**06/18/2017**

**Readme and Disclaimer**

OEM Key profiles were measured off of a set of Vortex PBT Doubleshot 104-Key caps.

Cherry Key Profiles were estimated off of Cherry Corp. datasheets.

Files were made using Solidworks 2017.

**No Measurement or Dimension is Guaranteed to be Accurate or Suitable.**

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**Modifying Base Dimensions on Wookiee’s Keycaps Files**

1. Base Dimensions
2. Angle of Key Front
3. Angle of Key Rear
4. Front and Rear Key Height
5. **Shape of Cylindrical Top, Front Sketch**
6. Shape of Cylindrical Top, Rear Sketch
7. Wall Thickness
8. Upright Edge Fillets
9. Top Edge Fillet
10. Stem Dimensions
11. Final Touches/Stabilizer Stems.

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| 1. **Base dimensions**   ( 《 【 2 帑 あ 、 型 d56 《 セ n 20 》 》 n 【 ) 山 0 22 00M  さ 0 一 帑 も LWV  aueld 6 〔  2 言 LieW ロ 」 亠  aueld d01 〔  ・ 【 エ 0 帑 ~ S ア  2E2 ed コ 凸 凸  〔 ed コ 凸 凸  5 」 0 さ as 」  、 」 0 工 扈  u ふ ご 0  Base key dimensions are 18x18. Including these dimensions in configurations and design table allows me to switch between any key width and length. |

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| 1. **Angle of Key Front**   Extruded  Features  Revolved  Sketch  Swept Sossi8ase  Lofted Soss;aase  Boundary Soss,'Sase  Extruded  16  Swept Cut  Revolved  Lofted Cut  Wizard  Soundar} Cut  Draft  Shell  Reference  Geometry  Curves  Instant30  Mirror  Surfaces Sheet Metal Direct Editing Evaluate DimXpert SOLIDWORKS Add-Ins  Wookiee OEM  Front angle  Message  efi  First Reference  Line 1 @SketchI  IL  Perpendicular  Coincident  Project  Second Reference  Front Plane  Parallel  IL  Perpendicular  lg.COdeg  Mid Plane  Third Reference  Options  Flip normal  Model  Motion Study I  Front plane angle is set coincident with front edge of base, and at an angle. This angle can be adjusted for all configurations, or you can add it to the design table and set different angles for each configuration. |
| 1. **Angle of Key Rear**   Machine generated alternative text: Wookiee OEM  (RI  History  Sensors  Annotations  erial < not specfied>  Front Plane  Top Plane  Right Plane  Origin  MateReferences  Sketchl  Front angle  Rear Angle -  Sketch5  U Surface-Loftl  L oft I Ske hl  Shelll  Filletl  Fillet2  Boss-Extrudel  Chamferl  LPatternI  LPattern2  r•kÅ   The angle of the rear plane is set the same way, but references the rear edge of the base sketch. |

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| 1. **Front and Rear Key Height**   Machine generated alternative text: Wookiee OEM (RI  History  Sensors  Annotations  erial < not specfied>  Front Plane  Top Plane  Right Plane  Origin  MateReferences  Sketchl  Front angle  Rear Angle  C Sketch5 -  Surface-Loftl  L oft I  Shelll  Fillet2  Boss-Extrudel  Chamferl  LPatternI  LPattern2  Display State I  r•kÅ   The front and rear height of the profile are set using a construction sketch on the right plane. These dimensions are constrained to the front and rear angle planes, and set as distances from the base plane. They are included in the design table and set in each configuration. |
| 1. **Shape of Cylindrical Top, Front Sketch**   Machine generated alternative text: res Sketch  Surfaces Sheet Metal  Direct Editing  Qaluate  DimXpert  Wookiee OEM (RI  Favorites  History  Sensors  Annotations  Surface Bodies(l)  erial < not specfied>  Front Plane  Top Plane  Right Plane  Origin  MateRef  erences  Sketchl  Front angle  Rear Angle  C Sketch5  Surface-Loftl  Sketc  C Sketch3  Shelll  Filletl  Fillet2  Boss-Extrudel  Chamferl  LPatternI  LPattern2  Display State I  SOLIDWORKS Add-ins  r•kÅ  2.65  2.  The shape of the top of the key is set by an extruded loft between the two angled planes. The front edge is defined on the front angle plane. The width is defined relative to the base, the endpoints are set by the previously sketched profile, and the depth is dimensioned to the midpoint. |

