

SMuFL

Standard Music Font Layout

Version 0.85 (2014-03-09)

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Version history

Version 0.1 (2013-01-31)

- Initial version.

Version 0.2 (2013-02-08)

- Added **Tick barline**.
- Changed names of time signature, tuplet and figured bass digit glyphs to ensure that they are unique.
- Add upside-down and reversed G, F and C clefs for cancrizans and inverted canons.
- Added **Time signature +** and **Time signature fraction slash** glyphs.
- Added Black diamond notehead, White diamond notehead, Half-filled diamond notehead, Black circled notehead, White circled notehead glyphs.
- Added 256th and 512th note glyphs.
- All symbols shown on combining stems now also exist as separate symbols.
- Added reversed sharp, natural, double flat and inverted flat and double flat glyphs for cancrizans and inverted canons.
- Added trill wiggle segment, glissando wiggle segment and arpeggiato wiggle segment glyphs.
- Added string **Half-harmonic**, **Overpressure down bow** and **Overpressure up bow** glyphs.
- Added **Breath mark** glyph.
- Added angled beater pictograms for xylophone, timpani and yarn beaters.
- Added alternative glyph for **Half-open**, per Weinberg.
- Added **Scrape from rim to center** and **Scrape around rim** glyphs.
- Added **Start of stimme** glyph.
- Added colon for tuplet ratios.
- Added stem down versions of mensural notes, and signum congruentia and custos glyphs.
- Added three additional mensuration signs.
- Added Riemann Function theorys glyphs.

Version 0.3 (2013-03-11):

- Moved combining flags glyphs to accommodate glyphs for 256th note stem up, 256th note stem down, 512th note stem up and 512th note stem down.

Version 0.4 (2013-05-16):

- Added range for Arel-Ezgi-Uzdilek (AEU) accidentals for Turkish maqam music.
- Added equals sign and open time signature glyphs.

Version 0.5 (2013-07-08):

- Many existing code points have been changed, as a result of hundreds of new glyphs being added, plus a number of new ranges.
- Added long and very long system dividers for very large scores.
- Added heavy, double heavy and dotted barlines.
- Added square coda and small repeat signs for repeats within bars.
- Added recommended stylistic alternates for segno and coda for the appearance preferred by Japanese publishers.
- Added quindicesima bassa G clef and F clef, G clef combined with C clef, G clefs designed to be ligated with numbers below and above to show the transposition of an instrument, plus recommended ligatures for G and F clefs with numbers above and below; also added G, C and F clefs with arrows up and down, which may be used either as alternatives for octave clefs or to represent the extremes of register on an instrument, and semi-pitched percussion clefs, plus a bridge clef.
- Removed "tall" versions of 6- and 4-string tab clefs, and instead made them recommended stylistic alternates, together with versions that use letterforms with serifs.
- Added +, -, X (multiply), comma, parentheses glyphs for time signatures, plus basic fractions, and Penderecki-style open time signature.
- Added specific noteheads for double whole note and whole note to the noteheads range rather than relying on the glyphs in the pre-composed notes range.
- Added shaped noteheads for specific note values (double whole note, whole note, half note, and quarter note and shorter); also added large up- and down-pointing triangles for highest/lowest notes played by an instrument.
- Added large slashed circular noteheads as used by Stockhausen for notating gong/tam-tam hits.
- Added combining glyphs for note clusters of specific note values.
- Added noteheads with *solfège* and chromatic note names embedded within them, as seen in "EZ-Play" educational scores.
- Added specific range of noteheads for sacred harp shape note singing.
- Added pre-composed 1024th notes, tails and rest.

- Added range for typing simple beamed groups of notes in text-based applications,. Designed to be used in conjunction with pre-composed notes, and allowing beamed groups with rhythmic values between 8th notes and 64th notes, plus ties and triplets.
- Added combining stems for multiphonics, damp, sussurando, Saunders vibrato pulse accent.
- Added four- and five-stroke tremolos plus Wieniawski-style unmeasured tremolo glyphs.
- Added stylistic alternates for flags: straight flags; and shorter stem-up flags to avoid collisions with augmentation dots.
- Separated accidentals into several discrete ranges based around the various accidental systems, including 12-EDO, 24-EDO, the system of up- and down-pointing arrows favoured by Gould, Stein-Zimmermann (also known as Tartini-Couper), Sims (also known as Maneri-Sims, due to the adoption of Ezra Sims' accidentals by Joe Maneri of the Boston Microtonal Society), Ben Johnston, Marc Sabat and Wolfgang von Schweinitz's Extended Helmholtz-Ellis Just Intonation Pitch Notation.
- Added George Secor and Dave Keenan's Sagittal system of accidentals.
- Added accidentals used in Turkish folk music.
- Added Persian accidentals.
- Added staccatissimo wedge and stroke glyphs.
- Added very short and very long fermatas, plus short caesura.
- Added left and right halves of multirest H-bars and old-style quarter rest as seen in e.g. Novello editions.
- Added ventiduesima (three octaves, "22") glyphs to octaves range.
- Added precomposed glyphs for common dynamics and *niente* circle for hairpins.
- Added *schleifer* (long mordent) and Haydn ornament.
- Added additional brass techniques, including short, medium and long versions of lift, doit, lip fall, smooth fall, rough fall, plus jazz turn.
- Added range of glyphs for embouchure tightness, reed position, multiphonics, and stylistic alternates for double- and triple-tonguing with no slurs.
- Added further overpressure glyphs, plus *jété*, *fouetté*, Rebecca Saunders's "vibrato pulse" accent, thumb position and indeterminate bow direction to string techniques range.
- Added plectrum pictogram and combining damp glyph for note stems to plucked techniques range.
- Added arrows for breathing and intonation, plus combining *sussurando* glyph for note stems, to vocal techniques range.

- Added pedal pictograms, *sostenuto* pedal symbols, and half-pedal marks to keyboard techniques range.
- Added pictograms for metal rod and tuning key to harp techniques range.
- Added Smith Brindle's pictograms for tuned percussion instruments.
- Added pictogram for Indian table, plus stylistic alternate for tambourine as used by Stockhausen.
- Added pictogram for football rattle, plus Smith Brindle's pictogram for castanets as a stylistic alternate.
- Added pictogram for handbell, plus stylistic alternates for cow bell (from Berio) and sleigh bell (from Smith Brindle).
- Added pictogram for Chinese cymbal.
- Added pictogram for tam-tam with beater from Smith Brindle.
- Added pictogram for maracas, rainstick, plus stylistic alternate for maraca from Smith Brindle.
- Added pictogram for megaphone.
- Added soft and hard glockenspiel beaters, superball beaters, wound beaters with hard and soft cores, plus soft, medium and hard gum beaters.
- Added pluck lift to handbells range.
- Added "Theme" indicators to analytics range.
- Added minor (minus sign) glyph to chord symbols range.
- Added mensural proportion glyphs.
- Added combining raise and lower glyphs to figured bass range.
- Added repetition, angle brackets, and prefix + and ring glyphs to Function theorys range.
- Added new range for multi-segment lines, including moving all of the various "wiggle" glyphs (for trill, glissando, arpeggiando, vibrato, etc.) plus the 11 ornament strokes from the Unicode Musical Symbols range into this range, and adding further glyphs for variable speed trills, alternate arpeggiato ending glyphs, wavy lines, squaretooth and sawtooth lines, group glissando, circular motion, and variable speed and intensity of vibrato.
- Added new range of pictograms for electronic music, including microphone, loudspeaker, transport controls, volume level and MIDI controller level.
- Added new "do not copy" glyphs, eyeglasses and choral divide arrows glyphs to the miscellaneous symbols range.
- Adjusted the registration of many glyphs (e.g. noteheads, accidentals, time signatures, flags, rests) in Bravura in line with the interim guidelines for metrics and registration for SMuFL-compliant fonts intended for use with scoring applications.

Version 0.6 (2013-07-29):

- Added opening parenthesis and closing parenthesis for noteheads, circled slash notehead, heavy X and heavy X with hat noteheads, as used in Dante Agostini's drum method.
- Added muted slash noteheads.
- Added "si" note name noteheads for French solfège, and H sharp note name noteheads for German.
- Added combining rim shot stem.
- Added "sharp sharp" accidental for compatibility with MusicXML.
- Added extended Stein-Zimmermann accidentals with arrows.
- Added one-third-tone sharp and two-third-tones sharp accidentals as used by Xenakis.
- Significant revision to the ornaments range, including splitting into separate ranges (common ornaments, other baroque ornaments, combining strokes for trills/mordents, precomposed trills/mordents). A small number of glyphs from previous versions of SMuFL have been removed to make way for symbols drawn from Frederick Neumann's authoritative book on baroque ornamentation.
- Added left hand pizzicato.
- Added recommended stylistic alternates for Bartok pizzicato above/below.
- Added recommended stylistic alternates for 'Ped.' and 'Sost.' that do not include terminal dots.
- Added choke cymbal glyph from Weinberg.
- Added open, half-open and closed wah/volume pedals, left- and right-hand tapping glyphs for guitar.
- Added new range for arrows and arrowheads, including moving the up/down/right/left arrows from the vocal techniques into this new range.

Version 0.7 (2013-11-27):

- Introduced canonical names for every recommended glyph, which are intended to be immutable. Code points, on the other hand, may change as required to accommodate insertions or deletions of glyphs.
- New **Notes for implementers** section with expanded guidelines for glyph registration, with changes for precomposed stems and stem decorations (which should now be centered around $x=0$) and flags (which should be positioned vertically relative to the end of a stem of normal length at $y=0$).
- Added specification for JSON metadata files for SMuFL and for SMuFL-compliant fonts, developed in conjunction with Joe Berkovitz.

- Significantly expanded the repertoire of glyphs for Medieval and Renaissance notation, with new ranges for clefs, accidentals and ligatures, plus considerable reworking of the notes and prolations ranges, expansion of the repertoire of glyphs for plainchant notation (with new ranges for staves, divisions, clefs and articulations, and a wider range of neumes).
- Added range for Daseian notation, as found in the ninth century treatises *Musica enchiriadis* and *Scolica enchiriadis*.
- Added new range of control characters for adjusting the staff position of staff-relative glyphs, intended for fonts designed for text-based applications.
- Added narrow and wide staff line glyphs, intended for fonts designed for text-based applications.
- Added C clef ottava bassa, and recommended stylistic alternate for G clef ottava bassa with parentheses around the 8.
- Added control characters for time signature digits to allow digits to be stacked vertically, intended for fonts designed for text-based applications.
- Added square double whole note (breve) notehead.
- Added new combining harp string noise for stem glyph, and corresponding precomposed stem glyph.
- Added four further quarter-tone accidental symbols to “other microtonal accidentals” group.
- Added some percussion playing technique symbols from Dante Agostini’s method books.
- Added a *golpe* (tap the pick guard) glyph from Claude Worm’s flamenco guitar method book.
- Added short and long fermata glyphs as used by Henze.
- Added combining glyphs for accordion couplers, allowing the creation of any coupler diagram not explicitly encoded.
- Added “pf” dynamic.

Version 0.8 (2014-02-03):

- Based on community feedback, added clarification that code points for glyphs may change until SMuFL reaches version 1.0, after which point existing code points will become immutable.
- Glyphs in SMuFL encoded in the primary range of U+E000–U+F3FF are no longer considered “mandatory”, but rather they are “recommended”: in order to be considered SMuFL-compliant, a font need not implement every recommended glyph, just as a text font need not implement every Unicode code point in order to be considered Unicode-compliant. Fonts need only implement those glyphs that

are appropriate for their intended use at the correct SMuFL code points in order to be considered SMuFL-compliant.

- Changed guidelines for metrics of text-like glyphs (e.g. dynamics, D.C./D.S. markings in repeats) in fonts intended for use in scoring applications, such that it is recommended that the x-height of such glyphs is around 1 staff space (0.25 em).
- Added Ivan Wyschnegradsky's system of 72-EDO accidentals.
- Added Bosanquet's comma up/down.
- Dispersed the glyphs formerly in the Sagittal-compatible accidentals range to other ranges, and revised the canonical glyph names for Sagittal accidentals that describe specific ratios in order to make those ratios clearer.
- Added slashed sharp/flat accidentals used by John Tavener in his Byzantine-inspired choral works.
- Added left/right parentheses for accidentals.
- Added new ranges for Renaissance lute tablature, covering French/English, Italian/Spanish and German conventions.
- Added new ranges for fingering charts for flute, oboe, clarinet, bassoon, saxophone and recorder, as used in educational materials such as instructional or method books.
- Added Britten's curlew sign for a pause of an indeterminate length.
- Added push/pull signs for accordion.
- Added separate noteheads for white mensural notation.
- Added inverted signum congruentiae.
- Added combined tenuto-accent articulation.
- Added quasi-random wiggly lines (**wiggleRandom1**, **wiggleRandom2**, **wiggleRandom3**, **wiggleRandom4**) to multi-segment lines range.
- Added flipped and large versions of constant circular motion (**wiggleCircularConstantFlipped**, **wiggleCircularConstantLarge**, **wiggleCircularConstantFlippedLarge**) to multi-segment lines range.
- Added combining top/middle/bottom segments for black and white rectangular note clusters.
- Added 2, 3, 4 and 6-dot divisi indicators for measured tremolos (**tremoloDivisiDots2**, **tremoloDivisiDots3**, etc.) to tremolos range.
- Added clavichord bebung glyphs for 2, 3, and 4 finger movements (**keyboardBebung2DotsAbove**, **keyboardBebung3DotsBelow**, etc.) to the keyboard techniques range.
- Added double-height parentheses and brackets (**csymParensLeftTall**, **csymParensRightTall**, **csymBracketLeftTall**, **csymBracketRightTall**) to the chord symbols range.

- Added recommendation for stylistic alternates for time signature digits 0–9 suitable for use as large time signatures shown above/between staves (**timeSig0Large** through **timeSig9Large**).
- Added *sfp* (sforzato-piano) dynamic and ligature.
- Added Penderecki's quarter-flat and Busotti's three-quarter sharp accidentals.
- Added six further accordion coupler diagrams for right-hand three-rank accordions, and accordion ricochet glyphs.

Version 0.85 (2014-03-09):

- Updated glyph registration guidelines for articulations, such that articulations above the note should be positioned sitting on the baseline, and articulations below the note should be positioned hanging from the baseline.
- Quite a few changes to canonical glyph names, especially for accidentals, with the aim of making the names clarify the actual interval represented by each accidental (where that is unambiguous) in terms of fractions of a tone.
- Added whole and half rests with leger lines, i.e. as if displayed outside the staff.
- Added clef for diatonic accordion.
- Added recommended stylistic alternates for C and F clef forms used in 18th century French music, and for an F clef form used in 19th century music across Europe.
- Added recommended ligature for G clef with ligated 8 above.
- Added half-brackets for keyboard notation to show notes that should be played by the other hand.
- Moved staff divide arrows from the **Miscellaneous symbols** range to the (now renamed) **Staff brackets and dividers** range.
- Moved the percussion swish arrow from the **Miscellaneous symbols** range to the **Percussion playing techniques pictograms** range.
- Moved all the glyphs from the **Quartetone accidentals (24-EDO)** range to the (now renamed) **Other accidentals** range, eliminating the former range and moving the latter to the very end of all of the ranges of accidentals.
- Further revisions to the plainchant ranges, including adding reversed *virga*, smaller version of *punctum inclinatum*, moving the *punctum mora* to the plainchant articulations range, and eliminating the precomposed *podatus* and *clivis* glyphs in favour of individual components that provide the means to construct these easily for any interval. Also added *strophicus*, *strophicus auctus*, *punctum inclinatum auctum* to the single-note forms range.
- Added new range for Kievian square notation, as used for liturgical chant in the Russian Orthodox Church.
- Added new glyphs for tabling one handbell and tabling a pair of handbells.

- Added alternative pedal heel glyph and pedal heel or toe glyph to **Keyboard techniques** range.
- Added recommended stylistic alternates for braces designed for use across different sizes of gaps, designed to be scaled uniformly rather than simply stretched vertically.
- Added many new electronic music pictograms, including speaker configurations, more transport controls, additional hardware devices, and so on.
- Added guitar fade in, fade out and swell glyphs.
- Added the glyphs used in the Corpus Monodicum project to the **Medieval and Renaissance plainchant in CMN** range.
- Added notes on the currently-defined classes in the JSON metadata file to the **Notes for implementers** section.

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About SMuFL

A brief history of music fonts

Computer software has been displaying musical symbols of various kinds since the 1960s, but the first font for musical symbols did not arrive until 1985, when Cleo Huggins designed Sonata for Adobe.¹

Sonata mapped the musical symbols onto keys on the standard QWERTY keyboard, using some simple mnemonics (the treble G clef, for example, was mapped onto the & key, and the sharp sign onto #). Most music fonts developed since then, including Steve Peha's Petrucci (the first music font for Finale, dating from 1988²) and Jonathan Finn's Opus (the first music font for Sibelius, dating from 1993), have followed Sonata's layout.

However, since Sonata includes fewer than 200 glyphs, and even conventional music notation³ requires many more symbols than that, individual vendors have devised their own mappings for glyphs beyond Sonata's initial set.

By 2013, for example, the Opus font family that is still Sibelius's default font set contains no fewer than 18 fonts with more than 600 glyphs between them.

In 1998, Perry Roland of the University of Virginia drafted a proposal for a new range of musical symbols to be incorporated into the Unicode Standard⁴. This range of 220 glyphs was duly accepted into the Unicode Standard, and those symbols are found at code points U+1D100–U+1D1FF⁵. However, its repertoire of 220 symbols does not extend dramatically beyond the scope of the original 1985 version of Sonata, though it does add some symbols for mensural and Gregorian notation.

To date the only commercially available music font that uses the Unicode mapping is Adobe Sonata Std, and its repertoire is incomplete.

How SMuFL is organized

The aim of the Standard Music Font Layout (SMuFL) is to provide the basis for music font mapping for the age of Unicode and OpenType fonts.

SMuFL uses the standard Private Use Area in the Basic Multilingual Plane (starting at code point U+E000), and currently includes more than 2550 recommended glyphs, plus several hundred further optional but recommended glyphs, primarily ligatures (i.e. two

¹ See <http://www.identifont.com/show?12A>

² See <http://blog.finalemusic.com/post/2010/02/18/Meet-Steve-Peha-creator-of-Petrucci-Finales-first-music-font.aspx>

³ A term coined by Donald Byrd, Senior Scientist and Adjunct Associate Professor of Informatics at Indiana University.

⁴ The original proposal (<http://www.lib.virginia.edu/artsandmedia/dmmc/Music/UnicodeMusic/>) is no longer available, but an archived version can be found at <http://archive.is/PzkaT>

⁵ See <http://www.unicode.org/charts/PDF/U1D100.pdf>

or more symbols drawn as a single glyph) and stylistic alternates (i.e. a different appearance for the same glyph with equivalent meaning). SMuFL is a superset of the Unicode Musical Symbols range, and it is recommended that common glyphs are included both at code points in SMuFL and in the Unicode Musical Symbols range. In the tables of glyphs in this document, where glyphs are shared between SMuFL and the Unicode Musical Symbols range, the Unicode Musical Symbols code point is shown following the SMuFL code point.

The groupings of glyphs within SMuFL are based on the groupings defined by Perry Roland in the Unicode Musical Symbols range, but with finer granularity. There are currently 108 groups of glyphs, proceeding roughly in order from least to most idiomatic, i.e. specific to particular instruments, types of music, or historical periods. The grouping has no significance other than acting as an attempt to provide an overview of the included glyphs.

Room for future expansion has generally been left in each group, so code points are not contiguous. Until SMuFL reaches version 1.0, code points may also change between revisions to accommodate the insertion or deletion of individual glyphs and groups of glyphs. However, every glyph in SMuFL also has a canonical name, intended to be immutable, which makes it possible for software developers to minimize the impact of code points changing in the short term. Once SMuFL reaches version 1.0, the code points of existing glyphs will not change in future revisions.

Recommended and optional glyphs

One of the aims of SMuFL is to make it as simple as possible for developers both of fonts and of scoring software to implement support for a wide range of musical symbols. Although modern font technologies such as OpenType enable a great deal of sophistication in automatic substitution features⁶, applications that wish to use SMuFL-compliant fonts are not obliged to support advanced OpenType features.

The basic requirements for the use of SMuFL-compliant fonts are the ability to access glyphs by their Unicode code point, to measure glyphs, and to scale them (e.g. by drawing the font at different point sizes). If applications are able to access OpenType features such as stylistic sets and ligatures, then additional functionality may be enabled.

However, all glyphs that can be accessed via OpenType features are also accessible via an explicit code point. For example, a stylistic alternate for the sharp accidental designed to have a clearer appearance when reproduced at a small size can be

⁶ See http://www.adobe.com/devnet/opentype/afdko/topic_feature_file_syntax.html

accessed as a stylistic alternate for **accidentalSharp**, but also by way of its explicit code point, which will be in the range U+F400–U+F8FF.

Because optional glyphs for ligatures, stylistic alternates, etc. are not required, and different font developers may choose to provide different sets (e.g. several different appearances of tab clefs, or different sets of glyphs whose designs are optimized for drawing at different optical sizes), SMuFL does not make any specific recommendations for how these glyphs should be assigned explicit code points, except that they must be within the range U+F400–U+F8FF, which is reserved for this purpose and for any other private use required by font or application developers.

In summary, recommended glyphs are encoded from U+E000, with a nominal upper limit of U+F3FF (a total of 5120 possible glyphs), while optional glyphs (ligatures, stylistic alternates, etc.) are encoded from U+F400, with a nominal upper limit of U+F8FF (a total of 1280 possible glyphs).

In order for a font to be considered SMuFL-compliant, it should implement as many of the recommended glyphs as are appropriate for the intended use of the font, at the specified code points. Fonts need not implement every recommended glyph, and need not implement any optional glyphs, in order to be considered SMuFL-compliant.

Implementations

To date the only available font that implements SMuFL is Bravura, an OpenType font released under the SIL Open Font License that can be downloaded from the SMuFL web site at <http://www.smufl.org/fonts>.

The example glyphs in this document are all taken from Bravura.

Sources for symbols

In addition to surveying the music fonts supplied with Sibelius, Finale and other scoring applications, the following texts were consulted as sources for musical symbols:

- Agostini, Dante. *Methode de Batterie*. France: Carisch Musicom, 2009.
- Balestrieri, Donald. *Registers of the Standard Stradella Keyboard*. USA: Accord Magazine, 1979.⁷
- Davis, Roger E. *The Organists' Manual*. New York: W. W. Norton, 1985.
- Doty, David B. *The Just Intonation Primer*. San Francisco, USA: The Just Intonation Network, 1993.

⁷ See <http://www.accordions.com/articles/stradella.aspx>

- Draugsvoll, Geir & Højsgaard, Erik (translated Borregaard, Andreas). *Handbook on Accordion Notation*. Copenhagen: The Royal Danish Academy of Music in Copenhagen, 2001.⁸
- Drobner, Mieczysław. *Instrumentoznawstwo i akustyka* (Musical Instruments and Acoustics). Cracow: PWM Edition, 1960 (7th Edition, 2008).
- Gould, Elaine. *Behind Bars*. London: Faber Music, 2011.
- Inglefield, Ruth & Neill, Lou Anne. *Writing for the Pedal Harp: Standardized Manual for Composers and Harpists*. University of California Press, 1985.
- Karoushka, Erhard & Koenig, Ruth. *Notation in New Music*. Universal Edition, 1972.
- McCarty, Frank. *Notational Standards for Percussion: A Report on the Ghent Conference* (from *The Instrumentalist*, xxix). Northfield, IL: The Instrumentalist Publishing Co., 1975.
- Neumann, Frederick. *Ornamentation in Baroque and Post-Baroque Music*. Princeton, NJ: Princeton University Press, 1978.
- Poulton, Diana. *A Tutor for the Renaissance Lute*. London, UK: Schott, 1991.
- Read, Gardner. *Twentieth-Century Microtonal Notation*. USA: Praeger, 1990.
- Roland, Perry. *Proposal for Encoding Western Music Symbols in ISO/IEC 10646*. Virginia: University of Virginia, 1998.
- Sabat, Marc. *The Extended Helmholtz-Ellis JI Pitch Notation*. Plainsound Music Edition, 2005.
- Salzedo, Carlos. *Modern Study of the Harp*. London: G. Schirmer, 1921.
- Secor, George & Keenan, David. *Sagittal – A Microtonal Notation System*. Xenharmonikôn, An Informal Journal of Experimental Music, Volume 18, 2006. www.sagittal.org, 2004.
- Simmons, Nikita. *A Primer of Kievian Square-Note (Quadratic or Synodal) Notation*. www.synaxis.info, 2004.
- Smith Brindle, Reginald. *Contemporary Percussion*. New York: Oxford University Press, 1991.
- Stone, Kurt. *Music Notation in the Twentieth Century: A Practical Guidebook*. New York: W.W. Norton, 1980.

⁸ See http://www.rednoteensemble.com/Calls_for_Scores_files/Handbook%20on%20Accordion%20Notation.pdf

- Weinberg, Norman. *Guide to Standardized Drumset Notation*. Lawton: Percussive Arts Society, Inc., 1998.
- “Ornaments”, Grove Music Online, ed. L. Macy (accessed January 24 2013)
- AGEHR Handbell and Handchime Notation Booklet, 8th ed. Dayton: Lorenz, 2010.⁹

Other contributors

Grateful thanks are also extended to the following, all of whom have contributed their time and expertise to identifying further sources of glyphs for inclusion in SMuFL: Mark Adler, Stephen Begley, Michael Scott Cuthbert, Ben Finn, Maurizio Gavioli, Michael Good, Mark Johnson, Dave Keenan, Matthew Maslanka, Jean-Christoph Michel, Alexander Plötz, Grzegorz Rolek, Ahmed Tahar, Emil Wojtacki, Werner Wolff.

Thanks also to Joe Berkovitz for his contribution towards the guidelines for font metrics and glyph registration for fonts intended for use with scoring applications, and the design of the font metadata JSON files.

Missing symbols?

If you know of any commonly used symbols that are not included in SMuFL, please post your suggestions to the [smufl-discuss mailing list](http://www.smufl.org/discuss) (see www.smufl.org/discuss).

License

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⁹ A summary of the main notations prescribed in this book can be found at <http://www.handbellworld.com/music/HandbellNotation.cfm>

Notes for implementers

This section provides guidelines and recommendations for metrics, glyph registration and font metadata, and is intended for font designers who want to design SMuFL-compliant fonts, and for software developers who want to build applications that can consume SMuFL-compliant fonts.

Glyph and class names

To aid software developers in implementing SMuFL-compliant fonts, two support files in JSON format are available, one providing a mapping between code point and canonical glyph name, and the other providing a list of similar glyphs grouped into classes, i.e. groups of glyphs that should be handled in a similar way in software applications (e.g. noteheads, clefs, flags, etc.).

For more information about the JSON format, see www.json.org.

It is strongly recommended that software developers should refer to specific glyphs within SMuFL by name rather than by Unicode code point. While SMuFL is still under active development, it cannot be guaranteed that code points will remain unchanged from one revision to the next, whereas every effort will be made to keep glyph names consistent between revisions.

glyphnames.json is the file that maps code points to glyph names, which by convention use lower camel case, a convenient format for most programming languages. Here is an excerpt of this file:

```
{
  ...
  "barlineDashed": {
    "alternateCodepoint": "U+1D104",
    "codepoint": "U+E036"
  },
  "barlineDotted": {
    "codepoint": "U+E037"
  },
  "barlineDouble": {
    "alternateCodepoint": "U+1D101",
    "codepoint": "U+E031"
  },
  "barlineFinal": {
    "alternateCodepoint": "U+1D102",
    "codepoint": "U+E032"
  },
  "barlineHeavy": {
    "codepoint": "U+E034"
  },
  ...
}
```

```
}
```

The file is keyed using the glyph names, with the SMuFL code point provided as the value for the "codepoint" key, and the Unicode Musical Symbols range code point (if applicable) provided as the value for the "alternateCodepoint" key.

classes.json is the file that groups glyphs together into classes, so that software developers can handle similar glyphs in a similar fashion. Here is an excerpt of this file:

```
{
  "clefs": [
    "gClef",
    "gClef15mb",
    "gClef8vb",
    "gClef8va",
    "gClef15ma",
    "gClef8vbOld",
    "gClef8vbCclef",
    ...
  ],
  "noteheads": [
    "noteheadDoubleWhole",
    "noteheadWhole",
    "noteheadHalf",
    "noteheadBlack",
    "noteheadNull",
    ...
  ],
  "flags": [
    "flag8thUp",
    "flag8thDown",
    "flag16thUp",
    "flag16thDown",
    "flag32ndUp",
    "flag32ndDown",
    ...
  ],
  ...
}
```

Glyphs are listed within their classes using the names specified in **glyphnames.json**. Not all glyphs are contained within classes, and the same glyph can theoretically appear in multiple classes (though, as of the current version, none do).

The classes defined at present are as follows:

<i>Class name</i>	<i>Description</i>
accidentals	Contains all glyphs in all accidentals ranges.
accidentalsPersian	
accidentals53EDOTurkish	
accidentalsAEU	
accidentals72EDOWyschnegradsky	
accidentalsSagittalDiacritics	
accidentalsSagittalPromethean	
accidentalsSagittalTrojan	
accidentalsSagittalAthenian	
accidentalsSagittalPure	
accidentalsSagittalMixed	
accidentalsHelmholtzEllis	
accidentalsJohnston	
accidentalsSims	
accidentalsSteinZimmermann	
accidentals24EDOArrows	
accidentalsStandard	
articulations	Contains all articulations, regardless of whether they are intended to be positioned above or below the note/staff.
articulationsBelow	Contains only those articulations that are positioned either above or below the note/staff, as appropriate.
articulationsAbove	
combiningStaffPositions	Contains glyphs that are available in ligatures with the Combining staff position glyphs, in fonts intended for use in text-based applications. (N.B. not implemented in the current Bravura font, which is intended for scoring applications.)
forTextBasedApplications	Contains glyphs that scoring applications can generally ignore, i.e. these are useful for text-based applications (or for runs of normal text in scoring applications). This contains glyphs like the Beamed groups of notes range, pre-composed stems, pre-composed staff lines, etc.
multiGlyphForms	Contains all glyphs that are designed to be used in combination to produce larger forms, e.g. ornaments, wiggly lines, etc.
noteheads	Contains all glyphs in all noteheads ranges.

<i>Class name</i>	<i>Description</i>
noteheadSetSacredHarp	
noteheadSetNamesPitch	
noteheadSetNamesSolfège	
noteheadSetSquare	
noteheadSetRoundSmall	
noteheadSetRoundLarge	
noteheadSetSlashHorizontalEnds	
noteheadSetSlashVerticalEnds	
parenthesesNotehead	
noteheadSetHeavyX	
noteheadSetLargeArrowDown	
noteheadSetLargeArrowUp	
noteheadSetCircled	
noteheadSetDiamondOld	
noteheadSetDiamond	
noteheadSetSlashed2	
noteheadSetSlashed1	
noteheadSetTriangleDown	
noteheadSetTriangleRight	
noteheadSetTriangleLeft	
noteheadSetTriangleUp	
noteheadSetWithX	
noteheadSetCircleX	
noteheadSetPlus	
noteheadSetX	
noteheadSetDefault	
ornaments	Contains all pre-composed ornament glyphs, excluding the component parts in the Combining strokes for trills and mordents range.
pauses	Contains all fermatas/caesuras, regardless of whether they are intended to be positioned above or below the note/staff.
pausesBelow	Contains only those fermatas that are positioned either above or below the note/staff, as appropriate.
pausesAbove	
rests	Contains all rests glyphs.
stemDecorations	Contains glyphs that are designed to be positioned on stems. This is a useful class, because the individual glyphs that are intended to be drawn on stems are dotted around various ranges.

<i>Class name</i>	<i>Description</i>
wigglesQuasiRandom	These classes contain useful subsets of the Multi-segment lines range.
wigglesVibratoVariable	
wigglesCircularMotion	
wigglesVibrato	
wigglesArpeggiato	
wigglesArpeggiatoDown	
wigglesArpeggiatoUp	
wigglesTrill	

The current versions of **glyphnames.json** and **classes.json** are available for download at www.smufl.org/download.

In addition to the glyph names and classes JSON files, it is recommended that SMuFL-compliant fonts also contain font-specific metadata JSON files, which are described below.

Designing for scoring applications and text-based applications

In addition to providing a standard approach to how musical symbols should be assigned to Unicode code points, SMuFL also aims to provide two sets of guidelines for the metrics and glyph registration, addressing the two most common use cases for fonts that contain musical symbols, i.e. use within dedicated scoring applications, and use within text-based applications (such as a word processors, desktop publishers, web pages, etc.).

Since it is helpful for scoring applications that all symbols in a font be scaled relative to each other as if drawn on a staff of a particular size, and conversely it is helpful for musical symbols to be drawn in-line with text to be scaled relative to the letterforms with which the musical symbols are paired, in general a single font cannot address these two use cases: the required metrics and relative scaling of glyphs are incompatible¹⁰.

Therefore, it is recommended that font developers make clear whether a given font is intended for use by scoring applications or by text-based applications by appending "Text" to the name of the font intended for text-based applications; for example, "Bravura" is intended for use by scoring applications, and "Bravura Text" is intended for

¹⁰ The main problem concerns line spacing: because most applications determine the line spacing required for a font based on a sum of the ascender, descender and line gap values in the font (for which different applications on different operating systems use different combinations of the three places this can be defined, once the `hhea` table and twice in the `OS/2` table), it is impractical to provide a font where all glyphs are scaled correctly relatively to another in such a way that all musical symbols can be drawn at a single scale factor that complements text fonts at the same point size. Many applications clip glyphs that exceed the calculated line spacing, so in order to have a single font in which e.g. a G clef is drawn without clipping and an eighth note is drawn at a corresponding scale factor (such that the clef is around twice as tall as the note), the line spacing would have to be so tall that it would greatly distort the line spacing of the text. For more information about this issue, see <http://typophile.com/node/13081>. Bravura, for what it's worth, uses very large line spacing (1.75 times its em square), such that 99% of glyphs are drawn without clipping in text-based applications, at the expense of making it practical to use the font mixed in-line with text.

use by text-based applications (or indeed for mixing musical symbols with free text within a scoring application).

Metrics and glyph registration for scoring applications

The following guidelines are provided for fonts intended for use in scoring applications:

- Dividing the em in four provides an analogue for a five-line staff: if a font uses 1000 upm (design units per em), as is conventional for a PostScript font, one staff space is equal to 250 design units; if a font uses 2048 upm, as is conventional for a TrueType font, one staff space is equal to 512 design units.
- The origin (bottom left corner of the em square, i.e. $x = 0$ and $y = 0$ in font design space) therefore represents the middle of the bottom staff line of a nominal five-line staff, and $y = 1$ em represents the middle of the top staff line of that same five-line staff.
- All glyphs should be drawn at a scale consistent with the key measurement that one staff space = 0.25 em.
- Unless otherwise stated, all glyphs shall be horizontally registered so that their leftmost point coincides with $x = 0$.
- Unless otherwise stated, all glyphs shall have zero-width side bearings, i.e. no blank space to the left or right of the glyph.
- Glyphs that apply to a staff as a whole (e.g. barlines) shall be registered such that the font baseline lies at the nominal vertical position of the bottom line of a five-line staff. If the glyph is specific to a staff other than a regular five-line staff, then for registration purposes that staff's vertical center shall be exactly aligned with the vertical center of a five-line staff.
- Glyphs for movable notations that apply to some vertical staff position (e.g. note heads, accidentals) shall be registered such that the font baseline lies exactly at that position. For example, a typical notehead or accidental glyph is registered such that it is vertically centered on the baseline.
- Clefs should be positioned such that the pitch the clef refers to is on the baseline (e.g. the F clef is placed such that the upper dot is above and the lower dot below the baseline). If a clef does not refer specifically to a pitch, its $y=0$ should coincide with the center staff line on a five-line staff, or the visual center for staves with more or fewer than five lines (e.g. tablature staves).
- Noteheads should be positioned as if on the bottom line of the staff (except for complete clusters representing intervals of a second or third, which should be positioned as if in the bottom space of the staff).

- Pre-composed stems should be positioned as if they are pointing upwards and attached to a notehead on the bottom line of the staff. The center of the stem should be at $x=0$.
- Combining glyphs that are designed to be superimposed on stems (stem decorations) should be registered such that the point that should sit in the center of the stem (i.e. typically the visual center of the symbol) should be at $x=0$ and $y=0$.
- Accidentals should be positioned as if they apply to a notehead on the bottom line of the staff.
- Articulations to be positioned above a note or chord should be positioned such that they sit on the baseline ($y=0$), while articulations to be positioned below a note or chord should be positioned such that they hang from the baseline.
- Pre-composed notes should be positioned as if on the bottom line of the staff.
- Flags are positioned such that $y=0$ corresponds to the end of a stem of normal length, and such that $x=0$ corresponds to the left-hand side of the stem.
- Rests are relative to an imaginary staff position, typographically speaking (usually the center line of a five-line staff in which the rest assumes its default position). The font baseline should represent this staff position, with the exception of the whole note (semibreve) rest, which should hang from the font baseline.
- Bracket ends are positioned such that the point at which they connect to the top or bottom of a vertical bracket is at $y=0$.
- Letters for dynamics (and for D.C./D.S. in the repeats range) should be scaled such that the caps height is around 0.5 em, and the x-height is around 0.25 em.
- Digits for time signatures should be scaled such that each digit is two staff spaces tall, i.e. 0.5 em, and vertically centered on the baseline. Although some glyphs in the time signatures range (such as the large + sign, common and cut time glyphs, etc.) apply to the whole staff, these should likewise be vertically centered on the baseline.

Many of these guidelines are based on the conventions established by Adobe's Sonata font and carried through by most other fonts designed for use in scoring applications, for the sake of making it as easy as possible for font and application developers to transition their existing fonts and software to supporting SMuFL-compliant fonts.

Metadata for SMuFL-compliant fonts

To help software developers integrate SMuFL-compliant fonts, it is recommended that font designers provide a font-specific metadata file, in JSON format, in the distribution package for their fonts.

The metadata file allows the designer to provide information that cannot easily (or in some cases at all) be encoded within or retrieved from the font software itself, including recommendations for how to draw the elements of music notation not provided directly by the font itself (such as staff lines, barlines, hairpins, etc.) in a manner complementary to the design of the font, and important glyph-specific metrics, such as the precise coordinates at which a stem should connect to a notehead.

Glyph names may be supplied either using their Unicode code point or their canonical glyph name (as defined in the **glyphnames.json** file – see above). Measurements are specified in staff spaces, using floating point numbers to any desired level of precision.

The following key/value pairs are mandatory:

<i>Key name</i>	<i>Description</i>
"fontName"	The name of the font to which the metadata applies
"fontVersion"	The version number of the font to which the metadata applies

All other key/value pairs are optional. The "engravingDefaults" structure contains key/value pairs defining recommended defaults for line widths etc., as follows, with all measurements expressed in staff spaces:

<i>Key name</i>	<i>Description</i>
"staffLineThickness"	The thickness of each staff line
"stemThickness"	The thickness of a stem
"beamThickness"	The thickness of a beam
"beamSpacing"	The distance between the inner edge of the primary and outer edge of subsequent secondary beams
"legerLineThickness"	The thickness of a leger line (normally somewhat thicker than a staff line)
"legerLineExtension"	The amount by which a leger line should extend either side of a notehead
"slurEndpointThickness"	The thickness of the end of a slur
"slurMidpointThickness"	The thickness of the mid-point of a slur (i.e. its thickest point)
"tieEndpointThickness"	The thickness of the end of a tie
"tieMidpointThickness"	The thickness of the mid-point of a tie

Key name	Description
"thinBarlineThickness"	The thickness of a thin barline, e.g. a normal barline, or each of the lines of a double barline
"thickBarlineThickness"	The thickness of a thick barline, e.g. in a final barline or a repeat barline
"dashedBarlineThickness"	The thickness of a dashed barline
"dashedBarlineDashLength"	The length of the dashes to be used in a dashed barline
"dashedBarlineGapLength"	The length of the gap between dashes in a dashed barline
"barlineSeparation"	The default distance between multiple barlines when locked together, e.g. between two thin barlines making a double barline, or a thin and a thick barline making a final barline, measured from the right-hand edge of the left barline to the left-hand edge of the right barline.
"repeatBarlineDotSeparation"	The default horizontal distance between the dots and the inner barline of a repeat barline, measured from the edge of the dots to the edge of the barline.
"bracketThickness"	The thickness of the vertical line of a bracket grouping staves together
"subBracketThickness"	The thickness of the vertical line of a sub-bracket grouping staves belonging to the same instrument together
"hairpinThickness"	The thickness of a <i>crescendo/diminuendo</i> hairpin
"octaveLineThickness"	The thickness of the dashed line used for an octave line
"pedalLineThickness"	The thickness of the line used for piano pedaling
"repeatEndingLineThickness"	The thickness of the brackets drawn to indicate repeat endings
"arrowShaftThickness"	The thickness of the line used for the shaft of an arrow
"lyricLineThickness"	The thickness of the lyric extension line to indicate a melisma in vocal music
"textEnclosureThickness"	The thickness of a box drawn around text instructions (e.g. rehearsal marks)
"tupletBracketThickness"	The thickness of the brackets drawn either side of tuplet numbers

The "glyphs" structure contains a structure for each glyph for which metadata is supplied, with the canonical glyph name or its Unicode code point as the key. Each glyph may define any of the following key/value pairs:

Key name	Description
"stemUpSE"	The exact position at which the bottom right-hand (south-east) corner of an upward-pointing stem rectangle should start, relative to the glyph origin, expressed as Cartesian coordinates in staff spaces.
"stemDownNW"	The exact position at which the top left-hand (north-west) corner of a downward-pointing stem rectangle should start, relative to the glyph origin, expressed as Cartesian coordinates in staff spaces.
"stemUpNW"	The amount by which an up-stem should be lengthened from its nominal unmodified length in order to ensure a good connection with a flag, in spaces. ¹¹
"stemDownSW"	The amount by which a down-stem should be lengthened from its nominal unmodified length in order to ensure a good connection with a flag, in spaces.
"nominalWidth"	The width in staff spaces of a given glyph that should be used for e.g. positioning leger lines correctly. ¹²
"numeralTop"	The position in staff spaces that should be used to position numerals relative to clefs with ligated numbers where those numbers hang from the bottom of the clef, corresponding horizontally to the center of the numeral's bounding box.
"numeralBottom"	The position in staff spaces that should be used to position numerals relative to clefs with ligatured numbers where those numbers sit on the baseline or at the north-east corner of the G clef, corresponding horizontally to the center of the numeral's bounding box.

Below is an excerpt of a dummy font metadata file for the Bravura font, with some of the "engravingDefaults" and "glyphs" structures filled in:

```
{
  "fontName" : "Bravura",
  "fontVersion": "0.8",
```

¹¹ It is typical for noteheads and flags to be drawn using font glyphs, while stems themselves are drawn using primitive lines or rectangles. Flag glyphs in SMuFL-compliant fonts are registered such that y=0 represents the end of a stem drawn at its normal length, i.e. typically 3.5 staff spaces, so for simple drawing, any flag can be drawn at the same position relative to the stem and give the correct visual stem length. Modern drawing APIs typically provide sub-pixel RGB anti-aliasing for font glyphs, but may only provide grayscale anti-aliasing for primitive shapes. If the stem is drawn at its normal length with a flag glyph continuing beyond the end of the stem, there may be a poor visual appearance resulting from the primitive stem using standard anti-aliasing and the flag glyph using sub-pixel anti-aliasing. Therefore, it is recommended to extend the stem by the additional height of the flag such that the primitive stem stops at the end (or just short of the end) of the flag. Because the amount by which the stem should be extended is highly dependent on the design of the flag in a particular font, this value should be specified for each flag glyph in the metadata JSON file.

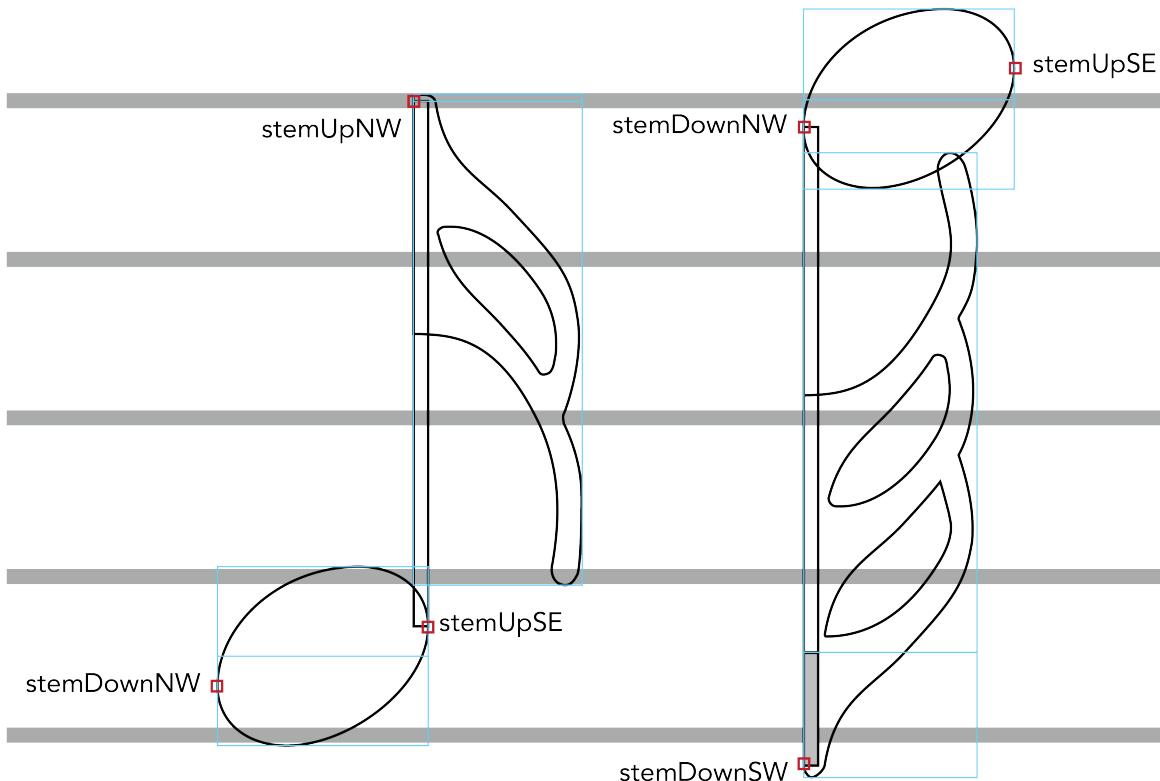
¹² Certain fonts, for example those that mimic music calligraphy, may include glyphs that are asymmetric by design, and where a simple calculation of the glyph's bounding box will not provide the correct result for registering that glyph with other primitives. For example, a whole rest may be slightly oblique if mimicking a chisel nib pen, and for precise registration it may be necessary to specify its width independent of the glyph's actual bounding box.

```
"engravingDefaults": {
    "staffLineThickness": 0.1,
    "stemThickness": 0.1,
    "beamThickness": 0.5,
    "beamSpacing": 0.25,
    "legerLineThickness": 0.2,
    "legerLineExtension": 0.2,
    ...
},
"glyphs": {
    "noteheadBlack": {
        "stemDownNW": [
            0.0,
            -0.184
        ],
        "stemUpSE": [
            1.328,
            0.184
        ]
    }
},
...
}
```

Example of glyph registration for notes with flags

The figure below shows how font-specific metadata may be used in conjunction with the conventions of glyph registration to construct two notes: an up-stem 16th note (semiquaver), and a down-stem 32nd (demisemiquaver).

