

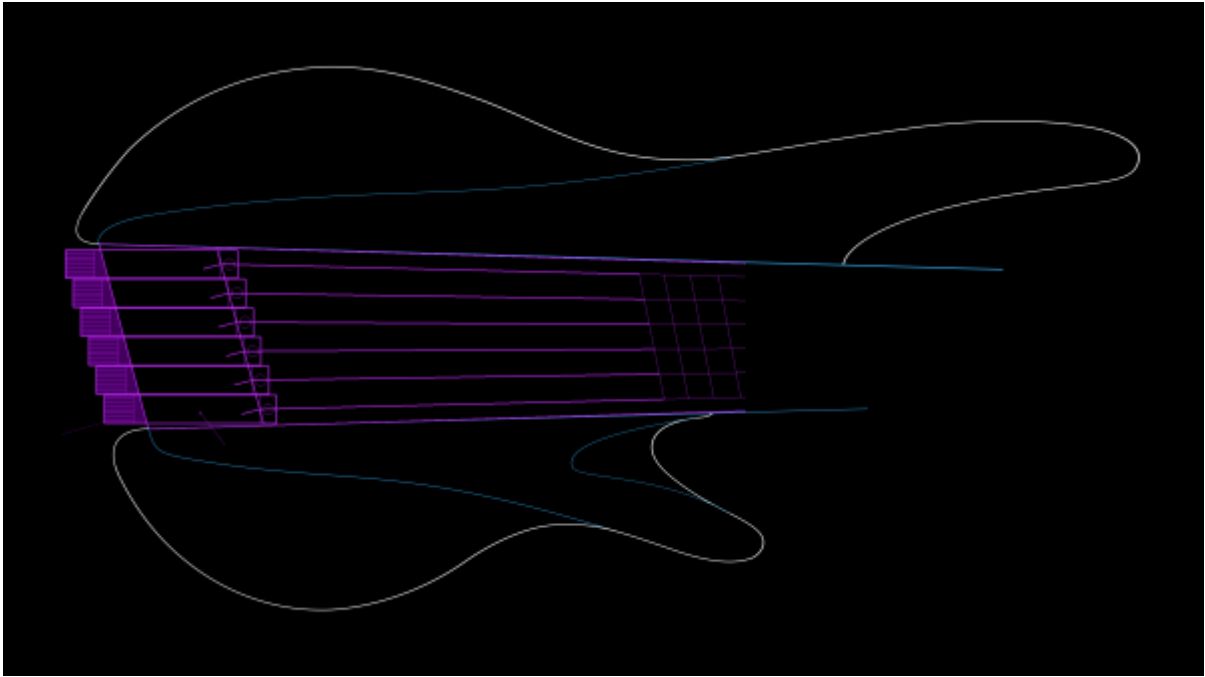
Ressourcen

Holz

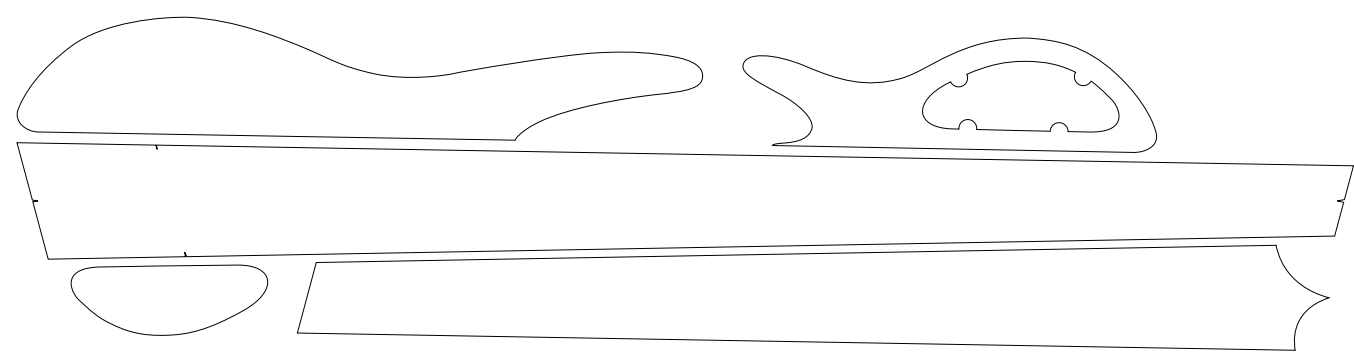
- Bubinga
- Ebenholz
- Mahagonie
- Wenge Furnier
- Walnuss Wurzelholz