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| 1. **Shape of Cylindrical Top, Rear Sketch**   Machine generated alternative text: Wrap  Fillet  Extruded  ioss/Base  res  swept aoss,'Base  Revolved  Lofted 80ss/Base  80ss/Base  Boundary 80ss/Base  Extruded  Swept Cut  Revolved  Lofted Cut  Boundary Cut  Linear  Pattern  Draft  Reference  Intersect  Geometry  Mirror  Curves  Instant3D  Wizard  Sketch Surfaces Sheet Metal Direct Editing Evaluate DimXpert SOLIDWORKS Add-Ins  Wookiee OEM (RI  Favorites  History  Sensors  Annotations  Surface Bodies(l)  erial < not specfied>  Front Plane  Top Plane  Right Plane  Origin  MateRef  erences  Sketchl  Front angle  Rear Angle  C Sketch5  Surface-Loftl  C Sketch2  C Sketch3 -  Loftl  Shelll  Filletl  Fillet2  Boss-Extrudel  Chamferl  LPatternI  LPattern2  Display State I > )  The shape of the top of the key is set by an extruded loft between the two angled planes. The front edge is defined on the front angle plane. The width is defined relative to the base, the endpoints are set by the previously sketched profile, and the depth is dimensioned to the midpoint.  Theoretically, this means you can make the front and rear of the keycap completely different shapes. Just be careful, in the published .sldprt files, changing the shape in one dimension will change it for all dimensions. |
| 1. **Wall Thickness**   Machine generated alternative text: 80ss/Base  Features  80ss/Base  Boundary 80ss/Base  Sketch Surfaces Sheet Metal Direct Editing  Evaluate  e  Boundary Cut  DimXpert SOLIDWORKS Add-ins  Shell  Mirror  Wookiee OEM (RI  History  Sensors  Annotations  Surface Bodies(l)  Solid Bodies(l)  erial < not specfied>  Front Plane  Top Plane  Right Plane  Origin  MateReferences  Front angle  Rear Angle  C Sketch5  Surface- Loftl  C Sketch2  C Sketch3  Sketchl  Shelli -  Fillet2  Boss-Extrudel  Chamferl  LPatternI  LPattern2  Display State I  A loft between the base sketch and the lofted top profile gives the key shape. This is then shelled. The wall thickness is defined by the shell. |

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| 1. **Upright Edge Fillets**   Swept Soss;aase  Lofted Soss;aase  Extruded  Features  Filleti  Feature  Rens To  Revolved  Sketch  Extruded  Revolved  Wizard  16  Swept Cut  Lofted Cut  Boundary Cut  Draft  Shell  Reference  Intersect  Geometry  Mirror  Curves  Instant30  Boundary Soss;aase  Surfaces Sheet Metal Direct Editing Evaluate  DimXpert SOLIDWORKS Add-ins  Wookiee OEM  Radius:  Radius:  Radius:  Imm  Imm  Radius: 0.5mm  Imm  Edgec  Edgec  Edgec  Edgec  Edge<6  Edgec  Edge<8  Z] Shcn,v selection toolbar  Z] Tangent propagation  @ Full previeu  C) Partial preview  C) No previeu  mmetric  00m m  Z] Multi Radius Fillet  Profile:  Circular  Opüons  0.5mm  Radius:  Radius:  Radius: 0.5mm  Imm  0.5mm  Radius:  The upright edge fillets are set using a multiple radius fillet. Each edge can be edited individually. |
| 1. **Top Edge Fillet**   Machine generated alternative text: Boundary Soss,'Sase  Surfaces Sheet Metal Direct Editing  Features Sketch  Fillet2  Feature Ty pe  To Fillet  Evaluate  Soundar} Cut  DimXpert SOLIDWORKS Add-ins  Q 31  Shell Mirror  Wookiee OEM  Radius: 0.1 mm  Z] Shcn,v selection toolbar  Z] Tangent propagation  @ Full preview  C) Partial preview  C) No preview  Fillet Parameters  metric  O. 10mm  Multi Radius Fillet  Profile:  Circular  Fillet Options  The top edge has a tiny fillet put on it. This is for aesthetics and can be suppressed or changed at will. |
| 1. **Stem Dimensions**   Machine generated alternative text: Wookiee OEM (RI  Favorites  History  Sensors  Annotations  Surface Bodies(l)  Solid Bodies(l)  erial < not specfied>  Front Plane  Top Plane  Right Plane  Origin  MateRef  erences  Front angle  Rear Angle  C Sketch5  Surface-Loftl  C Sketch2  C Sketch3  Sketchl  Shelli  Fillet2  Boss-Extrudel  C Sketch4 - -  Chamfer I  LPatternI  LPattern2  Display State I  r•kÅ  Model Motion Study I  The stem shape is defined on the bottom plane, and extruded up to surface to the top surface. These dimensions can be easily changed. I used 1.2mm wide x 4 long for the arms of the key cross. |
| 1. **Final Touches/Stabilizer Stems**   Machine generated alternative text: Wookiee OEM (RI  Favorites  History  Sensors  Annotations  Surface Bodies(l)  Solid Bodies(l)  erial < not specfied>  Front Plane  Top Plane  Right Plane  Origin  MateRef  erences  Front angle  Rear Angle  C Sketch5  Surface- Loftl  C Sketch2  C Sketch3  Sketchl  Shelli  Fillet2  Boss-Extrudel  C Sketch4  Chamferl  LPatternI  Caca LPattern2  Display State I  r•kÅ  The stem opening is chamfered per the Vortex model these were measured from.  Stems for stabilizers are spaced using linear patterns which are suppressed or activated by configuration. Key widths 2u and up have stabilizer stems, shorter key widths do not. |