Practicing your skills with projects

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SOLID EDGE
VELOCITY SERIES

...with Synchronous Technology

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Lesson

1 *Introduction*

Welcome to self paced training for Solid Edge. This course is designed to educate you in the use of Solid Edge. The course is self-paced and contains instruction followed by activities.

Solid Edge self-paced courses

- **spse01510**—Sketching
- **spse01515**—Constructing base features
- **spse01520**—Moving and rotating faces
- **spse01525**—Working with face relationships
- **spse01530**—Constructing treatment features
- **spse01535**—Constructing procedural features
- **spse01536**—Modeling synchronous and ordered features
- **spse01540**—Modeling assemblies
- **spse01541**—Explode-Render-Animate
- **spse01545**—Creating detailed drawings
- **spse01546**—Sheet metal design
- **spse01550**—Practicing your skills with projects
- **spse01560**—Modeling a Part Using Surfaces
- **spse01610**—Solid Edge frame design
- **spse01640**—Assembly patterning
- **spse01645**—Assembly systems libraries
- **spse01650**—Working with large assemblies
- **spse01655**—Revising assemblies
- **spse01660**—Assembly reports
- **spse01665**—Replacing parts in an assembly

- **spse01670**—Designing in the context of an assembly
- **spse01675**—Assembly features
- **spse01680**—Inspecting assemblies
- **spse01685**—Alternate assemblies
- **spse01690**—Virtual components in assemblies
- **spse01695**—XpresRoute (tubing)
- **spse01696**—Creating a Wire Harness with Harness Design
- **spse01424**—Working with Solid Edge Embedded Client

Start with the tutorials

Self-paced training begins where tutorials end. Tutorials are the quickest way for you to become familiar with the basics of using Solid Edge. If you do not have any experience with Solid Edge, please start by working through the tutorials for basic part modeling and editing before starting this self-paced training.

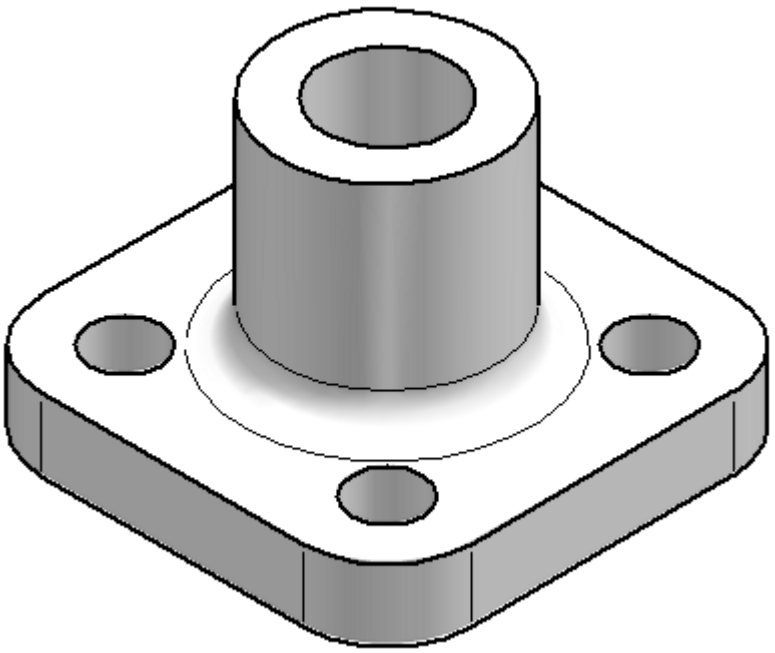
Lesson

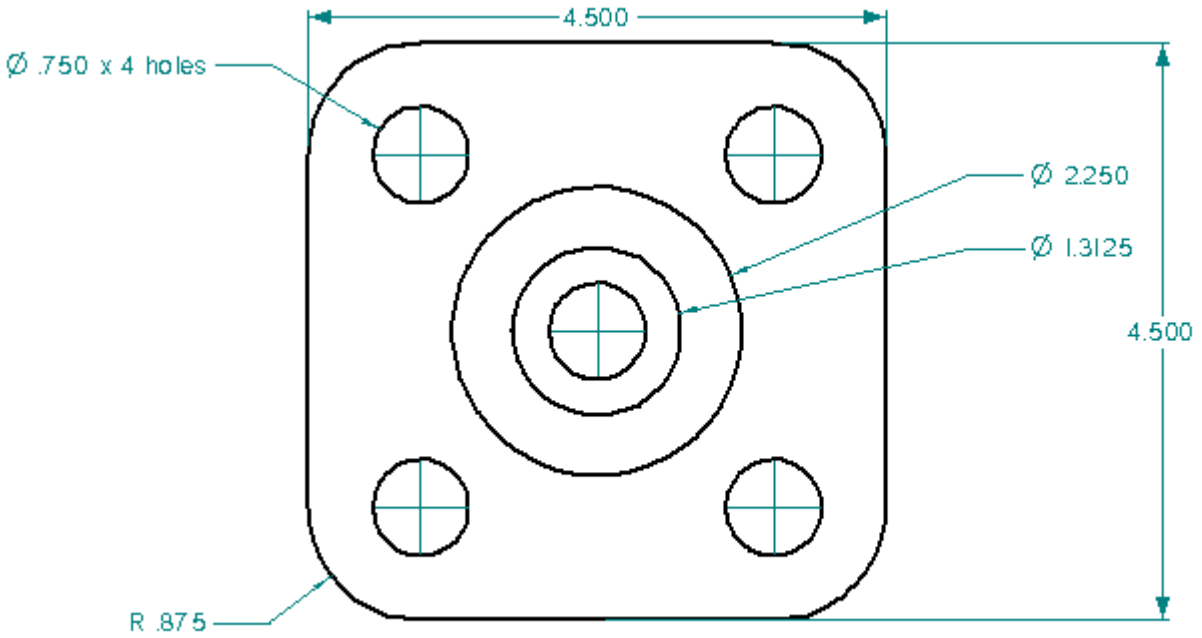
2 *Additional modeling projects*

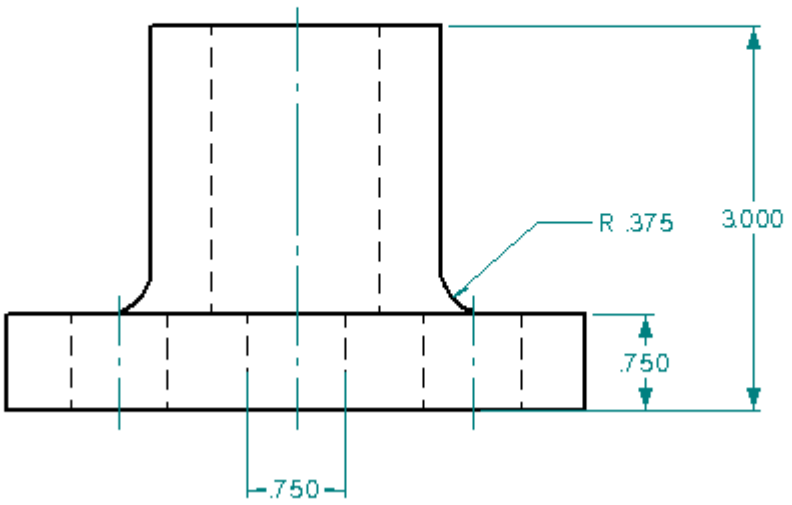
Introduction

This section contains additional parts for modeling practice. Each part in this section can be created in several different methods using a variety of commands in Solid Edge. There is no correct or incorrect method to create these parts. Experiment with different commands and options in an effort to learn as much about each command as possible. There is an isometric view of each part to give you a better idea as to what the finished part looks like. There are also principal views that contain the dimensions needed to create the part. There may be more dimensions than are needed in the drawings.

