

A close-up, macro photograph of the intricate mechanical parts of a saxophone. The image shows the complex arrangement of keys, levers, and pads, highlighting the precision engineering of the instrument. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the metallic textures and the smooth surfaces of the pads.

Introducing:
A One-handed Saxophone by Stelling Brass & Winds
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The Stelling Brass & Winds One-Handed Saxophone Prototype



The one-handed saxophone was built for David Nabb, by Jeff Stelling following David's stroke in February of 2000. The inspiration to pursue a one-handed instrument was provided when David learned of Ken Carter and his one-handed saxophone.

This project proceeded in three general stages: design and construction of the prototype, study and improvement of the prototype, and construction of a professional quality instrument. The prototype was designed and constructed between August 2000 and April 2001. From May 2001 to April 2002 the prototype was studied and improved. Final construction of the professional instrument occurred from July 2002 to April 2003.

Construction of the prototype was supported by Stelling Brass and the State of Nebraska Department of Vocational Rehabilitation.

The University of Nebraska at Kearney and Stelling Brass supported the prototype modification. The professional version of the one-handed saxophone was supported by the University of Nebraska at Kearney, Yamaha International, J.G. Nikolas, Inc., and Stelling Brass.



Important thanks are due to Jeff Stelling, Eugene Rousseau, Paul Cohen, Kyle Vincent, Yamaha International, the University of Nebraska at Kearney, and the State of Nebraska Department of Vocational Rehabilitation.

Toggle Key (patent pending)

At the heart of the Stelling Brass one-handed saxophone system is a unique “toggle” mechanism. The key system allows one index, middle, or ring finger to perform the functions normally executed by the same fingers on both hands. The right hand index finger operates the B key, bis B flat, and F keys. The middle finger operates the C key and F sharp. The ring finger operates the G and D keys. The figures below highlight this clever mechanism.



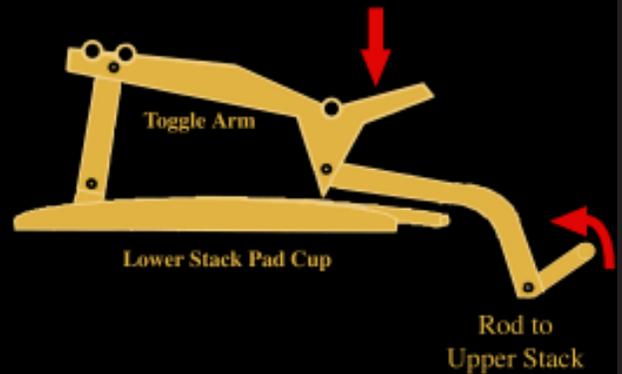
Resting Position:

When the key is not depressed, the tone holes of both stacks remain open.



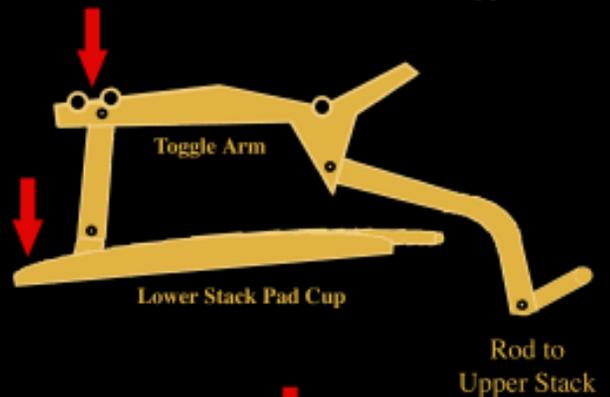
Upper Stack Only:

When this part of the mechanism is pressed the rod to the upper stack pivots, causing the the upper stack pad cup to close.



Lower Stack Only:

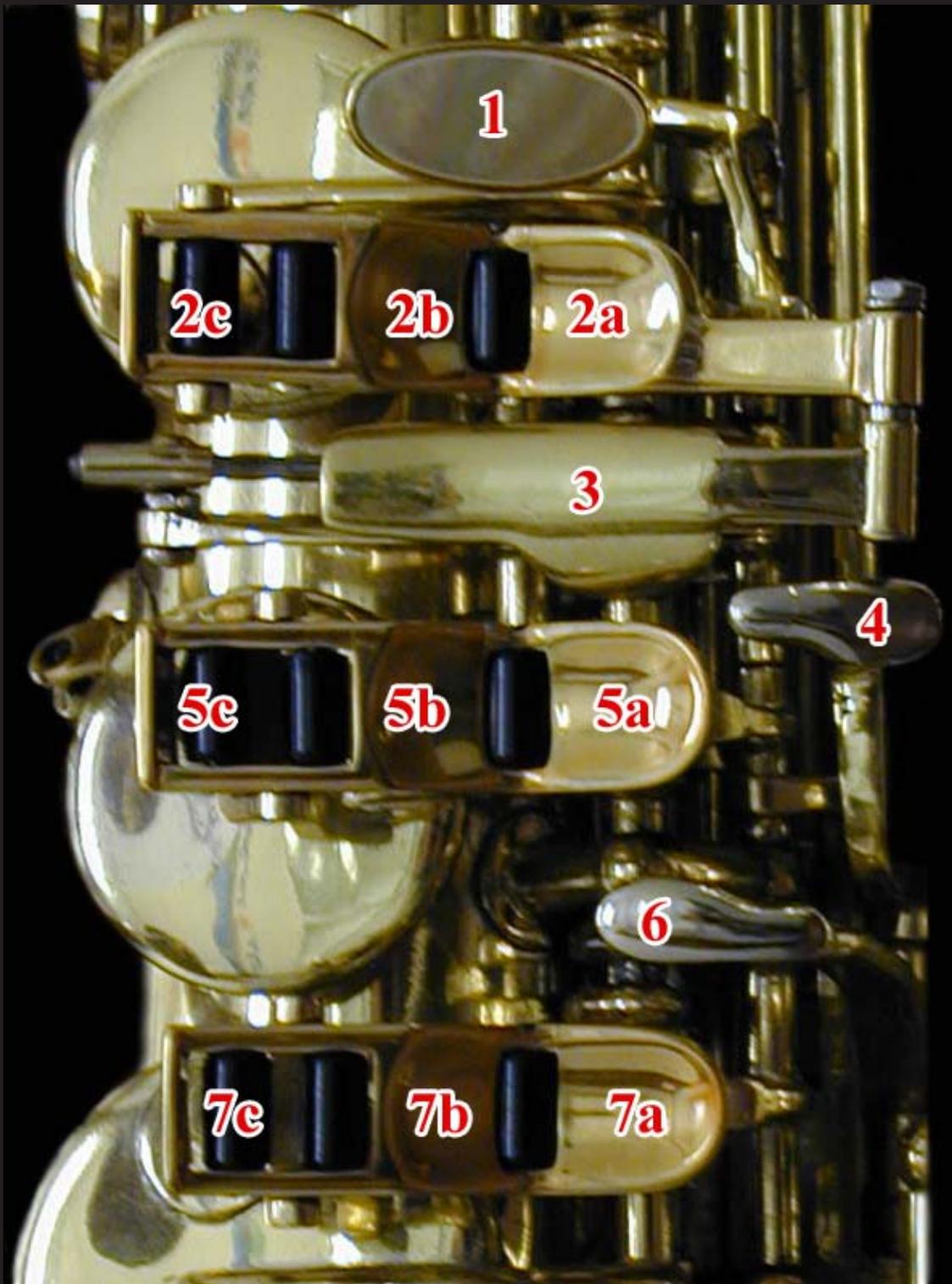
By depressing this part of the key, the pad cup for the right hand will close without closing the the tone hole of the left hand.



Both Stacks:

When this part of the key is pressed the mechanism closes both the lower and upper stack pad cups.





“STACK” CLOSE-UP

The top of the instrument is at the top of the photo.

Visible in this view are:

- | | |
|---|----------------------|
| 1) “Front F” Key | 5) C/F-sharp Toggle |
| 2) B/F Toggle | 6) “Side B-flat” Key |
| 3) “Bis B-flat” Key | 7) G/D Toggle |
| 4) B to C Trill Key (the equivalent of “side C”
on conventional horns) | |



PINKY KEYS

In this photo, the pinky table is detailed. At the top of the photo, the lower part of the "stack" keys are visible.

