets
fA	fast attack
fA_auto	attack automation (normal/fast attack)
fast-rep	fast repetitions
flatter	flutter tonguing
fx	effect sound
gliss	glissando
hA	hard attack
leg	legato
li	light

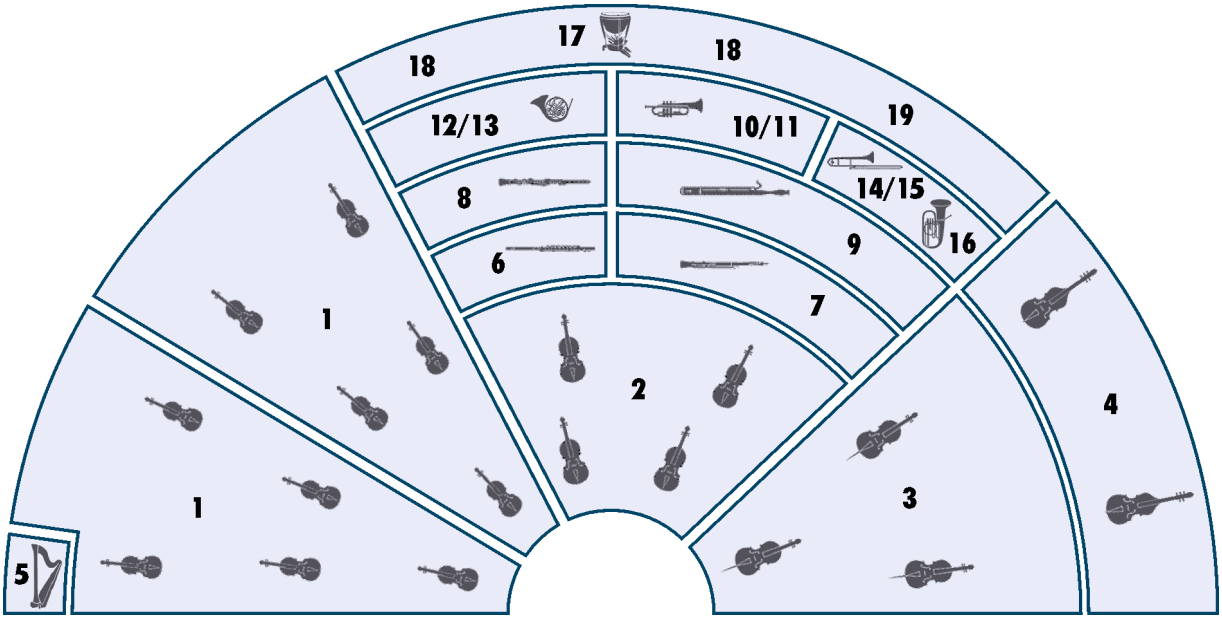
Abbreviation	Meaning
lo	long
ma	major
marc	marcato
me	medium
mi	minor
mord	mordent
mu	muted
muA, muB	muted, variation A/B
nA	normal attack
noVib	without vibrato
perf-rep	repetition performance
por	portato
run	octave run
sA	soft attack
sl	slow
sta, stac	staccato
sto	stopped (horns)
str	strong
sus	sustained
T	triplets
tune	"tuning in" articulation
UB	upbeat
UB-a1, -a2	1, 2 upbeats
v1, v2 …	1st, 2nd, … variation
Vib	with (medium) vibrato
Vib-progr	progressive vibrato
XF	cell crossfade Matrix

Articulations

56 Tenor trombone	
01 SHORT + LONG NOTES	Staccato Portato short, with normal and soft attack Portato medium, normal and soft attack, and marcato Portato long with and without vibrato, soft attack, and marcato Sustained with light, progressive, strong, and without vibrato
02 DYNAMICS	Light crescendo and diminuendo with vibrato, 1.5, 2, 3, and 4 sec.; without vibrato, 1, 1.5, 2, 3, 4, and 6 sec. Medium crescendo and diminuendo with and without vibrato, 1.5 (no vib.), 2, 3, 4, and 6 sec. Strong crescendo and diminuendo with vibrato, 4 sec.; without vibrato, 2, 3, 4, and 6 sec. pfp without vibrato, 6 sec. Fortepiano, sforzato and sforzatissimo
03 FLATTER	Flutter tonguing, normal and crescendo
10 PERF INTERVAL	Legato without vibrato, normal and with sustain crossfading Legato with vibrato, normal and with sustain crossfading Marcato
11 PERF INTERVAL FAST	Legato Marcato
12 PERF TRILL	Trills, legato, minor 2nd to major 3rd
13 PERF REPETITION	Legato Portato Staccato slow and fast Dynamics for all repetitions
14 FAST REPETITION	Staccato, 9 repetitions, 150 to 190 BPM Normal and dynamics
15 UPBEAT REPETITION	1 and 2 upbeats, 80–140, 160, 180, 200, and 220 BPM 3 upbeats, 80–140, 160, and 180 BPM
16 GRACE NOTES	Grace notes, minor and major 2nd, up and down
17 GLISSANDI	Performance glissandos, fast and slow, minor 2nd to diminished 5th Fixed glissandos, fast, minor 2nd to diminished 5th, up and down Fixed glissandos, slow, minor 3rd to diminished 5th, up and down
18 ARPEGGIOS	Arpeggios, staccato Diminished, major and minor from C to B key Up and down, 2 speeds for all

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
2 Viola
3 Cello
4 Double bass
5 Harp
6 Concert flute, piccolo
7 Oboe, English horn
8 Clarinet, bass clarinet
9 Bassoon, contrabassoon
10/11 Trumpet
12/13 Horn
14/15 Trombone
16 Tuba
17 Timpani
18 Drums, cymbals
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.

56 Tenor trombone

The Instrument

Description

The tenor trombone in Bb is, like the trumpet, played with a cup-shaped mouthpiece. The trombone is the oldest brass wind instrument with a chromatic scale – thanks to its slide, which distinguishes it from all other brass instruments.

The trombone section in the modern orchestra uses four trombones, usually two tenor and two tenor-bass trombones.

Range and notation

The tenor trombone has a range from E2–F5.

Notation in the tenor (higher register) and bass clefs (lower register), no transposition.

Sound characteristics

Brassy, brilliant, powerful, overpowering, solid, tense, penetrating, dramatic, hard, full, sinister, soft, round.

The low notes sound threatening when played *forte*, mysterious and full when played *piano*. They are used for weighty and portentous themes and as bass in harmony sequences.

The middle register sounds metallic, mighty, sometimes blaring and heroic when played *forte*.

In the upper register the sound becomes more brilliant and can reach sweeping intensity. The mellowness increases.

Combination with other instruments

Good tonal blend with the other brass instruments.

The combination of deep woodwinds with the trombone principally serves the reinforcement of sound.

The combination with strings does not generally produce homogeneity. The trombone supports and fleshes out the deep strings.

