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Introduction

A truly unique collection of acoustic solo instruments

In collaboration with the famous IRCAM research department, this brand new collection presents the finest solo instruments (Violin, Viola, Cello, Contrabass, Flute in C, Oboe, Clarinet, Bassoon, Alto saxophone, French horn, Trumpet, Trombone, Bass tuba, Accordion, Guitar & Harp) played by the most talented contemporary musicians and captured in the very best conditions to ensure maximum fidelity.

This collection not only contains the usual sounds of these sixteen wonderful instruments, but also some very rare playing techniques that you will not find anywhere else, such as multiphonic, aeolian, hit-on-body, buzz, crushed and more. The presets are carefully programmed with expressive key-switches and other cross fading techniques and can be loaded and played instantaneously in your Mac/Win system thanks to the supplied UVI Workstation.

Take a listen!
We could describe these sounds all day, but it’s better to give an ear (www.ultimatesoundbank.com) to the audio demos for yourself and hear why we believe this collection is so unique.

If you’re looking for your first high quality solo instrument library or want to enhance your existing library, the IRCAM Solo Instruments collection is a great choice that provides high quality core sounds as well as unique musical samples found in no other library.

The concept

The IRCAM Solo Instruments collection is the result of more than ten years of research, recording, editing & publishing. Started in 1996, this huge project involved the very best musicians, artistic directors, and engineers. The instruments were recorded using Prism converters with several high-end and customized microphones. After intense experimentation, the decision was made to use the sounds obtained via the close-proximity mono channel; because this is the most natural way to work with solo instruments, especially if you want to add external reverberation (like the superb sounding convolution reverb from the UVI Workstation). Sounds are stored in the 24 bits / 44.1 kHz format.

The IRCAM Solo Instruments collection offers traditional and very musical samples, but also includes some rare and unique features. The stringed instruments (violin, viola, cello and double bass), were recorded string by string, so you can choose the string you want for the note you want through key switching presets. In addition, the collection also includes some rare to find transitions from different playing techniques such as Sul tasto to Ordinario and Ordinario to Sul ponticello to name a few.
The players

Don't forget that the most important actors of this kind of project are the players, especially for solo instruments, where musical experience and playing techniques are essential. IRCAM did collaborate with the very best musicians to achieve an exceptional and musical result. Each instrument and sample has a natural human sound.

We are proud to introduce these 16 inspired musicians to you:

Hae-Sun Kang – Violin
Soloist for the Ensemble InterContemporain since 1994, concertmaster of the Orchestre de Paris, and winner of several international competitions, Hae-Sun Kang is a professor at the Conservatoire National Supérieur de Musique de Paris.

Pascal Robault – Viola
Violinist and violist, Pascal Robault won several international prices like the Evian International String Quartet Competition. He has participated in numerous concerts, exploring the most vast and varied forms of the chamber and contemporary music repertoires, performing with groups such as the Ensemble InterContemporain, Alternance, and Court-circuit.

Antoine Ladrette - Cello
- Instrument Played: Caussin, France, end of XIX century.
A former student of André Navarra and Bernard Michelin at the Conservatoire de Paris, André Ladrette developed a taste for early music, driving him to participate in groups such as Les Arts Florissants, La Chappelle Royale, La Grande Ecurie et la Chambre du Roy, Les Musiciens du Louvre, the London Fortepiano Trio, and, for fifteen years, the Stradivaria Ensemble directed by Daniel Cuiller.

Didier Meu - Contrabass
- Instrument Played: 3/4, Germany, end of XIX century
Member of the ensembles Court-circuit, Sillage, and Fa, he also performs on a regular basis with Ars Nova, the Ensemble InterContemporain, the Ensemble Modern, and the Ensemble Recherche. Didier Meu works in close collaboration with Ircam. He also created the Acrobass association, a group devoted to promoting instruments with a bass range and is also involved in projects where jazz and contemporary music intersect.

Jens McManama - French Horn
Born in Portland, Oregon, Jens McManama performed his first solo concert at the age of thirteen with the Seattle Orchestra. After studying in Cleveland with Myron Bloom, he became the horn soloist at La Scala in Milan under the direction of Claudio Abbado. As a soloist for the Ensemble InterContemporain since 1979, Jens McManama performed in numbers of pieces like the premiere of Karheinz Stockhausen’s In Freundschaft arranged for horn in Baden-Baden in 1988.

Laurent Bomont - Trumpet
Admitted to the Conservatoire national supérieur de musique de Paris in 1989, he won first prize in chamber music in 1991, followed by a first prize in trumpet performance the next year. Then he was invited to perform on a regular basis as a soloist at various festivals, and with prominent orchestras and groups. He has performed under the direction of Christoph von Dohnany, Sir Simon Rattle, Sir Georg Solti, James Conlon, Peter Eotvös, David Robertson... as well as Pierre Boulez.
Benny Sluchin - Trombone
Benny Sluchin studied music at the Conservatory of Tel Aviv, his hometown, and at the Academy of Music in Jerusalem. Sluchin played with the Israel Philharmonic Orchestra for two years before becoming a co-soloist in the Jerusalem Symphony Orchestra (Radio Orchestra) where he remained for four years. Since 1976, he has been a member of the Ensemble InterContemporain, performing the contemporary repertoire. Benny Sluchin also gives conferences all over the world.

Gerard Buquet - Bass Tuba
- Instrument played: Bass Tuba in F with 6 valves, Germany, manufactured by Fabien Levy
Gerard Buquet has given numerous premieres and has been an invited soloist at many of the major contemporary music festivals. He has played with the Orchestre de Paris, the Orchestre National de France, and the Orchestre Philharmonique de Radio France, as well as in various jazz combos. From 1976 to 2001, Buquet was the tuba player for the Ensemble InterContemporain.

Claude Delangle - Alto Saxophone
- Instrument played: SELMER Série2 n°434775 plated gold
Concert artist, researcher and teacher, Claude Delangle has expanded the contemporary repertoire by working with the greatest composers of our time and by promoting recordings of their work on labels such as BIS, Deutsche Grammophon, Harmonia Mundi, Erato and Véray. He has worked with Pierre Boulez, D. Robertson, P. Éötvös, K. Nagano, E.P. Salonen, and M.W. Chung. Delangle’s research on saxophone acoustics has resulted in a collaboration with Henri-Selmer-Paris in the creation of their prototypes.

Catherine Bowie - Flute in C
Catherine Bowie began her musical studies in her native New Zealand. Winner of the Young Musicians Competition, she entered the Conservatoire national supérieur de Paris, where she studied with Michel Deboest and Pierre-Yves Artaud. A member of Ensemble Court-circuit from 1991 to 2002, she currently lives in New Zealand and plays with the Auckland Philharmonia.

Helene De Villeneuve - Oboe
In October 1994, she was the winner of the fourth Tokyo International Oboe Contest. From 1992 to 1995 Hélène Devilleneuve played solo oboe for the Flanders Royal Philharmonic Orchestra. She then went on to become the first oboe super-soloist for the Orchestre philharmonique de Radio France in 1995. In the latter domain, she is a part of the ensemble Court-circuit and is regularly invited to play with the Ictus ensemble (Brussels), the Fa ensemble (Dominique My), and more.

Pierre Dutrieu - Clarinet
- Instrument played: Buffet-Crampon Prestige 1996 using Fineber system
His interest in the contemporary repertoire has led him to premiere numerous concert works worldwide. As a soloist, Dutrieu has performed some of the most difficult pieces found in the contemporary repertoire such as the famous Dialogue de l’ombre double by Pierre Boulez. Pierre Dutrieu is a permanent member of the groups Court-circuit, S.I.C. and Sillages, and is regularly invited by other groups, such as the Ensemble InterContemporain.

Laurent Le Chenadec - Bassoon
First place bassoonist at the Conservatoire national supérieur de musique de Paris, Laurent Le Chenadec has played the modern bassoon with the Paris-Bastille octet, the Ensemble InterContemporain under the direction of Pierre Boulez, and the group Court-circuit.

Tania Chagnot - Guitar
- Instrument played: Daniel Friederich n°627
Winner of numerous international competitions, Tania Chagnot has given concerts all over the world, and has participated in radio and television programs in Europe and in the United States. Although Tania feels her vocation is to spread knowledge of contemporary music, especially through premiering new works, her repertoire extends from early music to today’s music.
Virginie Tarrete - Harp
After having completed her studies at the Conservatoire national supérieure de musique de Paris, where she took first place in both harp performance and chamber music, she continued her studies with Ursula Holliger at the Staatliche Hochschule für Musik in Freiburg. Soloist in the ensemble l'Itinéraire, a large part of Virginie Tarrête's performance activity is dedicated to contemporary music, which has led to numerous collaborations with composers like Mark André Dalbavie, Klaus Huber, Helmut Lachenmann...

Pascal Contet - Accordion
- Instrument played: ZEROSETTE number B32C64T58 Levy special
Virtuoso with an impressive reputation, festival director, accordion collector, and lecturer, Pascal Contet isn’t afraid to take risks in order to make his instrument vibrate. He has improvised with Joëlle Léandre, Andy Emler, Jean-Pierre Drouet. In addition, has collaborated with Pierre Boulez.
About IRCAM

In 1969 Georges Pompidou initiated the establishment of the Institut de Recherche et Coordination Acoustique/Musique (Institute for music/acoustic research and coordination) entrusting its direction to the composer and conductor Pierre Boulez. IRCAM became, and remains today, the only center of its kind across the globe, dedicated to contemporary musical research and production and linked to the Centre Pompidou.

Initially the project of one man, Pierre Boulez, composer, conductor and author of several works, the project to create IRCAM incarnated the utopian aspirations and aesthetic conceptions of its founder. His objective was to bring science and art together in order to widen instrumentarium and rejuvenate musical language. In the late 1970’s IRCAM offered the most advanced reflection into computer music in the world.

With the arrival of Laurent Bayle in 1992, the institution opened its doors to new artistic forms and worked at attracting a larger public, notably via the establishment of the Agora festival. In addition, anticipating the importance of the Internet the Forum went online enabling IRCAM’s “know-how” to be accessed across the entire globe.

In 2002, the philosopher Bernard Stiegler took over IRCAM’s direction, reaffirming the primary vocation of the institute: the coordination between research and creation. Seeking to renew relations between art and science, IRCAM’s project has both feet firmly based in contemporary questions such as the links between cultural industries and creation.

Strongly supported by the presence of composers and artists invited to dialogue with the scientific teams, IRCAM contributes to debates incited by current issues, whether theoretical, musical, aesthetical or political.

Research & Development

IRCAM provides a unique framework to welcome and coordinate various scientific ways of approaching music, including physics (acoustics, mechanics), signal processing, computer science, cognitive psychology and musicology. Activities are structured according to specific themes, entrusted to specialized teams. Each team assumes responsibility for all the work carried out within its domain: research, software development, contracts, collaborative projects, and diffusion.