- The horizontal grey lines denote staff lines, for scale.
 - The light blue boxes show glyph bounding boxes, with the left-hand side of the box corresponding to $x=0$, while the horizontal lines bisecting the blue boxes show the origin for each glyph, i.e. $y=0$.
 - The red boxes show the locations of the glyph attachment points, as specified in the font metadata JSON file.
 - The shaded area on the down-stem note shows the amount by which a stem of standard length (i.e. the unfilled portion of the stem) should be extended in order to ensure good on-screen appearance at all zoom levels.



Note that the **stemUpSE** attachment point corresponds to the bottom right-hand (or south-east) corner of the stem, while **stemDownNW** corresponds to the top left-hand (or north-west) corner of the stem. Likewise, for correct alignment, the flag glyphs must always be aligned precisely to the left-hand side of the stem, with the glyph origin positioned vertically at the end of the normal stem length.

Metrics and glyph registration for text-based applications

Work on these guidelines for metrics and glyph registration is ongoing.

Staff brackets and dividers (U+E000–U+E00F)

	U+E000 (and U+1D114)		U+E001
{	<i>brace</i>	}	<i>reversedBrace</i>
	Brace		Reversed brace
{	U+E002 (and U+1D115)		U+E003
	<i>bracket</i>		<i>bracketTop</i>
	Bracket		Bracket top
	U+E004		U+E005
	<i>bracketBottom</i>		<i>reversedBracketTop</i>
	Bracket bottom		Reversed bracket top
	U+E006		U+E007
	<i>reversedBracketBottom</i>		<i>systemDivider</i>
	Reversed bracket bottom		System divider
	U+E008		U+E009
	<i>systemDividerLong</i>		<i>systemDividerExtraLong</i>
	Long system divider		Extra long system divider
	U+E00A		U+E00B
=	<i>splitBarDivider</i>		<i>staffDivideArrowDown</i>
	Split bar divider (bar spans a system break)		Staff divide arrow down
	U+E00C		U+E00D
↗	<i>staffDivideArrowUp</i>		<i>staffDivideArrowUpDown</i>
	Staff divide arrow up		Staff divide arrows

Recommended stylistic alternates

uniE000.salt02	uniE000.salt03
{ <i>braceLarge</i> Brace (large)	{ <i>braceLarger</i> Brace (larger)
uniE000.salt01	uniE000.salt04
{ <i>braceSmall</i> Brace (small)	{ <i>braceFlat</i> Brace (flat)

Implementation notes

The **brace** glyph should be scaled vertically in a scoring application to the appropriate height of the two or more staves it encompasses.

bracket is a complete bracket of a fixed height useful for displaying brackets in text-based documents or applications.

To display a bracket of variable height in a scoring application, use **bracketTop** and **bracketBottom** as the top and bottom terminals of a bracket drawn using a stroked line or filled rectangle of the appropriate width.

Staves (U+E010–U+E02F)

U+E010 (and U+1D116)	U+E011 (and U+1D117)
— <i>staff1Line</i> 1-line staff	— <i>staff2Lines</i> 2-line staff
☰ U+E012 (and U+1D118) <i>staff3Lines</i> 3-line staff	☰ U+E013 (and U+1D119) <i>staff4Lines</i> 4-line staff
☰ U+E014 (and U+1D11A) <i>staff5Lines</i> 5-line staff	☰ U+E015 (and U+1D11B) <i>staff6Lines</i> 6-line staff
— U+E016 <i>staff1LineWide</i> 1-line staff (wide)	— U+E017 <i>staff2LinesWide</i> 2-line staff (wide)
☰ U+E018 <i>staff3LinesWide</i> 3-line staff (wide)	☰ U+E019 <i>staff4LinesWide</i> 4-line staff (wide)
☰ U+E01A <i>staff5LinesWide</i> 5-line staff (wide)	☰ U+E01B <i>staff6LinesWide</i> 6-line staff (wide)
— U+E01C <i>staff1LineNarrow</i> 1-line staff (narrow)	— U+E01D <i>staff2LinesNarrow</i> 2-line staff (narrow)
☰ U+E01E <i>staff3LinesNarrow</i> 3-line staff (narrow)	☰ U+E01F <i>staff4LinesNarrow</i> 4-line staff (narrow)
☰ U+E020 <i>staff5LinesNarrow</i> 5-line staff (narrow)	☰ U+E021 <i>staff6LinesNarrow</i> 6-line staff (narrow)

Implementation notes

Scoring programs should draw their own staff lines using primitives, not use the glyphs in this range.

Narrow and wide versions are provided for use in fonts intended for use in text-based applications. These glyphs should be zero-width in such fonts.

Barlines (U+E030–U+E03F)

U+E030 (and U+1D100)		U+E031 (and U+1D101)
<i>barlineSingle</i>		<i>barlineDouble</i>
Single barline		Double barline
U+E032 (and U+1D102)		U+E033 (and U+1D103)
<i>barlineFinal</i>		<i>barlineReverseFinal</i>
Final barline		Reverse final barline
U+E034		U+E035
<i>barlineHeavy</i>		<i>barlineHeavyHeavy</i>
Heavy barline		Heavy double barline
U+E036 (and U+1D104)		U+E037
<i>barlineDashed</i>	..	<i>barlineDotted</i>
Dashed barline		Dotted barline
U+E038 (and U+1D105)		U+E039
<i>barlineShort</i>		<i>barlineTick</i>
Short barline		Tick barline

Implementation notes

Scoring programs should draw their own barlines using primitives, not use the glyphs in this range.

Repeats (U+E040–U+E04F)

	U+E040 (and U+1D106)		U+E041 (and U+1D107)
:	<i>leftRepeat</i> Left repeat sign	:	<i>rightRepeat</i> Right repeat sign
:	U+E042 (and U+1D108)	.	U+E043
	<i>repeatDots</i> Repeat dots		<i>repeatDot</i> Single repeat dot
D.S.	U+E044 (and U+1D109)	D.C.	U+E045 (and U+1D10A)
	<i>dalSegno</i> Dal segno		<i>daCapo</i> Da capo
§	U+E046 (and U+1D10B)	⊕	U+E047 (and U+1D10C)
	<i>segno</i> Segno		<i>coda</i> Coda
田	U+E048	∞	U+E049
	<i>codaSquare</i> Square coda		<i>segnoSerpent1</i> Segno (serpent)
§	U+E04A	:	U+E04B
	<i>segnoSerpent2</i> Segno (serpent with vertical lines)		<i>leftRepeatSmall</i> Left repeat sign within bar
:	U+E04C		
	<i>rightRepeatSmall</i> Right repeat sign within bar		

Recommended stylistic alternates

uniE046.salt01	uniE047.salt01
§	⊕

segnoJapanese
Segno (Japanese style, rotated)

codaJapanese
Coda (Japanese style, serif)

Recommended ligatures

uniE040_uniE041



repeatLeftRight

Left and right repeat signs

Implementation notes

Scoring programs should draw their own repeat barlines using primitives to draw the thick and thin lines and **repeatDots** to draw the dots, not use the precomposed glyphs **leftRepeat** or **rightRepeat**.

dalSegno and **daCapo** are provided for compatibility with the Unicode Musical Symbols range. Scoring applications should allow the user to specify the appearance of the *da capo* and *dal segno* instructions using any regular text font.

Clefs (U+E050–U+E07F)

U+E050 (and U+1D11E)

*gClef*

G clef



U+E051

gClef15mb

G clef quindicesima bassa



U+E052 (and U+1D120)

gClef8vb

G clef ottava bassa



U+E053 (and U+1D11F)

gClef8va

G clef ottava alta



U+E054

gClef15ma

G clef quindicesima alta



U+E055

gClef8vbOld

G clef ottava bassa (old style)



U+E056

gClef8vbSquare

G clef ottava bassa (19th century)



U+E057

gClef8vbCClef

G clef ottava bassa with C clef



U+E058

gClefLigatedNumberBelow

Combining G clef, number below



U+E059

gClefLigatedNumberAbove

Combining G clef, number above



U+E05A

gClefArrowUp

G clef, arrow up



U+E05B

gClefArrowDown

G clef, arrow down



U+E05C (and U+1D121)

cClef

C clef



U+E05D

cClef8vb

C clef ottava bassa



U+E05E

cClefArrowUp

C clef, arrow up



U+E05F

cClefArrowDown

C clef, arrow down



U+E060

cClefCombining

Combining C clef



U+E061 (and U+1D122)

fClef

F clef

U+E062	U+E063 (and U+1D124)
<i>fClef15mb</i>	<i>fClef8vb</i>
	F clef ottava bassa
U+E064 (and U+1D123)	U+E065
<i>fClef8va</i>	<i>fClef15ma</i>
	F clef quindicesima alta
U+E066	U+E067
<i>fClefArrowUp</i>	<i>fClefArrowDown</i>
	F clef, arrow down
U+E068 (and U+1D125)	U+E069 (and U+1D126)
<i>unpitchedPercussionClef1</i>	<i>unpitchedPercussionClef2</i>
	Unpitched percussion clef 2
U+E06A	U+E06B
<i>semipitchedPercussionClef1</i>	<i>semipitchedPercussionClef2</i>
	Semi-pitched percussion clef 2
U+E06C	U+E06D
<i>6stringTabClef</i>	<i>4stringTabClef</i>
	4-string tab clef
U+E06E	U+E06F
<i>cClefTriangular</i>	<i>fClefTriangular</i>
	Triangular F clef
U+E070	U+E071
<i>cClefTriangularToFclef</i>	<i>fClefTriangularToCClef</i>
	F clef to C clef change
U+E072	U+E073
<i>gClefReversed</i>	<i>gClefUpsideDown</i>
	Upside-down G clef

U+E074

cClefReversed
Reversed C clef

U+E075

fClefReversed
Reversed F clef

U+E076

fClefUpsideDown
Upside-down F clef

**U+E077**

bridgeClef
Bridge clef

U+E078

accdnDiatonicClef
Diatonic accordion clef

Recommended stylistic alternates**uniE052.salt01**

gClef8vbParens
G clef ottava bassa (8)

**uniE05C.salt01**

cClefFrench
C clef (French, 18th century)

uniE061.salt01

fClefFrench
F clef (French, 18th century)

**uniE061.salt02**

fClef19thCentury
F clef (19th century)

uniE068.salt01

unpitchedPercussionClef1Alt
Unpitched percussion clef 1 (thick-thin)

**uniE06C.salt01**

6stringTabClefTall
6-string tab clef (tall)

uniE06C.salt02

6stringTabClefSerif
6-string tab clef (serif)

**uniE06D.salt01**

4stringTabClefTall
4-string tab clef (tall)

uniE06D.salt02

4stringTabClefSerif
4-string tab clef (serif)

Recommended ligatures

uniE061_uniE815

fClef5Below



F clef, 5 below

uniE058_uniE810

gClef0Below



G clef, 0 below

uniE058_uniE811_uniE810

gClef10Below



G clef, 10 below



uniE058_uniE811_uniE811

gClef11Below

G clef, 11 below

uniE058_uniE811_uniE812

gClef12Below



G clef, 12 below



uniE058_uniE811_uniE813

gClef13Below

G clef, 13 below

uniE058_uniE811_uniE814

gClef14Below



G clef, 14 below



uniE058_uniE811_uniE815

gClef15Below

G clef, 15 below

uniE058_uniE811_uniE816

gClef16Below



G clef, 16 below



uniE058_uniE811_uniE817

gClef17Below

G clef, 17 below

uniE059_uniE812

gClef2Above



G clef, 2 above



uniE058_uniE812

gClef2Below

G clef, 2 below

uniE059_uniE813

gClef3Above



G clef, 3 above



uniE058_uniE813

gClef3Below

G clef, 3 below

uniE059_uniE814

gClef4Above



G clef, 4 above



uniE058_uniE814

gClef4Below

G clef, 4 below

uniE059_uniE815

gClef5Above



G clef, 5 above



uniE058_uniE815

gClef5Below

G clef, 5 below

uniE059_uniE816	uniE058_uniE816
 <i>gClef6Above</i> G clef, 6 above	 <i>gClef6Below</i> G clef, 6 below
uniE059_uniE817	uniE058_uniE817
 <i>gClef7Above</i> G clef, 7 above	 <i>gClef7Below</i> G clef, 7 below
uniE059_uniE818	uniE058_uniE818
 <i>gClef8Above</i> G clef, 8 above	 <i>gClef8Below</i> G clef, 8 below
uniE059_uniE819	uniE058_uniE819
 <i>gClef9Above</i> G clef, 9 above	 <i>gClef9Below</i> G clef, 9 below
uniE058_uniE811_uniE810_uniE240	uniE058_uniE811_uniE811_uniE240
 <i>gClefFlat10Below</i> G clef, flat 10 below	 <i>gClefFlat11Below</i> G clef, flat 11 below
uniE058_uniE811_uniE813_uniE240	uniE058_uniE811_uniE814_uniE240
 <i>gClefFlat13Below</i> G clef, flat 13 below	 <i>gClefFlat14Below</i> G clef, flat 14 below
uniE058_uniE811_uniE815_uniE240	uniE058_uniE811_uniE816_uniE240
 <i>gClefFlat15Below</i> G clef, flat 15 below	 <i>gClefFlat16Below</i> G clef, flat 16 below
uniE058_uniE240_uniE811	uniE059_uniE812_uniE240
 <i>gClefFlat1Below</i> G clef, flat 1 below	 <i>gClefFlat2Above</i> G clef, flat 2 above
uniE058_uniE240_uniE812	uniE059_uniE813_uniE240
 <i>gClefFlat2Below</i> G clef, flat 2 below	 <i>gClefFlat3Above</i> G clef, flat 3 above

uniE058_uniE240_uniE813*gClefFlat3Below*

G clef, flat 3 below

uniE058_uniE240_uniE814*gClefFlat4Below*

G clef, flat 4 below

uniE059_uniE815_uniE240*gClefFlat5Above*

G clef, flat 5 above

**uniE059_uniE816_uniE240***gClefFlat6Above*

G clef, flat 6 above

uniE058_uniE240_uniE816*gClefFlat6Below*

G clef, flat 6 below

**uniE059_uniE817_uniE240***gClefFlat7Above*

G clef, flat 7 above

uniE058_uniE240_uniE817*gClefFlat7Below*

G clef, flat 7 below

**uniE059_uniE818_uniE240***gClefFlat8Above*

G clef, flat 8 above

uniE059_uniE819_uniE240*gClefFlat9Above*

G clef, flat 9 above

**uniE058_uniE240_uniE819***gClefFlat9Below*

G clef, flat 9 below

uniE058_uniE241_uniE812*gClefNat2Below*

G clef, natural 2 below

**uniE058_uniE811_uniE810_uniE241***gClefNatural10Below*

G clef, natural 10 below

uniE058_uniE811_uniE813_uniE241*gClefNatural13Below*

G clef, natural 13 below

**uniE058_uniE811_uniE817_uniE241***gClefNatural17Below*

G clef, natural 17 below

uniE059_uniE812_uniE241*gClefNatural2Above*

G clef, natural 2 above

**uniE059_uniE813_uniE241***gClefNatural3Above*

G clef, natural 3 above

uniE058_uniE241_uniE813*gClefNatural3Below*

G clef, natural 3 below

**uniE059_uniE816_uniE241***gClefNatural6Above*

G clef, natural 6 above

uniE058_uniE241_uniE816*gClefNatural6Below*

G clef, natural 6 below

**uniE059_uniE817_uniE241***gClefNatural7Above*

G clef, natural 7 above

**uniE059_uniE819_uniE241***gClefNatural9Above*

G clef, natural 9 above

**uniE058_uniE241_uniE819***gClefNatural9Below*

G clef, natural 9 below

**uniE058_uniE811_uniE812_uniE242***gClefSharp12Below*

G clef, sharp 12 below

**uniE059_uniE811_uniE242***gClefSharp1Above*

G clef, sharp 1 above

**uniE059_uniE814_uniE242***gClefSharp4Above*

G clef, sharp 4 above

**uniE058_uniE242_uniE815***gClefSharp5Below*

G clef, sharp 5 below

Implementation notes

Scoring applications may choose to create e.g. *ottava alta* and *ottava bassa* versions of the G clef and F clef by combining **gClef** and **fClef** with **ottava** and **quindicesima** rather than using the precomposed glyphs.

The basic G clef, F clef and C clef symbols can be positioned at different vertical positions relative to the staff as required (e.g. the C clef can be positioned to create an alto or tenor clef).

Time signatures (U+E080–U+E09F)

	U+E080 <i>timeSig0</i>		U+E081 <i>timeSig1</i>
0	Time signature 0	1	Time signature 1
	U+E082 <i>timeSig2</i>		U+E083 <i>timeSig3</i>
2	Time signature 2	3	Time signature 3
	U+E084 <i>timeSig4</i>		U+E085 <i>timeSig5</i>
4	Time signature 4	5	Time signature 5
	U+E086 <i>timeSig6</i>		U+E087 <i>timeSig7</i>
6	Time signature 6	7	Time signature 7
	U+E088 <i>timeSig8</i>		U+E089 <i>timeSig9</i>
8	Time signature 8	9	Time signature 9
	U+E08A (and U+1D134) <i>timeSigCommon</i>		U+E08B (and U+1D135) <i>timeSigCutCommon</i>
C	Common time	¢	Cut time
	U+E08C <i>timeSigPlus</i>		U+E08D <i>timeSigPlusSmall</i>
+	Time signature +	+	Time signature + (for numerators)
	U+E08E <i>timeSigFractionalSlash</i>		U+E08F <i>timeSigEquals</i>
/	Time signature fraction slash	=	Time signature equals
	U+E090 <i>timeSigMinus</i>		U+E091 <i>timeSigMultiply</i>
-	Time signature minus	×	Time signature multiply

U+E092		U+E093
	<i>timeSigParensLeftSmall</i>	
(Left parenthesis for numerator only)
U+E094		U+E095
	<i>timeSigParensLeft</i>	
(Left parenthesis for whole time signature)
U+E096		U+E097
	<i>timeSigComma</i>	
,	Time signature comma	$\frac{1}{4}$
U+E098		U+E099
	<i>timeSigFractionHalf</i>	
$\frac{1}{2}$	Time signature fraction $\frac{1}{2}$	$\frac{3}{4}$
U+E09A		U+E09B
	<i>timeSigFractionOneThird</i>	
$\frac{1}{3}$	Time signature fraction $\frac{1}{3}$	$\frac{2}{3}$
U+E09C		U+E09D
	<i>timeSigX</i>	
X	Open time signature	\sim
U+E09E		U+E09F
	<i>timeSigCombNumerator</i>	
0	Control character for numerator digit	
1		<i>timeSigCombDenominator</i>
2		Control character for denominator digit
3		

Recommended stylistic alternates

uniE080.salt01		uniE081.salt01
0	<i>timeSig0Large</i>	
	Time signature 0 (outside staff)	1
uniE082.salt01		uniE083.salt01
2	<i>timeSig2Large</i>	
	Time signature 2 (outside staff)	3
		<i>timeSig3Large</i>
		Time signature 3 (outside staff)

4	uniE084.salt01 <i>timeSig4Large</i> Time signature 4 (outside staff)	5	uniE085.salt01 <i>timeSig5Large</i> Time signature 5 (outside staff)
6	uniE086.salt01 <i>timeSig6Large</i> Time signature 6 (outside staff)	7	uniE087.salt01 <i>timeSig7Large</i> Time signature 7 (outside staff)
8	uniE088.salt01 <i>timeSig8Large</i> Time signature 8 (outside staff)	9	uniE089.salt01 <i>timeSig9Large</i> Time signature 9 (outside staff)

Recommended ligatures

0	uniE09F_uniE080 <i>timeSig0Denominator</i> Time signature 0 (denominator)	0	uniE09E_uniE080 <i>timeSig0Numerator</i> Time signature 0 (numerator)
1	uniE09F_uniE081 <i>timeSig1Denominator</i> Time signature 1 (denominator)	1	uniE09E_uniE081 <i>timeSig1Numerator</i> Time signature 1 (numerator)
2	uniE09F_uniE082 <i>timeSig2Denominator</i> Time signature 2 (denominator)	2	uniE09E_uniE082 <i>timeSig2Numerator</i> Time signature 2 (numerator)
3	uniE09F_uniE083 <i>timeSig3Denominator</i> Time signature 3 (denominator)	3	uniE09E_uniE083 <i>timeSig3Numerator</i> Time signature 3 (numerator)
4	uniE09F_uniE084 <i>timeSig4Denominator</i> Time signature 4 (denominator)	4	uniE09E_uniE084 <i>timeSig4Numerator</i> Time signature 4 (numerator)
5	uniE09F_uniE085 <i>timeSig5Denominator</i> Time signature 5 (denominator)	5	uniE09E_uniE085 <i>timeSig5Numerator</i> Time signature 5 (numerator)

	uniE09F_uniE086 <i>timeSig6Denominator</i>	uniE09E_uniE086 <i>timeSig6Numerator</i>
6	Time signature 6 (denominator)	Time signature 6 (numerator)
	uniE09F_uniE087 <i>timeSig7Denominator</i>	uniE09E_uniE087 <i>timeSig7Numerator</i>
7	Time signature 7 (denominator)	Time signature 7 (numerator)
	uniE09F_uniE088 <i>timeSig8Denominator</i>	uniE09E_uniE088 <i>timeSig8Numerator</i>
8	Time signature 8 (denominator)	Time signature 8 (numerator)
	uniE09F_uniE089 <i>timeSig9Denominator</i>	uniE09E_uniE089 <i>timeSig9Numerator</i>
9	Time signature 9 (denominator)	Time signature 9 (numerator)

Implementation notes

timeSigCombNumerator and **timeSigCombDenominator** are control characters designed to be combined with the time signature digits (by way of glyph substitution, such as OpenType ligatures) to shift them vertically into position suitable for drawing as the numerator and denominator of a time signature. These control characters are intended for fonts to be used in text-based applications, since scoring applications should position the numerator and denominator of time signatures independently.

Noteheads (U+E0A0–U+E0EF)

	U+E0A0 <i>noteheadDoubleWhole</i> Double whole notehead		U+E0A1 <i>noteheadDoubleWholeSquare</i> Double whole notehead (square)
◐◑	Whole notehead	◑	Half notehead
○		○	
●	Black notehead		
■■■	X notehead double whole	✗	X notehead whole
✗	X notehead half	✗	X notehead black
✖	Ornate X notehead	✚✚	Plus notehead double whole
⊕	Plus notehead whole	⊕	Plus notehead half
+	Plus notehead black	✚	Circle X double whole
⊗	Circle X whole	⊗	Circle X half

U+E0B2 (and U+1D145) <i>noteheadCircleX</i>	⊗ Circle X notehead	U+E0B3 <i>noteheadDoubleWholeWithX</i>	Double whole notehead with X
U+E0B4 <i>noteheadWholeWithX</i>	⊗ Whole notehead with X	U+E0B5 <i>noteheadHalfWithX</i>	⊗ Half notehead with X
U+E0B6 <i>noteheadVoidWithX</i>	⊗ Void notehead with X	U+E0B7 (and U+1D146) <i>noteheadSquareWhite</i>	□ Square notehead white
U+E0B8 (and U+1D147) <i>noteheadSquareBlack</i>	■ Square notehead black	U+E0B9 <i>noteheadTriangleUpDoubleWhole</i>	▲ Triangle notehead up double whole
U+E0BA <i>noteheadTriangleUpWhole</i>	△ Triangle notehead up whole	U+E0BB <i>noteheadTriangleUpHalf</i>	△ Triangle notehead up half
U+E0BC (and U+1D148) <i>noteheadTriangleUpWhite</i>	△ Triangle notehead up white	U+E0BD (and U+1D149) <i>noteheadTriangleUpBlack</i>	▲ Triangle notehead up black
U+E0BE (and U+1D14A) <i>noteheadTriangleLeftWhite</i>	▷ Triangle notehead left white	U+E0BF (and U+1D14B) <i>noteheadTriangleLeftBlack</i>	▶ Triangle notehead left black
U+E0C0 (and U+1D14C) <i>noteheadTriangleRightWhite</i>	◀ Triangle notehead right white	U+E0C1 (and U+1D14D) <i>noteheadTriangleRightBlack</i>	◀ Triangle notehead right black
U+E0C2 <i>noteheadTriangleDownDoubleWhole</i>	▀ Triangle notehead down double whole	U+E0C3 <i>noteheadTriangleDownWhole</i>	▽ Triangle notehead down whole

U+E0C4	U+E0C5 (and U+1D14E)
<i>noteheadTriangleDownHalf</i>	<i>noteheadTriangleDownWhite</i>
▼ Triangle notehead down half	▼ Triangle notehead down white
U+E0C6 (and U+1D14F)	U+E0C7 (and U+1D150)
<i>noteheadTriangleDownBlack</i>	<i>noteheadTriangleUpRightWhite</i>
▼ Triangle notehead down black	▷ Triangle notehead up right white
U+E0C8 (and U+1D151)	U+E0C9 (and U+1D152)
<i>noteheadTriangleUpRightBlack</i>	<i>noteheadMoonWhite</i>
▼ Triangle notehead up right black	□ Moon notehead white
U+E0CA (and U+1D153)	U+E0CB (and U+1D154)
<i>noteheadMoonBlack</i>	<i>noteheadTriangleRoundDownWhite</i>
■ Moon notehead black	▼ Triangle-round notehead down white
U+E0CC (and U+1D155)	U+E0CD (and U+1D156)
<i>noteheadTriangleRoundDownBlack</i>	<i>noteheadParenthesis</i>
▼ Triangle-round notehead down black	() Parenthesis notehead
U+E0CE	U+E0CF
<i>noteheadSlashedBlack1</i>	<i>noteheadSlashedBlack2</i>
☛ Slashed black notehead (bottom left to top right)	☛ Slashed black notehead (top left to bottom right)
U+E0D0	U+E0D1
<i>noteheadSlashedHalf1</i>	<i>noteheadSlashedHalf2</i>
☛ Slashed half notehead (bottom left to top right)	☛ Slashed half notehead (top left to bottom right)
U+E0D2	U+E0D3
<i>noteheadSlashedWhole1</i>	<i>noteheadSlashedWhole2</i>
☛ Slashed whole notehead (bottom left to top right)	☛ Slashed whole notehead (top left to bottom right)
U+E0D4	U+E0D5
<i>noteheadSlashedDoubleWhole1</i>	<i>noteheadSlashedDoubleWhole2</i>
☛ Slashed double whole notehead (bottom left to top right)	☛ Slashed double whole notehead (top left to bottom right)

	U+E0D6 <i>noteheadDiamondDoubleWhole</i> Diamond double whole notehead		U+E0D7 <i>noteheadDiamondWhole</i> Diamond whole notehead
❖		❖	
	U+E0D8 <i>noteheadDiamondHalf</i> Diamond half notehead		U+E0D9 <i>noteheadDiamondBlack</i> Diamond black notehead
❖		❖	
	U+E0DA <i>noteheadDiamondDoubleWholeOld</i> Diamond double whole notehead (old)		U+E0DB <i>noteheadDiamondWholeOld</i> Diamond whole notehead (old)
❖		❖	
	U+E0DC <i>noteheadDiamondHalfOld</i> White diamond notehead		U+E0DD <i>noteheadDiamondBlackOld</i> Black diamond notehead
❖		❖	
	U+E0DE <i>noteheadDiamondHalfFilled</i> Half-filled diamond notehead		U+E0DF <i>noteheadCircledBlack</i> Circled black notehead
❖		●	
	U+E0E0 <i>noteheadCircledHalf</i> Circled half notehead		U+E0E1 <i>noteheadCircledWhole</i> Circled whole notehead
○		○	
	U+E0E2 <i>noteheadCircledDoubleWhole</i> Circled double whole notehead		U+E0E3 <i>noteheadLargeArrowUpDoubleWhole</i> Large arrow up (highest pitch) double whole notehead
○○		△	
	U+E0E4 <i>noteheadLargeArrowUpWhole</i> Large arrow up (highest pitch) whole notehead		U+E0E5 <i>noteheadLargeArrowUpHalf</i> Large arrow up (highest pitch) half notehead
△		△	
	U+E0E6 <i>noteheadLargeArrowUpBlack</i> Large arrow up (highest pitch) black notehead		U+E0E7 <i>noteheadLargeArrowDownDoubleWhole</i> Large arrow down (lowest pitch) double whole notehead
▲		▀	

U+E0E8	U+E0E9
<i>noteheadLargeArrowDownWhole</i>	<i>noteheadLargeArrowDownHalf</i>
▼ Large arrow down (lowest pitch) whole notehead	▼ Large arrow down (lowest pitch) half notehead
U+E0EA	U+E0EB
<i>noteheadLargeArrowDownBlack</i>	<i>noteheadParenthesisLeft</i>
▼ Large arrow down (lowest pitch) black notehead	(Opening parenthesis
U+E0EC	U+E0ED
<i>noteheadParenthesisRight</i>	<i>noteheadCircleSlash</i>
) Closing parenthesis	∅ Circle slash notehead
U+E0EE	U+E0EF
<i>noteheadHeavyX</i>	<i>noteheadHeavyXHat</i>
✗ Heavy X notehead	❖ Heavy X with hat notehead

Recommended stylistic alternates

uniE0A0.salt01
<i>noteheadDoubleWholeAlt</i>
⌚ Double whole note (breve), single vertical strokes

Implementation notes

These noteheads should be combined with stems and flags as necessary to create complete notes. In text-based applications, per the Unicode Musical Symbols documentation:

$$\begin{matrix} \text{♩} = \text{○} + \text{○} \\ 1D15E \quad 1D157 \quad 1D165 \end{matrix}$$

$$\begin{matrix} \text{♪} = \bullet + \text{○} | + \text{○} \\ 1D162 \quad 1D158 \quad 1D165 \quad 1D170 \end{matrix}$$

$$\begin{matrix} \text{♩} = \bullet + \text{○} | \\ 1D15F \quad 1D158 \quad 1D165 \end{matrix}$$

$$\begin{matrix} \text{♪} = \bullet + \text{○} | + \text{○} \\ 1D163 \quad 1D158 \quad 1D165 \quad 1D171 \end{matrix}$$

$$\begin{matrix} \text{♪} = \bullet + \text{○} | + \text{○} \\ 1D160 \quad 1D158 \quad 1D165 \quad 1D16E \end{matrix}$$

$$\begin{matrix} \text{♪} = \bullet + \text{○} | + \text{○} \\ 1D164 \quad 1D158 \quad 1D165 \quad 1D172 \end{matrix}$$

$$\begin{matrix} \text{♪} = \bullet + \text{○} | + \text{○} \\ 1D161 \quad 1D158 \quad 1D165 \quad 1D16F \end{matrix}$$

Scoring applications should draw stems using primitives, rather than using **stem** (i.e. U+1D165 as shown in the above image¹³), so that they can be drawn to the correct length.

See also the implementation notes for flags.

¹³ From Chapter 15 “Symbols”, *The Unicode Standard, Version 6.2*. Ed. Julie D. Allen et al. Mountain View; The Unicode Consortium, 2012.

Slash noteheads (U+E0F0–U+E0FF)

U+E0F0

noteheadSlashVerticalEnds

/ Slash with vertical ends

U+E0F1 (and U+1D10D)

noteheadSlashHorizontalEnds

/ Slash with horizontal ends

U+E0F2

noteheadSlashWhite

// White slash

U+E0F3

noteheadSlashDiamondWhite

◇ Large white diamond

U+E0F4

noteheadSlashVerticalEndsSmall

/ Small slash with vertical ends

U+E0F5

noteheadSlashX

X Large X notehead

U+E0F6

noteheadSlashVerticalEndsMuted

X Muted slash with vertical ends

U+E0F7

noteheadSlashHorizontalEndsMuted

X Muted slash with horizontal ends

U+E0F8

noteheadSlashWhiteMuted

XX Muted white slash

Implementation notes

See the implementation notes for noteheads.

Round and square noteheads (U+E100–U+E10F)

U+E100

noteheadRoundBlackLarge

● Large round black notehead

U+E102

noteheadRoundWhiteWithDotLarge

○ Large round white notehead with dot

U+E104

noteheadRoundWhite

○ Round white notehead



U+E106

noteheadRoundBlackSlashedLarge

Large round black notehead, slashed



U+E108

noteheadRoundBlackSlashed

Round black notehead, slashed



U+E10A

noteheadSquareBlackLarge

Large square black notehead

U+E101

noteheadRoundWhiteLarge

○ Large round white notehead

U+E103

noteheadRoundBlack

● Round black notehead

U+E105

noteheadRoundWhiteWithDot

○ Round white notehead with dot



U+E107

noteheadRoundWhiteSlashedLarge

Large round white notehead, slashed



U+E109

noteheadRoundWhiteSlashed

Round white notehead, slashed



U+E10B

noteheadSquareBlackWhite

Large square white notehead

Note clusters (U+E110–U+E13F)

U+E110 (and U+1D15A)

□ *noteheadClusterSquareWhite*
Cluster notehead white (square)

U+E111 (and U+1D15B)

■ *noteheadClusterSquareBlack*
Cluster notehead black (square)

U+E112

○ *noteheadClusterRoundWhite*
Cluster notehead white (round)

U+E113

● *noteheadClusterRoundBlack*
Cluster notehead black (round)

U+E114

□□ *noteheadClusterDoubleWhole2nd*
Double whole note cluster, 2nd

U+E115

○○ *noteheadClusterWhole2nd*
Whole note cluster, 2nd

U+E116

○ *noteheadClusterHalf2nd*
Half note cluster, 2nd

U+E117

● *noteheadClusterQuarter2nd*
Quarter note cluster, 2nd

U+E118

□□ *noteheadClusterDoubleWhole3rd*
Double whole note cluster, 3rd

U+E119

○○ *noteheadClusterWhole3rd*
Whole note cluster, 3rd

U+E11A

○ *noteheadClusterHalf3rd*
Half note cluster, 3rd

U+E11B

● *noteheadClusterQuarter3rd*
Quarter note cluster, 3rd

U+E11C

□□□ *noteheadClusterDoubleWholeTop*
Combining double whole note cluster, top

U+E11D

□□□ *noteheadClusterDoubleWholeMiddle*
Combining double whole note cluster, middle

U+E11E

□□□ *noteheadClusterDoubleWholeBottom*
Combining double whole note cluster, bottom

U+E11F

○○○ *noteheadClusterWholeTop*
Combining whole note cluster, top

U+E120

□□ *noteheadClusterWholeMiddle*
Combining whole note cluster, middle

U+E121

○○○ *noteheadClusterWholeBottom*
Combining whole note cluster, bottom

U+E122	U+E123
<i>noteheadClusterHalfTop</i>	<i>noteheadClusterHalfMiddle</i>
Combining half note cluster, top	Combining half note cluster, middle
“”	“”
U+E124	U+E125
<i>noteheadClusterHalfBottom</i>	<i>noteheadClusterQuarterTop</i>
Combining half note cluster, bottom	Combining quarter note cluster, top
“”	“”
U+E126	U+E127
<i>noteheadClusterQuarterMiddle</i>	<i>noteheadClusterQuarterBottom</i>
Combining quarter note cluster, middle	Combining quarter note cluster, bottom
■	●
U+E128	U+E129
<i>noteheadDiamondClusterWhite2nd</i>	<i>noteheadDiamondClusterBlack2nd</i>
White diamond cluster, 2nd	Black diamond cluster, 2nd
◊	◆
U+E12A	U+E12B
<i>noteheadDiamondClusterWhite3rd</i>	<i>noteheadDiamondClusterBlack3rd</i>
White diamond cluster, 3rd	Black diamond cluster, 3rd
◊	◆
U+E12C	U+E12D
<i>noteheadDiamondClusterWhiteTop</i>	<i>noteheadDiamondClusterWhiteMiddle</i>
Combining white diamond cluster, top	Combining white diamond cluster, middle
◊	“”
U+E12E	U+E12F
<i>noteheadDiamondClusterWhiteBottom</i>	<i>noteheadDiamondClusterBlackTop</i>
Combining white diamond cluster, bottom	Combining black diamond cluster, top
◊	◆
U+E130	U+E131
<i>noteheadDiamondClusterBlackMiddle</i>	<i>noteheadDiamondClusterBlackBottom</i>
Combining black diamond cluster, middle	Combining black diamond cluster, bottom
■	◆
U+E132	U+E133
<i>noteheadRectangularClusterBlackTop</i>	<i>noteheadRectangularClusterBlackMiddle</i>
Combining black rectangular cluster, top	Combining black rectangular cluster, middle
■	■

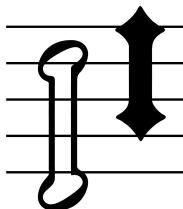
U+E134	U+E135
<i>noteheadRectangularClusterBlackBottom</i>	<i>noteheadRectangularClusterWhiteTop</i>
■ Combining black rectangular cluster, bottom	□ Combining white rectangular cluster, top
U+E136	U+E137
<i>noteheadRectangularClusterWhiteMiddle</i>	<i>noteheadRectangularClusterWhiteBottom</i>
□ Combining white rectangular cluster, middle	□ Combining white rectangular cluster, bottom

Implementation notes

Scoring applications should draw simple note clusters (e.g.

noteheadClusterSquareWhite, **noteheadClusterRoundBlack**) directly using primitives rather than using these glyphs, so that the clusters can be drawn spanning the correct interval.

The combining glyphs for note clusters are designed to allow the creation of clusters of any size, with a scoring application inserting the appropriate number of “middle” segments between a single instance of the “top” and “bottom” segments:



The left-hand cluster is a stack (top to bottom) of 1 x **noteheadClusterHalfTop**, 3 x **noteheadClusterHalfMiddle**, 1 x **noteheadClusterHalfBottom**; the right-hand cluster is 1 x **noteheadDiamondClusterBlackTop**, 2 x **noteheadDiamondClusterBlackMiddle**, 1 x **noteheadDiamondClusterBlackBottom**.

See also the implementation notes for noteheads.

Note name noteheads (U+E140–U+E19F)

U+E140*noteDoWhole*

⑩ Do (whole note)

U+E141*noteReWhole*

⑪ Re (whole note)

U+E142*noteMiWhole*

Ⓜ Mi (whole note)

U+E143*noteFaWhole*

Ⓕ Fa (whole note)

U+E144*noteSoWhole*

Ⓢ So (whole note)

U+E145*noteLaWhole*

Ⓛ La (whole note)

U+E146*noteTiWhole*

Ⓣ Ti (whole note)

U+E147*noteSiWhole*

Ⓢ Si (whole note)

U+E148*noteDoHalf*

⑩ Do (half note)

U+E149*noteReHalf*

⑪ Re (half note)

U+E14A*noteMiHalf*

Ⓜ Mi (half note)

U+E14B*noteFaHalf*

Ⓕ Fa (half note)

U+E14C*noteSoHalf*

Ⓢ So (half note)

U+E14D*noteLaHalf*

Ⓛ La (half note)

U+E14E*noteTiHalf*

Ⓣ Ti (half note)

U+E14F*noteSiHalf*

Ⓢ Si (half note)

U+E150*noteDoBlack*

⑩ Do (black note)

U+E151*noteReBlack*

⑪ Re (black note)

U+E152	U+E153
<i>noteMiBlack</i>	<i>noteFaBlack</i>
Ⓜ Mi (black note)	Ⓕ Fa (black note)
U+E154	U+E155
<i>noteSoBlack</i>	<i>noteLaBlack</i>
Ⓢ So (black note)	Ⓛ La (black note)
U+E156	U+E157
<i>noteTiBlack</i>	<i>noteSiBlack</i>
Ⓣ Ti (black note)	Ⓢ Si (black note)
U+E158	U+E159
<i>noteAFlatWhole</i>	<i>noteAWhole</i>
Ⓐ A flat (whole note)	Ⓐ A (whole note)
U+E15A	U+E15B
<i>noteASharpWhole</i>	<i>noteBFlatWhole</i>
Ⓑ A sharp (whole note)	Ⓑ B flat (whole note)
U+E15C	U+E15D
<i>noteBWhole</i>	<i>noteBSharpWhole</i>
Ⓑ B (whole note)	Ⓑ B sharp (whole note)
U+E15E	U+E15F
<i>noteCFlatWhole</i>	<i>noteCWhole</i>
Ⓒ C flat (whole note)	Ⓒ C (whole note)
U+E160	U+E161
<i>noteCSharpWhole</i>	<i>noteDFlatWhole</i>
Ⓒ C sharp (whole note)	Ⓓ D flat (whole note)
U+E162	U+E163
<i>noteDWhole</i>	<i>noteDSharpWhole</i>
Ⓓ D (whole note)	Ⓓ D sharp (whole note)

U+E164	U+E165
<i>noteEFlatWhole</i>	<i>noteEWhole</i>
ⓘ E flat (whole note)	ⓘ E (whole note)
U+E166	U+E167
<i>noteESharpWhole</i>	<i>noteFFlatWhole</i>
ⓘ E sharp (whole note)	ⓘ F flat (whole note)
U+E168	U+E169
<i>noteFWhole</i>	<i>noteFSharpWhole</i>
ⓘ F (whole note)	ⓘ F sharp (whole note)
U+E16A	U+E16B
<i>noteGFlatWhole</i>	<i>noteGWhole</i>
ⓘ G flat (whole note)	ⓘ G (whole note)
U+E16C	U+E16D
<i>noteGSharpWhole</i>	<i>noteHWhole</i>
ⓘ G sharp (whole note)	ⓘ H (whole note)
U+E16E	U+E16F
<i>noteHSharpWhole</i>	<i>noteAFlatHalf</i>
ⓘ H sharp (whole note)	ⓘ A flat (half note)
U+E170	U+E171
<i>noteAHalf</i>	<i>noteASharpHalf</i>
ⓘ A (half note)	ⓘ A sharp (half note)
U+E172	U+E173
<i>noteBFlatHalf</i>	<i>noteBHalf</i>
ⓘ B flat (half note)	ⓘ B (half note)
U+E174	U+E175
<i>noteBSharpHalf</i>	<i>noteCFlatHalf</i>
ⓘ B sharp (half note)	ⓘ C flat (half note)

U+E176	U+E177
<i>noteCHalf</i>	<i>noteCSharpHalf</i>
⌚ C (half note)	⌚ C sharp (half note)
U+E178	U+E179
<i>noteDFlatHalf</i>	<i>noteDHalf</i>
⌚ D flat (half note)	⌚ D (half note)
U+E17A	U+E17B
<i>noteDSharpHalf</i>	<i>noteEFlatHalf</i>
⌚ D sharp (half note)	⌚ E flat (half note)
U+E17C	U+E17D
<i>noteEHalf</i>	<i>noteESharpHalf</i>
⌚ E (half note)	⌚ E sharp (half note)
U+E17E	U+E17F
<i>noteFFlatHalf</i>	<i>noteFHalf</i>
⌚ F flat (half note)	⌚ F (half note)
U+E180	U+E181
<i>noteFSharpHalf</i>	<i>noteGFlatHalf</i>
⌚ F sharp (half note)	⌚ G flat (half note)
U+E182	U+E183
<i>noteGHalf</i>	<i>noteGSharpHalf</i>
⌚ G (half note)	⌚ G sharp (half note)
U+E184	U+E185
<i>noteHHalf</i>	<i>noteHSharpHalf</i>
⌚ H (half note)	⌚ H sharp (half note)
U+E186	U+E187
<i>noteAFlatBlack</i>	<i>noteABlack</i>
⌚ A flat (black note)	⌚ A (black note)

U+E188	U+E189
<i>noteASharpBlack</i>	<i>noteBFlatBlack</i>
Ⓐ A sharp (black note)	Ⓑ B flat (black note)
U+E18A	U+E18B
<i>noteBBlack</i>	<i>noteBSharpBlack</i>
Ⓑ B (black note)	Ⓑ B sharp (black note)
U+E18C	U+E18D
<i>noteCFlatBlack</i>	<i>noteCBlack</i>
Ⓒ C flat (black note)	Ⓒ C (black note)
U+E18E	U+E18F
<i>noteCSharpBlack</i>	<i>noteDFlatBlack</i>
Ⓒ C sharp (black note)	Ⓓ D flat (black note)
U+E190	U+E191
<i>noteDBlack</i>	<i>noteDSharpBlack</i>
Ⓓ D (black note)	Ⓓ D sharp (black note)
U+E192	U+E193
<i>noteEFlatBlack</i>	<i>noteEBlack</i>
Ⓔ E flat (black note)	Ⓔ E (black note)
U+E194	U+E195
<i>noteESharpBlack</i>	<i>noteFFlatBlack</i>
Ⓔ E sharp (black note)	Ⓕ F flat (black note)
U+E196	U+E197
<i>noteFBlack</i>	<i>noteFSharpBlack</i>
Ⓕ F (black note)	Ⓕ F sharp (black note)
U+E198	U+E199
<i>noteGFlatBlack</i>	<i>noteGBlack</i>
Ⓖ G flat (black note)	Ⓖ G (black note)

U+E19A

noteGSharpBlack

⌚ G sharp (black note)

U+E19B

noteHBlack

⌚ H (black note)

U+E19C

noteHSharpBlack

⌚ H sharp (black note)

U+E19D

noteEmptyWhole

⌚ Empty whole note

U+E19E

noteEmptyHalf

⌚ Empty half note

U+E19F

noteEmptyBlack

⌚ Empty black note

Implementation notes

These noteheads are designed for use by scoring applications to render music where the names of notes are shown inside noteheads. For practical use, scoring applications should provide a means of automatically substituting regular noteheads for the appropriate note name notehead glyph according to the pitch of each note.

See also the implementation notes for noteheads.

