Instructions For Programming Inlaid Dovetail Joint on the Legacy Maverick CNC

- User assumes all risk in utilizing these instructions.
- Read and observe all safety measures for the CNC. Keep fingers back when CNC is in motion.

1. Items used:
   1.1. See “Cutting Inlaid Dovetail...” instructions (by Milo Scott).
   1.2. See Legacy Video “Legacy CNC Joinery Series Through Dovetails”
   1.3. Vectric “Aspire”

2. Bits used:
   2.1. Magnate 469 – 14 deg dovetail, 3/4” base, 3/4” cut length
   2.2. Magnate 2005 – 1/4” Spiral carbide bit (measured .245 – half = .1225). Cut in 4 passes, with last pass 1/16” - .0625”

3. Specifications:
   3.1. Material thickness: 3/4” - .75
   3.2. Inlay: 3/32” - .0938”
   3.3. Extend tails to sand off by +1/64” - .0156”
   3.4. Tail total length: .75 + .0156 = .7656 final tail length

4. Create “2 Cut Inlay” (Fig 1) part – cut away gray portion of center drawing.
   4.1. Board size: .75 thick X 4-1/32” wide X desired length.
   4.2. Depth of cut
      4.2.1. 3/4” – 3/32” + 1/64”
      4.2.2. .75 - .0938 + .0156

4.3. Spiral bit cuts out corners in attempt to limit chip out, and, clear bulk of material.
4.4. Dovetail bit removes undercut material in single pass.
4.5. Align dovetail (larger circles) and spiral bits (smaller circles) with cut lines (Fig 1).
4.6. In Aspire:

4.6.2. Drill 1 (Fig 2) = 1/4” Spiral – Drilling Toolpath - corner drill – cut depth .6719.
4.6.3. Cut Ends (Fig 3) = 1/4” Spiral – Profile – cut depth .6719.

4.6.4. Clear Center Slots (Fig 4) = 1/4” Spiral – Pocket – cut depth .6719.
4.6.5. Dove Tail Ends (Fig 5) = 3/4” Dovetail – Profile – cut depth .6719.
4.6.6. Dove Tail Centers (Fig 6) = 3/4" Dovetail – Pocket – cut depth .6719.

5. Create “3 Lone Dovetails” (Fig 7) part – cut away gray portion of center drawing.
   5.1. Board size: .75 thick X 4-1/32” wide X desired length.
   5.2. Depth of cut: .7656
      5.2.1. 3/4” + 1/64”
      5.2.2. .75 + .0156 = .7656

5.3. Align dovetail (larger circles) and spiral bits (smaller circles) with cut lines (Fig 7).
5.4. Note “face cut” on left side of dovetails (right image in Fig 7).
5.5. In Aspire:
   5.5.1. Job setup: “X” .75, “Y” 4.0, “Z” 3.0, XY Datum “X” 0.0, “Y” -2.0
5.5.2. Drill Face (Fig 8) = 1/4" Spiral – Drilling – corner drill – cut depth .7657.
5.5.3. Cut Ends Top (Fig 9) = 1/4" Spiral – Pocket – cut depth .7656. Note Raster Angle 180 degrees.

5.5.4. Cut Ends Bottom (Fig 10) = 1/4" Spiral – Pocket – cut depth .7656.
5.5.5. Cut Face (Fig 11) = 1/4" Spiral – Profile – cut depth .7656.
5.5.6. Drill Corners (Fig 12) = 1/4" Spiral – Drilling – cut depth .7656.
5.5.7. Cut Center Slots (Fig 13) = 3/4" Dovetail – Pocket – cut depth .7656 (fig 13).

5.5.8. Dove Tail Ends (Fig 14) = 3/4" Dovetail – Profile – cut depth .7656.
5.5.9. Dove Tail Centers (Fig 15) = 3/4" Dovetail – Pocket – cut depth .7656.
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6. Create “4 Inlay Core” (Fig 16) part – cut away gray portion of center drawing.
   6.1. Board size: .75 thick X 4” wide X desired length.
   6.2. Depth of cut: .7656
      6.2.1. 3/4” + 1/64”
      6.2.2. .75 + .0156

6.3. Align spiral bits (smaller circles) with cut lines (Fig 16).
6.4. Note “face cut” on left side of dovetails (right image in Fig 16).
6.5. In Aspire:
      6.5.1. Job setup: “X” .75, “Y” 4.0, “Z” 3.0, XY Datum “X” 0.0, “Y” -2.0

6.5.2. Drill Face Corner (Fig 17) = 1/4” Spiral – Drilling - cut depth .7656.
6.5.3. Cut Face (Fig 18) = 1/4” Spiral – Profile – cut depth .7656.
6.5.4. Drill Slots (Fig 19) = 1/4” Spiral – Drilling – cut depth .7656.
6.5.5. Cut Back Slots (Fig 20) = 1/4" Spiral – Profile – cut depth .7656.
6.5.6. Clear Center Slots (Fig 21) = 1/4" Spiral – Pocket – cut depth .7656.
6.5.7. Size Pockets (Fig 22) = 1/4" Spiral – Profile – cut depth .7656. **When cutting this part, dry fit insert part from section 4 above. Use this step to increase gap. “Allowance offset”, more negative, will enlarge slot.

7. Create “6 Cut Inlay Triangles” (Fig 23) part – cut away gray portion of center drawing.
   7.1. Board size: Assembly of sections 4 and 6. This part is already milled flush on all sides.
   7.2. Depth of cut: .6563
      7.2.1. 3/4” - 3/32”
      7.2.2. .75 - .0937

7.3. Align spiral bits (smaller circles) with cut lines (Fig 23).
7.4. In Aspire:
      7.4.1. Job setup: “X” .75, “Y” 4.0, “Z” 3.0, XY Datum “X” 0.0, “Y” -2.0
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7.4.2. Drill Corners (Fig 24) = 1/4" Spiral – Drilling - cut depth .6563.
7.4.3. Cut Back Slots (Fig 25) = 1/4" Spiral – Profile – cut depth .6563.
7.4.4. Clear Slots (Fig 26) = 1/4" Spiral – Pocket – cut depth .6563.

7.4.5. Size Pockets (Fig 27) = 1/4" Spiral – Profile – cut depth .6563.
**When cutting this part, dry fit insert part from section 5 above. Use this step to increase gap. “Allowance offset”, more negative, will enlarge slot.

8. End result should look like figure 28...