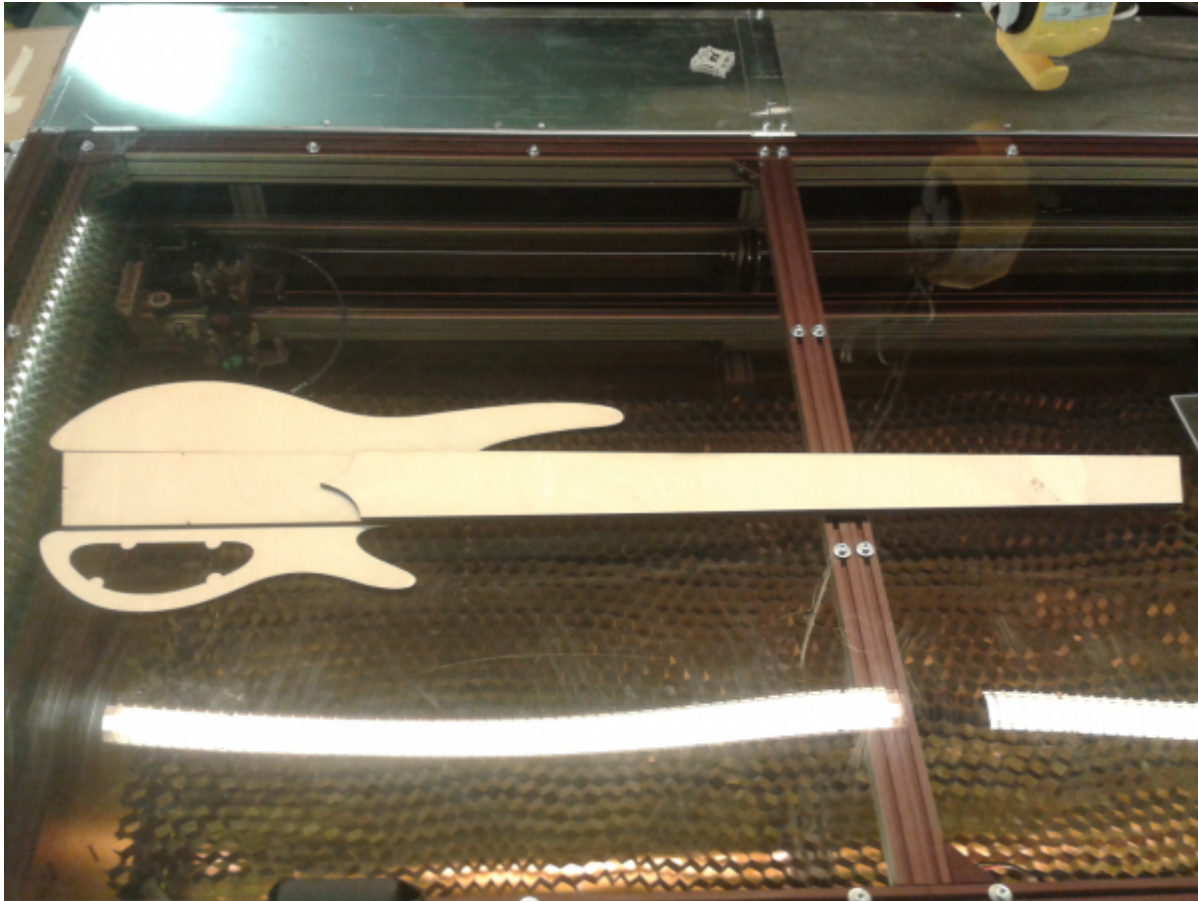


Design



Lasercutting Templates

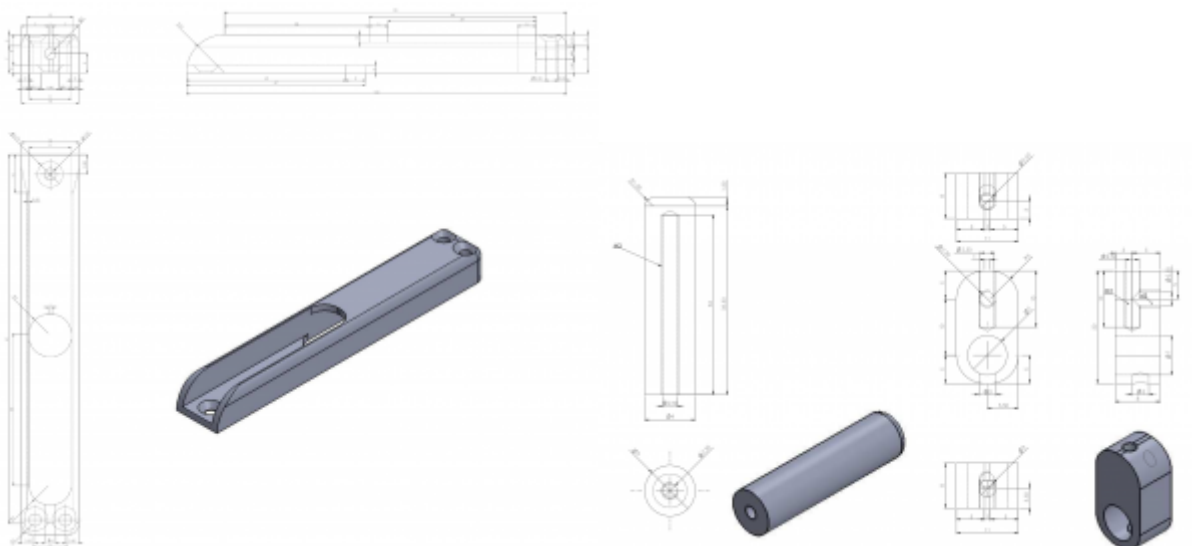




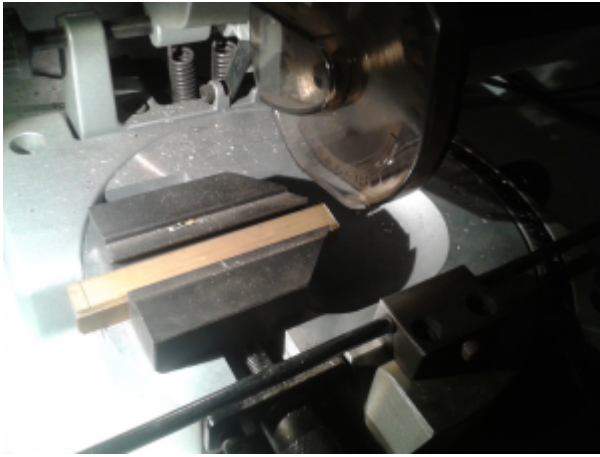
[Video](#)

Mechanik

- CAD Design



- Messing Profile auf Maße kappen



- Fräsen, Drehen, Bohren, Senken, Schleifen, ...

[Video \(Prototyp\)](#)





- GCode:

Werkbett 1

%

(Creates a nice bed to place the workpiece)

G21 (using mm)

G40 (manual toolrad comp)

(Operation config)

#<z-safe> = 20 (safe height)

#<z-feed> = 0.5 (depth feed steps)

#<toolrad> = 4

#<feedrate> = 200

(Workpiece params)

#<width> = [15 + 0.5] (2 x .25mm margin for workpiece)

#<length> = [93.8 + 0.5] (2 x .25mm margin for workpiece)

#<depth> = -2

G00 X0 Y0 Z[#<z-safe>]

(Corners)

G00 X[#<width> * 0.5] Y[#<length> * 0.5]

G01 Z[#<depth>] F[#<feedrate>]

G00 Z[#<z-safe>]