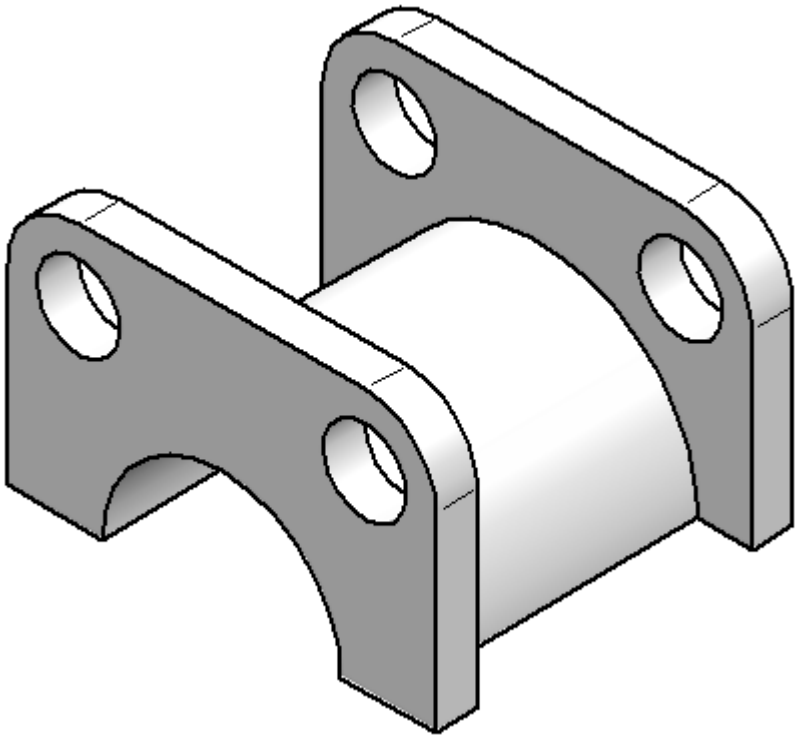
Base plate

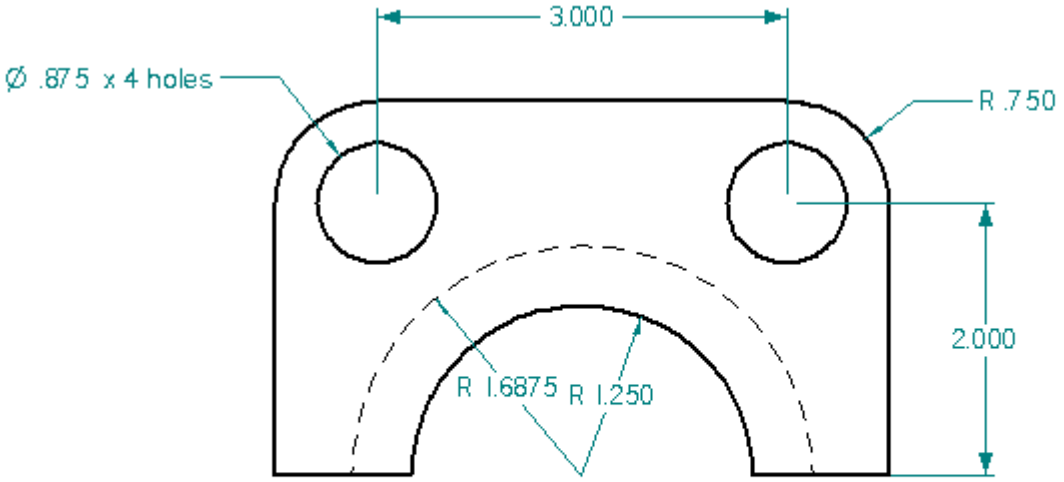


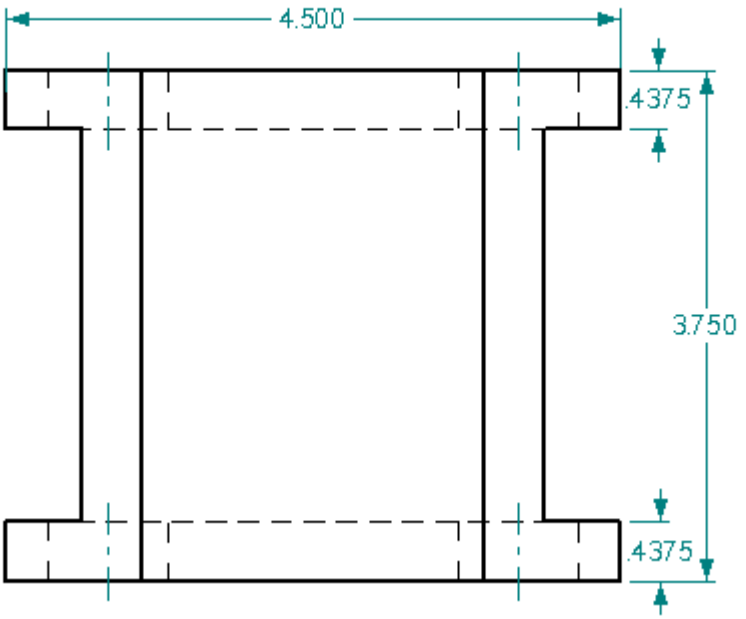

4.500
Ø .750 x 4 holes
Ø 2.250
Ø 1.3125
4.500
R .875


R .375
3.000
.750
.750

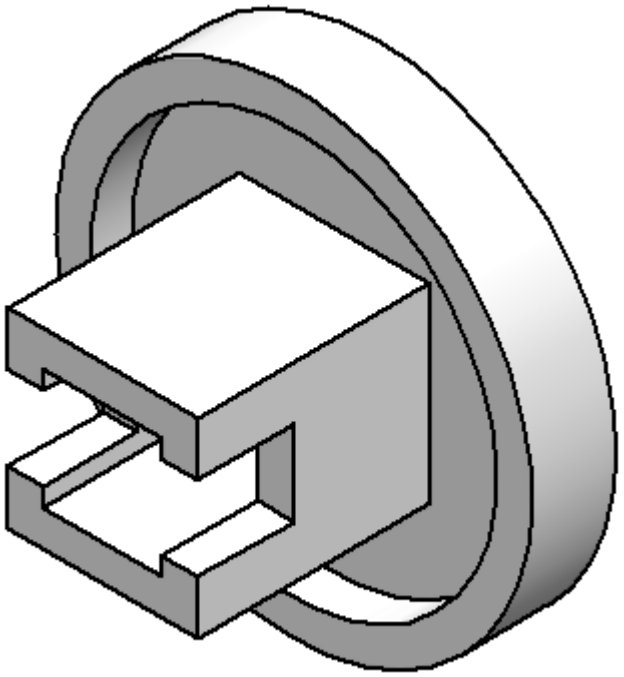
Bearing block A

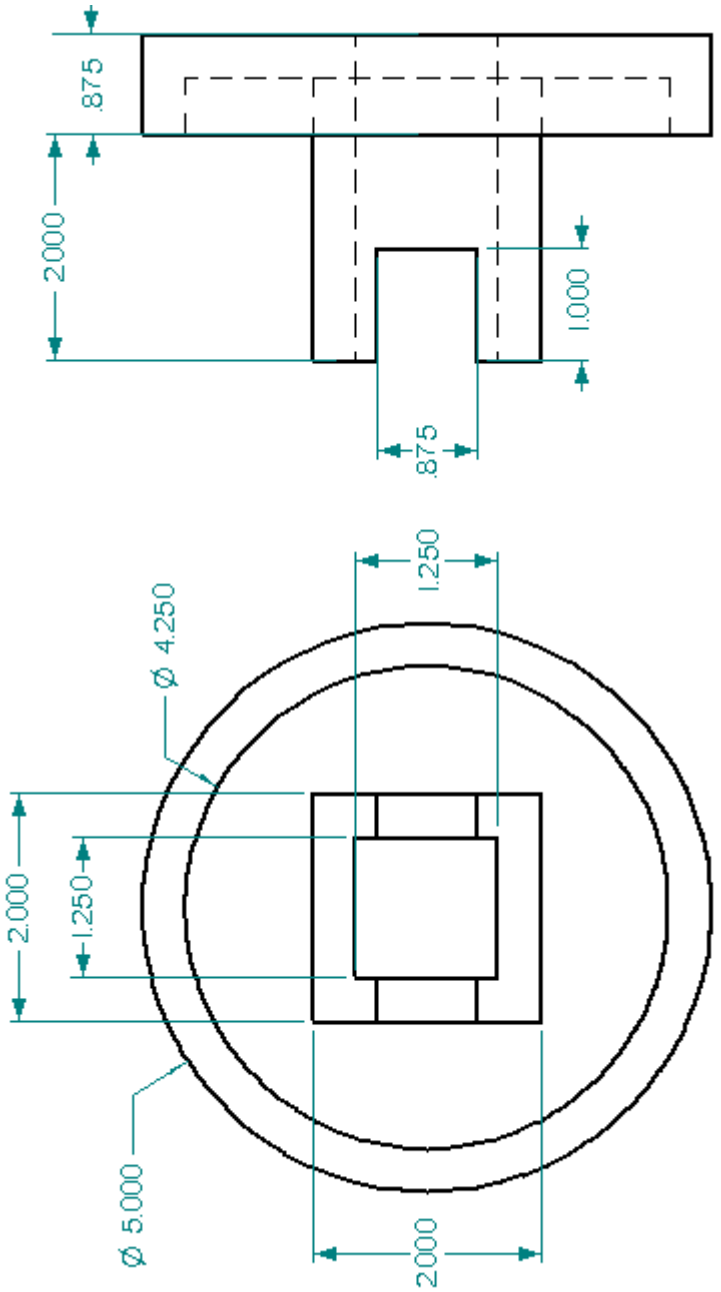



3.000
Ø .875 x 4 holes
R .750
2.000
R 1.6875
R 1.250

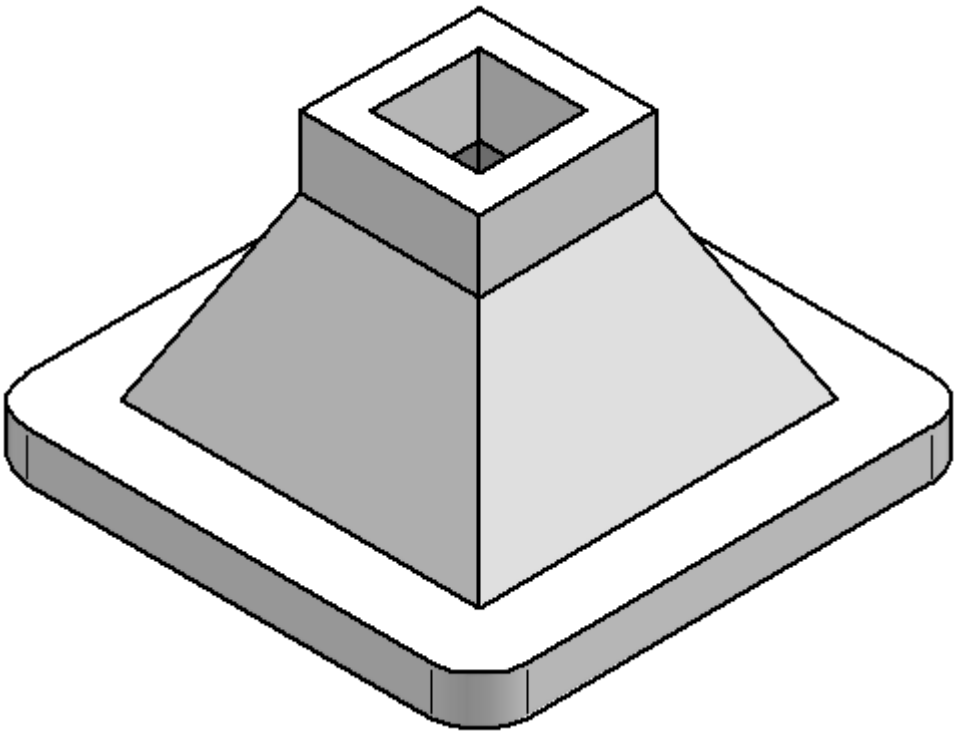

4.500
.4375
3.750
.4375

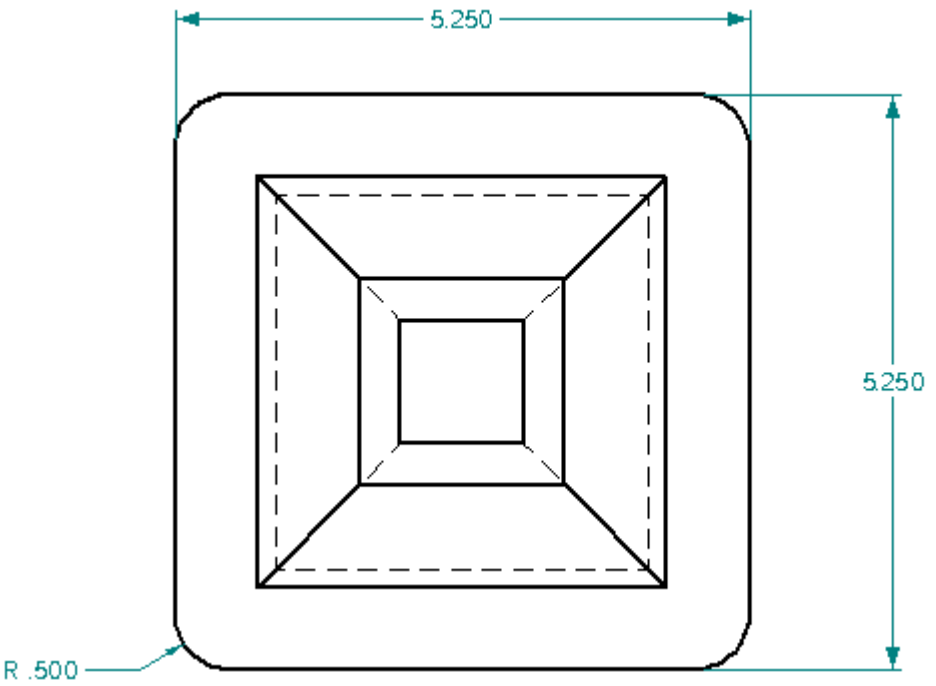
Bearing block B

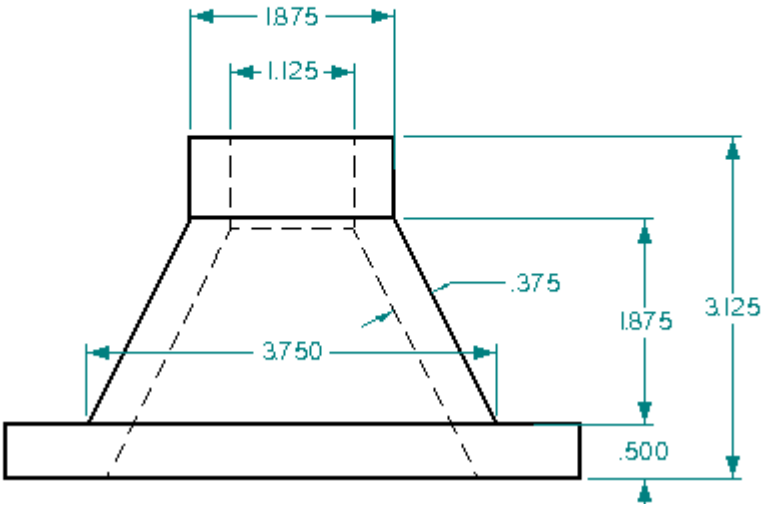



.875
2.000
1.000
.875
1.250
Ø 4.250
2.000
1.250
Ø 5.000
2.000

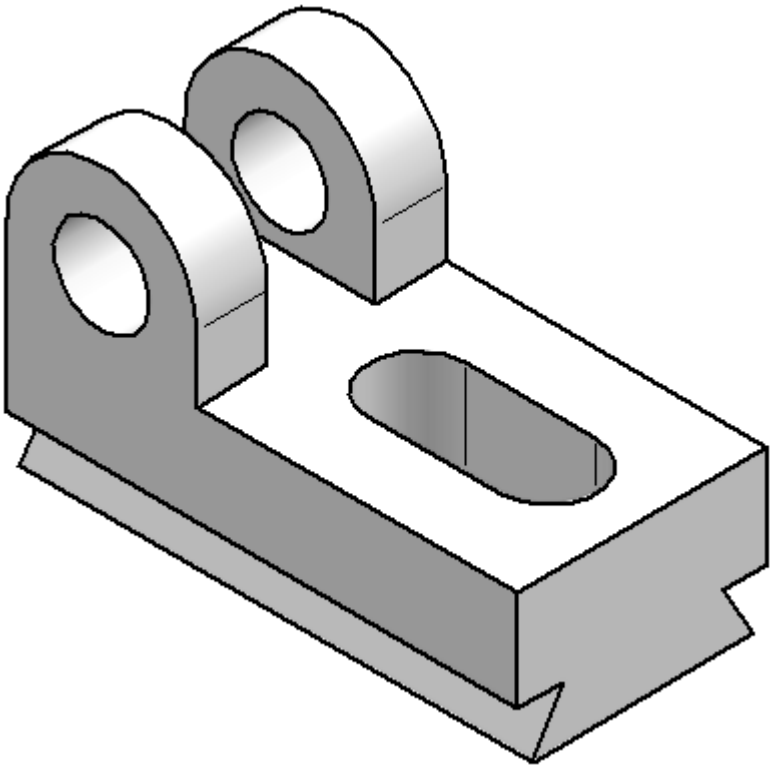
