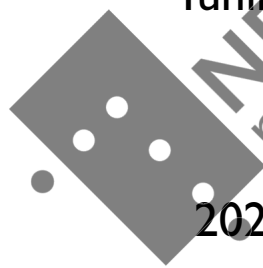


Håkon Thelin

Zusammen (Together)

Double Bass
Tuning Forks



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Performance instructions:

Together is composed for solo double bass and tuning forks which, in a live performance, are struck and placed simultaneously on the body of the double bass by two performers sitting on each side of the instrument. The key precept for the piece was a description of being 'separately consonant and together dissonant'.

26 equally tempered tuning forks (see Appendix A, concert pitch A440 or A442 Hz) are necessary to perform the piece. The fundamental pitch should be predominant when playing the forks.

The open strings of the bass are tuned to the corresponding equally tempered fundamental pitch (E-A-D-G), with the same concert pitch as the tuning forks.

The double bass chords in the A sections consist of stopped notes on the A-string and harmonics on the neighbouring D or E-string. The stopped notes are tuned to the harmonics, leading to a microtonally descending line where the stopped notes move downward in eleven small, unequal steps within a minor third interval (from stopped C to open A). The tuning of the chords should be done by ear. This means that every musician might have their own interpretation of the tunings, according to what they hear as the preferred interval (whether its equally tempered or pure tuned). The chords played on the bass microtonally contrast the chords played by the tuning forks, which form equally tempered chords within the 12 TET system.

The notation does NOT show the precise location of the tone, and only accidentals for sharps (#), flats (b), the consonant just major 3rd ($\sharp$ -14 cents, HEJ notation) and the consonant natural 7th (or the harmonic 7th, $\sharp$ -31 cents, Ben Johnston's notation) are used. Numbers above the harmonic indicate the difference – in cents – from equal temperament. The black triangles (▼) in front of the stopped notes are intended to show whether the tone is lowered or raised in relation to what is written. As mentioned, the tuning of the chords should be done by ear.

The B sections follow a pattern of double-stop harmonics that ascend chromatically in uneven steps through one octave using an intricate fingering system. The overtone series provides a natural microtonal contrast to the tuning forks.

18

A4 (8^{va})

II

II III

(III)

>

23

(+2 cents) (8^{va})

(Tune to major 6th)

(-31 cents) (8^{va})

(Tune to major 3rd)

(Tune to unison)

B4

III

IV

II II

29

II

II III

(III)

III

III

35 A5 (8^{va})

(+2 cents) (8^{va})

(-31 cents) (8^{va})

(+2 cents) (8^{va})

(Tune to major 6th) (Tune to major 3rd) (Tune to unison) (Tune to minor 7th)

40 B5

III III III I I II (II)

IV II II II II III (III)

46 I III III III III A6 (8^{va})

III III III IV IV IV IV IV

52

(+2 cents) (8^{va})
(Tune to major 6th)

(-31 cents) (8^{va})
(Tune to major 3rd)

(+2 cents) (8^{va})
(Tune to unison)

(+2 cents) (8^{va})
(Tune to minor 7th)

(+2 cents) (8^{va})
(Tune to unison)

57

B6

63

69

A7 (8^{va}) (+2 cents)
(Tune to major 6th)

(+2 cents) (8^{va})
(Tune to major 3rd)

(-31 cents) (8^{va})
(Tune to unison)

(+2 cents) (8^{va})
74 (Tune to minor 7th)

(+2 cents) (8^{va})
(Tune to unison)

(-14 cents) (8^{va})
(Tune to 5th)

B7

80

86

A8 (8^{va})
92 (Tune to major 6th)

(+2 cents) (8^{va})
(Tune to major 3rd)

(-31 cents) (8^{va})
(Tune to unison)

(+2 cents) (8^{va})
(Tune to minor 7th)

8

(+2 cents) (8va)
(Tune to unison)

(-14 cents) (8va)
(Tune to 5th)