G00 X[#<width> * -0.5]

G01 Z[#<depth>] F[#<feedrate>]

G00 Z[#<z-safe>]

G00 Y[#<length> * -0.5]

G01 Z[#<depth>] F[#<feedrate>]

G00 Z[#<z-safe>]

G00 X[#<width> * 0.5]

G01 Z[#<depth>] F[#<feedrate>]

G00 Z[#<z-safe>]

(Return to Origin)

G00 X0 Y0 Z[#<z-safe>]

(Square)

G00 X[#<width> * 0.5 - #<toolrad>]

G01 Z[#<depth>] F[#<feedrate>]

G01 Y[#<length> * -0.5 + #<toolrad>] F[#<feedrate>]

G01 X[#<width> * -0.5 + #<toolrad>] F[#<feedrate>]

G01 Y[#<length> * 0.5 - #<toolrad>] F[#<feedrate>]

G01 X[#<width> * 0.5 - #<toolrad>] F[#<feedrate>]

G01 Y0 F[#<feedrate>]

G00 Z[#<z-safe>]

(Return to Origin)

G00 X0 Y0 Z[#<z-safe>]

%

Aussparung 1

%

(Creates the first, closed pocket)

G21 (using mm)

G40 (manual toolrad comp)

(Operation config)

#<z-safe> = 20 (safe height)

#<z-feed> = 0.25 (depth feed steps)