Patches

01 SHORT + LONG NOTES — Range: C2–A#4

01 TTB_staccato — Range: C2–D5 — Samples: 392 — RAM: 24 MB

Staccato
6 velocity layers
4 Alternations

02 TTB_portato_short — Range: C2–D5 — Samples: 328 — RAM: 20 MB

Portato, short
5 velocity layers
4 Alternations

03 TTB_portato_short_soft — Samples: 336 — RAM: 21 MB

Portato, short, soft attack
6 velocity layers
4 Alternations

04 TTB_portato_medium — Range: C2–D5 — Samples: 396 — RAM: 24 MB

Portato, medium
6 velocity layers
4 Alternations

05 TTB_portato_medium_soft — Samples: 279 — RAM: 17 MB

Portato, medium, soft attack
5 velocity layers
4 Alternations

06 TTB_portato_medium_marc — Samples: 224 — RAM: 14 MB

Portato, medium, marcato
4 velocity layers
4 Alternations

07 TTB_portato_long_Vib — Samples: 300 — RAM: 18 MB

Portato, long, with vibrato
6 velocity layers
Release samples
2 Alternations

08 TTB_portato_long_Vib_soft — Samples: 244 — RAM: 15 MB

Portato, long, with vibrato, soft attack
4 velocity layers
Release samples
2 Alternations

09 TTB_portato_long_noVib **Range: C2–D5** **Samples: 328** **RAM: 20 MB**

Portato, long, without vibrato
6 velocity layers
Release samples
2 Alternations

10 TTB_portato_long_marc **Samples: 246** **RAM: 15 MB**

Portato, long, marcato
4 velocity layers
Release samples
2 Alternations

21 TTB_sus_Vib_progr **Samples: 244** **RAM: 15 MB**

Sustained, progressive vibrato
4 velocity layers
Release samples

22 TTB_sus_Vib_light **Samples: 244** **RAM: 15 MB**

Sustained, light vibrato
4 velocity layers
Release samples

23 TTB_sus_Vib_strong **Samples: 300** **RAM: 18 MB**

Sustained, strong vibrato
6 velocity layers
Release samples

24 TTB_sus_noVib **Range: C2–D5** **Samples: 297** **RAM: 18 MB**

Sustained, without vibrato
5 velocity layers
Release samples

02 DYNAMICS Range: C2–A#4

01 TTB_dyn-li_Vib_1'5s **Samples: 168** **RAM: 10 MB**

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

02 TTB_dyn-li_Vib_2s **Samples: 168** **RAM: 10 MB**

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

03 TTB_dyn-li_Vib_3s **Samples: 168** **RAM: 10 MB**

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

04 TTB_dyn-li_Vib_4s **Samples: 168** **RAM: 10 MB**

Light crescendo and diminuendo with vibrato, 4 sec.
3 velocity layers
AB switch: crescendo/diminuendo

11 TTB_dyn-li_noVib_1s **Samples: 224** **RAM: 14 MB**

Light crescendo and diminuendo without vibrato, 1 sec.
4 velocity layers
AB switch: crescendo/diminuendo

12 TTB_dyn-li_noVib_1'5s **Samples: 224** **RAM: 14 MB**

Light crescendo and diminuendo without vibrato, 1.5 sec.
4 velocity layers
AB switch: crescendo/diminuendo

13 TTB_dyn-li_noVib_2s **Samples: 224** **RAM: 14 MB**

Light crescendo and diminuendo without vibrato, 2 sec.
4 velocity layers
AB switch: crescendo/diminuendo

14 TTB_dyn-li_noVib_3s **Samples: 224** **RAM: 14 MB**

Light crescendo and diminuendo without vibrato, 3 sec.
4 velocity layers
AB switch: crescendo/diminuendo

15 TTB_dyn-li_noVib_4s **Samples: 224** **RAM: 14 MB**

Light crescendo and diminuendo without vibrato, 4 sec.
4 velocity layers
AB switch: crescendo/diminuendo

16 TTB_dyn-li_noVib_6s **Samples: 224** **RAM: 14 MB**

Light crescendo and diminuendo without vibrato, 6 sec.
4 velocity layers
AB switch: crescendo/diminuendo

21 TTB_dyn-me_Vib_2s **Samples: 112** **RAM: 7 MB**

Medium crescendo and diminuendo with vibrato, 2 sec.
2 velocity layers
AB switch: crescendo/diminuendo

22 TTB_dyn-me_Vib_3s **Samples: 112** **RAM: 7 MB**

Medium crescendo and diminuendo with vibrato, 3 sec.
2 velocity layers
AB switch: crescendo/diminuendo

23 TTB_dyn-me_Vib_4s **Samples: 112** **RAM: 7 MB**

Medium crescendo and diminuendo with vibrato, 4 sec.
2 velocity layers
AB switch: crescendo/diminuendo

24 TTB_dyn-me_Vib_6s **Samples: 133** **RAM: 8 MB**

Medium crescendo and diminuendo with vibrato, 6 sec.
2 velocity layers
AB switch: crescendo/diminuendo

31 TTB_dyn-me_noVib_1'5s **Samples: 112** **RAM: 7 MB**

Medium crescendo and diminuendo without vibrato, 1.5 sec.
2 velocity layers
AB switch: crescendo/diminuendo

32 TTB_dyn-me_noVib_2s **Samples: 112** **RAM: 7 MB**

Medium crescendo and diminuendo without vibrato, 2 sec.
2 velocity layers
AB switch: crescendo/diminuendo

33 TTB_dyn-me_noVib_3s **Samples: 112** **RAM: 7 MB**

Medium crescendo and diminuendo without vibrato, 3 sec.
2 velocity layers
AB switch: crescendo/diminuendo

34 TTB_dyn-me_noVib_4s **Samples: 112** **RAM: 7 MB**

Medium crescendo and diminuendo without vibrato, 4 sec.
2 velocity layers
AB switch: crescendo/diminuendo

35 TTB_dyn-me_noVib_6s **Samples: 112** **RAM: 7 MB**

Medium crescendo and diminuendo without vibrato, 6 sec.
2 velocity layers
AB switch: crescendo/diminuendo

41 TTB_dyn-str_Vib_4s **Samples: 56** **RAM: 3 MB**

Strong crescendo and diminuendo with vibrato, 4 sec.
1 velocity layer
AB switch: crescendo/diminuendo

51 TTB_dyn-str_noVib_2s **Samples: 56** **RAM: 3 MB**

Strong crescendo and diminuendo without vibrato, 2 sec.
1 velocity layer
AB switch: crescendo/diminuendo

52 TTB_dyn-str_noVib_3s **Samples: 56** **RAM: 3 MB**

Strong crescendo and diminuendo without vibrato, 3 sec.
1 velocity layer
AB switch: crescendo/diminuendo

53 TTB_dyn-str_noVib_4s **Samples: 59** **RAM: 3 MB**

Strong crescendo and diminuendo without vibrato, 4 sec.
1 velocity layer
AB switch: crescendo/diminuendo

