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1 // the preview may not look correct on some machiens. In order to view it correctly,
  render the scene first. (F6 on the keyboard.)
2
3 // define the display resolution
4 $fn = 50;
5
6 //
7 ds1 = 2.5;
8 ds2 = 2.8;
9
10 // hole diameters
11 ds = [2.8, 3.5, 3, 2.8, 2.7];
12 // holes polar offset from center (rough estimates)
13 Ds = [14.5, 15, 26, 16, 27];
14 // holes polar position in degrees (rough estimates)
15 A = [120, 190, 230, 280, 315];
16
17 //Main diameter
18 D = 62.4;
19 // misc diameters.
20 D2 = 11.3;
21 Di2 = 8;
22 d2 = 22.3;
23 d3 = 25;
24 d4 = 12.1;
25 d5 = 13.8;
26 // chamfer on the bottom side
27 chamfer = 0.5;
28 // step heights
29 H = 9.8;
30 H2 = 6.6;
31 H3 = 1.9;
32 H4 = 0.8;
33 h2 = 1.5;
34 slotRadius = 2.5;
35 slotDepth = 0.6;
36
37 // call the disc module now
38 disc();
39
40 // define the module
41 module disc()
42 // first extrude the material. than cutout the holes and the slot.
43 difference()
44 {
45 // create the half cross-section and rotate it 360 degrees
46 rotate_extrude()polygon(points=[
47 [D/2, 0],
48 [D/2, H],
49 [d3/2 + chamfer, H],
50 [d3/2, H - chamfer],
51 [d3/2, H - chamfer - h2],
52 [d2/2, H - chamfer - h2],
53 [d2/2, H - chamfer],
54 [d2/2 - chamfer, H],
55 [D2/2, H],
56 [D2/2, H + H2 - chamfer],
57 [D2/2 - chamfer, H + H2],
58 [Di2/2, H + H2],
59 [Di2/2, H3 + chamfer],
60 [Di2/2 + chamfer, H3],
61 [d4/2 + chamfer, H3],
62 [d4/2 + chamfer, H3 - H4],
63 [d5/2, 0],
64
65 ]);
66 // difference of the extruded part with the union of all the cutouts
67 union()
68 {

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69     translate([0,0,H/2])rotate_extrude()translate([D/2 + slotRadius-slotDepth,
70     0,0])circle(slotRadius);
71     translate([0,D2/2,H2 + H - 3])rotate(90, [1,0,0])cylinder(h = D2/2, r = ds1 / 2);
72     rotate(120, [0,0,1])translate([0,D2/2,H2 + H - 4.5])rotate(90,
73     [1,0,0])cylinder(h = D2/2, r = ds2 / 2);
74 };
75 holes();
76 }
77 // holes module called in the disc module
78 module holes()
79 {
80     for (i = [0:1:4])
81         // make the holes over-long for better display.
82         rotate(A[i], [0,0,1])translate([Ds[i],0,0])cylinder(r = ds[i] / 2, h = 3*H, center
83         = true);
84 }

```