#<toolrad> = 4

#<feedrate> = 200

(Workpiece params)

#<wp_length> = 93.8

#<width> = [12 + 0.2] (0.1mm margin on each side)

#<length> = 40

#<depth> = [8 + 1] (1mm safety margin)

#<steps> = [#<depth> / #<z-feed>]

G00 X0 Y0 Z[#<z-safe>]

G00 Y[#<wp_length> * 0.5 - #<toolrad> - 8] X[#<width> * 0.5 - #<toolrad>]

#<current_depth> = [#<depth>]

0101 repeat [#<steps>]

 #<current_depth> = [#<current_depth> - #<z-feed>]

 G01 Z[#<current_depth>] F[#<feedrate> * 0.05]

 G01 Y[#<wp_length> * 0.5 - #<toolrad> - #<length> - 8] F[#<feedrate>]

 G01 X[#<width> * -0.5 + #<toolrad>] F[#<feedrate>]

 G01 Y[#<wp_length> * 0.5 - #<toolrad> - 8] F[#<feedrate>]

 G01 X[#<width> * 0.5 - #<toolrad>] F[#<feedrate>]

0101 endrepeat

G00 Z[#<z-safe>]

(Return to Origin)

G00 X0 Y0 Z[#<z-safe>]

%

Aussparung 2

%

(Creates a the second, open pocket)
(flip workpiece with closed pocket facing down on the clamped side)

G21 (using mm)

G40 (manual toolrad comp)

(Operation config)

#<z-safe> = 20 (safe height)

#<z-feed> = 0.25 (depth feed steps)

#<toolrad> = 4

#<feedrate> = 200

(Workpiece params)

#<wp_length> = 93.8

#<width> = [12 + 0.2] (0.1mm margin on each side)

#<length> = 46.9

#<depth> = [8 + 1] (1mm safety margin)

#<steps> = [#<depth> / #<z-feed>]

G00 X0 Y0 Z[#<z-safe>]

G00 Y[#<wp_length> * 0.5 + #<toolrad>] X[#<width> * 0.5 - #<toolrad>]

#<current_depth> = [#<depth>]

0101 repeat [#<steps>]

 #<current_depth> = [#<current_depth> - #<z-feed>]

 G01 Z[#<current_depth>] F[#<feedrate>]

 G01 Y[#<wp_length> * 0.5 - #<toolrad> - #<length>] F[#<feedrate>]

 G01 X[#<width> * -0.5 + #<toolrad>] F[#<feedrate>]

 G01 Y[#<wp_length> * 0.5 + #<toolrad>] F[#<feedrate>]

 G01 X[#<width> * 0.5 - #<toolrad>] F[#<feedrate>]

0101 endrepeat

G00 Z[#<z-safe>]

(Return to Origin)

G00 X0 Y0 Z[#<z-safe>]

%

Seitliche Verrundung

%

(creates a bevel on the back side)

(clamp workpiece on open pocket)

G21 (using mm)

G40 (manual toolrad comp)

(Operation config)

#<z-safe> = 20 (safe height)

#<z-feed> = 0.25 (depth feed steps)

#<toolrad> = 4

#<feedrate> = 200

(Workpiece params)

#<wp_width> = 15

#<depth> = [10 + 1] (1mm safety margin)

#<bevel> = 3

#<wp_length> = [93.8 - #<bevel> + 2.5]

#<steps> = [#<depth> / #<z-feed> * 0.5]

G00 X0 Y0 Z[#<z-safe>]

G00 Y[#<wp_length> * 0.5 + #<toolrad> - [#<bevel> + #<toolrad>]]

X[#<wp_width> * 0.5 + #<toolrad>]

#<current_depth> = [#<depth>]

0101 repeat [#<steps>]

 #<current_depth> = [#<current_depth> - #<z-feed>]

 G01 Z[#<current_depth> - 2] F[#<feedrate>]

 G03 X[#<wp_width> * 0.5 + #<toolrad> - [#<bevel> + #<toolrad>]]

Y[#<wp_length> * 0.5 + #<toolrad>] I[#<bevel> + #<toolrad>] * -1]

F[#<feedrate>]

 G01 X[#<wp_width> * -0.5 - #<toolrad> + [#<bevel> + #<toolrad>]]

F[#<feedrate>]

 G03 X[#<wp_width> * -0.5 - #<toolrad>] Y[#<wp_length> * 0.5 + #<toolrad>
- [#<bevel> + #<toolrad>]] J[#<bevel> + #<toolrad>] * -1] F[#<feedrate>]