54 TTB_dyn-str_noVib_6s **Samples: 59** **RAM: 3 MB**

Strong crescendo and diminuendo without vibrato, 6 sec.
1 velocity layer
AB switch: crescendo/diminuendo

61 TTB_pfp_noVib_6s **Samples: 28** **RAM: 1 MB**

Crescendo-diminuendo without vibrato, 6 sec.
1 velocity layer

71 TTB_fp **Range: C2–D5** **Samples: 33** **RAM: 2 MB**

Fortepiano
1 velocity layer

72 TTB_sfz **Range: C2–D5** **Samples: 33** **RAM: 2 MB**

Sforzato
1 velocity layer

73 TTB_sffz **Range: C2–D5** **Samples: 33** **RAM: 2 MB**

Sforzatissimo
1 velocity layer

03 FLATTER — Range: C2–A#4

01 TTB_flatter — Samples: 56 — RAM: 3 MB

Flutter tonguing
1 velocity layer
Release samples

02 TTB_flatter_cre — Samples: 28 — RAM: 1 MB

Flutter tonguing, crescendo
1 velocity layer

10 PERF INTERVAL — Range: C2–D5

01 TTB_perf-legato_noVib — Samples: 811 — RAM: 50 MB

Legato, without vibrato
2 velocity layers
Release samples

02 TTB_perf-legato_noVib_sus — Samples: 976 — RAM: 61 MB

Legato, without vibrato
Sustain crossfading
5 velocity layers
Release samples

03 TTB_perf-legato_Vib — Range: C2–A#4 — Samples: 746 — RAM: 46 MB

Legato, with vibrato
2 velocity layers
Release samples

04 TTB_perf-legato_Vib_sus — Range: C2–A#4 — Samples: 774 — RAM: 48 MB

Legato, with vibrato
Sustain crossfading
3 velocity layers
Release samples

04 TTB_perf-marcato — Samples: 1236 — RAM: 77 MB

Marcato
3 velocity layers
Release samples

11 PERF INTERVAL FAST — Range: C2–A#4

01 TTB_perf-legato_fa — **Samples: 844** — **RAM: 52 MB**

Legato, fast
2 velocity layers
Release samples

02 TTB_perf-marcato_fa — **Samples: 848** — **RAM: 53 MB**

Marcato, fast
2 velocity layers
Release samples

12 PERF TRILL — Range: C2–D5

01 TTB_perf-trill — **Samples: 2043** — **RAM: 127 MB**

Performance trills, legato, minor 2nd to major 3rd
2 velocity layers
Release samples

13 PERF REPETITION — Range: C2–A#4

01 TTB_perf-rep_leg — **Samples: 180** — **RAM: 11 MB**

Legato
2 velocity layers

02 TTB_perf-rep_por — **Samples: 405** — **RAM: 25 MB**

Portato
3 velocity layers

03 TTB_perf-rep_sta-sl — **Samples: 405** — **RAM: 25 MB**

Staccato, slow
3 velocity layers

04 TTB_perf-rep_sta-fa — **Samples: 405** — **RAM: 25 MB**

Staccato, fast
3 velocity layers

11 TTB_perf-rep_dyn6_leg-sl — **Samples: 180** — **RAM: 11 MB**

Legato dynamics, 6 repetitions
1 velocity layer
AB switch: crescendo/diminuendo

12 TTB_perf-rep_dyn9_por **Samples: 270** **RAM: 16 MB**

Portato dynamics, 9 repetitions
1 velocity layer
AB switch: crescendo/diminuendo

13 TTB_perf-rep_dyn9_sta-sl **Samples: 270** **RAM: 16 MB**

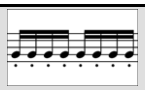
Staccato dynamics, slow, 9 repetitions
1 velocity layer
AB switch: crescendo/diminuendo

14 TTB_perf-rep_dyn9_sta-fa **Samples: 270** **RAM: 16 MB**

Staccato dynamics, fast, 9 repetitions
1 velocity layer
AB switch: crescendo/diminuendo

14 FAST REPETITION

Range: D2–A4



01 TTB_fast-rep_150 (160/170/180/190) **Samples: 168** **RAM: 10 MB**

Fast repetitions: 150–190 BPM
3 velocity layers
Release samples

11 TTB_fast-rep_150_dyn (160/170/180/190) **Samples: 56** **RAM: 3 MB**

Fast repetitions
Dynamics, 150–190 BPM
1 velocity layer
AB switch: crescendo/diminuendo

15 UPBEAT REPETITION

A Single Upbeat

Range: D2–A4

01 TTB_UB-a1_80 (90/100/110/120/130/140/160/180/200/220)

Samples: 84 **RAM: 5 MB**

1 upbeat, 80–140, 160, 180, 200, and 220 BPM
3 velocity layers

B Double Upbeats

Range: D2–A4

01 TTB_UB-a2_80 (90/100/110/120/130/140/160/180/200/220)

Samples: 84 **RAM: 5 MB**

2 upbeats, 80–140, 160, 180, 200, and 220 BPM
3 velocity layers

C Triple Upbeats — Range: D2–A4

01 TTB_UB-a3_80 (90/100/110/120/130/140/160/180) — **Samples: 84** — **RAM: 5 MB**

3 upbeats, 80–140, 160, and 180 BPM
3 velocity layers

16 GRACE NOTES — Range: C2–A#6

01 TTB_grace-1 — **Samples: 294** — **RAM: 18 MB**

Grace notes, minor 2nd
3 velocity layers
Release samples
AB switch: up/down

02 TTB_grace-2 — **Samples: 288** — **RAM: 18 MB**

Grace notes, major 2nd
3 velocity layers
Release samples
AB switch: up/down

17 GLISSANDI — Range: C2–C5

Please note that fixed glissandos have different up and down ranges.