Column base

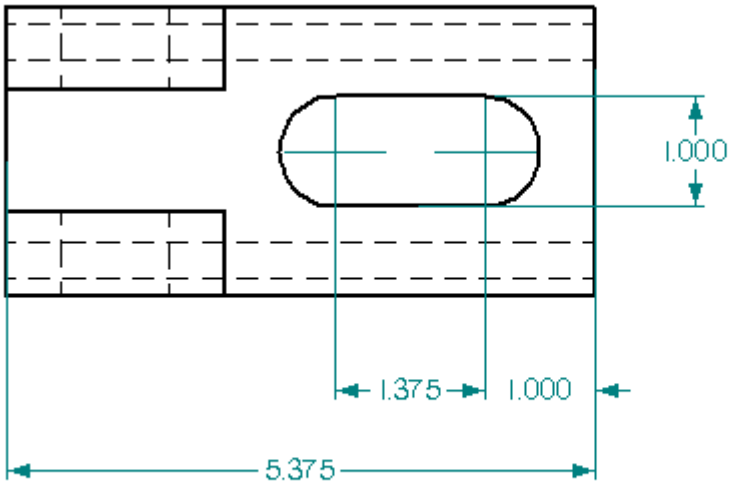


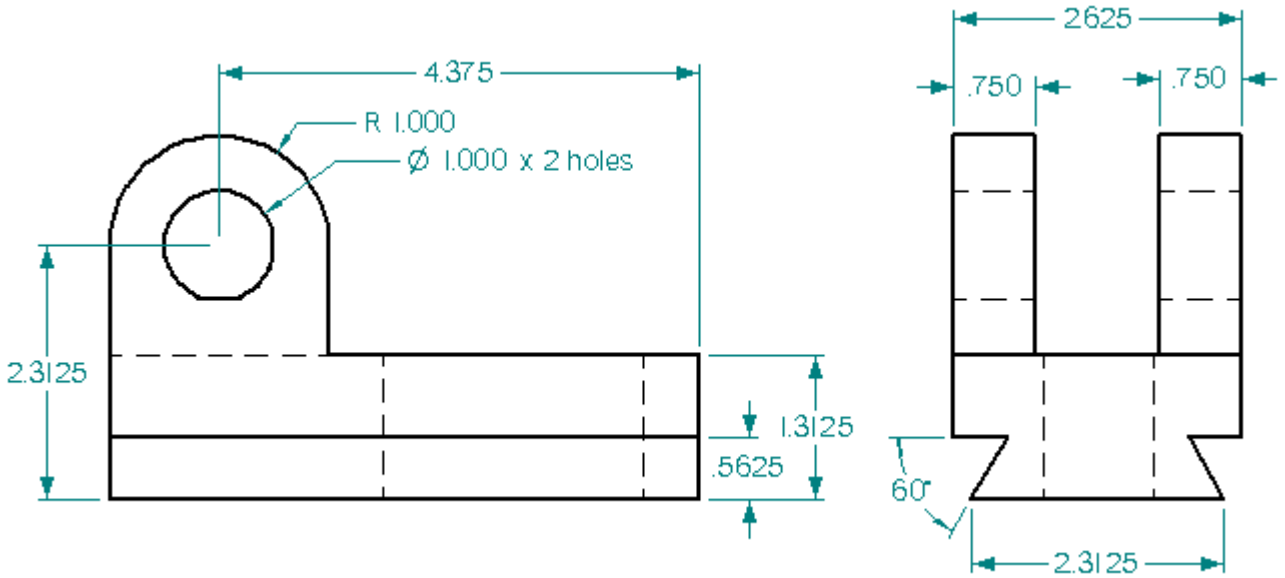

5.250
5.250
R .500


1.875
1.125
.375
1.875
3.125
3.750
.500

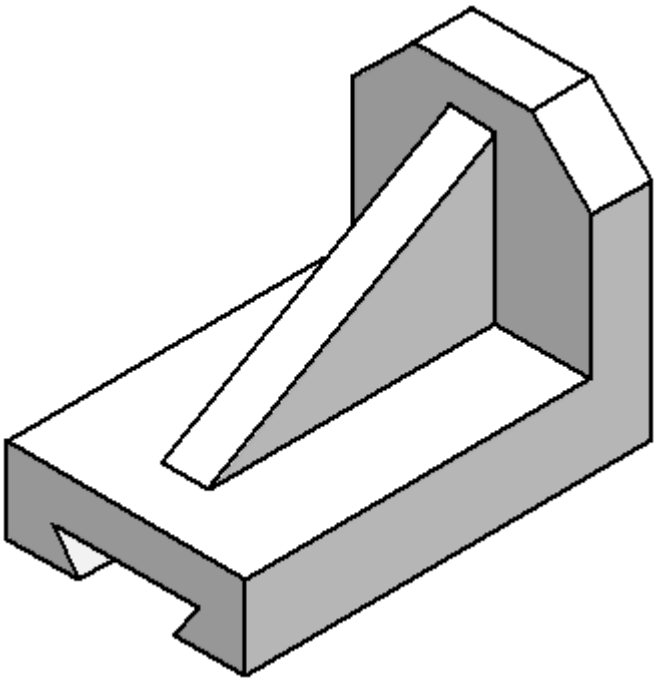
Dovetail bracket

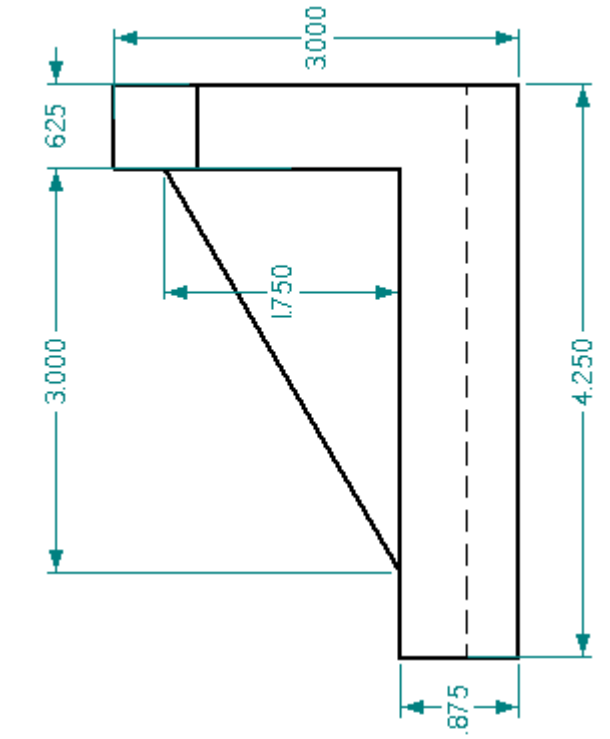


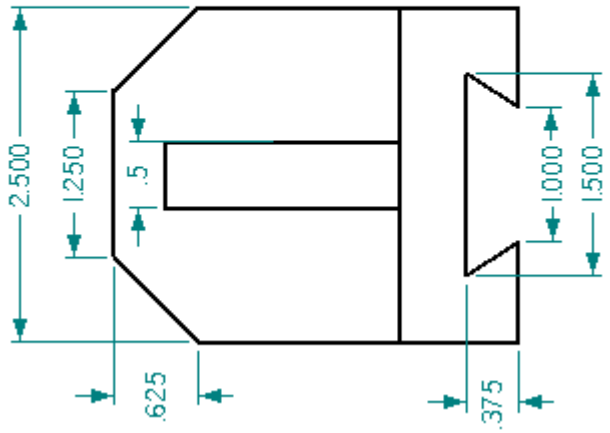

1.000
1.375
1.000
5.375


4.375
R 1.000
Ø 1.000 x 2 holes
2.3125
1.3125
.5625
2625
.750
.750
60°
2.3125

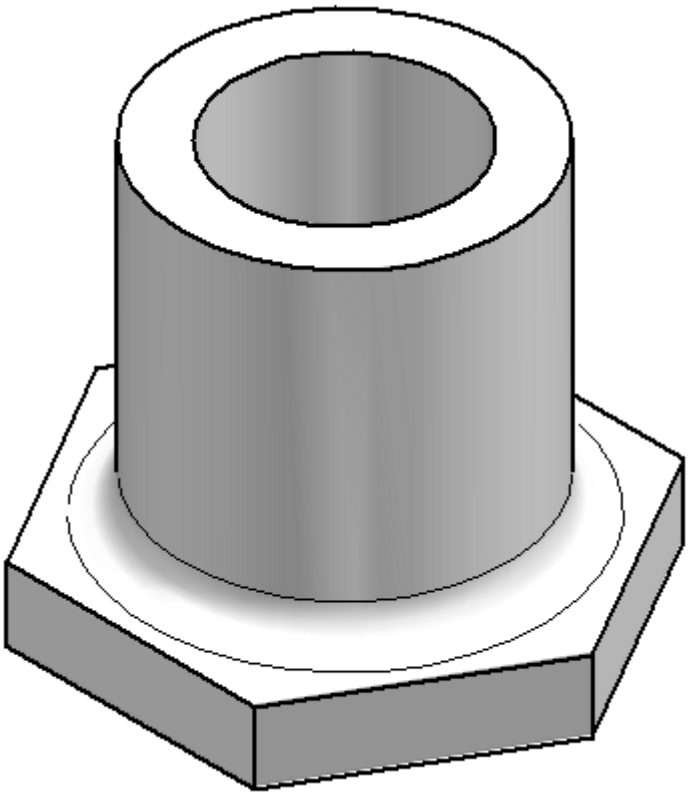
Dovetail stop

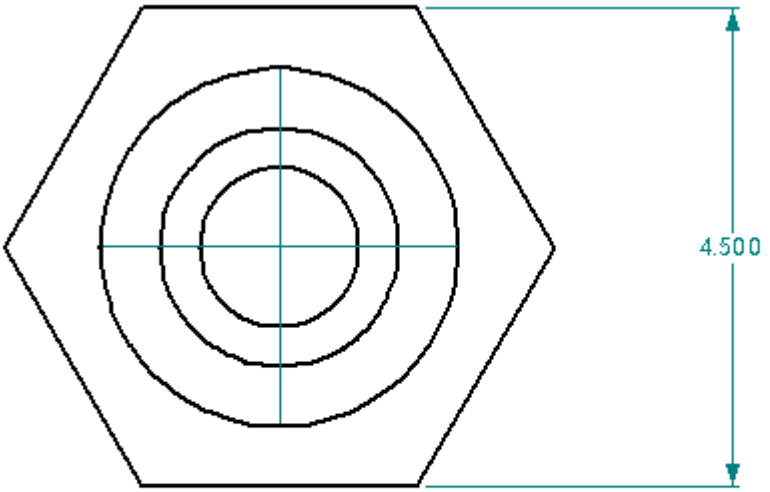


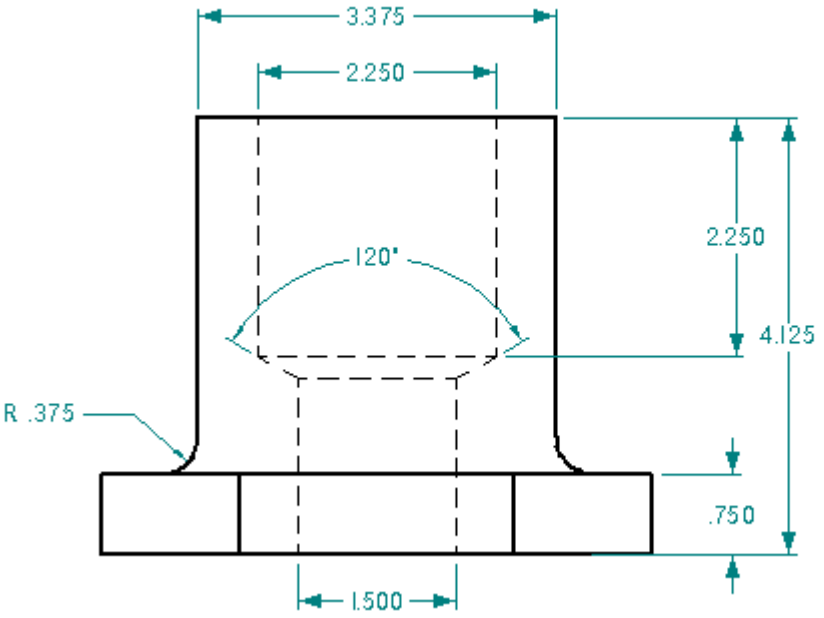

3.000
.625
1.750
3.000
4.250
.875


2.500
1.250
.5
1.000
1.500
.625
.375

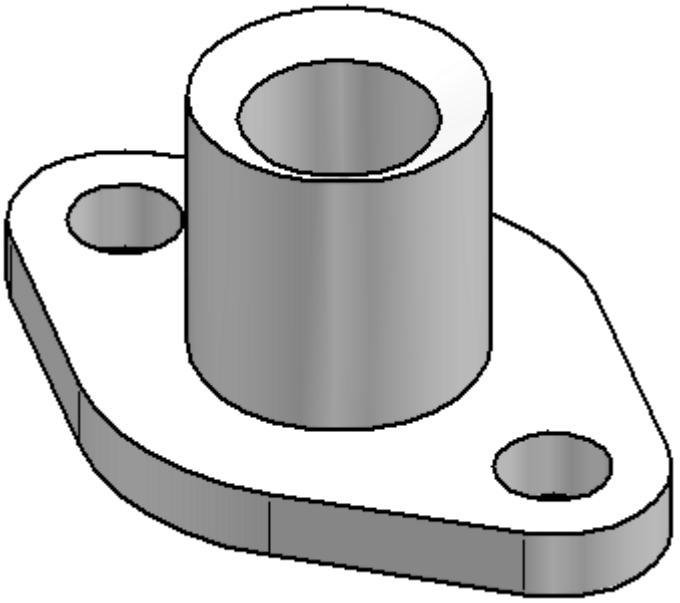