 #<current_depth> = [#<current_depth> - #<z-feed>]

 G01 Z[#<current_depth> - 2] F[#<feedrate>]

 G02 X[#<wp_width> * -0.5 - #<toolrad> + [#<bevel> + #<toolrad>]]

Y[#<wp_length> * 0.5 + #<toolrad>] I[#<bevel> + #<toolrad>]] F[#<feedrate>]

 G01 X[#<wp_width> * 0.5 + #<toolrad> - [#<bevel> + #<toolrad>]]

F[#<feedrate>]

 G02 Y[#<wp_length> * 0.5 + #<toolrad> - [#<bevel> + #<toolrad>]]

X[#<wp_width> * 0.5 + #<toolrad>] J[#<bevel> + #<toolrad>] * -1]

F[#<feedrate>]

0101 endrepeat

```
G00 Z[#<z-safe>]

(Return to Origin)
G00 X0 Y0 Z[#<z-safe>]

%
```

Werkbett 2

```
%

(Creates a nice bed to place the workpiece)

G21 (using mm)
G40 (manual toolrad comp)

(Operation config)
#<z-safe> = 20 (safe height)
#<z-feed> = 0.5 (depth feed steps)
#<toolrad> = 4
#<feedrate> = 200

(Workpiece params)
#<width> = [10 + 0.5] (2 x .25mm margin for workpiece)
#<length> = [93.8 + 0.5] (2 x .25mm margin for workpiece)
#<depth> = -2

G00 X0 Y0 Z[#<z-safe>]

(Corners)

    G00 X[#<width> * 0.5] Y[#<length> * 0.5]
    G01 Z[#<depth>] F[#<feedrate>]
    G00 Z[#<z-safe>]

    G00 X[#<width> * -0.5]
    G01 Z[#<depth>] F[#<feedrate>]
    G00 Z[#<z-safe>]

    G00 Y[#<length> * -0.5]
    G01 Z[#<depth>] F[#<feedrate>]
    G00 Z[#<z-safe>]

    G00 X[#<width> * 0.5]
    G01 Z[#<depth>] F[#<feedrate>]
    G00 Z[#<z-safe>]
(Return to Origin)
G00 X0 Y0 Z[#<z-safe>]

(Square)
```

```

G00 X[#<width> * 0.5 - #<toolrad>]
G01 Z[#<depth>] F[#<feedrate>]
G01 Y[#<length> * -0.5 + #<toolrad>] F[#<feedrate>]

G01 X[#<width> * -0.5 + #<toolrad>] F[#<feedrate>]
G01 Y[#<length> * 0.5 - #<toolrad>] F[#<feedrate>]
G01 X[#<width> * 0.5 - #<toolrad>] F[#<feedrate>]
G01 Y0 F[#<feedrate>]

G00 Z[#<z-safe>]
(Return to Origin)
G00 X0 Y0 Z[#<z-safe>]

%
```

Vordere Verrundung

```

%

(Creates the second bevel on the front side)
(flip workpiece with closed pocket facing down on the clamped side)

G21 (using mm)
G40 (manual toolrad comp)

(Operation config)
#<z-safe> = 20 (safe height)
#<z-feed> = 0.25 (depth feed steps)
#<toolrad> = 4
#<feedrate> = 200

(Workpiece params)
#<wp_length> = 88
#<wp_width> = 10
#<depth> = [15 + 1] (1mm safety margin)
#<bevel> = [10 + #<toolrad>]

#<steps> = [#<depth> / #<z-feed> * 0.5]

G00 X0 Y0 Z[#<z-safe>]

G00 Y[#<wp_length> * 0.5 + #<toolrad> - #<bevel>] X[#<wp_width> * 0.5 +
#<toolrad>]

#<current_depth> = [#<depth>]

0101 repeat [#<steps>]

    #<current_depth> = [#<current_depth> - #<z-feed>]

    G01 Z[#<current_depth> - 2] F[#<feedrate>]
```

```

G03 X[#<wp_width> * 0.5 + #<toolrad> - #<bevel>] Y[#<wp_length> * 0.5 +
#<toolrad>] I[#<bevel> * -1] F[#<feedrate>]
#<current_depth> = [#<current_depth> - #<z-feed>]

G01 Z[#<current_depth> - 2] F[#<feedrate>]
G02 X[#<wp_width> * 0.5 + #<toolrad>] Y[#<wp_length> * 0.5 + #<toolrad>
- #<bevel>] J[#<bevel> * -1] F[#<feedrate>]

0101 endrepeat

G00 Z[#<z-safe>]

(Return to Origin)
G00 X0 Y0 Z[#<z-safe>]
%
```

- Kopfstück designen
- Fräsen, Bohren
- Auf Halsprofil anpassen (Feilen)

Hals

- Trussrod Kanal fräsen



- Template mit Lasersaur schneiden
- Grob mit Band- oder Stichsäge zusägen
- Feinarbeit mit Kopierfräser and der Unterfräse
- ...