01 TTB_perf-gliss_fa — **Range: C2–D5** — **Samples: 911** — **RAM: 56 MB**

Glissando, fast
Minor 2nd to diminished 5th
2 velocity layers
Release samples

02 TTB_perf-gliss_sl — **Range: C2–D5** — **Samples: 927** — **RAM: 57 MB**

Glissando, slow
Minor 2nd to diminished 5th
2 velocity layers
Release samples

11 TTB_gliss-fa-1 — **Samples: 120** — **RAM: 7 MB**

Glissando, fast, minor 2nd
2 velocity layers
AB switch: up/down

12 TTB_gliss-fa-2 — **Samples: 108** — **RAM: 6 MB**

Glissando, fast, major 2nd
2 velocity layers
AB switch: up/down

13 TTB_gliss-fa-3 **Samples: 92** **RAM: 5 MB**

Glissando, fast, minor 3rd
2 velocity layers
AB switch: up/down

14 TTB_gliss-fa-4 **Samples: 76** **RAM: 4 MB**

Glissando, fast, major 3rd
2 velocity layers
AB switch: up/down

15 TTB_gliss-fa-5 **Samples: 52** **RAM: 3 MB**

Glissando, fast, 4th
2 velocity layers
AB switch: up/down

16 TTB_gliss-fa-6 **Samples: 24** **RAM: 1 MB**

Glissando, fast, diminished 5th
2 velocity layers
AB switch: up/down

21 TTB_gliss-sl-3 **Samples: 100** **RAM: 6 MB**

Glissando, slow, minor 3rd
2 velocity layers
AB switch: up/down

22 TTB_gliss-sl-4 **Samples: 79** **RAM: 4 MB**

Glissando, slow, major 3rd
2 velocity layers
AB switch: up/down

23 TTB_gliss-sl-5 **Samples: 52** **RAM: 3 MB**

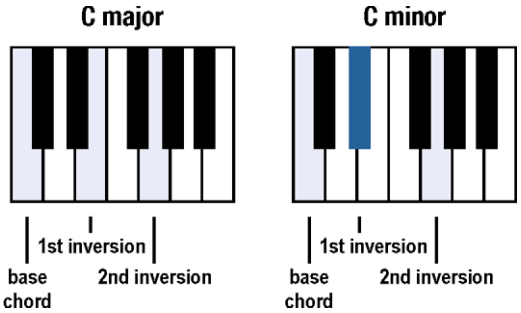
Glissando, slow, 4th
2 velocity layers
AB switch: up/down

24 TTB_gliss-sl-6 **Samples: 28** **RAM: 1 MB**

Glissando, slow, diminished 5th
2 velocity layers
AB switch: up/down

18 ARPEGGIOS

Please note that the playing ranges vary with the key of the Patch used.
For playing ranges and mappings for each key, please see the appendix.



Staccato diminished

01 TTB_arp-sta_dm **Range: D2–G4** **Samples: 48** **RAM: 3 MB**

Arpeggios, staccato
Diminished
2 velocity layers
AB switch: up/down

Staccato diminished fast

01 TTB_arp-sta+_dm **Range: D2–G4** **Samples: 48** **RAM: 3 MB**

Arpeggios, staccato, fast
Diminished
2 velocity layers
AB switch: up/down

Staccato major

01 TTB_arp-sta_C-ma (through to B-ma) **Samples: 20** **RAM: 1 MB**

Arpeggios, staccato
C to B major
Mapping (according to key, here for C major): C – base, E – 1st inversion, G – 2nd inversion
2 velocity layers
AB switch: up/down

Staccato major fast

01 TTB_arp-sta+_C-ma (through to B-ma) **Samples: 20** **RAM: 1 MB**

Arpeggios, staccato, fast
C to B major
Mapping (according to key, here for C major): C – base, E – 1st inversion, G – 2nd inversion
2 velocity layers
AB switch: up/down

Staccato minor

01 TTB_arp-sta_C-mi (through to B-mi) **Samples: 16** **RAM: 1 MB**

Arpeggios, staccato
C to B minor
Mapping (according to key, here for C minor): C – base, D#/Eb – 1st inversion, G – 2nd inversion
2 velocity layers
AB switch: up/down

Staccato minor fast

01 TTB_arp-sta_C-mi+ (through to B-mi) **Samples: 16** **RAM: 1 MB**

Arpeggios, staccato, fast
C to B minor
Mapping (according to key, here for C minor): C – base, D#/Eb – 1st inversion, G – 2nd inversion
2 velocity layers
AB switch: up/down

98 RESOURCES

Performance speed variations: Legato, slow
Isolated dynamics repetitions: Legato, portato, staccato
Single layer long notes

01 Perf Rep dyn **Range: C2–A#4**

01 TTB_rep_cre6_leg-1 (2/3/4/5/6) **Samples: 15** **RAM: 1 MB**

Extracted repetitions
Legato, crescendo, 1st to 6th note
1 velocity layer

01 TTB_rep_dim6_leg-1 (2/3/4/5/6) **Samples: 15** **RAM: 1 MB**

Extracted repetitions
Legato, diminuendo, 1st to 6th note
1 velocity layer

02 TTB_rep_cre9_por-1 (2/3/4/5/6/7/8/9) **Samples: 15** **RAM: 1 MB**

Extracted repetitions: Portato, crescendo, 1st to 9th note
1 velocity layer

02 TTB_rep_dim9_por-1 (2/3/4/5/6/7/8/9) **Samples: 15** **RAM: 1 MB**

Extracted repetitions: Portato, diminuendo, 1st to 9th note
1 velocity layer

03 TTB_rep_cre9_sta-1 (2/3/4/5/6/7/8/9) **Samples: 15** **RAM: 1 MB**

Extracted repetitions: Staccato, crescendo, 1st to 9th note
1 velocity layer

03 TTB_rep_dim9_sta-1 (2/3/4/5/6/7/8/9) **Samples: 15** **RAM: 1 MB**

Extracted repetitions: Staccato, diminuendo, 1st to 9th note
1 velocity layer

02 Long Notes - Single Layer Range: C2–D5

01 TTB_sus_pp_noVib **Samples: 66** **RAM: 4 MB**

Sustained, pianissimo, without vibrato
1 velocity layer
Release samples

02 TTB_sus_p_noVib **Samples: 66** **RAM: 4 MB**

Sustained, piano, without vibrato
1 velocity layer
Release samples

03 TTB_sus_mf_noVib **Samples: 66** **RAM: 4 MB**

Sustained, mezzoforte, without vibrato
1 velocity layer
Release samples

04 TTB_sus_f_noVib **Samples: 66** **RAM: 4 MB**

Sustained, forte, without vibrato
1 velocity layer
Release samples

05 TTB_sus_ff_noVib **Samples: 66** **RAM: 4 MB**

Sustained, fortissimo, without vibrato
1 velocity layer
Release samples

03 Perf Speed variation Range: C2–D5

01 TTB_perf-legato_noVib_slow **Samples: 877** **RAM: 54 MB**

Interval performances
Legato, slow, without vibrato
2 velocity layers
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 TTB Articulation Combi — Samples: 1307 RAM: 81 MB

Single note articulations
Staccato, portato short, sustained with light and without vibrato, crescendo-diminuendo without vibrato 6 sec., fortepiano and sforzato, flutter tonguing normal and crescendo

Matrix switches: Horizontal: Keyswitches, C1–E1 Vertical: Modwheel, 2 zones

	C1	C#1	D1	D#1	E1
V1	stac	sus light vib.	pfp no vib. 6s.	fp	flutter
V2	port. short	sus no vib.	pfp no vib. 6s.	sfz	flutter cres.