Gland blank

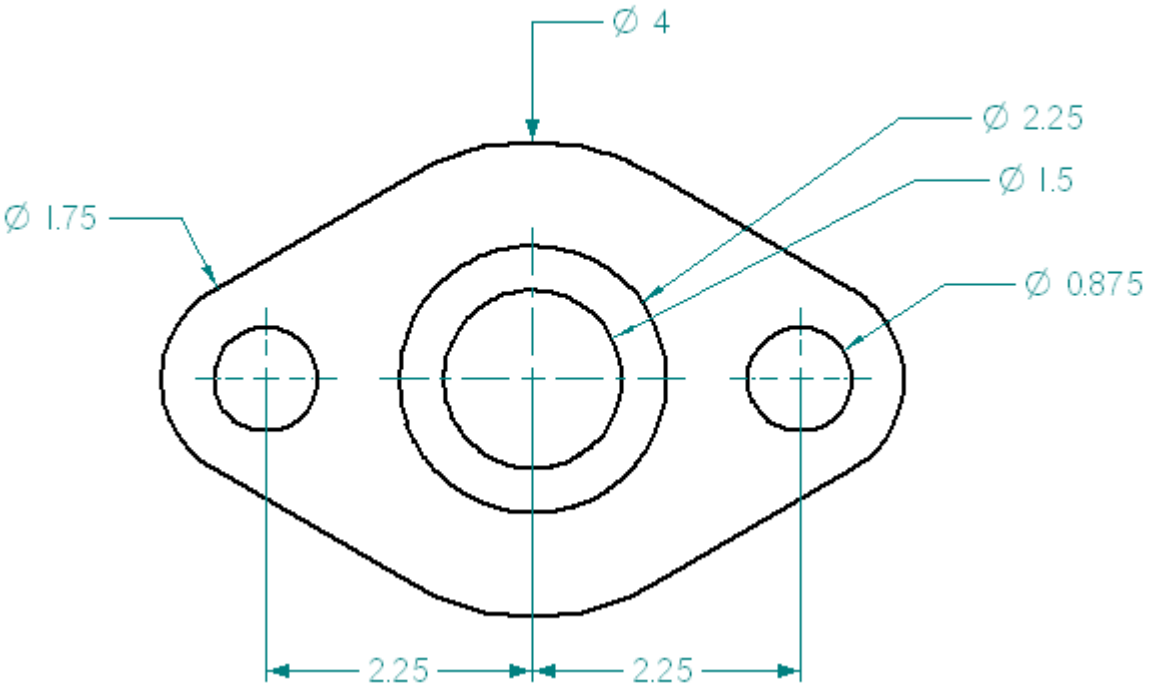


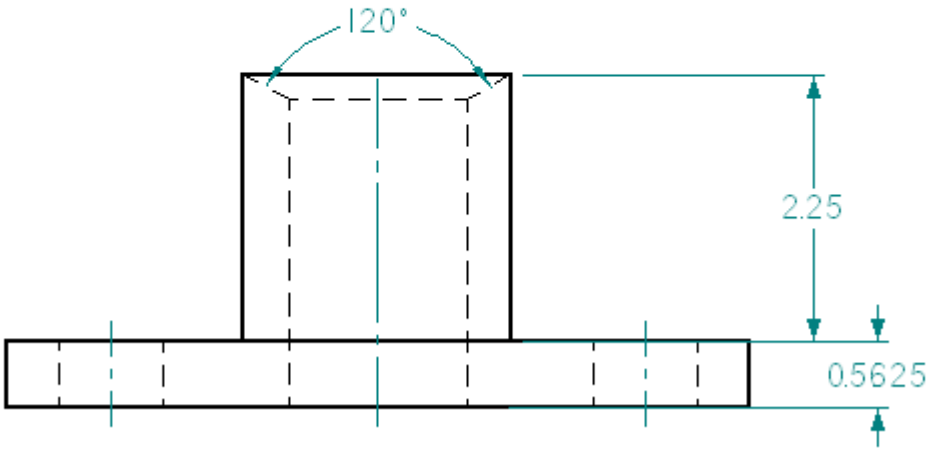

4.500


3.375
2.250
2.250
120°
4.125
R .375
.750
1.500

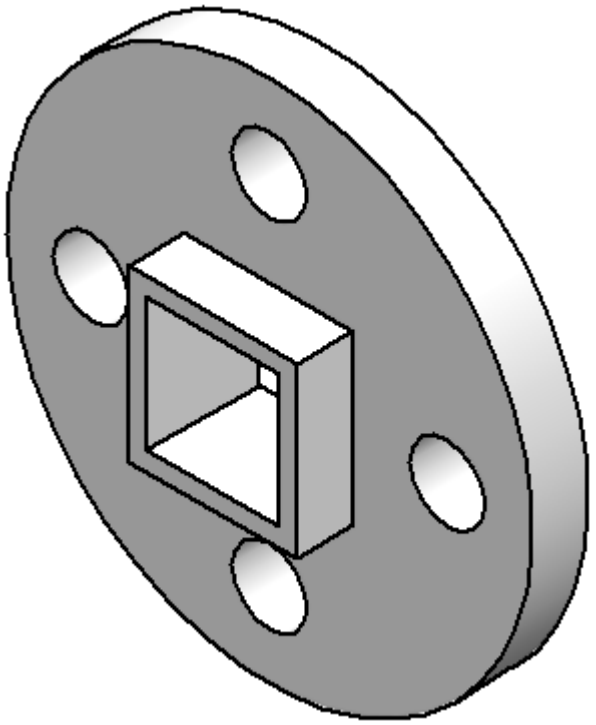
Gland

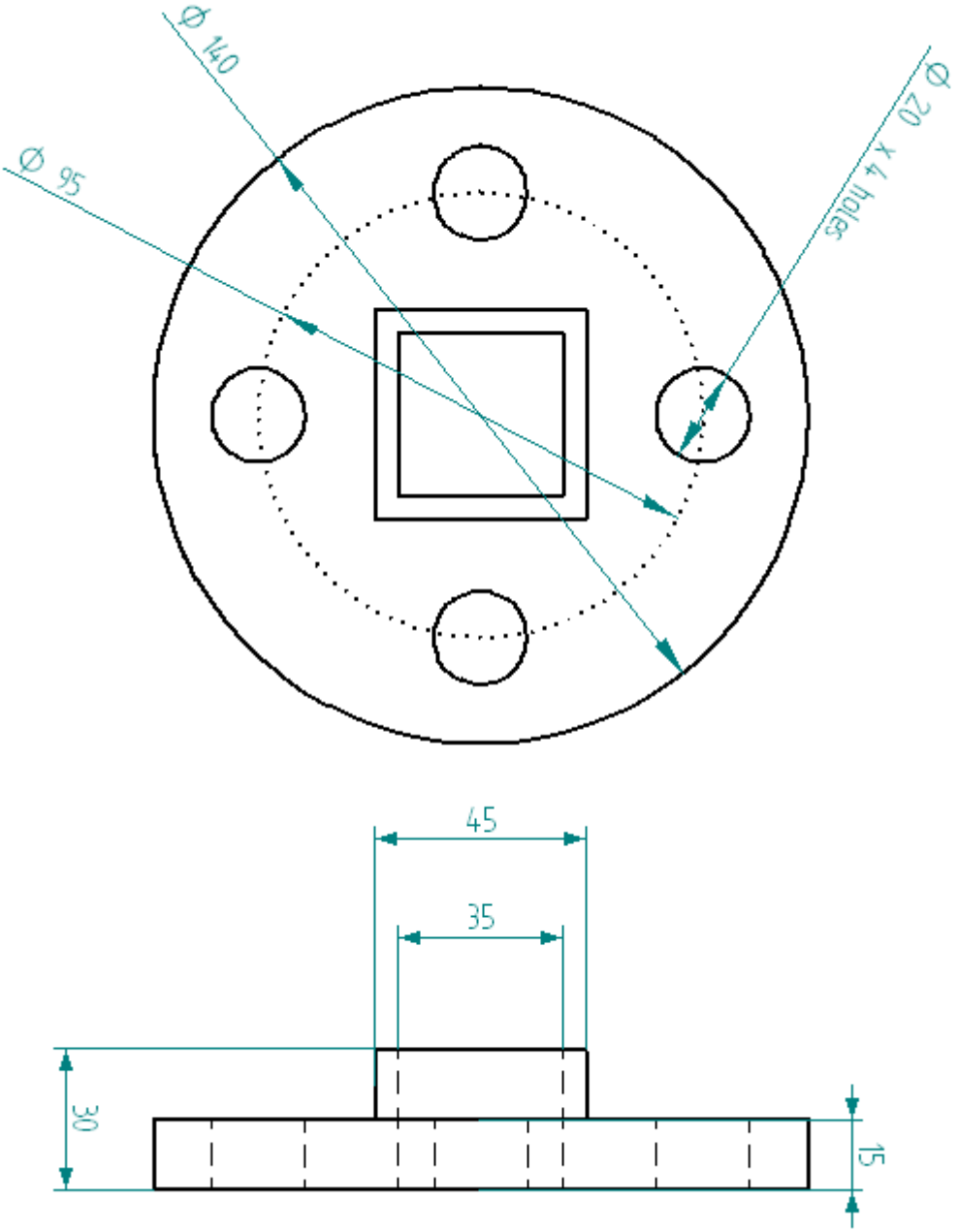



Ø 4
Ø 2.25
Ø 1.5
Ø 1.75
Ø 0.875
2.25
2.25

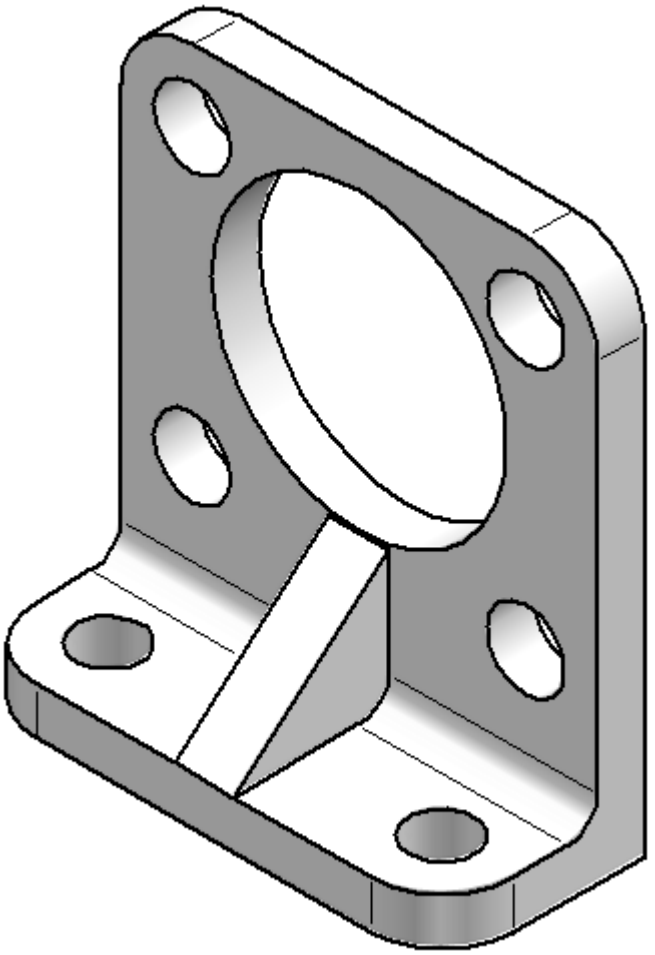

120°
2.25
0.5625

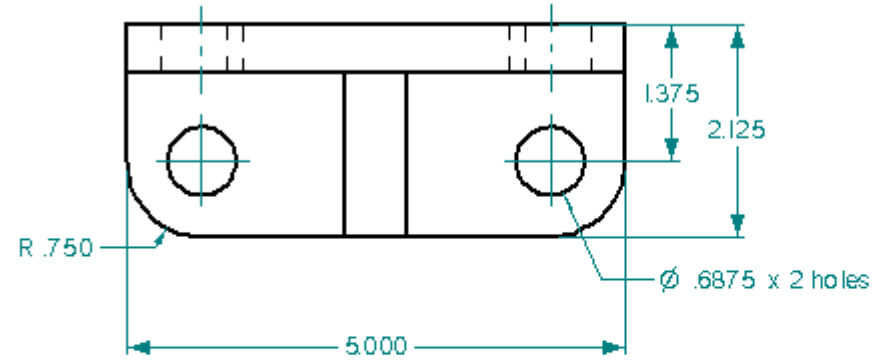
Guide plate

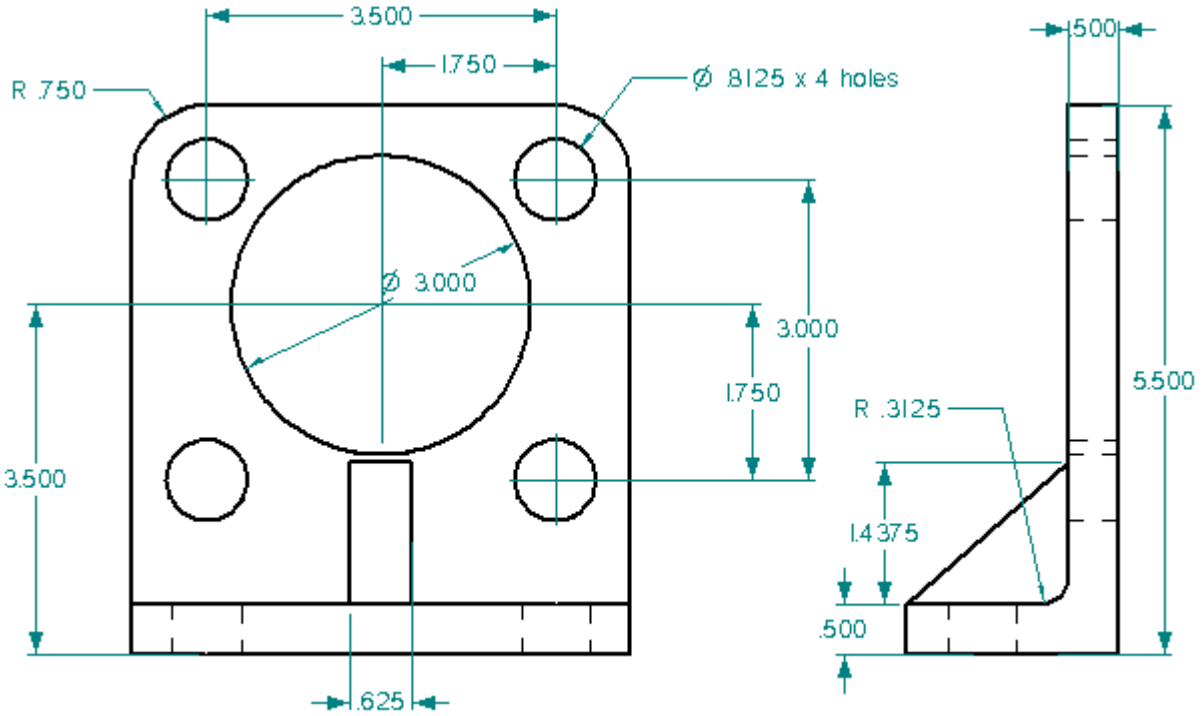



Ø 140
Ø 95
Ø 20 x 4 holes
45
35
30
15

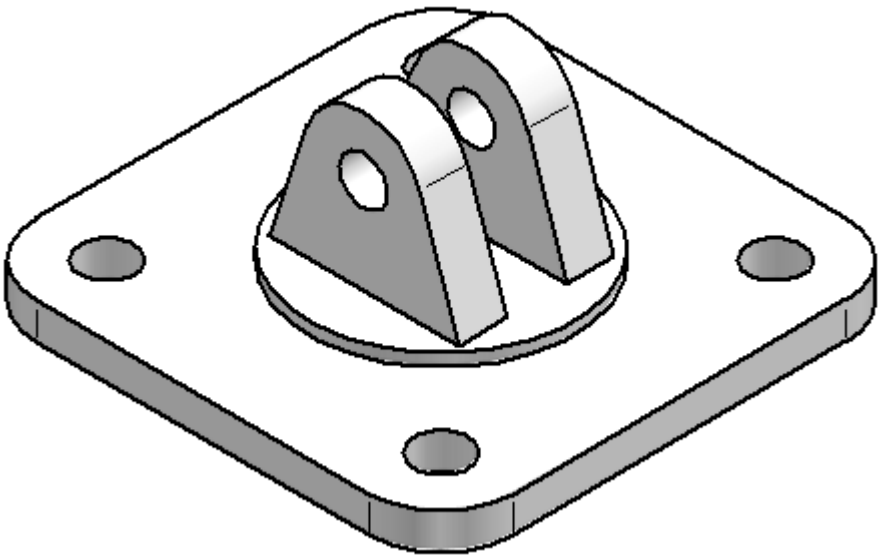
Head attachment

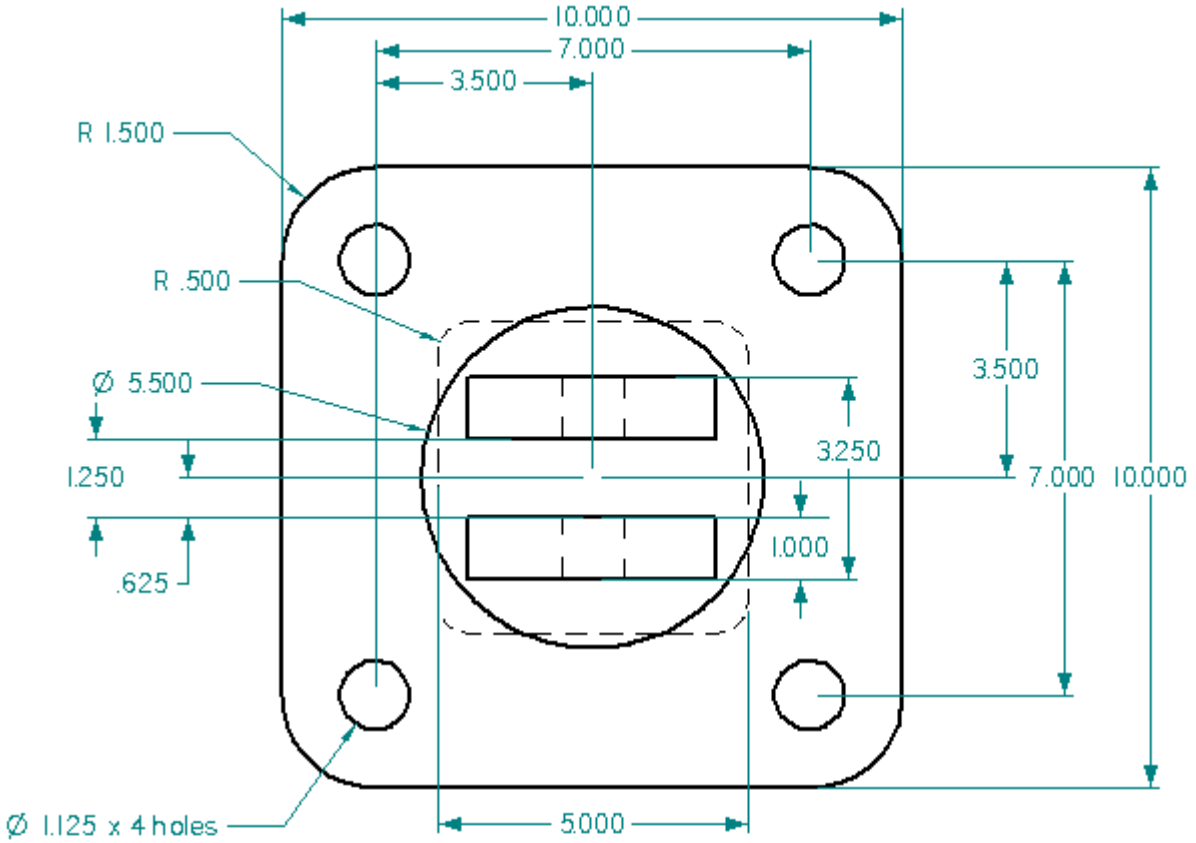


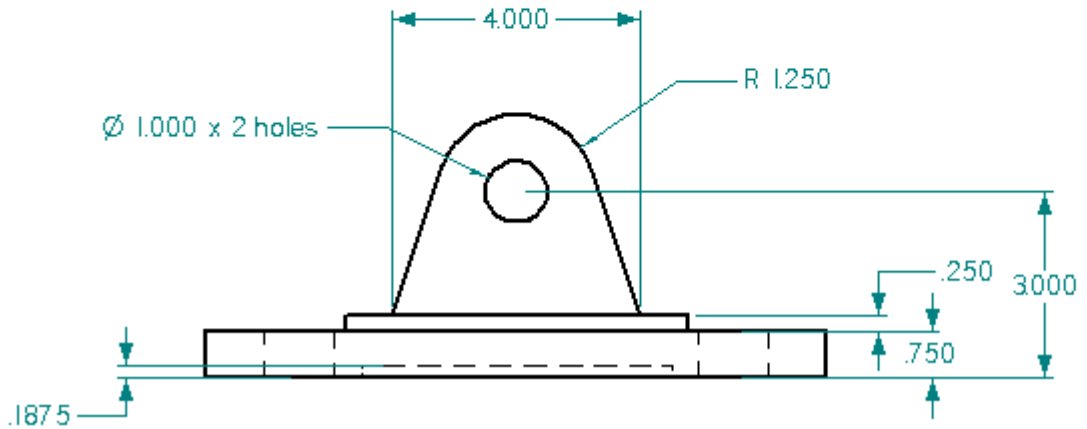