Korpus

- Template mit Lasersaur schneiden ✓
- Grob mit Band- oder Stichsäge zusägen ✓
- Bubinga Flügel:
 - ~~Kammern mit Forstner Bohrern an der Bohrpresse verteilen~~
 - Aussparung für Elektronik fräsen → CNC
 - GCode mit inkscape erzeugen und editieren: ✓

%

G21 (using mm)

G40 (manual toolrad comp)

#<feed_rate> = 400.000000 (Feed definition)

#<z_feed_rate> = 100.000000 (Feed definition)

#<depth> = 32 (Pocket depth)

#<z_feed> = 0.5

#<z_offset> = [-1 * #<depth>] (Z axis offset)

#<x_offset> = 0 (X axis offset)

#<y_offset> = 0 (Y axis offset)

#<z_safe> = [30 - #<z_offset>]

G00 Z[#<z_safe> + #<z_offset>]

#<steps> = [#<depth> / #<z_feed>]

#<current_depth> = [#<depth>]

0101 repeat [#<steps>]

 #<current_depth> = [#<current_depth> - #<z_feed>]

 G01 X[32.054936 + #<x_offset>] Y[22.882033 + #<y_offset>]

 G01 Z[#<current_depth> + #<z_offset>] F [#<z_feed_rate>](Penetrate)

 G03 X[23.557358 + #<x_offset>] Y[22.164836 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[2.140962] J[-76.066372] F [
#<feed_rate>]

 G03 X[14.366990 + #<x_offset>] Y[20.218615 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[9.604867] J[-68.028020]

 G03 X[28.745723 + #<x_offset>] Y[20.203180 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[20.700675] J[12589.113637]

 G03 X[39.957979 + #<x_offset>] Y[20.204503 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[4.540988] J[9035.587637]

 G03 X[40.435590 + #<x_offset>] Y[20.559101 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-6.960636] J[9.874287]

 G02 X[40.932160 + #<x_offset>] Y[20.908992 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[3.783206] J[-4.841858]

 G02 X[42.373402 + #<x_offset>] Y[21.748064 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[11.991749] J[-18.940458]

 G02 X[43.900643 + #<x_offset>] Y[22.524593 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[20.543220] J[-38.513342]

 G03 X[39.753406 + #<x_offset>] Y[22.832397 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-6.652687] J[-61.542869]

 G03 X[33.979494 + #<x_offset>] Y[22.920712 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-4.639457] J[-114.531741]

 G03 X[33.091467 + #<x_offset>] Y[22.907234 + #<y_offset>] Z[

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#<current_depth> + #<z_offset>] I[0.825981 ] J[-83.681862 ]
G03 X[32.054936 + #<x_offset>] Y[22.882022 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[2.768378 ] J[-135.136922 ]
G01 X[32.054936 + #<x_offset>] Y[22.882033 + #<y_offset>] Z[
#<current_depth> + #<z_offset>]

G01 X[31.898573 + #<x_offset>] Y[27.267879 + #<y_offset>]