L1 TTB Perf-Legato Speed — Samples: 1093 RAM: 68 MB

Interval performances
Legato slow and normal without vibrato, and fast
Monophonic, Speed controller

Matrix switches: Horizontal: Speed, 3 zones

	H1	H2	H3
legato	slow no vib.	normal no vib.	fast

L1 TTB Perf-Repetitions Combi — Samples: 990 RAM: 61 MB

Repetition performances
Legato
Portato
Staccato slow

Matrix switches: Vertical: Modwheel, 3 zones

	repetitions
V1	legato
V2	portato
V3	staccato slow

Matrix - LEVEL 2 A - Advanced

01 TTB Perf-Universal — Samples: 2417 RAM: 151 MB

Interval performances
Legato slow and normal without vibrato, and fast
Marcato normal and fast
Monophonic, Speed controller

Matrix switches: Horizontal: Speed, 3 zones Vertical: Modwheel, 2 zones

	H1	H2	H3
legato	slow no vib.	normal no vib.	fast
marcato	normal	normal	fast

02 TTB Perf-Trill Speed — Samples: 2299 RAM: 143 MB

Multi interval performances
Legato without vibrato, and trills
Monophonic, Speed controller

Matrix switches: Horizontal: Speed, 2 zones

	H1	H2
V1	legato no vib.	trills

03 TTB Short+Long notes — Samples: 2169 RAM: 135 MB

Single notes
Staccato, portato short and medium, portato long with and without vibrato
Sustained with light, strong, progressive, and without vibrato

Matrix switches: Horizontal: Keyswitches, C1–E1 Vertical: Modwheel, 4 zones

	C1	C#1	D1	D#1	E1
V1	staccato	port. short	port.med.	port.long vib.	sus. light vib.
V2	%	%	%	port.long vib.	sus. strong vib.
V3	%	%	%	port.long vib.	sus. prog. vib.
V4	%	%	%	port.long no vib.	sus. no vib.

Matrix - LEVEL 2 B - Standard

11 TTB Perf-Legato Speed — Samples: 1093 RAM: 68 MB

Interval performances
Legato slow and normal without vibrato, and fast
Monophonic, Speed controller

Matrix switches: Horizontal: Speed, 3 zones

	H1	H2	H3
legato	slow no vib.	normal no vib.	fast

12 TTB Perf-Marcato Speed — Samples: 1456 RAM: 91 MB

Interval performances^mMarcato normal and fast
Monophonic, Speed controller

Matrix switches: Horizontal: Speed, 2 zones

	H1	H2
marcato	normal	fast

13 TTB Short notes — Samples: 1955 RAM: 122 MB

Single notes
Staccato, portato short with normal and soft attack, portato medium with normal and soft attack, and marcato

Matrix switches: Horizontal: Keyswitches, C1–F1

	C1	C#1	D1	D#1	E1	F1
V1	staccato	port.short norm.	port.short soft	port.med. norm.	port.med. soft	port.med. marcato

14 TTB Long notes - All

Samples: 689 **RAM: 43 MB**

Single notes
Sustained with light, strong, progressive, and without vibrato

Matrix switches: Horizontal: Keyswitches, C1–D#1

	C1	C#1	D1	D#1
sustained	light vib.	strong vib.	progr. vib.	no vib.

15 TTB Dynamics - Small

Samples: 435 **RAM: 27 MB**

Dynamics
Medium crescendo and diminuendo with vibrato, 2, 3, and 4 sec.
Fortepiano, sforzato, sforzatissimo

Matrix switches: Horizontal: Keyswitches, C1–D1 Vertical: Modwheel, 4 zones

	C1	C#1	D1
dyn.med. vib.	2 sec.	3 sec.	4 sec.
fp	%	%	%
sfz	%	%	%
sffz	%	%	%

16 TTB Dynamics - Large

Samples: 1218 **RAM: 76 MB**

Dynamics
Medium crescendo and diminuendo with and without vibrato, 2, 3, 4, and 6 sec.
Strong crescendo and diminuendo without vibrato, 2, 3, 4, and 6 sec.
Crescendo-diminuendo without vibrato, 6 sec.
Fortepiano, sforzato, sforzatissimo

Matrix switches: Horizontal: Keyswitches, C1–D#1 Vertical: Modwheel, 5 zones

	C1	C#1	D1	D#1
dyn.med. vib.	2 sec.	3 sec.	4 sec.	6 sec.
dyn.med. no vib.	2 sec.	3 sec.	4 sec.	6 sec.
dyn.str. no vib.	2 sec.	3 sec.	4 sec.	6 sec.
pfp no vib.	6 sec.	%	%	%
fp/sfz/sffz	fp	sfz	sffz	sffz

17 TTB Flatter

Samples: 84 **RAM: 5 MB**

Flutter tonguing
Normal, crescendo, and normal/crescendo with Cell crossfading

Matrix switches: Horizontal: Keyswitches, C1–D1

	C1	C#1	D1
flutter	normal	crescendo	Cell XF

Matrix - LEVEL 2 C - Repetitions

31 TTB Perf-Repetitions - Combi

Samples: 1395 **RAM: 87 MB**

Repetition performances
Legato, portato, and staccato slow and fast

Matrix switches: Horizontal: Keyswitches, C1–D#1

	C1	C#1	D1	D#1
V1	legato	portato	staccato slow	staccato fast

32 TTB Perf-Repetitions - Speed — Samples: 1395 RAM: 87 MB

Repetition performances
Legato, portato, and staccato slow and fast
Speed controller

Matrix switches: Horizontal: Speed, 4 zones

	H1	H2	H3	H4
V1	legato	portato	staccato slow	staccato fast

33 TTB Fast-Repetitions — Samples: 504 RAM: 31 MB

Fast repetitions: Staccato, 150–190 BPM

Matrix switches: Horizontal: Keyswitches, C1–E1

	C1	C#1	D1	D#1	E1
speed/BPM	150	160	170	180	190

34 TTB Upbeats a1 — Samples: 924 RAM: 57 MB

Repetitions: 1 upbeat, 80–140, 160, 180, 200, and 220 BPM

Matrix switches: Horizontal: Keyswitches, C1–A#1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1
speed/BPM	80	90	100	110	120	130	140	160	180	200	220

35 TTB Upbeats a2 — Samples: 899 RAM: 56 MB

Repetitions: 2 upbeats, 80–140, 160, 180, 200, and 220 BPM

Matrix switches: Horizontal: Keyswitches, C1–A#1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1
speed/BPM	80	90	100	110	120	130	140	160	180	200	220

36 TTB Upbeats a3 — Samples: 756 RAM: 47 MB

Repetitions: 3 upbeats, 80–140, 160, and 180 BPM

Matrix switches: Horizontal: Keyswitches, C1–G#1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1
speed/BPM	90	100	110	120	130	140	160	180	200

37 TTB Upbeats all — Samples: 2579 RAM: 161 MB

Repetitions: 1–3 upbeats, 80–140, 160, 180, 200, and 220 BPM

Matrix switches: Horizontal: Keyswitches, C1–A#1 Vertical: Modwheel, 3 zones

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1
1 upbeat	80	90	100	110	120	130	140	160	180	200	220
2 upbeats	80	90	100	110	120	130	140	160	180	200	220
3 upbeats	80	90	100	110	120	130	140	160	180	180	180