The personnel working within IRCAM’s Department of Research and Development (90 researchers, engineers, post-graduates, technicians and administration staff) under the direction of Hugues Vinet.
INSTRUMENTS LIST

FLUTE (in C)

OBOE
OBOE WITH MUTE

CLARINET (in B♭)

BASSOON
BASSOON WITH MUTE

ALTO SAXOPHONE (in E♭)

FRENCH HORN
FRENCH HORN WITH MUTE

TRUMPET (in C)
TRUMPET in C with CUP MUTE
TRUMPET in C with HARMON MUTE
TRUMPET in C with STRAIGHT MUTE
TRUMPET in C with WAWA MUTE

TROMBONE (Tenor/bass)
TROMBONE with CUP MUTE
TROMBONE with HARMON MUTE
TROMBONE with STRAIGHT MUTE
TROMBONE with WAWA MUTE

BASS TUBA (in F)
BASS TUBA WITH MUTE

ACCORDION

GUITAR

HARP

VIOLIN
VIOLIN WITH MUTE
VIOLIN WITH LEAD MUTE

VIOLA
VIOLA WITH MUTE
VIOLA WITH LEAD MUTE

VIOLONCELLO
VIOLONCELLO WITH MUTE
VIOLONCELLO WITH LEAD MUTE

CONTRABASS
CONTRABASS WITH MUTE
WOODWINDS

Detail of available playing techniques for each woodwind instrument

The ranges are given in international format: middle C = C4
All musical notations are in sounding pitches (untransposed)

FLUTE in C

Instrumentist: Catherine Bowie - Artistic direction: Joshua Fineberg - Sound engineers: François Eckert, Antoine Mercier.

Instrument part to be written at actual pitch

Ranges in sounding pitches: (B3 with special extension) C4 – C7 (+)

aeolian
aeolian-and-ordinario
aeolian-to-ordinario
chromatic-scale
crescendo
crescendo-to-decrescendo
decrescendo
discoledered-fingering
flatterzunge
flatterzunge-to-ordinario
harmonic-fingering
jet-whistle
key-click
note-durations
ordinario
ordinario-1q
ordinario-to-aeolian
ordinario-to-flatterzunge
pizzicato
play-and-sing
play-and-sing-unison
sforzando
staccato
tongue-ram
trill-major-second-up
trill-minor-second-up
whistle-tones
whistle-tones-sweeping
IRCAM SOLO INSTRUMENTS

OBOE

Instrumentalist: Hélène Devilleneuve - Artistic director: Joshua Fineberg - Sound engineers: François Eckert, Antoine Mercier.

Instrument part to be written at actual pitch
Range in sounding pitches: B♭₃ – G₆ (+)

- blow-without-reed
- chromatic-scale
- crescendo
- crescendo-to-decrescendo
- decrescendo
- discolored-fingering
- double-trill-major-second-up
- double-trill-minor-second-up
- flatterzunge
- harmonic-fingering
- key-click
- kiss
- lip-glissando
- multiphonics
- note-durations
- ordinario
- ordinario-1q
- sforzando
- staccato
- trill-major-second-up
- trill-minor-second-up
- vibrato

OBOE CON SORDINA
ordinario
Instrument part to be written a major second higher

Range in sounding pitches: D3-F6 (+)

aeolian-and-ordinario
crescendo
crescendo-to-decrescendo
decrescendo
flatterzunge
flatterzunge-high-register
glissando
key-click
multiphonics
note-durations
ordinario
ordinario-1q
ordinario-high-register
sforzando
staccato
trill-major-second-up
trill-minor-second-up
**BASSOON**

Instrument part to be written at actual pitch
Range in sounding pitches: $B^1 - E^5$ (+)

- blow-without-reed
- chromatic-scale
- crescendo
- crescendo-to-decrescendo
- decrescendo
- flatterzunge
- glissando-with-throat
- harmonic-fingering
- key-click
- multiphonics
- note-durations
- ordinario
- ordinario-1q
- sforzando
- staccato
- trill-major-second-up
- trill-minor-second-up
- vibrato

**BASSON CON SORDINA**

ordinario
**BRASS**

**Detail of available playing techniques for each brass instrument**

The ranges are given in international format: middle C = C₄
All musical notations are in sounding pitches (untransposed)

**TRUMPET in C**
Instrumentalist: Laurent Bomont - Artistic direction: Joshua Fineberg - Sound engineers: François Eckert, Antoine Mercier.

Instrument part to be written at actual pitch

Range in sounding pitches: \( F^{\#}_{-3} \text{-}\text{-}B_{-5}^{\#} (+) \)

<table>
<thead>
<tr>
<th>Technique</th>
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<tbody>
<tr>
<td>crescendo</td>
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<tr>
<td>crescendo-to-decrescendo</td>
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<tr>
<td>cuivré</td>
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<tr>
<td>cuivré-to-ordinario</td>
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<tr>
<td>decrescendo</td>
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<tr>
<td>flatterzunge</td>
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<tr>
<td>flatterzunge-to-ordinario</td>
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<tr>
<td>glissando-embouchure</td>
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<td>half-valve-glissando</td>
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<tr>
<td>harmonics-glissando</td>
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<tr>
<td>increasing-intervals-legato</td>
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<tr>
<td>note-durations</td>
</tr>
<tr>
<td>ordinario</td>
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<tr>
<td>ordinario-to-cuivré</td>
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<tr>
<td>ordinario-to-flatterzunge</td>
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<tr>
<td>pedal-tone</td>
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<tr>
<td>sforzando</td>
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<tr>
<td>slap-pitched</td>
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<td>staccato</td>
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<tr>
<td>trill-major-second-up</td>
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<tr>
<td>trill-minor-second-up</td>
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<tr>
<td>vocalize-on-harmonics</td>
</tr>
</tbody>
</table>

**C TRUMPET CUP MUTE**
flatterzunge
ordinario

**C TRUMPET HARMON MUTE**
flatterzunge
ordinario

**C TRUMPET STRAIGHT MUTE**
flatterzunge
ordinario

**C TRUMPET WAWA MUTE**
closed-to-open
flatterzunge-open
open-to-closed
ordinario-closed
ordinario-open
ALTO SAXOPHONE in E₈


Instrument part to be written a major sixth higher
Range in sounding pitches: (-) D₃-A₅ (+)

aeolian
backwards
bisbigliando
blow-without-reed
chromatic-scale
crescendo
crescendo-to-decrescendo
decrescendo
discolored-fingering
double-tonguing
exploding-slap-pitched
flatterzunge
flatterzunge-to-ordinario
glissando
harmonic-fingering
harmonics-glissando
key-click
kiss
move-bell-from-down-to-up
move-bell-from-left-to-right
multiphonics
ordinario
ordinario-1q
ordinario-high-register
ordinario-to-flatterzunge
play-and-sing-glissando
play-and-sing-m2-up
play-and-sing-unison
sforzando
slap-pitched
slap-unpitched
staccato
trill-major-second-up
trill-minor-second-up
IRCAM SOLO INSTRUMENTS

FRENCH HORN in F

Instrumentist: Jens McManama - Artistic direction: Joshua Fineberg - Sound engineers: François Eckert, Antoine Mercier.

Instrument part to be written a perfect fifth higher

Range in sounding pitches: (-) B1-F4 (+)

- chromatic-scale
- crescendo
- crescendo-to-decrescendo
- cuivré
- cuivré-to-ordinario
- decrescendo
- flatterzunge
- flatterzunge-stopped
- flatterzunge-to-ordinario
- note-durations
- open-to-stopped
- ordinario
- ordinario-to-cuivré
- ordinario-to-flatterzunge
- sforzando
- slap-pitched
- staccato
- stopped
- stopped-to-open
- trill-major-second-up
- trill-minor-second-up

FRENCH HORN CON SORDINA

- flatterzunge
- ordinario
**TROMBONE (tenor-bass)**

*Instrumentist: Benny Sluchin - Artistic direction: Joshua Fineberg - Sound engineers: François Eckert, Antoine Mercier.*

Instrument part to be written at actual pitch

Range in sounding pitches: (-) E2-D5 (+)

- chromatic-scale
- crescendo
- crescendo-to-decrescendo
- cuivré
- cuivré-to-ordinario
- decrescendo
- flatterzunge
- flatterzunge-no-mouthpiece
- flatterzunge-to-ordinario
- glissando
- note-durations
- ordinario
- ordinario-no-mouthpiece
- ordinario-to-cuivré
- ordinario-to-flatterzunge
- pedal-tone
- sforzando
- slap-pitched
- staccato

**TROMBONE SORD CUP**
- flatterzunge
- ordinario

**TROMBONE SORD HARMON**
- flatterzunge
- ordinario

**TROMBONE SORD STRAIGHT**
- flatterzunge
- ordinario

**TROMBONE SORD WAWA**
- closed-to-open
- flatterzunge-closed
- flatterzunge-open
- open-to-closed
- ordinario-closed
- ordinario-open
**BASS TUBA**

*Instrumentist:* Gérard Buquet  
*Instrument:* Bass Tuba in F with six valves, German  
*Artistic direction:* Fabien Levy  
*Sound engineers:* Vérène Valat  
*Editing:* Cécile Lenoir, Gérard Delia.