Sacred harp shape notes (U+E1A0–U+E1AF)

U+E1A0

noteShapeRoundWhite

- Round white (4-shape sol; 7-shape so)

U+E1A2

noteShapeSquareWhite

- Square white (4-shape la; 7-shape la)

U+E1A4

noteShapeTriangleRightWhite

- ▽ Triangle right white (stem down; 4-shape fa; 7-shape fa)

U+E1A6

noteShapeTriangleLeftWhite

- ◀ Triangle left white (stem up; 4-shape fa; 7-shape fa)

U+E1A8

noteShapeDiamondWhite

- ◊ Diamond white (4-shape mi; 7-shape mi)

U+E1AA

noteShapeTriangleUpWhite

- △ Triangle up white (7-shape do)

U+E1AC

noteShapeMoonWhite

- Moon white (7-shape re)

U+E1AE

noteShapeTriangleRoundWhite

- ◊ Triangle-round white (7-shape ti)

U+E1A1

noteShapeRoundBlack

- Round black (4-shape sol; 7-shape so)

U+E1A3

noteShapeSquareBlack

- Square black (4-shape la; 7-shape la)

U+E1A5

noteShapeTriangleRightBlack

- ▶ Triangle right black (stem down; 4-shape fa; 7-shape fa)

U+E1A7

noteShapeTriangleLeftBlack

- ◀ Triangle left black (stem up; 4-shape fa; 7-shape fa)

U+E1A9

noteShapeDiamondBlack

- ◆ Diamond black (4-shape mi; 7-shape mi)

U+E1AB

noteShapeTriangleUpBlack

- ▲ Triangle up black (7-shape do)

U+E1AD

noteShapeMoonBlack

- Moon black (7-shape re)

U+E1AF

noteShapeTriangleRoundBlack

- ▼ Triangle-round black (7-shape ti)

Implementation notes

For practical use, scoring applications should provide a means of automatically substituting regular noteheads for the appropriate shape note notehead glyph according to the pitch of each note.

See also the implementation notes for noteheads.

Individual notes (U+E1B0–U+E1CF)

U+E1B0 (and U+1D15C)

noteDoubleWhole

 Double whole note (breve)

U+E1B2 (and U+1D15D)

noteWhole

 Whole note (semibreve)

U+E1B4

noteHalfDown

 Half note (minim) stem down

U+E1B6

noteQuarterDown

 Quarter note (crotchet) stem down

U+E1B8

noteEighthDown

 Eighth note (quaver) stem down

U+E1BA

noteSixteenthDown

 16th note (semiquaver) stem down

U+E1BC

noteThirtySecondDown

 32nd note (demisemiquaver) stem down

U+E1BE

noteSixtyFourthDown

 64th note (hemidemisemiquaver) stem down

U+E1C0

noteOneHundredTwentyEighthDown

 128th note (semihemidemisemiquaver) stem down

U+E1B1

noteDoubleWholeSquare

 Double whole note (square)

U+E1B3 (and U+1D15E)

noteHalfUp

 Half note (minim) stem up

U+E1B5 (and U+1D15F)

noteQuarterUp

 Quarter note (crotchet) stem up

U+E1B7 (and U+1D160)

noteEighthUp

 Eighth note (quaver) stem up

U+E1B9 (and U+1D161)

noteSixteenthUp

 16th note (semiquaver) stem up

U+E1BB (and U+1D162)

noteThirtySecondUp

 32nd note (demisemiquaver) stem up

U+E1BD (and U+1D163)

noteSixtyFourthUp

 64th note (hemidemisemiquaver) stem up

U+E1BF (and U+1D164)

noteOneHundredTwentyEighthUp

 128th note (semihemidemisemiquaver) stem up

U+E1C1

noteTwoHundredFiftySixthUp

 256th note (demisemihemidemisemiquaver) stem up

U+E1C2		<i>note256thDown</i> 256th note (demisemihemidemisemiquaver) stem		U+E1C3 <i>note512thUp</i> 512th note (hemidemisemihemidemisemiquaver)
U+E1C4		<i>note512thDown</i> 512th note (hemidemisemihemidemisemiquaver)		U+E1C5 <i>note1024thUp</i> 1024th note (semihemidemisemihemidemisemiquaver)
U+E1C6		<i>note1024thDown</i> 1024th note (semihemidemisemihemidemisemiquaver)	•	U+E1C7 (and U+1D16D) <i>augmentationDot</i> Augmentation dot

Recommended stylistic alternates

uniE1B0.salt01		<i>noteDoubleWholeAlt</i> Double whole note (breve), single vertical strokes
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Implementation notes

This range is most useful in fonts intended for text-based applications, with metrics that are compatible for mixing musical symbols with text.

In such a font, the precomposed note glyphs may be used for displaying metronome marks and simple metric modulations. More complex metric modulations and *l'istesso tempo* directions may be drawn using these glyphs in conjunction with the **Beamed groups of notes** range.

Scoring applications should draw all notes by combining notehead glyphs — e.g. **noteheadBlack** for quarter notes (crotchets) and shorter notes, **noteheadHalf** for half notes (minims) — with stems drawn using primitives.

Beamed groups of notes (U+E1D0–U+E1EF)

U+E1D0



textBlackNoteShortStem

Black note, short stem

U+E1D1



textBlackNoteLongStem

Black note, long stem

U+E1D2



textBlackNoteFrac8thShortStem

Black note, fractional 8th beam,
short stem



textBlackNoteFrac8thLongStem

Black note, fractional 8th beam,
long stem

U+E1D4



textBlackNoteFrac16thShortStem

Black note, fractional 16th beam,
short stem



textBlackNoteFrac16thLongStem

Black note, fractional 16th beam,
long stem

U+E1D6



textBlackNoteFrac32ndLongStem

Black note, fractional 32nd beam,
long stem



textCont8thBeamShortStem

Continuing 8th beam for short stem

U+E1D8



textCont8thBeamLongStem

Continuing 8th beam for long stem



textCont16thBeamShortStem

Continuing 16th beam for short
stem

U+E1DA



textCont16thBeamLongStem

Continuing 16th beam for long stem



textCont32ndBeamLongStem

Continuing 32nd beam for long
stem

U+E1DC

textAugmentationDot



Augmentation dot



textTie

Tie

U+E1DE



textTupletBracketStartShortStem

Tuplet bracket start for short stem



textTuplet3ShortStem

Tuplet number 3 for short stem

U+E1E0



textTupletBracketEndShortStem

Tuplet bracket end for short stem



textTupletBracketStartLongStem

Tuplet bracket start for long stem

U+E1E2 3 <i>textTuplet3LongStem</i> Tuplet number 3 for long stem	U+E1E3 3 <i>textTupletBracketEndLongStem</i> Tuplet bracket end for long stem
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Implementation notes

This range is most useful in fonts intended for text-based applications, with metrics that are compatible for mixing musical symbols with text.

In such a font, these glyphs may be used for displaying complex metric modulations and *I'istesso tempo* directions in conjunction with the precomposed note glyphs in the **Individual notes** range.

By way of example:



textBlackNoteShortStem, **textCont8thBeamShortStem**, space,
textBlackNoteFrac8thShortStem, **textCont16thBeamShortStem**,
 space, **textBlackNoteFrac16thShortStem**



textBlackNoteShortStem, **textCont8thBeamShortStem**, space,
textBlackNoteFract8thShortStem, space, =,
textTupletBracketStartLongStem, **textBlackNoteShortStem**,
textTuplet3LongStem, space, **textTupletBracketEndLongStem**,
note8thUp



textBlackNoteShortStem, **textCont8thBeamShortStem**,
textAugmentationDot, space, **textCont8thBeamShortStem**,
textBlackNoteFrac16thShortStem

Stems (U+E1F0–U+E1FF)

U+E1F0 (and U+1D165)		U+E1F1 (and U+1D166)	
	stem	*	<i>stemSprechgesang</i>
	Combining stem		Combining sprechgesang stem
U+E1F2		U+E1F3	
↖	<i>stemSwished</i>	* ↖	<i>stemPendereckiTremolo</i>
	Combining swished stem		Combining Penderecki unmeasured tremolo stem
U+E1F4		U+E1F5	
↑	<i>stemSulPonticello</i>	* ↑	<i>stemBowOnBridge</i>
	Combining sul ponticello (bow behind bridge) stem		Combining bow on bridge stem
U+E1F6		U+E1F7	
†	<i>stemBowOnTailpiece</i>	* †	<i>stemBuzzRoll</i>
	Combining bow on tailpiece stem		Combining buzz roll stem
U+E1F8		U+E1F9	
⊕	<i>stemDamp</i>	▷	<i>stemVibratoPulse</i>
	Combining damp stem		Combining vibrato pulse accent (Saunders) stem
U+E1FA		U+E1FB	
ℳ	<i>stemMultiphonicsBlack</i>	ℳ	<i>stemMultiphonicsWhite</i>
	Combining multiphonics (black) stem		Combining multiphonics (white) stem
U+E1FC		U+E1FD	
ℳℳ	<i>stemMultiphonicsBlackWhite</i>	\$	<i>stemSussurando</i>
	Combining multiphonics (black and white) stem		Combining sussurando stem
U+E1FE		U+E1FF	
* †	<i>stemRimShot</i>	* ↗	<i>stemHarpStringNoise</i>
	Combining rim shot stem		Combining harp string noise stem

Implementation notes

The glyphs shown here may be combined with noteheads to produce precomposed glyphs with a fixed stem length.

Scoring applications should produce this effect by imposing the required symbol on a stem drawn using a primitive line, rather than using these precomposed stem glyphs:

- Sprechgesang (**vocalSprechgesang**)
- Swish (**pictSwish**)
- Penderecki unmeasured tremolo (**pendereckiTremolo**)
- Sul ponticello (**stringsBowBehindBridge**)
- Bow on bridge (**stringsBowOnBridge**)
- Bow on tailpiece (**stringsBowOnTailpiece**)
- Buzz roll (**buzzRoll**)
- Damp (**pluckedDampOnStem**)
- Vibrato pulse accent (**stringsVibratoPulse**)
- Multiphonics (**windMultiphonicsBlackStem**, **windMultiphonicsWhiteStem**, **windMultiphonicsBlackWhiteStem**)
- Sussurando (**vocalsSussurando**)
- Rim shot (**pictRimShotOnStem**)
- Harp string noise (**harpStringNoiseStem**)

Tremolos (U+E200–U+E21F)

U+E200 (and U+1D167)	U+E201 (and U+1D168)
<i>tremolo1</i>	<i>tremolo2</i>
= Combining tremolo 1	= Combining tremolo 2
U+E202 (and U+1D169)	U+E203
<i>tremolo3</i>	<i>tremolo4</i>
≡ Combining tremolo 3	≡ Combining tremolo 4
U+E204	U+E205 (and U+1D16A)
<i>tremolo5</i>	<i>tremoloFingered1</i>
≡ Combining tremolo 5	= Fingered tremolo 1
U+E206 (and U+1D16B)	U+E207 (and U+1D16C)
<i>tremoloFingered2</i>	<i>tremoloFingered3</i>
≡ Fingered tremolo 2	≡ Fingered tremolo 3
U+E208	U+E209
<i>tremoloFingered4</i>	<i>tremoloFingered5</i>
≡ Fingered tremolo 4	≡ Fingered tremolo 5
U+E20A	U+E20B
<i>buzzRoll</i>	<i>pendereckiTremolo</i>
= Buzz roll	≈ Pendericki unmeasured tremolo
U+E20C	U+E20D
<i>unmeasuredTremolo</i>	<i>unmeasuredTremoloSimple</i>
≡ Wieniawski unmeasured tremolo	≈ Wieniawski unmeasured tremolo (simpler)
U+E20E	U+E20F
<i>tremoloDivisiDots2</i>	<i>tremoloDivisiDots3</i>
·· Divide measured tremolo by 2	·· Divide measured tremolo by 3
U+E210	U+E211
<i>tremoloDivisiDots4</i>	<i>tremoloDivisiDots6</i>
··· Divide measured tremolo by 4	··· Divide measured tremolo by 6

Implementation notes

Scoring applications may simply use multiple instances of **tremolo1** imposed on note stems to draw one-note tremolos with different numbers of slashes.

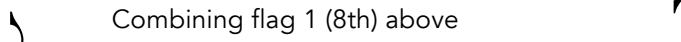
The fingered tremolo glyphs are for two-note tremolos. Scoring applications should draw two-note tremolos using the same primitives used for drawing beams, rather than using these glyphs.

Flags (U+E220–U+E23F)

U+E220 (and U+1D16E)

flag8thUp

Combining flag 1 (8th) above



U+E221

flag8thDown

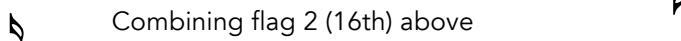
Combining flag 1 (8th) below



U+E222 (and U+1D16F)

flag16thUp

Combining flag 2 (16th) above



U+E223

flag16thDown

Combining flag 2 (16th) below



U+E224 (and U+1D170)

flag32ndUp

Combining flag 3 (32nd) above



U+E225

flag32ndDown

Combining flag 3 (32nd) below



U+E226 (and U+1D171)

flag64thUp

Combining flag 4 (64th) above



U+E227

flag64thDown

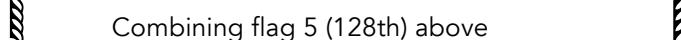
Combining flag 4 (64th) below



U+E228 (and U+1D172)

flag128thUp

Combining flag 5 (128th) above



U+E229

flag128thDown

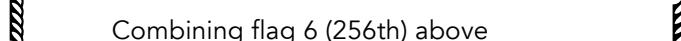
Combining flag 5 (128th) below



U+E22A

flag256thUp

Combining flag 6 (256th) above



U+E22B

flag256thDown

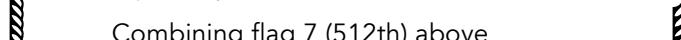
Combining flag 6 (256th) below



U+E22C

flag512thUp

Combining flag 7 (512th) above



U+E22D

flag512thDown

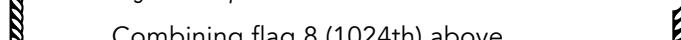
Combining flag 7 (512th) below



U+E22E

flag1024thUp

Combining flag 8 (1024th) above



U+E22F

flag1024thDown

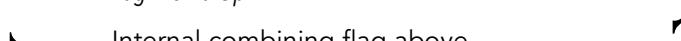
Combining flag 8 (1024th) below



U+E230

flagInternalUp

Internal combining flag above



U+E231

flagInternalDown

Internal combining flag below



Recommended stylistic alternates

uniE220.ss03	uniE220.ss02
<i>flag8thUpStraight</i>	<i>flag8thUpShort</i>
Combining flag 1 (8th) above (straight)	Combining flag 1 (8th) above (short)
uniE221.ss03	uniE222.ss03
<i>flag8thDownStraight</i>	<i>flag16thUpStraight</i>
Combining flag 1 (8th) below (straight)	Combining flag 2 (16th) above (straight)
uniE222.ss02	uniE223.ss03
<i>flag16thUpShort</i>	<i>flag16thDownStraight</i>
Combining flag 2 (16th) above (short)	Combining flag 2 (16th) below (straight)
uniE224.ss03	uniE224.ss02
<i>flag32ndUpStraight</i>	<i>flag32ndUpShort</i>
Combining flag 3 (32nd) above (straight)	Combining flag 3 (32nd) above (short)
uniE225.ss03	uniE226.ss03
<i>flag32ndDownStraight</i>	<i>flag64thUpStraight</i>
Combining flag 3 (32nd) below (straight)	Combining flag 4 (64th) above (straight)
uniE226.ss02	uniE227.ss03
<i>flag64thUpShort</i>	<i>flag64thDownStraight</i>
Combining flag 4 (64th) above (short)	Combining flag 4 (64th) below (straight)
uniE228.ss03	uniE228.ss02
<i>flag128thUpStraight</i>	<i>flag128thUpShort</i>
Combining flag 5 (128th) above (straight)	Combining flag 5 (128th) above (short)
uniE229.ss03	uniE22A.ss03
<i>flag128thDownStraight</i>	<i>flag256thUpStraight</i>
Combining flag 5 (128th) below (straight)	Combining flag 6 (256th) above (straight)
uniE22A.ss02	uniE22B.ss03
<i>flag256thUpShort</i>	<i>flag256thDownStraight</i>
Combining flag 6 (256th) above (short)	Combining flag 6 (256th) below (straight)

uniE22C.ss03	uniE22C.ss02
 <i>flag512thUpStraight</i>	 <i>flag512thUpShort</i>
Combining flag 7 (512th) above (straight)	Combining flag 7 (512th) above (short)
uniE22D.ss03	uniE22E.ss03
 <i>flag512thDownStraight</i>	 <i>flag1024thUpStraight</i>
Combining flag 7 (512th) below (straight)	Combining flag 8 (1024th) above (straight)
uniE22E.ss02	uniE22F.ss03
 <i>flag1024thUpShort</i>	 <i>flag1024thDownStraight</i>
Combining flag 8 (1024th) above (short)	Combining flag 8 (1024th) below (straight)

Implementation notes

Scoring applications may create groups of flags for notes shorter than 16th notes (semiquavers) by combining **flag16thUp** with the required number of **flagInternalUp** for stem up notes, or **flag16thDown** with the required number of **flagInternalDown** for stem down notes, stacking **flagInternalUp** above or **flagInternalDown** below respectively, ensuring even spacing.

The set of stylistic alternates for shorter flags may be substituted by a scoring application in the case of a dotted note with an upward stem, to avoid collisions between the augmentation dot and the flag.

Standard accidentals (12-EDO) (U+E240–U+E24F)

	U+E240 (and 266D) <i>accidentalFlat</i>		U+E241 (and 266E) <i>accidentalNatural</i>
♭	Flat	♯	Natural
	U+E242 (and 266F) <i>accidentalSharp</i>		U+E243 (and U+1D12A) <i>accidentalDoubleSharp</i>
#	Sharp	×	Double sharp
	U+E244 (and U+1D12B) <i>accidentalDoubleFlat</i>		U+E245 <i>accidentalTripleSharp</i>
𝄪	Double flat	𝄫	Triple sharp
	U+E246 <i>accidentalTripleFlat</i>		U+E247 <i>accidentalNaturalFlat</i>
𝄪	Triple flat	𝄪	Natural flat
	U+E248 <i>accidentalNaturalSharp</i>		U+E249 <i>accidentalSharpSharp</i>
𝄫	Natural sharp	𝄫	Sharp sharp
	U+E24A <i>accidentalParensLeft</i>		U+E24B <i>accidentalParensRight</i>
(Accidental parenthesis, left)	Accidental parenthesis, right

Recommended stylistic alternates

	uniE240.ss01 <i>accidentalFlatSmall</i>		uniE241.ss01 <i>accidentalNaturalSmall</i>
♭	Flat (for small staves)	♯	Natural (for small staves)
	uniE242.ss01 <i>accidentalSharpSmall</i>		
#	Sharp (for small staves)		

Implementation notes

Scoring applications may choose to substitute stylistic alternate versions of the common accidentals glyphs for a better appearance on smaller staves.

Gould arrow quartetone accidentals (24-EDO) (U+E250–U+E25F)

U+E250 (and U+1D12C) <i>accidentalQuarterToneFlatArrowUp</i> Quarter-tone flat	U+E251 (and U+1D12D) <i>accidentalThreeQuarterTonesFlatArrowDown</i> Three-quarter-tones flat
U+E252 (and U+1D12E) <i>accidentalQuarterToneSharpNaturalArrowUp</i> Quarter-tone sharp	U+E253 (and U+1D12F) <i>accidentalQuarterToneFlatNaturalArrowDown</i> Quarter-tone flat
U+E254 (and U+1D130) <i>accidentalThreeQuarterTonesSharpArrowUp</i> Three-quarter-tones sharp	U+E255 (and U+1D131) <i>accidentalQuarterToneSharpArrowDown</i> Quarter-tone flat
U+E256 <i>accidentalFiveQuarterTonesSharpArrowUp</i> Five-quarter-tones sharp	U+E257 <i>accidentalThreeQuarterTonesSharpArrowDown</i> Three-quarter-tones sharp
U+E258 <i>accidentalThreeQuarterTonesFlatArrowUp</i> Three-quarter-tones flat	U+E259 <i>accidentalFiveQuarterTonesFlatArrowDown</i> Five-quarter-tones flat
U+E25A <i>accidentalArrowUp</i> Arrow up (raise by one quarter-tone)	U+E25B <i>accidentalArrowDown</i> Arrow down (lower by one quarter-tone)

Stein-Zimmermann accidentals (24-EDO) (U+E260–U+E26F)

U+E260

accidentalQuarterToneFlatStein

♩ Reversed flat (quarter-tone flat)
(Stein)

U+E262

accidentalQuarterToneSharpStein

♯ Half sharp (quarter-tone sharp)
(Stein)

U+E264

accidentalNarrowReversedFlat

♩ Narrow reversed flat(quarter-tone
flat)

U+E261

accidentalThreeQuarterTonesFlatZimmermann

♩ Reversed flat and flat (three-quarter-
tones flat) (Zimmermann)

U+E263

accidentalThreeQuarterTonesSharpStein

♯ One and a half sharps (three-quarter-
tones sharp) (Stein)

U+E265

accidentalNarrowReversedFlatAndFlat

♩ Narrow reversed flat and flat(three-
quarter-tones flat)

Extended Stein-Zimmermann accidentals (U+E270–U+E27F)

U+E270	U+E271
↑ ↗ <i>accidentalReversedFlatArrowUp</i> Reversed flat with arrow up	↓ ↘ <i>accidentalReversedFlatArrowDown</i> Reversed flat with arrow down
U+E272	U+E273
↑ ↗ <i>accidentalFilledReversedFlatArrowUp</i> Filled reversed flat with arrow up	↓ ↘ <i>accidentalFilledReversedFlatArrowDown</i> Filled reversed flat with arrow down
U+E274	U+E275
↑ ↗ <i>accidentalReversedFlatAndFlatArrowUp</i> Reversed flat and flat with arrow up	↓ ↘ <i>accidentalReversedFlatAndFlatArrowDown</i> Reversed flat and flat with arrow down
U+E276	U+E277
↓ ↖ <i>accidentalFilledReversedFlatAndFlat</i> Filled reversed flat and flat	↑ ↗ <i>accidentalFilledReversedFlatAndFlatArrowUp</i> Filled reversed flat and flat with arrow up
U+E278	U+E279
↓ ↖ <i>accidentalFilledReversedFlatAndFlatArrowDown</i> Filled reversed flat and flat with arrow down	↑ ↗ <i>accidentalHalfSharpArrowUp</i> Half sharp with arrow up
U+E27A	U+E27B
♯ ↓ <i>accidentalHalfSharpArrowDown</i> Half sharp with arrow down	♯ ↑ <i>accidentalOneAndAHalfSharpsArrowUp</i> One and a half sharps with arrow up
U+E27C	
♯ ↓ <i>accidentalOneAndAHalfSharpsArrowDown</i> One and a half sharps with arrow down	

Implementation notes

These accidentals were not actually proposed by Richard Stein or Bernd Zimmermann, but are instead logical extensions of their symbols adding arrows to provide options for notating slight pitch modifications¹⁴.

¹⁴ Gould, *ibid.*, page 96 acknowledges the Stein-Zimmermann accidentals as the most commonly-used symbols with fixed meanings; however, the extensions provided here do not have fixed meanings.

Sims accidentals (72-EDO) (U+E280–U+E28F)

	U+E280 <i>accidentalSims12Down</i> ↓ 1/12 tone low		U+E281 <i>accidentalSims6Down</i> ↓ 1/6 tone low
	U+E282 <i>accidentalSims4Down</i> ↓ 1/4 tone low		U+E283 <i>accidentalSims12Up</i> ↑ 1/12 tone high
1	U+E284 <i>accidentalSims6Up</i> 1/6 tone high		U+E285 <i>accidentalSims4Up</i> ↑ 1/4 tone high

Implementation notes

These glyphs may be used alone and to the left of the standard 12-EDO accidentals.

Johnston accidentals (just intonation) (U+E290–U+E29F)

U+E290

accidentalJohnstonPlus

+ Plus (raise by 81:80)

U+E291

accidentalJohnstonMinus

- Minus (lower by 81:80)

U+E292

accidentalJohnstonEl

↳ Inverted seven (raise by 36:35)

U+E293

accidentalJohnstonSeven

↑ Seven (lower by 36:35)

U+E294

accidentalJohnstonUp

↑ Up arrow (raise by 33:32)

U+E295

accidentalJohnstonDown

↓ Down arrow (lower by 33:32)

U+E296

accidentalJohnston13

↑ Thirteen (raise by 65:64~)

U+E297

accidentalJohnston31

↓ Inverted 13 (lower by 65:64)

Implementation notes

These glyphs are intended for combining with the standard 12-EDO accidentals.

Extended Helmholtz-Ellis accidentals (just intonation) (U+E2A0–U+E2DF)

U+E2A0	U+E2A1
 <i>accidentalDoubleFlatOneArrowDown</i>	 <i>accidentalFlatOneArrowDown</i>
Double flat lowered by one syntonic comma	Flat lowered by one syntonic comma
U+E2A2	U+E2A3
 <i>accidentalNaturalOneArrowDown</i>	 <i>accidentalSharpOneArrowDown</i>
Natural lowered by one syntonic comma	Sharp lowered by one syntonic comma
U+E2A4	U+E2A5
 <i>accidentalDoubleSharpOneArrowDown</i>	 <i>accidentalDoubleFlatOneArrowUp</i>
Double sharp lowered by one syntonic comma	Double flat raised by one syntonic comma
U+E2A6	U+E2A7
 <i>accidentalFlatOneArrowUp</i>	 <i>accidentalNaturalOneArrowUp</i>
Flat raised by one syntonic comma	Natural raised by one syntonic comma
U+E2A8	U+E2A9
 <i>accidentalSharpOneArrowUp</i>	 <i>accidentalDoubleSharpOneArrowUp</i>
Sharp raised by one syntonic comma	Double sharp raised by one syntonic comma
U+E2AA	U+E2AB
 <i>accidentalDoubleFlatTwoArrowsDown</i>	 <i>accidentalFlatTwoArrowsDown</i>
Double flat lowered by two syntonic commas	Flat lowered by two syntonic commas
U+E2AC	U+E2AD
 <i>accidentalNaturalTwoArrowsDown</i>	 <i>accidentalSharpTwoArrowsDown</i>
Natural lowered by two syntonic commas	Sharp lowered by two syntonic commas
U+E2AE	U+E2AF
 <i>accidentalDoubleSharpTwoArrowsDown</i>	 <i>accidentalDoubleFlatTwoArrowsUp</i>
Double sharp lowered by two syntonic commas	Double flat raised by two syntonic commas

U+E2B0



accidentalFlatTwoArrowsUp

Flat raised by two syntonic commas

U+E2B1



accidentalNaturalTwoArrowsUp

Natural raised by two syntonic commas

U+E2B2



accidentalSharpTwoArrowsUp

Sharp raised by two syntonic commas



U+E2B3

accidentalDoubleSharpTwoArrowsUp

Double sharp raised by two syntonic commas

U+E2B4



accidentalDoubleFlatThreeArrowsDown

Double flat lowered by three syntonic commas



U+E2B5

accidentalFlatThreeArrowsDown

Flat lowered by three syntonic commas

U+E2B6



accidentalNaturalThreeArrowsDown

Natural lowered by three syntonic commas



U+E2B7

accidentalSharpThreeArrowsDown

Sharp lowered by three syntonic commas

U+E2B8



accidentalDoubleSharpThreeArrowsDown

Double sharp lowered by three syntonic commas



U+E2B9

accidentalDoubleFlatThreeArrowsUp

Double flat raised by three syntonic commas

U+E2BA



accidentalFlatThreeArrowsUp

Flat raised by three syntonic commas



U+E2BB

accidentalNaturalThreeArrowsUp

Natural raised by three syntonic commas

U+E2BC



accidentalSharpThreeArrowsUp

Sharp raised by three syntonic commas



U+E2BD

accidentalDoubleSharpThreeArrowsUp

Double sharp raised by three syntonic commas

U+E2BE



accidentalLowerOneSeptimalComma

Lower by one septimal comma



U+E2BF

accidentalRaiseOneSeptimalComma

Raise by one septimal comma

U+E2C0



accidentalLowerTwoSeptimalCommas

Lower by two septimal commas



U+E2C1

accidentalRaiseTwoSeptimalCommas

Raise by two septimal commas

U+E2C2

accidentalLowerOneUndecimalQuartertone
Lower by one undecimal quartertone

♩

U+E2C4

accidentalLowerOneTridecimalQuartertone
Lower by one tridecimal quartertone

♩

U+E2C6

accidentalCombiningLower17Schisma
Combining lower by one 17-limit schisma

〝

U+E2C8

accidentalCombiningLower19Schisma
Combining lower by one 19-limit schisma

ˊ

U+E2CA

accidentalCombiningLower23Limit29LimitComma
Combining lower by one 23-limit comma or 29-limit comma

↑

U+E2CC

accidentalCombiningLower31Schisma
Combining lower by one 31-limit schisma

‐

U+E2CE

accidentalCombiningOpenCurlyBrace
Combining open curly brace

{

U+E2D0

accidentalDoubleFlatEqualTempered
Double flat equal tempered semitone

♭♭

U+E2D2

accidentalNaturalEqualTempered
Natural equal tempered semitone

♮

U+E2C3

accidentalRaiseOneUndecimalQuartertone
Raise by one undecimal quartertone

♯

U+E2C5

accidentalRaiseOneTridecimalQuartertone
Raise by one tridecimal quartertone

♯

U+E2C7

accidentalCombiningRaise17Schisma
Combining raise by one 17-limit schisma

〞

U+E2C9

accidentalCombiningRaise19Schisma
Combining raise by one 19-limit schisma

ˊ

U+E2CB

accidentalCombiningRaise23Limit29LimitComma
Combining raise by one 23-limit comma or 29-limit comma

↓

U+E2CD

accidentalCombiningRaise31Schisma
Combining raise by one 31-limit schisma

+

U+E2CF

accidentalCombiningCloseCurlyBrace
Combining close curly brace

}

U+E2D1

accidentalFlatEqualTempered
Flat equal tempered semitone

♭

U+E2D3

accidentalSharpEqualTempered
Sharp equal tempered semitone

♯

U+E2D4

accidentalDoubleSharpEqualTempered

Double sharp equal tempered
semitone

Spartan Sagittal single-shaft accidentals (U+E2E0–U+E2EF)

U+E2E0	U+E2E1
<i>accSagittal5v7KleismaUp</i>	<i>accSagittal5v7KleismaDown</i>
↳ 5:7 kleisma up, (5:7k, ~11:13k, 7C less 5C)	↳ 5:7 kleisma down
U+E2E2	U+E2E3
<i>accSagittal5CommaUp</i>	<i>accSagitta5CommaDown</i>
↖ 5 comma up, (5C), 1° up [22 27 29 34 41 46 53 96 EDOs], 1/12-tone up	↘ 5 comma down, 1° down [22 27 29 34 41 46 53 96 EDOs], 1/12-tone
U+E2E4	U+E2E5
<i>accSagittal7CommaUp</i>	<i>accSagittal7CommaDown</i>
↗ 7 comma up, (7C), 1° up [43 EDO], 2° up [72 EDO], 1/6-tone up	↙ 7 comma down, 1° down [43 EDO], 2° down [72 EDO], 1/6-tone down
U+E2E6	U+E2E7
<i>accSagittal25SmallDiesisUp</i>	<i>accSagittal25SmallDiesisDown</i>
↖ 25 small diesis up, (25S, ~5:13S, ~37S, 5C plus 5C), 2° up [53 EDO]	↘ 25 small diesis down, 2° down [53 EDO]
U+E2E8	U+E2E9
<i>accSagittal35MediumDiesisUp</i>	<i>accSagittal35MediumDiesisDown</i>
↑ 35 medium diesis up, (35M, ~13M, ~125M, 5C plus 7C), 2/9-tone up	↙ 35 medium diesis down, 1°[50] 2°[27] down, 2/9-tone down
U+E2EA	U+E2EB
<i>accSagittal11MediumDiesisUp</i>	<i>accSagittal11MediumDiesisDown</i>
↑ 11 medium diesis up, (11M), 1°[17 31] 2°46 up, 1/4-tone up	↓ 11 medium diesis down, 1°[17 31] 2°46 down, 1/4-tone down
U+E2EC	U+E2ED
<i>accSagittal11LargeDiesisUp</i>	<i>accSagittal11LargeDiesisDown</i>
↑ 11 large diesis up, (11L), (sharp less 11M), 3° up [46 EDO]	↓ 11 large diesis down, 3° down [46 EDO]
U+E2EE	U+E2EF
<i>accSagittal35LargeDiesisUp</i>	<i>accSagittal35LargeDiesisDown</i>
↑ 35 large diesis up, (35L, ~13L, ~125L, sharp less 35M), 2°50 up	↓ 35 large diesis down, 2° down [50 EDO], 5/18-tone down

Implementation notes

It is not necessary to implement the complete Sagittal microtonal notation system. The Spartan set is sufficient to notate 13-limit just intonation (JI), 1/12-tones, 50 common equal divisions of the octave (EDOs), and their related linear temperaments.

The eight pairs of single-shaft accidentals above are sufficient to provide these capabilities when used alone, and to the left of the standard **accidentalDoubleFlat**, **accidentalFlat**, **accidentalSharp**, and the almost-standard **accidentalLargeDoubleSharp**. This is called “mixed Sagittal.”

As an alternative, the following group (the multi-shaft Spartans) provides a complete set of stand-alone accidentals to replace each of the above combinations of a single-shaft Sagittal with a standard accidental. This is called “pure Sagittal.” The standard **accidentalNatural** is used alone in both mixed and pure variants, but only to cancel a previous accidental.

Sagittal accidentals are not intended to be combined with one another, inasmuch as symbols representing useful combinations and powers of primes are already provided. An accidental can often be used to represent alternative commas that differ by 2 cents or less. In such cases the intended comma ratio may be determined by the note to which it is applied, or by the musical context. Alternatively, diacritics (from the Herculean and subsequent extensions) may be added to distinguish these commas. Commas which require diacritics for exact representation are preceded by a tilde “~” in the glyph descriptions.

Sagittal extensions following Spartan allow notation of JI ratios with primes beyond 13, and more combinations of lower primes, as well as finer tone-fractions, degrees of larger EDOs, and more complex temperaments, all with single Sagittal accidentals. The same choice of mixed versus pure is available with each extension. See <http://sagittal.org> for more information.

Other Sagittal-compatible accidentals are **accidentalQuarterToneSharpStein** and **accidentalThreeQuarterTonesSharpStein** which may be substituted for **accSagittal11MediumDiesisUp** and **accSagittalSharp11MUp**; the **accidentalNarrowReversedFlat** and **accidentalNarrowReversedFlatAndFlat** which may be substituted for **accSagittal11MediumDiesisDown** and **accSagittalFlat11MDown**; and the **accidentalWilsonPlus** and **accidentalWilsonMinus** which may be substituted for the **accSagittal5CommaUp** and **accSagittal5CommaDown**.

Spartan Sagittal multi-shaft accidentals (U+E2F0–U+E31F)

U+E2F0

accSagittalSharp25SDown

¶ Sharp 25S-down, 3° up [53 EDO]

U+E2F1

accSagittalFlat25SUp

¶ Flat 25S-up, 3° down [53 EDO]

U+E2F2

accSagittalSharp7CDown

¶ Sharp 7C-down, 2° up [43 EDO], 4° up [72 EDO], 1/3-tone up

U+E2F3

accSagittalFlat7CUp

¶ Flat 7C-up, 2° down [43 EDO], 4° down [72 EDO], 1/3-tone down

U+E2F4

accSagittalSharp5CDown

¶ Sharp 5C-down, 2°[22 29] 3°[34 41] 4°[46 53 60] up, 5/12-tone up

U+E2F5

accSagittalFlat5CUp

¶ Flat 5C-up, 2°[22,29] 3°[34 41] 4°[46 53 60] down, 5/12-tone down

U+E2F6

accSagittalSharp5v7kDown

¶ Sharp 5:7k-down

U+E2F7

accSagittalFlat5v7kUp

¶ Flat 5:7k-up

U+E2F8

accSagittalSharp

¶ Sharp, (apotome up)[almost all EDOs], 1/2-tone up

U+E2F9

accSagittalFlat

¶ Flat, (apotome down)[almost all EDOs], 1/2-tone down

U+E2FA

accSagittalUnused1

Unused

U+E2FB

accSagittalUnused2

Unused

U+E2FC

accSagittalSharp5v7kUp

¶ Sharp 5:7k-up

U+E2FD

accSagittalFlat5v7kDown

¶ Flat 5:7k-down

U+E2FE

accSagittalSharp5CUp

¶ Sharp 5C-up, 4°[22 29] 5°[27 34 41] 6°[39 46 53] up, 7/12-tone up

U+E2FF

accSagittalFlat5CDown

¶ Flat 5C-down, 4°[22 29] 5°[27 34 41] 6°[39 46 53] down, 7/12-tone down

U+E300	U+E301
<i>accSagittalSharp7CUp</i>	<i>accSagittalFlat7CDown</i>
▀ Sharp 7C-up, 4° up [43 EDO], 8° up [72 EDO], 2/3-tone up	▀ Flat 7C-down, 4° down [43 EDO], 8° down [72 EDO], 2/3-tone down
U+E302	U+E303
<i>accSagittalSharp25SUp</i>	<i>accSagittalFlat25SDown</i>
▀ Sharp 25S-up, 7° up [53 EDO]	▀ Flat 25S-down, 7° down [53 EDO]
U+E304	U+E305
<i>accSagittalSharp35MUp</i>	<i>accSagittalFlat35MDown</i>
▀ Sharp 35M-up, 4° up [50 EDO], 6° up [27 EDO], 13/18-tone up	▀ Flat 35M-down, 4° down [50 EDO], 6° down [27 EDO], 13/18-tone
U+E306	U+E307
<i>accSagittalSharp11MUp</i>	<i>accSagittalFlat11MDown</i>
^K Sharp 11M-up, 3° up [17 31 EDOs], 7° up [46 EDO], 3/4-tone up	▼ Flat 11M-down, 3° down [17 31 EDOs], 7° down [46 EDO], 3/4-tone
U+E308	U+E309
<i>accSagittalSharp11LUUp</i>	<i>accSagittalFlat11LDown</i>
▀ Sharp 11L-up, 8° up [46 EDO]	▀ Flat 11L-down, 8° up [46 EDO]
U+E30A	U+E30B
<i>accSagittalSharp35LUUp</i>	<i>accSagittalFlat35LDown</i>
▀ Sharp 35L-up, 5° up [50 EDO]	▀ Flat 35L-down, 5° down [50 EDO]
U+E30C	U+E30D
<i>accSagittalDoubleSharp25SDown</i>	<i>accSagittalDoubleFlat25SUp</i>
★ Double sharp 25S-down, 8° up [53 EDO]	▼ Double flat 25S-up, 8° down [53 EDO]
U+E30E	U+E30F
<i>accSagittalDoubleSharp7CDown</i>	<i>accSagittalDoubleFlat7CUp</i>
^K Double sharp 7C-down, 5° [43] 10° [72] up, 5/6-tone up	▼ Double flat 7C-up, 5° down [43 EDO], 10° down [72 EDO], 5/6-tone
U+E310	U+E311
<i>accSagittalDoubleSharp5CDown</i>	<i>accSagittalDoubleFlat5CUp</i>
^K Double sharp 5C-down, 5° [22 29] 7° [34 41] 9° 53 up, 11/12 tone up	▼ Double flat 5C-up, 5° [22 29] 7° [34 41] 9° 53 down, 11/12 tone down

U+E312

accSagittalDoubleSharp5v7kDown



Double sharp 5:7k-down

U+E313

accSagittalDoubleFlat5v7kUp



Double flat 5:7k-up

U+E314

accSagittalDoubleSharp



Double sharp, (2 apotomes up)[almost all EDOs], whole-tone up



U+E315

accSagittalDoubleFlat

Double flat, (2 apotomes down)[almost all EDOs], whole-tone

Athenian Sagittal extension (medium precision) accidentals (U+E320–U+E34F)

U+E320

accSagittal7v11KleismaUp

↑ 7:11 kleisma up, (7:11k, ~29k)

U+E321

accSagittal7v11KleismaDown

↓ 7:11 kleisma down

U+E322

accSagittal17CommaUp

↑ 17 comma up, (17C)

U+E323

accSagittal17CommaDown

↓ 17 comma down

U+E324

accSagittal55CommaUp

↖ 55 comma up, (55C, 11M less 5C),
3°up [96 EDO], 3/16-tone up

U+E325

accSagittal55CommaDown

↙ 55 comma down, 3° down [96
EDO], 3/16-tone down

U+E326

accSagittal7v11CommaUp

↖ 7:11 comma up, (7:11C, ~13:17S,
~29S, 11L less 7C), 1° up [60 EDO]

U+E327

accSagittal7v11CommaDown

↙ 7:11 comma down, 1° down [60
EDO], 1/10-tone down

U+E328

accSagittal5v11SmallDiesisUp

↖ 5:11 small diesis up, (5:11S, ~7:13S,
~11:17S, 5:7k plus 7:11C)

U+E329

accSagittal5v11SmallDiesisDown

↙ 5:11 small diesis down

U+E32A

accSagittalSharp5v11SDown

↑ Sharp 5:11S-down

U+E32B

accSagittalFlat5v11SUp

↓ Flat 5:11S-up

U+E32C

accSagittalSharp7v11CDown

↑ Sharp 7:11C-down, 4° up [60 EDO],
2/5-tone up

U+E32D

accSagittalFlat7v11CUp

↓ Flat 7:11C-up, 4° down [60 EDO],
2/5-tone down

U+E32E

accSagittalSharp55CDown

↖ Sharp 55C-down, 5° up [96 EDO],
5/16-tone up

U+E32F

accSagittalFlat55CUp

↓ Flat 55C-up, 5° down [96 EDO],
5/16-tone down

	U+E330 <i>accSagittalSharp17CDown</i> ¶ Sharp 17C-down		U+E331 <i>accSagittalFlat17CUp</i> ¶ Flat 17C-up
	U+E332 <i>accSagittalSharp7v11kDown</i> ¶ Sharp 7:11k-down		U+E333 <i>accSagittalFlat7v11kUp</i> ¶ Flat 7:11k-up
	U+E334 <i>accSagittalSharp7v11kUp</i> ¶ Sharp 7:11k-up		U+E335 <i>accSagittalFlat7v11kDown</i> ¶ Flat 7:11k-down
	U+E336 <i>accSagittalSharp17CUp</i> ¶ Sharp 17C-up		U+E337 <i>accSagittalFlat17CDown</i> ¶ Flat 17C-down
	U+E338 <i>accSagittalSharp55CUp</i> ¶ Sharp 55C-up, 11° up [96 EDO], 11/16-tone up		U+E339 <i>accSagittalFlat55CDown</i> ¶ Flat 55C-down, 11° down [96 EDO], 11/16-tone down
	U+E33A <i>accSagittalSharp7v11CUp</i> ¶ Sharp 7:11C-up, 6° up [60 EDO], 3/5- tone up		U+E33B <i>accSagittalFlat7v11CDown</i> ¶ Flat 7:11C-down, 6° down [60 EDO], 3/5- tone down
	U+E33C <i>accSagittalSharp5v11SUp</i> ¶ Sharp 5:11S-up		U+E33D <i>accSagittalFlat5v11SDown</i> ¶ Flat 5:11S-down
	U+E33E <i>accSagittalDoubleSharp5v11SDown</i> ¶ Double sharp 5:11S-down		U+E33F <i>accSagittalDoubleFlat5v11SUp</i> ¶ Double flat 5:11S-up
	U+E340 <i>accSagittalDoubleSharp7v11CDown</i> ¶ Double sharp 7:11C-down, 9° up [60 EDO], 9/10-tone up		U+E341 <i>accSagittalDoubleFlat7v11CUp</i> ¶ Double flat 7:11C-up, 9° down [60 EDO], 9/10-tone down

U+E342

accSagittalDoubleSharp55CDown

↖ Double sharp 55C-down, 13° up [96
EDO], 13/16-tone up

U+E344

accSagittalDoubleSharp17CDown

↖ Double sharp 17C-down

U+E346

accSagittalDoubleSharp7v11kDown

↖ Double sharp 7:11k-down

U+E343

accSagittalDoubleFlat55CUp

↖ Double flat 55C-up, 13° down [96
EDO], 13/16-tone down

U+E345

accSagittalDoubleFlat17CUp

↖ Double flat 17C-up

U+E347

accSagittalDoubleFlat7v11kUp

↖ Double flat 7:11k-up

Trojan Sagittal extension (12-EDO relative) accidentals (U+E350–U+E36F)

	U+E350		U+E351
	<i>accSagittal23CommaUp</i>		<i>accSagittal23CommaDown</i>
↑	23 comma up, (23C), 2° up [96 EDO], 1/8-tone up	↓	23 comma down, 2° down [96 EDO], 1/8-tone down
	U+E352		U+E353
	<i>accSagittal5v19CommaUp</i>		<i>accSagittal5v19CommaDown</i>
↗	5:19 comma up, (5:19C, 5C plus 19s), 1/20-tone up	↖	5:19 comma down, 1/20-tone down
	U+E354		U+E355
	<i>accSagittal5v23SmallDiesisUp</i>		<i>accSagittal5v23SmallDiesisDown</i>
↑	5:23 small diesis up, (5:23S, 5C plus 23C), 2° up [60 EDO], 1/5-tone up	↓	5:23 small diesis down, 2° down [60 EDO], 1/5-tone down
	U+E356		U+E357
	<i>accSagittalSharp5v23SDown</i>		<i>accSagittalFlat5v23SUp</i>
↑	Sharp 5:23S-down, 3° up [60 EDO], 3/10-tone up	↓	Flat 5:23S-up, 3° down [60 EDO], 3/10-tone down
	U+E358		U+E359
	<i>accSagittalSharp5v19CDown</i>		<i>accSagittalFlat5v19CUp</i>
↑	Sharp 5:19C-down, 9/20-tone up	↓	Flat 5:19C-up, 9/20-tone down
	U+E35A		U+E35B
	<i>accSagittalSharp23CDown</i>		<i>accSagittalFlat23CUp</i>
↑	Sharp 23C-down, 6° up [96 EDO], 3/8-tone up	↓	Flat 23C-up, 6° down [96 EDO], 3/8-tone down
	U+E35C		U+E35D
	<i>accSagittalSharp23CUp</i>		<i>accSagittalFlat23CDown</i>
↑	Sharp 23C-up, 10° up [96 EDO], 5/8-tone up	↓	Flat 23C-down, 10° down [96 EDO], 5/8-tone down
	U+E35E		U+E35F
	<i>accSagittalSharp5v19CUp</i>		<i>accSagittalFlat5v19CDown</i>
↑	Sharp 5:19C-up, 11/20-tone up	↓	Flat 5:19C-down, 11/20-tone down

	U+E360 <i>accSagittalSharp5v23SUp</i>		U+E361 <i>accSagittalFlat5v23SDown</i>
↑	Sharp 5:23S-up, 7° up [60 EDO], 7/10-tone up	↓	Flat 5:23S-down, 7° down [60 EDO], 7/10-tone down
	U+E362 <i>accSagittalDoubleSharp5v23SDown</i>		U+E363 <i>accSagittalDoubleFlat5v23SUp</i>
↗	Double sharp 5:23S-down, 8° up [60 EDO], 4/5-tone up	↘	Double flat 5:23S-up, 8° down [60 EDO], 4/5-tone down
	U+E364 <i>accSagittalDoubleSharp5v19CDown</i>		U+E365 <i>accSagittalDoubleFlat5v19CUp</i>
↖	Double sharp 5:19C-down, 19/20- tone up	↙	Double flat 5:19C-up, 19/20-tone down
	U+E366 <i>accSagittalDoubleSharp23CDown</i>		U+E367 <i>accSagittalDoubleFlat23CUp</i>
↗	Double sharp 23C-down, 14°up [96 EDO], 7/8-tone up	↘	Double flat 23C-up, 14° down [96 EDO], 7/8-tone down

Implementation notes

The Trojan (or tone-fraction) set is not strictly-speaking an extension of Athenian, as there are a few Athenians (including Spartans) that are not Trojan. Those are the glyphs whose descriptions include “5:7k”, “7:11k”, “5:11S”, “25S” or “11L” and do not include a tone-fraction.