Matrix - LEVEL 2 D - Scale+Phrase

41 TTB Arpeggios-staccato - Major — Samples: 108 RAM: 6 MB

Arpeggios, staccato, C to B major
AB switch up/down

Matrix switches: Horizontal: Keyswitches, C1–B1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1	B1
staccato maj.	C	C#	D	D#	E	F	F#	G	G#	A	A#	B

42 TTB Arpeggios-staccato - Major+ — Samples: 108 RAM: 6 MB

Arpeggios, staccato fast, C to B major
AB switch up/down

Matrix switches: Horizontal: Keyswitches, C1–B1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1	B1
staccato maj. fast	C	C#	D	D#	E	F	F#	G	G#	A	A#	B

43 TTB Arpeggios-staccato - Minor — Samples: 96 RAM: 6 MB

Arpeggios, staccato, C to B minor
AB switch up/down

Matrix switches: Horizontal: Keyswitches, C1–B1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1	B1
staccato min.	C	C#	D	D#	E	F	F#	G	G#	A	A#	B

44 TTB Arpeggios-staccato - Minor+ — Samples: 96 RAM: 6 MB

Arpeggios, staccato fast, C to B minor
AB switch up/down

Matrix switches: Horizontal: Keyswitches, C1–B1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1	B1
staccato min. fast	C	C#	D	D#	E	F	F#	G	G#	A	A#	B

45 TTB Arpeggios-staccato - All — Samples: 252 RAM: 15 MB

Arpeggios, staccato, C to B major and minor, diminished
AB switch up/down

Matrix switches: Horizontal: Keyswitches, C1–B1 Vertical: Modwheel, 3 zones

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1	B1
major	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
minor	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
diminished	%	%	%	%	%	%	%	%	%	%	%	%

46 TTB Arpeggios-staccato - All+ — Samples: 252 RAM: 15 MB

Arpeggios, staccato fast, C to B major and minor, diminished
AB switch up/down

Matrix switches: Horizontal: Keyswitches, C1–B1 Vertical: Modwheel, 3 zones

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1	B1
major	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
minor	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
diminished	%	%	%	%	%	%	%	%	%	%	%	%

51 TTB Grace notes - All — Samples: 450 RAM: 28 MB

Grace notes, minor and major 2nd
AB switch up/down

Matrix switches: Horizontal: Keyswitches, C1–C#1

	C1	C#1
interval	min. 2nd	maj. 2nd

Matrix - LEVEL 2 E - Keyswitch Vel

71 TTB Legato - cre6 — Samples: 90 RAM: 5 MB

Legato notes: Crescendo, keyswitch velocity
Keyswitches control 6 dynamic steps

Matrix switches: Horizontal: Keyswitches, C1–F1

	C1	C#1	D1	D#1	E1	F1
velocity	1st	2nd	3rd	4th	5th	6th

72 TTB Portato - cre9 — Samples: 135 RAM: 8 MB

Portato notes: Crescendo, keyswitch velocity
Keyswitches control 9 dynamic steps

Matrix switches: Horizontal: Keyswitches, C1–G#1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1
velocity	1st	2nd	3rd	4th	5th	6th	7th	8th	9th

73 TTB Staccato - cre9 — Samples: 135 RAM: 8 MB

Staccato notes: Crescendo, keyswitch velocity
Keyswitches control 9 dynamic steps

Matrix switches: Horizontal: Keyswitches, C1–G#1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1
velocity	1st	2nd	3rd	4th	5th	6th	7th	8th	9th

74 TTB Combi - cre9 — Samples: 270 RAM: 16 MB

Portato and staccato: Crescendo, keyswitch velocity
Keyswitches control 9 dynamic steps

Matrix switches: Horizontal: Keyswitches, C1–G#1 Vertical: Modwheel, 2 zones

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1
portato	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
staccato	1st	%	%	%	%	%	%	%	%

75 TTB Legato - dim6 — Samples: 90 RAM: 5 MB

Legato notes: Diminuendo, keyswitch velocity
Keyswitches control 6 dynamic steps

Matrix switches: Horizontal: Keyswitches, C1–F1

	C1	C#1	D1	D#1	E1	F1
velocity	1st	2nd	3rd	4th	5th	6th

76 TTB Portato - dim9 — Samples: 135 RAM: 8 MB

Portato notes: Diminuendo, keyswitch velocity
Keyswitches control 9 dynamic steps

Matrix switches: Horizontal: Keyswitches, C1–G#1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1
velocity	1st	2nd	3rd	4th	5th	6th	7th	8th	9th

77 TTB Staccato - dim9

Samples: 135 **RAM: 8 MB**

Staccato notes: Diminuendo, keyswitch velocity
Keyswitches control 9 dynamic steps

Matrix switches: Horizontal: Keyswitches, C1–G#1

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1
velocity	1st	2nd	3rd	4th	5th	6th	7th	8th	9th

78 TTB Combi - dim9

Samples: 270 **RAM: 16 MB**

Portato and staccato: Diminuendo, keyswitch velocity
Keyswitches control 9 dynamic steps

Matrix switches: Horizontal: Keyswitches, C1–G#1 Vertical: Modwheel, 2 zones

	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1
portato	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
staccato	1st	%	%	%	%	%	%	%	%

Presets

TTB VSL Preset Level 1 **Samples: 3192** **RAM: 199 MB**

L1 TTB Perf-Legato Speed
L1 TTB Articulation Combi
L1 TTB Perf-Repetitions Combi
Preset keyswitches: C6–D6

TTB VSL Preset Level 2 **Samples: 6646** **RAM: 415 MB**

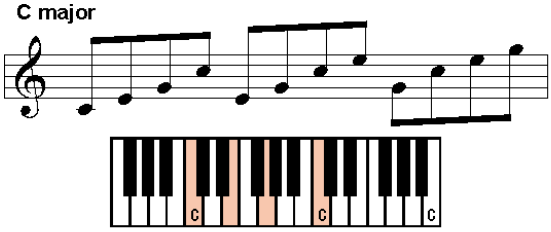
01 TTB Perf-Universal
02 TTB Perf-Trill Speed
L1 TTB Articulation Combi
31 TTB Perf-Repetitions - Combi
74 TTB Combi - cre9
Preset keyswitches: C6–E6

Appendix

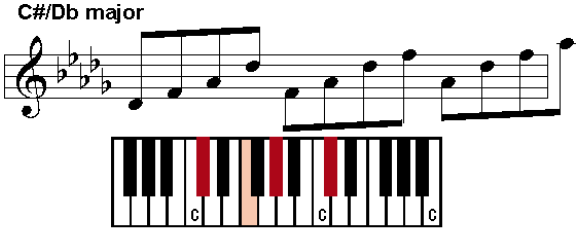
In the following, you will find notations and keyboard layout graphics for major and minor arpeggios, as well as a list of playing ranges for the individual arpeggio Patches.