Instrument part to be written at actual pitch

Range in sounding pitches: (-) F1 - C4 (+)

- bisbigliando
- blow
- breath
- buzz
- chromatic-scale
- crescendo
- crescendo-to-decrescendo
- cuivré
- decrescendo
- discolored-fingering
- discolored-fingering-1q
- exploding-slap-pitched
- exploding-slap-unpitched
- filtered-by-voice
- flatterzunge
- flatterzunge-and-voice-unison
- flatterzungle-to-ordinario
- glissando
- growl
- inhaled
- kiss
- multiphonics
- ordinario
- ordinario-1q
- ordinario-high-register
- ordinario-to-flatterzunge
- pedal-tone
- percussion-embouchure
- play-and-sing-aug4-up
- play-and-sing-glissando
- play-and-sing-m2-up
- play-and-sing-M7-up
- play-and-sing-P5-up
- play-and-sing-unison
- sforzando
- single-tonguing
- slap-pitched
- slap-unpitched
- speak-into-instrument
- staccato
- trill-major-second-up
- trill-minor-second-up

**BASS TUBA SORDINA**

ordinario
FREE REED

Available playing techniques

The ranges are given in international format: middle C = C4
All musical notations are in sounding pitches (untransposed)

ACCORDION

Instrumentist: Pascal Contet - Instrument: ZEROSETTE number B32C64T58 IND n°1 special - Artistic direction: Fabien Levy
- Sound engineers: Vérène Valat - Editing: Cécile Lenoir, Gérard Delia.

instrument part to be written at actual pitch

range in sounding pitches: E1-A7 (C8)

backwards
bellowshake
breath
crescendo
crescendo-to-decrescendo
decrescendo
difference-tones
key-click
sforzando
staccato
tap-on-body
PLUCKED STRINGS

Available playing techniques

The ranges are given in international format: middle C = C4
All musical notations are in sounding pitches (untransposed)

GUITAR


Instrument part to be written an octave higher

Range in sounding pitches: E₂-E₅ (+)

- behind-the-frog
- bell-effect
- bottleneck
- chromatic-scale
- dedillo
- drum-effect
- glissando
- harmonic-fingering
- ordinario
- pizzicato
- pizzicato-bartok
- rasguado
- scratch-with-nail
- slide
- sul-ponticello
- sul-tasto
- tap-on-body
- tap-with-stick
HARP

Instrumentalist: Virginie Tarrete

Instrument part to be written at actual pitch
Range in sounding pitches: C1-G7

bisbigliando
bisbigliando-with-stick
buzzing-pedal
clusters
clusters-with-nail
damped
double-glissando
glissando
glissando-fluido-with-stick
glissando-near-the-board
glissando-with-nail
glissando-with-pedal
glissando-with-stick
harmonic-fingering
harmonic-in-wood
near-the-board
near-the-board-with-nail
near-the-peg
ordinario
pizzicato-bartok
scratch-with-nail
tap-on-body
tap-with-stick	
tremolo-with-fingertips
xylophonic sounds
STRINGS

Detail of available playing techniques for each string instrument

The ranges are given in international format: middle C = C4
All musical notations are in sounding pitches (untransposed)

VIOLIN


Instrument part to be written at actual pitch

range in sounding pitches: G3-G7 (➕)

artificial-harmonic (mixed strings and individual strings)
artificial-harmonic-tremolo (mixed strings and individual strings)
behind-the-bridge
behind-the-fingerboard
chromatic-scale
col-legno-battuto (mixed strings and individual strings)
col-legno-tratto (mixed strings and individual strings)
crescendo
crescendo-to-decrescendo
pressed-to-ordinario
decrescendo
hit-on-body
natural-harmonics-glissandi
non-vibrato (mixed strings and individual strings)
note-durations
on-the-tailpiece
on-the-tuning-peg
ordinario (mixed strings and individual strings)
ordinario-to-pressured
ordinario-to-sul-ponticello
ordinario-to-sul-tasto
ordinario-to-tremolo
pizzicato-bartok (mixed strings and individual strings)
pizzicato-l-vib (mixed strings and individual strings)
pizzicato-secco (mixed strings and individual strings)
sforzato
staccato
sul-ponticello (mixed strings and individual strings)
sul-ponticello-to-ordinario
sul-ponticello-to-sul-tasto
sul-ponticello-tremolo
sul-tasto (mixed strings and individual strings)
sul-tasto-to-ordinario
sul-tasto-to-sul-ponticello
tremolo (mixed strings and individual strings)
tremolo-to-ordinario
trill-major-second-up (mixed strings and individual strings)
trill-minor-second-up (mixed strings and individual strings)
VIOLIN CON SORDINA
non-vibrato (mixed strings and individual strings)
ordinario (mixed strings and individual strings)
tremolo (mixed strings and individual strings)

VIOLIN CON SORDINA PIOMBO
non-vibrato
ordinario
tremolo
Instrument part to be written at actual pitch

Range in sounding pitches: C3-C6 (+)

artificial-harmonic (mixed strings and individual strings)
artificial-harmonic-tremolo (mixed strings and individual strings)
behind-the-bridge
behind-the-fingerboard
chromatic-scale
col-legno-battuto (mixed strings and individual strings)
col-legno-tratto (mixed strings and individual strings)
crescendo
crescendo-to-decrescendo
pressured-to-ordinario
decrescendo
hit-on-body
natural-harmonics-glissandi
non-vibrato (mixed strings and individual strings)
note-durations
on-the-bridge
on-the-frog
on-the-tuning-peg
ordinario (mixed strings and individual strings)
ordinario-to-pressured
ordinario-to-sul-ponticello
ordinario-to-sul-tasto
ordinario-to-tremolo
pizzicato-bartok (mixed strings and individual strings)
pizzicato-l-vib (mixed strings and individual strings)
pizzicato-secco (mixed strings and individual strings)
sforzato
staccato (mixed strings and individual strings)
sul-ponticello (mixed strings and individual strings)
sul-ponticello-to-ordinario
sul-ponticello-to-sul-tasto
sul-ponticello-tremolo
sul-tasto (mixed strings and individual strings)
sul-tasto-to-ordinario
sul-tasto-to-sul-ponticello
sul-tasto-tremolo
tremolo (mixed strings and individual strings)
tremolo-to-ordinario
trill-major-second-up (mixed strings and individual strings)
trill-minor-second-up (mixed strings and individual strings)

**VIOLA CON SORDINA**
non-vibrato (mixed strings and individual strings)
ordinario (mixed strings and individual strings)
tremolo (mixed strings and individual strings)

**VIOLA CON SORDINA PIOMBO**
non-vibrato
ordinario, tremolo
**VIOLONCELLO**


Instrument part to be written at actual pitch range in sounding pitches: C2-A5 (++)

- artificial-harmonic (mixed strings and individual strings)
- artificial-harmonic-tremolo (mixed strings and individual strings)
- behind-the-bridge
- chromatic-scale
- col-legno-battuto (mixed strings and individual strings)
- col-legno-tratto (mixed strings and individual strings)
- crescendo
- crescendo-to-decrescendo
- pressured-to-ordinario
- decrescendo
- hit-on-body
- natural-harmonics-glissandi
- non-vibrato (mixed strings and individual strings)
- note-durations
- on-the-bridge
- on-the-frog
- on-the-tailpiece
- on-the-tuning-peg
- ordinario (mixed strings and individual strings)
- ordinario-to-pressured
- ordinario-to-sul-ponticello
- ordinario-to-sul-tasto
- ordinario-to-tremolo
- pizzicato-bartok (mixed strings and individual strings)
- pizzicato-l-vib (mixed strings and individual strings)
- pizzicato-secco (mixed strings and individual strings)
- sforzato
- staccato
- sul-ponticello (mixed strings and individual strings)
- sul-ponticello-to-ordinario
- sul-ponticello-to-sul-tasto
- sul-ponticello-tremolo
- sul-tasto (mixed strings and individual strings)
- sul-tasto-to-ordinario
- sul-tasto-to-sul-ponticello
- sul-tasto-tremolo
- tremolo (mixed strings and individual strings)
- tremolo-to-ordinario
- tremolo-to-sul-ponticello
- tremolo-tremolo
- trill-major-second-up (mixed strings and individual strings)
- trill-minor-second-up (mixed strings and individual strings)

**VIOLONCELLO CON SORDINA**

- non-vibrato (mixed strings and individual strings)
- ordinario (mixed strings and individual strings)
- tremolo

**VIOLONCELLO CON SORDINA PIOMBO**

- non-vibrato
- ordinario, tremolo
CONTRABASS

Instrumentist: Didier Meu - Instrument: 3/4, Germany, end of XIX - Artistic direction: Joshua Fineberg - Sound engineers: François Eckert, Antoine Mercier.

instrument part to be written an octave higher

range in sounding pitches: (C1 with five strings) E1-G4 (++)

- artificial-harmonic (mixed strings and individual strings)
- artificial-harmonic-tremolo (mixed strings and individual strings)
- behind-the-bridge
- chromatic-scale
- col-legno-battuto (mixed strings and individual strings)
- col-legno-tratto (mixed strings and individual strings)
- crescendo
- crescendo-to-decrescendo
- pressured-to-ordinario
- decrescendo
- hit-on-body
- natural-harmonics-glissandi
- non-vibrato
- note-durations
- on-the-bridge
- on-the-tailpiece
- on-the-tuning- pegs
- ordinario (mixed strings and individual strings)
- ordinario-to-pressured
- ordinario-to-sul-ponticello
- ordinario-to-sul-tasto
- ordinario-to-tremolo
- pizzicato-bartok (mixed strings and individual strings)
- pizzicato-l-vib (mixed strings and individual strings)
- pizzicato-secco (mixed strings and individual strings)
- sforzato
- staccato
- sul-ponticello (mixed strings and individual strings)
- sul-ponticello-to-ordinario
- sul-ponticello-to-sul-tasto
- sul-ponticello-tremolo
- sul-tasto (mixed strings and individual strings)
- sul-tasto-to-ordinario
- sul-tasto-to-sul-ponticello
- sul-tasto-tremolo
- tremolo (mixed strings and individual strings)
- tremolo-to-ordinario
- trill-major-second-up (mixed strings and individual strings)
- trill-minor-second-up (mixed strings and individual strings)

CONTRABASS CON SORDINA

- non-vibrato (mixed strings and individual strings)
- ordinario (mixed strings and individual strings)
- tremolo (mixed strings and individual strings)
Playing techniques and suggested notation

GENERAL playing techniques

Ordinario
Normal playing on instrument with three dynamic layers (except in some particular cases)
Note that the “ordinario” instruments in this collection are almost without vibrato. This is the normal performance practice in contemporary music.

Ordinario-1q
Quarter tone notes to complete the “ordinario” instrument

Sforzando
Write “sfz” below the emphasized notes.

\[ \text{sfz} \]

Staccato

\[ \text{!} \]

Trill-major-second-up
Use small note in parenthesis to show the note to trill to.

Trill-minor-second-up
Use small note in parenthesis to show the note to trill to.

Vibrato
Write vib. Above the notes. Additional indications can include poco, molto and/or a wavy line to indicate the amplitude of the vibrato.

Notes
For all special playing techniques, it is common to indicate “ord.” when returning to normal playing. A bracket can also be used to affect an entire passage without writing “ord.”.

For all progressive techniques (technique 1 – to – technique 2), use an arrow in between the text indications.
### WOODWINDS playing techniques

<table>
<thead>
<tr>
<th>Technique</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aeolian</strong></td>
<td>Sounds produced by taking away the tone partially or totally to leave only the sound of the air.</td>
</tr>
<tr>
<td><strong>Aeolian-and-ordinario</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Aeolian-to-ordinario</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Blow-without-reed</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Double-trill-major-second-up</strong></td>
<td>Trills produced by alternating two different fingerings for the same trill. The result is twice as fast.</td>
</tr>
<tr>
<td><strong>Double-trill-minor-second-up</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Flatterzunge</strong></td>
<td>Playing technique achieved by rolling the tongue or the throat along with the stream of air.</td>
</tr>
<tr>
<td><strong>Flatterzunge-to-ordinario</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Glissando-with-throat</strong></td>
<td>On the bassoon, glissando technique to bend the tone a semitone higher or lower. Available in 2 directions (up, down) and 3 different speeds (slow, medium, fast).</td>
</tr>
<tr>
<td><strong>Harmonic-fingering</strong></td>
<td>Tone having as origin a fundamental note which is not produced by its real fingering.</td>
</tr>
<tr>
<td><strong>Jet-whistle</strong></td>
<td>Fast and forced ascending harmonics glissando. It is possible to indicate on which fundamental pitch the jet is executed with a small note.</td>
</tr>
</tbody>
</table>
**Key-click**  
Percussive playing technique achieved by hitting one or more keys forcefully. Can be used as a complement of normal sound or like an independent technique. Generally effective only on the lower octave plus a fifth (12th) of the instruments.

```
key click
```

**Kiss – smacking sound**  
Playing technique available only on double reed instruments (oboe, bassoon, saxophone)

```
kiss
```

**Lip-glissando**  
On the oboe, glissando technique for bending the tone a semitone higher or lower. Available in 2 directions (up, down) and 3 different speeds (slow, medium, fast).