The descriptions below the Sagittal glyphs do not include all possible uses, only a selection of the most common. To determine which of these glyphs to use for tone-fractions not listed here (as well as for JI ratios and degrees of EDOs that are not listed here) please see <http://sagittal.org>.

Promethean Sagittal extension (high precision) single-shaft accidentals (U+E370–U+E38F)

U+E370

accSagittal19SchismaUp

↑ 19 schisma up, (19s)

U+E371

accSagittal19SchismaDown

↓ 19 schisma down

U+E372

accSagittal17KleismaUp

↑ 17 kleisma up, (17k)

U+E373

accSagittal17KleismaDown

↓ 17 kleisma down

U+E374

accSagittal143CommaUp

↑ 143 comma up, (143C, 13L less 11M)

↓

U+E375

accSagittal143CommaDown

143 comma down

U+E376

accSagittal11v49CommaUp

↑ 11:49 comma up, (11:49C, 11M less 49C)

↓

U+E377

accSagittal11v49CommaDown

11:49 comma down

U+E378

accSagittal19CommaUp

↑ 19 comma up, (19C)

↓

U+E379

accSagittal19CommaDown

19 comma down

U+E37A

accSagittal7v19CommaUp

↑ 7:19 comma up, (7:19C, 7C less 19s)

↓

U+E37B

accSagittal7v19CommaDown

7:19 comma down

U+E37C

accSagittal49SmallDiesisUp

↑ 49 small diesis up, (49S, ~31S)

↓

U+E37D

accSagittal49SmallDiesisDown

49 small diesis down

U+E37E

accSagittal23SmallDiesisUp

↑ 23 small diesis up, (23S)

↓

U+E37F

accSagittal23SmallDiesisDown

23 small diesis down

U+E380	U+E381
<i>accSagittal5v13MediumDiesisUp</i>	<i>accSagittal5v13MediumDiesisDown</i>
↗ 5:13 medium diesis up, (5:13M, ~37M, 5C plus 13C)	↘ 5:13 medium diesis down
U+E382	U+E383
<i>accSagittal11v19MediumDiesisUp</i>	<i>accSagittal11v19MediumDiesisDown</i>
↑ 11:19 medium diesis up, (11:19M, 11M plus 19s)	↓ 11:19 medium diesis down
U+E384	U+E385
<i>accSagittal49MediumDiesisUp</i>	<i>accSagittal49MediumDiesisDown</i>
↗ 49 medium diesis up, (49M, ~31M, 7C plus 7C)	↘ 49 medium diesis down
U+E386	U+E387
<i>accSagittal5v49MediumDiesisUp</i>	<i>accSagittal5v49MediumDiesisDown</i>
↑ 5:49 medium diesis up, (5:49M, half apotome)	↓ 5:49 medium diesis down
U+E388	U+E389
<i>accSagittal49LargeDiesisUp</i>	<i>accSagittal49LargeDiesisDown</i>
↗ 49 large diesis up, (49L, ~31L, apotome less 49M)	↘ 49 large diesis down
U+E38A	U+E38B
<i>accSagittal11v19LargeDiesisUp</i>	<i>accSagittal11v19LargeDiesisDown</i>
↗ 11:19 large diesis up, (11:19L, apotome less 11:19M)	↖ 11:19 large diesis down
U+E38C	U+E38D
<i>accSagittal5v13LargeDiesisUp</i>	<i>accSagittal5v13LargeDiesisDown</i>
↗ 5:13 large diesis up, (5:13L, ~37L, apotome less 5:13M)	↖ 5:13 large diesis down

Promethean Sagittal extension (high precision) multi-shaft accidentals (U+E390–U+E3CF)

U+E390

accSagittalSharp23SDown

¶ Sharp 23S-down

U+E391

accSagittalFlat23SUp

¶ Flat 23S-up

U+E392

accSagittalSharp49SDown

¶ Sharp 49S-down

U+E393

accSagittalFlat49SUp

¶ Flat 49S-up

U+E394

accSagittalSharp7v19CDown

¶ Sharp 7:19C-down

U+E395

accSagittalFlat7v19CUp

¶ Flat 7:19C-up

U+E396

accSagittalSharp19CDown

¶ Sharp 19C-down

U+E397

accSagittalFlat19CUp

¶ Flat 19C-up

U+E398

accSagittalSharp11v49CDown

¶ Sharp 11:49C-down

U+E399

accSagittalFlat11v49CUp

¶ Flat 11:49C-up

U+E39A

accSagittalSharp143CDown

¶ Sharp 143C-down

U+E39B

accSagittalFlat143CUp

¶ Flat 143C-up

U+E39C

accSagittalSharp17kDown

¶ Sharp 17k-down

U+E39D

accSagittalFlat17kUp

¶ Flat 17k-up

U+E39E

accSagittalSharp19sDown

¶ Sharp 19s-down

U+E39F

accSagittalFlat19sUp

¶ Flat 19s-up

	U+E3A0 <i>accSagittalSharp19sUp</i> ℳ Sharp 19s-up		U+E3A1 <i>accSagittalFlat19sDown</i> ℳ Flat 19s-down
	U+E3A2 <i>accSagittalSharp17kUp</i> ℳ Sharp 17k-up		U+E3A3 <i>accSagittalFlat17kDown</i> ℳ Flat 17k-down
	U+E3A4 <i>accSagittalSharp143CUp</i> ℳ Sharp 143C-up		U+E3A5 <i>accSagittalFlat143CDown</i> ℳ Flat 143C-down
	U+E3A6 <i>accSagittalSharp11v49CUp</i> ℳ Sharp 11:49C-up		U+E3A7 <i>accSagittalFlat11v49CDown</i> ℳ Flat 11:49C-down
	U+E3A8 <i>accSagittalSharp19CUp</i> ℳ Sharp 19C-up		U+E3A9 <i>accSagittalFlat19CDown</i> ℳ Flat 19C-down
	U+E3AA <i>accSagittalSharp7v19CUp</i> ℳ Sharp 7:19C-up		U+E3AB <i>accSagittalFlat7v19CDown</i> ℳ Flat 7:19C-down
	U+E3AC <i>accSagittalSharp49SUp</i> ℳ Sharp 49S-up		U+E3AD <i>accSagittalFlat49SDown</i> ℳ Flat 49S-down
	U+E3AE <i>accSagittalSharp23SUp</i> ℳ Sharp 23S-up		U+E3AF <i>accSagittalFlat23SDown</i> ℳ Flat 23S-down
	U+E3BO <i>accSagittalSharp5v13MUp</i> ℳ Sharp 5:13M-up		U+E3B1 <i>accSagittalFlat5v13MDown</i> ℳ Flat 5:13M-down

U+E3B2	U+E3B3
<i>accSagittalSharp11v19MUp</i>	<i>accSagittalFlat11v19MDown</i>
 Sharp 11:19M-up	 Flat 11:19M-down
U+E3B4	U+E3B5
<i>accSagittalSharp49MUp</i>	<i>accSagittalFlat49MDown</i>
 Sharp 49M-up	 Flat 49M-down
U+E3B6	U+E3B7
<i>accSagittalSharp5v49MUp</i>	<i>accSagittalFlat5v49MDown</i>
 Sharp 5:49M-up, (one and a half apotomes)	 Flat 5:49M-down
U+E3B8	U+E3B9
<i>accSagittalSharp49LUp</i>	<i>accSagittalFlat49LDown</i>
 Sharp 49L-up	 Flat 49L-down
U+E3BA	U+E3BB
<i>accSagittalSharp11v19LUp</i>	<i>accSagittalFlat11v19LDown</i>
 Sharp 11:19L-up	 Flat 11:19L-down
U+E3BC	U+E3BD
<i>accSagittalSharp5v13LUp</i>	<i>accSagittalFlat5v13LDown</i>
 Sharp 5:13L-up	 Flat 5:13L-down
U+E3BE	U+E3BF
<i>accSagittalUnused3</i>	<i>accSagittalUnused4</i>
Unused	Unused
U+E3C0	U+E3C1
<i>accSagittalDoubleSharp23SDown</i>	<i>accSagittalDoubleFlat23SUp</i>
 Double sharp 23S-down	 Double flat 23S-up
U+E3C2	U+E3C3
<i>accSagittalDoubleSharp49SDown</i>	<i>accSagittalDoubleFlat49SUp</i>
 Double sharp 49S-down	 Double flat 49S-up

U+E3C4	U+E3C5
<i>accSagittalDoubleSharp7v19CDown</i>	<i>accSagittalDoubleFlat7v19CUp</i>
↖ Double sharp 7:19C-down	↖ Double flat 7:19C-up
U+E3C6	U+E3C7
<i>accSagittalDoubleSharp19CDown</i>	<i>accSagittalDoubleFlat19CUp</i>
↖ Double sharp 19C-down	↘ Double flat 19C-up
U+E3C8	U+E3C9
<i>accSagittalDoubleSharp11v49CDown</i>	<i>accSagittalDoubleFlat11v49CUp</i>
↖ Double sharp 11:49C-down	↘ Double flat 11:49C-up
U+E3CA	U+E3CB
<i>accSagittalDoubleSharp143CDown</i>	<i>accSagittalDoubleFlat143CUp</i>
↖ Double sharp 143C-down	↘ Double flat 143C-up
U+E3CC	U+E3CD
<i>accSagittalDoubleSharp17kDown</i>	<i>accSagittalDoubleFlat17kUp</i>
↖ Double sharp 17k-down	↘ Double flat 17k-up
U+E3CE	U+E3CF
<i>accSagittalDoubleSharp19sDown</i>	<i>accSagittalDoubleFlat19sUp</i>
↖ Double sharp 19s-down	↘ Double flat 19s-up

Herculean Sagittal extension (very high precision) accidental diacritics (U+E3D0–U+E3DF)

U+E3D0	U+E3D1
<i>accSagittalShaftUp</i>	<i>accSagittalShaftDown</i>
Shaft up, (natural for use with only diacritics up)	Shaft down, (natural for use with only diacritics down)
U+E3D2	U+E3D3
<i>accSagittalAcute</i>	<i>accSagittalGrave</i>
' Acute, 5 schisma up (5s), 2 cents up	' Grave, 5 schisma down, 2 cents down

Implementation notes

Sagittal diacritics are placed to the left of Sagittal accidentals if required; at most one diacritic from each group. If there are multiple diacritics, those representing the larger alteration are placed closer to the accidental. If diacritics are directly altering the natural note, they should be placed to the left of, but not touching, one of the bare-shaft glyphs (**accSagittalShaftUp** or **accSagittalShaftDown**); whichever one represents the direction of the sum of the diacritic alterations.

Olympian Sagittal extension (extreme precision) accidental diacritics (U+E3E0–U+E3EF)

Reserved for future use.

Implementation notes

This range is reserved for the future definition of four glyphs, representing alterations of one and two 455 or 65:77 schisminas. These schisminas are approximately 0.4 cents.

Magrathean Sagittal extension (insane precision) accidental diacritics (U+E3F0–U+E3FF)

Reserved for future use.

Implementation notes

This range is reserved for the future definition of 38 glyphs, representing alterations of a half to nine-and-a-half tinas. A tina is approximately 0.14 cents.

Wyschnegradsky accidentals (72-EDO) (U+E400–U+E41F)

U+E400

accidental Wyschnegradsky 1TwelfthsSharp

1/12 tone sharp

U+E401

accidental Wyschnegradsky 2TwelfthsSharp

1/6 tone sharp

U+E402

accidental Wyschnegradsky 3TwelfthsSharp

1/4 tone sharp

U+E403

accidental Wyschnegradsky 4TwelfthsSharp

1/3 tone sharp

U+E404

accidental Wyschnegradsky 5TwelfthsSharp

5/12 tone sharp

U+E405

accidental Wyschnegradsky 6TwelfthsSharp

1/2 tone sharp

U+E406

accidental Wyschnegradsky 7TwelfthsSharp

7/12 tone sharp

U+E407

accidental Wyschnegradsky 8TwelfthsSharp

2/3 tone sharp

U+E408

accidental Wyschnegradsky 9TwelfthsSharp

3/4 tone sharp

U+E409

accidental Wyschnegradsky 10TwelfthsSharp

5/6 tone sharp

U+E40A

accidental Wyschnegradsky 11TwelfthsSharp

11/12 tone sharp

U+E40B

accidental Wyschnegradsky 1TwelfthsFlat

1/12 tone flat

U+E40C

accidental Wyschnegradsky 2TwelfthsFlat

1/6 tone flat

U+E40D

accidental Wyschnegradsky 3TwelfthsFlat

1/4 tone flat

U+E40E

accidental Wyschnegradsky 4TwelfthsFlat

1/3 tone flat

U+E40F

accidental Wyschnegradsky 5TwelfthsFlat

5/12 tone flat

U+E410

accidental Wyschnegradsky 6TwelfthsFlat



1/2 tone flat

U+E411

accidental Wyschnegradsky 7TwelfthsFlat



7/12 tone flat

U+E412

accidental Wyschnegradsky 8TwelfthsFlat



2/3 tone flat



U+E413

accidental Wyschnegradsky 9TwelfthsFlat

3/4 tone flat

U+E414

accidental Wyschnegradsky 10TwelfthsFlat



5/6 tone flat



U+E415

accidental Wyschnegradsky 11TwelfthsFlat

11/12 tone flat

Arel-Ezgi-Uzdilek (AEU) accidentals (U+E420–U+E42F)

U+E420

accidentalBuyukMucennebFlat

ֆ

Büyük mücenneb (flat)

U+E421

accidentalKucukMucennebFlat

բ

Küçük mücenneb (flat)

U+E422

accidentalBakiyeFlat

ֆ

Bakiye (flat)

U+E423

accidentalKomaFlat

դ

Koma (flat)

U+E424

accidentalKomaSharp

ֆ

Koma (sharp)

U+E425

accidentalBakiyeSharp

ֆ

Bakiye (sharp)

U+E426

accidentalKucukMucennebSharp

ֆ

Küçük mücenneb (sharp)

U+E427

accidentalBuyukMucennebSharp

ֆ

Büyük mücenneb (sharp)

Turkish folk music accidentals (U+E430–U+E43F)

U+E430

#¹
accidental1CommaSharp
1-comma sharp

U+E431

#²
accidental2CommaSharp
2-comma sharp

U+E432

#³
accidental3CommaSharp
3-comma sharp

U+E433

#⁵
accidental5CommaSharp
5-comma sharp

U+E434

♭¹
accidental1CommaFlat
1-comma flat

U+E435

♭²
accidental2CommaFlat
2-comma flat

U+E436

♭³
accidental3CommaFlat
3-comma flat

U+E437

♭⁴
accidental4CommaFlat
4-comma flat

Persian accidentals (U+E440–U+E44F)

U+E440

accidental *Koron*

▷

Koron (quarter tone flat)

U+E441

accidental *Sori*

#

Sori (quarter tone sharp)

Other accidentals (U+E450–U+E47F)

U+E450

accidentalXenakisOneThirdToneSharp

One-third-tone sharp (Xenakis)

U+E451

accidentalXenakisTwoThirdTonesSharp

Two-third-tones sharp (Xenakis)

U+E452

accidentalQuarterToneSharpBusotti

† Quarter tone sharp (Busotti)

U+E453

accidentalSharpOneHorizontalStroke

† One or three quarter tones sharp

U+E454

accidentalThreeQuarterTonesSharpBusotti

† Three quarter tones sharp (Busotti)

U+E455

accidentalQuarterToneSharpWiggle

~# Quarter tone sharp with wiggly tail

U+E456

accidentalTavenerSharp

Byzantine-style slashed sharp
(Tavener)

✗

accidentalTavenerFlat

Byzantine-style slashed flat
(Tavener)

U+E458

accidentalQuarterToneFlatPenderecki

♪ Quarter tone flat (Penderecki)

✗

U+E457

accidentalCommaSlashUp

Syntonic/Didymus comma (80:81)
up (Bosanquet)

U+E45A

accidentalCommaSlashDown

‐ Syntonic/Didymus comma (80:81)
down (Bosanquet)

✗

accidentalWilsonPlus

Wilson plus (5 comma up)

U+E45C

accidentalWilsonMinus

‐ Wilson minus (5 comma down)

✗

U+E45D

accidentalLargeDoubleSharp

Large double sharp

U+E45E (and U+1D132)

accidentalQuarterToneSharp4

‡ Quarter-tone sharp

‡

U+E45F (and U+1D133)

accidentalQuarterToneFlat4

Quarter-tone flat

U+E460

accidentalQuarterToneFlatFilledReversed

‐ Filled reversed flat (quarter-tone flat)

‡

U+E461

accidentalSharpReversed

Reversed sharp

U+E462*accidentalNaturalReversed*

¶

Reversed natural

U+E463*accidentalDoubleFlatReversed*

¶

Reversed double flat

U+E464*accidentalFlatInverted*

¶

Inverted flat

U+E465*accidentalDoubleFlatInverted*

¶

Inverted double flat

U+E466*accidentalThreeQuarterTonesFlatGrisey*

¶

Three-quarter-tones flat (Grisey)

¶

U+E467*accidentalThreeQuarterTonesFlatTartini*

¶

Three-quarter-tones flat (Tartini)

U+E468*accidentalQuarterToneFlatVanBlankenburg*

¶

Quarter-tone flat (van Blankenburg)

¶

U+E469*accidentalThreeQuarterTonesFlatCouper*

Three-quarter-tones flat (Couper)

Articulation (U+E480–U+E49F)

	U+E480 (and U+1D17B)		U+E481
>	<i>articAccentAbove</i>	>	<i>articAccentBelow</i>
	Accent above		Accent below
	U+E482 (and U+1D17C)		U+E483
•	<i>articStaccatoAbove</i>	•	<i>articStaccatoBelow</i>
	Staccato above		Staccato below
	U+E484 (and U+1D17D)		U+E485
—	<i>articTenutoAbove</i>	—	<i>articTenutoBelow</i>
	Tenuto above		Tenuto below
'	U+E486 (and U+1D17E)		U+E487
	<i>articStaccatissimoAbove</i>		<i>articStaccatissimoBelow</i>
	Staccatissimo above		Staccatissimo below
	U+E488		U+E489
'	<i>articStaccatissimoWedgeAbove</i>		<i>articStaccatissimoWedgeBelow</i>
	Staccatissimo wedge above		Staccatissimo wedge below
	U+E48A		U+E48B
'	<i>articStaccatissimoStrokeAbove</i>		<i>articStaccatissimoStrokeBelow</i>
	Staccatissimo stroke above		Staccatissimo stroke below
	U+E48C (and U+1D17F)		U+E48D
^	<i>articMarcatoAbove</i>		<i>articMarcatoBelow</i>
	Marcato above	v	Marcato below
^	U+E48E (and U+1D180)		U+E48F
•	<i>articMarcatoStaccatoAbove</i>		<i>articMarcatoStaccatoBelow</i>
	Marcato-staccato above	•	Marcato-staccato below
^	U+E490 (and U+1D181)		U+E491
•	<i>articAccentStaccatoAbove</i>		<i>articAccentStaccatoBelow</i>
	Accent-staccato above	•	Accent-staccato below

	U+E492 (and U+1D182) <i>articTenutoSlurAbove</i> • Louré (tenuto-staccato) above		U+E493 <i>articTenutoSlurBelow</i> • Louré (tenuto-staccato) below
≥		≤	
	U+E494 <i>articTenutoAccentAbove</i> Tenuto-accent above		U+E495 <i>articTenutoAccentBelow</i> Tenuto-accent below
›		›	
	U+E496 <i>articStressAbove</i> Stress above		U+E497 <i>articStressBelow</i> Stress below
◦		◦	
	U+E498 <i>articUnstressAbove</i> Unstress above		U+E499 <i>articUnstressBelow</i> Unstress below
◦		◦	
	U+E49A <i>articLaissezVibrerAbove</i> Laissez vibrer (l.v.) above		U+E49B <i>articLaissezVibrerBelow</i> Laissez vibrer (l.v.) below
◦		◦	

Recommended stylistic alternates

	uniE480.salt01
>	<i>articAccentLarge</i> Large accent

Holds and pauses (U+E4A0–U+E4BF)

U+E4A0 (and U+1D110)	U+E4A1 (and U+1D111)
<i>fermataAbove</i>	<i>fermataBelow</i>
⌚ Fermata above	⌚ Fermata below
U+E4A2	U+E4A3
<i>fermataVeryShortAbove</i>	<i>fermataVeryShortBelow</i>
▲ Very short fermata above	▼ Very short fermata below
U+E4A4	U+E4A5
<i>fermataShortAbove</i>	<i>fermataShortBelow</i>
^K Short fermata above	▼ Short fermata below
U+E4A6	U+E4A7
<i>fermataLongAbove</i>	<i>fermataLongBelow</i>
■ Long fermata above	■ Long fermata below
U+E4A8	U+E4A9
<i>fermataVeryLongAbove</i>	<i>fermataVeryLongBelow</i>
■■ Very long fermata above	■■ Very long fermata below
U+E4AA	U+E4AB
<i>fermataLongHenzeAbove</i>	<i>fermataLongHenzeBelow</i>
⌚⌚ Long fermata (Henze) above	⌚⌚ Long fermata (Henze) below
U+E4AC	U+E4AD
<i>fermataShortHenzeAbove</i>	<i>fermataShortHenzeBelow</i>
⌚⌚ Short fermata (Henze) above	⌚⌚ Short fermata (Henze) below
U+E4AE (and U+1D112)	U+E4AF (and U+1D113)
<i>breathMark</i>	<i>caesura</i>
,	//
Breath mark	Caesura
U+E4B0	U+E4B1
<i>caesuraThick</i>	<i>caesuraShort</i>
// Thick caesura	// Short caesura

U+E4B2

breathMarkSalzedo



Breath mark (Salzedo)

U+E4B3

curlewSign



Curlew (Britten)

Recommended stylistic alternates

uniE4AF.salt01

caesuraSingleStroke



Caesura (single stroke)

Rests (U+E4C0–U+E4DF)

U+E4C0	U+E4C1 (and U+1D13A)
<i>restLonga</i>	<i>restDoubleWhole</i>
▀ Longa rest	▀ Double whole (breve) rest
U+E4C2 (and U+1D13B)	U+E4C3 (and U+1D13C)
<i>restWhole</i>	<i>restHalf</i>
▬ Whole (semibreve) rest	▬ Half (minim) rest
U+E4C4 (and U+1D13D)	U+E4C5 (and U+1D13E)
<i>restQuarter</i>	<i>rest8th</i>
♪ Quarter (crotchet) rest	♩ Eighth (quaver) rest
U+E4C6 (and U+1D13F)	U+E4C7 (and U+1D140)
<i>rest16th</i>	<i>rest32nd</i>
♪ 16th (semiquaver) rest	♪ 32nd (demisemiquaver) rest
U+E4C8 (and U+1D141)	U+E4C9 (and U+1D142)
<i>rest64th</i>	<i>rest128th</i>
♪ 64th (hemidemisemiquaver) rest	♪ 128th (semihemidemisemiquaver) rest
U+E4CA	U+E4CB
<i>rest256th</i>	<i>rest512th</i>
♪ 256th rest	♪ 512th rest
U+E4CC	U+E4CD (and U+1D129)
<i>rest1024th</i>	<i>restHBar</i>
♪ 1024th rest	▬ Multiple measure rest
U+E4CE	U+E4CF
<i>restHBarLeft</i>	<i>restHBarRight</i>
▬ H-bar, left half	▬ H-bar, right half
U+E4D0	U+E4D1
<i>restQuarterOld</i>	<i>restWholeLegerLine</i>
♪ Old-style quarter (crotchet) rest	▬ Whole rest on leger line

U+E4D2

restHalfLegerLine

—
Half rest on leger line

Implementation notes

Scoring applications should draw multiple measure rests using primitives to provide variable width and line thickness rather than using **restHBar**.

“Old style” multiple measure rests can be created by laying out **restLonga** (four bars), **restDoubleWhole** (two bars) and **restWhole** (one bar) next to each other.

For dotted rests, the augmentation dot glyph **augmentationDot** should be used.

Bar repeats (U+E4E0–U+E4EF)

U+E4E0 (and U+1D10E)

repeat1Bar



Repeat last bar

U+E4E1 (and U+1D10F)

repeat2Bars



Repeat last two bars

U+E4E2

repeat4Bars



Repeat last four bars

Octaves (U+E4F0–U+E4FF)

U+E4F0

8
ottava
Ottava

U+E4F1 (and U+1D136)

8^{va}
ottavaAlta
Ottava alta

U+E4F2 (and U+1D137)

8^{vb}
ottavaBassa
Ottava bassa

U+E4F3

8^{ba}
ottavaBassaBa
Ottava bassa (ba)

U+E4F4

15
quindicesima
Quindicesima

15^{ma}

U+E4F5 (and U+1D138)

15^{mb}
quindicesimaAlta
Quindicesima alta

U+E4F6 (and U+1D139)

15^{mb}
quindicesimaBassa
Quindicesima bassa

U+E4F7

22
ventiduesima
Ventiduesima

U+E4F8

22^{ma}
ventiduesimaAlta
Ventiduesima alta

U+E4F9

22^{mb}
ventiduesimaBassa
Ventiduesima bassa

U+E4FA

(
octaveParensLeft
Left parenthesis for octave signs

U+E4FB

)
octaveParensRight
Right parenthesis for octave signs

Implementation notes

See the implementation notes for clefs.

Dynamics (U+E500–U+E52F)

	U+E500 (and U+1D18F) <i>dynamicPiano</i> p Piano	U+E501 (and U+1D190) <i>dynamicMezzo</i> m Mezzo
f	U+E502 (and U+1D191) <i>dynamicForte</i> Forte	U+E503 (and U+1D18C) <i>dynamicRinforzando</i> r Rinforzando
s	U+E504 (and U+1D18D) <i>dynamicSforzando</i> Sforzando	U+E505 (and U+1D18E) <i>dynamicZ</i> z Z
n	U+E506 <i>dynamicNiente</i> Niente	U+E507 <i>dynamicPPPPPP</i> pppppp pppppp
ppppp	U+E508 <i>dynamicPPPPPP</i> ppppp	U+E509 <i>dynamicPPPP</i> pppp pppp
ppp	U+E50A <i>dynamicPPP</i> ppp	U+E50B <i>dynamicPP</i> pp pp
mp	U+E50C <i>dynamicMP</i> mp	U+E50D <i>dynamicMF</i> mf mf
pf	U+E50E <i>dynamicPF</i> pf	U+E50F <i>dynamicFF</i> ff ff
fff	U+E510 <i>dynamicFFF</i> fff	U+E511 <i>dynamicFFFF</i> ffff ffff

	U+E512 <i>dynamicFFFF</i> fffff		U+E513 <i>dynamicFFFFFF</i> fffffff
fp	U+E514 <i>dynamicFortePiano</i> Forte-piano	fz	U+E515 <i>dynamicForzando</i> Forzando
sf	U+E516 <i>dynamicSforzando1</i> Sforzando 1	sfp	U+E517 <i>dynamicSforzandoPiano</i> Sforzando-piano
sfp	U+E518 <i>dynamicSforzandoPianissimo</i> Sforzando-pianissimo	s fz	U+E519 <i>dynamicSforzato</i> Sforzato
sfzp	U+E51A <i>dynamicSforzatoPiano</i> Sforzato-piano	sffz	U+E51B <i>dynamicSforzatoFF</i> Sforzatissimo
rf	U+E51C <i>dynamicRinforzando1</i> Rinforzando 1	r fz	U+E51D <i>dynamicRinforzando2</i> Rinforzando 2
<	U+E51E (and U+1D192) <i>dynamicCrescendoHairpin</i> Crescendo	>	U+E51F (and U+1D193) <i>dynamicDiminuendoHairpin</i> Diminuendo
◦	U+E520 <i>dynamicNienteForHairpin</i> Niente (for hairpins)		

Implementation notes

Scoring applications should draw crescendo and diminuendo hairpins using primitives rather than **dynamicCrescendoHairpin** and **dynamicDiminuendoHairpin** in order to provide variable width, line thickness, angle and aperture.

Ligatures should be defined for common combinations of dynamics, such as **mp**. Special attention should be paid to kerning pairs for these glyphs.

Scoring applications may choose to draw dynamics either using multiple glyphs (e.g. 3 x **dynamicForte** for ***fff***) or using the pre-composed glyph (e.g. 1 x **dynamicFFF** for ***fff***).

Common ornaments (U+E530–U+E53F)

U+E530 (and U+1D194)  graceNoteAcciaccaturaStemUp Slashed grace note stem up	U+E531  graceNoteAcciaccaturaStemDown Slashed grace note stem down
U+E532 (and U+1D195)  graceNoteAppoggiaturaStemUp Grace note stem up	U+E533  graceNoteAppoggiaturaStemDown Grace note stem down
U+E534  graceNoteSlashStemUp Slash for stem up grace note	U+E535  graceNoteSlashStemDown Slash for stem down grace note
U+E536 (and U+1D196)  ornamentTrill Trill	U+E537 (and U+1D197)  ornamentTurn Turn
U+E538 (and U+1D198)  ornamentTurnInverted Inverted turn	U+E539 (and U+1D199)  ornamentTurnSlash Turn with slash
U+E53A (and U+1D19A)  ornamentTurnUp Turn up	U+E53B  ornamentTurnUpS Inverted turn up
U+E53C  ornamentMordent Mordent	U+E53D  ornamentMordentInverted Inverted mordent
U+E53E  ornamentTremblement Tremblement	U+E53F  ornamentHaydn Haydn ornament

Recommended ligatures

uniE240_uniE536	uniE241_uniE536
 <i>ornamentTrillFlatAbove</i>	 <i>ornamentTrillNaturalAbove</i>
Trill, flat above	Trill, natural above
uniE242_uniE536	uniE240_uniE537
 <i>ornamentTrillSharpAbove</i>	 <i>ornamentTurnFlatAbove</i>
Trill, sharp above	Turn, flat above
uniE240_uniE537_uniE242	uniE537_uniE240
 <i>ornamentTurnFlatAboveSharpBelow</i>	 <i>ornamentTurnFlatBelow</i>
Turn, flat above, sharp below	Turn, flat below
uniE241_uniE537	uniE537_uniE241
 <i>ornamentTurnNaturalAbove</i>	 <i>ornamentTurnNaturalBelow</i>
Turn, natural above	Turn, natural below
uniE242_uniE537	uniE242_uniE537_uniE240
 <i>ornamentTurnSharpAbove</i>	 <i>ornamentTurnSharpAboveFlatBelow</i>
Turn, sharp above	Turn, sharp above, flat below
uniE537_uniE242	
 <i>ornamentTurnSharpBelow</i>	
Turn, sharp below	

Implementation notes

Scoring applications should draw grace notes in the same way as they draw regular notes, rather than using the precomposed glyphs.

Likewise, scoring applications should draw *glissandi* using multiple instances of a wiggly line segment (e.g. **wiggleGlissando**), not the precomposed glyphs, to provide variable length and angle.

Other baroque ornaments (U+E540–U+E55F)

	U+E540 <i>ornamentPortDeVoixV</i> Port de voix		U+E541 <i>ornamentRightFacingHalfCircle</i> Right-facing half circle
V)	()
	U+E542 <i>ornamentLeftFacingHalfCircle</i> Left-facing half circle		U+E543 <i>ornamentRightFacingHook</i> Right-facing hook
)))
	U+E544 <i>ornamentLeftFacingHook</i> Left-facing hook		U+E545 <i>ornamentHookBeforeNote</i> Hook before note
)))
	U+E546 <i>ornamentHookAfterNote</i> Hook after note		U+E547 <i>ornamentUpCurve</i> Curve above
)))
	U+E548 <i>ornamentDownCurve</i> Curve below		U+E549 <i>ornamentShortObliqueLineBeforeNote</i> Short oblique straight line SW-NE
)		/	/
	U+E54A <i>ornamentShortObliqueLineAfterNote</i> Short oblique straight line NW-SE		U+E54B <i>ornamentObliqueLineBeforeNote</i> Oblique straight line SW-NE
\		/	/
	U+E54C <i>ornamentObliqueLineAfterNote</i> Oblique straight line NW-SE		U+E54D <i>ornamentDoubleObliqueLinesBeforeNote</i> Double oblique straight lines SW-NE
\		//	//
	U+E54E <i>ornamentDoubleObliqueLinesAfterNote</i> Double oblique straight lines NW-SE		U+E54F <i>ornamentObliqueLineHorizBeforeNote</i> Oblique straight line tilted SW-NE
\		-	-
	U+E550 <i>ornamentObliqueLineHorizAfterNote</i> Oblique straight line tilted NW-SE	,	U+E551 <i>ornamentComma</i> Comma
\		,	,

	U+E552 <i>ornamentShake3</i> +	U+E553 <i>ornamentVerticalLine</i>
	Shake	Vertical line
	U+E554 <i>ornamentShakeMuffat1</i> <i>t</i>	U+E555 (and U+1D1B1) <i>glissandoUp</i> Shake (Muffat)
	Shake (Muffat)	
	U+E556 (and U+1D1B2) <i>glissandoDown</i> 	U+E557 <i>ornamentSchleifer</i>  Glissando down
	Glissando down	Schleifer (long mordent)

Implementation notes

There is little agreement over the meaning, or indeed the naming, of ornaments beyond those that have survived into modern usage. The glyphs included in this range are the shapes that are used by a wide variety of composers, particularly in the baroque period. For information about the uses and interpretations of individual symbols in this range, consult Neumann (*ibid.*).

Combining strokes for trills and mordents (U+E560–U+E57F)

U+E560

ornamentTopLeftConcaveStroke
Ornament top left concave stroke

U+E561 (and U+1D1A5)

ornamentTopLeftConvexStroke
Ornament top left convex stroke

U+E562

ornamentHighLeftConcaveStroke
Ornament high left concave stroke

U+E563 (and U+1D1A2)

ornamentHighLeftConvexStroke
Ornament high left convex stroke

U+E564 (and U+1D19B)

ornamentLeftVerticalStroke
Ornament left vertical stroke

U+E565

ornamentLeftVerticalStrokeWithCross
Ornament left vertical stroke with cross (+)

U+E566

ornamentLeftShakeT
Ornament left shake t

U+E567

ornamentLeftPlus
Ornament left +

U+E568

ornamentLowLeftConcaveStroke
Ornament low left concave stroke

U+E569 (and U+1D1A4)

ornamentLowLeftConvexStroke
Ornament low left convex stroke

U+E56A

ornamentBottomLeftConcaveStroke
Ornament bottom left concave
stroke

U+E56B (and U+1D1A1)

ornamentBottomLeftConcaveStrokeLarge
Ornament bottom left concave
stroke, large

U+E56C

ornamentBottomLeftConvexStroke
Ornament bottom left convex stroke

U+E56D (and U+1D19C)

ornamentZigZagLineNoRightEnd
Ornament zig-zag line without right-
hand end

U+E56E (and U+1D19D)

ornamentZigZagLineWithRightEnd
Ornament zig-zag line with right-
hand end

U+E56F (and U+1D1A0)

ornamentMiddleVerticalStroke
Ornament middle vertical stroke

U+E570

ornamentTopRightConcaveStroke
Ornament top right concave stroke

U+E571 (and U+1D19E)

ornamentTopRightConvexStroke
Ornament top right convex stroke

U+E572

ornamentHighRightConcaveStroke
Ornament high right concave stroke

U+E573

ornamentHighRightConvexStroke
Ornament high right convex stroke

U+E574

ornamentRightVerticalStroke
Ornament right vertical stroke

U+E575 (and U+1D1A3)

ornamentLowRightConcaveStroke
Ornament low right concave stroke

U+E576

ornamentLowRightConvexStroke
Ornament low right convex stroke

U+E577 (and U+1D19F)

ornamentBottomRightConcaveStroke
Ornament bottom right concave stroke

U+E578

ornamentBottomRightConvexStroke
Ornament bottom right convex stroke

Implementation notes

When designing the Unicode Musical Symbols range, Perry Roland elected to develop a scheme for creating complex ornaments using a series of glyphs rather than defining precomposed glyphs for every ornament, as shown below:¹⁵

¹⁵ *Ibid.*, Allen, page 539.

	1D19C STROKE-2 + 1D19D STROKE-3
	1D19C STROKE-2 + 1D1A0 STROKE-6 + 1D19D STROKE-3
	1D1A0 STROKE-6 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3
	1D19C STROKE-2 + 1D19C STROKE-2 + 1D1A0 STROKE-6 + 1D19D STROKE-3
	1D19C STROKE-2 + 1D19C STROKE-2 + 1D1A3 STROKE-9
	1D1A1 STROKE-7 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3
	1D1A2 STROKE-8 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3
	1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3 + 1D19F STROKE-5
	1D1A1 STROKE-7 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D1A0 STROKE-6 + 1D19D STROKE-3
	1D1A1 STROKE-7 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3 + 1D19F STROKE-5
	1D1A2 STROKE-8 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D1A0 STROKE-6 + 1D19D STROKE-3
	1D19B STROKE-1 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3
	1D19B STROKE-1 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3 + 1D19E STROKE-4
	1D19C STROKE-2 + 1D19D STROKE-3 + 1D19E STROKE-4

This range expands upon the repertoire of 11 strokes in the Unicode Musical Symbols range.

The side-bearings for the glyphs in this range must be adjusted carefully to ensure correct positioning. (Kerning pairs may also be used.)

Glyphs between **ornamentTopLeftConcaveStroke** and **ornamentBottomLeftConvexStroke** are designed to be positioned immediately to the left of and to join seamlessly to **ornamentZigZagLineNoRightEnd**. **ornamentZigZagLineWithRightEnd** and glyphs between **ornamentTopRightConcaveStroke** and **ornamentBottomRightConvexStroke** are designed to be positioned immediately to the right of and to join seamlessly to **ornamentZigZagLineNoRightEnd**. **ornamentMiddleVerticalStroke** should be used immediately to the left of either **ornamentZigZagLineNoRightEnd** or **ornamentZigZagLineWithRightEnd** to provide correct positioning of the vertical stroke across the zig-zag line.

Precomposed trills and mordents (U+E580–U+E58F)

U+E580	U+E581
 <i>ornamentPrecompSlide</i> Slide	 <i>ornamentPrecompDescendingSlide</i> Descending slide
U+E582	U+E583
 <i>ornamentPrecompAppoggTrill</i> Supported appoggiatura trill	 <i>ornamentPrecompAppoggTrillSuffix</i> Supported appoggiatura trill with two-note suffix
U+E584	U+E585
 <i>ornamentPrecompTurnTrillDAnglebert</i> Turn-trill (D'Anglebert)	 <i>ornamentPrecompSlideTrillDAnglebert</i> Slide-trill (D'Anglebert)
U+E586	U+E587
 <i>ornamentPrecompSlideTrillMarpurg</i> Slide-trill with one-note suffix (Marpurg)	 <i>ornamentPrecompTurnTrillBach</i> Turn-trill with two-note suffix (J.S. Bach)
U+E588	U+E589
 <i>ornamentPrecompSlideTrillBach</i> Slide-trill with two-note suffix (J.S. Bach)	 <i>ornamentPrecompSlideTrillMuffat</i> Slide-trill (Muffat)
U+E58A	U+E58B
 <i>ornamentPrecompSlideTrillSuffixMuffat</i> Slide-trill with two-note suffix (Muffat)	 <i>ornamentPrecompTrillSuffixDandrieu</i> Trill with two-note suffix (Dandrieu)
U+E58C	
 <i>ornamentPrecompPortDeVoixMordent</i> Pre-beat port de voix followed by multiple mordent (Dandrieu)	

Implementation notes

The glyphs in this range show how the glyphs in the preceding range can be combined, based on examples from the “Selective Glossary of Terms and Symbols” in Neumann (*ibid.*).

ornamentPrecompSlide

2 x **ornamentZigZagLineNoRightEnd** +
ornamentHighRightConcaveStroke

<code>ornamentPrecompDescendingSlide</code>	<code>2 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentBottomRightConvexStroke</code>
<code>ornamentPrecompAppoggTrill</code>	<code>ornamentLeftVerticalStroke +</code> <code>2 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentZigZagLineWithRightEnd</code>
<code>ornamentPrecompAppoggTrillSuffix</code>	<code>ornamentLeftVerticalStroke +</code> <code>2 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentRightVerticalStroke</code>
<code>ornamentPrecompTurnTrillDAnglebert</code>	<code>ornamentHighLeftConvexStroke +</code> <code>3 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentTopRightConcaveStroke</code>
<code>ornamentPrecompSlideTrillDAnglebert</code>	<code>ornamentBottomLeftConcaveStrokeLarge +</code> <code>ornamentZigZagLineNoRightEnd +</code> <code>ornamentZigZagLineWithRightEnd</code>
<code>ornamentPrecompSlideTrillMarpurg</code>	<code>ornamentBottomLeftConcaveStrokeLarge +</code> <code>2 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentTopRightConvexStroke</code>
<code>ornamentPrecompTurnTrillBach</code>	<code>ornamentHighLeftConvexStroke +</code> <code>3 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentMiddleVerticalStroke +</code> <code>ornamentZigZagLineWithRightEnd</code>
<code>ornamentPrecompSlideTrillBach</code>	<code>ornamentBottomLeftConcaveStroke +</code> <code>2 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentMiddleVerticalStroke +</code> <code>ornamentZigZagLineWithRightEnd</code>
<code>ornamentPrecompSlideTrillMuffat</code>	<code>ornamentBottomLeftConvexStroke +</code> <code>2 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentTopRightConcaveStroke</code>
<code>ornamentPrecompSlideTrillSuffixMuffat</code>	<code>ornamentBottomLeftConvexStroke +</code> <code>2 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentTopRightConvexStroke</code>
<code>ornamentPrecompTrillSuffixDandrieu</code>	<code>3 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentZigZagLineWithRightEnd</code>
<code>ornamentPrecompPortDeVoixMordent</code>	<code>ornamentLowLeftConcaveStroke +</code> <code>2 x ornamentZigZagLineNoRightEnd +</code> <code>ornamentMiddleVerticalStroke +</code> <code>ornamentZigZagLineWithRightEnd</code>

Brass techniques (U+E590–U+E5AF)

U+E590

brassScoop

Scoop

U+E591

brassLiftShort

Lift, short

U+E592

brassLiftMedium

Lift, medium

U+E593

brassLiftLong

Lift, long

U+E594 (and U+1D185)

brassDoitShort

Doit, short

U+E595

brassDoitMedium

Doit, medium

U+E596

brassDoitLong

Doit, long

U+E597 (and U+1D186)

brassFallLipShort

Lip fall, short

U+E598

brassFallLipMedium

Lip fall, medium

U+E599

brassFallLipLong

Lip fall, long

U+E59A

brassFallSmoothShort

Smooth fall, short

U+E59B

brassFallSmoothMedium

Smooth fall, medium

U+E59C

brassFallSmoothLong

Smooth fall, long

U+E59D

brassFallRoughShort

Rough fall, short

U+E59E

brassFallRoughMedium

Rough fall, medium

U+E59F

brassFallRoughLong

Rough fall, long

U+E5A0

brassPlop

Plop

U+E5A1 (and U+1D187)

brassFlip

Flip

U+E5A2 (and U+1D188)		U+E5A3 (and U+1D189)
<i>brassSmear</i>		<i>brassBend</i>
~ Smear	□	Bend
U+E5A4		U+E5A5
<i>brassJazzTurn</i>		<i>brassMuteClosed</i>
~~ Jazz turn	+	Muted (closed)
U+E5A6		U+E5A7
<i>brassMuteHalfClosed</i>		<i>brassMuteOpen</i>
⊕ Half-muted (half-closed)	○	Open
U+E5A8		U+E5A9
<i>brassHarmonMuteClosed</i>		<i>brassHarmonMuteStemHalfLeft</i>
◆ Harmon mute, closed	◆	Harmon mute, stem-cup half-closed, left
U+E5AA		U+E5AB
<i>brassHarmonMuteStemHalfRight</i>		<i>brassHarmonMuteStemOpen</i>
◆ Harmon mute, stem-cup half-closed, right	+	Harmon mute, stem-cup open

Wind techniques (U+E5B0–U+E5CF)

U+E5B0 (and U+1D18A)	U+E5B1
<i>doubleTongueAbove</i>	
Double-tongue above	
U+E5B2 (and U+1D18B)	U+E5B3
<i>tripleTongueAbove</i>	
Triple-tongue above	
U+E5B4	U+E5B5
<i>windClosedHole</i>	
Closed hole	
U+E5B6	U+E5B7
<i>windHalfClosedHole1</i>	
Half-closed hole	
U+E5B8	U+E5B9
<i>windHalfClosedHole3</i>	
Half-open hole	
U+E5BA	U+E5BB
<i>windTrillKey</i>	
Trill key	
U+E5BC	U+E5BD
<i>windSharpEmbouchure</i>	
Flatter embouchure	
U+E5BE	U+E5BF
<i>windLessRelaxedEmbouchure</i>	
Somewhat relaxed embouchure	
U+E5C0	U+E5C1
<i>windLessTightEmbouchure</i>	
Somewhat tight embouchure	

U+E5C2*windWeakAirPressure*

Very relaxed embouchure / weak air-pressure

U+E5C4*windReedPositionNormal*

Normal reed position

U+E5C6*windReedPositionIn*

Much more reed (push inwards)

**U+E5C8***windMultiphonicsWhiteStem*

Combining multiphonics (white) for stem

U+E5C3*windStrongAirPressure*

Very tight embouchure / strong air pressure

U+E5C5*windReedPositionOut*

Very little reed (pull outwards)

U+E5C7*windMultiphonicsBlackStem*

Combining multiphonics (black) for stem

**U+E5C9***windMultiphonicsBlackWhiteStem*

Combining multiphonics (black and white) for stem

Recommended stylistic alternates**uniE5B0.salt01***doubleTongueAboveNoSlur*

Double-tongue above (no slur)

**uniE5B1.salt01***doubleTongueBelowNoSlur*

Double-tongue below (no slur)

uniE5B2.salt01*tripleTongueAboveNoSlur*

Triple-tongue above (no slur)

**uniE5B3.salt01***tripleTongueBelowNoSlur*

Triple-tongue below (no slur)

String techniques (U+E5D0–U+E5EF)

U+E5D0 (and U+1D1AA)	U+E5D1 (and U+1D1AB)
<i>stringsDownBow</i>	<i>stringsUpBow</i>
□ Down bow	▽ Up bow
U+E5D2 (and U+1D1AC)	U+E5D3
<i>stringsHarmonic</i>	<i>stringsHalfHarmonic</i>
○ Harmonic	● Half-harmonic
U+E5D4	U+E5D5
<i>stringsMuteOn</i>	<i>stringsMuteOff</i>
■ Mute on	□ Mute off
U+E5D6	U+E5D7
<i>stringsBowBehindBridge</i>	<i>stringsBowOnBridge</i>
○ Bow behind bridge (sul ponticello)	— Bow on top of bridge
U+E5D8	U+E5D9
<i>stringsBowOnTailpiece</i>	<i>stringsOverpressureDownBow</i>
— Bow on tailpiece	■ Overpressure, down bow
U+E5DA	U+E5DB
<i>stringsOverpressureUpBow</i>	<i>stringsOverpressurePossibleDownBow</i>
▽ Overpressure, up bow	■ Overpressure possible, down bow
U+E5DC	U+E5DD
<i>stringsOverpressurePossibleUpBow</i>	<i>stringsOverpressureNoDirection</i>
▽ Overpressure possible, up bow	▶ Overpressure, no bow direction
U+E5DE	U+E5DF
<i>stringsJeteAbove</i>	<i>stringsJeteBelow</i>
~~ Jeté (gettato) above	~~ Jeté (gettato) below
U+E5E0	U+E5E1
<i>stringsFouette</i>	<i>stringsVibratoPulse</i>
↳ Fouetté	↗ Vibrato pulse accent (Saunders) for stem

U+E5E2	U+E5E3
♀	stringsThumbPosition (՞Վ)
Thumb position	Change bow direction, indeterminate
՞Վ	stringsChangeBowDirectionLiga Change bow direction, indeterminate (Pricope)
՞Վ	stringsChangeBowDirectionImposed Change bow direction, indeterminate (Plötz)

Recommended stylistic alternates

Implementation notes

Scoring applications should not use the precomposed glyphs that include stems but instead draw the stems using primitives and impose the symbols upon them to ensure optimal positioning.