1.375
2.125
R .750
Ø .6875 x 2 holes
5.000


3.500
1.750
R .750
Ø .8125 x 4 holes
Ø 3.000
3.000
1.750
3.500
.625
.500
5.500
R .3125
1.4375
.500

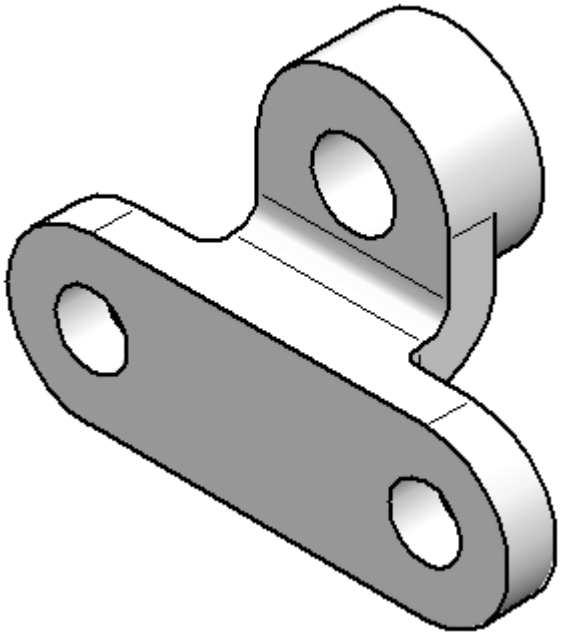
Head yoke

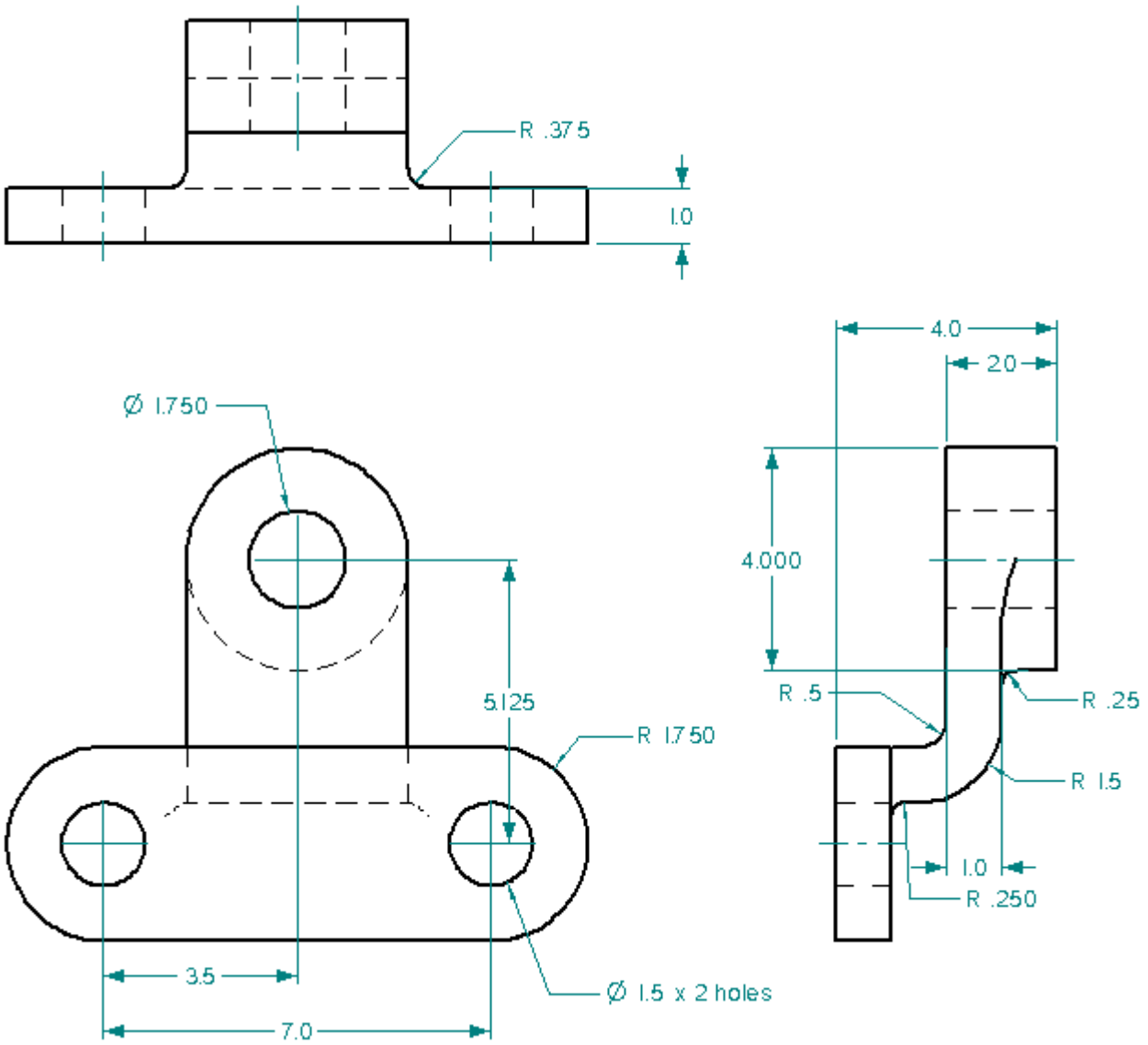



10.000
7.000
3.500
R 1.500
R .500
Ø 5.500
1.250
.625
3.250
1.000
3.500
7.000
10.000
Ø 1.125 x 4 holes
5.000

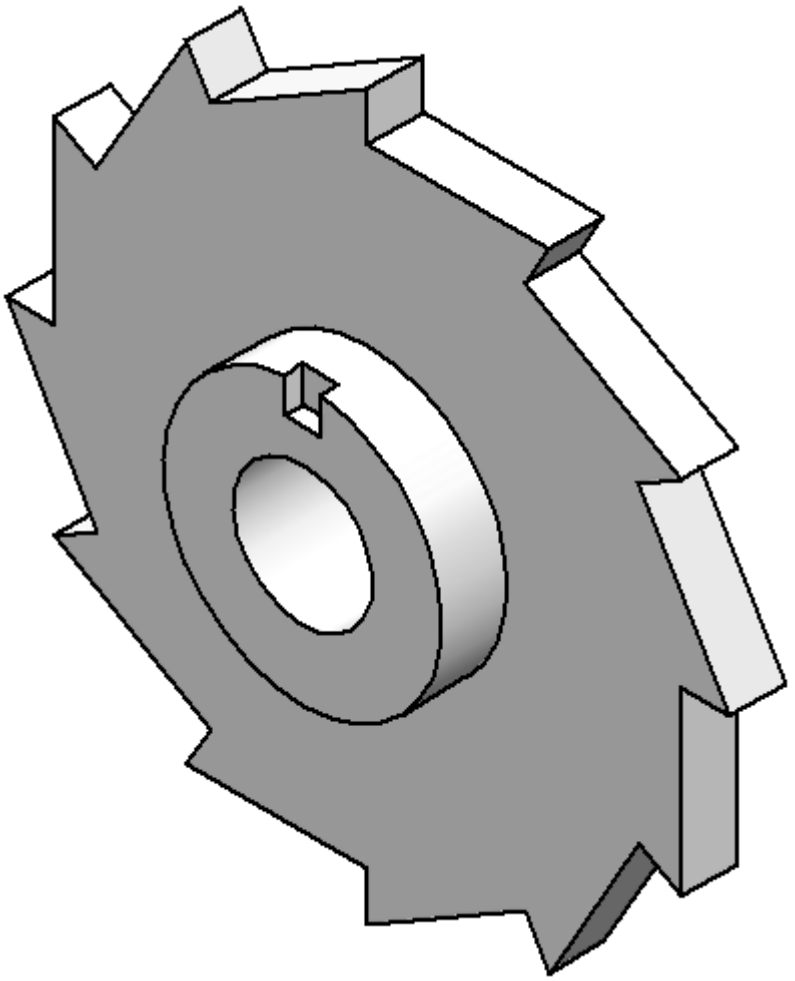

4.000
R 1.250
Ø 1.000 x 2 holes
.250
3.000
.750
.1875

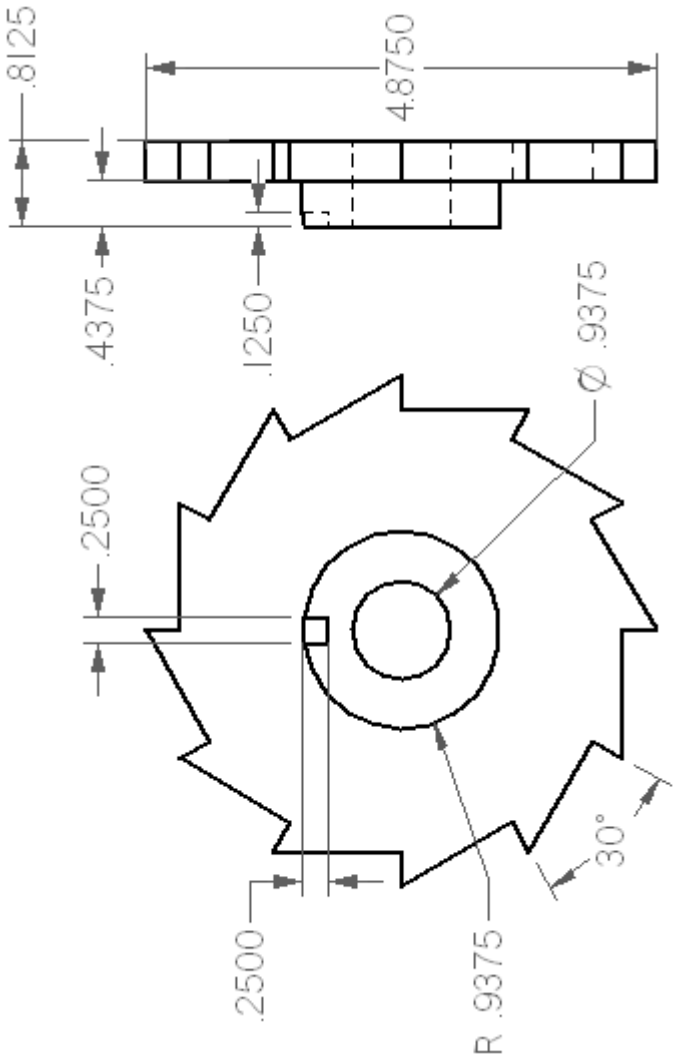
Rod support



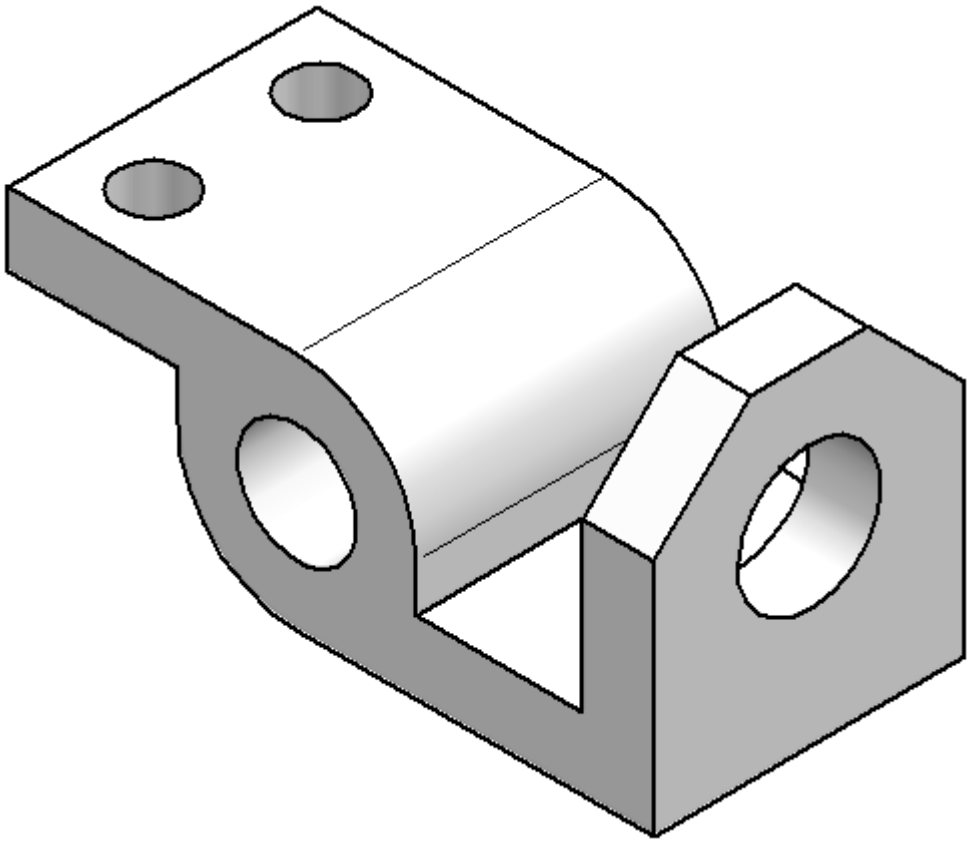

R .375
1.0
Ø 1.750
5.125
R 1.750
3.5
7.0
Ø 1.5 x 2 holes
4.0
2.0
4.000
R .5
R .25
R 1.5
1.0
R .250