G01 Z[ #<current_depth> + #<z_offset>] F [ #<z_feed_rate>](Penetrate)
G03 X[21.343924 + #<x_offset>] Y[26.262677 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[2.233996 ] J[-79.371621 ] F [
#<feed_rate>]
G03 X[8.480523 + #<x_offset>] Y[23.089678 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[13.338246 ] J[-81.734269 ]
G02 X[7.783723 + #<x_offset>] Y[21.811040 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-20.681840 ] J[10.441476 ]
G02 X[7.001475 + #<x_offset>] Y[20.588331 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-16.157997 ] J[9.475766 ]
G03 X[6.909780 + #<x_offset>] Y[20.444630 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[1.745759 ] J[-1.215059 ]
G02 X[6.816964 + #<x_offset>] Y[20.301726 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-1.529153 ] J[0.891598 ]
G01 X[6.808695 + #<x_offset>] Y[20.301563 + #<y_offset>] Z[
#<current_depth> + #<z_offset>]
G02 X[6.317582 + #<x_offset>] Y[19.666480 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-9.596938 ] J[6.913929 ]
G02 X[5.806535 + #<x_offset>] Y[19.053054 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-127.596787 ] J[105.781690 ]
G03 X[6.319081 + #<x_offset>] Y[18.795951 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[13.059092 ] J[25.394434 ]
G02 X[6.820003 + #<x_offset>] Y[18.529972 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-3.751290 ] J[-7.669549 ]
G02 X[8.750212 + #<x_offset>] Y[17.295555 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-12.032008 ] J[-20.940280 ]
G02 X[10.418190 + #<x_offset>] Y[15.996691 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-13.526618 ] J[-19.091072 ]
G02 X[10.495923 + #<x_offset>] Y[15.919774 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-0.484820 ] J[-0.567696 ]
G03 X[10.572069 + #<x_offset>] Y[15.843448 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[0.608078 ] J[0.530496 ]
G03 X[28.434879 + #<x_offset>] Y[15.819667 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[31.019063 ] J[16591.253292 ]
G03 X[41.664837 + #<x_offset>] Y[15.820842 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[5.948981 ] J[7502.175359 ]
G02 X[42.736339 + #<x_offset>] Y[16.635864 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[19.583598 ] J[-24.634502 ]
G02 X[43.768882 + #<x_offset>] Y[17.337174 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[11.385792 ] J[-15.652630 ]
G02 X[45.696480 + #<x_offset>] Y[18.438562 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[13.107584 ] J[-20.702777 ]
G02 X[47.801423 + #<x_offset>] Y[19.398511 + #<y_offset>] Z[

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#<current_depth> + #<z_offset>] I[11.496961 ] J[-22.422356 ]
G02 X[49.792317 + #<x_offset>] Y[20.106749 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[9.797352 ] J[-24.388495 ]
G02 X[52.285392 + #<x_offset>] Y[20.746793 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[7.607765 ] J[-24.457960 ]
G02 X[53.564207 + #<x_offset>] Y[20.968288 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[4.384850 ] J[-21.513811 ]
G02 X[54.843237 + #<x_offset>] Y[21.125776 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[4.692073 ] J[-32.834024 ]
G03 X[54.441859 + #<x_offset>] Y[21.574200 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-29.806193 ] J[-26.275199 ]
G02 X[54.070710 + #<x_offset>] Y[22.011045 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[6.352452 ] J[5.773223 ]
G02 X[53.908528 + #<x_offset>] Y[22.228364 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[4.095897 ] J[3.225902 ]
G02 X[53.759526 + #<x_offset>] Y[22.451467 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[4.168061 ] J[2.944979 ]
G02 X[53.750863 + #<x_offset>] Y[22.466172 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[4.333531 ] J[2.563059 ]
G02 X[53.742254 + #<x_offset>] Y[22.480897 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[4.336711 ] J[2.545135 ]
G02 X[52.696494 + #<x_offset>] Y[23.980547 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[20.250589 ] J[15.235922 ]
G02 X[51.762784 + #<x_offset>] Y[25.612508 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[14.863985 ] J[9.587359 ]
G03 X[44.277820 + #<x_offset>] Y[26.883417 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-12.063688 ] J[-48.371944 ]
G03 X[33.923295 + #<x_offset>] Y[27.308584 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-9.347279 ] J[-101.343866 ]
G03 X[32.969890 + #<x_offset>] Y[27.294017 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[0.874881 ] J[-88.463077 ]
G03 X[31.898760 + #<x_offset>] Y[27.267885 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[2.973279 ] J[-143.840787 ]
G01 X[31.898573 + #<x_offset>] Y[27.267879 + #<y_offset>] Z[
#<current_depth> + #<z_offset>]

G01 X[31.715009 + #<x_offset>] Y[32.472999 + #<y_offset>]

G01 Z[ #<current_depth> + #<z_offset>] F [ #<z_feed_rate>](Penetrate)
G03 X[19.553779 + #<x_offset>] Y[31.241740 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[2.365259 ] J[-84.036152 ] F [
#<feed_rate>]
G03 X[3.983251 + #<x_offset>] Y[27.136053 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[16.551656 ] J[-94.348895 ]
G02 X[3.770906 + #<x_offset>] Y[26.531504 + #<y_offset>] Z[
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G02 X[3.522276 + #<x_offset>] Y[25.913314 + #<y_offset>] Z[
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G02 X[0.878686 + #<x_offset>] Y[21.827659 + #<y_offset>] Z[
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G02 X[-0.230364 + #<x_offset>] Y[20.686201 + #<y_offset>] Z[
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G01 X[-2.863403 + #<x_offset>] Y[18.660433 + #<y_offset>] Z[
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G02 X[-4.400339 + #<x_offset>] Y[17.786642 + #<y_offset>] Z[
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G02 X[-5.908356 + #<x_offset>] Y[17.102852 + #<y_offset>] Z[
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G02 X[-7.048536 + #<x_offset>] Y[16.700255 + #<y_offset>] Z[
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G01 X[-19.484225 + #<x_offset>] Y[16.651272 + #<y_offset>]