Plucked techniques (U+E5F0–U+E5FF)

U+E5F0 (and U+1D1AD)	U+E5F1
⌚ <i>pluckedSnapPizzicatoBelow</i>	⌚ <i>pluckedSnapPizzicatoAbove</i>
Snap pizzicato below	Snap pizzicato above
U+E5F2	U+E5F3
⌚ <i>pluckedBuzzPizzicato</i>	⌚ <i>pluckedLeftHandPizzicato</i>
Buzz pizzicato	Left-hand pizzicato
U+E5F4 (and U+1D183)	U+E5F5 (and U+1D184)
⌚ <i>arpeggiatoUp</i>	⌚ <i>arpeggiatoDown</i>
Arpeggiato up	Arpeggiato down
U+E5F6 (and U+1D1B3)	U+E5F7
⌚ <i>pluckedWithFingernails</i>	⌚ <i>pluckedFingernailFlick</i>
With fingernails	Fingernail flick
U+E5F8 (and U+1D1B4)	U+E5F9 (and U+1D1B5)
⌚ <i>pluckedDamp</i>	⌚ <i>pluckedDampAll</i>
Damp	Damp all
U+E5FA	U+E5FB
⌚ <i>pluckedPlectrum</i>	⌚ <i>pluckedDampOnStem</i>
Plectrum	Damp (on stem)

Recommended stylistic alternates

uniE5F0.salt01	uniE5F1.salt01
⌚ <i>pluckedSnapPizzicatoBelowGerman</i>	⌚ <i>pluckedSnapPizzicatoAboveGerman</i>
Snap pizzicato below (German)	Snap pizzicato above (German)

Implementation notes

Scoring applications should draw arpeggiato markings using multiple instances of the appropriate wiggly line segment glyphs (in the **Multi-segment lines** range) rather than the precomposed glyphs (**arpeggiatoUp** and **arpeggiatoDown**) to allow variable length.

Vocal techniques (U+E600–U+E60F)

	U+E600		U+E601
✓	<i>vocalBreathMark</i>	—	<i>vocalMouthClosed</i>
	Breath mark		Mouth closed
	U+E602		U+E603
□	<i>vocalMouthSlightlyOpen</i>	□	<i>vocalMouthOpen</i>
	Mouth slightly open		Mouth open
	U+E604		U+E605
□	<i>vocalMouthWideOpen</i>	□	<i>vocalMouthPursed</i>
	Mouth wide open		Mouth pursed
	U+E606		U+E607
×	<i>vocalSprechgesang</i>	S	<i>vocalsSussurando</i>
	Sprechgesang		Combining sussurando for stem

Keyboard techniques (U+E610–U+E62F)

	U+E610 (and U+1D1AE)		U+E611
❖.	<i>keyboardPedalPed</i> Pedal mark	❖	<i>keyboardPedalP</i> Pedal P
*	U+E612 (and U+1D1AF)		U+E613 (and U+1D1B0)
*	<i>keyboardPedalUp</i> Pedal up mark	Λ	<i>keyboardPedalHalf</i> Half-pedal mark
Λ	U+E614		U+E615
	<i>keyboardPedalUpNotch</i> Pedal up notch	Sost.	<i>keyboardPedalSost</i> Sostenuto pedal mark
S	U+E616		U+E617
	<i>keyboardPedals</i> Pedal S	❖	<i>keyboardPedalHalf2</i> Half pedal mark 1
❖.	U+E618		U+E619
	<i>keyboardPedalHalf3</i> Half pedal mark 2	*	<i>keyboardPedalUpSpecial</i> Pedal up special
⌚	U+E61A		U+E61B
	<i>keyboardLeftPedalPictogram</i> Left pedal pictogram	⌚	<i>keyboardMiddlePedalPictogram</i> Middle pedal pictogram
⌚	U+E61C		U+E61D
	<i>keyboardRightPedalPictogram</i> Right pedal pictogram	U	<i>keyboardPedalHeel1</i> Pedal heel 1
∩	U+E61E		U+E61F
	<i>keyboardPedalHeel2</i> Pedal heel 2	O	<i>keyboardPedalHeel3</i> Pedal heel 3 (Davis)
V	U+E620		U+E621
	<i>keyboardPedalToe1</i> Pedal toe 1	Λ	<i>keyboardPedalToe2</i> Pedal toe 2

U+E622		U+E623	
<i>keyboardPedalHeelToe</i>		<i>keyboardPluckInside</i>	
Pedal heel or toe		Pluck strings inside piano (Maderna)	
U+E624		U+E625	
<i>keyboardBebung2DotsAbove</i>		<i>keyboardBebung2DotsBelow</i>	
Clavichord bebung, 2 finger movements (above)		Clavichord bebung, 2 finger movements (below)	
U+E626		U+E627	
<i>keyboardBebung3DotsAbove</i>		<i>keyboardBebung3DotsBelow</i>	
Clavichord bebung, 3 finger movements (above)		Clavichord bebung, 3 finger movements (below)	
U+E628		U+E629	
<i>keyboardBebung4DotsAbove</i>		<i>keyboardBebung4DotsBelow</i>	
Clavichord bebung, 4 finger movements (above)		Clavichord bebung, 4 finger movements (below)	
U+E62A		U+E62B	
<i>keyboardPlayWithRH</i>		<i>keyboardPlayWithLH</i>	
Play with right hand		Play with left hand	

Recommended stylistic alternates

uniE610.salt01	uniE615.salt01

keyboardPedalPedNoDot *keyboardPedalSostNoDot*

Pedal mark (no dot) Sostenuto pedal mark (no dot)

Harp techniques (U+E630–U+E64F)

	U+E630		U+E631
▀	<i>harpPedalRaised</i> Harp pedal raised (flat)	+	<i>harpPedalCentered</i> Harp pedal centered (natural)
▀	U+E632	†	U+E633
	<i>harpPedalLowered</i> Harp pedal lowered (sharp)		<i>harpPedalDivider</i> Harp pedal divider
ƪ	U+E634		U+E635
	<i>harpSalzedoSlideWithSuppleness</i> Slide with suppleness (Salzedo)	~~~	<i>harpSalzedoOboicFlux</i> Oboic flux (Salzedo)
⚡	U+E636		U+E637
	<i>harpSalzedoThunderEffect</i> Thunder effect (Salzedo)	████	<i>harpSalzedoWhistlingSounds</i> Whistling sounds (Salzedo)
‡	U+E638		U+E639
	<i>harpSalzedoMetallicSounds</i> Metallic sounds (Salzedo)	◎	<i>harpSalzedoTamTamSounds</i> Tam-tam sounds (Salzedo)
ⓂⓂ	U+E63A		U+E63B
	<i>harpSalzedoPlayUpperEnd</i> Play at upper end of strings (Salzedo)	◎	<i>harpSalzedoTimpanicSounds</i> Timpanic sounds (Salzedo)
⊕	U+E63C		U+E63D
	<i>harpSalzedoMuffleTotally</i> Muffle totally (Salzedo)	◎	<i>harpSalzedoFluidicSoundsLeft</i> Fluidic sounds, left hand (Salzedo)
▬	U+E63E		U+E63F
	<i>harpSalzedoFluidicSoundsRight</i> Fluidic sounds, right hand (Salzedo)	▬	<i>harpMetalRod</i> Metal rod pictogram
🔧	U+E640		U+E641
	<i>harpTuningKey</i> Tuning key pictogram	▬←	<i>harpTuningKeyHandle</i> Use handle of tuning key pictogram

U+E642*harpTuningKeyShank*

Use shank of tuning key pictogram

**U+E643***harpTuningKeyGlissando*

Retune strings for glissando

U+E644*harpStringNoiseStem*

Combining string noise for stem

Recommended stylistic alternates**uniE63F.salt01***harpMetalRodAlt*

Metal rod pictogram (alternative)

**uniE640.salt01***harpTuningKeyAlt*

Tuning key pictogram (alternative)

Implementation notes

harpSalzedoFluidicSoundsLeft and **harpSalzedoFluidicSoundsRight** are similar in function to noteheads, and should be positioned relative to note stems in the same way.

harpSalzedoOboicFlux and **harpSalzedoPlayUpperEnd** may be repeated to create a continuing line, indicating the duration of the technique.

Tuned mallet percussion pictograms (U+E650–U+E65F)

U+E650



pictGlsp

Glockenspiel

U+E651



pictXyl

Xylophone

U+E652



pictMar

Marimba



U+E653

pictVib

Vibraphone

U+E654



pictEmptyTrap

Empty trapezoid



U+E655

pictGlspSmithBrindle

Glockenspiel (Smith Brindle)



U+E656

pictXylSmithBrindle

Xylophone (Smith Brindle)



U+E657

pictMarSmithBrindle

Marimba (Smith Brindle)



U+E658

pictVibSmithBrindle

Vibraphone (Smith Brindle)



U+E659

pictCrotales

Crotales

Chimes pictograms (U+E660–U+E66F)

U+E660



pictTubularBells

Tubular bells

U+E661



pictWindChimesGlass

Wind chimes (glass)

U+E662



pictChimes

Chimes

Drums pictograms (U+E670–U+E68F)

U+E670



pictTimpani

Timpani



U+E671

pictSnareDrum

Snare drum

U+E672



pictSnareDrumSnaresOff

Snare drum, snares off



U+E673

pictSnareDrumMilitary

Military snare drum

U+E674



pictBassDrum

Bass drum



U+E675

pictBassDrumOnSide

Bass drum on side

U+E676



pictTenorDrum

Tenor drum



U+E677

pictTomTom

Tom-tom

U+E678



pictTambourine

Tambourine



U+E679

pictTimbales

Timbales

U+E67A



pictBongos

Bongos



U+E67B

pictConga

Conga

U+E67C



pictLogDrum

Log drum



U+E67D

pictSlitDrum

Slit drum

U+E67E



pictBrakeDrum

Brake drum



U+E67F

pictGobletDrum

Goblet drum (djembe, dumbek)

U+E680



pictTabla

Indian tabla

Recommended stylistic alternates

uniE678.salt01

pictTambourineStockhausen



Tambourine (Stockhausen)

Wooden struck or scraped percussion pictograms (U+E690–U+E69F)

U+E690



pictWoodBlock
Wood block

U+E691



pictTempleBlocks
Temple blocks

U+E692



pictClaves
Claves

U+E693



pictGuiro
Guiro

U+E694



pictRatchet
Ratchet



U+E695

pictFootballRatchet
Football rattle

U+E696



pictWhip
Whip



U+E697

pictBoardClapper
Board clapper

U+E698



pictCastanets
Castanets

Recommended stylistic alternates

uniE698.salt01



pictCastanetsSmithBrindle
Castanets (Smith Brindle)

Metallic struck percussion pictograms (U+E6A0–U+E6AF)

U+E6A0



pictTriangle
Triangle

U+E6A1



pictAnvil
Anvil

Bells pictograms (U+E6B0–U+E6BF)

U+E6B0



pictSleighBell

Sleigh bell



U+E6B1

pictCowBell

Cow bell

U+E6B2



pictAlmglocken

Almglocken



U+E6B3

pictBellPlate

Bell plate

U+E6B4



pictBell

Bell



U+E6B5

pictHandbell

Handbell

Recommended stylistic alternates

uniE6B0.salt01



pictSleighBellSmithBrindle

Sleigh bell (Smith Brindle)



uniE6B1.salt01

pictCowBellBerio

Cow bell (Berio)

Cymbals pictograms (U+E6C0–U+E6CF)

U+E6C0

 *pictCrashCymbals*
Crash cymbals

U+E6C1

 *pictSuspendedCymbal*
Suspended cymbal

U+E6C2

 *pictHiHat*
Hi-hat



U+E6C3

 *pictHiHatOnStand*
Hi-hat cymbals on stand

U+E6C4

 *pictSizzleCymbal*
Sizzle cymbal



U+E6C5

 *pictVietnameseHat*
Vietnamese hat cymbal

U+E6C6

 *pictChineseCymbal*
Chinese cymbal



U+E6C7

 *pictFingerCymbals*
Finger cymbals

U+E6C8

 *pictCymbalTongs*
Cymbal tongs



U+E6C9

 *pictBellOfCymbal*
Edge of cymbal

U+E6CA

 *pictEdgeOfCymbal*
Bell of cymbal

Gongs pictograms (U+E6D0–U+E6DF)

U+E6D0



pictTamTam

Tam-tam



U+E6D1

pictTamTamWithBeater

Tam-tam with beater (Smith Brindle)

U+E6D2



pictGong

Gong



U+E6D3

pictGongWithButton

Gong with button (nipple)

U+E6D4



pictSlideBrushOnGong

Slide brush on gong

Shakers or rattles pictograms (U+E6E0–U+E6EF)

U+E6E0



pictFlexatone

Flexatone

U+E6E1



pictMaraca

Maraca

U+E6E2



pictMaracas

Maracas

U+E6E3



pictCabasa

Cabasa

U+E6E4



pictThundersheet

Thundersheet



U+E6E5

pictVibraslap

Vibraslap

U+E6E6



pictSistrum

Sistrum



U+E6E7

pictRainstick

Rainstick

Recommended stylistic alternates

uniE6E1.salt01



pictMaracaSmithBrindle

Maraca (Smith Brindle)

Whistles and aerophones pictograms (U+E6F0–U+E6FF)

U+E6F0



pictSlideWhistle

Slide whistle

U+E6F1



pictBirdWhistle

Bird whistle

U+E6F2



pictPoliceWhistle

Police whistle



U+E6F3

pictSiren

Siren

U+E6F4



pictWindMachine

Wind machine



U+E6F5

pictCarHorn

Car horn

U+E6F6



pictKlaxonHorn

Klaxon horn



U+E6F7

pictDuckCall

Duck call

U+E6F8



pictWindWhistle

Wind whistle (or mouth siren)



U+E6F9

pictMegaphone

Megaphone

Miscellaneous percussion instrument pictograms (U+E700–U+E70F)

U+E700



pictPistolShot

Pistol shot

U+E701



pictCannon

Cannon

U+E702



pictSandpaperBlocks

Sandpaper blocks



U+E703

pictLionsRoar

Lion's roar

Beaters pictograms (U+E710–U+E77F)

U+E710

 *pictBeaterSoftXylophoneUp*
Soft xylophone stick up

U+E712

 *pictBeaterSoftXylophoneRight*
Soft xylophone stick right

U+E714

 *pictBeaterMediumXylophoneUp*
Medium xylophone stick up

U+E716

 *pictBeaterMediumXylophoneRight*
Medium xylophone stick right

U+E718

 *pictBeaterHardXylophoneUp*
Hard xylophone stick up

U+E71A

 *pictBeaterHardXylophoneRight*
Hard xylophone stick right

U+E71C

 *pictBeaterWoodXylophoneUp*
Wood xylophone stick up

U+E71E

 *pictBeaterWoodXylophoneRight*
Wood xylophone stick right

U+E720

 *pictBeaterSoftGlockenspielUp*
Soft glockenspiel stick up

U+E711

 *pictBeaterSoftXylophoneDown*
Soft xylophone stick down

U+E713

 *pictBeaterSoftXylophoneLeft*
Soft xylophone stick left

U+E715

 *pictBeaterMediumXylophoneDown*
Medium xylophone stick down

U+E717

 *pictBeaterMediumXylophoneLeft*
Medium xylophone stick left

U+E719

 *pictBeaterHardXylophoneDown*
Hard xylophone stick down

U+E71B

 *pictBeaterHardXylophoneLeft*
Hard xylophone stick left

U+E71D

 *pictBeaterWoodXylophoneDown*
Wood xylophone stick down

U+E71F

 *pictBeaterWoodXylophoneLeft*
Wood xylophone stick left

U+E721

 *pictBeaterSoftGlockenspielDown*
Soft glockenspiel stick down

U+E722

pictBeaterSoftGlockenspielRight
Soft glockenspiel stick right



U+E723

pictBeaterSoftGlockenspielLeft
Soft glockenspiel stick left



U+E724

pictBeaterHardGlockenspielUp
Hard glockenspiel stick up



U+E725

pictBeaterHardGlockenspielDown
Hard glockenspiel stick down

U+E726

pictBeaterHardGlockenspielRight
Hard glockenspiel stick right



U+E727

pictBeaterHardGlockenspielLeft
Hard glockenspiel stick left

U+E728

pictBeaterSoftTimpaniUp
Soft timpani stick up



U+E729

pictBeaterSoftTimpaniDown
Soft timpani stick down

U+E72A

pictBeaterSoftTimpaniRight
Soft timpani stick right



U+E72B

pictBeaterSoftTimpaniLeft
Soft timpani stick left

U+E72C

pictBeaterMediumTimpaniUp
Medium timpani stick up



U+E72D

pictBeaterMediumTimpaniDown
Medium timpani stick down

U+E72E

pictBeaterMediumTimpaniRight
Medium timpani stick right



U+E72F

pictBeaterMediumTimpaniLeft
Medium timpani stick left

U+E730

pictBeaterHardTimpaniUp
Hard timpani stick up



U+E731

pictBeaterHardTimpaniDown
Hard timpani stick down

U+E732

pictBeaterHardTimpaniRight
Hard timpani stick right



U+E733

pictBeaterHardTimpaniLeft
Hard timpani stick left

U+E734



pictBeaterWoodTimpaniUp

Wood timpani stick up

U+E735



pictBeaterWoodTimpaniDown

Wood timpani stick down

U+E736



pictBeaterWoodTimpaniRight

Wood timpani stick right



U+E737

pictBeaterWoodTimpaniLeft

Wood timpani stick left

U+E738



pictBeaterSoftBassDrumUp

Soft bass drum stick up



U+E739

pictBeaterSoftBassDrumDown

Soft bass drum stick down

U+E73A



pictBeaterMediumBassDrumUp

Medium bass drum stick up



U+E73B

pictBeaterMediumBassDrumDown

Medium bass drum stick down

U+E73C



pictBeaterHardBassDrumUp

Hard bass drum stick up



U+E73D

pictBeaterHardBassDrumDown

Hard bass drum stick down

U+E73E



pictBeaterDoubleBassDrumUp

Double bass drum stick up



U+E73F

pictBeaterDoubleBassDrumDown

Double bass drum stick down

U+E740



pictBeaterSoftYarnUp

Soft yarn beater up



U+E741

pictBeaterSoftYarnDown

Soft yarn beater down

U+E742



pictBeaterSoftYarnRight

Soft yarn beater right



U+E743

pictBeaterSoftYarnLeft

Soft yarn beater left

U+E744



pictBeaterMediumYarnUp

Medium yarn beater up



U+E745

pictBeaterMediumYarnDown

Medium yarn beater down

U+E746



pictBeaterMediumYarnRight

Medium yarn beater right

U+E747



pictBeaterMediumYarnLeft

Medium yarn beater left

U+E748



pictBeaterHardYarnUp

Hard yarn beater up



pictBeaterHardYarnDown

Hard yarn beater down

U+E74A



pictBeaterHardYarnRight

Hard yarn beater right



pictBeaterHardYarnLeft

Hard yarn beater left

U+E74C



pictBeaterSuperballUp

Superball beater up



pictBeaterSuperballDown

Superball beater down

U+E74E



pictBeaterSuperballRight

Superball beater right



pictBeaterSuperballLeft

Superball beater left

U+E750



pictSuperball

Superball



U+E751

pictWoundHardUp

Wound beater, hard core up

U+E752



pictWoundHardDown

Wound beater, hard core down



U+E753

pictWoundHardRight

Wound beater, hard core right

U+E754



pictWoundHardLeft

Wound beater, hard core left



U+E755

pictWoundSoftUp

Wound beater, soft core up



U+E756

pictWoundSoftDown

Wound beater, soft core down



U+E757

pictWoundSoftRight

Wound beater, soft core right

U+E758



pictWoundSoftLeft

Wound beater, soft core left

U+E759



pictGumSoftUp

Soft gum beater, up

U+E75A



pictGumSoftDown

Soft gum beater, down



pictGumSoftRight

Soft gum beater, right

U+E75C



pictGumSoftLeft

Soft gum beater, left



U+E75D

pictGumMediumUp

Medium gum beater, up

U+E75E



pictGumMediumDown

Medium gum beater, down



U+E75F

pictGumMediumRight

Medium gum beater, right

U+E760



pictGumMediumLeft

Medium gum beater, left



U+E761

pictGumHardUp

Hard gum beater, up

U+E762



pictGumHardDown

Hard gum beater, down



U+E763

pictGumHardRight

Hard gum beater, right

U+E764



pictGumHardLeft

Hard gum beater, left



U+E765

pictBeaterSnareSticksUp

Snare sticks up

U+E766



pictBeaterSnareSticksDown

Snare sticks down



U+E767

pictBeaterJazzSticksUp

Jazz sticks up

U+E768



pictBeaterJazzSticksDown

Jazz sticks down



U+E769

pictBeaterTriangleUp

Triangle beater up

U+E76A



pictBeaterTriangleDown
Triangle beater down



U+E76B

pictBeaterWireBrushesUp
Wire brushes up



pictBeaterWireBrushesDown
Wire brushes down



U+E76D
pictBeaterBrassMalletsUp
Brass mallets up



pictBeaterBrassMalletsDown
Brass mallets down



U+E76F
pictBeaterSoftXylophone
Soft xylophone beaters



pictBeaterSpoonWoodenMallet
Spoon-shaped wooden mallet



U+E771
pictBeaterGuiroScraper
Guiro scraper



pictBeaterBow
Bow



U+E773
pictBeaterMallet
Chime hammer



pictBeaterMetalHammer
Metal hammer



U+E775
pictBeaterHammer
Hammer



pictBeaterKnittingNeedle
Knitting needle



U+E777
pictBeaterHand
Hand



pictBeaterFinger
Finger



U+E779
pictBeaterFist
Fist



pictBeaterFingernails
Fingernails



U+E77B
pictCoins
Coins

U+E77C

pictDrumStick

Drum stick

Percussion playing technique pictograms (U+E780–U+E79F)

U+E780	U+E781
✿ <i>pictStickShot</i> Stick shot	⌚ <i>pictScrapeCenterToEdge</i> Scrape from center to edge
U+E782	U+E783
⌚ <i>pictScrapeEdgeToCenter</i> Scrape from edge to center	⌚ <i>pictScrapeAroundRim</i> Scrape around rim
U+E784	U+E785
■ <i>pictOnRim</i> On rim	+ <i>pictOpenRimShot</i> Closed / rim shot
U+E786	U+E787
⊕ <i>pictHalfOpen1</i> Half-open	∅ <i>pictHalfOpen2</i> Half-open 2 (Weinberg)
U+E788	U+E789
○ <i>pictOpen</i> Open	⊕ <i>pictDamp1</i> Damp
U+E78A	U+E78B
∅ <i>pictDamp2</i> Damp 2	∅ <i>pictDamp3</i> Damp 3
U+E78C	U+E78D
∅ <i>pictDamp4</i> Damp 4	✗ <i>pictRimShotOnStem</i> Rim shot (on stem)
U+E78E	U+E78F
⊗ <i>pictCenter1</i> Center (Weinberg)	◎ <i>pictCenter2</i> Center (Ghent)

Ⓐ	U+E790 <i>pictCenter3</i> Center (Caltabiano)	Ⓑ	U+E791 <i>pictRim1</i> Rim or edge (Weinberg)
○	U+E792 <i>pictRim2</i> Rim (Ghent)	○	U+E793 <i>pictRim3</i> Rim (Caltabiano)
Ⓝ	U+E794 <i>pictNormalPosition</i> Normal position (Caltabiano)	Ⓝ	U+E795 <i>pictChokeCymbal</i> Choke (Weinberg)
□	U+E796 <i>pictRightHandSquare</i> Left hand (Agostini)	□	U+E797 <i>pictLeftHandCircle</i> Right hand (Agostini)
↗	U+E798 <i>pictSwish</i> Swish	↗	

Handbells (U+E7A0–U+E7BF)

U+E7A0	U+E7A1
<i>handbellsMartellato</i>	<i>handbellsMartellatoLift</i>
▼ Martellato	▼↑ Martellato lift
U+E7A2	U+E7A3
<i>handbellsHandMartellato</i>	<i>handbellsMutedMartellato</i>
▼ Hand martellato	▼ Muted martellato
U+E7A4	U+E7A5
<i>handbellsMalletBellSuspended</i>	<i>handbellsMalletBellOnTable</i>
+ Mallet, bell suspended	+ Mallet, bell on table
U+E7A6	U+E7A7
<i>handbellsMalletLft</i>	<i>handbellsPluckLift</i>
†↑ Mallet lift	↑ Pluck lift
U+E7A8	U+E7A9
<i>handbellsSwingUp</i>	<i>handbellsSwingDown</i>
↑ Swing up	↓ Swing down
U+E7AA	U+E7AB
<i>handbellsSwing</i>	<i>handbellsEcho1</i>
↔ Swing	↑ Echo
U+E7AC	U+E7AD
<i>handbellsEcho2</i>	<i>handbellsGyro</i>
↓ Echo 2	○ Gyro
U+E7AE	U+E7AF
<i>handbellsDamp3</i>	<i>handbellsBelltree</i>
⊗ Damp 3	☒ Belltree
U+E7B0	U+E7B1
<i>handbellsTableSingleBell</i>	<i>handbellsTablePairBells</i>
→ Table single handbell	→ Table pair of handbells

Guitar (U+E7C0–U+E7DF)