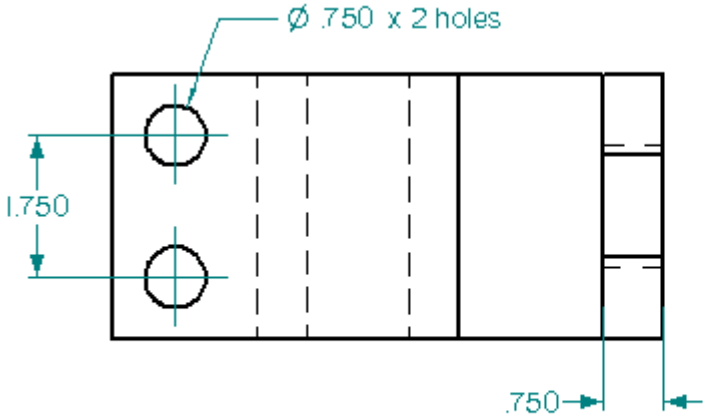
Saw blade

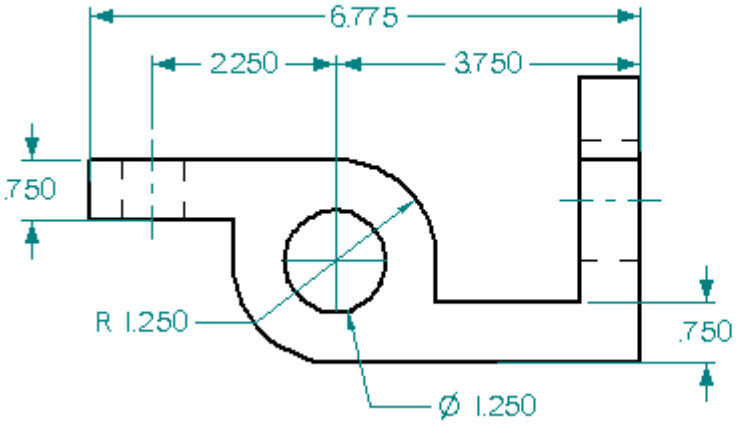


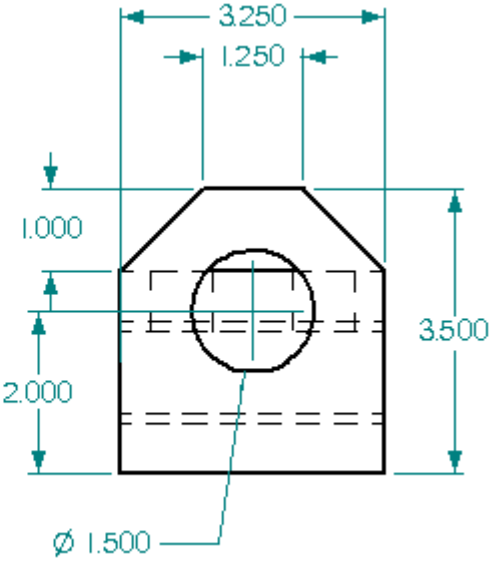

.8125
4.8750
.4375
.1250
Ø .9375
.2500
30°
.2500
R .9375

S-bracket

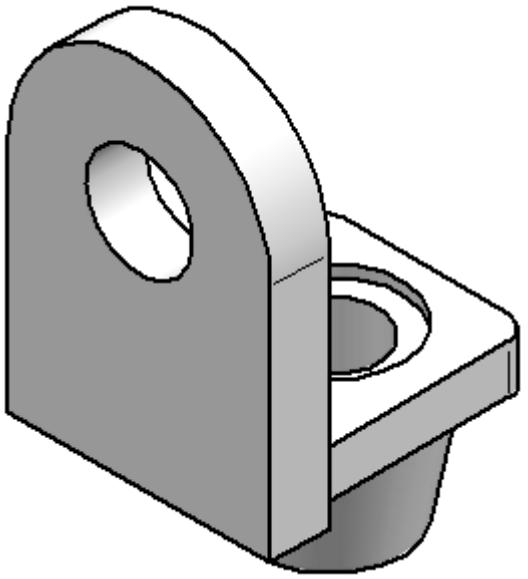


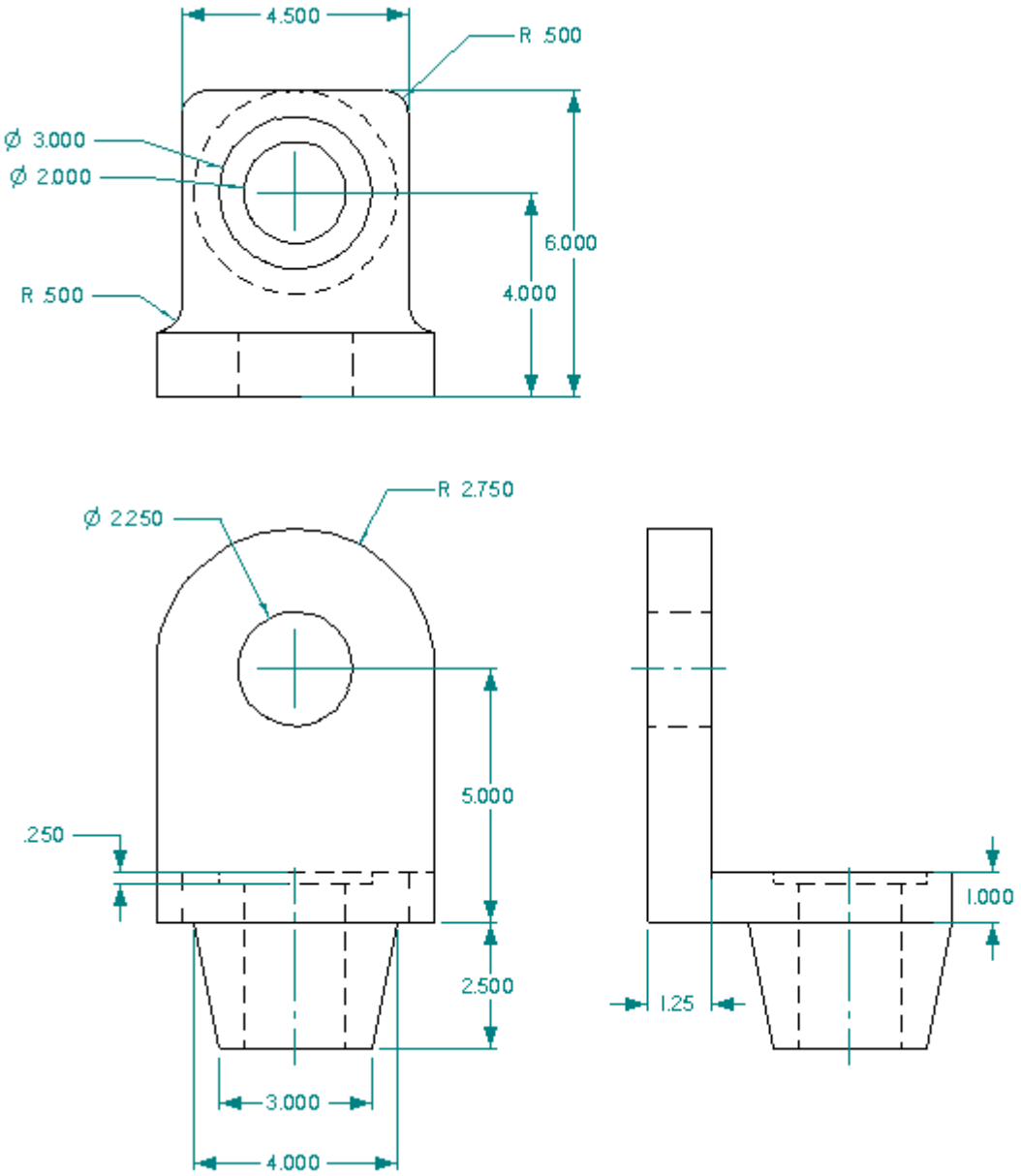

Ø .750 x 2 holes
1.750
.750


6.775
2.250
3.750
.750
R 1.250
.750
Ø 1.250

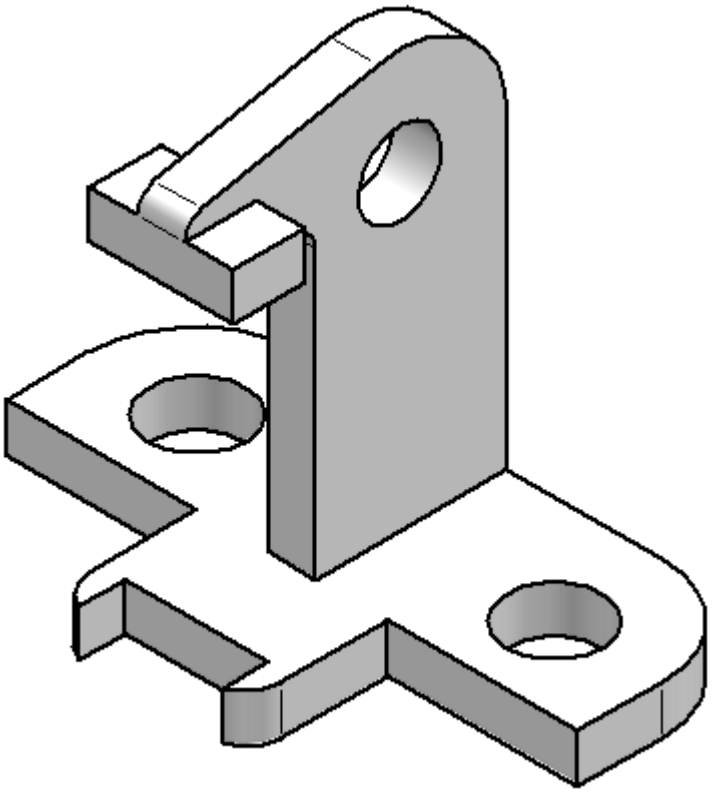

3.250
1.250
1.000
2.000
3.500
Ø 1.500

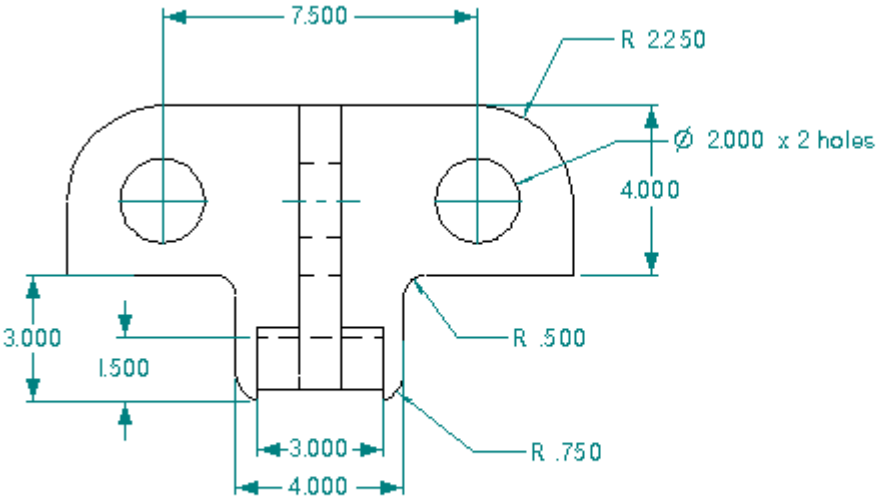
Side beam bracket

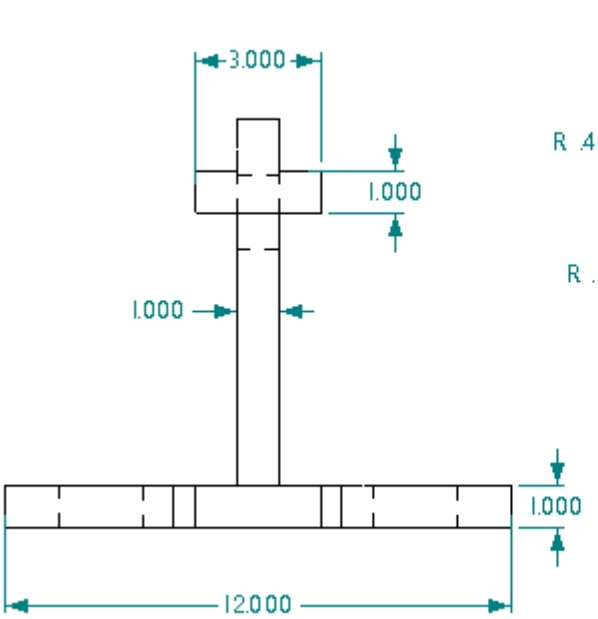


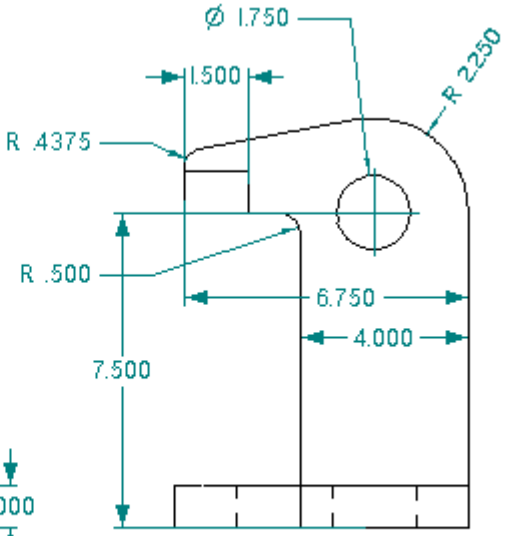

4.500
R .500
Ø 3.000
Ø 2.000
6.000
4.000
R .500
R 2.750
Ø 2.250
5.000
.250
2.500
3.000
4.000
1.000
1.25

Slide stop

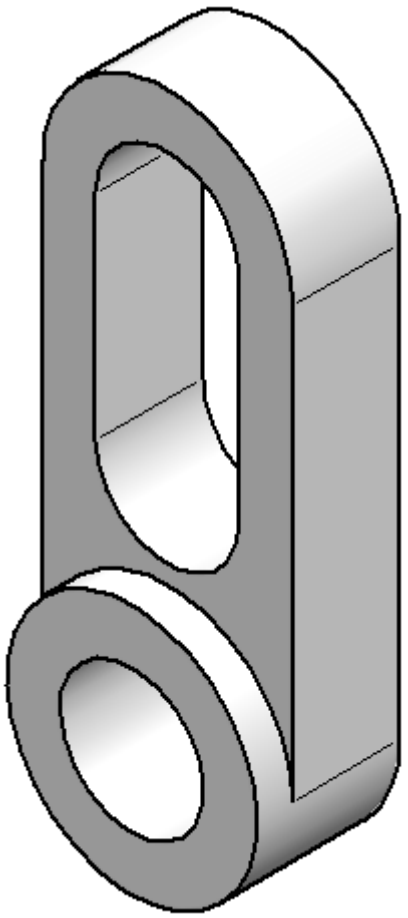


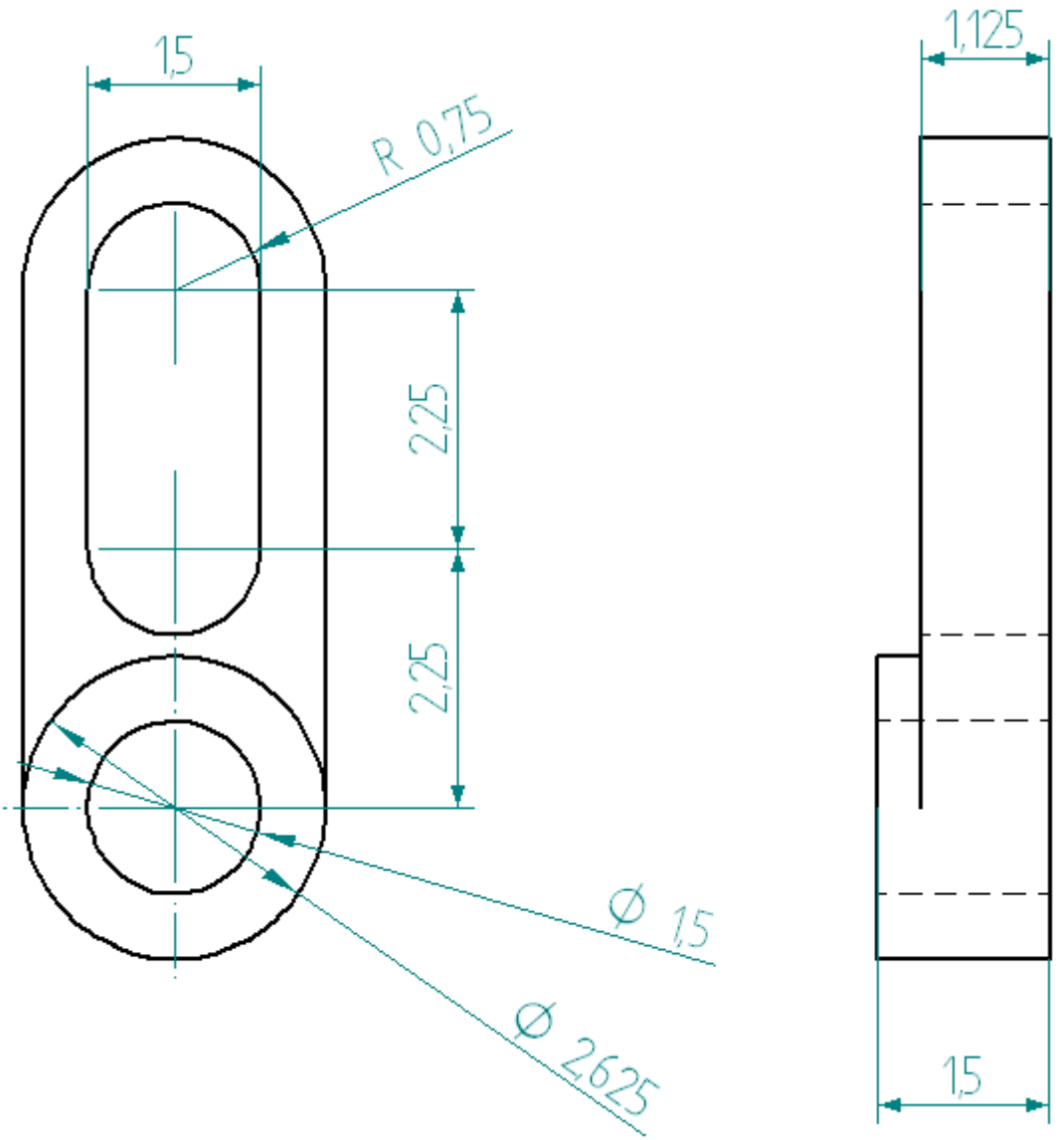

7.500
R 2.250
Ø 2.000 x 2 holes
4.000
3.000
1.500
R .500
3.000
4.000
R .750


3.000
1.000
1.000
1.000
12.000

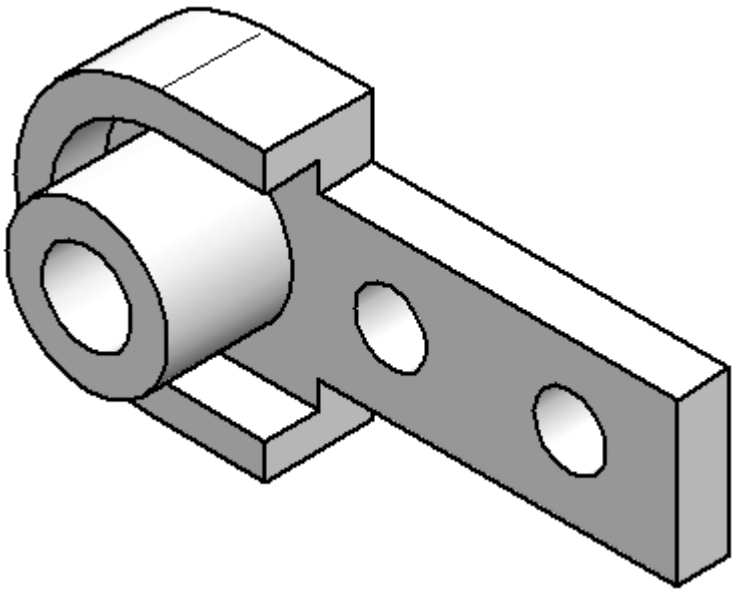

Ø 1.750
1.500
R 2.250
R .4375
R .500
6.750
4.000
7.500

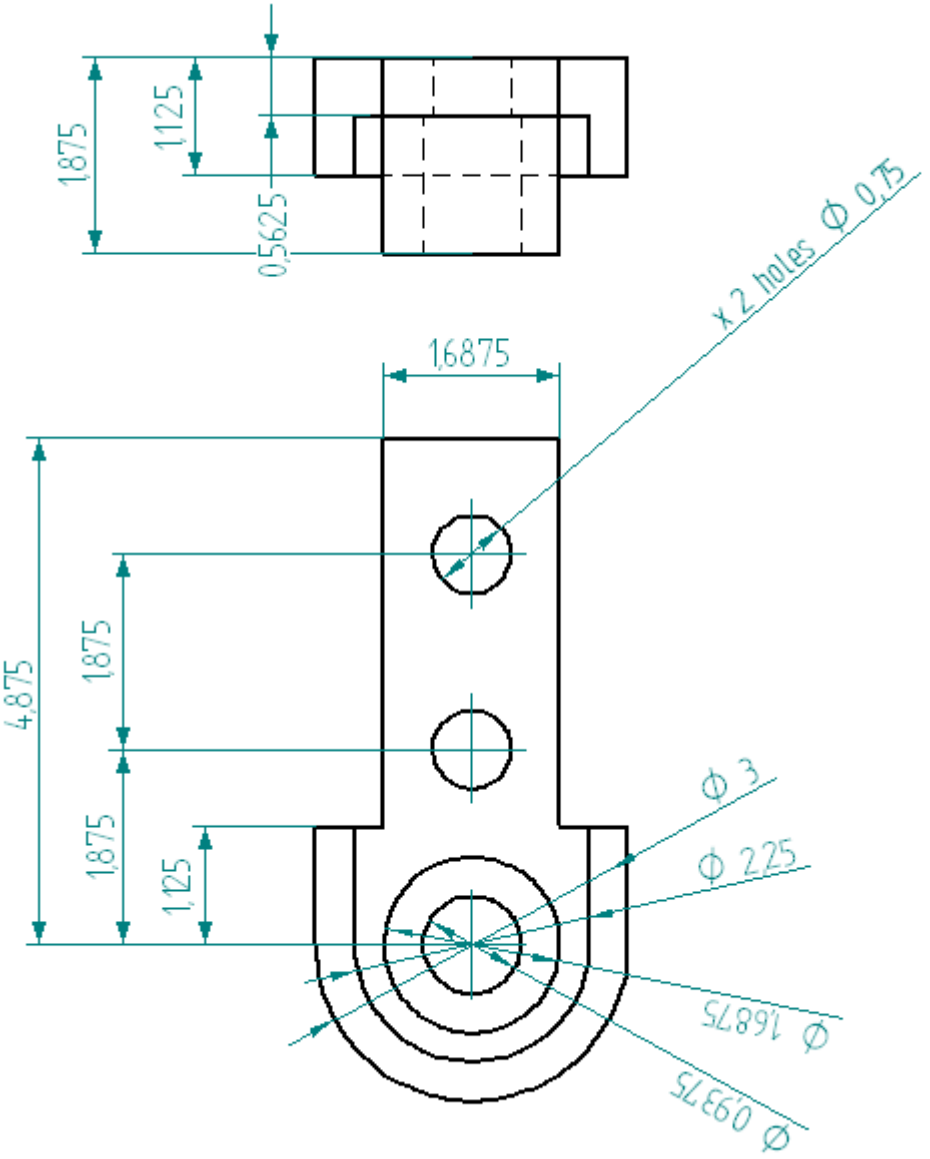
Slotted link



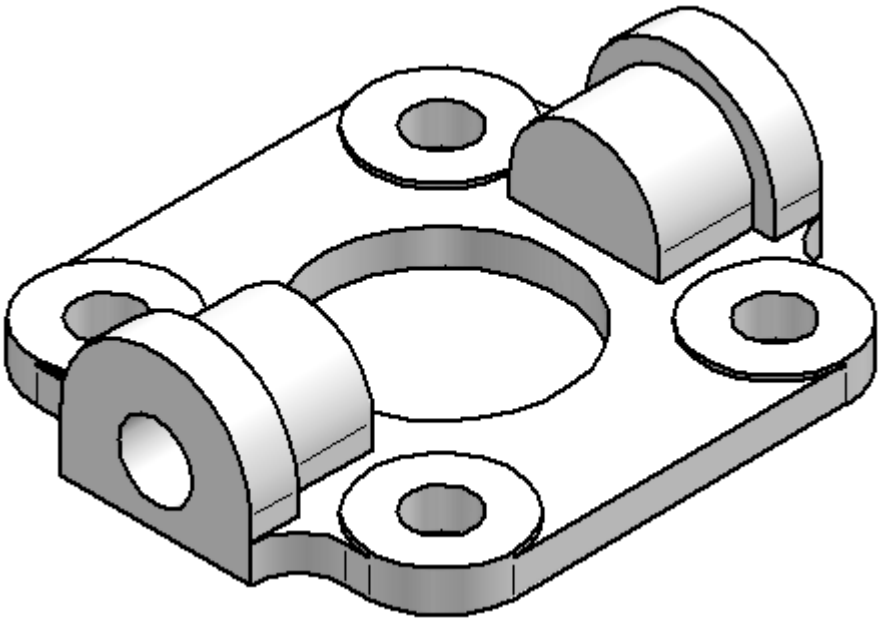

1,5
R 0,75
2,25
2,25
Ø 1,5
Ø 2625
1,125
1,5

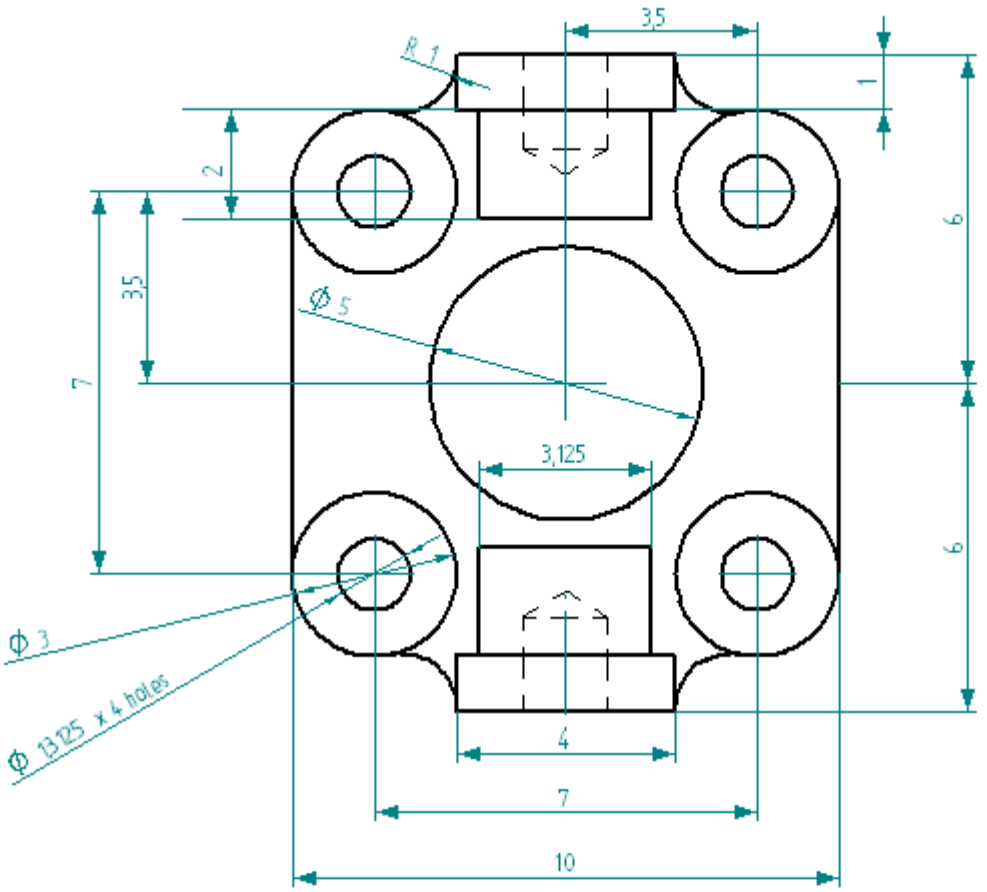
Swivel plate

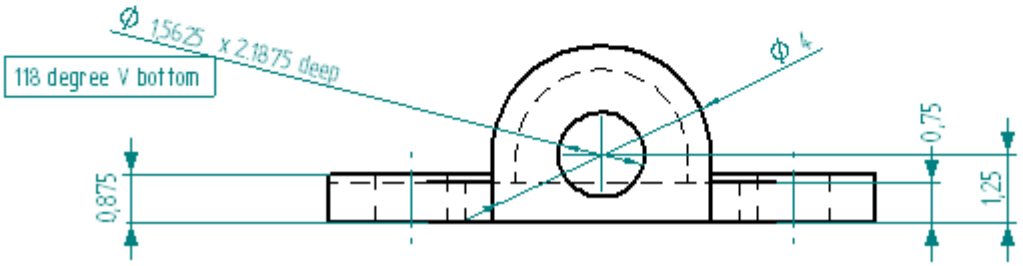



1,875
1,125
0,5625
x 2 holes Ø 0,75
1,6875
4,875
1,875
1,875
1,125
Ø 3
Ø 2,25
Ø 1,6875
Ø 0,9375