**Multiphonics**  
Complex sounds, chords, achieved with special fingerings and various embouchure positions.

**Ordinario-to-aeolian**

```
ord. ➔ aeolian
```

**Ordinario-to-flatterzunge**

```
ord. ➔ flatt.
```

**Pizzicato – slap**  
Percussive playing technique achieved by the slamming of the tongue against the palate to create a strong "t". Pitch can be perceived according to the position of the embouchure.

```
pizz.
```

**Play-and-sing**  
**Play-and-sing-unison**
The voice can be used simultaneously with the normal instrumental playing. According to the complexity of the writing, the voice is sometimes notated on a different stave. In all cases, use rectangular shaped note-heads for the voice.

```

```

**Tongue-ram**  
Percussive playing technique achieved by a fast sinking in (ram) of the tongue in the embouchure. A brief vibration is produced in the air column resulting in a pitch sounding about a seventh (major or minor according to fingerings) under the pitch of the fingering. Notate the intended pitch in a black square shaped note-head.

```
tongue ram
```
Whistle-tones
On the flutes, harmonics produced by blowing a very small amount of air into the flute. Only possible in very soft dynamic levels (from pppp to p). Use of a specific fundamental pitch to be notated in diamond shaped note.

Example of whistle tone pitches for a C4 fundamental

Whistle-tones-sweeping
On the flutes, whistle-tones sweeping, freely permuted. Use a freely draw line to suggest sweeping shape.
Available in two different speeds, slow and fast.
IRCAM SOLO INSTRUMENTS

BRASS playing techniques

Aeolian
Available only for saxophone. See definition in woodwinds.

Backwards
Inhaled sounds, giving the impression of a backwards playing tape.

Bisbigliando
Sounds obtained by alternating two or more different fingerings producing the same pitch.

Cuivré
“Brassy”, forced sounds. Write “cuivré” above note or passage. Write “ord.” to return to normal playing.

Cuivré-to-ordinario

Buzz
Sound of embouchure by itself. It is the sounds that enter the tube of brass instruments putting the air column in vibration.

Closed-to-open
For the wawa mute. Gradual opening of the tube with the hand.

Discolored-fingering - _ valve
Discolored-fingering-1q – _ valve -1q
Available only in valve instruments. Playing with the valve(s) being pressed half way resulting in a weaker, somewhat unfocused pitch.

Exploding-slap-pitched
Percussive playing technique achieved by the slamming of the tongue against the palate to create a strong “t”. Equivalent of Pizzicato.

Exploding-slap-unpitched

Flatterzunge
Playing technique achieved by rolling the tongue or the throat along with the stream of air.

Flatterzunge-and-voice-unison
Flatterzunge-closed
Flatterzunge playing with the mute closed (closed tube of the wawa mute)

Flatterzunge-no-mouthpiece
Flatterzunge-open
Flatterzunge playing with the mute unclosed (open tube of the wawa mute or open position for the horn)

Flatterzunge-stopped
On the horn, flatterzungue playing with the bell stopped by the fist.

Flatterzunge-to-ordinario
Growl
Low pitched throat flatterzungue. Notate like regular flatt. But use the indication “Growl”.

Half-valve-glissando
Harmonic-fingering
Available only for saxophone. See definition in woodwinds.

Inhaled
Key-click
Available only for saxophone. See definition in woodwinds.

Kiss – smacking sound
See definition in woodwinds.
Move-bell-from-down-to-up
Move-bell-from-left-to-right
Available only for the saxophone

Open-to-closed

Open-to-stopped
On the horn, progressive closing of the bell with the fist.

Ordinario-closed
Normal playing with wawa mute tube closed by the hand.

Ordinario-open
Normal playing with wawa mute tube open.

Ordinario-to-cuivré

Ordinario-to-flatterzunge

Pedal-tone
Fundamental tone on which rest the harmonic series available by the use of valves. They have to be used with care since they are difficult to produce and cannot be played in loud dynamics.

Percussion-embouchure
Slap effect obtained by slamming the embouchure with the palm of the hand.

Play-and-sing-aug4-up
Play-and-sing-glissando
Play-and-sing-m2-up
Play-and-sing-m7-up
Play-and-sing-p5-up
Play-and-sing-unison
See in woodwinds for voice notation
Slap-pitched
Percussive playing technique achieved by the slapping of the tongue in the embouchure.

Slap-unpitched
Percussive playing technique achieved by the slapping of the tongue in the embouchure.

Speak-into-instrument
Sounds produced when the instrumentist speaks while playing.

Stopped
On the horn, sounds with the bell blocked by the fist. The result is a characteristic metallic sound.

Stopped-to-open
On the horn, gradual opening of the bell by the fist.
## PLUCKED STRINGS playing techniques

### GUITAR special playing techniques

**Behind-the-frog**  
Produced by playing the strings behind the frog

**Bell-effect**

**Bottleneck**  
Polished metal or glass tube which fits on to the left hand index or little finger and which has the same width than the neck of the guitar. Allows free sliding between pitches.

**Dedillo**  
Tremolo like effect which can be rhythmically measured.

**Drum-effect**  
Percussive sound imitating the snare drum obtained by crossing the 5th and 6th strings at the level of fret V or VI.

**Glissando**  
Effective when played fast before the sound is lost.

**Harmonic-fingering**  
Regular natural or artificial harmonic sounds.

**Pizzicato**  
Produced by muting the resonance of the string with the right hand palm placed half on the bridge and half on the strings.

**Pizzicato-bartok**  
Produced by pulling the string upwards and allowing it to snap sharply against the fingerboard.

**Rasgueado**  
Rhythmic strumming right hand patterns in which the strings are not plucked but hammered with one ore more fingers. This technique is most often associated with flamenco.

**Scratch-with-nail**  
Produced by scratching the string with the nail along it’s length.

**Slide**  
Portamento effect obtained by sliding the finger from one fret to another or by slurring to the second note without reattack.

**Sul-ponticello**  
Played near the bridge.

**Sul-tasto**  
Played near or above the fingerboard.

**Tap-on-body**  
Percussive effects resulting from tapping on different areas of the body of the instrument. The resulting pitches are indefinite.

**Tap-with-stick**  
Percussive effect resulting from tapping on the strings with a stick.
**HARP special playing techniques**

**Bisbigliando**
Produced by rapidly alternating to pitches (equal or not) on two different strings using one or two fingers from each hand. The samples in this collection alternate two equal pitches tuned on two enharmonically tuned strings. Current notation practice uses the small note in parenthesis to indicate the second note. Above the note or passage, use the indication “bisb.” along with the trill like wavy line.

**Bisbigliando-with-stick**
Produced by rapidly alternating a metal stick between two strings. The samples in this collection alternate two strings tuned enharmonically on equal pitches.

**Buzzing-pedal**
Buzzing sounds achieved by holding the pedal(s) halfway between two notches while playing the string(s). Possible only on the metal strings (that is, up to G1).

**Clusters**
A collection of clusters on three areas (high-medium-low) of the range and on three dynamic levels.

**Clusters-with-nails**

**Damped**
The sound is muffled right after the note by putting firmly the flat of the hand upon the strings in order to also damp sympathetic resonance.

**Glissando-fluido-with-stick**
Produced by sliding a stick along the string length to alter the sounding pitch.

**Glissando-near-the-board**
See near the board.

**Glissando-with-nail**
Use the “nail” symbol above note or passage

**Glissando-with-pedal**
Produced by changing the position of the pedal in the resonance of the tone.

**Glissando-with-stick**
Produced by sliding a stick along the string length to do a glissando from the sounding pitch.

**Harmonic-fingering**
Harmonic-in-wood (Xylharmonic sound)

Near-the-board
Produced by playing near the lowest extremity of the string, close to the board of the instrument. Write “near the board” above note or passage. Known as “près de la table”.

Near-the-board-with-nail
Produced by playing with the nail near the lowest extremity of the string, close to the board of the instrument. The resulting sound is close to a plectrum sound.

Near-the-peg
Produced by playing near the highest extremity of the string, near the pegs.

Pizzicato-bartok
Produced by letting the articulated part of the finger hit the body of the instrument right after striking the note.

Scratch-with-nail
The string is scratched on its length by the nail.

Tap-on-body
Percussive effect produced by hitting the body of the instrument.

Tap-with-stick
Percussive effect produced by hitting the body of the instrument with a stick.

Tremolo-with-fingertips
Produced by gently hitting the strings with the fingertips, almost like playing on keys.

Xylophonic sounds
Percussive like sounds produced by firmly pressing the fingertips of the left hand on the lowest extremity of the strings (diamond shaped notation) while the right hand plays in the centre of the same strings. The role of each hand can be inverted according to requirements. Use diamond shaped note-heads to indicate the strings to be damped, or simply write “xyl” above note or passage.
STRINGS playing techniques

Artificial-harmonic
In order to produce as harmonics notes that are not overtones of the open strings, the string is pressed down by the first finger on a note which will be the fundamental and the fourth finger touches the string lightly at a point a perfect fourth higher which is equivalent to dividing the unstopped portion of the string into quarters, resulting in a harmonic two octaves above the fundamental pitch. This corresponds to the fourth partial produced on an open string. The resulting sound can also be notated in small note and in parenthesis to avoid confusion since artificial harmonics at the third and fifth also exist.

Artificial-harmonic-tremolo

Behind-the-bridge
Produced by drawing the bow behind the bridge. The sounds are of indeterminate pitch but may vary in pitch according to the string.

Behind-the-fingerboard
Produced by drawing the bow across the back of the fingerboard. The sounds is of indeterminate pitch.

Col-legno-battuto
Produced by striking the string with the wood of the neck. Write “ord.” to return to normal playing mode.

Col-legno-tratto
Produced by drawing the wood part of the bow across the string. Write “ord.” to return to normal playing mode.

Pressured-to-ordinario
Produced by excessive bow pressure and then a gradual release of this pressure. A notation symbol can be used to indicate pressured sound instead of text for separate notes.
Hit-on-body

Natural-harmonics-glissandi
Available in 3 different speeds (slow, medium, fast) and 2 directions (up, down).
Natural harmonics are simply overtones (or partials) of the open strings. They are produced by lightly touching the string at the right point.