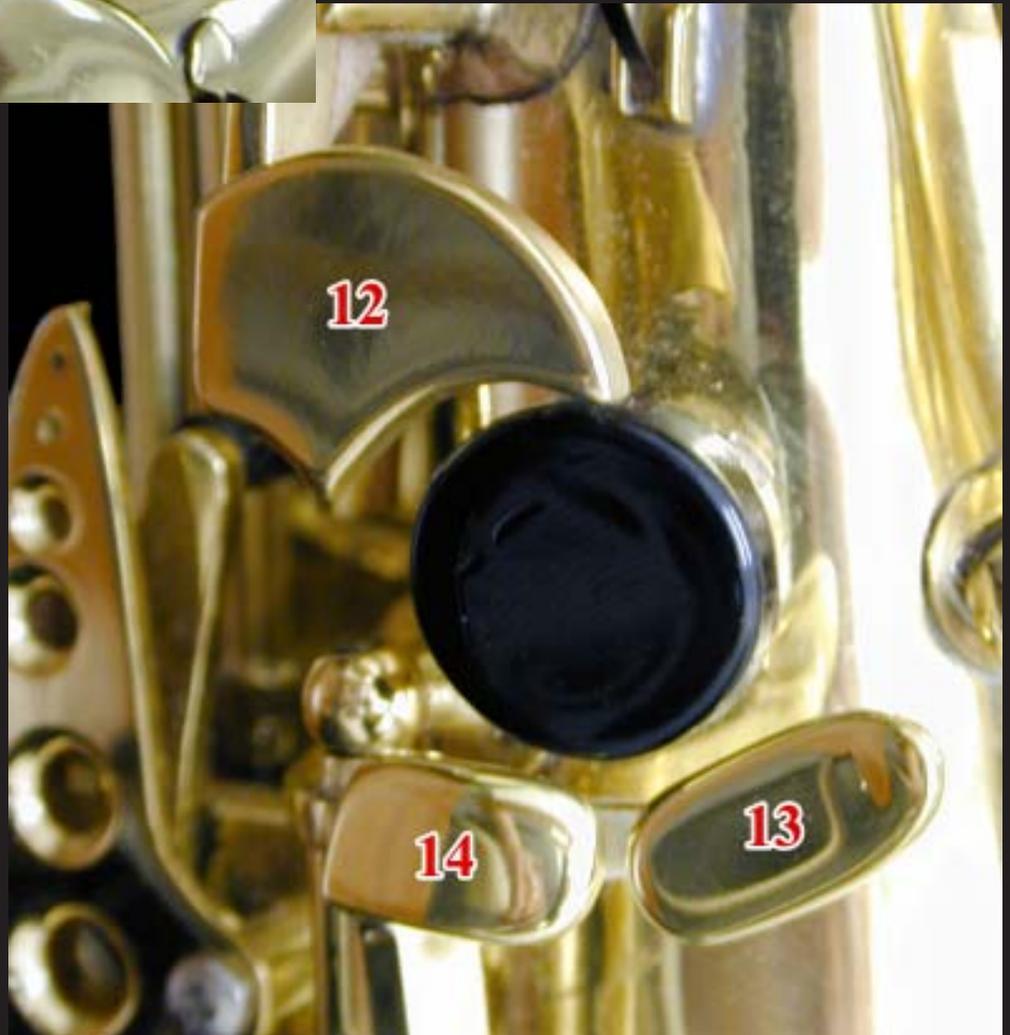
The pinky keys are numbered as follows,

- 8) G Sharp/ D Sharp Key
- 9) Low C Key, and
- 10) Low C Sharp Key
- 11) "Forked" or
"Chromatic" F Sharp Key

THUMB CLUSTER

In this photo of the thumb cluster, the keys are numbered:

- 12) Octave Key
- 13) Low B
- 14) Low B Flat





PALM KEYS

This view of the back side of the prototype details the palm keys. The palm keys are organized as a “mirror image” of palm keys on conventional instruments, operating for high D, E flat, E and F.

The keys are numbered as follows:

- 15) Palm D Key
- 16) Palm Flat Key
- 17) Palm E Key
- 18) Palm F Key

The Stelling Brass & Winds One-Handed Saxophone Prototype

- 1) Front F
- 2) B/F Toggle
- 3) Bis B-Flat
- 4) B to C Trill
- 5) C/F-Sharp Toggle
- 6) Side B-Flat
- 7) G/D Toggle
- 8) G Sharp/D Sharp
- 9) Low C
- 10) Low C Sharp
- 11) Chromatic F Sharp
- 12) Octave
- 13) Low B
- 14) Low B Flat
- 15) Palm D
- 16) Palm E Flat
- 17) High E
- 18) Palm F

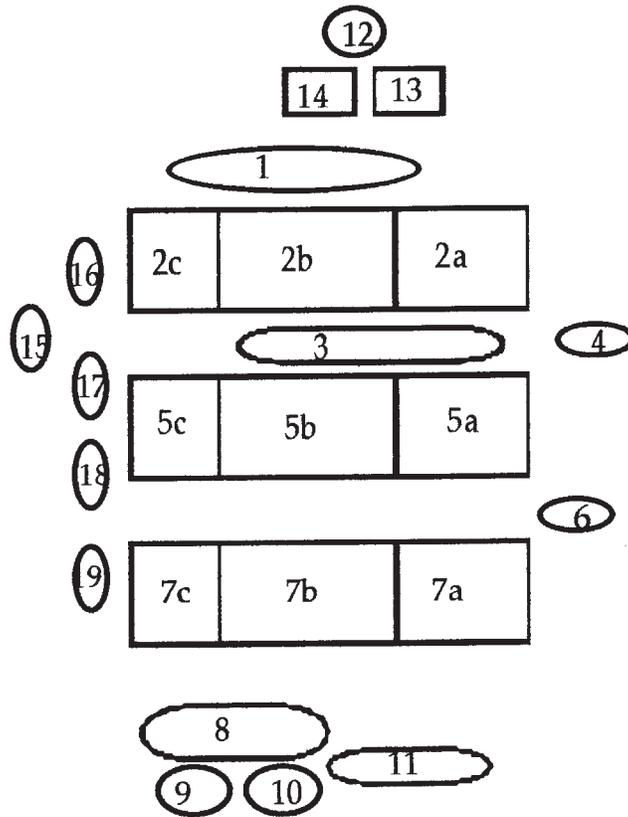


Right Thumb Cluster



Fingering Chart Template:

The numbers on the fingering template below correspond to the numbered keys in the photographs on pages 3-6. It should aid in interpreting the fingering chart that follows this page. The high F# key (No. 19) does not appear in the photos of the prototype, since that instrument does not have a high F# tone hole. Note that the toggle keys (nos. 2, 5, and 7) each have three distinct sections (a, b, and c) in the template. They correspond to the parts of the key in the photo on page 3.



The next few pages feature a fingering chart which makes use of the above template. Of course, only the most common fingerings are represented. Practically any fingering available on a conventional horn can be adapted to this one-handed mechanism.

Standard fingerings for the Stelling Brass & Winds one-handed saxophone (right hand model):

The image displays two musical staves with notes and corresponding fingering diagrams for a saxophone. The top staff shows notes with fingerings: G4 (1), A4 (1), B4 (1), C5 (1), D5 (1), E5 (1), F5 (1), G5 (1), A5 (1), B5 (1), C6 (1), D6 (1), E6 (1), F6 (1), G6 (1), A6 (1), B6 (1), C7 (1), D7 (1), E7 (1), F7 (1), G7 (1), A7 (1), B7 (1), C8 (1). The bottom staff shows notes with fingerings: G4 (1), A4 (1), B4 (1), C5 (1), D5 (1), E5 (1), F5 (1), G5 (1), A5 (1), B5 (1), C6 (1), D6 (1), E6 (1), F6 (1), G6 (1), A6 (1), B6 (1), C7 (1), D7 (1), E7 (1), F7 (1), G7 (1), A7 (1), B7 (1), C8 (1). The fingering diagrams show the placement of fingers (1-4) on the keys, with some keys shaded to indicate finger placement. A bracket groups the notes from G5 to C6 in the bottom staff.

A musical staff with a treble clef. It contains several notes: a whole note on the second line (G4), a whole note on the second space (A4), a whole note on the second space (A4), and a whole note on the second space (A4). A bracket groups the first two notes, and another bracket groups the last two notes. The key signature is one sharp (F#).

Diagrammatic representation of the first two notes. Each note is shown as a vertical rectangle divided into three horizontal sections. The top section is black, the middle is white, and the bottom is white. To the left of each rectangle is a small square with a dot above it. To the right is a small oval with a dot above it. Below each rectangle are three small circles. A large bracket on the left groups these two diagrams.

Diagrammatic representation of the third note. It follows the same structure as the previous notes, with a black top section, a white middle section, and a white bottom section.

Diagrammatic representation of the last two notes. Each note is shown as a vertical rectangle divided into three horizontal sections. The top section is black, the middle is white, and the bottom is white. To the left of each rectangle is a small square with a dot above it. To the right is a small oval with a dot above it. Below each rectangle are three small circles. A large bracket on the left groups these two diagrams.

Diagrammatic representation of the final note. It follows the same structure as the previous notes, with a black top section, a white middle section, and a white bottom section.

A musical staff with a treble clef. It contains several notes: a whole note on the second space (A4), and a whole note on the second space (A4). A bracket groups the first two notes, and another bracket groups the last two notes. The key signature is one sharp (F#).

Diagrammatic representation of the first two notes. Each note is shown as a vertical rectangle divided into three horizontal sections. The top section is black, the middle is white, and the bottom is white. To the left of each rectangle is a small square with a dot above it. To the right is a small oval with a dot above it. Below each rectangle are three small circles. A large bracket on the left groups these two diagrams.

Diagrammatic representation of the third note. It follows the same structure as the previous notes, with a black top section, a white middle section, and a white bottom section.

Diagrammatic representation of the fourth note. It follows the same structure as the previous notes, with a black top section, a white middle section, and a white bottom section.

Diagrammatic representation of the fifth note. It follows the same structure as the previous notes, with a black top section, a white middle section, and a white bottom section.

Diagrammatic representation of the sixth note. It follows the same structure as the previous notes, with a black top section, a white middle section, and a white bottom section.

Diagrammatic representation of the seventh note. It follows the same structure as the previous notes, with a black top section, a white middle section, and a white bottom section.

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