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G03 X[-25.182001 + #<x_offset>] Y[12.053669 + #<y_offset>] Z[
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G02 X[-25.371962 + #<x_offset>] Y[11.798134 + #<y_offset>] Z[
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G03 X[-23.725675 + #<x_offset>] Y[11.359741 + #<y_offset>] Z[
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G03 X[-20.129609 + #<x_offset>] Y[10.838944 + #<y_offset>] Z[
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G02 X[-19.701974 + #<x_offset>] Y[11.296079 + #<y_offset>] Z[

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#<current_depth> + #<z_offset>] I[46.800429 ] J[-43.351706 ]
    G02 X[-19.268441 + #<x_offset>] Y[11.727276 + #<y_offset>] Z[
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    G02 X[-17.932832 + #<x_offset>] Y[12.852626 + #<y_offset>] Z[
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    G02 X[-16.635375 + #<x_offset>] Y[13.753032 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[11.291879 ] J[-14.886249 ]
    G02 X[-15.183192 + #<x_offset>] Y[14.581692 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[9.753131 ] J[-15.405078 ]
    G02 X[-13.582104 + #<x_offset>] Y[15.310780 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[8.830523 ] J[-17.269401 ]
    G02 X[-13.030362 + #<x_offset>] Y[15.514055 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[3.778825 ] J[-9.406337 ]
    G02 X[-12.433606 + #<x_offset>] Y[15.713544 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[72.895718 ] J[-217.068905 ]
    G03 X[-12.688041 + #<x_offset>] Y[15.695645 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[0.229632 ] J[-5.081424 ]
    G02 X[-12.941250 + #<x_offset>] Y[15.681017 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-0.321007 ] J[3.357850 ]
    G02 X[-14.745705 + #<x_offset>] Y[15.723347 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[-0.416597 ] J[20.722675 ]
    G02 X[-16.598691 + #<x_offset>] Y[15.935053 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[1.336170 ] J[19.910164 ]
    G02 X[-18.155454 + #<x_offset>] Y[16.263523 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[2.682547 ] J[16.567089 ]
    G02 X[-19.484225 + #<x_offset>] Y[16.651283 + #<y_offset>] Z[
#<current_depth> + #<z_offset>] I[6.119789 ] J[23.441771 ]
    G01 X[-19.484225 + #<x_offset>] Y[16.651272 + #<y_offset>] Z[
#<current_depth> + #<z_offset>]

0101 endrepeat

G00 Z[#<z_safe> + #<z_offset>]
G00 X0 Y0
%
```

- Fräsen <https://www.youtube.com/watch?v=IJDeGeCIE6Y>
- Walnuss Wurzelholz Top:
- Resawing (in 10mm dicke Bretter sägen) ✓



- evtl. mit Epoxy stabilisieren (Astlöcher)
- Walnuss Wurzelholz Decke und Bubinga Flügel verleimen ✓



- Feinarbeit mit Kopierfräser an der Unterfräse
 - Im Kampf Fräse gegen Bubinga gewann meistens dann doch das Holz: Sehr dicht, Extrem lange Fasern und sehr spröde ... -> Trommelschleifer ✓



• ...

Pickups

- 3D Drucken
- Wickeln
- mit 2/3 Bienenwachs/Paraffin einkapseln um mikrofonische Effekte zu verhindern
- Ausmessen (Spectrum Analyzer?)

Elektronik

- Passiv/Aktiv?
- DSP?

Griffbrett

- Oberfläche glatt hobeln ✓



- Template Lasern ✓
- Grob zusägen an der Bandsäge ✓
- Feinschliff mit Kopierfräser ✓
- Mit Hals verleimen
- Schnitte für Bünde/Furnierstreifen
 - Radius (<http://en.wikipedia.org/wiki/Fingerboard#Parameters>):
 - konstant (12,,) mit Schleifklotz erzeugen
 - Konisch mit Schlitten und Oberfräse

Finish

- Hartwachsöl (Selber mischen oder Osmo High Solid)

Weiterführende Links

- [Thread auf TalkBass](#)