Arpeggios – major

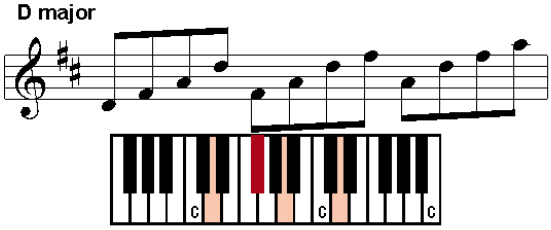
C major



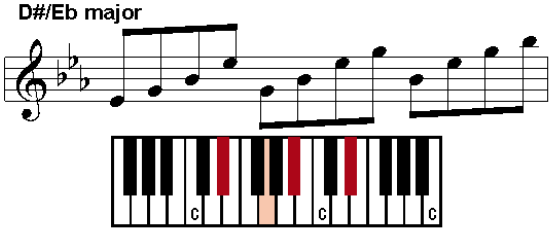
C#/Db major



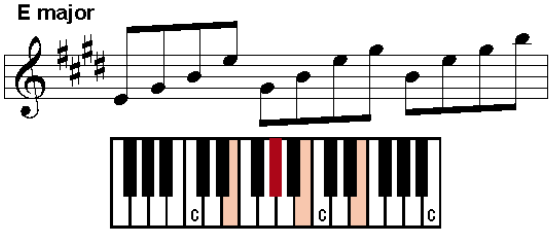
D major



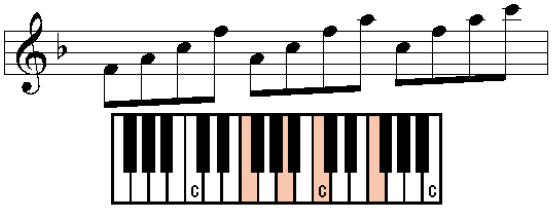
D#/Eb major



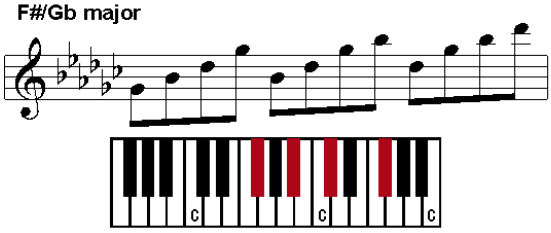
E major



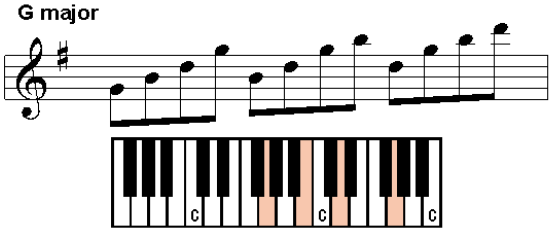
F major



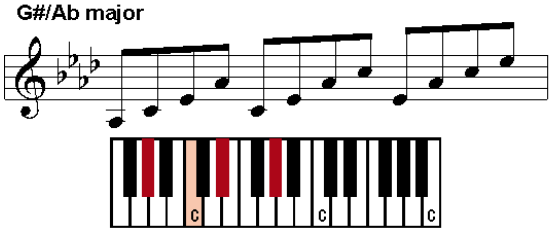
F#/Gb major



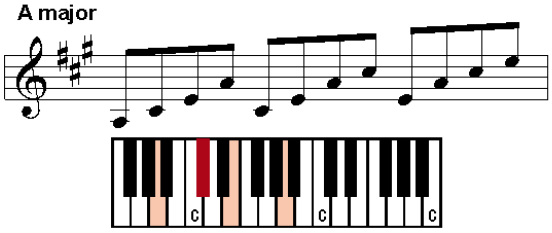
G major



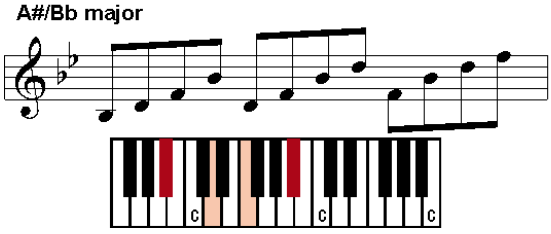
G#/Ab major



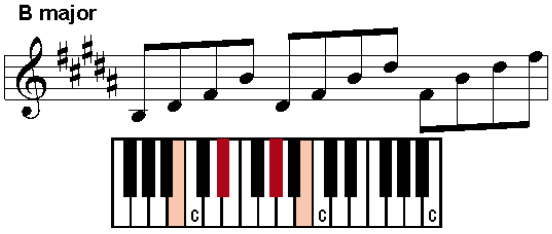
A major



A#/Bb major

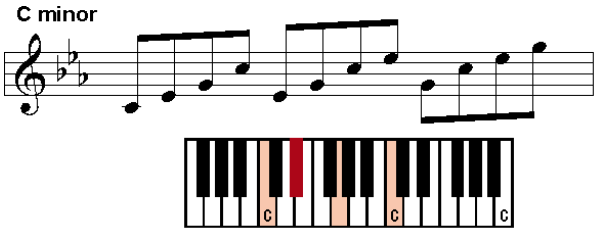


B major

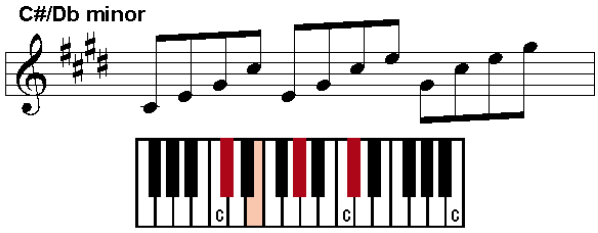


Arpeggios – minor

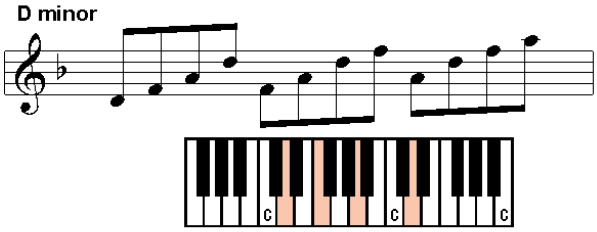
C minor



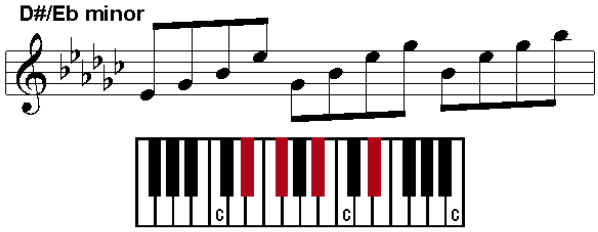
C#/Db minor



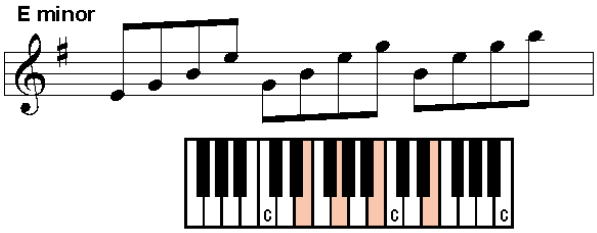
D minor



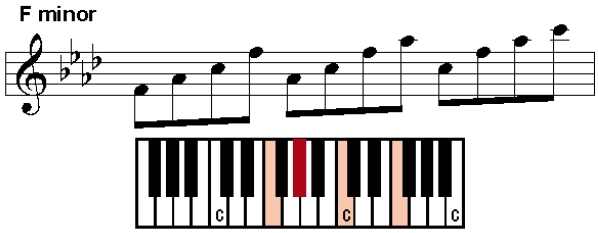
D#/Eb minor



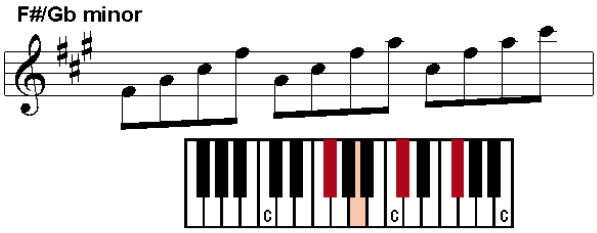
E minor



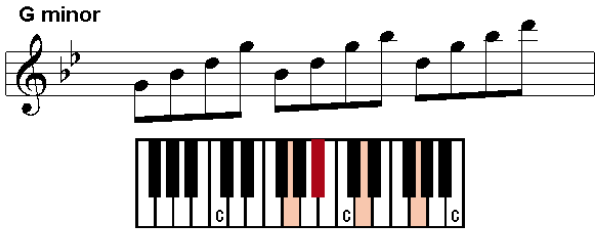
F minor



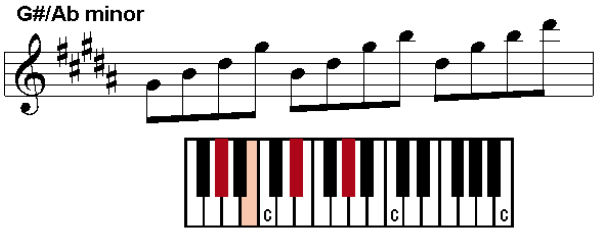
F#/Gb minor



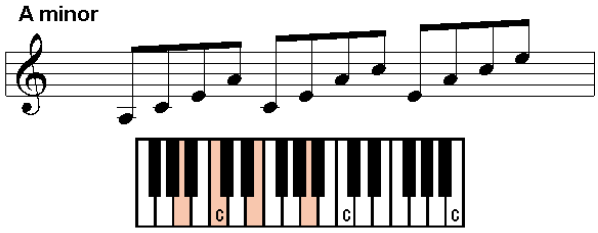
G minor



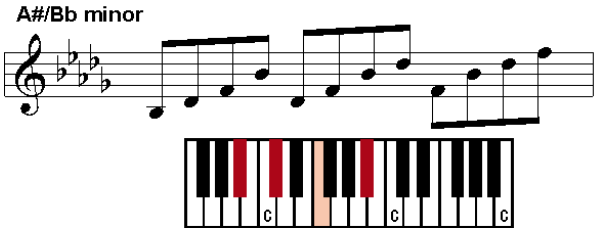
G#/Ab minor



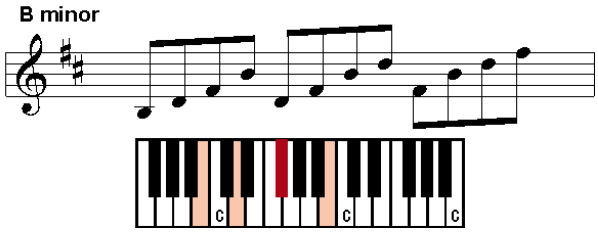
A minor



A#/Bb minor



B minor



Arpeggio ranges

Staccato major	play range
01 TTB_arp-sta_C-ma	E2–G4
02 TTB_arp-sta_C#-ma	F2–G#4