	U+E7C0 <i>guitarVibratoBarScoop</i> Guitar vibrato bar scoop	✓		U+E7C1 <i>guitarVibratoBarDip</i> Guitar vibrato bar dip	▽
~~~	<b>U+E7C2</b> <i>guitarShake</i> Guitar shake	①	②	<b>U+E7C3</b> <i>guitarString0</i> String number 0	③
①	<b>U+E7C4</b> <i>guitarString1</i> String number 1	②	④	<b>U+E7C5</b> <i>guitarString2</i> String number 2	③
③	<b>U+E7C6</b> <i>guitarString3</i> String number 3	④	⑤	<b>U+E7C7</b> <i>guitarString4</i> String number 4	⑥
⑤	<b>U+E7C8</b> <i>guitarString5</i> String number 5	⑥	⑦	<b>U+E7C9</b> <i>guitarString6</i> String number 6	⑧
⑦	<b>U+E7CA</b> <i>guitarString7</i> String number 7	⑧	⑨	<b>U+E7CB</b> <i>guitarString8</i> String number 8	○
⑨	<b>U+E7CC</b> <i>guitarString9</i> String number 9	○		<b>U+E7CD</b> <i>guitarOpenPedal</i> Open wah/volume pedal	+
⊕	<b>U+E7CE</b> <i>guitarHalfOpenPedal</i> Half-open wah/volume pedal	+		<b>U+E7CF</b> <i>guitarClosePedal</i> Closed wah/volume pedal	+
⑩	<b>U+E7D0</b> <i>guitarLeftHandTapping</i> Left-hand tapping	†		<b>U+E7D1</b> <i>guitarRightHandTapping</i> Right-hand tapping	†

	<b>U+E7D2</b>		<b>U+E7D3</b>
*	<i>guitarGolpe</i>	<	<i>guitarFadeIn</i>
	Golpe (tapping the pick guard)		Fade in
	<b>U+E7D4</b>		<b>U+E7D5</b>
>	<i>guitarFadeOut</i>	◇	<i>guitarVolumeSwell</i>
	Fade out		Volume swell

# Chord diagrams (U+E7E0–U+E7EF)

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## **U+E7E0**



*fretboard3String*  
3-string fretboard

## **U+E7E1**



*fretboard3StringNut*  
3-string fretboard at nut

## **U+E7E2** (and U+1D11D)



*fretboard4String*  
4-string fretboard

## **U+E7E3**



*fretboard4StringNut*  
4-string fretboard at nut

## **U+E7E4**



*fretboard5String*  
5-string fretboard



## **U+E7E5**

*fretboard5StringNut*  
5-string fretboard at nut

## **U+E7E6** (and U+1D11C)



*fretboard6String*  
6-string fretboard



## **U+E7E7**

*fretboard6StringNut*  
6-string fretboard at nut

## **U+E7E8**



*fretboardFilledCircle*  
Fingered fret (filled circle)



## **U+E7E9**

*fretboardX*  
String not played (X)

## **U+E7EA**



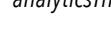
*fretboardO*  
Open string (O)

## Implementation notes

Scoring applications may choose to draw chord diagram fretboards using primitives in order to provide the end user with control over grid spacing and line thickness relative to size.

# Analytics (U+E7F0–U+E7FF)

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	<b>U+E7F0</b> (and U+1D1A6)  <i>analyticsHauptstimme</i> Hauptstimme	<b>U+E7F1</b> (and U+1D1A7)  <i>analyticsNebenstimme</i> Nebenstimme
	<b>U+E7F2</b>  <i>analyticsStartStimme</i> Start of stimme	<b>U+E7F3</b> (and U+1D1A8)  <i>analyticsEndStimme</i> End of stimme
Th	<b>U+E7F4</b>  <i>analyticsTheme</i> Theme	<b>U+E7F5</b>  <i>analyticsThemeRetrograde</i> Retrograde of theme
	<b>U+E7F6</b>  <i>analyticsThemeRetrogradeInversion</i> Retrograde inversion of theme	<b>U+E7F7</b>  <i>analyticsThemeInversion</i> Inversion of theme
T	<b>U+E7F8</b>  <i>analyticsTheme1</i> Theme 1	<b>U+E7F9</b>  <i>analyticsInversion1</i> Inversion 1

# Chord symbols (U+E800–U+E80F)

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<b>U+E800</b> (and U+1D1A9)	<b>U+E801</b>
○ <i>csymDiminished</i> Diminished	∅ <i>csymHalfDiminished</i> Half-diminished
<b>U+E802</b>	<b>U+E803</b>
+ <i>csymAugmented</i> Augmented	△ <i>csymMajorSeventh</i> Major seventh
<b>U+E804</b>	<b>U+E805</b>
— <i>csymMinor</i> Minor	( <i>csymParensLeftTall</i> Double-height left parenthesis
) <b>U+E806</b> <i>csymParensRightTall</i> Double-height right parenthesis	[ <b>U+E807</b> <i>csymBracketLeftTall</i> Double-height left bracket
] <b>U+E808</b> <i>csymBracketRightTall</i> Double-height right bracket	

## Implementation notes

These symbols are designed to combine with accidental symbols (**accidentalSharp** and **accidentalFlat**) from the music font and the letters A–G (for root and bass alterations), lower case letters (for chord qualities, e.g. “maj” and “min”) and numbers (for chord extensions or tensions) from any standard text font to produce complete chord symbols.

Scoring applications should be able to create strings with complex formatting, e.g. superscript and subscript characters, small digits stacked on top of each other, and scale these symbols to any arbitrary size in order to produce satisfactory chord symbols with a wide variety of visual appearances.

# Tuplets (U+E810–U+E81F)

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	<b>U+E810</b>		<b>U+E811</b>
<b>0</b>	<i>tuplet0</i>		<i>tuplet1</i>
	Tuplet 0	<b>1</b>	Tuplet 1
	<b>U+E812</b>		<b>U+E813</b>
<b>2</b>	<i>tuplet2</i>		<i>tuplet3</i>
	Tuplet 2	<b>3</b>	Tuplet 3
	<b>U+E814</b>		<b>U+E815</b>
<b>4</b>	<i>tuplet4</i>		<i>tuplet5</i>
	Tuplet 4	<b>5</b>	Tuplet 5
	<b>U+E816</b>		<b>U+E817</b>
<b>6</b>	<i>tuplet6</i>		<i>tuplet7</i>
	Tuplet 6	<b>7</b>	Tuplet 7
	<b>U+E818</b>		<b>U+E819</b>
<b>8</b>	<i>tuplet8</i>		<i>tuplet9</i>
	Tuplet 8	<b>9</b>	Tuplet 9
	<b>U+E81A</b>		
:	<i>tupletColon</i>		
	Tuplet colon		

## Implementation notes

This range provides glyphs for tuplet numbers. These digits may also be used in ligatures with clefs to indicate the interval by which a transposing instrument transposes, used in some scores in C.

Scoring applications should use primitives to draw tuplet brackets.

Simple triplets (including brackets) can be written in fonts intended for use in text-based applications using the glyphs in the **Beamed groups of notes** range.

# Conductor symbols (U+E820–U+E82F)

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<b>U+E820</b>	<b>U+E821</b>
↓ <i>conductorStrongBeat</i> Strong beat or cue	↓ <i>conductorLeftBeat</i> Left-hand beat or cue
<b>U+E822</b>	<b>U+E823</b>
↓ <i>conductorRightBeat</i> Right-hand beat or cue	↓ <i>conductorWeakBeat</i> Weak beat or cue
<b>U+E824</b>	<b>U+E825</b>
□ <i>conductorBeat2Simple</i> Beat 2, simple time	△ <i>conductorBeat3Simple</i> Beat 3, simple time
<b>U+E826</b>	<b>U+E827</b>
□ <i>conductorBeat4Simple</i> Beat 4, simple time	□ <i>conductorBeat2Compound</i> Beat 2, compound time
<b>U+E828</b>	<b>U+E829</b>
△ <i>conductorBeat3Compound</i> Beat 3, compound time	□ <i>conductorBeat4Compound</i> Beat 4, compound time

# Accordion (U+E830–U+E86F)

## U+E830



*accdnRH3RanksPiccolo*

Right hand, 3 ranks, 4' stop (piccolo)



## U+E831

*accdnRH3RanksClarinet*

Right hand, 3 ranks, 8' stop (clarinet)

## U+E832



*accdnRH3RanksUpperTremolo8*

Right hand, 3 ranks, upper tremolo  
8' stop



## U+E833

*accdnRH3RanksLowerTremolo8*

Right hand, 3 ranks, lower tremolo  
8' stop

## U+E834



*accdnRH3RanksBassoon*

Right hand, 3 ranks, 16' stop  
(bassoon)



## U+E835

*accdnRH3RanksOboe*

Right hand, 3 ranks, 4' stop + 8'  
stop (oboe)

## U+E836



*accdnRH3RanksViolin*

Right hand, 3 ranks, 8' stop + upper  
tremolo 8' stop (violin)



## U+E837

*accdnRH3RanksImitationMusette*

Right hand, 3 ranks, 4' stop + 8'  
stop + upper tremolo 8' stop

## U+E838



*accdnRH3RanksAuthenticMusette*

Right hand, 3 ranks, lower tremolo  
8' stop + 8' stop + upper tremolo 8'



## U+E839

*accdnRH3RanksOrgan*

Right hand, 3 ranks, 4' stop + 16'  
stop (organ)

## U+E83A



*accdnRH3RanksHarmonium*

Right hand, 3 ranks, 4' stop + 8'  
stop + 16' stop (harmonium)



## U+E83B

*accdnRH3RanksBandoneon*

Right hand, 3 ranks, 8' stop + 16'  
stop (bandoneón)

## U+E83C



*accdnRH3RanksAccordion*

Right hand, 3 ranks, 8' stop + upper  
tremolo 8' stop + 16' stop



## U+E83D

*accdnRH3RanksMaster*

Right hand, 3 ranks, 4' stop + lower  
tremolo 8' stop + upper tremolo 8'

## U+E83E



*accdnRH3RanksTwoChoirs*

Right hand, 3 ranks, lower tremolo  
8' stop + upper tremolo 8' stop



## U+E83F

*accdnRH3RanksTremoloLower8ve*

Right hand, 3 ranks, lower tremolo  
8' stop + upper tremolo 8' stop +

## U+E840



*accdnRH3RanksTremoloUpper8ve*

Right hand, 3 ranks, 4' stop + lower  
tremolo 8' stop + upper tremolo 8'



## U+E841

*accdnRH3RanksDoubleTremoloLower8ve*

Right hand, 3 ranks, lower tremolo  
8' stop + 8' stop + upper tremolo 8'

**U+E842***accdnRH3RanksDoubleTremoloUpper8ve*

Right hand, 3 ranks, 4' stop + lower tremolo 8' stop + 8' stop + upper

**U+E844***accdnRH4RanksSoprano*

Right hand, 4 ranks, soprano

**U+E846***accdnRH4RanksTenor*

Right hand, 4 ranks, tenor

**U+E848***accdnRH4RanksSoftBass*

Right hand, 4 ranks, soft bass

**U+E84A***accdnRH4RanksBassAlto*

Right hand, 4 ranks, bass/alto

**U+E84C***accdnLH2Ranks16Round*

Left hand, 2 ranks, 16' stop (round)

**U+E84E***accdnLH2RanksMasterRound*

Left hand, 2 ranks, master (round)

**U+E850***accdnLH2RanksFullMasterRound*

Left hand, 2 ranks, full master (round)

**U+E852***accdnLH3Ranks2Square*

Left hand, 3 ranks, 2' stop (square)

**U+E843***accdnRH3RanksFullFactory*

Right hand, 3 ranks, 4' stop + lower tremolo 8' stop + 8' stop + upper

**U+E845***accdnRH4RanksAlto*

Right hand, 4 ranks, alto

**U+E847***accdnRH4RanksMaster*

Right hand, 4 ranks, master

**U+E849***accdnRH4RanksSoftTenor*

Right hand, 4 ranks, soft tenor

**U+E84B***accdnLH2Ranks8Round*

Left hand, 2 ranks, 8' stop (round)

**U+E84D***accdnLH2Ranks8Plus16Round*

Left hand, 2 ranks, 8' stop + 16' stop (round)

**U+E84F***accdnLH2RanksMasterPlus16Round*

Left hand, 2 ranks, master + 16' stop (round)

**U+E851***accdnLH3Ranks8Square*

Left hand, 3 ranks, 8' stop (square)

**U+E853***accdnLH3RanksDouble8Square*

Left hand, 3 ranks, double 8' stop (square)

<b>U+E854</b>		<b>U+E855</b>	
<i>accdnLH3Ranks2Plus8Square</i>		<i>accdnLH3RanksTuttiSquare</i>	
Left hand, 3 ranks, 2' stop + 8' stop (square)		Left hand, 3 ranks, 2' stop + double 8' stop (tutti) (square)	
<b>U+E856</b>		<b>U+E857</b>	
<i>accdnCombRH3RanksEmpty</i>		<i>accdnCombRH4RanksEmpty</i>	
Combining right hand, 3 ranks, empty		Combining right hand, 4 ranks, empty	
<b>U+E858</b>		<b>U+E859</b>	
<i>accdnCombLH2RanksEmpty</i>		<i>accdnCombLH3RanksEmptySquare</i>	
Combining left hand, 2 ranks, empty		Combining left hand, 3 ranks, empty (square)	
<b>U+E85A</b>		<b>U+E85B</b>	
<i>accdnCombDot</i>		<i>accdnPush</i>	
Combining accordion coupler dot		Push	
<b>U+E85C</b>		<b>U+E85D</b>	
<i>accdnPull</i>		<i>accdnRicochet2</i>	
Pull		Ricochet (2 tones)	
<b>U+E85E</b>		<b>U+E85F</b>	
<i>accdnRicochet3</i>		<i>accdnRicochet4</i>	
Ricochet (3 tones)		Ricochet (4 tones)	
<b>U+E860</b>		<b>U+E861</b>	
<i>accdnRicochet5</i>		<i>accdnRicochet6</i>	
Ricochet (5 tones)		Ricochet (6 tones)	
<b>U+E862</b>		<b>U+E863</b>	
<i>accdnRicochetStem2</i>		<i>accdnRicochetStem3</i>	
> Combining ricochet for stem (2 tones)		Combining ricochet for stem (3 tones)	
<b>U+E864</b>		<b>U+E865</b>	
<i>accdnRicochetStem4</i>		<i>accdnRicochetStem5</i>	
< Combining ricochet for stem (4 tones)		Combining ricochet for stem (5 tones)	

**U+E866**

WW *accdnRicochetStem6*  
Combining ricochet for stem (6  
tones)

**Recommended stylistic alternates**

uniE85B.salt01  
V *accdnPushAlt*  
Push (Draugsvoll & Højsgaard)

# Beams and slurs (U+E870–U+E87F)

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**U+E870** (and U+1D173)

*controlBeginBeam*

Begin beam

**U+E871** (and U+1D174)

*controlEndBeam*

End beam

**U+E872** (and U+1D175)

*controlBeginTie*

Begin tie

**U+E873** (and U+1D176)

*controlEndTie*

End tie

**U+E874** (and U+1D177)

*controlBeginSlur*

Begin slur

**U+E875** (and U+1D178)

*controlEndSlur*

End slur

**U+E876** (and U+1D179)

*controlBeginPhrase*

Begin phrase

**U+E877** (and U+1D17A)

*controlEndPhrase*

End phrase

## Implementation notes

These are format characters as defined in the Unicode Standard¹⁶:

Extensive ligature-like beams are used frequently in musical notation between groups of notes having short values. The practice is widespread and very predictable, so it is therefore amenable to algorithmic handling. The format characters U+1D173 musical symbol begin beam and U+1D174 musical symbol end beam can be used to indicate the extents of beam groupings. In some exceptional cases, beams are left unclosed on one end. This status can be indicated with a U+1D159 musical symbol null notehead character if no stem is to appear at the end of the beam.

Similarly, format characters have been provided for other connecting structures. The characters U+1D175 musical symbol begin tie, U+1D176 musical symbol end tie, U+1D177 musical symbol begin slur, U+1D178 musical symbol end slur, U+1D179 musical symbol begin phrase, and U+1D17A musical symbol end phrase indicate the extent of these features. Like beaming, these features are easily handled in an algorithmic fashion.

These pairs of characters modify the layout and grouping of notes and phrases in full musical notation. When musical examples are written or rendered in plain text without special software, the start/end format characters may be rendered as brackets or left uninterpreted. To the extent possible, more sophisticated software that renders musical examples inline with natural-language text might interpret them in their actual format control capacity, rendering slurs, beams, and so forth, as appropriate.

Scoring applications may choose to implement these format characters for beams, slurs, phrase marks and ties or not, as they wish.

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¹⁶ *Ibid.*, Allen, page 537.

# Medieval and Renaissance staves (U+E880–U+E88F)

---

## U+E880

*chantStaff*

☰ Plainchant staff

## U+E881

*chantStaffWide*

☰ Plainchant staff (wide)

## U+E882

*chantStaffNarrow*

☰ Plainchant staff (narrow)

## U+E883

*chantDivisioMinima*

| Divisio minima

## U+E884

*chantDivisioMaior*

| Divisio maior

## U+E885

*chantDivisioMaxima*

| Divisio maxima

## U+E886

*chantDivisioFinalis*

|| Divisio finalis

## U+E887

*chantVirgula*

, Virgula

## U+E888

*chantCesura*

, Caesura

# Medieval and Renaissance clefs (U+E890–U+E89F)

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## U+E890

*mensuralGclef*

Ĝ

Mensural G clef



## U+E891

*mensuralGclefPetrucci*



Petrucci G clef

## U+E892

*mensuralFclefGregorian*

Ĝ

Gregorian F clef



## U+E893

*mensuralFclefAncient*



Ancient F clef

## U+E894

*mensuralFclef*

Ĝ:

Mensural F clef



## U+E895

*mensuralFclefPetrucci*

Petrucci F clef

## U+E896

*mensuralCclefGregorian*

Ĝ

Gregorian C clef



## U+E897

*mensuralCclef*

Mensural C clef

## U+E898

*mensuralCclefPetrucci*

Ĝ

Petrucci C clef

# Medieval and Renaissance prolations (U+E8A0–U+E8BF)

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	<b>U+E8A0</b> (and U+1D1C7) <i>mensuralProlation1</i>		<b>U+E8A1</b> (and U+1D1C8) <i>mensuralProlation2</i>
⌚	Tempus perfectum cum prolatione perfecta (9/8)	⌚	Tempus perfectum cum prolatione imperfecta (3/4)
	<b>U+E8A2</b> (and U+1D1C9) <i>mensuralProlation3</i>		<b>U+E8A3</b> <i>mensuralProlation4</i>
∅	Tempus perfectum cum prolatione imperfecta diminution 1 (3/8)	∅	Tempus perfectum cum prolatione perfecta diminution 2 (9/16)
	<b>U+E8A4</b> (and U+1D1CA) <i>mensuralProlation5</i>		<b>U+E8A5</b> (and U+1D1CB) <i>mensuralProlation6</i>
⌚	Tempus imperfectum cum prolatione perfecta (6/8)	⌚	Tempus imperfectum cum prolatione imperfecta (2/4)
	<b>U+E8A6</b> (and U+1D1CC) <i>mensuralProlation7</i>		<b>U+E8A7</b> <i>mensuralProlation8</i>
⌚	Tempus imperfectum cum prolatione imperfecta diminution 1	⌚	Tempus imperfectum cum prolatione imperfecta diminution 2
	<b>U+E8A8</b> (and U+1D1CD) <i>mensuralProlation9</i>		<b>U+E8A9</b> (and U+1D1CE) <i>mensuralProlation10</i>
⌚	Tempus imperfectum cum prolatione imperfecta diminution 3	⌚	Tempus imperfectum cum prolatione imperfecta diminution 4
	<b>U+E8AA</b> <i>mensuralProlation11</i>		<b>U+E8AB</b> <i>mensuralProlationCombiningDot</i>
⌚	Tempus imperfectum cum prolatione imperfecta diminution 5	•	Combining dot
	<b>U+E8AC</b> <i>mensuralProlationCombiningTwoDots</i>		<b>U+E8AD</b> <i>mensuralProlationCombiningThreeDots</i>
..	Combining two dots	...	Combining three dots horizontal
	<b>U+E8AE</b> <i>mensuralProlationCombiningThreeDotsTri</i>		<b>U+E8AF</b> <i>mensuralProlationCombiningDotVoid</i>
⋮	Combining three dots triangular	⌚	Combining void dot

	<b>U+E8B0</b> <i>mensuralProlationCombiningStroke</i> Combining vertical stroke		<b>U+E8B1</b> <i>mensuralProportion1</i> Mensural proportion 1
1		1	
2	<b>U+E8B2</b> <i>mensuralProportion2</i> Mensural proportion 2	3	<b>U+E8B3</b> <i>mensuralProportion3</i> Mensural proportion 3
4	<b>U+E8B4</b> <i>mensuralProportion4</i> Mensural proportion 4	:	<b>U+E8B5</b> <i>mensuralProportionMinor</i> Mensural proportion minor
:	<b>U+E8B6</b> <i>mensuralProportionMajor</i> Mensural proportion major		<b>U+E8B7</b> <i>mensuralModusPerfectumVert</i> Modus perfectum, vertical
	<b>U+E8B8</b> <i>mensuralModusImperfectumVert</i> Modus imperfectum, vertical		<b>U+E8B9</b> <i>mensuralTempusPerfectumHoriz</i> Tempus perfectum, horizontal
	<b>U+E8BA</b> <i>mensuralTempusImperfectumHoriz</i> Tempus imperfectum, horizontal		

## Recommended stylistic alternates

	<b>uniE8B4.salt01</b>
ꝝ	<i>mensuralProportion4Old</i> Mensural proportion 4 (old)

# Medieval and Renaissance noteheads and stems (U+E8C0–U+E8DF)

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## U+E8C0

*mensuralNoteheadMaximaBlack*

■ Maxima notehead, black

## U+E8C1 (and U+1D1B6)

*mensuralNoteheadMaximaVoid*

□ Maxima notehead, void

## U+E8C2

*mensuralNoteheadMaximaBlackVoid*

■ Maxima notehead, black and void

## U+E8C3

*mensuralNoteheadMaximaWhite*

□ Maxima notehead, white

## U+E8C4

*mensuralNoteheadLongaBlack*

■ Longa/brevis notehead, black

## U+E8C5 (and U+1D1B7)

*mensuralNoteheadLongaVoid*

□ Longa/brevis notehead, void

## U+E8C6

*mensuralNoteheadLongaBlackVoid*

■ Longa/brevis notehead, black and void

## U+E8C7

*mensuralNoteheadLongaWhite*

□ Longa/brevis notehead, white

## U+E8C8 (and U+1D1BA)

*mensuralNoteheadSemibrevisBlack*

◆ Semibrevis notehead, black

## U+E8C9 (and U+1D1B9)

*mensuralNoteheadSemibrevisVoid*

◊ Semibrevis notehead, void

## U+E8CA

*mensuralNoteheadSemibrevisBlackVoid*

◊ Semibrevis notehead, black and void

## U+E8CB

*mensuralNoteheadSemibrevisBlackVoidInverted*

◊ Semibrevis notehead, black and void (inverted)

## U+E8CC

*mensuralNoteheadMinimaWhite*

◊ Minima notehead, white

## U+E8CD

*mensuralNoteheadSemiminimaWhite*

◊ Semiminima/fusa notehead, white

## U+E8CE

*mensuralCombStemUp*

| Combining stem up

## U+E8CF

*mensuralCombStemDown*

| Combining stem down

<b>U+E8D0</b>	<b>U+E8D1</b>
<i>mensuralCombStemDiagonal</i>	
Combining stem diagonal	
<b>U+E8D2</b>	<b>U+E8D3</b>
<i>mensuralCombStemDownFlagRight</i>	
Combining stem with flag right down	Combining stem with flag left up
<b>U+E8D4</b>	<b>U+E8D5</b>
<i>mensuralCombStemDownFlagLeft</i>	
Combining stem with flag left down	Combining stem with flared flag up
<b>U+E8D6</b>	<b>U+E8D7</b>
<i>mensuralCombStemDownFlagFlared</i>	
Combining stem with flared flag down	Combining stem with extended flag up
<b>U+E8D8</b>	<b>U+E8D9</b>
<i>mensuralCombStemDownFlagExtended</i>	
Combining stem with extended flag down	Combining stem with semiminima flag up
<b>U+E8DA</b>	<b>U+E8DB</b>
<i>mensuralCombStemDownFlagSemiminima</i>	
Combining stem with semiminima flag down	Combining stem with fusa flag up
<b>U+E8DC</b>	
<i>mensuralCombStemDownFlagFusa</i>	
Combining stem with fusa flag down	

## Recommended ligatures

<b>uniE8C8_uniE8DC</b>	<b>uniE8C8_uniE8DB</b>
<i>mensuralFusaBlackStemDown</i>	
Fusa black, stem down	Fusa black, stem up
<b>uniE8CA_uniE8DC</b>	<b>uniE8CA_uniE8DB</b>
<i>mensuralFusaBlackVoidStemDown</i>	
Fusa black and void, stem down	Fusa black and void, stem up

<b>uniE8C9_ uniE8DC</b>	<b>uniE8C9_ uniE8DB</b>
<i>mensuralFusaVoidStemDown</i>	<i>mensuralFusaVoidStemUp</i>
◊ Fusa void, stem down	◊ Fusa void, stem up
<b>uniE8CF_ uniE8C4</b>	<b>uniE8C4_ uniE8CF</b>
<i>mensuralLongaBlackStemDownLeft</i>	<i>mensuralLongaBlackStemDownRight</i>
■ Longa black, stem down left	■ Longa black, stem down right
<b>uniE8CE_ uniE8C4</b>	<b>uniE8C4_ uniE8CE</b>
<i>mensuralLongaBlackStemUpLeft</i>	<i>mensuralLongaBlackStemUpRight</i>
■ Longa black, stem up left	■ Longa black, stem up right
<b>uniE8CF_ uniE8C6</b>	<b>uniE8C6_ uniE8CF</b>
<i>mensuralLongaBlackVoidStemDownLeft</i>	<i>mensuralLongaBlackVoidStemDownRight</i>
■ Longa black and void, stem down left	■ Longa black and void, stem down right
<b>uniE8CE_ uniE8C6</b>	<b>uniE8C6_ uniE8CE</b>
<i>mensuralLongaBlackVoidStemUpLeft</i>	<i>mensuralLongaBlackVoidStemUpRight</i>
■ Longa black and void, stem up left	■ Longa black and void, stem up right
<b>uniE8CF_ uniE8C5</b>	<b>uniE8C5_ uniE8CF</b>
<i>mensuralLongaVoidStemDownLeft</i>	<i>mensuralLongaVoidStemDownRight</i>
□ Longa void, stem down left	□ Longa void, stem down right
<b>uniE8CE_ uniE8C5</b>	<b>uniE8C5_ uniE8CE</b>
<i>mensuralLongaVoidStemUpLeft</i>	<i>mensuralLongaVoidStemUpRight</i>
□ Longa void, stem up left	□ Longa void, stem up right
<b>uniE8CF_ uniE8C0</b>	<b>uniE8C0_ uniE8CF</b>
<i>mensuralMaximaBlackStemDownLeft</i>	<i>mensuralMaximaBlackStemDownRight</i>
■ Maxima black, stem down left	■ Maxima black, stem down right
<b>uniE8CE_ uniE8C0</b>	<b>uniE8C0_ uniE8CE</b>
<i>mensuralMaximaBlackStemUpLeft</i>	<i>mensuralMaximaBlackStemUpRight</i>
■ Maxima black, stem up left	■ Maxima black, stem up right

<b>uniE8CF_ uniE8C2</b>	<b>uniE8C2_ uniE8CF</b>
<i>mensuralMaximaBlackVoidStemDownLeft</i>	<i>mensuralMaximaBlackVoidStemDownRight</i>
 Maxima black and void, stem down left	 Maxima black and void, stem down right
<b>uniE8CE_ uniE8C2</b>	<b>uniE8C2_ uniE8CE</b>
<i>mensuralMaximaBlackVoidStemUpLeft</i>	<i>mensuralMaximaBlackVoidStemUpRight</i>
 Maxima black and void, stem up left	 Maxima black and void, stem up right
<b>uniE8CF_ uniE8C1</b>	<b>uniE8C1_ uniE8CF</b>
<i>mensuralMaximaVoidStemDownLeft</i>	<i>mensuralMaximaVoidStemDownRight</i>
 Maxima void, stem down left	 Maxima void, stem down right
<b>uniE8CE_ uniE8C1</b>	<b>uniE8C1_ uniE8CE</b>
<i>mensuralMaximaVoidStemUpLeft</i>	<i>mensuralMaximaVoidStemUpRight</i>
 Maxima void, stem up left	 Maxima void, stem up right
<b>uniE8C8_ uniE8CF</b>	<b>uniE8C8_ uniE8D8</b>
<i>mensuralMinimaBlackStemDown</i>	<i>mensuralMinimaBlackStemDownExtendedFlag</i>
 Minima black, stem down	 Minima black, stem down with extended flag
<b>uniE8C8_ uniE8D4</b>	<b>uniE8C8_ uniE8D2</b>
<i>mensuralMinimaBlackStemDownFlagLeft</i>	<i>mensuralMinimaBlackStemDownFlagRight</i>
 Minima black, stem down with flag left	 Minima black, stem down with flag right
<b>uniE8C8_ uniE8D6</b>	<b>uniE8C8_ uniE8CE</b>
<i>mensuralMinimaBlackStemDownFlaredFlag</i>	<i>mensuralMinimaBlackStemUp</i>
 Minima black, stem down with flared flag	 Minima black, stem up
<b>uniE8C8_ uniE8D7</b>	<b>uniE8C8_ uniE8D3</b>
<i>mensuralMinimaBlackStemUpExtendedFlag</i>	<i>mensuralMinimaBlackStemUpFlagLeft</i>
 Minima black, stem up with extended flag	 Minima black, stem up with flag left
<b>uniE8C8_ uniE8D1</b>	<b>uniE8C8_ uniE8D5</b>
<i>mensuralMinimaBlackStemUpFlagRight</i>	<i>mensuralMinimaBlackStemUpFlaredFlag</i>
 Minima black, stem up with flag right	 Minima black, stem up with flared flag

<b>uniE8CA_ uniE8CF</b>	<b>uniE8CA_ uniE8D8</b>
<i>mensuralMinimaBlackVoidStemDown</i>	<i>mensuralMinimaBlackVoidStemDownExtendedFlag</i>
◊ Minima black and void, stem down	◊ Minima black and void, stem down with extended flag
<b>uniE8CA_ uniE8D4</b>	<b>uniE8CA_ uniE8D2</b>
<i>mensuralMinimaBlackVoidStemDownFlagLeft</i>	<i>mensuralMinimaBlackVoidStemDownFlagRight</i>
◊ Minima black and void, stem down with flag left	◊ Minima black and void, stem down with flag right
<b>uniE8CA_ uniE8D6</b>	<b>uniE8CA_ uniE8CE</b>
<i>mensuralMinimaBlackVoidStemDownFlaredFlag</i>	<i>mensuralMinimaBlackVoidStemUp</i>
◊ Minima black and void, stem down with flared flag	◊ Minima black and void, stem up
<b>uniE8CA_ uniE8D7</b>	<b>uniE8CA_ uniE8D3</b>
<i>mensuralMinimaBlackVoidStemUpExtendedFlag</i>	<i>mensuralMinimaBlackVoidStemUpFlagLeft</i>
◊ Minima black and void, stem up with extended flag	◊ Minima black and void, stem up with flag left
<b>uniE8CA_ uniE8D1</b>	<b>uniE8CA_ uniE8D5</b>
<i>mensuralMinimaBlackVoidStemUpFlagRight</i>	<i>mensuralMinimaBlackVoidStemUpFlaredFlag</i>
◊ Minima black and void, stem up with flag right	◊ Minima black and void, stem up with flared flag
<b>uniE8C9_ uniE8CF</b>	<b>uniE8C9_ uniE8D8</b>
<i>mensuralMinimaVoidStemDown</i>	<i>mensuralMinimaVoidStemDownExtendedFlag</i>
◊ Minima void, stem down	◊ Minima void, stem down with extended flag
<b>uniE8C9_ uniE8D4</b>	<b>uniE8C9_ uniE8D2</b>
<i>mensuralMinimaVoidStemDownFlagLeft</i>	<i>mensuralMinimaVoidStemDownFlagRight</i>
◊ Minima void, stem down with flag left	◊ Minima void, stem down with flag right
<b>uniE8C9_ uniE8D6</b>	<b>uniE8C9_ uniE8D7</b>
<i>mensuralMinimaVoidStemDownFlaredFlag</i>	<i>mensuralMinimaVoidStemUpExtendedFlag</i>
◊ Minima void, stem down with flared flag	◊ Minima void, stem up with extended flag
<b>uniE8C9_ uniE8CE</b>	<b>uniE8C9_ uniE8D3</b>
<i>mensuralMinimaVoidStemUp</i>	<i>mensuralMinimaVoidStemUpFlagLeft</i>
◊ Minima void, stem up	◊ Minima void, stem up with flag left

<b>uniE8C9_ uniE8D1</b>	<b>uniE8C9_ uniE8D5</b>
mensuralMinimaVoidStemUpFlagRight Minima void, stem up with flag right	mensuralMinimaVoidStemUpFlaredFlag Minima void, stem up with flared flag
<b>uniE8C8_ uniE8DA</b>	<b>uniE8C8_ uniE8D9</b>
mensuralSemiminimaBlackStemDown Semiminima black, stem down	mensuralSemiminimaBlackStemUp Semiminima black, stem up
<b>uniE8CA_ uniE8DA</b>	<b>uniE8CA_ uniE8D9</b>
mensuralSemiminimaBlackVoidStemDown Semiminima black and void, stem down	mensuralSemiminimaBlackVoidStemUp Semiminima black and void, stem up
<b>uniE8C9_ uniE8DA</b>	<b>uniE8C9_ uniE8D9</b>
mensuralSemiminimaVoidStemDown Semiminima void, stem down	mensuralSemiminimaVoidStemUp Semiminima void, stem up

# Medieval and Renaissance individual notes (U+E8E0–U+E8FF)

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## **U+E8E0**

*mensuralBlackMaxima*



Black mensural maxima

## **U+E8E1**

*mensuralBlackLonga*



Black mensural longa

## **U+E8E2**

*mensuralBlackBrevis*



Black mensural brevis

## **U+E8E3**

*mensuralBlackSemibrevis*



Black mensural semibrevis

## **U+E8E4**

*mensuralBlackMinima*



Black mensural minima



## **U+E8E5**

*mensuralBlackSemiminima*

Black mensural semiminima

## **U+E8E6**

*mensuralBlackBrevisVoid*



Black mensural void brevis



## **U+E8E7**

*mensuralBlackSemibrevisVoid*

Black mensural void semibrevis

## **U+E8E8**

*mensuralBlackMinimaVoid*



Black mensural void minima



## **U+E8E9**

*mensuralBlackSemibrevisCaudata*

Black mensural semibrevis caudata

## **U+E8EA**

*mensuralBlackDrama*



Black mensural drama



## **U+E8EB**

*mensuralBlackSemibrevisOblique*

Black mensural oblique semibrevis

## **U+E8EC**

*mensuralWhiteMaxima*



White mensural maxima



## **U+E8ED**

*mensuralWhiteLonga*

White mensural longa

## **U+E8EE**

*mensuralWhiteBrevis*



White mensural brevis



## **U+E8EF**

*mensuralWhiteMinima*

White mensural minima

**U+E8F0**

*mensuralWhiteSemiminima*

White mensural semiminima



**U+E8F1**

*mensuralWhiteFusa*

White mensural fusa



# Medieval and Renaissance plainchant single-note forms (U+E900–U+E90F)

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<b>U+E900</b>		<b>U+E901</b>	
<i>chantPunctum</i>		<i>chantPunctumInclinatum</i>	
▀ Punctum	♦	Punctum inclinatum	
<b>U+E902</b>		<b>U+E903</b>	
<i>chantPunctumInclinatumAuctum</i>		<i>chantPunctumInclinatumDeminutum</i>	
♦ Punctum inclinatum auctum	♦	Punctum inclinatum deminutum	
<b>U+E904</b> (and U+1D1D3)		<b>U+E905</b>	
<i>chantPunctumVirga</i>		<i>chantPunctumVirgaReversed</i>	
▀ Punctum virga	▀	Punctum virga, reversed	
<b>U+E906</b>		<b>U+E907</b>	
<i>chantPunctumCavum</i>		<i>chantPunctumLinea</i>	
▀ Punctum cavum	▀	Punctum linea	
<b>U+E908</b>		<b>U+E909</b>	
<i>chantPunctumLineaCavum</i>		<i>chantQuilisma</i>	
▀ Punctum linea cavum	▀	Quilisma	
<b>U+E90A</b>		<b>U+E90B</b>	
<i>chantOriscusAscending</i>		<i>chantOriscusDescending</i>	
▀ Oriscus ascending	▀	Oriscus descending	
<b>U+E90C</b>		<b>U+E90D</b>	
<i>chantStrophicus</i>		<i>chantStrophicusAuctus</i>	
♦ Strophicus	♦	Strophicus auctus	

# Medieval and Renaissance plainchant multiple-note forms (U+E910–U+E92F)

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## **U+E910**

*chantPodatusLower*

Podatus, lower

## **U+E911** (and U+1D1D4)

*chantPodatusUpper*

Podatus, upper

## **U+E912**

*chantAuctumAsc*

Punctum auctum, ascending

## **U+E913**

*chantDeminutumUpper*

Punctum deminutum, upper

## **U+E914**

*chantAuctumDesc*

Punctum auctum, descending

## **U+E915**

*chantDeminutumLower*

Punctum deminutum, lower

## **U+E916**

*chantEntryLineAsc2nd*

Entry line, ascending 2nd

## **U+E917**

*chantEntryLineAsc3rd*

Entry line, ascending 3rd

## **U+E918**

*chantEntryLineAsc4th*

Entry line, ascending 4th

## **U+E919**

*chantEntryLineAsc5th*

Entry line, ascending 5th

## **U+E91A**

*chantEntryLineAsc6th*

Entry line, ascending 6th

## **U+E91B**

*chantLigaturaDesc2nd*

Ligated stroke, descending 2nd

## **U+E91C**

*chantLigaturaDesc3rd*

Ligated stroke, descending 3rd

## **U+E91D**

*chantLigaturaDesc4th*

Ligated stroke, descending 4th

## **U+E91E**

*chantLigaturaDesc5th*

Ligated stroke, descending 5th

## **U+E91F**

*chantConnectingLineAsc2nd*

Connecting line, ascending 2nd

<b>U+E920</b>	<b>U+E921</b>
<i>chantConnectingLineAsc3rd</i>	<i>chantConnectingLineAsc4th</i>
Connecting line, ascending 3rd	Connecting line, ascending 4th
<b>U+E922</b>	<b>U+E923</b>
<i>chantConnectingLineAsc5th</i>	<i>chantConnectingLineAsc6th</i>
Connecting line, ascending 5th	Connecting line, ascending 6th

## Implementation notes

To produce ligatures of three or more notes, some of the glyphs in this range have to be combined.

Glyphs should be positioned relative to their starting pitch: for example, the **chantLigaturaDesc3rd** glyph, which describes a downwards progression by an interval of a third, should be positioned on the staff line or space of the starting note of the downwards pattern; the connecting lines (e.g. **chantConnectingLineAsc3rd**) should likewise be positioned on the staff line or space corresponding to the bottom of the line; for an ascending liquescent, position **chantAuctumAsc** on the starting staff position, and **chantDeminutemUpper** on the ending staff position, with the appropriate length of connecting line between them.

Scoring applications should position these glyphs like any other notehead, i.e. moving them vertically according to the desired starting staff position. Fonts intended for use in text-based applications should include glyphs that present these symbols at different staff positions, and a means to easily choose between them; one possible implementation would be to define OpenType ligatures of each of the glyphs in the **Combining staff positions** range with each of the glyphs in this range.

The table below shows how to produce some common ligatures, and describes which glyphs should be used; glyphs whose names appear in parentheses are control characters that move the following glyph vertically to a different staff position, as might be used in a font that employs OpenType ligatures.



Podatus, ascending 3rd: **chantPodatusLower + chantConnectingLineAsc3rd + (staffPosRaise3) + chantPodatusUpper**



Clivis, descending 4th: **chantPunctumVirgaReversed + (staffPosLower4) + chantConnectingLineAsc4th + (staffPosLower4) + chantPunctum**



Salicus: **chantPunctum + (staffPosRaise1) + chantPodatusLower + (staffPosRaise1) + chantConnectingLineAsc2nd + (staffPosRaise2) + chantPodatusUpper**



Climacus: **chantPunctumVirga** + (staffPosLower1) + **chantPunctumInclinatum** + (staffPosLower2) + **chantPunctumInclinatum**



Torculus: **chantPunctum** + (staffPosRaise1) + **chantPunctum** + **chantPunctum**



Porrectus: **chantEntryLineAsc5th** + (staffPosRaise5) + **chantLigaturaDesc4th** + (staffPosRaise1) + **chantConnectingLineAsc3rd** + (staffPosRaise4) + **chantPunctum**



Scandicus flexus: **chantPodatusLower** + (staffPosRaise1) + **chantConnectingLineAsc2nd** + (staffPosRaise2) + **chantPodatusUpper** + **chantPunctumVirga** + **chantConnectingLineAsc3rd** + **chantPunctum**



Porrectus flexus: **chantConnectingLineAsc3rd** + (staffPosRaise3) + **chantLigaturaDesc3rd** + **chantPunctumVirga** + **chantConnectingLineAsc3rd** + **chantPunctum**



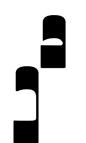
Climacus resupinus: **chantPunctumVirga** + (staffPosRaise1) + **chantPunctumInclinatum** + **chantPunctumInclinatum** + (staffPosRaise1) + **chantPunctum**



Torculus resupinus: **chantPunctum** + (staffPosRaise1) + **chantPunctum** + **chantPunctum** + (staffPosRaise1) + **chantPunctumVirga**



Pes subbipunctus: **chantPodatusLower** + (staffPosRaise1) + **chantConnectingLineAsc2nd** + (staffPosRaise2) + **chantPodatusUpper** + **chantPunctumInclinatum** + (staffPosLower1) + **chantPunctumInclinatum**



Virga praetripunctis: **chantPodatusLower** + (staffPosRaise1) + **chantConnectingLineAsc3rd** + (staffPosRaise3) + **chantPodatusUpper** + **chantPodatus3rd** + (staffPosRaise4) + **chantPodatusLower** + (staffPosRaise5) + **chantConnectingLineAsc2nd** + (staffPosRaise6) + **chantPodatusUpper**



Epiphonus (liquefiant podatus): **chantAuctumAsc** + (staffPosRaise1) + **chantDeminutemUpper**



Cephalicus (liquefiant flexa): **chantConnectingLineAsc3rd** + (staffPosRaise3) + **chantAuctumDesc** + (staffPosRaise2) + **chantDeminutemLower**



Pinnosa (liquefiant torculus): **chantPunctum** + **chantConnectingLineAsc4th** + (staffPosRaise4) + **chantAuctumDesc** + (staffPosRaise3) + **chantDeminutemLower**



Porrectus liquescens: **chantPunctumVirgaReversed** + (staffPosLower1) + **chantAuctumAsc** + (staffPosRaise1) + **chantDeminutemUpper**



Scandicus liquescens: **chantPunctum** + (staffPosRaise1) + **chantAuctumAsc** + (staffPosRaise1) + **chantConnectingLineAsc3rd** + (staffPosRaise4) + **chantDeminutemUpper**

# Medieval and Renaissance plainchant articulations (U+E930–U+E93F)

---

## **U+E930**

*chantIctusAbove*

Ictus above

## **U+E931**

*chantIctusBelow*

Ictus below

## **U+E932**

*chantCirculusAbove*

Circulus above

## **U+E933**

*chantCirculusBelow*

Circulus below

## **U+E934**

*chantSemicirculusAbove*

Semicirculus above

## **U+E935**

*chantSemicirculusBelow*

Semicirculus below

## **U+E936**

*chantAccentusAbove*

Accentus above

## **U+E937**

*chantAccentusBelow*

Accentus below

## **U+E938**

*chantEpisema*

Episema

## **U+E939**

*chantAugmentum*

Augmentum (mora)

# Medieval and Renaissance accidentals (U+E940–U+E94F)

---

## **U+E940**

*medRenFlatSoftB*

flat, soft b (fa)

## **U+E941**

*medRenFlatHardB*

flat, hard b (mi)

## **U+E942**

*medRenNatural*

flat, natural

## **U+E943** (and U+1D1CF)

*medRenSharpCroix*

flat, sharp croix

## **U+E944**

*medRenFlatWithDot*

flat with dot

## **U+E945**

*medRenNaturalWithCross*

flat, natural with interrupted cross

# Medieval and Renaissance rests (U+E950–U+E95F)

---

## **U+E950**

*mensuralRestMaxima*

Maxima rest

## **U+E951** (and U+1D1C1)

*mensuralRestLongaPerfecta*

Longa perfecta rest

## **U+E952** (and U+1D1C2)

*mensuralRestLongaImperfecta*

Longa imperfecta rest

## **U+E953** (and U+1D1C3)

*mensuralRestBrevis*

Brevis rest

## **U+E954** (and U+1D1C4)

*mensuralRestSemibrevis*

Semibrevis rest

## **U+E955** (and U+1D1C5)

*mensuralRestMinima*

Minima rest

## **U+E956** (and U+1D1C6)

*mensuralRestSemiminima*

Semiminima rest

## **U+E957**

*mensuralRestFusa*

Fusa rest

## **U+E958**

*mensuralRestSemifusa*

Semifusa rest

# Medieval and Renaissance miscellany (U+E960–U+E96F)

---

## U+E960

§ *mensuralSignumUp*  
Signum congruentiae up

## U+E962

~~ *mensuralCustosUp*  
Mensural custos up

## U+E964

! *chantCustosStemUp*  
Plainchant custos, stem up

## U+E966

✓ *mensuralCustosCheckmark*  
Checkmark custos

## U+E968

⊜ *mensuralColorationStartSquare*  
Coloration start, square

## U+E96A

⊝ *mensuralColorationStartRound*  
Coloration start, round

## U+E96C

▽ *mensuralAlterationSign*  
Alteration sign

## U+E961

₹ *mensuralSignumDown*  
Signum congruentiae down

## U+E963

₩ *mensuralCustosDown*  
Mensural custos down

## U+E965

! *chantCustosStemDown*  
Plainchant custos, stem down

## U+E967

∞ *mensuralCustosTurn*  
Turn-like custos

## U+E969

⊜ *mensuralColorationEndSquare*  
Coloration end, square

## U+E96B

⊝ *mensuralColorationEndRound*  
Coloration end, round

# Medieval and Renaissance symbols in CMN (U+E970–U+E97F)

---

	<b>U+E970</b> <i>ornamentQuilisma</i> Quilisma	<b>U+E971</b> <i>ornamentOriscus</i> Oriscus
vw		~
	<b>U+E972</b> <i>medRenLiquescenceCMN</i> Liquescence	<b>U+E973</b> <i>medRenPlicaCMN</i> Plica
x		-
G	<b>U+E974</b> <i>medRenGClefCMN</i> G clef (Corpus Monodicum)	<b>U+E975</b> <i>medRenPunctumCMN</i> Punctum (Corpus Monodicum)
♪		•
	<b>U+E976</b> <i>medRenLiquescentAscCMN</i> Liquescent ascending (Corpus Monodicum)	<b>U+E977</b> <i>medRenLiquescentDescCMN</i> Liquescent descending (Corpus Monodicum)
♩		♩
	<b>U+E978</b> <i>medRenQuilismaCMN</i> Quilisma (Corpus Monodicum)	<b>U+E979</b> <i>medRenStrophicusCMN</i> Strophicus (Corpus Monodicum)
♪		,
	<b>U+E97A</b> <i>medRenOriscusCMN</i> Oriscus (Corpus Monodicum)	
♩		

# Daseian notation (U+E980–U+E99F)

---

## **U+E980**

ᾳ

*daseianGraves1*

Daseian graves 1

ᾳ

## **U+E981**

*daseianGraves2*

Daseian graves 2

## **U+E982**

ῃ

*daseianGraves3*

Daseian graves 3

ῃ

## **U+E983**

*daseianGraves4*

Daseian graves 4

## **U+E984**

ῃ

*daseianFinales1*

Daseian finales 1

ῃ

## **U+E985**

*daseianFinales2*

Daseian finales 2

## **U+E986**

ῃ

*daseianFinales3*

Daseian finales 3

ῃ

## **U+E987**

*daseianFinales4*

Daseian finales 4

## **U+E988**

ῃ

*daseianSuperiores1*

Daseian superiores 1

ῃ

## **U+E989**

*daseianSuperiores2*

Daseian superiores 2

## **U+E98A**

ῃ

*daseianSuperiores3*

Daseian superiores 3

ῃ

## **U+E98B**

*daseianSuperiores4*

Daseian superiores 4

## **U+E98C**

ῃ

*daseianExcellentes1*

Daseian excellentes 1

ῃ

## **U+E98D**

*daseianExcellentes2*

Daseian excellentes 2

## **U+E98E**

ῃ

*daseianExcellentes3*

Daseian excellentes 3

ῃ

## **U+E98F**

*daseianExcellentes4*

Daseian excellentes 4

## **U+E990**

ῃ

*daseianResidua1*

Daseian residua 1

ῃ

## **U+E991**

*daseianResidua2*

Daseian residua 2