(-14 cents)
(Tune to major 6th)

B8

103

109

114

A9 (8va)
(+2 cents) (8va)
(Tune to major 6th)

(Tune to major 3rd)

119

(-31 cents) (8^{va})

(+2 cents) (8^{va})

(+2 cents) (8^{va})

(-14 cents) (8^{va})

(Tune to unison)

(Tune to minor 7th)

(Tune to unison)

(Tune to 5th)

123

(-14 cents) (8^{va})

(+2 cents) (8^{va})

B9

(Tune to major 6th)

(Tune to major 7th)

129

135

III IV IV III I

141

IV III

A10 (8^{va})

(+2 cents) (8^{va})

(Tune to major 6th) (Tune to major 3rd)

(+2 cents) (8^{va})

(Tune to major 6th) (Tune to major 3rd)

146

(-31 cents) (8^{va})

(+2 cents) (8^{va})

(+2 cents) (8^{va})

(-14 cents) (8^{va})

(Tune to unison) (Tune to minor 7th) (Tune to unison) (Tune to 5th)

(-31 cents) (8^{va})

(+2 cents) (8^{va})

(+2 cents) (8^{va})

(-14 cents) (8^{va})

(Tune to unison) (Tune to minor 7th) (Tune to unison) (Tune to 5th)

150 (-14 cents) (+2 cents) (+2 cents) B10

(Tune to major 6th) (Tune to major 7th) (Tune to minor 2nd)

156 I II (II) I II III IV III IV IV

162 III IV IV IV III I

167 III IV III IV II III III

MB noter
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All (8^{va})

173

(+2 cents) (8^{va})
(Tune to major 6th)

(-31 cents) (8^{va})
(Tune to major 3rd)

(-31 cents) (8^{va})
(Tune to unison)

(+2 cents) (8^{va})
(Tune to minor 7th)

(+2 cents) (8^{va})
(Tune to unison)

(-14 cents) (8^{va})
(Tune to 5th)

(-14 cents) (8^{va})
(Tune to major 6th)

177

(+2 cents) (8^{va})
(Tune to major 7th)

(+2 cents) (8^{va})
(Tune to minor 2nd)

(-31 cents) (8^{va})
(Tune to major 2nd)

B I I

181

187

II III (II) III III IV IV IV

193

III IV IV III I

198

II III IV III III

203

A12 (8va)

(+2 cents)

(8va)

(Tune to major 6th)

(Tune to major 3rd)

III III >

209 (-31 cents) (8^{va})
(Tune to unison)

(+2 cents) (8^{va})
(Tune to minor 7th)

(+2 cents) (8^{va})
(Tune to unison)

(-14 cents) (8^{va})
(Tune to 5th)

213 (-14 cents) (8^{va})
(Tune to major 6th)

(+2 cents) (8^{va})
(Tune to major 7th)

(+2 cents) (8^{va})
(Tune to minor 2nd)

(-31 cents) (8^{va})
(Tune to major 2nd)

217 (8^{va})

221

BI2

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227 15

III IV III I III

233

IV III IV II III

236

III III III IV rit.. rit..

Appendix A

Tuning forks required to play the piece

Tuning forks



Appendix B

Tuning fork **chords** in the A sections (shown together with the double bass chords)

Double Bass

Tuning Forks

A1
(8^{va})

A2
+2 cents
(8^{va})
Tune to major 6th

A3
Tune to major 3rd

A4
-31 cents
(8^{va})
Tune to unison

A5
+2 cents
(8^{va})
Tune to minor 7th

A6
+2 cents
(8^{va})
Tune to unison

A7
-14 cents
(8^{va})
Tune to 5th

A8
-14 cents
(8^{va})
Tune to major 6th

A9
+2 cents
(8^{va})
Tune to major 7th

A10
+2 cents
(8^{va})
Tune to minor 2nd

A11
-31 cents
(8^{va})
Tune to major 2nd

A12
(8^{va})