Resulting natural harmonic pitches for string instruments.

Non-vibrato – Senza vibrato
write “non vib” or “senza vib.”.

On-the-bridge
Produced by playing “on” the bridge (as distinguished from near it “sul ponticello”).

On-the-tailpiece
Produced by playing on the tailpiece. On the cello and contrabass, this results in a low groaning noise. Behind the tailpiece produces a very shrill and penetrating tone.

On-the-tuning-pegs
Produced by playing on the tuning pegs.
Ordinario-to-pressured
See pressured-to-ordinario.

Ordinario-to-sul-ponticello

Ordinario-to-sul-tasto

Ordinario-to-tremolo

Pizzicato-bartok
Produced by pulling the string upwards and allowing it to 'snap' sharply against the fingerboard.

Pizzicato-l-vib
Resonating pizzicato. It is possible to add a “let vibrate” sign after the notes.

Pizzicato-secco
Dry pizzicato. It is possible to add dots under the notes for an entire passage.

Sul-ponticello
Played near the bridge. Use “Molto pont.” to have a more metallic, “on” the bridge playing.

Sul-ponticello-to-ordinario

Sul-ponticello-to-sul-tasto
**Sul-ponticello-tremolo**

sul pont.

---

**Sul-tasto**

Playing above or very close to the fingerboard.

sul tasto

---

**Sul-tasto-to-ordinario**

tasto → ord.

---

**Sul-tasto-to-sul-ponticello**

tasto → pont.

---

**Sul-tasto-tremolo**

sul tasto

---

**Tremolo (tremolo)**

---

**Tremolo-to-ordinario**

---
Appendix A: Presets list

01 Flute

**Classical**
- Fl Dur 0,5s
- Fl Dur 1s
- Fl Dur KS
- Fl Fortepiano
- Fl KS
- Fl Ordinario
- Fl Ordinario X
- Fl Sforzando
- Fl Staccato
- Fl Trill maj2
- Fl Trill min2

**Extended**
- Fl Aeolian
- Fl Aeolian & ordinario
- Fl Aeolian & ordinario X
- Fl Discolored fingering
- Fl Flatterzunge
- Fl Flatterzunge X
- Fl Harmonic fingering
- Fl Jet whistle
- Fl Key click
- Fl Multiphonics
- Fl Ordinario 1q
- Fl Pizzicato
- Fl Play and sing C4
- Fl Play and sing unison
- Fl Tongue ram
- Fl Whistle tones
- Fl Whistle tones sweeping

**Transitions**
- Fl Aeolian to ordinario
- Fl Chromatic Scales
- Fl Crescendo
- Fl Crescendo to decrescendo
- Fl Decrescendo
- Fl Flatterzunge to ordinario
- Fl Ordinario to aeolian
- Fl Ordinario to flatterzunge
02 Oboe

**Classical**
- Ob Dur 0,5s
- Ob Dur 1s
- Ob Dur KS
- Ob Fortepiano
- Ob KS
- Ob Ordinario
- Ob Ordinario X
- Ob Sforzando
- Ob Staccato
- Ob Trill maj2
- Ob Trill min2
- Ob Vibrato

**Extended**
- Ob Blow without reed
- Ob Dbl trill maj2 up
- Ob Dbl trill min2 up
- Ob Discolored fingering
- Ob Flatterzunge
- Ob Harmonic fingering
- Ob Key click
- Ob Kiss
- *Ob Lip glissando*
  - Ob Gliss asc fast
  - Ob Gliss asc mod
  - Ob Gliss asc slw
  - Ob Gliss dsc fst
  - Ob Gliss dsc mod
  - Ob Gliss dsc slw

- Ob Multiphonics
- Ob Ordinario 1q

**Muted**
- Ob Mute Ordinario

**Transitions**
- Ob Chromatic scale
- Ob Crescendo
- Ob Crescendo to decrescendo
- Ob Decrescendo
03 Clarinet in Bb

**Classical**
- Clar Dur 0,5s
- Clar Dur 1s
- Clar Dur KS
- Clar Fortepiano
- Clar KS
- Clar Ordinario
- Clar Ordinario X
- Clar Sforzando
- Clar Staccato
- Clar Trill maj2
- Clar Trill min2

**Extended**
- Clar Aeolian & ordinario
- Clar Flatterzunge
- Clar Flatterzunge X
- Clar Glissando
- Clar Multiphonics
- Clar Ordinario 1q
- Clar Slap

**Transitions**
- Clar Crescendo
- Clar Crescendo to decrescendo
- Clar Decrescendo
04 Bassoon

Classical
Bsn Dur 0,5s
Bsn Dur 1s
Bsn Dur KS
Bsn Fortepiano
Bsn KS
Bsn Ordinario
Bsn Ordinario X
Bsn Sforzando
Bsn Staccato
Bsn Trill maj2
Bsn Trill min2
Bsn Vibrato

Extended
Bsn Blow without reed
Bsn Flatterzunge
Bsn Glissando with throat
  Bsn asc fst
  Bsn asc mod
  Bsn asc slw
  Bsn dsc fst
  Bsn dsc mod
  Bsn dsc slw
Bsn Harmonic fingering
Bsn Key click
Bsn Multiphonics
Bsn Ordinario 1q

Muted
Bsn Mute Ordinario

Transitions
Bsn Chromatic scale
Bsn Crescendo
Bsn Crescendo to decrescendo
Bsn Decrescendo
05 Saxophone Alto in Eb

Classical
Sax Alto Fortepiano
Sax Alto KS
Sax Alto Ordinario
Sax Alto Ordinario X
Sax Alto Staccato
Sax Alto Trill maj2
Sax Alto Trill min2

Extended
Sax Alto Aeolian
Sax Alto Backwards
Sax Alto Bisbigliando
Sax Alto Blow without reed
Sax Alto Discolored fingering
Sax Alto Double tonguing
Sax Alto Exploding slap pitched
Sax Alto Flatterzunge
Sax Alto Glissando
Sax Alto Harmonic fingering
Sax Alto Key click
Sax Alto Move bell down to up
Sax Alto Move bell left to right
Sax Alto Ordinario 1q
Sax Alto Play & sing glissando
Sax Alto Play & sing m2 up
Sax Alto Play & sing unison
Sax Alto Slap pitched
Sax Alto Slap unpitched

Transitions
Sax Alto Chromatic scale
Sax Alto Crescendo
Sax Alto Crescendo to decrescendo
Sax Alto Decrescendo
Sax Alto Flatterzunge to ordinarino
Sax Alto Ordinario to flatterzunge
**06 French Horn**

**Classical**
- Hrn Dur 0,5s
- Hrn Dur 1s
- Hrn Dur KS
- Hrn Forte piano
- Hrn KS
- Hrn Ordinario
- Hrn Ordinario X
- Hrn Sforzando
- Hrn Staccato
- Hrn Trill maj2
- Hrn Trill min2

**Extended**
- Hrn Cuivre
- Hrn Flatterzunge
- Hrn Flatterzunge stopped
- Hrn Flatterzunge X
- Hrn Slap pitched
- Hrn Stopped

**Muted**
- Hrn Mute Flatterzunge
- Hrn Mute Ordinario

**Transitions**
- Hrn Chromatic scale
- Hrn Crescendo
- Hrn Crescendo to decrescendo
- Hrn Cuivre to ordinario
- Hrn Decrescendo
- Hrn Flatterzunge to ordinario
- Hrn Open to stopped
- Hrn Ordinario to cuivre
- Hrn Ordinario to flatterzunge
- Hrn Stopped to open
07 Trumpet in C

Classical
Tpt Dur 0.5s
Tpt Dur 1s
Tpt Dur KS
Tpt Fortepiano
Tpt KS
Tpt Ordinario
Tpt Ordinario X
Tpt Sforzando
Tpt Staccato
Tpt Trill maj2
Tpt Trill min2

Extended
Tpt Cuivre
Tpt Flatterzunge
Tpt Flatterzunge X
Tpt FX
Tpt Pedal tone
Tpt Slap pitched
Tpt Vocalize on harmonics

Muted
Tpt Mute Cup
Tpt Cup Flatterzunge
Tpt Cup Ordinario

Tpt Mute Harmon
Tpt Harmon Flatterzunge
Tpt Harmon Ordinario

Tpt Mute Straight
Tpt Straight Flatterzunge
Tpt Straight Ordinario

Tpt Mute Wawa
Tpt Wawa Flatterzunge open
Tpt Wawa Ordinario closed
Tpt Wawa Ordinario open

Transitions Mute
Tpt Wawa Closed to open
Tpt Wawa Open to closed
Transitions

Tpt Crescendo
Tpt Crescendo to decrescendo
Tpt Cuivre to ordinario
Tpt Decrescendo
Tpt Flatterzunge to ordinario
Tpt Ordinario to cuivre
Tpt Ordinario to flatterzunge
08 Trombone

**Classical**
- Trb Dur 0.5s
- Trb Dur 1s
- Trb Dur KS
- Trb Fortepiano
- Trb KS
- Trb Ord+Pedal tone
- Trb Ordinario
- Trb Ordinario X
- Trb Sforzando
- Trb Staccato

**Extended**
- Trb Cuivre
- Trb Flatterzunge
- Trb Flatterzunge X
- Trb Glissando
- Trb No mouthpiece
- Trb Pedal tone
- Trb Slap pitched

**Muted**

*Transitions Mute*
- Trb Wawa Closed to open
- Trb Wawa Open to closed

*Trb Mute Cup*
- Trb Cup Flatterzunge
- Trb Cup Ordinario

*Trb Mute Harmon*
- Trb Harmon Flatterzunge
- Trb Harmon Ordinario

*Trb Mute Straight*
- Trb Straight Flatterzunge
- Trb Straight Ordinario

*Trb Mute Wawa*
- Trb Wawa Flatterzunge closed
- Trb Wawa Flatterzunge open
- Trb Wawa Ordinario closed
- Trb Wawa Ordinario open
**Transitions**

Trb Crescendo
Trb Crescendo to decrescendo
Trb Cuivre to ordinario
Trb Decrescendo
Trb Flatterzunge to ordinario
Trb Ordinario to cuivre
Trb Ordinario to flatterzunge
09 Tuba

**Classical**
- Tuba Fortepiano
- Tuba KS
- Tuba Ordinario
- Tuba Ordinario X
- Tuba Staccato
- Tuba Trill maj2
- Tuba Trill min2