# Figured bass (U+E9A0–U+E9BF)

---

	<b>U+E9A0</b>		<b>U+E9A1</b>
0	<i>figbass0</i>	1	<i>figbass1</i>
	Figured bass 0		Figured bass 1
	<b>U+E9A2</b>		<b>U+E9A3</b>
2	<i>figbass2</i>	2	<i>figbass2Raised</i>
	Figured bass 2		Figured bass 2 raised by half-step
	<b>U+E9A4</b>		<b>U+E9A5</b>
3	<i>figbass3</i>	4	<i>figbass4</i>
	Figured bass 3		Figured bass 4
	<b>U+E9A6</b>		<b>U+E9A7</b>
4	<i>figbass4Raised</i>	5	<i>figbass5</i>
	Figured bass 4 raised by half-step		Figured bass 5
	<b>U+E9A8</b>		<b>U+E9A9</b>
5	<i>figbass5Raised1</i>	5	<i>figbass5Raised2</i>
	Figured bass 5 raised by half-step		Figured bass 5 raised by half-step 2
	<b>U+E9AA</b>		<b>U+E9AB</b>
5	<i>figbass5Raised3</i>	6	<i>figbass6</i>
	Figured bass diminished 5		Figured bass 6
	<b>U+E9AC</b>		<b>U+E9AD</b>
6	<i>figbass6Raised</i>	7	<i>figbass7</i>
	Figured bass 6 raised by half-step		Figured bass 7
	<b>U+E9AE</b>		<b>U+E9AF</b>
7	<i>figbass7Raised</i>	8	<i>figbass8</i>
	Figured bass 7 raised by half-step		Figured bass 8
	<b>U+E9B0</b>		<b>U+E9B1</b>
9	<i>figbass9</i>	9	<i>figbass9Raised</i>
	Figured bass 9		Figured bass 9 raised by half-step

**U+E9B2**

*figbassDoubleFlat*

♭

Figured bass double flat

**U+E9B3**

*figbassFlat*

♭

Figured bass flat

**U+E9B4**

*figbassNatural*

♮

Figured bass natural

**U+E9B5**

*figbassSharp*

#

Figured bass sharp

**U+E9B6**

*figbassDoubleSharp*

✗

Figured bass double sharp

**U+E9B7**

*figbassBracketLeft*

[

Figured bass [

**U+E9B8**

*figbassBracketRight*

]

Figured bass ]

**U+E9B9**

*figbassParensLeft*

(

Figured bass (

**U+E9BA**

*figbassParensRight*

)

Figured bass )

**U+E9BB**

*figbassPlus*

+

Figured bass +

**U+E9BC**

*figbassCombiningRaising*

—

Combining raise

**U+E9BD**

*figbassCombiningLowering*

—

Combining lower

# Function theory symbols (U+E9C0–U+E9EF)

	<b>U+E9C0</b>		<b>U+E9C1</b>
0	<i>functionZero</i> Function theory 0	1	<i>functionOne</i> Function theory 1
2	<b>U+E9C2</b> <i>functionTwo</i> Function theory 2	3	<b>U+E9C3</b> <i>functionThree</i> Function theory 3
4	<b>U+E9C4</b> <i>functionFour</i> Function theory 4	5	<b>U+E9C5</b> <i>functionFive</i> Function theory 5
6	<b>U+E9C6</b> <i>functionSix</i> Function theory 6	7	<b>U+E9C7</b> <i>functionSeven</i> Function theory 7
8	<b>U+E9C8</b> <i>functionEight</i> Function theory 8	9	<b>U+E9C9</b> <i>functionNine</i> Function theory 9
<	<b>U+E9CA</b> <i>functionLessThan</i> Function theory less than	-	<b>U+E9CB</b> <i>functionMinus</i> Function theory minus
>	<b>U+E9CC</b> <i>functionGreaterThan</i> Function theory greater than	ss	<b>U+E9CD</b> <i>functionSSUpper</i> Function theory major subdominant of subdominant
ss	<b>U+E9CE</b> <i>functionSSLower</i> Function theory minor subdominant of subdominant	D	<b>U+E9CF</b> <i>functionDUpper</i> Function theory major dominant
d	<b>U+E9D0</b> <i>functionDLower</i> Function theory minor dominant	D	<b>U+E9D1</b> <i>functionDD</i> Function theory dominant of dominant

	<b>U+E9D2</b>		<b>U+E9D3</b>
Ԁ	<i>functionSlashedDD</i> Function theory double dominant seventh	Ԁ	<i>functionGUpper</i> Function theory G
g	<b>U+E9D4</b> <i>functionGLower</i> Function theory g	N	<b>U+E9D5</b> <i>functionNUpper</i> Function theory N
n	<b>U+E9D6</b> <i>functionNLower</i> Function theory n	P	<b>U+E9D7</b> <i>functionPUpper</i> Function theory P
p	<b>U+E9D8</b> <i>functionPLower</i> Function theory p	S	<b>U+E9D9</b> <i>functionSUppper</i> Function theory major subdominant
s	<b>U+E9DA</b> <i>functionSLower</i> Function theory minor subdominant	T	<b>U+E9DB</b> <i>functionTUpper</i> Function theory tonic
t	<b>U+E9DC</b> <i>functionTLower</i> Function theory minor tonic	V	<b>U+E9DD</b> <i>functionVUpper</i> Function theory V
v	<b>U+E9DE</b> <i>functionVLower</i> Function theory v	[	<b>U+E9DF</b> <i>functionBracketLeft</i> Function theory bracket left
]	<b>U+E9E0</b> <i>functionBracketRight</i> Function theory bracket right	(	<b>U+E9E1</b> <i>functionParensLeft</i> Function theory parenthesis left
)	<b>U+E9E2</b> <i>functionParensRight</i> Function theory parenthesis right	<	<b>U+E9E3</b> <i>functionAngleLeft</i> Function theory angle bracket left

**U+E9E4**

⟩ *functionAngleRight*  
Function theory angle bracket right

**U+E9E5**

∷ *functionRepetition1*  
Function theory repetition 1

**U+E9E6**

⁺ *functionRepetition2*  
Function theory repetition 2

**U+E9E7**

◦ *functionRing*  
Function theory prefix ring

**U+E9E8**

⊕ *functionPlus*  
Function theory prefix plus

# Multi-segment lines (U+E9F0–U+EA3F)

---

## **U+E9F0**

*wiggleTrillFastest*

Trill wiggle segment, fastest

## **U+E9F1**

*wiggleTrillFasterStill*

Trill wiggle segment, faster still

## **U+E9F2**

*wiggleTrillFaster*

Trill wiggle segment, faster

## **U+E9F3**

*wiggleTrillFast*

Trill wiggle segment, fast

## **U+E9F4**

*wiggleTrill*

Trill wiggle segment

## **U+E9F5**

*wiggleTrillSlow*

Trill wiggle segment, slow

## **U+E9F6**

*wiggleTrillSlower*

Trill wiggle segment, slower

## **U+E9F7**

*wiggleTrillSlowerStill*

Trill wiggle segment, slower still

## **U+E9F8**

*wiggleTrillSlowest*

Trill wiggle segment, slowest

## **U+E9F9**

*wiggleArpeggiatoUp*

Arpeggiato wiggle segment,  
upwards

## **U+E9FA**

*wiggleArpeggiatoDown*

Arpeggiato wiggle segment,  
downwards

## **U+E9FB**

*wiggleArpeggiatoUpSwash*

Arpeggiato upward swash

## **U+E9FC**

*wiggleArpeggiatoDownSwash*

Arpeggiato downward swash

## **U+E9FD**

*wiggleArpeggiatoUpArrow*

Arpeggiato arrowhead up

## **U+E9FE**

*wiggleArpeggiatoDownArrow*

Arpeggiato arrowhead down

## **U+E9FF**

*wiggleGlissando*

Glissando wiggle segment

## **U+EA00**

*wiggleVibrato*

Vibrato / shake wiggle segment

## **U+EA01**

*wiggleVibratoWide*

Wide vibrato / shake wiggle  
segment

<b>U+EA02</b>	<b>U+EA03</b>
<i>guitarVibratoStroke</i>	<i>guitarWideVibratoStroke</i>
~ Vibrato wiggle segment	~ Wide vibrato wiggle segment
<b>U+EA04</b>	<b>U+EA05</b>
<i>wiggleWavy</i>	<i>wiggleSquaretooth</i>
~ Wavy line segment	~ Squaretooth line segment
<b>U+EA06</b>	<b>U+EA07</b>
<i>wiggleSawtooth</i>	<i>wiggleGlissandoGroup1</i>
~ Sawtooth line segment	~ Group glissando 1
<b>U+EA08</b>	<b>U+EA09</b>
<i>wiggleGlissandoGroup2</i>	<i>wiggleGlissandoGroup3</i>
~ Group glissando 2	~ Group glissando 3
<b>U+EA0A</b>	<b>U+EA0B</b>
<i>wiggleCircularConstant</i>	<i>wiggleCircularConstantFlipped</i>
~ Constant circular motion segment	~ Constant circular motion segment (flipped)
<b>U+EA0C</b>	<b>U+EA0D</b>
<i>wiggleCircularConstantLarge</i>	<i>wiggleCircularConstantFlippedLarge</i>
~ Constant circular motion segment (large)	~ Constant circular motion segment (flipped, large)
<b>U+EA0E</b>	<b>U+EA0F</b>
<i>wiggleCircularStart</i>	<i>wiggleCircularLargest</i>
~ Circular motion start	~ Circular motion segment, largest
<b>U+EA10</b>	<b>U+EA11</b>
<i>wiggleCircularLargerStill</i>	<i>wiggleCircularLarger</i>
~ Circular motion segment, larger still	~ Circular motion segment, larger
<b>U+EA12</b>	<b>U+EA13</b>
<i>wiggleCircularLarge</i>	<i>wiggleCircular</i>
~ Circular motion segment, large	~ Circular motion segment

<b>U+EA14</b>	<i>wiggleCircularSmall</i>	<b>U+EA15</b>	<i>wiggleCircularEnd</i>
„	Circular motion segment, small	~	Circular motion end
<b>U+EA16</b>	<i>wiggleVibratoStart</i>	<b>U+EA17</b>	<i>wiggleVibratoSmallestFastest</i>
“	Vibrato start	~	Vibrato smallest, fastest
<b>U+EA18</b>	<i>wiggleVibratoSmallestFasterStill</i>	<b>U+EA19</b>	<i>wiggleVibratoSmallestFaster</i>
~	Vibrato smallest, faster still	~	Vibrato smallest, faster
<b>U+EA1A</b>	<i>wiggleVibratoSmallestFast</i>	<b>U+EA1B</b>	<i>wiggleVibratoSmallestSlow</i>
~	Vibrato smallest, fast	~	Vibrato smallest, slow
<b>U+EA1C</b>	<i>wiggleVibratoSmallestSlower</i>	<b>U+EA1D</b>	<i>wiggleVibratoSmallestSlowest</i>
~	Vibrato smallest, slower	~	Vibrato smallest, slowest
<b>U+EA1E</b>	<i>wiggleVibratoSmallFastest</i>	<b>U+EA1F</b>	<i>wiggleVibratoSmallFasterStill</i>
~	Vibrato small, fastest	~	Vibrato small, faster still
<b>U+EA20</b>	<i>wiggleVibratoSmallFaster</i>	<b>U+EA21</b>	<i>wiggleVibratoSmallFast</i>
~	Vibrato small, faster	~	Vibrato small, fast
<b>U+EA22</b>	<i>wiggleVibratoSmallSlow</i>	<b>U+EA23</b>	<i>wiggleVibratoSmallSlower</i>
~	Vibrato small, slow	~	Vibrato small, slower
<b>U+EA24</b>	<i>wiggleVibratoSmallSlowest</i>	<b>U+EA25</b>	<i>wiggleVibratoMediumFastest</i>
~	Vibrato small, slowest	~	Vibrato medium, fastest

<b>U+EA26</b>	<b>U+EA27</b>
<i>wiggleVibratoMediumFasterStill</i>	<i>wiggleVibratoMediumFaster</i>
~ Vibrato medium, faster still	~ Vibrato medium, faster
<b>U+EA28</b>	<b>U+EA29</b>
<i>wiggleVibratoMediumFast</i>	<i>wiggleVibratoMediumSlow</i>
~ Vibrato medium, fast	~ Vibrato medium, slow
<b>U+EA2A</b>	<b>U+EA2B</b>
<i>wiggleVibratoMediumSlower</i>	<i>wiggleVibratoMediumSlowest</i>
~ Vibrato medium, slower	~ Vibrato medium, slowest
<b>U+EA2C</b>	<b>U+EA2D</b>
<i>wiggleVibratoLargeFastest</i>	<i>wiggleVibratoLargeFasterStill</i>
~ Vibrato large, fastest	~ Vibrato large, faster still
<b>U+EA2E</b>	<b>U+EA2F</b>
<i>wiggleVibratoLargeFaster</i>	<i>wiggleVibratoLargeFast</i>
~ Vibrato large, faster	~ Vibrato large, fast
<b>U+EA30</b>	<b>U+EA31</b>
<i>wiggleVibratoLargeSlow</i>	<i>wiggleVibratoLargeSlower</i>
~ Vibrato large, slow	~ Vibrato large, slower
<b>U+EA32</b>	<b>U+EA33</b>
<i>wiggleVibratoLargeSlowest</i>	<i>wiggleVibratoLargestFastest</i>
~ Vibrato large, slowest	~ Vibrato largest, fastest
<b>U+EA34</b>	<b>U+EA35</b>
<i>wiggleVibratoLargestFasterStill</i>	<i>wiggleVibratoLargestFaster</i>
~ Vibrato largest, faster still	~ Vibrato largest, faster
<b>U+EA36</b>	<b>U+EA37</b>
<i>wiggleVibratoLargestFast</i>	<i>wiggleVibratoLargestSlow</i>
~ Vibrato largest, fast	~ Vibrato largest, slow

**U+EA38**

*wiggleVibratoLargestSlower*  
Vibrato largest, slower

**U+EA39**

*wiggleVibratoLargestSlowest*  
Vibrato largest, slowest

**U+EA3A**

*wiggleRandom1*  
Quasi-random squiggle 1

**U+EA3B**

*wiggleRandom2*  
Quasi-random squiggle 2

**U+EA3C**

*wiggleRandom3*  
Quasi-random squiggle 3

**U+EA3D**

*wiggleRandom4*  
Quasi-random squiggle 4

**Implementation notes**

Scoring applications can combine these glyphs to produce lines of varying lengths. By way of example:



`ornamentTrill + wiggleTrillFastest + wiggleTrillFasterStill +  
wiggleTrillFaster + wiggleTrillFast + wiggleTrill +  
wiggleTrillSlower + wiggleTrillSlowerStill + wiggleTrill +  
wiggleTrillFaster + wiggleTrillFasterStill`



`10 x wiggleWavy`



`10 x wiggleSawtooth`



`6 x wiggleSquaretooth`



`wiggleCircularStart + wiggleCircularLargest +  
wiggleCircularLargerStill + wiggleCircularLarger +  
wiggleCircularLarge + wiggleCircularEnd`



`wiggleVibratoStart + wiggleVibratoSmallestFastest +  
wiggleVibratoMediumSlower +  
wiggleVibratoMediumSlowest +  
wiggleVibratoMediumFaster +  
wiggleVibratoMediumFasterStill, etc.`

# Electronic music pictograms (U+EA40–U+EA8F)

## U+EA40



*elecMicrophone*

Microphone

## U+EA41



*elecHeadphones*

Headphones

## U+EA42



*elecHeadset*

Headset

## U+EA43



*elecDisc*

Disc

## U+EA44



*elecTape*

Tape



## U+EA45

*elecMixingConsole*

Mixing console

## U+EA46



*elecUSB*

USB connection



## U+EA47

*elecVideoCamera*

Video camera

## U+EA48



*elecMonitor*

Monitor



## U+EA49

*elecProjector*

Projector

## U+EA4A



*elecLoudspeaker*

Loudspeaker



## U+EA4B

*elecCamera*

Camera



## U+EA4C

*elecPlay*

Play



## U+EA4D

*elecStop*

Stop



## U+EA4E

*elecPause*

Pause



## U+EA4F

*elecFastForward*

Fast-forward



## U+EA50

*elecRewind*

Rewind



## U+EA51

*elecSkipForwards*

Skip forwards

<b>U+EA52</b>	<b>U+EA53</b>
	
<i>elecSkipBackwards</i> Skip backwards	<i>elecLoop</i> Loop
<b>U+EA54</b>	<b>U+EA55</b>
	
<i>elecReplay</i> Replay	<i>elecShuffle</i> Shuffle
<b>U+EA56</b>	<b>U+EA57</b>
	
<i>elecMute</i> Mute	<i>elecUnmute</i> Unmute
<b>U+EA58</b>	<b>U+EA59</b>
	
<i>elecMicrophoneMute</i> Mute microphone	<i>elecMicrophoneUnmute</i> Unmute microphone
<b>U+EA5A</b>	<b>U+EA5B</b>
	
<i>elecPowerOnOff</i> Power on/off	<i>elecEject</i> Eject
<b>U+EA5C</b>	<b>U+EA5D</b>
	
<i>elecVolumeFader</i> Combining volume fader	<i>elecVolumeFaderThumb</i> Combining volume fader thumb
<b>U+EA5E</b>	<b>U+EA5F</b>
	
<i>elecVolumeLevel0</i> Volume level 0%	<i>elecVolumeLevel20</i> Volume level 20%
<b>U+EA60</b>	<b>U+EA61</b>
	
<i>elecVolumeLevel40</i> Volume level 40%	<i>elecVolumeLevel60</i> Volume level 60%
<b>U+EA62</b>	<b>U+EA63</b>
	
<i>elecVolumeLevel80</i> Volume level 80%	<i>elecVolumeLevel100</i> Volume level 100%

**U+EA64**



*elecMIDIIn*

MIDI in

**U+EA65**



*elecMIDIOut*

MIDI out

**U+EA66**



*elecMIDIController0*

MIDI controller 0%



**U+EA67**

*elecMIDIController20*

MIDI controller 20%

**U+EA68**



*elecMIDIController40*

MIDI controller 40%



**U+EA69**

*elecMIDIController60*

MIDI controller 60%

**U+EA6A**



*elecMIDIController80*

MIDI controller 80%



**U+EA6B**

*elecMIDIController100*

MIDI controller 100%

**U+EA6C**



*elecAudioMono*

Mono audio setup



**U+EA6D**

*elecAudioStereo*

Stereo audio setup

**U+EA6E**



*elecAudioChannelsOne*

One channel (mono)



**U+EA6F**

*elecAudioChannelsTwo*

Two channels (stereo)

**U+EA70**



*elecAudioChannelsThreeFrontal*

Three channels (frontal)



**U+EA71**

*elecAudioChannelsThreeSurround*

Three channels (surround)

**U+EA72**



*elecAudioChannelsFour*

Four channels



**U+EA73**

*elecAudioChannelsFive*

Five channels

**U+EA74**



*elecAudioChannelsSix*

Six channels (5.1 surround)



**U+EA75**

*elecAudioChannelsSeven*

Seven channels

<b>U+EA76</b>		<i>elecAudioChannelsEight</i>	<b>U+EA77</b>		<i>elecLineIn</i>
		Eight channels (7.1 surround)			Line in
<b>U+EA78</b>		<i>elecLineOut</i>	<b>U+EA79</b>		<i>elecAudioIn</i>
		Line out			Audio in
<b>U+EA7A</b>		<i>elecAudioOut</i>	<b>U+EA7B</b>		<i>elecVideoIn</i>
		Audio out			Video in
<b>U+EA7C</b>		<i>elecVideoOut</i>	<b>U+EA7D</b>		<i>elecDataIn</i>
		Video out			Data in
<b>U+EA7E</b>		<i>elecDataOut</i>	<b>U+EA7F</b>		<i>elecDownload</i>
		Data out			Download
<b>U+EA80</b>		<i>elecUpload</i>			
		Upload			

# Arrows and arrowheads (U+EA90–U+EAAF)

<b>U+EA90</b>	<b>U+EA91</b>
↑ <i>arrowBlackUp</i> Black arrow up (N)	↗ <i>arrowBlackUpRight</i> Black arrow up-right (NE)
→ <b>U+EA92</b> <i>arrowBlackRight</i> Black arrow right (E)	↘ <b>U+EA93</b> <i>arrowBlackDownRight</i> Black arrow down-right (SE)
↓ <b>U+EA94</b> <i>arrowBlackDown</i> Black arrow down (S)	↙ <b>U+EA95</b> <i>arrowBlackDownLeft</i> Black arrow down-left (SW)
← <b>U+EA96</b> <i>arrowBlackLeft</i> Black arrow left (W)	↖ <b>U+EA97</b> <i>arrowBlackUpLeft</i> Black arrow up-left (NW)
↑ <b>U+EA98</b> <i>arrowWhiteUp</i> White arrow up (N)	↗ <b>U+EA99</b> <i>arrowWhiteUpRight</i> White arrow up-right (NE)
→ <b>U+EA9A</b> <i>arrowWhiteRight</i> White arrow right (E)	↘ <b>U+EA9B</b> <i>arrowWhiteDownRight</i> White arrow down-right (SE)
↓ <b>U+EA9C</b> <i>arrowWhiteDown</i> White arrow down (S)	↙ <b>U+EA9D</b> <i>arrowWhiteDownLeft</i> White arrow down-left (SW)
← <b>U+EA9E</b> <i>arrowWhiteLeft</i> White arrow left (W)	↖ <b>U+EA9F</b> <i>arrowWhiteUpLeft</i> White arrow up-left (NW)
▲ <b>U+EAA0</b> <i>arrowheadBlackUp</i> Black arrowhead up (N)	▼ <b>U+EAA1</b> <i>arrowheadBlackUpRight</i> Black arrowhead up-right (NE)

<b>U+EAA2</b>	<b>U+EAA3</b>
➤ <i>arrowheadBlackRight</i>	◀ <i>arrowheadBlackDownRight</i>
Black arrowhead right (E)	Black arrowhead down-right (SE)
<b>U+EAA4</b>	<b>U+EAA5</b>
▼ <i>arrowheadBlackDown</i>	▶ <i>arrowheadBlackDownLeft</i>
Black arrowhead down (S)	Black arrowhead down-left (SW)
<b>U+EAA6</b>	<b>U+EAA7</b>
◀ <i>arrowheadBlackLeft</i>	▶ <i>arrowheadBlackUpLeft</i>
Black arrowhead left (W)	Black arrowhead up-left (NW)
<b>U+EAA8</b>	<b>U+EAA9</b>
▲ <i>arrowheadWhiteUp</i>	▽ <i>arrowheadWhiteUpRight</i>
White arrowhead up (N)	White arrowhead up-right (NE)
<b>U+EAAA</b>	<b>U+EAAB</b>
➤ <i>arrowheadWhiteRight</i>	◀ <i>arrowheadWhiteDownRight</i>
White arrowhead right (E)	White arrowhead down-right (SE)
<b>U+EAAC</b>	<b>U+EAAD</b>
▽ <i>arrowheadWhiteDown</i>	△ <i>arrowheadWhiteDownLeft</i>
White arrowhead down (S)	White arrowhead down-left (SW)
<b>U+EAAE</b>	<b>U+EAAF</b>
◀ <i>arrowheadWhiteLeft</i>	▶ <i>arrowheadWhiteUpLeft</i>
White arrowhead left (W)	White arrowhead up-left (NW)

# Combining staff positions ( $U+EAB0-U+EABF$ )

---

## **U+EAB0**

*staffPosRaise1*  
Raise 1 staff position

## **U+EAB1**

*staffPosRaise2*  
Raise 2 staff positions

## **U+EAB2**

*staffPosRaise3*  
Raise 3 staff positions

## **U+EAB3**

*staffPosRaise4*  
Raise 4 staff positions

## **U+EAB4**

*staffPosRaise5*  
Raise 5 staff positions

## **U+EAB5**

*staffPosRaise6*  
Raise 6 staff positions

## **U+EAB6**

*staffPosRaise7*  
Raise 7 staff positions

## **U+EAB7**

*staffPosRaise8*  
Raise 8 staff positions

## **U+EAB8**

*staffPosLower1*  
Lower 1 staff position

## **U+EAB9**

*staffPosLower2*  
Lower 2 staff positions

## **U+EABA**

*staffPosLower3*  
Lower 3 staff positions

## **U+EABB**

*staffPosLower4*  
Lower 4 staff positions

## **U+EABC**

*staffPosLower5*  
Lower 5 staff positions

## **U+EABD**

*staffPosLower6*  
Lower 6 staff positions

## **U+EABE**

*staffPosLower7*  
Lower 7 staff positions

## **U+EABF**

*staffPosLower8*  
Lower 8 staff positions

# Renaissance lute tablature (U+EAC0–U+EADF)

	<b>U+EAC0</b>		<b>U+EAC1</b>
<i>luteStaff6Lines</i>		<i>luteStaff6LinesWide</i>	
Lute tablature staff, 6 courses		Lute tablature staff, 6 courses (wide)	
	<b>U+EAC2</b>		<b>U+EAC3</b>
<i>luteStaff6LinesNarrow</i>		<i>luteBarlineStartRepeat</i>	
Lute tablature staff, 6 courses (narrow)		Lute tablature start repeat barline	
	<b>U+EAC4</b>		<b>U+EAC5</b>
<i>luteBarlineEndRepeat</i>		<i>luteBarlineFinal</i>	
Lute tablature end repeat barline		Lute tablature final barline	
	<b>U+EAC6</b>		<b>U+EAC7</b>
<i>luteDurationDoubleWhole</i>		<i>luteDurationWhole</i>	
Double whole note (breve) duration sign		Whole note (semibreve) duration sign	
	<b>U+EAC8</b>		<b>U+EAC9</b>
<i>luteDurationHalf</i>		<i>luteDurationQuarter</i>	
Half note (minim) duration sign		Quarter note (crotchet) duration sign	
	<b>U+EACA</b>		<b>U+EACB</b>
<i>luteDuration8th</i>		<i>luteDuration16th</i>	
Eighth note (quaver) duration sign		16th note (semiquaver) duration sign	
	<b>U+EACC</b>		<b>U+EACD</b>
<i>luteDuration32nd</i>		<i>luteFingeringRHThumb</i>	
32nd note (demisemiquaver) duration sign		Right-hand fingering, thumb	
	<b>U+EACE</b>		<b>U+EACF</b>
<i>luteFingeringRHFist</i>		<i>luteFingeringRHSecond</i>	
Right-hand fingering, first finger		Right-hand fingering, second finger	
	<b>U+EADO</b>		
<i>luteFingeringRTHird</i>			
Right-hand fingering, third finger			

## Recommended stylistic alternates

### **uniEAD0.salt01**

*luteFingeringRHTthirdAlt*

.. Right-hand fingering, third finger  
(alternate)

# French and English Renaissance lute tablature (U+EAEO–U+EAFF)

---

	<b>U+EAEO</b> <i>luteFrenchFretA</i>		<b>U+EAE1</b> <i>luteFrenchFretB</i>
<b>a</b>	Open string (a)	<b>b</b>	First fret (b)
	<b>U+EAE2</b> <i>luteFrenchFretC</i>		<b>U+EAE3</b> <i>luteFrenchFretD</i>
<b>c</b>	Second fret (c)	<b>d</b>	Third fret (d)
	<b>U+EAE4</b> <i>luteFrenchFretE</i>		<b>U+EAE5</b> <i>luteFrenchFretF</i>
<b>e</b>	Fourth fret (e)	<b>f</b>	Fifth fret (f)
	<b>U+EAE6</b> <i>luteFrenchFretG</i>		<b>U+EAE7</b> <i>luteFrenchFretH</i>
<b>g</b>	Sixth fret (g)	<b>h</b>	Seventh fret (h)
	<b>U+EAE8</b> <i>luteFrenchFretI</i>		<b>U+EAE9</b> <i>luteFrenchFretK</i>
<b>i</b>	Eighth fret (i)	<b>k</b>	Ninth fret (k)
	<b>U+EAEA</b> <i>luteFrenchFretL</i>		<b>U+EAEB</b> <i>luteFrenchFretM</i>
<b>l</b>	10th fret (l)	<b>m</b>	11th fret (m)
	<b>U+EAEC</b> <i>luteFrenchFretN</i>		<b>U+EAED</b> <i>luteFrench7thCourse</i>
<b>n</b>	12th fret (n)	<b>a</b>	Seventh course (diapason)
	<b>U+EAEE</b> <i>luteFrench8thCourse</i>		<b>U+EAEF</b> <i>luteFrench9thCourse</i>
<b>/a</b>	Eighth course (diapason)	<b>//a</b>	Ninth course (diapason)

	<b>U+EAFO</b>		<b>U+EAF1</b>
// ^a	<i>luteFrench10thCourse</i>	x	<i>luteFrenchMordentUpper</i>
	10th course (diapason)		Mordent with upper auxiliary
	<b>U+EAF2</b>		<b>U+EAF3</b>
**	<i>luteFrenchMordentLower</i>	7	<i>luteFrenchMordentInverted</i>
	Mordent with lower auxiliary		Inverted mordent
	<b>U+EAF4</b>		<b>U+EAF5</b>
+	<i>luteFrenchAppoggiaturaBelow</i>	#	<i>luteFrenchAppoggiaturaAbove</i>
	Appoggiatura from below		Appoggiatura from above

## Recommended stylistic alternates

	<b>uniEAE2.salt01</b>		<b>uniEAED.salt01</b>
c	<i>luteFrenchFretCAlt</i>	- ^a	<i>luteFrench7thCourseStrikethru</i>
	Second fret (c), alternate appearance		Seventh course (diapason), strikethrough
	<b>uniEAED.salt02</b>		<b>uniEAED.salt03</b>
<u>a</u>	<i>luteFrench7thCourseUnderline</i>	<u>a</u>	<i>luteFrench7thCourseRight</i>
	Seventh course (diapason), underline		Seventh course (diapason), right
	<b>uniEAE.salt01</b>		<b>uniEAE.salt02</b>
/ ^a	<i>luteFrench8thCourseStrikethru</i>	/ ^a	<i>luteFrench8thCourseUnderline</i>
	Eighth course (diapason), strikethrough		Eighth course (diapason), underlined
	<b>uniEAE.salt03</b>		<b>uniEAEF.salt01</b>
<u>a/</u>	<i>luteFrench8thCourseRight</i>	// ^a	<i>luteFrench9thCourseStrikethru</i>
	Eighth course (diapason), right		Ninth course (diapason), strikethrough
	<b>uniEAEF.salt02</b>		<b>uniEAEF.salt03</b>
<u>a</u>	<i>luteFrench9thCourseUnderline</i>	<u>a//</u>	<i>luteFrench9thCourseRight</i>
	Ninth course (diapason), underlined		Ninth course (diapason), right
	<b>uniEAF0.salt01</b>		<b>uniEAF0.salt02</b>
// ^a	<i>luteFrench10thCourseStrikethru</i>	// ^a	<i>luteFrench10thCourseUnderline</i>
	10th course (diapason), strikethrough		10th course (diapason), underlined

**uniEAF0.salt03**

*luteFrench10thCourseRight*

**a///**  
10th course (diapason), right

# Italian and Spanish Renaissance lute tablature (U+EB00–U+EB1F)

---

	<b>U+EB00</b> <i>lutetItalianFret0</i> 0 Open string (0)		<b>U+EB01</b> <i>lutetItalianFret1</i> 1 First fret (1)
2	<b>U+EB02</b> <i>lutetItalianFret2</i> Second fret (2)	3	<b>U+EB03</b> <i>lutetItalianFret3</i> Third fret (3)
4	<b>U+EB04</b> <i>lutetItalianFret4</i> Fourth fret (4)	5	<b>U+EB05</b> <i>lutetItalianFret5</i> Fifth fret (5)
6	<b>U+EB06</b> <i>lutetItalianFret6</i> Sixth fret (6)	7	<b>U+EB07</b> <i>lutetItalianFret7</i> Seventh fret (7)
8	<b>U+EB08</b> <i>lutetItalianFret8</i> Eighth fret (8)	9	<b>U+EB09</b> <i>lutetItalianFret9</i> Ninth fret (9)
	<b>U+EB0A</b> <i>lutetItalianTempoFast</i> Φ Fast tempo indication (de Mudarra)		<b>U+EB0B</b> <i>lutetItalianTempoSlightlyFast</i> Φ Somewhat fast tempo indication (de Narvaez)
C	<b>U+EB0C</b> <i>lutetItalianTempoNeitherFastNorSlow</i> Neither fast nor slow tempo indication (de Mudarra)		<b>U+EB0D</b> <i>lutetItalianTempoSlow</i> C Slow tempo indication (de Mudarra)
3	<b>U+EB0E</b> <i>lutetItalianTempoVerySlow</i> C Very slow indication (de Narvaez)		<b>U+EB0F</b> <i>lutetItalianTimeTriple</i> 3 Triple time indication

<b>U+EB10</b>		<b>U+EB11</b>	
<i>lutetItalianClefFaUt</i>		<i>lutetItalianClefCSolFaUt</i>	
	F fa ut clef		C sol fa ut clef
<b>U+EB12</b>		<b>U+EB13</b>	
<i>lutetItalianTremolo</i>		<i>lutetItalianHoldNote</i>	
	Single-finger tremolo or mordent		Hold note
<b>U+EB14</b>		<b>U+EB15</b>	
<i>lutetItalianHoldFinger</i>		<i>lutetItalianReleaseFinger</i>	
	Hold finger in place		Release finger
<b>U+EB16</b>			
<i>lutetItalianVibrato</i>			
	Vibrato (verre cassé)		

# German Renaissance lute tablature (U+EB20–U+EB4F)

---

**U+EB20***luteGermanALower*

a 5th course, 1st fret (a)

**U+EB21***luteGermanBLower*

b 4th course, 1st fret (b)

**U+EB22***luteGermanCLower*

c 3rd course, 1st fret (c)

**U+EB23***luteGermanDLower*

d 2nd course, 1st fret (d)

**U+EB24***luteGermanELower*

e 1st course, 1st fret (e)

**U+EB25***luteGermanFLower*

f 5th course, 2nd fret (f)

**U+EB26***luteGermanGLower*

g 4th course, 2nd fret (g)

**U+EB27***luteGermanHLower*

h 3rd course, 2nd fret (h)

**U+EB28***luteGermanILower*

i 2nd course, 2nd fret (i)

**U+EB29***luteGermanKLower*

j 1st course, 2nd fret (k)

**U+EB2A***luteGermanLLower*

l 5th course, 3rd fret (l)

**U+EB2B***luteGermanMLower*

m 4th course, 3rd fret (m)

**U+EB2C***luteGermanNLower*

n 3rd course, 3rd fret (n)

**U+EB2D***luteGermanOLower*

o 2nd course, 3rd fret (o)

**U+EB2E***luteGermanPLower*

p 1st course, 3rd fret (p)

**U+EB2F***luteGermanQLower*

q 5th course, 4th fret (q)

**U+EB30**

*luteGermanRLower*

ꝛ

4th course, 4th fret (r)

**U+EB31**

*luteGermanSLower*

ſ

3rd course, 4th fret (s)

**U+EB32**

*luteGermanTLower*

ꝛ

2nd course, 4th fret (t)

ݒ

**U+EB33**

*luteGermanVLower*

**U+EB34**

*luteGermanXLower*

ꝛ

5th course, 5th fret (x)

ݒ

**U+EB35**

*luteGermanYLower*

**U+EB36**

*luteGermanZLower*

ȝ

3rd course, 5th fret (z)

ݒ

**U+EB37**

*luteGermanAUpper*

ȝ

6th course, 2nd fret (B)

ݒ

**U+EB38**

*luteGermanCUpper*

܁

**U+EB39**

*luteGermanAUpper*

܁

6th course, 3rd fret (C)

܁

**U+EB3B**

*luteGermanEUpper*

܁

**U+EB3D**

*luteGermanGUpper*

܁

**U+EB3E**

*luteGermanLUpper*

܁

6th course, 5th fret (E)

܁

**U+EB3F**

*luteGermanIUpper*

܁

**U+EB41**

*luteGermanLUpper*

܁

6th course, 7th fret (G)

܁

**U+EB40**

*luteGermanKUpper*

܁

6th course, 8th fret (H)

܁

**U+EB41**

*luteGermanLUpper*

܁

6th course, 9th fret (I)

܁

**U+EB41**

*luteGermanLUpper*

܁

6th course, 11th fret (L)

**U+EB42**



*luteGermanMUpper*

6th course, 12th fret (M)

**U+EB43**



*luteGermanNUpper*

6th course, 13th fret (N)

# Kievan square notation (U+EB50–U+EB5F)

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## **U+EB50**

*kievanCClef*



Kievan C clef (tse-fa-ut)

## **U+EB51**

*kievanEndingSymbol*



Kievan ending symbol

## **U+EB52**

*kievanNoteReciting*



Kievan reciting note

## **U+EB53**

*kievanNoteWhole*



Kievan whole note

## **U+EB54**

*kievanNoteWholeFinal*



Kievan final whole note

## **U+EB55**

*kievanNoteHalfStemDown*



Kievan half note, stem down

## **U+EB56**

*kievanNoteQuarterStemUp*



Kievan quarter note, stem up

## **U+EB57**

*kievanNoteQuarterStemDown*



Kievan quarter note, stem down

## **U+EB58**

*kievanNote8thStemUp*



Kievan eighth note, stem up

## **U+EB59**

*kievanNote8thStemDown*



Kievan eighth note, stem down

## **U+EB5A**

*kievanAugmentationDot*



Kievan augmentation dot

## **U+EB5B**

*kievanAccidentalSharp*



Kievan sharp

## **U+EB5C**

*kievanAccidentalFlat*



Kievan flat

# Fingering chart for flute (U+EB60–U+EB9F)

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**U+EB60***fingeringFluteChart*

Flute fingering chart, piccolo all open

**U+EB62***fingeringFluteBFoot*Flute fingering chart, flute low B foot  
all open**U+EB64***fingeringFluteLThumbBClosed*Flute fingering chart, left-hand thumb  
B closed**U+EB66***fingeringFluteLH2ndFingerClosed*Flute fingering chart, left-hand 2nd  
finger closed**U+EB68***fluteFingeringLHGSharpClosed*Flute fingering chart, left-hand G  
sharp closed**U+EB6A***fingeringFluteRH1stFingerClosed*Flute fingering chart, right-hand 1st  
finger closed**U+EB6C***fingeringFluteRH2ndFingerClosed*Flute fingering chart, right-hand 2nd  
finger closed**U+EB6E***fingeringFluteRH3rdFingerClosed*Flute fingering chart, right-hand 3rd  
finger closed**U+EB70***fingeringFluteRHLowCSharpClosed*Flute fingering chart, right-hand low  
C sharp closed**U+EB61***fingeringFluteCFoot*Flute fingering chart, flute low C foot  
all open**U+EB63***fingeringFluteLThumbBFlatClosed*Flute fingering chart, left-hand thumb  
B flat closed**U+EB65***fingeringFluteLH1stFingerClosed*Flute fingering chart, left-hand 1st  
finger closed**U+EB67***fingeringFluteLH3rdFingerClosed*Flute fingering chart, left-hand 3rd  
finger closed**U+EB69***fingeringFluteRHBFatTrillClosed*Flute fingering chart, right-hand B flat  
trill closed**U+EB6B***fingeringFluteRHDTrillClosed*Flute fingering chart, right-hand D  
trill closed**U+EB6D***fingeringFluteRHDSharpTrillClosed*Flute fingering chart, right-hand D  
sharp trill closed**U+EB6F***fingeringFluteRHEFlatPaddleClosed*Flute fingering chart, right-hand E flat  
paddle closed**U+EB71***fingeringFluteRHLowCClosed*Flute fingering chart, right-hand low  
C closed

**U+EB72**

*fingeringFluteRHLowBClosed*

Flute fingering chart, right-hand low B closed

**U+EB74**

*fingeringFluteLH1stFingerHalfClosedLeft*

Flute fingering chart, left-hand 1st finger half-closed (left)

**U+EB76**

*fingeringFluteLH3rdFingerHalfClosedLeft*

Flute fingering chart, left-hand 3rd finger half-closed (left)

**U+EB78**

*fingeringFluteRH2ndFingerHalfClosedLeft*

Flute fingering chart, right-hand 2nd finger half-closed (left)

**U+EB7A**

*fingeringFluteLH1stFingerHalfClosedRight*

Flute fingering chart, left-hand 1st finger half-closed (right)

**U+EB7C**

*fingeringFluteLH3rdFingerHalfClosedRight*

Flute fingering chart, left-hand 3rd finger half-closed (right)

**U+EB7E**

*fingeringFluteRH2ndFingerHalfClosedRight*

Flute fingering chart, right-hand 2nd finger half-closed (right)

**U+EB80**

*fingeringFluteLH1stFingerQuarterClosedLeft*

Flute fingering chart, left-hand 1st finger quarter-closed (left)

**U+EB82**

*fingeringFluteLH3rdFingerQuarterClosedLeft*

Flute fingering chart, left-hand 3rd finger quarter-closed (left)

**U+EB73**

*fingeringFluteRHGizmoClosed*

Flute fingering chart, right-hand gizmo closed

**U+EB75**

*fingeringFluteLH2ndFingerHalfClosedLeft*

Flute fingering chart, left-hand 2nd finger half-closed (left)

**U+EB77**

*fingeringFluteRH1stFingerHalfClosedLeft*

Flute fingering chart, right-hand 1st finger half-closed (left)

**U+EB79**

*fingeringFluteRH3rdFingerHalfClosedLeft*

Flute fingering chart, right-hand 3rd finger half-closed (left)

**U+EB7B**

*fingeringFluteLH2ndFingerHalfClosedRight*

Flute fingering chart, left-hand 2nd finger half-closed (right)

**U+EB7D**

*fingeringFluteRH1stFingerHalfClosedRight*

Flute fingering chart, right-hand 1st finger half-closed (right)

**U+EB7F**

*fingeringFluteRH3rdFingerHalfClosedRight*

Flute fingering chart, right-hand 3rd finger half-closed (right)

**U+EB81**

*fingeringFluteLH2ndFingerQuarterClosedLeft*

Flute fingering chart, left-hand 2nd finger quarter-closed (left)

**U+EB83**

*fingeringFluteRH1stFingerQuarterClosedLeft*

Flute fingering chart, right-hand 1st finger quarter-closed (left)

**U+EB84**

*fingeringFluteRH2ndFingerQuarterClosedLeft*

Flute fingering chart, right-hand 2nd finger quarter-closed (left)

**U+EB86**

*fingeringFluteLH1stFingerQuarterClosedRight*

Flute fingering chart, left-hand 1st finger quarter-closed (right)

**U+EB88**

*fingeringFluteLH3rdFingerQuarterClosedRight*

Flute fingering chart, left-hand 3rd finger quarter-closed (right)

**U+EB8A**

*fingeringFluteRH2ndFingerQuarterClosedRight*

Flute fingering chart, right-hand 2nd finger quarter-closed (right)

**U+EB8C**

*fingeringFluteLHThumbBFlatTrill*

Flute fingering chart, left-hand thumb B flat trill

**U+EB8E**

*fingeringFluteLH1stFingerTrill*

Flute fingering chart, left-hand 1st finger trill

**U+EB90**

*fingeringFluteLH3rdFingerTrill*

Flute fingering chart, left-hand 3rd finger trill

**U+EB92**

*fingeringFluteRHBFlatTrillTrill*

Flute fingering chart, right-hand B flat trill key trill

**U+EB94**

*fingeringFluteRHDTrillTrill*

Flute fingering chart, right-hand D trill key trill

**U+EB85**

*fingeringFluteRH3rdFingerQuarterClosedLeft*

Flute fingering chart, right-hand 3rd finger quarter-closed (left)

**U+EB87**

*fingeringFluteLH2ndFingerQuarterClosedRight*

Flute fingering chart, left-hand 2nd finger quarter-closed (right)

**U+EB89**

*fingeringFluteRH1stFingerQuarterClosedRight*

Flute fingering chart, right-hand 1st finger quarter-closed (right)

**U+EB8B**

*fingeringFluteRH3rdFingerQuarterClosedRight*

Flute fingering chart, right-hand 3rd finger quarter-closed (right)

**U+EB8D**

*fingeringFluteLHThumbBTrill*

Flute fingering chart, left-hand thumb B trill

**U+EB8F**

*fingeringFluteLH2ndFingerTrill*

Flute fingering chart, left-hand 2nd finger trill

**U+EB91**

*fluteFingeringLHGSharpTrill*

Flute fingering chart, left-hand G sharp trill

**U+EB93**

*fingeringFluteRH1stFingerTrill*

Flute fingering chart, right-hand 1st finger trill

**U+EB95**

*fingeringFluteRH2ndFingerTrill*

Flute fingering chart, right-hand 2nd finger trill

**U+EB96***fingeringFluteRHDSharpTrillTrill*

Flute fingering chart, right-hand D sharp trill key trill

**U+EB98***fingeringFluteRHEFlatPaddleTrill*

Flute fingering chart, right-hand E flat paddle trill

**U+EB9A***fingeringFluteRHLowCTrill*

Flute fingering chart, right-hand low C trill

**U+EB9C***fingeringFluteRHGizmoTrill*

Flute fingering chart, right-hand gizmo trill

**U+EB97***fingeringFluteRH3rdFingerTrill*

Flute fingering chart, right-hand 3rd finger trill

**U+EB99***fingeringFluteRHLowCSharpTrill*

Flute fingering chart, right-hand low C sharp trill

**U+EB9B***fingeringFluteRHLowBTrill*

Flute fingering chart, right-hand low B trill

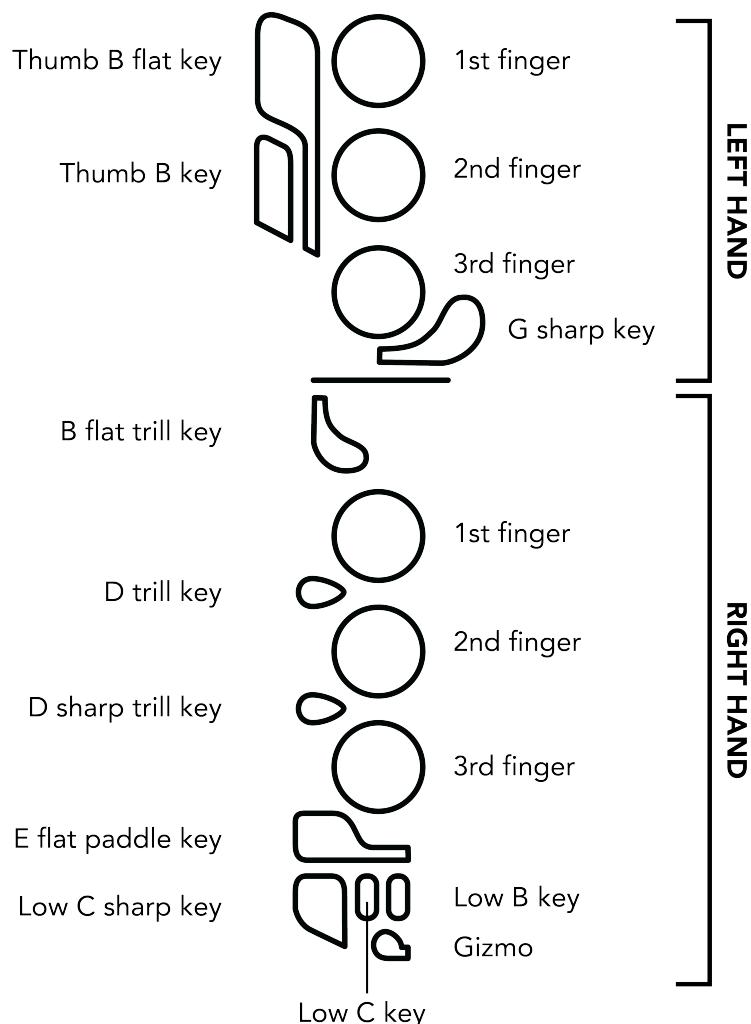
## Implementation notes

All of the glyphs in this range should have zero width, with all glyphs registered so that they overlay correctly (see examples below).

To construct a fingering chart, first use **fingeringFluteChart** to produce an empty chart for piccolo with all keys open; add **fingeringFluteCFoot** to add the low keys from a C foot flute, and add **fingeringFluteBFoot** to add the additional low B key if necessary.

To add closed, half-closed, quarter-closed or trill keys to the chart, simply add the relevant glyphs at the same position.

The following diagram shows the disposition of keys in the blank chart.



Here are a couple of examples of complete fingering charts. Note that they have been rotated counter-clockwise by 90 degrees:



C: `fingeringFluteChart, fingeringFluteCFoot, fingeringFluteBFoot, fingeringFluteLHThumbBClosed, fingeringFluteLH1stFingerClosed, fingeringFluteLH2ndFingerClosed, fingeringFluteLH3rdFingerClosed, fingeringFluteRH1stFingerClosed, fingeringFluteRH2ndFingerClosed, fingeringFluteRH3rdFingerClosed, fingeringFluteRHCSharpClosed, fingeringFluteRHLowCClosed`



E: `fingeringFluteChart, fingeringFluteCFoot, fingeringFluteBFoot, fingeringFluteLHThumbBClosed, fingeringFluteLH1stFingerClosed, fingeringFluteLH2ndFingerClosed, fingeringFluteLH3rdFingerClosed, fingeringFluteRH1stFingerClosed, fingeringFluteRH2ndFingerClosed, fingeringFluteRHEFlatPaddleClosed`

# Fingering chart for clarinet (U+EBA0–U+EBFF)

---

## **U+EBA0**

*fingeringClarChart*

Clarinet fingering chart, all open

## **U+EBA2**

*fingeringClarRegisterClosed*

Clarinet fingering chart, register closed

## **U+EBA4**

*fingeringClarLHAClosed*

Clarinet fingering chart, left-hand A closed

## **U+EBA6**

*fingeringClarLH1stFingerClosed*

Clarinet fingering chart, left-hand 1st finger closed

## **U+EBA8**

*fingeringClarLHEFlatClosed*

Clarinet fingering chart, left-hand E flat closed

## **U+EBAA**

*fingeringClarLHCSharpClosed*

Clarinet fingering chart, left-hand C sharp closed

## **U+EBAC**

*fingeringClarLHGSharpAltClosed*

Clarinet fingering chart, left-hand G sharp alt. closed

## **U+EBAE**

*fingeringClarRH1stSideClosed*

Clarinet fingering chart, right-hand 1st side closed

## **U+EBBO**

*fingeringClarRH3rdSideClosed*

Clarinet fingering chart, right-hand 3rd side closed

## **U+EBA1**

*fingeringClarBassEFlatOpen*

Clarinet fingering chart, bass clarinet E flat open

## **U+EBA3**

*fingeringClarLHThumbClosed*

Clarinet fingering chart, left-hand thumb closed

## **U+EBA5**

*fingeringClarLHGSharpClosed*

Clarinet fingering chart, left-hand G sharp closed

## **U+EBA7**

*fingeringClarLH2ndFingerClosed*

Clarinet fingering chart, left-hand 2nd finger closed

## **U+EBA9**

*fingeringClarLH3rdFingerClosed*

Clarinet fingering chart, left-hand 3rd finger closed

## **U+EBAB**

*fingeringClarLHFClosed*

Clarinet fingering chart, left-hand F closed

## **U+EBAD**

*fingeringClarLHEClosed*

Clarinet fingering chart, left-hand E closed

## **U+EBAF**

*fingeringClarRH2ndSideClosed*

Clarinet fingering chart, right-hand 2nd side closed

## **U+EBB1**

*fingeringClarRH4thSideClosed*

Clarinet fingering chart, right-hand 4th side closed

**U+EBB2**

*fingeringClarRH1stFingerClosed*

Clarinet fingering chart, right-hand  
1st finger closed

**U+EBB4**

*fingeringClarRHBClosed*

Clarinet fingering chart, right-hand B  
closed

**U+EBB6**

*fingeringClarRHFSharpClosed*

Clarinet fingering chart, right-hand F  
sharp closed

**U+EBB8**

*fingeringClarRHEClosed*

Clarinet fingering chart, right-hand E  
closed

**U+EBBA**

*fingeringClarBassEFlatClosed*

Clarinet fingering chart, bass clarinet  
E flat closed

**U+EBBC**

*fingeringClarLH2ndFingerRingOnly*

Clarinet fingering chart, left-hand  
2nd finger ring only

**U+EBBE**

*fingeringClarRH1stFingerRingOnly*

Clarinet fingering chart, right-hand  
1st finger ring only

**U+EBC0**

*fingeringClarRH3rdFingerRingOnly*

Clarinet fingering chart, right-hand  
3rd finger ring only

**U+EBC2**

*fingeringClarLH2ndFingerHalfClosedLeft*

Clarinet fingering chart, left-hand  
2nd finger half-closed left

**U+EBB3**

*fingeringClarRH2ndFingerClosed*

Clarinet fingering chart, right-hand  
2nd finger closed

**U+EBB5**

*fingeringClarRH3rdFingerClosed*

Clarinet fingering chart, right-hand  
3rd finger closed

**U+EBB7**

*fingeringClarRHGSharpClosed*

Clarinet fingering chart, right-hand G  
sharp closed

**U+EBB9**

*fingeringClarRHFClosed*

Clarinet fingering chart, right-hand F  
closed

**U+EBBB**

*fingeringClarLH1stFingerRingOnly*

Clarinet fingering chart, left-hand 1st  
finger ring only

**U+EBBD**

*fingeringClarLH3rdFingerRingOnly*

Clarinet fingering chart, left-hand 3rd  
finger ring only

**U+EBBF**

*fingeringClarRH2ndFingerRingOnly*

Clarinet fingering chart, right-hand  
2nd finger ring only

**U+EBC1**

*fingeringClarLH1stFingerHalfClosedLeft*

Clarinet fingering chart, left-hand 1st  
finger half-closed left

**U+EBC3**

*fingeringClarLH3rdFingerHalfClosedLeft*

Clarinet fingering chart, left-hand 3rd  
finger half-closed left

**U+EBC4**

*fingeringClarRH1stFingerHalfClosedLeft*

Clarinet fingering chart, right-hand  
1st finger half-closed left

**U+EBC6**

*fingeringClarRH3rdFingerHalfClosedLeft*

Clarinet fingering chart, right-hand  
3rd finger half-closed left

**U+EBC8**

*fingeringClarLH2ndFingerHalfClosedRight*