Trunnion plate



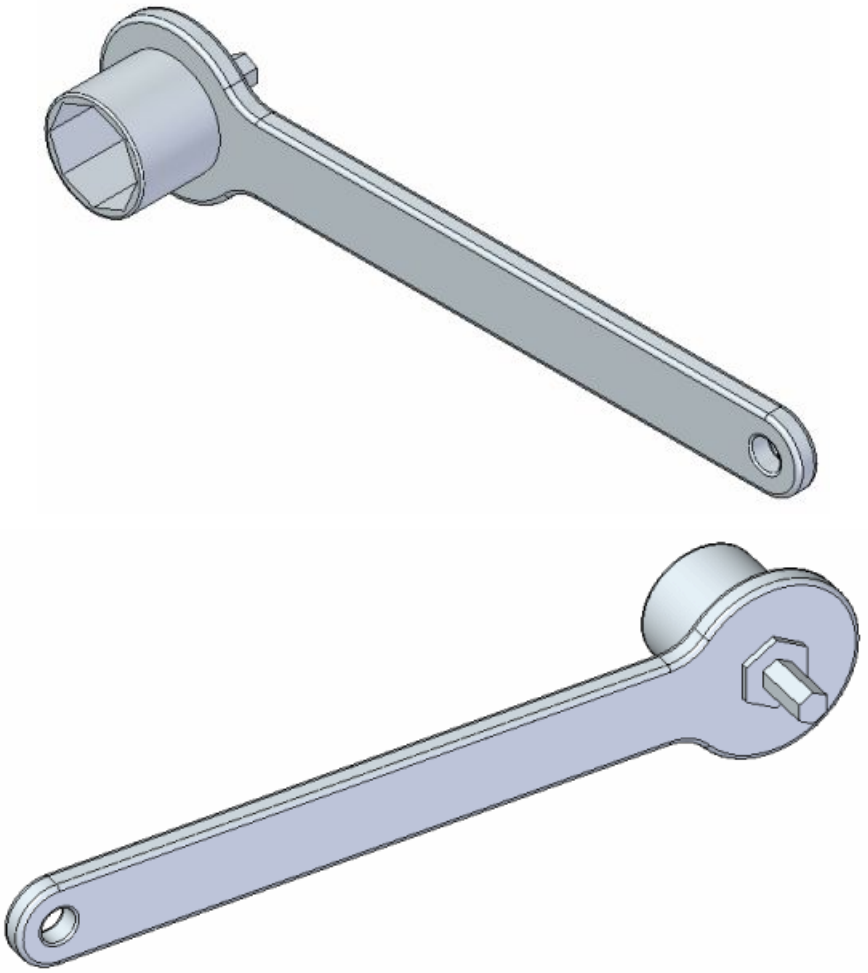

3,5
R 1
1
2
6
3,5
7
Ø 5
3,125
6
Ø 3
Ø 3125 x 4 holes
4
7
10


Ø 1,5625 x 2,1875 deep
118 degree V bottom
Ø 4
0,75
0,875
1,25

Lesson

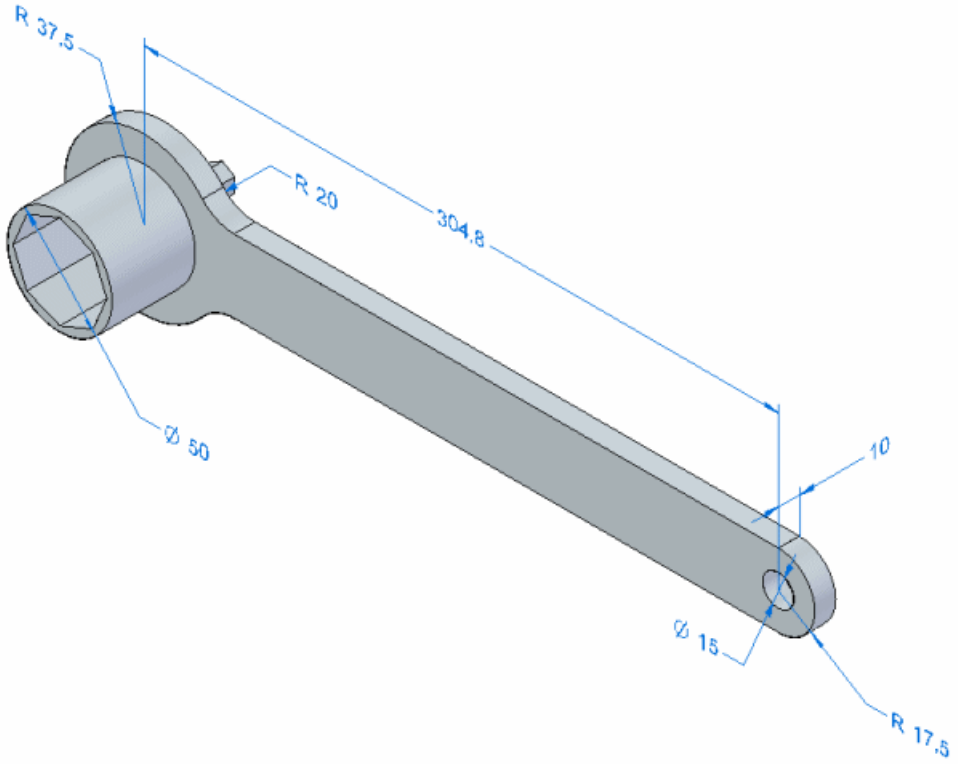
3 *Construct a bicycle hand tool*

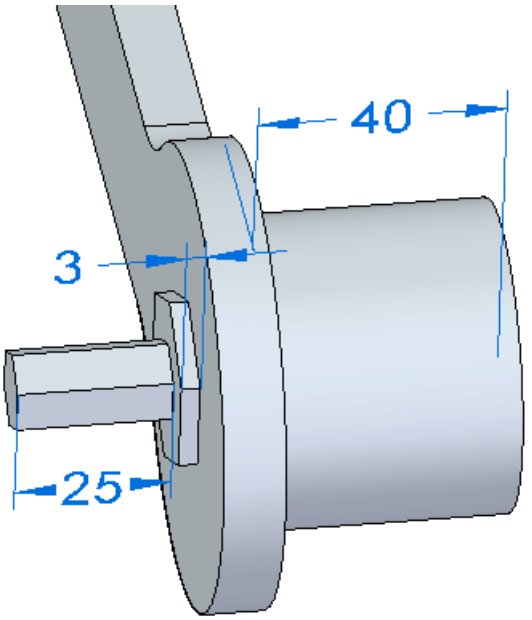
Model a wrench used specifically for removing the pedal cranks from a bicycle.

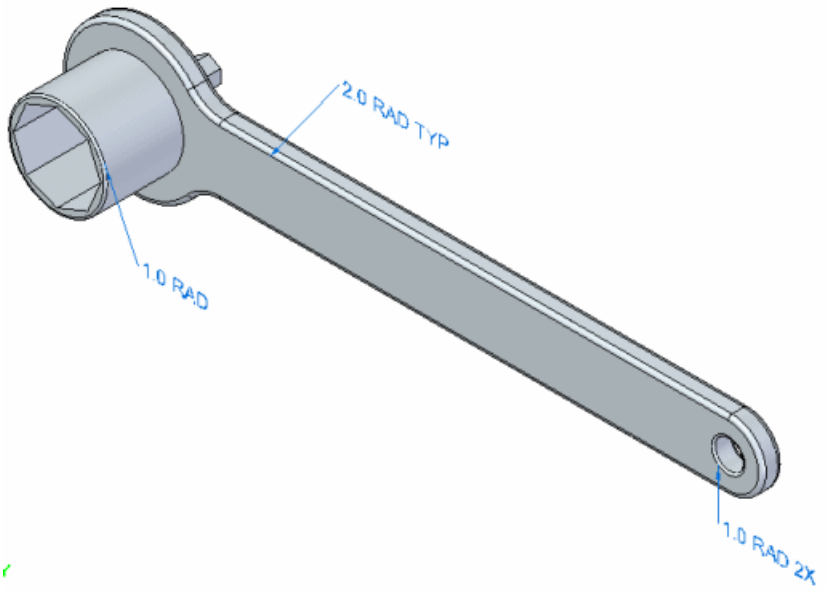


Major dimensions

- Use the following dimensions when constructing the overall shape of the tool.

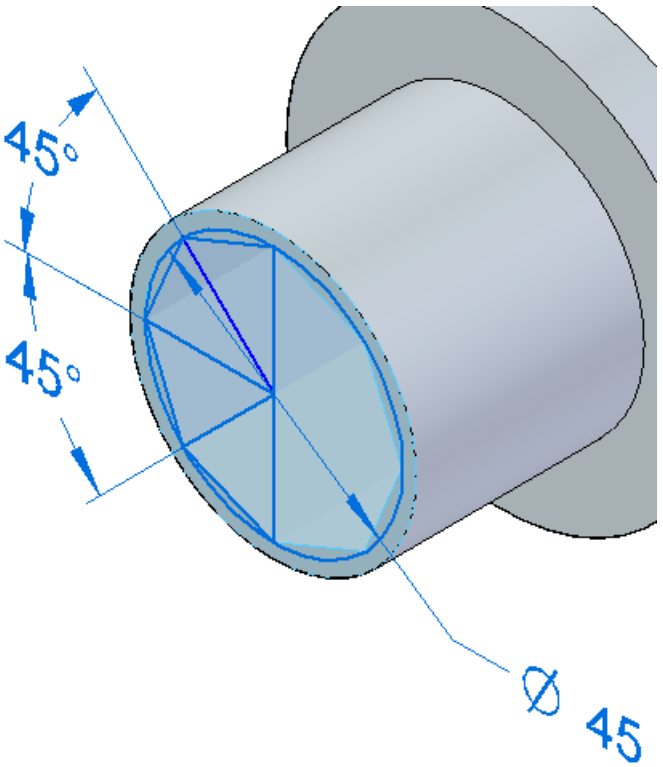


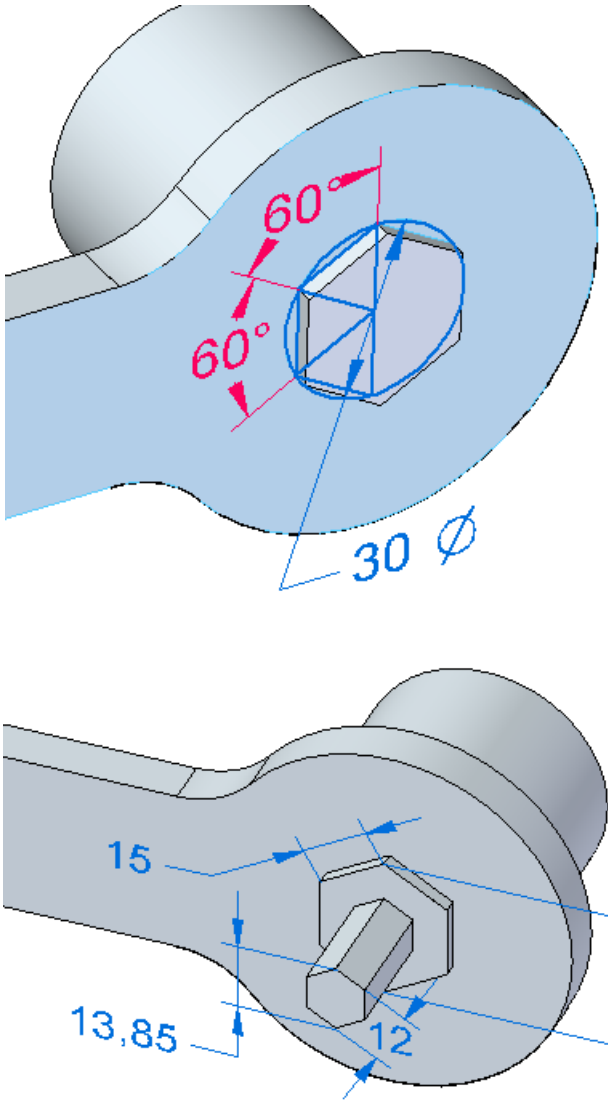




Socket and wrench dimensions

- Use the following dimensions when constructing the socket and Allen wrench.

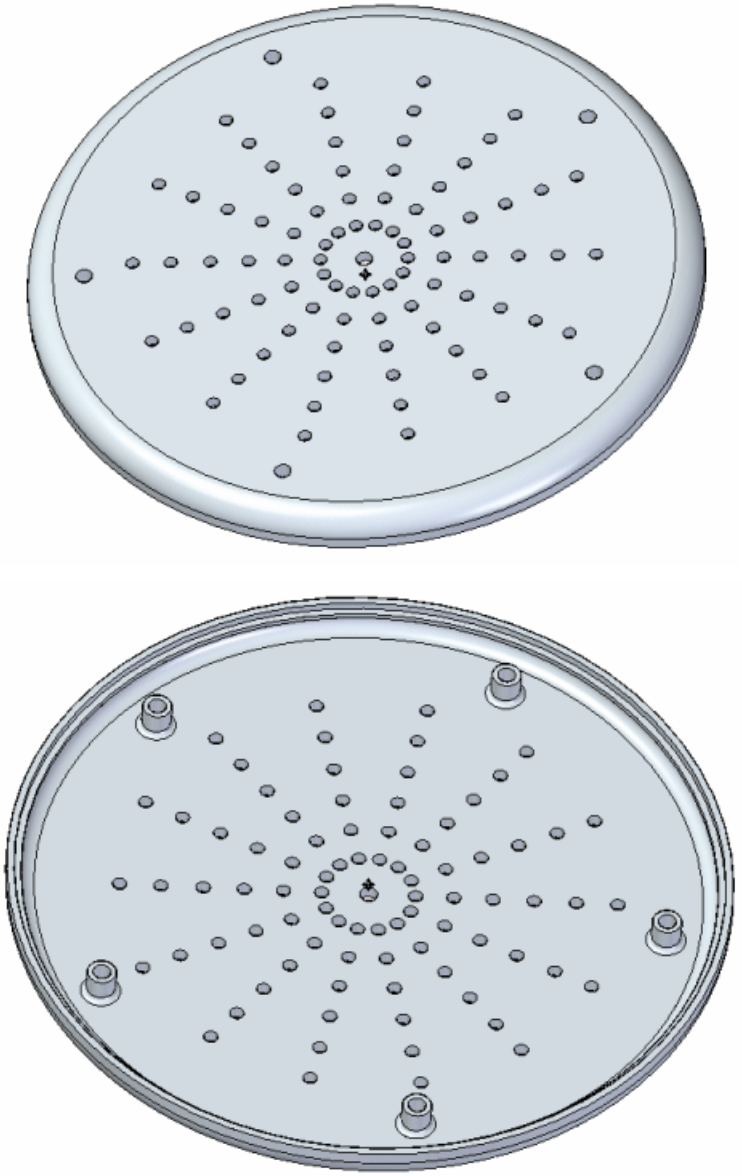



60°
60°
30 Ø
15
30
13,85
12

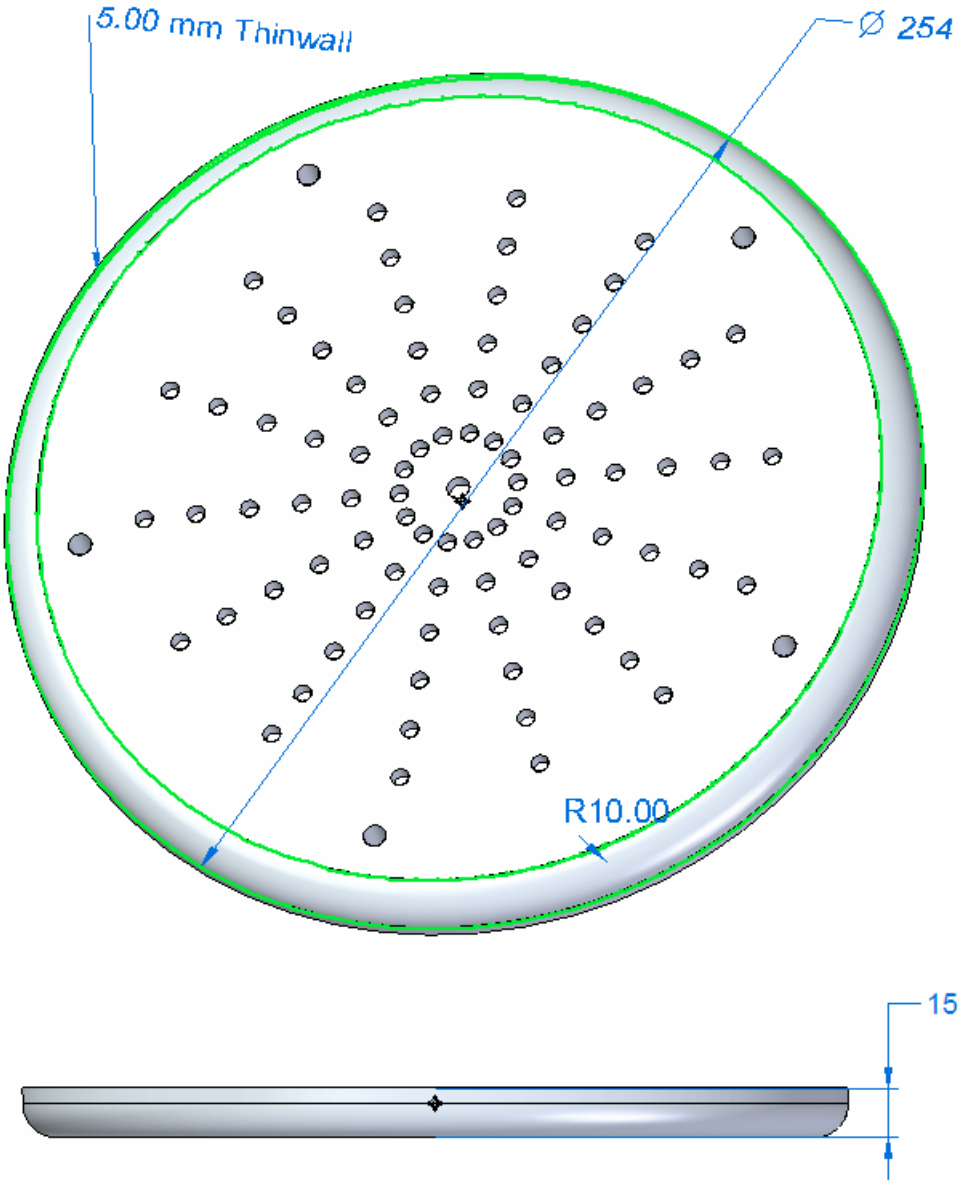
Lesson

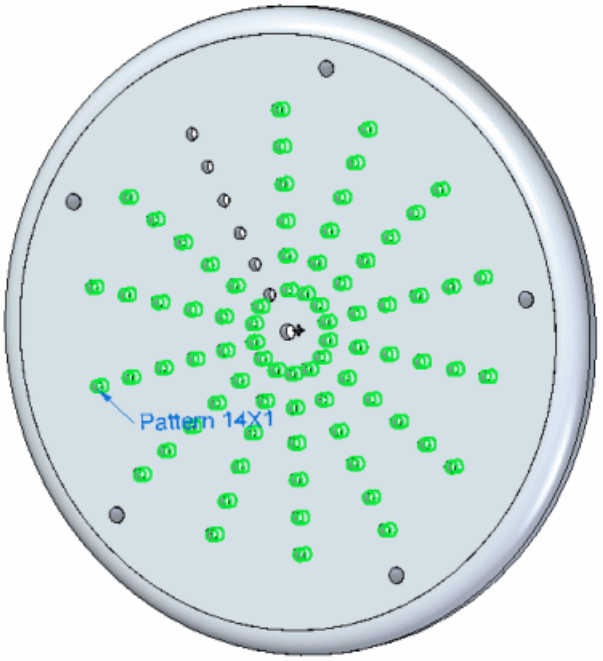
4 *Construct an intercom speaker cover*

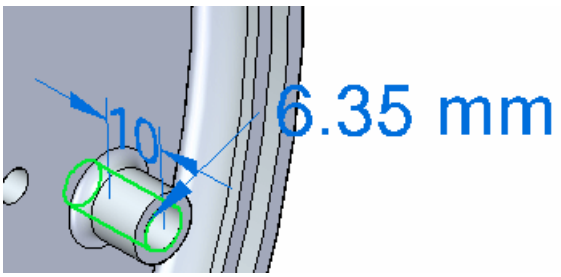
Create a cover plate for a ceiling-mounted intercom speaker.