**Extended**
- Tuba Bisbigliando
- Tuba Cuivre
- Tuba Discolored fingering
- Tuba Discolored fingering 1q
- Tuba Filtered by voice
- Tuba Flatterzunge
- Tuba Flatterzunge & voice unison
- Tuba Flatterzunge X
- Tuba FX 1
- Tuba FX 2
- Tuba Glissando
- Tuba Ord+Pedal tone
- Tuba Ordinario 1q
- Tuba Ordinario high register
- Tuba Pedal tone
  - *Tuba Play and Sing*
    - Tuba Play and sing aug4 up
    - Tuba Play and sing m2 up
    - Tuba Play and sing M7 up
    - Tuba Play and sing P5 up
    - Tuba Play and sing unison

- Tuba Single tonguing
- Tuba Slap pitched
- Tuba Slap unpitched

**Muted**
- Tuba Mute Ordinario
Transitions
Tuba Chromatic Scale
Tuba Crescendo
Tuba Crescendo to decrescendo
Tuba Decrescendo
Tuba Flatterzunge to ordinario
Tuba Ordinario to flatterzunge
10 Accordion

**Classical**
Acc Fortepiano
Acc KS
Acc Ordinario
Acc Ordinario X

*Acc Ordinario Registers*
Acc Ordinario DBL All KS
Acc Ordinario DBL1
Acc Ordinario DBL2
Acc Ordinario DBL3
Acc Ordinario DBL4
Acc Ordinario DBL5

Acc Staccato

**Extended**
Acc Backwards

*Acc Combination of registers*
Acc Combi. of regstr
Acc Combi. of regstr DBL1

Acc FX

**Transitions**
Acc Crescendo
Acc Crescendo to decrescendo
Acc Decrescendo
11 Guitar

**Classical**
Gtr Harmonic fingering

*Gtr Harmonic fingering by string*
- Gtr Harmonic fingering KS
- Gtr Harmonic fingering s1
- Gtr Harmonic fingering s2
- Gtr Harmonic fingering s3
- Gtr Harmonic fingering s4
- Gtr Harmonic fingering s5
- Gtr Harmonic fingering s6

Gtr Ordinario

*Gtr Ordinario by string*
- Gtr Ordinario KS
- Gtr Ordinario s1
- Gtr Ordinario s2
- Gtr Ordinario s3
- Gtr Ordinario s4
- Gtr Ordinario s5
- Gtr Ordinario s6

Gtr Sul ponticello
Gtr Sul tasto

**Extended**
Gtr Dedillo
Gtr FX1
Gtr FX2
Gtr Glissando
Gtr Pizzicato
Gtr Pizzicato bartok
Gtr Rasguado
Gtr Slide
Gtr Tap on body
12 Harp

**Classical**
- Harp Harmonic fingering
- Harp KS
- Harp Ordinario

**Extended**
- Harp Bisbigliando
- Harp Bisbigliando w stick
- Harp Buzzing pedal
- Harp Damped
- Harp FX
- Harp Glissandi
- Harp Glissando w stick
- Harp Glissando with pedal
- Harp Harmonic in wood
- Harp Near the board
- Harp Near the board with nail
- Harp Near the pegs
- Harp Pizzicato bartok
- Harp Scratch w nail
- Harp Tap with stick
- Harp Xylophonic
13 Violin

**Classical**
- Vln Fortepiano
- Vln KS

**Vln Note durations**
- Vln Dur 0,5s
- Vln Dur 1s
- Vln Dur KS

**Vln Ordinario by string**
- Vln Ordinario by string KS
- Vln Ordinario s1
- Vln Ordinario s2
- Vln Ordinario s3
- Vln Ordinario s4

- Vln Ordinario
- Vln Ordinario X

**Vln Pizzicato l.vib by string**
- Vln Pizzicato l.vib by string KS
- Vln Pizzicato l.vib s1
- Vln Pizzicato l.vib s2
- Vln Pizzicato l.vib s3
- Vln Pizzicato l.vib s4

- Vln Pizzicato l.vib

**Vln Pizzicato secco by string**
- Vln Pizzicato secco by string KS
- Vln Pizzicato secco s1
- Vln Pizzicato secco s2
- Vln Pizzicato secco s3
- Vln Pizzicato secco s4

- Vln Pizzicato secco
- Vln Sforzando
- Vln Staccato

**Vln Tremolo by string**
- Vln Tremolo by string KS
- Vln Tremolo s1
- Vln Tremolo s2
- Vln Tremolo s3
- Vln Tremolo s4

- Vln Tremolo
- Vln Tremolo X

**Vln Trill maj2 by string**
- Vln Trill maj2 by string KS
- Vln Trill maj2 s1
- Vln Trill maj2 s2
- Vln Trill maj2 s3
- Vln Trill maj2 s4
Vln Trill maj2

Vln Trill min2 by string
  Vln Trill min2 by string KS
  Vln Trill min2 s1
  Vln Trill min2 s2
  Vln Trill min2 s3
  Vln Trill min2 s4

Vln Trill min2

Extended

Vln Art harmonic

Vln Artificial harmonic by string
  Vln Artificial harmonic by string KS
  Vln Artificial harmonic s1
  Vln Artificial harmonic s2
  Vln Artificial harmonic s3
  Vln Artificial harmonic s4

Vln Artificial harmonic tremolo

Vln Artificial harmonic tremolo by string
  Vln Art harmonic tremolo by string KS
  Vln Art harmonic tremolo s1
  Vln Art harmonic tremolo s2
  Vln Art harmonic tremolo s3
  Vln Art harmonic tremolo s4

Vln Behind the bridge

Vln Col legno battuto by string
  Vln Col legno battuto by string KS
  Vln Col legno battuto s1
  Vln Col legno battuto s2
  Vln Col legno battuto s3
  Vln Col legno battuto s4

Vln Col legno battuto

Vln Col legno tratto by string
  Vln Col legno tratto by string KS
  Vln Col legno tratto s1
  Vln Col legno tratto s2
  Vln Col legno tratto s3
  Vln Col legno tratto s4

Vln Col legno tratto

Vln FX

Vln KS All Bow Pos

Vln KS All Pizz

Vln KS All Trems

Vln Natural harmonics glissandi
  Vln NHarm Gliss Fst Asc
  Vln NHarm Gliss Fst Dsc
  Vln NHarm Gliss KS
Vln NHarm Gliss Mod Asc
Vln NHarm Gliss Mod Desc
Vln NHarm Gliss Slw Asc
Vln NHarm Gliss Slw Dsc

Vln Non vibrato by string
Vln Non vibrato by string KS
Vln Non vibrato s1
Vln Non vibrato s2
Vln Non vibrato s3
Vln Non vibrato s4

Vln Non vibrato
Vln On the tuning pegs

Vln Pizzicato bartok by string
Vln Pizzicato bartok by string KS
Vln Pizzicato bartok s1
Vln Pizzicato bartok s2
Vln Pizzicato bartok s3
Vln Pizzicato bartok s4

Vln Pizzicato bartok

Vln Sul ponticello by string
Vln Sul ponticello by string KS
Vln Sul ponticello s1
Vln Sul ponticello s2
Vln Sul ponticello s3
Vln Sul ponticello s4

Vln Sul ponticello tremolo by string
Vln Sul ponticello tremolo by string KS
Vln Sul ponticello tremolo s1
Vln Sul ponticello tremolo s2
Vln Sul ponticello tremolo s3
Vln Sul ponticello tremolo s4

Vln Sul ponticello tremolo
Vln Sul ponticello

Vln Sul tasto by string
Vln Sul tasto by string KS
Vln Sul tasto s1
Vln Sul tasto s2
Vln Sul tasto s3
Vln Sul tasto s4

Vln Sul tasto

Muted

Vln Lead Mute Non vibrato by string
Vln Lead Mute Non vibrato by string KS
Vln Lead Mute Non vibrato s1
Vln Lead Mute Non vibrato s2
Vln Lead Mute Non vibrato s3
IRCAM SOLO INSTRUMENTS

Vln Lead Mute Non vibrato s4
Vln Lead Mute Non vibrato
Vln Lead Mute Ordinario by string
  Vln Lead Mute Ordinario by string KS
  Vln Lead Mute Ordinario s1
  Vln Lead Mute Ordinario s2
  Vln Lead Mute Ordinario s3
  Vln Lead Mute Ordinario s4
Vln Lead Mute Ordinario
Vln Lead Mute Tremolo by string
  Vln Lead Mute Tremolo by string KS
  Vln Lead Mute Tremolo s1
  Vln Lead Mute Tremolo s2
  Vln Lead Mute Tremolo s3
  Vln Lead Mute Tremolo s4
Vln Lead Mute Tremolo
Vln Mute Non vibrato by string
  Vln Mute Non vibrato by string KS
  Vln Mute Non vibrato s1
  Vln Mute Non vibrato s2
  Vln Mute Non vibrato s3
  Vln Mute Non vibrato s4
Vln Mute Non vibrato
Vln Mute Ordinario by string
  Vln Mute Ordinario by string KS
  Vln Mute Ordinario s1
  Vln Mute Ordinario s2
  Vln Mute Ordinario s3
  Vln Mute Ordinario s4
Vln Mute Ordinario
Vln Mute Tremolo by string
  Vln Mute Tremolo by string KS
  Vln Mute Tremolo s1
  Vln Mute Tremolo s2
  Vln Mute Tremolo s3
  Vln Mute Tremolo s4
Vln Mute Tremolo

Transitions
Vln Chromatic scale
Vln Crescendo
Vln Crescendo to decrescendo
Vln Decrescendo
Vln Ordinario to pressured by string
  Vln Ordinario to pressured KS
  Vln Ordinario to pressured s1
  Vln Ordinario to pressured s2
  Vln Ordinario to pressured s3
Vln Ordinario to pressured s4
Vln Ordinario to pressured
Vln Ordinario to sul ponticello
Vln Ordinario to sul tasto
**Vln Ordinario to tremolo by string**
  Vln Ordinario to tremolo KS
  Vln Ordinario to tremolo s1
  Vln Ordinario to tremolo s2
  Vln Ordinario to tremolo s3
  Vln Ordinario to tremolo s4
Vln Ordinario to tremolo
**Vln Pressured to ordinario by string**
  Vln Pressured to ordinario KS
  Vln Pressured to ordinario s1
  Vln Pressured to ordinario s2
  Vln Pressured to ordinario s3
  Vln Pressured to ordinario s4
Vln Pressured to ordinario
Vln Sul ponticello to ordinario
Vln Sul ponticello to sul tasto
Vln Sul tasto to ordinario
Vln Sul tasto to sul ponticello
**Vln Tremolo to ordinario by string**
  Vln Tremolo to ordinario KS
  Vln Tremolo to ordinario s1
  Vln Tremolo to ordinario s2
  Vln Tremolo to ordinario s3
  Vln Tremolo to ordinario s4
Vln Tremolo to ordinario
14 Viola