03 TTB_arp-sta_D-ma	F#2–A4
04 TTB_arp-sta_D#-ma	D#2–D#4
05 TTB_arp-sta_E-ma	E2–E4
06 TTB_arp-sta_F-ma	F2–F4
07 TTB_arp-sta_F#-ma	F#2–F#4
08 TTB_arp-sta_G-ma	G2–G4
09 TTB_arp-sta_G#-ma	G#2–G#4
10 TTB_arp-sta_A-ma	E2–A4
11 TTB_arp-sta_A#-ma	F2–A#4
12 TTB_arp-sta_B-ma	D#2–F#4

Staccato minor	play range
01 TTB_arp-sta_C-mi	G2–G4
02 TTB_arp-sta_C#-mi	E2–E4
03 TTB_arp-sta_D-mi	F2–F4
04 TTB_arp-sta_D#-mi	D#2–D#4
05 TTB_arp-sta_E-mi	E2–E4
06 TTB_arp-sta_F-mi	F2–F4
07 TTB_arp-sta_F#-mi	F#2–F#4
08 TTB_arp-sta_G-mi	G2–A#4
09 TTB_arp-sta_G#-mi	G#2–B4
10 TTB_arp-sta_A-mi	E2–E4
11 TTB_arp-sta_A#-mi	F2–F4
12 TTB_arp-sta_B-mi	F#2–F#4

Staccato major fast	play range
01 TTB_arp-sta+_C-ma	E2–G4
02 TTB_arp-sta+_C#-ma	F2–G#4
03 TTB_arp-sta+_D-ma	F#2–A4
04 TTB_arp-sta+_D#-ma	D#2–D#4
05 TTB_arp-sta+_E-ma	E2–E4
06 TTB_arp-sta+_F-ma	F2–F4
07 TTB_arp-sta+_F#-ma	F#2–F#4
08 TTB_arp-sta+_G-ma	G2–G4
09 TTB_arp-sta+_G#-ma	G#2–G#4
10 TTB_arp-sta+_A-ma	E2–A4
11 TTB_arp-sta+_A#-ma	F2–A#4
12 TTB_arp-sta+_B-ma	D#2–F#4

Staccato minor fast	play range
01 TTB_arp-sta_C-mi+	G2–G4
02 TTB_arp-sta_C#-mi+	E2–E4
03 TTB_arp-sta_D-mi+	F2–F4
04 TTB_arp-sta_D#-mi+	D#2–D#4
05 TTB_arp-sta_E-mi+	E2–E4
06 TTB_arp-sta_F-mi+	F2–F4
07 TTB_arp-sta_F#-mi+	F#2–F#4
08 TTB_arp-sta_G-mi+	G2–A#4
09 TTB_arp-sta_G#-mi+	G#2–B4
10 TTB_arp-sta_A-mi+	E2–E4
11 TTB_arp-sta_A#-mi+	F2–F4
12 TTB_arp-sta_B-mi+	F#2–F#4