Clarinet fingering chart, left-hand  
2nd finger half-closed right

**U+EBCA**

*fingeringClarRH1stFingerHalfClosedRight*

Clarinet fingering chart, right-hand  
1st finger half-closed right

**U+EBCC**

*fingeringClarRH3rdFingerHalfClosedRight*

Clarinet fingering chart, right-hand  
3rd finger half-closed right

**U+EBCE**

*fingeringClarLH2ndFingerQuarterClosedLeft*

Clarinet fingering chart, left-hand  
2nd finger quarter-closed left

**U+EBD0**

*fingeringClarRH1stFingerQuarterClosedLeft*

Clarinet fingering chart, right-hand  
1st finger quarter-closed left

**U+EBD2**

*fingeringClarRH3rdFingerQuarterClosedLeft*

Clarinet fingering chart, right-hand  
3rd finger quarter-closed left

**U+EBD4**

*fingeringClarLH2ndFingerQuarterClosedRight*

Clarinet fingering chart, left-hand  
2nd finger quarter-closed right

**U+EBC5**

*fingeringClarRH2ndFingerHalfClosedLeft*

Clarinet fingering chart, right-hand  
2nd finger half-closed left

**U+EBC7**

*fingeringClarLH1stFingerHalfClosedRight*

Clarinet fingering chart, left-hand 1st  
finger half-closed right

**U+EBC9**

*fingeringClarLH3rdFingerHalfClosedRight*

Clarinet fingering chart, left-hand 3rd  
finger half-closed right

**U+EBCB**

*fingeringClarRH2ndFingerHalfClosedRight*

Clarinet fingering chart, right-hand  
2nd finger half-closed right

**U+EBCD**

*fingeringClarLH1stFingerQuarterClosedLeft*

Clarinet fingering chart, left-hand 1st  
finger quarter-closed left

**U+EBCF**

*fingeringClarLH3rdFingerQuarterClosedLeft*

Clarinet fingering chart, left-hand 3rd  
finger quarter-closed left

**U+EBD1**

*fingeringClarRH2ndFingerQuarterClosedLeft*

Clarinet fingering chart, right-hand  
2nd finger quarter-closed left

**U+EBD3**

*fingeringClarLH1stFingerQuarterClosedRight*

Clarinet fingering chart, left-hand 1st  
finger quarter-closed right

**U+EBD5**

*fingeringClarLH3rdFingerQuarterClosedRight*

Clarinet fingering chart, left-hand 3rd  
finger quarter-closed right

**U+EBD6**

*fingeringClarRH1stFingerQuarterClosedRight*

Clarinet fingering chart, right-hand  
1st finger quarter-closed right

**U+EBD8**

*fingeringClarRH3rdFingerQuarterClosedRight*

Clarinet fingering chart, right-hand  
3rd finger quarter-closed right

**U+EBDA**

*fingeringClarLHThumbTrill*

Clarinet fingering chart, left-hand  
thumb trill

**U+EBDC**

*fingeringClarLHGSharpTrill*

Clarinet fingering chart, left-hand G  
sharp trill

**U+EBDE**

*fingeringClarLH2ndFingerTrill*

Clarinet fingering chart, left-hand  
2nd finger trill

**U+EBO**

*fingeringClarLH3rdFingerTrill*

Clarinet fingering chart, left-hand 3rd  
finger trill

**U+EBO2**

*fingeringClarLHFTrill*

Clarinet fingering chart, left-hand F  
trill

**U+EBO4**

*fingeringClarLHETrill*

Clarinet fingering chart, left-hand E  
trill

**U+EBO6**

*fingeringClarRH2ndSideTrill*

Clarinet fingering chart, right-hand  
2nd side trill

**U+EBO7**

*fingeringClarRH2ndFingerQuarterClosedRight*

Clarinet fingering chart, right-hand  
2nd finger quarter-closed right

**U+EBO9**

*fingeringClarRegisterTrill*

Clarinet fingering chart, register trill

**U+EBDB**

*fingeringClarLHATrill*

Clarinet fingering chart, left-hand A  
trill

**U+EBDD**

*fingeringClarLH1stFingerTrill*

Clarinet fingering chart, left-hand 1st  
finger trill

**U+EBDF**

*fingeringClarLHEFlatTrill*

Clarinet fingering chart, left-hand E  
flat trill

**U+EBO1**

*fingeringClarLHCSharpTrill*

Clarinet fingering chart, left-hand C  
sharp trill

**U+EBO3**

*fingeringClarLHGSharpAltTrill*

Clarinet fingering chart, left-hand G  
sharp alt. trill

**U+EBO5**

*fingeringClarRH1stSideTrill*

Clarinet fingering chart, right-hand  
1st side trill

**U+EBO7**

*fingeringClarRH3rdSideTrill*

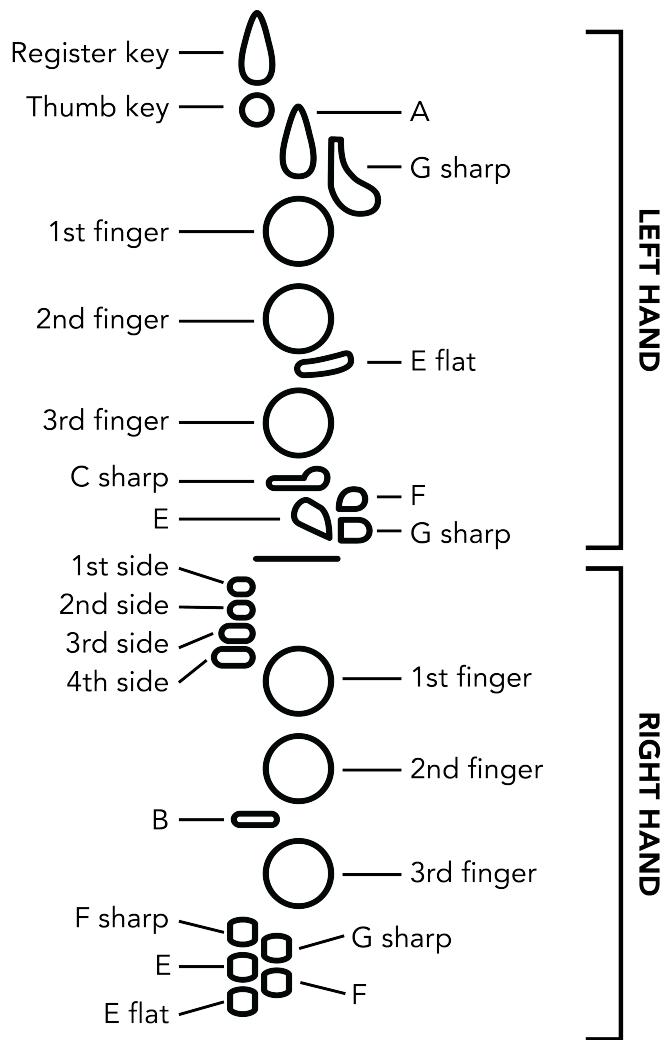
Clarinet fingering chart, right-hand  
3rd side trill

**U+EBE8***fingeringClarRH4thSideTrill*Clarinet fingering chart, right-hand  
4th side trill**U+EBA9***fingeringClarRH1stFingerTrill*Clarinet fingering chart, right-hand  
1st finger trill**U+EBC9***fingeringClarRH2ndFingerTrill*Clarinet fingering chart, right-hand  
2nd finger trill**U+EBE8***fingeringClarRH3rdFingerTrill*Clarinet fingering chart, right-hand F  
sharp trill**U+EBE9***fingeringClarRHGSharpTrill*Clarinet fingering chart, right-hand G  
sharp trill**U+EBE0***fingeringClarRHETrill*Clarinet fingering chart, right-hand E  
trill**U+EBE1***fingeringClarBassEFlatTrill*Clarinet fingering chart, bass clarinet  
E flat trill**Implementation notes**

All of the glyphs in this range should have zero width, with all glyphs registered so that they overlay correctly (see examples below).

To construct a fingering chart, first use **fingeringClarChart** to produce an empty chart for clarinet. To add the low E flat key found on the bass clarinet, next use **fingeringClarBassEFlatOpen**. To add closed, half-closed, quarter-closed or trill keys to the chart, simply add the relevant glyphs at the same position.

The following diagram shows the disposition of keys in the blank chart.



Here are a couple of examples of complete fingering charts. Note that they have been rotated counter-clockwise by 90 degrees:



C: `fingeringClarChart, fingeringClarLHRegisterClosed, fingeringClarLH1stFingerClosed, fingeringClarLH2ndFingerClosed, fingeringClarLH3rdFingerClosed`



High E: `fingeringClarChart, fingeringClarLHThumbClosed, fingeringClarLHRegisterClosed, fingeringClarLH1stFingerClosed, fingeringClarLH2ndFingerClosed, fingeringClarLH3rdFingerClosed, fingeringClarRHGSharpClosed`

# Fingering chart for oboe (U+EC00–U+EC4F)



## **U+EC00**

*fingeringOboeChart*

Oboe fingering chart, all open

## **U+EC02**

*fingeringOboeLH1stOctaveClosed*

Oboe fingering chart, left-hand 1st octave closed

## **U+EC04**

*fingeringOboeLH2ndOctaveClosed*

Oboe fingering chart, left-hand 2nd octave closed

## **U+EC06**

*fingeringOboeLHDTrillClosed*

Oboe fingering chart, left-hand D trill closed

## **U+EC08**

*fingeringOboeLHCSharpTrillClosed*

Oboe fingering chart, left-hand C sharp trill closed

## **U+EC0A**

*fingeringOboeLHGSharpClosed*

Oboe fingering chart, left-hand G sharp closed

## **U+EC0C**

*fingeringOboeLHEFlatClosed*

Oboe fingering chart, left-hand E flat closed

## **U+EC0E**

*fingeringOboeLHLowBFlatClosed*

Oboe fingering chart, left-hand low B flat closed

## **U+EC10**

*fingeringOboeRHGSharpClosed*

Oboe fingering chart, right-hand G sharp closed

## **U+EC01**

*fingeringOboeLH3rdOctaveClosed*

Oboe fingering chart, left-hand 3rd octave closed

## **U+EC03**

*fingeringOboeLH1stFingerClosed*

Oboe fingering chart, left-hand 1st finger closed

## **U+EC05**

*fingeringOboeLHBTrillClosed*

Oboe fingering chart, left-hand B trill closed

## **U+EC07**

*fingeringOboeLH2ndFingerClosed*

Oboe fingering chart, left-hand 2nd finger closed

## **U+EC09**

*fingeringOboeLH3rdFingerClosed*

Oboe fingering chart, left-hand 3rd finger closed

## **U+EC0B**

*fingeringOboeLHLowBClosed*

Oboe fingering chart, left-hand low B closed

## **U+EC0D**

*fingeringOboeLHFClosed*

Oboe fingering chart, left-hand F closed

## **U+EC0F**

*fingeringOboeRHAClosed*

Oboe fingering chart, right-hand A closed

## **U+EC11**

*fingeringOboeRH1stFingerClosed*

Oboe fingering chart, right-hand 1st finger closed

**U+EC12**

*fingeringOboeRHDTrollClosed*

Oboe fingering chart, right-hand D  
trill closed

**U+EC14**

*fingeringOboeRHFClosed*

Oboe fingering chart, right-hand F  
closed

**U+EC16**

*fingeringOboeRHCBananaClosed*

Oboe fingering chart, right-hand C  
banana closed

**U+EC18**

*fingeringOboeRHLowCSharpClosed*

Oboe fingering chart, right-hand low  
C sharp closed

**U+EC1A**

*fingeringOboeLH1stFingerRingOnly*

Oboe fingering chart, left-hand 1st  
finger ring only

**U+EC1C**

*fingeringOboeLH3rdFingerRingOnly*

Oboe fingering chart, left-hand 3rd  
finger ring only

**U+EC1E**

*fingeringOboeRH2ndFingerRingOnly*

Oboe fingering chart, right-hand 2nd  
finger ring only

**U+EC20**

*fingeringOboeLH1stFingerHalfClosed*

Oboe fingering chart, left-hand 1st  
finger half-closed

**U+EC22**

*fingeringOboeLH3rdFingerHalfClosedLeft*

Oboe fingering chart, left-hand 3rd  
finger half-closed (left)

**U+EC13**

*fingeringOboeRH2ndFingerClosed*

Oboe fingering chart, right-hand 2nd  
finger closed

**U+EC15**

*fingeringOboeRH3rdFingerClosed*

Oboe fingering chart, right-hand 3rd  
finger closed

**U+EC17**

*fingeringOboeRHLowCClosed*

Oboe fingering chart, right-hand low  
C closed

**U+EC19**

*fingeringOboeRHLowEFlatKeyClosed*

Oboe fingering chart, right-hand low  
E flat key closed

**U+EC1B**

*fingeringOboeLH2ndFingerRingOnly*

Oboe fingering chart, left-hand 2nd  
finger ring only

**U+EC1D**

*fingeringOboeRH1stFingerRingOnly*

Oboe fingering chart, right-hand 1st  
finger ring only

**U+EC1F**

*fingeringOboeRH3rdFingerRingOnly*

Oboe fingering chart, right-hand 3rd  
finger ring only

**U+EC21**

*fingeringOboeLH2ndFingerHalfClosedLeft*

Oboe fingering chart, left-hand 2nd  
finger half-closed (left)

**U+EC23**

*fingeringOboeRH1stFingerHalfClosedLeft*

Oboe fingering chart, right-hand 1st  
finger half-closed (left)

**U+EC24**

*fingeringOboeRH2ndFingerHalfClosedLeft*

Oboe fingering chart, right-hand 2nd finger half-closed (left)

**U+EC26**

*fingeringOboeLH2ndFingerHalfClosedRight*

Oboe fingering chart, left-hand 2nd finger half-closed (right)

**U+EC28**

*fingeringOboeRH1stFingerHalfClosedRight*

Oboe fingering chart, right-hand 1st finger half-closed (right)

**U+EC2A**

*fingeringOboeRH3rdFingerHalfClosedRight*

Oboe fingering chart, right-hand 3rd finger half-closed (right)

**U+EC2C**

*fingeringOboeLH3rdFingerQuarterClosedLeft*

Oboe fingering chart, left-hand 3rd finger quarter-closed (left)

**U+EC2E**

*fingeringOboeRH2ndFingerQuarterClosedLeft*

Oboe fingering chart, right-hand 2nd finger quarter-closed (left)

**U+EC30**

*fingeringOboeLH2ndFingerQuarterClosedRight*

Oboe fingering chart, left-hand 2nd finger quarter-closed (right)

**U+EC32**

*fingeringOboeRH1stFingerQuarterClosedRight*

Oboe fingering chart, right-hand 1st finger quarter-closed (right)

**U+EC34**

*fingeringOboeRH3rdFingerQuarterClosedRight*

Oboe fingering chart, right-hand 3rd finger quarter-closed (right)

**U+EC25**

*fingeringOboeRH3rdFingerHalfClosedLeft*

Oboe fingering chart, right-hand 3rd finger half-closed (left)

**U+EC27**

*fingeringOboeLH3rdFingerHalfClosedRight*

Oboe fingering chart, left-hand 3rd finger half-closed (right)

**U+EC29**

*fingeringOboeRH2ndFingerHalfClosedRight*

Oboe fingering chart, right-hand 2nd finger half-closed right

**U+EC2B**

*fingeringOboeLH2ndFingerQuarterClosedLeft*

Oboe fingering chart, left-hand 2nd finger quarter-closed (left)

**U+EC2D**

*fingeringOboeRH1stFingerQuarterClosedLeft*

Oboe fingering chart, right-hand 1st finger quarter-closed (left)

**U+EC2F**

*fingeringOboeRH3rdFingerQuarterClosedLeft*

Oboe fingering chart, right-hand 3rd finger quarter-closed (left)

**U+EC31**

*fingeringOboeLH3rdFingerQuarterClosedRight*

Oboe fingering chart, left-hand 3rd finger quarter-closed (right)

**U+EC33**

*fingeringOboeRH2ndFingerQuarterClosedRight*

Oboe fingering chart, right-hand 2nd finger quarter-closed (right)

**U+EC35**

*fingeringOboeLH3rdOctaveTrill*

Oboe fingering chart, left-hand 3rd octave trill

**U+EC36**

*fingeringOboeLH1stOctaveTrill*

Oboe fingering chart, left-hand 1st octave trill

**U+EC38**

*fingeringOboeLH2ndOctaveTrill*

Oboe fingering chart, left-hand 2nd octave trill

**U+EC3A**

*fingeringOboeLHDTrillTrill*

Oboe fingering chart, left-hand D trill key trill

**U+EC3C**

*fingeringOboeLHCSharpTrillTrill*

Oboe fingering chart, left-hand C sharp trill key trill

**U+EC3E**

*fingeringOboeLHGSharpTrill*

Oboe fingering chart, left-hand G sharp trill

**U+EC40**

*fingeringOboeLHEFlatTrill*

Oboe fingering chart, left-hand E flat trill

**U+EC42**

*fingeringOboeLHLowBFlatTrill*

Oboe fingering chart, left-hand low B flat trill

**U+EC44**

*fingeringOboeRHGSharpTrill*

Oboe fingering chart, right-hand G sharp trill

**U+EC46**

*fingeringOboeRHDTrillTrill*

Oboe fingering chart, right-hand D trill key trill

**U+EC37**

*fingeringOboeLH1stFingerTrill*

Oboe fingering chart, left-hand 1st finger trill

**U+EC39**

*fingeringOboeLHBTrillTrill*

Oboe fingering chart, left-hand B trill key trill

**U+EC3B**

*fingeringOboeLH2ndFingerTrill*

Oboe fingering chart, left-hand 2nd finger trill

**U+EC3D**

*fingeringOboeLH3rdFingerTrill*

Oboe fingering chart, left-hand 3rd finger trill

**U+EC3F**

*fingeringOboeLHLowBTrill*

Oboe fingering chart, left-hand low B trill

**U+EC41**

*fingeringOboeLHFTrill*

Oboe fingering chart, left-hand F trill

**U+EC43**

*fingeringOboeRHATrill*

Oboe fingering chart, right-hand A trill

**U+EC45**

*fingeringOboeRH1stFingerTrill*

Oboe fingering chart, right-hand 1st finger trill

**U+EC47**

*fingeringOboeRH2ndFingerTrill*

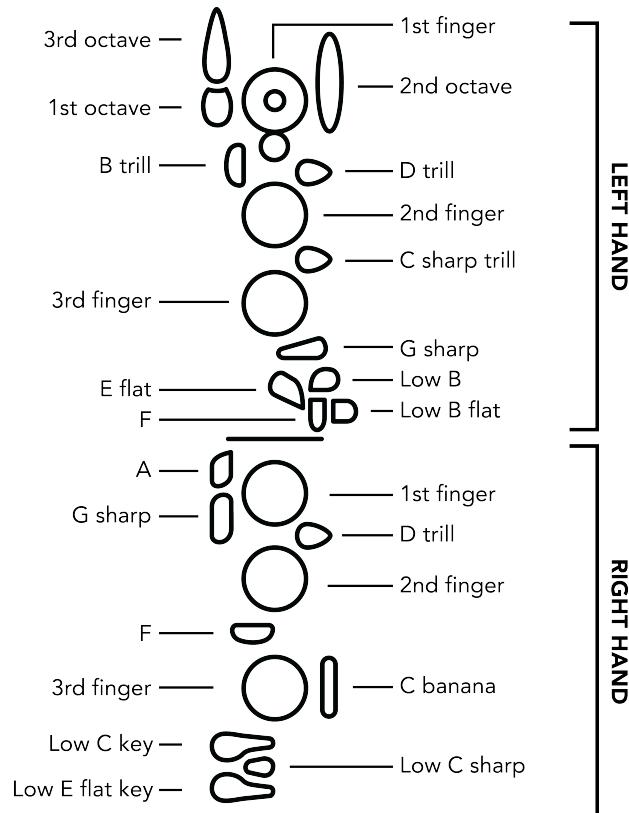
Oboe fingering chart, right-hand 2nd finger trill

**U+EC48***fingeringOboeRHFTroll*Oboe fingering chart, right-hand F  
trill**U+EC4A***fingeringOboeRHCBananaTrill*Oboe fingering chart, right-hand C  
banana trill**U+EC4C***fingeringOboeRHLowCSharpTrill*Oboe fingering chart, right-hand low  
C sharp trill**U+EC49***fingeringOboeRH3rdFingerTrill*Oboe fingering chart, right-hand 3rd  
finger trill**U+EC4B***fingeringOboeRHLowCTrill*Oboe fingering chart, right-hand low  
C trill**U+EC4D***fingeringOboeRHLowEFlatKeyTrill*Oboe fingering chart, right-hand low  
E flat key trill**Implementation notes**

All of the glyphs in this range should have zero width, with all glyphs registered so that they overlay correctly (see examples below).

To construct a fingering chart, first use **fingeringOboeChart** to produce an empty chart. To add closed, half-closed, quarter-closed or trill keys to the chart, simply add the relevant glyphs at the same position.

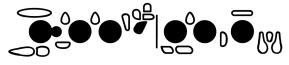
The following diagram shows the disposition of keys in the blank chart.



Here are a couple of examples of complete fingering charts. Note that they have been rotated counter-clockwise by 90 degrees:



G: **fingeringOboeChart**, **fingeringOboeLH1stFingerClosed**,  
**fingeringOboeLH2ndFingerClosed**, **fingeringOboeLH3rdFingerClosed**



E flat: **fingeringOboeChart**, **fingeringOboeLH1stFingerClosed**,  
**fingeringOboeLH2ndFingerClosed**, **fingeringOboeLH3rdFingerClosed**,  
**fingeringOboeLHEFlatClosed**, **fingeringOboeRH1stFingerClosed**,  
**fingeringOboeRH2ndFingerClosed**, **fingeringOboeRH3rdFingerClosed**

# Fingering chart for bassoon (U+EC50–U+EC9F)



## **U+EC50**

*fingeringBsnChart*

Bassoon fingering chart, all open



## **U+EC51**

*fingeringBsnChartThumbsHands*

Bassoon fingering chart, thumb/hand separators

## **U+EC52**

*fingeringBsnLHHighEClosed*

Bassoon fingering chart, left-hand high E closed

## **U+EC53**

*fingeringBsnLH1stFingerClosed*

Bassoon fingering chart, left-hand 1st finger closed

## **U+EC54**

*fingeringBsnLHHighEFlatClosed*

Bassoon fingering chart, left-hand high E flat closed

## **U+EC55**

*fingeringBsnLH2ndFingerClosed*

Bassoon fingering chart, left-hand 2nd finger closed

## **U+EC56**

*fingeringBsnLH3rdFingerRingClosed*

Bassoon fingering chart, left-hand 3rd finger ring closed

## **U+EC57**

*fingeringBsnLH3rdFingerClosed*

Bassoon fingering chart, left-hand 3rd finger closed

## **U+EC58**

*fingeringBsnLHLowEFlatClosed*

Bassoon fingering chart, left-hand low E flat closed

## **U+EC59**

*fingeringBsnLHLowDFlatClosed*

Bassoon fingering chart, left-hand low D flat closed

## **U+EC5A**

*fingeringBsnRHSharpTrillClosed*

Bassoon fingering chart, right-hand C sharp trill key closed

## **U+EC5B**

*fingeringBsnRH1stFingerClosed*

Bassoon fingering chart, right-hand 1st finger closed

## **U+EC5C**

*fingeringBsnRH2ndFingerRingClosed*

Bassoon fingering chart, right-hand 2nd finger ring closed

## **U+EC5D**

*fingeringBsnRH2ndFingerClosed*

Bassoon fingering chart, right-hand 2nd finger closed

## **U+EC5E**

*fingeringBsnRHBFlatTrillClosed*

Bassoon fingering chart, right-hand B flat trill key closed

## **U+EC5F**

*fingeringBsnRHLowGClosed*

Bassoon fingering chart, right-hand low G closed

## **U+EC60**

*fingeringBsnRHLowFClosed*

Bassoon fingering chart, right-hand low F closed

## **U+EC61**

*fingeringBsnRHFSharpClosed*

Bassoon fingering chart, right-hand alt. F sharp closed

**U+EC62***fingeringBsnRHAFlatClosed*

Bassoon fingering chart, right-hand A flat closed

**U+EC64***fingeringBsnLTHighBClosed*

Bassoon fingering chart, left thumb high B closed

**U+EC66***fingeringBsnLTCSharpClosed*

Bassoon fingering chart, left thumb C sharp closed

**U+EC68***fingeringBsnLTLowBFlatClosed*

Bassoon fingering chart, left thumb low B flat closed

**U+EC6A***fingeringBsnLTLowCClosed*

Bassoon fingering chart, left thumb low C closed

**U+EC6C***fingeringBsnRTBFlatClosed*

Bassoon fingering chart, right thumb B flat closed

**U+EC6E***fingeringBsnRTLowFSharpClosed*

Bassoon fingering chart, right thumb low F sharp closed

**U+EC70***fingeringBsnLH1stFingerHalfClosed*

Bassoon fingering chart, left-hand 1st finger half-closed

**U+EC72***fingeringBsnLH3rdFingerHalfClosed*

Bassoon fingering chart, left-hand 3rd finger half-closed

**U+EC63***fingeringBsnLTHighDClosed*

Bassoon fingering chart, left thumb high D closed

**U+EC65***fingeringBsnLTHighAClosed*

Bassoon fingering chart, left thumb high A closed

**U+EC67***fingeringBsnLTWhisperKeyClosed*

Bassoon fingering chart, left thumb whisper key closed

**U+EC69***fingeringBsnLTLowBClosed*

Bassoon fingering chart, left thumb low B closed

**U+EC6B***fingeringBsnLTLowDClosed*

Bassoon fingering chart, left thumb low D closed

**U+EC6D***fingeringBsnRTLowEClosed*

Bassoon fingering chart, right thumb low E closed

**U+EC6F***fingeringBsnRTAFlatClosed*

Bassoon fingering chart, right thumb A flat closed

**U+EC71***fingeringBsnLH2ndFingerHalfClosed*

Bassoon fingering chart, left-hand 2nd finger half-closed

**U+EC73***fingeringBsnRH1stFingerHalfClosed*

Bassoon fingering chart, right-hand 1st finger half-closed

**U+EC74**

*fingeringBsnRH2ndFingerHalfClosed*

Bassoon fingering chart, right-hand  
2nd finger half-closed

**U+EC76**

*fingeringBsnLH2ndFingerQuarterClosed*

Bassoon fingering chart, left-hand  
2nd finger quarter-closed

**U+EC78**

*fingeringBsnRH1stFingerQuarterClosed*

Bassoon fingering chart, right-hand  
1st finger quarter-closed

**U+EC7A**

*fingeringBsnLH1stFingerThreeQuartersClosed*

Bassoon fingering chart, left-hand 1st  
finger three-quarters closed

**U+EC7C**

*fingeringBsnLH3rdFingerThreeQuartersClosed*

Bassoon fingering chart, left-hand 3rd  
finger three-quarters closed

**U+EC7E**

*fingeringBsnRH2ndFingerThreeQuartersClosed*

Bassoon fingering chart, right-hand  
2nd finger three-quarters closed

**U+EC80**

*fingeringBsnLH1stFingerTrill*

Bassoon fingering chart, left-hand 1st  
finger trill

**U+EC82**

*fingeringBsnLH2ndFingerTrill*

Bassoon fingering chart, left-hand  
2nd finger trill

**U+EC84**

*fingeringBsnLHLowEFlatTrill*

Bassoon fingering chart, left-hand low  
E flat trill

**U+EC75**

*fingeringBsnLH1stFingerQuarterClosed*

Bassoon fingering chart, left-hand 1st  
finger quarter-closed

**U+EC77**

*fingeringBsnLH3rdFingerQuarterClosed*

Bassoon fingering chart, left-hand 3rd  
finger quarter-closed

**U+EC79**

*fingeringBsnRH2ndFingerQuarterClosed*

Bassoon fingering chart, right-hand  
2nd finger quarter-closed

**U+EC7B**

*fingeringBsnLH2ndFingerThreeQuartersClosed*

Bassoon fingering chart, left-hand  
2nd finger hole three-quarters closed

**U+EC7D**

*fingeringBsnRH1stFingerThreeQuartersClosed*

Bassoon fingering chart, right-hand  
1st finger three-quarters closed

**U+EC7F**

*fingeringBsnLHHighETrill*

Bassoon fingering chart, left-hand  
high E trill

**U+EC81**

*fingeringBsnLHHighEFlatTrill*

Bassoon fingering chart, left-hand  
high E flat trill

**U+EC83**

*fingeringBsnLH3rdFingerRingTrill*

Bassoon fingering chart, left-hand 3rd  
finger ring trill

**U+EC85**

*fingeringBsnLHLowDFlatTrill*

Bassoon fingering chart, left-hand  
low D flat trill

**U+EC86**

*fingeringBsnRHSharpTrillTrill*

Bassoon fingering chart, right-hand C sharp trill key trill

**U+EC88**

*fingeringBsnRH2ndFingerTrill*

Bassoon fingering chart, right-hand 2nd finger trill

**U+EC8A**

*fingeringBsnRHLowGTrill*

Bassoon fingering chart, right-hand low G trill

**U+EC8C**

*fingeringBsnRHFSharpTrill*

Bassoon fingering chart, right-hand F sharp trill

**U+EC8E**

*fingeringBsnLTHighDTrill*

Bassoon fingering chart, left thumb high D trill

**U+EC90**

*fingeringBsnLTHighATrill*

Bassoon fingering chart, left thumb high A trill

**U+EC92**

*fingeringBsnLTWhisperKeyTrill*

Bassoon fingering chart, left thumb whisper key trill

**U+EC94**

*fingeringBsnLTLowBTrill*

Bassoon fingering chart, left thumb low B trill

**U+EC96**

*fingeringBsnLTLowDTrill*

Bassoon fingering chart, left thumb low D trill

**U+EC87**

*fingeringBsnRH1stFingerTrill*

Bassoon fingering chart, right-hand 1st finger trill

**U+EC89**

*fingeringBsnRHBFlatTrillTrill*

Bassoon fingering chart, right-hand B flat trill key trill

**U+EC8B**

*fingeringBsnRHLowFTrill*

Bassoon fingering chart, right-hand low F trill

**U+EC8D**

*fingeringBsnRHAFlatTrill*

Bassoon fingering chart, right-hand A flat trill

**U+EC8F**

*fingeringBsnLTHighBTrill*

Bassoon fingering chart, left thumb high B trill

**U+EC91**

*fingeringBsnLTCSharpTrill*

Bassoon fingering chart, left thumb C sharp trill

**U+EC93**

*fingeringBsnLTLowBFlatTrill*

Bassoon fingering chart, left thumb low B flat trill

**U+EC95**

*fingeringBsnLTLowCTrill*

Bassoon fingering chart, left thumb low C trill

**U+EC97**

*fingeringBsnRTBFlatTrill*

Bassoon fingering chart, right thumb B flat trill

**U+EC98***fingeringBsnRTLowETrill*Bassoon fingering chart, right thumb  
low E trill**U+EC99***fingeringBsnRTLowFSharpTrill*Bassoon fingering chart, right thumb  
low F sharp trill**U+EC9A***fingeringBsnRTAFlatTrill*Bassoon fingering chart, right thumb  
A flat trill**Implementation notes**

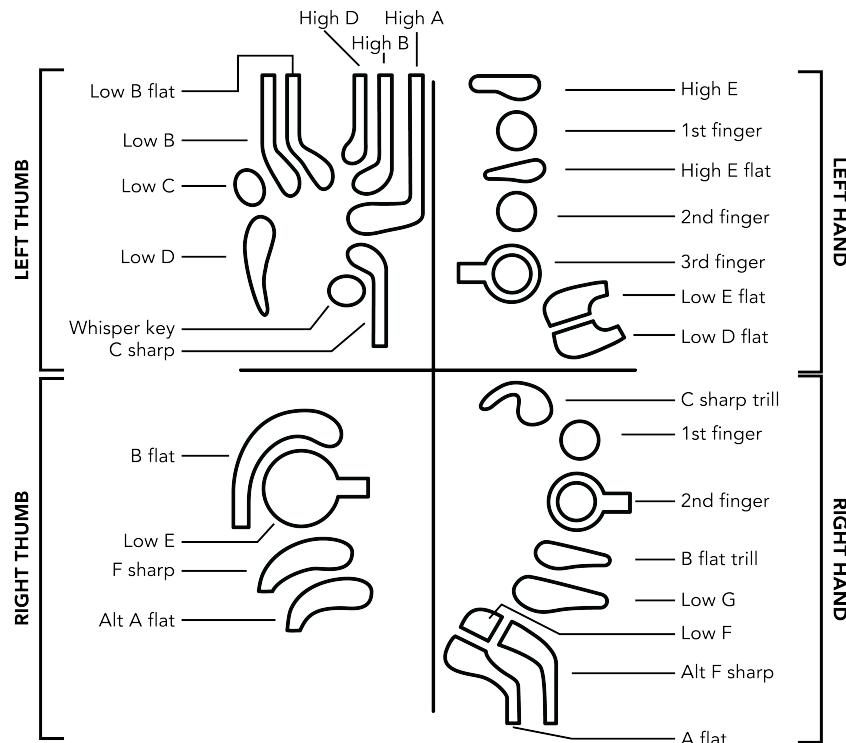
All of the glyphs in this range should have zero width, with all glyphs registered so that they overlay correctly (see examples below).

To construct a fingering chart, first use **fingeringBsnChart** to produce an empty chart.

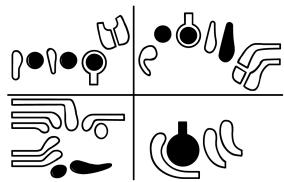
To add the vertical and horizontal separators for hands and thumbs, use

**fingeringBsnChartThumbsHands**. To add closed, half-closed, quarter-closed or trill keys to the chart, simply add the relevant glyphs at the same position.

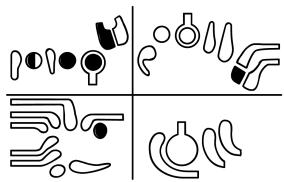
The following diagram shows the disposition of keys in the blank chart.



Here are a couple of examples of complete fingering charts. Note that they have been rotated counter-clockwise by 90 degrees:



C: `fingeringBsnChart`, `fingeringBsnChartThumbsHands`,  
`fingeringBsnLH1stFingerClosed`, `fingeringBsnLH2ndFingerClosed`,  
`fingeringBsnLH3rdFingerClosed`, `fingeringBsnRH1stFingerClosed`,  
`fingeringBsnRH2ndFingerClosed`, `fingeringBsnRHLowGClosed`,  
`fingeringBsnLTLowCClosed`, `fingeringBsnLTLowDClosed`,  
`fingeringBsnRTLowEClosed`



High G: `fingeringBsnChart`, `fingeringBsnChartThumbsHands`,  
`fingeringBsnLH1stFingerHalfClosed`, `fingeringBsnLH2ndFingerClosed`,  
`fingeringBsnLH3rdFingerClosed`, `fingeringBsnLHLowEFlatClosed`,  
`fingeringBsnRH1stFingerClosed`, `fingeringBsnRHLowFClosed`,  
`fingeringBsnLTWhisperKeyClosed`

# Fingering chart for saxophone (U+ECA0–U+ECDF)

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**U+ECA0***fingeringSaxChart*

Saxophone fingering chart, all open

**U+ECA2***fingeringSaxLHOctaveClosed*

Saxophone fingering chart, left-hand octave closed

**U+ECA4***fingeringSaxLH1stFingerClosed*

Saxophone fingering chart, left-hand 1st finger closed

**U+ECA6***fingeringSaxLH2ndFingerClosed*

Saxophone fingering chart, left-hand 2nd finger closed

**U+ECA8***fingeringSaxLHEFlatPalmClosed*

Saxophone fingering chart, left-hand E flat palm closed

**U+ECAA***fingeringSaxLHFPalmpClosed*

Saxophone fingering chart, left-hand F palm closed

**U+ECAC***fingeringSaxLHLowCSharpClosed*

Saxophone fingering chart, left-hand low C sharp closed

**U+ECAE***fingeringSaxLHLowBFlatClosed*

Saxophone fingering chart, left-hand low B flat closed

**U+ECB0***fingeringSaxRHCSideClosed*

Saxophone fingering chart, right-hand C side closed

**U+ECA1***fingeringSaxBariLowAOpen*

Saxophone fingering chart, baritone low A open

**U+ECA3***fingeringSaxLHFrontFClosed*

Saxophone fingering chart, left-hand front F closed

**U+ECA5***fingeringSaxLHBFlatClosed*

Saxophone fingering chart, left-hand B flat closed

**U+ECA7***fingeringSaxLH3rdFingerClosed*

Saxophone fingering chart, left-hand 3rd finger closed

**U+ECA9***fingeringSaxLHDpalmClosed*

Saxophone fingering chart, left-hand D palm closed

**U+ECAB***fingeringSaxLHGSharpClosed*

Saxophone fingering chart, left-hand G sharp closed

**U+ECAD***fingeringSaxLHLowBClosed*

Saxophone fingering chart, left-hand low B closed

**U+ECAF***fingeringSaxRHESideClosed*

Saxophone fingering chart, right-hand E side closed

**U+ECB1***fingeringSaxRHBFlatSideClosed*

Saxophone fingering chart, right-hand B flat side closed

**U+ECB2**

*fingeringSaxRHHighFSharpClosed*

Saxophone fingering chart, right-hand high F sharp closed

**U+ECB4**

*fingeringSaxRH2ndFingerClosed*

Saxophone fingering chart, right-hand 2nd finger closed

**U+ECB6**

*fingeringSaxRH3rdFingerClosed*

Saxophone fingering chart, right-hand 3rd finger closed

**U+ECB8**

*fingeringSaxRHLowCClosed*

Saxophone fingering chart, right-hand low C closed

**U+ECBA**

*fingeringSaxLH1stFingerHalfClosed*

Saxophone fingering chart, left-hand 1st finger half-closed

**U+ECBC**

*fingeringSaxLH3rdFingerHalfClosed*

Saxophone fingering chart, left-hand 3rd finger half-closed

**U+ECBE**

*fingeringSaxRH2ndFingerHalfClosed*

Saxophone fingering chart, right-hand 2nd finger half-closed

**U+ECC0**

*fingeringSaxLHOctaveTrill*

Saxophone fingering chart, left-hand octave trill

**U+ECC2**

*fingeringSaxLH1stFingerTrill*

Saxophone fingering chart, left-hand 1st finger trill

**U+ECB3**

*fingeringSaxRH1stFingerClosed*

Saxophone fingering chart, right-hand 1st finger closed

**U+ECB5**

*fingeringSaxRHFSharpAlternateClosed*

Saxophone fingering chart, right-hand F sharp alternate closed

**U+ECB7**

*fingeringSaxRHLowEFlatClosed*

Saxophone fingering chart, right-hand low E flat closed

**U+ECB9**

*fingeringSaxBariLowAClosed*

Saxophone fingering chart, baritone low A closed

**U+ECBB**

*fingeringSaxLH2ndFingerHalfClosed*

Saxophone fingering chart, left-hand 2nd finger half-closed

**U+ECBD**

*fingeringSaxRH1stFingerHalfClosed*

Saxophone fingering chart, right-hand 1st finger half-closed

**U+ECBF**

*fingeringSaxRH3rdFingerHalfClosed*

Saxophone fingering chart, right-hand 3rd finger half-closed

**U+ECC1**

*fingeringSaxLHFrontFTrill*

Saxophone fingering chart, left-hand front F trill

**U+ECC3**

*fingeringSaxLHBFlatTrill*

Saxophone fingering chart, left-hand B flat trill

**U+ECC4**

*fingeringSaxLH2ndFingerTrill*

Saxophone fingering chart, left-hand 2nd finger trill

**U+ECC6**

*fingeringSaxLHEFlatPalmTrill*

Saxophone fingering chart, left-hand E flat palm trill

**U+ECC8**

*fingeringSaxLHPalmTrill*

Saxophone fingering chart, left-hand F palm trill

**U+ECCA**

*fingeringSaxLHLowCSharpTrill*

Saxophone fingering chart, left-hand low C sharp trill

**U+ECCC**

*fingeringSaxLHLowBFlatTrill*

Saxophone fingering chart, left-hand low B flat trill

**U+ECCE**

*fingeringSaxRHCSideTrill*

Saxophone fingering chart, right-hand C side trill

**U+ECD0**

*fingeringSaxRHHighFSharpTrill*

Saxophone fingering chart, right-hand high F sharp trill

**U+ECD2**

*fingeringSaxRH2ndFingerTrill*

Saxophone fingering chart, right-hand 2nd finger trill

**U+ECD4**

*fingeringSaxRH3rdFingerTrill*

Saxophone fingering chart, right-hand 3rd finger trill

**U+ECC5**

*fingeringSaxLH3rdFingerTrill*

Saxophone fingering chart, left-hand 3rd finger trill

**U+ECC7**

*fingeringSaxLHDFlatPalmTrill*

Saxophone fingering chart, left-hand D palm trill

**U+ECC9**

*fingeringSaxLHGSharpTrill*

Saxophone fingering chart, left-hand G sharp trill

**U+ECCB**

*fingeringSaxLHLowBTrill*

Saxophone fingering chart, left-hand low B trill

**U+ECCD**

*fingeringSaxRHESideTrill*

Saxophone fingering chart, right-hand E side trill

**U+ECCF**

*fingeringSaxRHBFlatSideTrill*

Saxophone fingering chart, right-hand B flat side trill

**U+ECD1**

*fingeringSaxRH1stFingerTrill*

Saxophone fingering chart, right-hand 1st finger trill

**U+ECD3**

*fingeringSaxRHFSharpAlternateTrill*

Saxophone fingering chart, right-hand F sharp alternate trill

**U+ECD5**

*fingeringSaxRHLowEFlatTrill*

Saxophone fingering chart, right-hand low E flat trill

**U+ECD6***fingeringSaxRHLowCTrill*

Saxophone fingering chart, right-hand low C trill

**U+ECD7***fingeringSaxBariLowATrill*

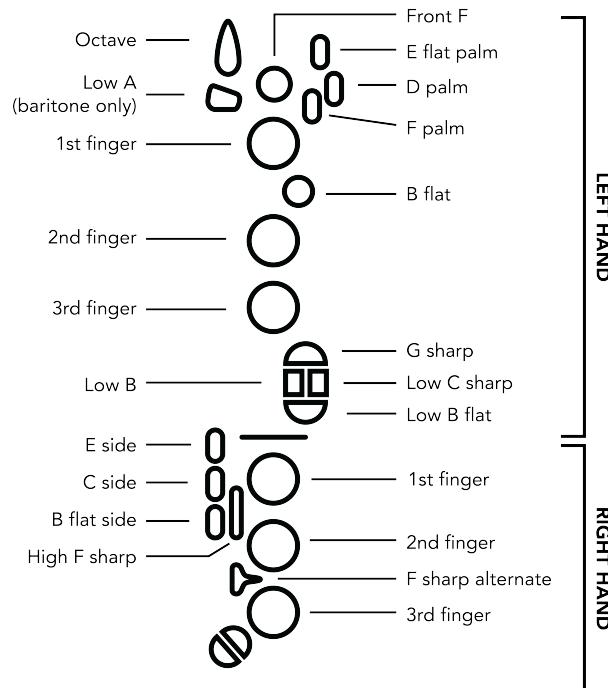
Saxophone fingering chart, baritone low A trill

**Implementation notes**

All of the glyphs in this range should have zero width, with all glyphs registered so that they overlay correctly (see examples below).

To construct a fingering chart, first use **fingeringSaxChart** to produce an empty chart for soprano, alto or tenor saxophone. To add the low A key found on a baritone saxophone, use **fingeringSaxBariLowAOpen**. To add closed, half-closed, quarter-closed or trill keys to the chart, simply add the relevant glyphs at the same position.

The following diagram shows the disposition of keys in the blank chart.



Here are a couple of examples of complete fingering charts. Note that they have been rotated counter-clockwise by 90 degrees:



D: *fingeringSaxChart, fingeringSaxLHOctaveClosed, fingeringSaxLH1stFingerClosed, fingeringSaxLH2ndFingerClosed, fingeringSaxLH3rdFingerClosed, fingeringSaxRH1stFingerClosed, fingeringSaxRH2ndFingerClosed, fingeringSaxRH3rdFingerClosed*



F sharp: *fingeringSaxChart, fingeringSaxLHOctaveClosed, fingeringSaxLHEFlatPalmClosed, fingeringSaxLHDPalmClosed, fingeringBsnLHFpalmClosed, fingeringSaxRHESideClosed, fingeringBsnRHHighFSharpClosed*

# Fingering chart for recorder (U+ECE0–U+ED1F)

00  
00  
00  
00**U+ECE0***fingeringRecChart*

Recorder fingering chart, all open

**U+ECE2**

- *fingeringRecLH1stFingerClosed*  
Recorder fingering chart, left-hand 1st finger closed

**U+ECE4**

- *fingeringRecLH3rdFingerClosed*  
Recorder fingering chart, left-hand 3rd finger closed

**U+ECE6**

- *fingeringRecRH1stDoubleHoleLeftClosed*  
Recorder fingering chart, right-hand 1st double hole left closed

**U+ECE8**

- *fingeringRecRH2ndDoubleHoleLeftClosed*  
Recorder fingering chart, right-hand 2nd double hole left closed

**U+ECEA**

- *fingeringRecLHThumbHalfClosedLeft*  
Recorder fingering chart, left-hand thumb half-closed (left)

**U+ECEC**

- *fingeringRecLH2ndFingerHalfClosedLeft*  
Recorder fingering chart, left-hand 2nd finger half-closed (left)

**U+ECEE**

- *fingeringRecRH1stFingerHalfClosedLeft*  
Recorder fingering chart, right-hand 1st finger half-closed (left)

**U+ECFO**

- *fingeringRecRH1stDoubleHoleRightHalfClosedLeft*  
Recorder fingering chart, right-hand 1st double hole right half-closed (left)

**U+ECE1**

- *fingeringRecLHThumbClosed*  
Recorder fingering chart, left-hand thumb closed

**U+ECE3**

- *fingeringRecLH2ndFingerClosed*  
Recorder fingering chart, left-hand 2nd finger closed

**U+ECE5**

- *fingeringRecRH1stFingerClosed*  
Recorder fingering chart, right-hand 1st finger closed

**U+ECE7**

- *fingeringRecRH1stDoubleHoleRightClosed*  
Recorder fingering chart, right-hand 1st double hole right closed

**U+ECE9**

- *fingeringRecRH2ndDoubleHoleRightClosed*  
Recorder fingering chart, right-hand 2nd double hole right closed

**U+ECEB**

- *fingeringRecLH1stFingerHalfClosedLeft*  
Recorder fingering chart, left-hand 1st finger half-closed (left)

**U+ECED**

- *fingeringRecLH3rdFingerHalfClosedLeft*  
Recorder fingering chart, left-hand 3rd finger half-closed (left)

**U+ECEF**

- *fingeringRecRH1stDoubleHoleLeftHalfClosedLeft*  
Recorder fingering chart, right-hand 1st double hole left half-closed (left)

**U+ECF1**

- *fingeringRecRH2ndDoubleHoleLeftHalfClosedLeft*  
Recorder fingering chart, right-hand 2nd double hole left half-closed (left)

**U+ECF2**

*fingeringRecRH2ndDoubleHoleRightHalfClosedLeft*  
 Recorder fingering chart, right-hand 2nd double hole right half-closed (left)

**U+ECF4**

*fingeringRecLH1stFingerHalfClosedRight*  
 Recorder fingering chart, left-hand 1st finger half-closed (right)

**U+ECF6**

*fingeringRecLH3rdFingerHalfClosedRight*  
 Recorder fingering chart, left-hand 3rd finger half-closed (right)

**U+ECF8**

*fingeringRecRH1stDoubleHoleLeftHalfClosedRight*  
 Recorder fingering chart, right-hand 1st double hole left half-closed (right)

**U+ECFA**

*fingeringRecRH2ndDoubleHoleLeftHalfClosedRight*  
 Recorder fingering chart, right-hand 2nd double hole left half-closed (right)

**U+ECFC**

*fingeringRecLHThumbQuarterClosedLeft*  
 Recorder fingering chart, left-hand thumb quarter-closed (left)

**U+ECFE**

*fingeringRecLH2ndFingerQuarterClosedLeft*  
 Recorder fingering chart, left-hand 2nd finger quarter-closed (left)

**U+ED00**

*fingeringRecRH1stFingerQuarterClosedLeft*  
 Recorder fingering chart, right-hand 1st finger quarter-closed (left)

**U+ED02**

*fingeringRecRH1stDoubleHoleRightQuarterClosedLeft*  
 Recorder fingering chart, right-hand 1st double hole right quarter-closed (left)

**U+ECF3**

*fingeringRecLHThumbHalfClosedRight*  
 Recorder fingering chart, left-hand thumb half-closed (right)

**U+ECF5**

*fingeringRecLH2ndFingerHalfClosedRight*  
 Recorder fingering chart, left-hand 2nd finger half-closed (right)

**U+ECF7**

*fingeringRecRH1stFingerHalfClosedRight*  
 Recorder fingering chart, right-hand 1st finger half-closed (right)

**U+ECF9**

*fingeringRecRH1stDoubleHoleRightHalfClosedRight*  
 Recorder fingering chart, right-hand 1st double hole right half-closed (right)

**U+ECFB**

*fingeringRecRH2ndDoubleHoleRightHalfClosedRight*  
 Recorder fingering chart, right-hand 2nd double hole right half-closed (right)

**U+ECFD**

*fingeringRecLH1stFingerQuarterClosedLeft*  
 Recorder fingering chart, left-hand 1st finger quarter-closed (left)

**U+ECFF**

*fingeringRecLH3rdFingerQuarterClosedLeft*  
 Recorder fingering chart, left-hand 3rd finger quarter-closed (left)

**U+ED01**

*fingeringRecRH1stDoubleHoleLeftQuarterClosedLeft*  
 Recorder fingering chart, right-hand 1st double hole left quarter-closed (left)

**U+ED03**

*fingeringRecRH2ndDoubleHoleLeftQuarterClosedLeft*  
 Recorder fingering chart, right-hand 2nd double hole left quarter-closed (left)

**U+ED04***fingeringRecRH2ndDoubleHoleRightQuarterClosedLeft*

Recorder fingering chart, right-hand 2nd double hole right quarter-closed (left)

**U+ED06***fingeringRecLH1stFingerQuarterClosedRight*

Recorder fingering chart, left-hand 1st finger quarter-closed (right)

**U+ED08***fingeringRecLH3rdFingerQuarterClosedRight*

Recorder fingering chart, left-hand 3rd finger quarter-closed (right)

**U+ED0A***fingeringRecRH1stDoubleHoleLeftQuarterClosedRight*

Recorder fingering chart, right-hand 1st double hole left quarter-closed (right)

**U+ED0C***fingeringRecRH2ndDoubleHoleLeftQuarterClosedRight*

Recorder fingering chart, right-hand 2nd double hole left quarter-closed (right)

**U+ED0E***fingeringRecLHThumbTrill*

Recorder fingering chart, left-hand thumb trill

**U+ED10***fingeringRecLH2ndFingerTrill*

Recorder fingering chart, left-hand 2nd finger trill

**U+ED12***fingeringRecRH1stFingerTrill*

Recorder fingering chart, right-hand 1st finger trill

**U+ED14***fingeringRecRH1stDoubleHoleRightTrill*

Recorder fingering chart, right-hand 1st double hole right trill

**U+ED05***fingeringRecLHThumbQuarterClosedRight*

Recorder fingering chart, left-hand thumb quarter-closed (right)

**U+ED07***fingeringRecLH2ndFingerQuarterClosedRight*

Recorder fingering chart, left-hand 2nd finger quarter-closed (right)

**U+ED09***fingeringRecRH1stFingerQuarterClosedRight*

Recorder fingering chart, right-hand 1st finger quarter-closed (right)

**U+ED0B***fingeringRecRH1stDoubleHoleRightQuarterClosedRight*

Recorder fingering chart, right-hand 1st double hole right quarter-closed (right)

**U+ED0D***fingeringRecRH2ndDoubleHoleRightQuarterClosedRight*

Recorder fingering chart, right-hand 2nd double hole right quarter-closed (right)

**U+ED0F***fingeringRecLH1stFingerTrill*

Recorder fingering chart, left-hand 1st finger trill

**U+ED11***fingeringRecLH3rdFingerTrill*

Recorder fingering chart, left-hand 3rd finger trill

**U+ED13***fingeringRecRH1stDoubleHoleLeftTrill*

Recorder fingering chart, right-hand 1st double hole left trill

**U+ED15***fingeringRecRH2ndDoubleHoleLeftTrill*

Recorder fingering chart, right-hand 2nd double hole left trill

**U+ED16**`fingeringRecRH2ndDoubleHoleRightTrill`

- ‘ Recorder fingering chart, right-hand 2nd double hole right trill

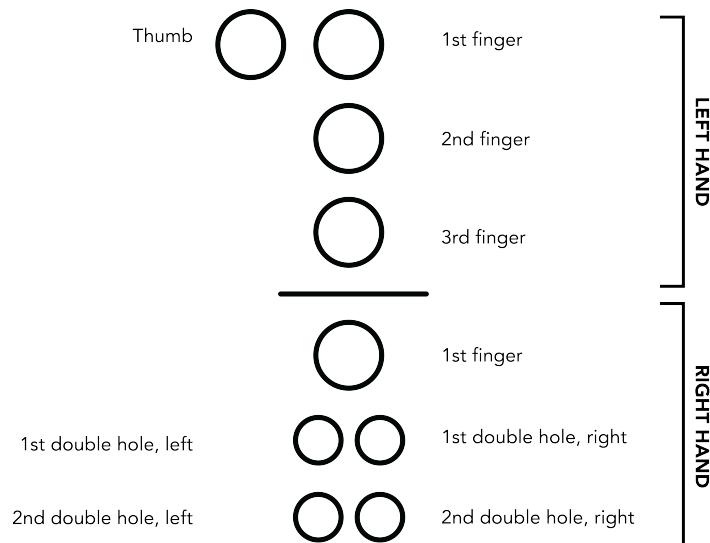
**Implementation notes**

All of the glyphs in this range should have zero width, with all glyphs registered so that they overlay correctly (see examples below).

To construct a fingering chart, first use **fingeringRecChart** to produce an empty chart.

To add closed, half-closed, quarter-closed or trill keys to the chart, simply add the relevant glyphs at the same position.

The following diagram shows the disposition of keys in the blank chart.



Here are a couple of examples of complete fingering charts. Note that they have been rotated counter-clockwise by 90 degrees:



C: **fingeringRecChart**, **fingeringRecLHThumbClosed**,  
**fingeringRecLH2ndFingerClosed**



G: **fingeringRecChart**, **fingeringRecLHThumbClosed**,  
**fingeringRecLH1stFingerClosed**, **fingeringRecLH2ndFingerClosed**,  
**fingeringRecLH3rdFingerClosed**

# Miscellaneous symbols (U+ED20–U+ED2F)

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## U+ED20



*miscDoNotPhotocopy*

Do not photocopy

## U+ED21



*miscDoNotCopy*

Do not copy

## U+ED22



*miscEyeglasses*

Eyeglasses