**Classical**
- Vla Fortepiano
- Vla KS

**Vla Note durations**
- Vla Dur 0,5s
- Vla Dur 1sec
- Vla Dur KS

**Vla Ordinario by string**
- Vla Ordinario by string KS
- Vla Ordinario s1
- Vla Ordinario s2
- Vla Ordinario s3
- Vla Ordinario s4
- Vla Ordinario X
- Vla Ordinario

**Vla Pizzicato l.vib by string**
- Vla Pizzicato l.vib by string KS
- Vla Pizzicato l.vib s1
- Vla Pizzicato l.vib s2
- Vla Pizzicato l.vib s3
- Vla Pizzicato l.vib s4

**Vla Pizzicato l.vib**

**Vla Pizzicato secco by string**
- Vla Pizzicato secco by string KS
- Vla Pizzicato secco s1
- Vla Pizzicato secco s2
- Vla Pizzicato secco s3
- Vla Pizzicato secco s4
- Vla Pizzicato secco
- Vla Sforzando
- Vla Staccato

**Vla Tremolo by string**
- Vla Tremolo by string KS
- Vla Tremolo s1
- Vla Tremolo s2
- Vla Tremolo s3
- Vla Tremolo s4
- Vla Tremolo X
- Vla Tremolo

**Vla Trill maj2 up by string**
- Vla Trill maj2 up by string KS
- Vla Trill maj2 up s1
- Vla Trill maj2 up s2
- Vla Trill maj2 up s3
- Vla Trill maj2 up s4
Vla Trill maj2 up
**Vla Trill min2 up by string**
- Vla Trill min2 up by string KS
- Vla Trill min2 up s1
- Vla Trill min2 up s2
- Vla Trill min2 up s3
- Vla Trill min2 up s4

**Extended**
Vla Art harmonic tremolo
**Vla Artificial harmonic by string**
- Vla Artificial harmonic by string KS
- Vla Artificial harmonic s1
- Vla Artificial harmonic s2
- Vla Artificial harmonic s3
- Vla Artificial harmonic s4

**Vla Artificial harmonic tremolo by string**
- Vla Art harmonic tremolo by string KS
- Vla Art harmonic tremolo s1
- Vla Art harmonic tremolo s2
- Vla Art harmonic tremolo s3
- Vla Art harmonic tremolo s4

Vla Artificial harmonic
Vla Behind the bridge
Vla Behind the fingerboard
**Vla Col legno battuto by string**
- Vla Col legno battuto by string KS
- Vla Col legno battuto s1
- Vla Col legno battuto s2
- Vla Col legno battuto s3
- Vla Col legno battuto s4

Vla Col legno battuto
**Vla Col legno tratto by string**
- Vla Col legno tratto by string KS
- Vla Col legno tratto s1
- Vla Col legno tratto s2
- Vla Col legno tratto s3
- Vla Col legno tratto s4

Vla Col legno tratto
Vla FX
Vla KS All Bow Pos
Vla KS All Pizz
Vla KS All Trems
**Vla Natural Harmonics Gliss**
- Vla NHarm Gliss Fast Asc
- Vla NHarm Gliss Fast Desc
IRCAM SOLO INSTRUMENTS

Vla NHarm Gliss KS
Vla NHarm Gliss Mod Asc
Vla NHarm Gliss Mod Desc
Vla NHarm Gliss Slow Asc
Vla NHarm Gliss Slow Desc

*Vla Non vibrato by string*
Vla Non vibrato by string KS
Vla Non vibrato s1
Vla Non vibrato s2
Vla Non vibrato s3
Vla Non vibrato s4

Vla Non vibrato
Vla On the tuning pegs

*Vla Pizzicato bartok by string*
Vla Pizzicato bartok by string KS
Vla Pizzicato bartok s1
Vla Pizzicato bartok s2
Vla Pizzicato bartok s3
Vla Pizzicato bartok s4

Vla Pizzicato bartok

*Vla Sul ponticello by string*
Vla Sul ponticello by string KS
Vla Sul ponticello s1
Vla Sul ponticello s2
Vla Sul ponticello s3
Vla Sul ponticello s4

*Vla Sul ponticello tremolo by string*
Vla Sul ponticello tremolo by string KS
Vla Sul ponticello tremolo s1
Vla Sul ponticello tremolo s2
Vla Sul ponticello tremolo s3
Vla Sul ponticello tremolo s4

Vla Sul ponticello tremolo
Vla Sul ponticello

*Vla Sul tasto by string*
Vla Sul tasto by string KS
Vla Sul tasto s1
Vla Sul tasto s2
Vla Sul tasto s3
Vla Sul tasto s4

*Vla Sul tasto tremolo by string*
Vla Sul tasto tremolo by string KS
Vla Sul tasto tremolo s1
Vla Sul tasto tremolo s2
Vla Sul tasto tremolo s3
Vla Sul tasto tremolo s4

Vla Sul tasto tremolo
Vla Sul tasto

**Muted**
Vla Lead Mute Non vibrato
Vla Lead Mute Ordinario
Vla Lead Mute Tremolo
*Vla Mute Non vibrato by string*
  Vla Mute Non vibrato by string KS
  Vla Mute Non vibrato s1
  Vla Mute Non vibrato s2
  Vla Mute Non vibrato s3
  Vla Mute Non vibrato s4
Vla Mute Non vibrato
*Vla Mute Ordinario by string*
  Vla Mute Ordinario by string KS
  Vla Mute Ordinario s1
  Vla Mute Ordinario s2
  Vla Mute Ordinario s3
  Vla Mute Ordinario s4
Vla Mute Ordinario
*Vla Mute Tremolo by string*
  Vla Mute Tremolo by string KS
  Vla Mute Tremolo s1
  Vla Mute Tremolo s2
  Vla Mute Tremolo s3
  Vla Mute Tremolo s4
Vla Mute Tremolo

**Transitions**
Vla Chromatic scale
Vla Crescendo to decrescendo
Vla Crescendo
Vla Decrescendo
Vla Ordinario to pressured
Vla Ordinario to sul ponticello
Vla Ordinario to sul tasto
Vla Ordinario to tremolo
Vla Pressured to ordinario
Vla Sul ponticello to ordinario
Vla Sul ponticello to sul tasto
Vla Sul tasto to ordinario
Vla Sul tasto to sul ponticello
Vla Tremolo to ordinario
15 Cello

**Classical**
Vc Fortepiano
Vc KS
Vc Note durations
  
  Vc 0,5s
  Vc 1s
  Vc Note Durations KS

Vc Ordinario by string
  
  Vc Ordinario by string KS
  Vc Ordinario s1
  Vc Ordinario s2
  Vc Ordinario s3
  Vc Ordinario s4

Vc Ordinario X
Vc Ordinario
Vc Pizzicato l.vib by string
  
  Vc Pizzicato l.vib by string KS
  Vc Pizzicato l.vib s1
  Vc Pizzicato l.vib s2
  Vc Pizzicato l.vib s3
  Vc Pizzicato l.vib s4

Vc Pizzicato l.vib
Vc Pizzicato secco by string
  
  Vc Pizzicato secco by string KS
  Vc Pizzicato secco s1
  Vc Pizzicato secco s2
  Vc Pizzicato secco s3
  Vc Pizzicato secco s4

Vc Pizzicato secco
Vc Sforzando
Vc Staccato
Vc Tremolo by string
  
  Vc Tremolo by string KS
  Vc Tremolo s1
  Vc Tremolo s2
  Vc Tremolo s3
  Vc Tremolo s4

Vc Tremolo X
Vc Tremolo
Vc Trill maj2 up by string
  
  Vc Trill maj2 up by string KS
  Vc Trill maj2 up s1
  Vc Trill maj2 up s2
  Vc Trill maj2 up s3
Vc Trill maj2 up

**Vc Trill min2 up by string**

Vc Trill min2 up by string KS
Vc Trill min2 up s1
Vc Trill min2 up s2
Vc Trill min2 up s3
Vc Trill min2 up s4

Vc Trill min2 up

**Extended**

Vc Art harmonic tremolo

**Vc Artificial harmonic by string**

Vc Artificial harmonic by string KS
Vc Artificial harmonic s1
Vc Artificial harmonic s2
Vc Artificial harmonic s3
Vc Artificial harmonic s4

**Vc Artificial harmonic tremolo by string**

Vc Art harmonic tremolo by string KS
Vc Art harmonic tremolo s1
Vc Art harmonic tremolo s2
Vc Art harmonic tremolo s3
Vc Art harmonic tremolo s4

Vc Artificial harmonic
Vc Behind the bridge

**Vc Col legno battuto by string**

Vc Col legno battuto by string KS
Vc Col legno battuto s1
Vc Col legno battuto s2
Vc Col legno battuto s3
Vc Col legno battuto s4

Vc Col legno battuto

**Vc Col legno tratto by string**

Vc Col legno tratto by string KS
Vc Col legno tratto s1
Vc Col legno tratto s2
Vc Col legno tratto s3
Vc Col legno tratto s4

Vc Col legno tratto
Vc FX
Vc KS All Bow Pos
Vc KS All Pizz
Vc KS All Trems

**Vc Natural harmonics glissandi**

Vc NHarm Gliss Fst Asc
Vc NHarm Gliss Fst Desc
Vc NHarm Gliss KS
Vc NHarm Gliss Mod Asc
Vc NHarm Gliss Mod Desc
Vc NHarm Gliss Slw Asc
Vc NHarm Gliss Slw Desc

Vc Non vibrato by string
Vc Non vibrato by string KS
Vc Non vibrato s1
Vc Non vibrato s2
Vc Non vibrato s3
Vc Non vibrato s4

Vc Non vibrato
Vc On the tuning pegs

Vc Pizzicato bartok by string
Vc Pizzicato bartok by string KS
Vc Pizzicato bartok s1
Vc Pizzicato bartok s2
Vc Pizzicato bartok s3
Vc Pizzicato bartok s4

Vc Pizzicato bartok
Vc Sul ponticello by string
Vc Sul ponticello by string KS
Vc Sul ponticello s1
Vc Sul ponticello s2
Vc Sul ponticello s3
Vc Sul ponticello s4

Vc Sul ponticello tremolo by string
Vc Sul ponticello tremolo by string KS
Vc Sul ponticello tremolo s1
Vc Sul ponticello tremolo s2
Vc Sul ponticello tremolo s3
Vc Sul ponticello tremolo s4

Vc Sul ponticello tremolo
Vc Sul ponticello
Vc Sul taste by string
Vc Sul taste by string KS
Vc Sul taste s1
Vc Sul taste s2
Vc Sul taste s3
Vc Sul taste s4

Vc Sul taste tremolo by string
Vc Sul taste tremolo by string KS
Vc Sul taste tremolo s1
Vc Sul taste tremolo s2
Vc Sul taste tremolo s3
Vc Sul taste tremolo s4