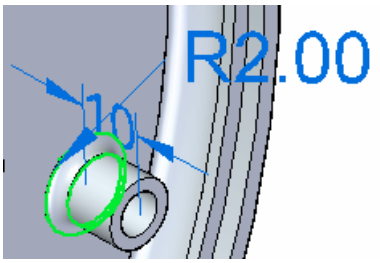


Major Dimensions




Pattern 14X1

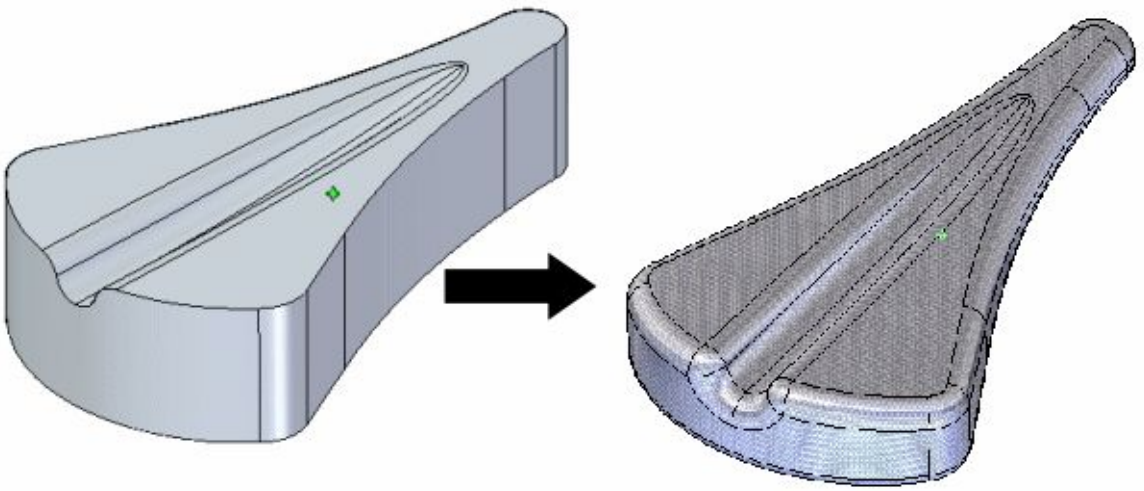

10
6.35 mm


10
R2.00

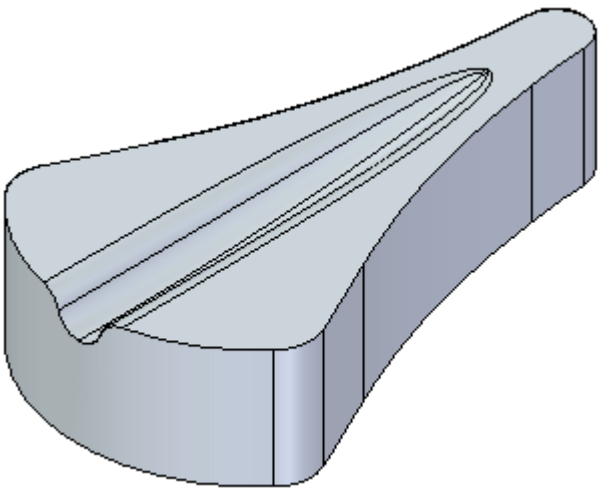
Lesson

5 *Construct a bicycle saddle shell*

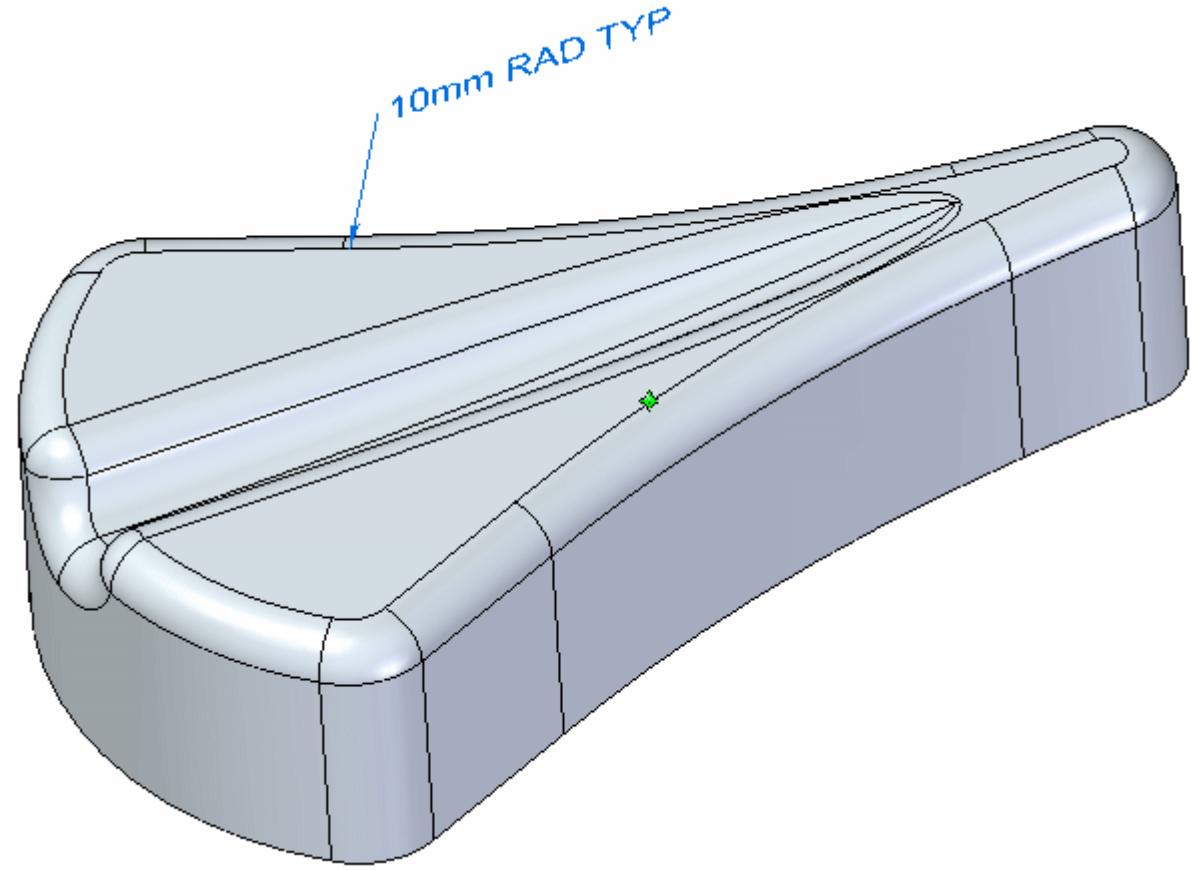
Transform a basic model into an anatomically correct shell for a bicycle saddle.

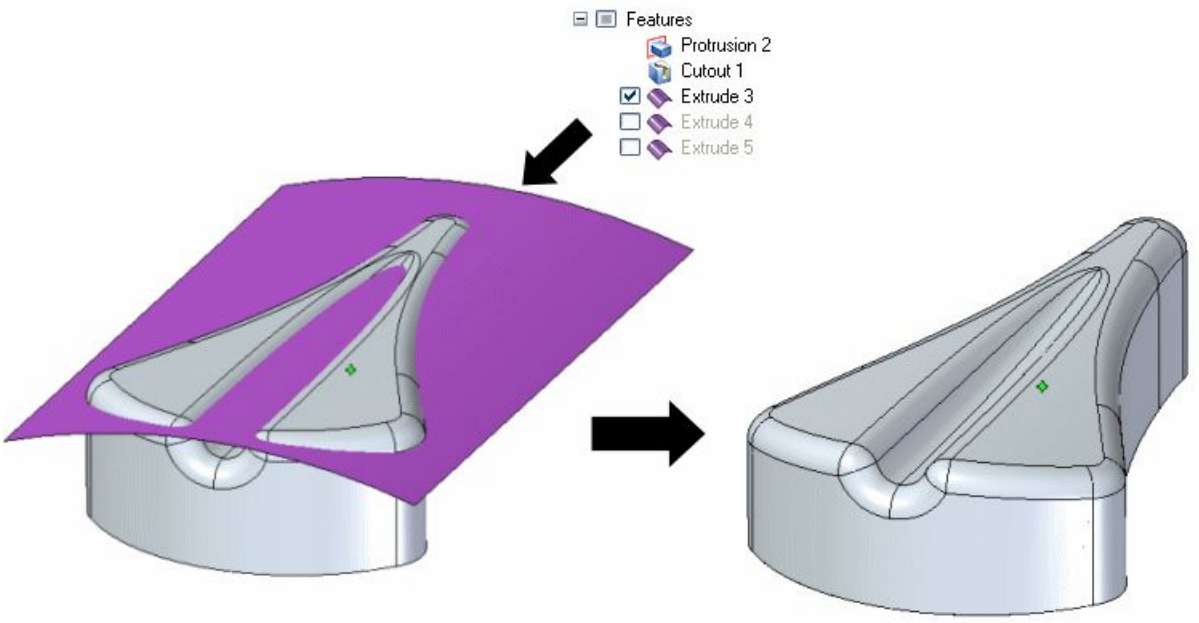


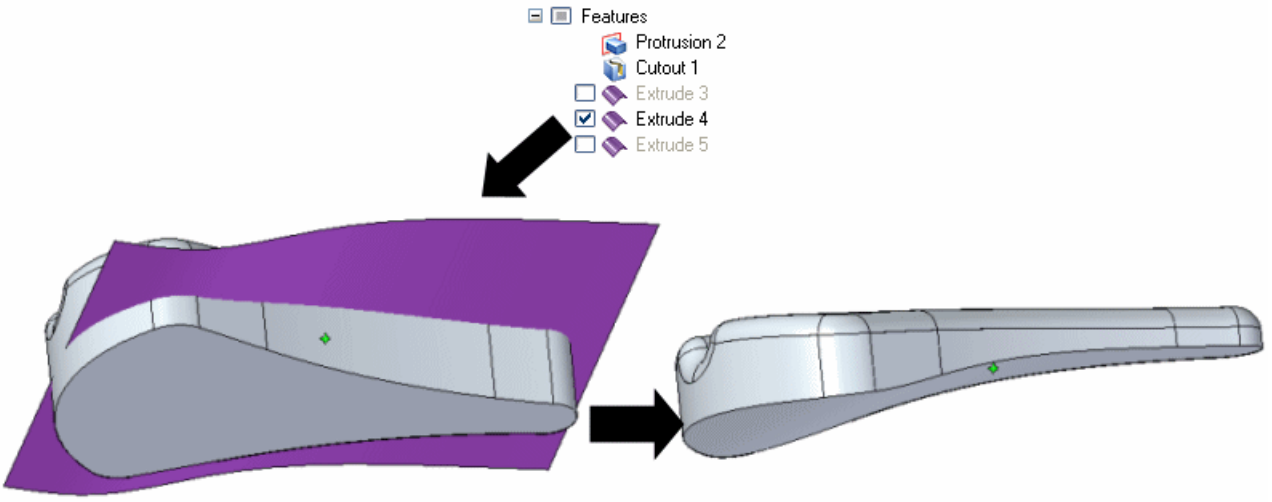
- Open *saddle_ex.par* from the zip file *spse01550.zip* you previously downloaded.

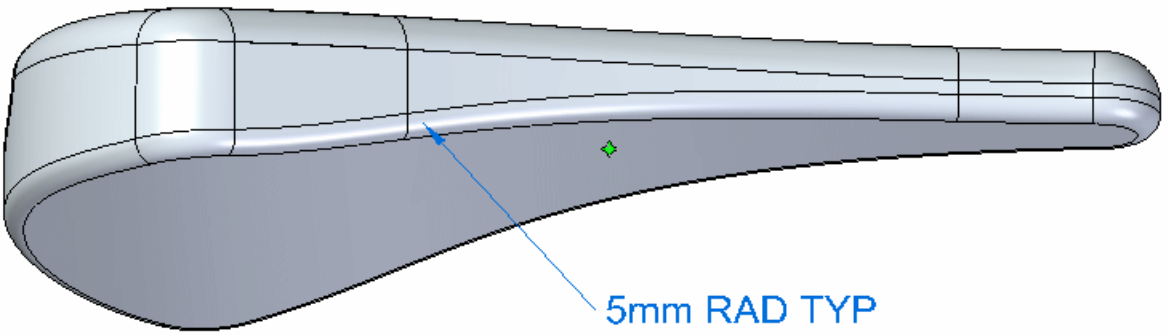


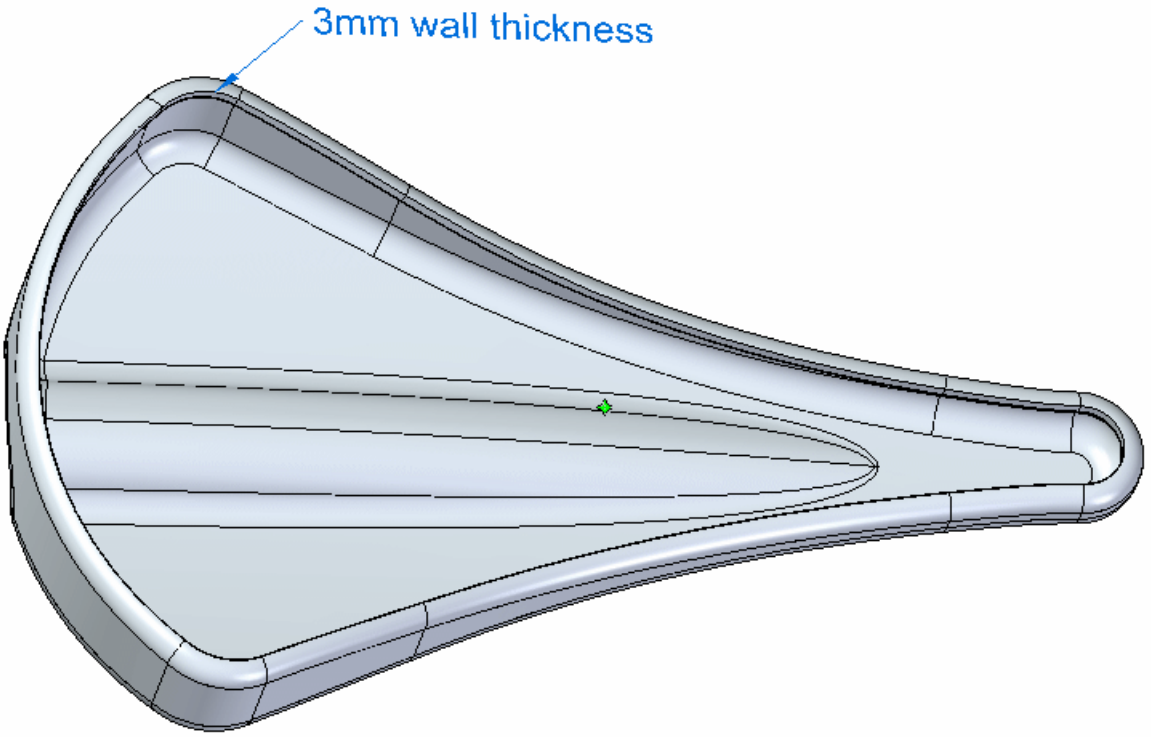
- Some hints:


10mm RAD TYP

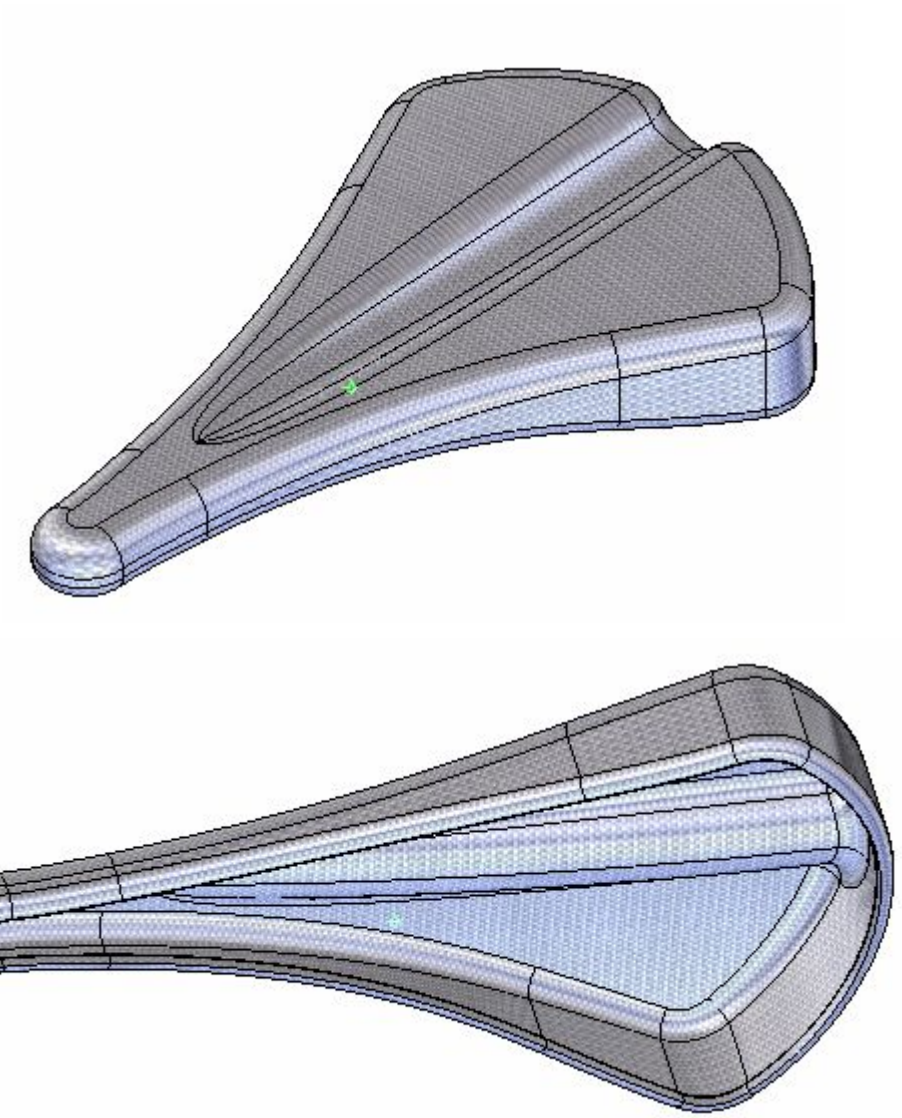

Features
Protrusion 2
Cutout 1
Extrude 3
Extrude 4
Extrude 5


Features
Protrusion 2
Cutout 1
Extrude 3
Extrude 4
Extrude 5


5mm RAD TYP


3mm wall thickness

- Finished saddle:

  Note

  Applying a texture is optional. See the Help topic on “Style Command” to learn more.