Vc Sul taste tremolo
Vc Sul tasto

**Muted**

*Vc Lead Mute Non vibrato by string*
- Vc Lead Mute Non vibrato by string KS
- Vc Lead Mute Non vibrato s1
- Vc Lead Mute Non vibrato s2
- Vc Lead Mute Non vibrato s3
- Vc Lead Mute Non vibrato s4

*Vc Lead Mute Non vibrato*

*Vc Lead Mute Ordinario by string*
- Vc Lead Mute Ordinario by string KS
- Vc Lead Mute Ordinario s1
- Vc Lead Mute Ordinario s2
- Vc Lead Mute Ordinario s3
- Vc Lead Mute Ordinario s4

*Vc Lead Mute Ordinario*

*Vc Lead Mute Tremolo by string*
- Vc Lead Mute Tremolo by string KS
- Vc Lead Mute Tremolo s1
- Vc Lead Mute Tremolo s2
- Vc Lead Mute Tremolo s3
- Vc Lead Mute Tremolo s4

*Vc Lead Mute Tremolo*

*Vc Mute Non vibrato by string*
- Vc Mute Non vibrato by string KS
- Vc Mute Non vibrato s1
- Vc Mute Non vibrato s2
- Vc Mute Non vibrato s3
- Vc Mute Non vibrato s4

*Vc Mute Non vibrato*

*Vc Mute Ordinario by string*
- Vc Mute Ordinario by string KS
- Vc Mute Ordinario s1
- Vc Mute Ordinario s2
- Vc Mute Ordinario s3
- Vc Mute Ordinario s4

*Vc Mute Ordinario*

*Vc Mute Tremolo by string*
- Vc Mute Tremolo by string KS
- Vc Mute Tremolo s1
- Vc Mute Tremolo s2
- Vc Mute Tremolo s3
- Vc Mute Tremolo s4

*Vc Mute Tremolo*

**Transitions**

*Vc Chromatic scale*
Vc Crescendo to decrescendo
Vc Crescendo
Vc Decrescendo
Vc Ordinario to pressured
Vc Ordinario to sul ponticello
Vc Ordinario to sul tasto
Vc Ordinario to tremolo
Vc Pressured to ordinario
Vc Sul ponticello to ordinario
Vc Sul ponticello to sul tasto
Vc Sul tasto to ordinario
Vc Sul tasto to sul ponticello
Vc Tremolo to ordinario
**16 Contrabass**

**Classical**  
Cb Fortepiano  
Cb KS  

**Cb Note durations**  
Cb Dur 0,5s  
Cb Dur 1s  
Cb Dur KS  

**Cb Ordinario by string**  
Cb Ordinario by string KS  
Cb Ordinario s1  
Cb Ordinario s2  
Cb Ordinario s3  
Cb Ordinario s4  

Cb Ordinario X  
Cb Ordinario  

**Cb Pizzicato l.vib by string**  
Cb Pizzicato l.vib by string KS  
Cb Pizzicato l.vib s1  
Cb Pizzicato l.vib s2  
Cb Pizzicato l.vib s3  
Cb Pizzicato l.vib s4  

Cb Pizzicato l.vib  

**Cb Pizzicato secco by string**  
Cb Pizzicato secco by string KS  
Cb Pizzicato secco s1  
Cb Pizzicato secco s2  
Cb Pizzicato secco s3  
Cb Pizzicato secco s4  

Cb Pizzicato secco  
Cb Sforzando  
Cb Staccato  

**Cb Tremolo by string**  
Cb Tremolo by string KS  
Cb Tremolo s1  
Cb Tremolo s2  
Cb Tremolo s3  
Cb Tremolo s4  

Cb Tremolo X  
Cb Tremolo  

**Cb Trill maj2 by string**  
Cb Trill maj2 by string KS  
Cb Trill maj2 s1  
Cb Trill maj2 s2  
Cb Trill maj2 s3  
Cb Trill maj2 s4
Cb Trill maj2

Cb Trill min2 by string
    Cb Trill min2 by string KS
    Cb Trill min2 s1
    Cb Trill min2 s2
    Cb Trill min2 s3
    Cb Trill min2 s4

Cb Trill min2

Extended
Cb Art harmonic tremolo

Cb Artificial harmonic by string
    Cb Artificial harmonic by string KS
    Cb Artificial harmonic s1
    Cb Artificial harmonic s2
    Cb Artificial harmonic s3
    Cb Artificial harmonic s4

Cb Artificial harmonic tremolo by string
    Cb Art harmonic tremolo by string KS
    Cb Art harmonic tremolo s1
    Cb Art harmonic tremolo s2
    Cb Art harmonic tremolo s3
    Cb Art harmonic tremolo s4

Cb Artificial harmonic
Cb Behind the bridge

Cb Col legno battuto by string
    Cb Col legno battuto by string KS
    Cb Col legno battuto s1
    Cb Col legno battuto s2
    Cb Col legno battuto s3
    Cb Col legno battuto s4

Cb Col legno battuto
Cb Col legno tratto by string
    Cb Col legno tratto by string KS
    Cb Col legno tratto s1
    Cb Col legno tratto s2
    Cb Col legno tratto s3
    Cb Col legno tratto s4

Cb Col legno tratto
Cb FX
Cb KS All Bow Pos
Cb KS All Pizz
Cb KS All Trems

Cb Natural harmonics glissandi
    Cb NHarm Gliss Fst Asc
    Cb NHarm Gliss Fst Desc
    Cb NHarm Gliss KS
Cb NHarm Gliss Mod Asc
Cb NHarm Gliss Mod Desc
Cb NHarm Gliss Slw Asc
Cb NHarm Gliss Slw Desc

**Cb Non vibrato by string**
Cb Non vibrato by string KS
Cb Non vibrato s1
Cb Non vibrato s2
Cb Non vibrato s3
Cb Non vibrato s4

Cb Non vibrato
Cb On the tuning pegs

**Cb Pizzicato bartok by string**
Cb Pizzicato bartok by string KS
Cb Pizzicato bartok s1
Cb Pizzicato bartok s2
Cb Pizzicato bartok s3
Cb Pizzicato bartok s4

Cb Pizzicato bartok

**Cb Sul ponticello by string**
Cb Sul ponticello by string KS
Cb Sul ponticello s1
Cb Sul ponticello s2
Cb Sul ponticello s3
Cb Sul ponticello s4

**Cb Sul ponticello tremolo by string**
Cb Sul ponticello tremolo by string KS
Cb Sul ponticello tremolo s1
Cb Sul ponticello tremolo s2
Cb Sul ponticello tremolo s3
Cb Sul ponticello tremolo s4

Cb Sul ponticello tremolo
Cb Sul ponticello

**Cb Sul tasto by string**
Cb Sul tasto by string KS
Cb Sul tasto s1
Cb Sul tasto s2
Cb Sul tasto s3
Cb Sul tasto s4

**Cb Sul tasto tremolo by string**
Cb Sul tasto tremolo by string KS
Cb Sul tasto tremolo s1
Cb Sul tasto tremolo s2
Cb Sul tasto tremolo s3
Cb Sul tasto tremolo s4

Cb Sul tasto tremolo
Cb Sul tasto
**Muted**

*Cb Mute Non vibrato by string*

- Cb Mute Non vibrato by string KS
- Cb Mute Non vibrato s1
- Cb Mute Non vibrato s2
- Cb Mute Non vibrato s3
- Cb Mute Non vibrato s4

*Cb Mute Non vibrato*

*Cb Mute Ordinario by string*

- Cb Mute Ordinario by string KS
- Cb Mute Ordinario s1
- Cb Mute Ordinario s2
- Cb Mute Ordinario s3
- Cb Mute Ordinario s4

*Cb Mute Ordinario*

*Cb Mute Tremolo by string*

- Cb Mute Tremolo by string KS
- Cb Mute Tremolo s1
- Cb Mute Tremolo s2
- Cb Mute Tremolo s3
- Cb Mute Tremolo s4

*Cb Mute Tremolo*

**Transitions**

- Cb Chromatic Scale
- Cb Crescendo to decrescendo
- Cb Crescendo
- Cb Decrescendo
- Cb Ordinario to pressured
- Cb Ordinario to sul ponticello
- Cb Ordinario to sul tasto
- Cb Ordinario to tremolo
- Cb Pressured to ordinario
- Cb Sul ponticello to ordinario
- Cb Sul ponticello to sul tasto
- Cb Sul tasto to ordinario
- Cb Sul tasto to sul ponticello
- Cb Tremolo to ordinario
## Appendix B: Key Switch Reference

### Regular Key Switches

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<thead>
<tr>
<th>Oct</th>
<th>C</th>
<th>C#</th>
<th>D</th>
<th>D#</th>
<th>E</th>
<th>F</th>
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<th>G</th>
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<td>Flatt.</td>
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<td>Sforzando</td>
<td>Cuivré</td>
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<td>Cuivré</td>
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<td>str5</td>
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<td>str3</td>
<td>str2</td>
<td>str1</td>
<td>str2</td>
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<td>Tremolo</td>
<td>Trill -2</td>
<td>Trill +2</td>
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<tr>
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<td>Trill -2</td>
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<tr>
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<td>6</td>
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<td>Tremolo</td>
<td>Trill -2</td>
<td>Trill +2</td>
<td>Pizzicato l.vib</td>
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1 Guitar Ordinario and Harmonic fingering KS presets are alike

---

[Image] UltimateSoundBank

[Image] Centre Pompidou
Duration Key Switches

Note length is set to 0.5 second for Keyswitch C, 1 second for Keyswitch C#

- Flute Note Durations KS: C2 / C#2
- Oboe Note Durations KS: C2 / C#2
- Clari Note Durations KS: C2 / C#2
- Bassn Note Durations KS: C0 / C#0
- French Horn Note Durations KS: C0 / C#0
- Trumpet Note Durations KS: C0 / C#0
- Trombone Note Durations KS: C2 / C#2
- Violin Note Durations KS: C0 / C#0
- Viola Note Durations KS: C2 / C#2
- Cello Note Durations KS: C0 / C#0
- Cbass Note Durations KS: C5 / C#5

Natural Harmonics Glissandi Key Switches

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<tr>
<th></th>
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<th>Slow Descending</th>
<th>Med Ascending</th>
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<td>G1</td>
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<td>F0</td>
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<td>A0</td>
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### All Positions Key Switches (strings)

<table>
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<th>Sul Ponticello</th>
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### All Pizzicati

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<th>Bartok</th>
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### All Tremis

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<td>C0</td>
<td>C#0</td>
<td>D0</td>
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<tr>
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<td>C#5</td>
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By string Key Switches

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<th>Str2</th>
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<td></td>
<td>C2</td>
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<tr>
<td>But:</td>
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<tr>
<td>But:</td>
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<td>But:</td>
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<td></td>
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<td>C#5</td>
<td>D5</td>
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<tr>
<td>But:</td>
<td></td>
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<td>D#1</td>
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<td>D1</td>
<td>D#1</td>
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