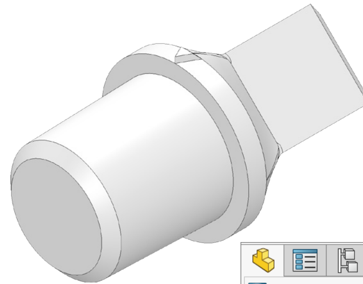
HAWT
Pin



A. Extrude1.

Step 1. Click File Menu > New, click **Part Metric** and OK.

Step 2. Click **Front Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 1**.

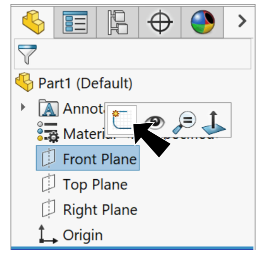


Fig. 1

Step 3. Click **Polygon** on the Sketch toolbar.

Step 4. In Polygon Property Manager set

Number of Sides 4, **Fig. 2**.

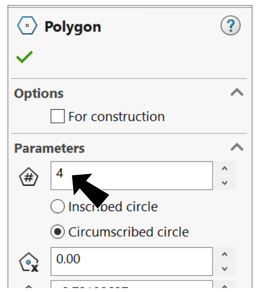


Fig. 2

Step 5. Sketch **polygon** at Origin , **Fig. 3**.

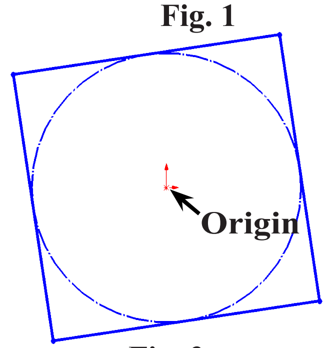


Fig. 3

Step 6. **Unselect Polygon tool**. To unselect, **right click graphics area and click Select** from menu.

Step 7. Click **two opposite vertices of polygon** and click **Make Vertical** on the context toolbar, **Fig. 4**.

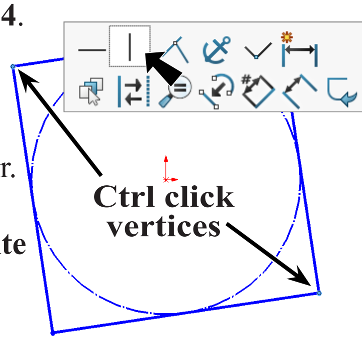


Fig. 4

Step 8. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 9. Dimension **10 across two opposite vertices, Fig. 5**.

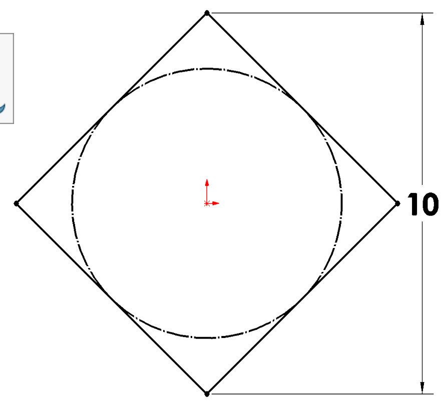


Fig. 5

Step 10. Click **Offset Entities** on the Sketch toolbar.

Step 11. In the Offset Entities Property Manager set:

under Parameters, **Fig. 6**

Distance **.13 (clearance of pin hole in Rotor)**

check **Reverse**

check **Select chain**

under Construction geometry

check **Base geometry**

click **a segment, Fig. 7**

Yellow offset segments on inside - base geometry (construction) on outside

click OK .

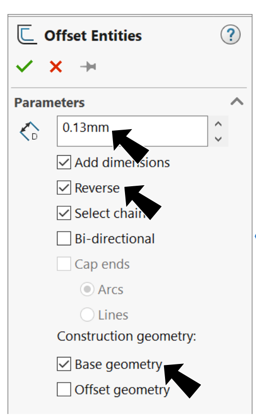


Fig. 6

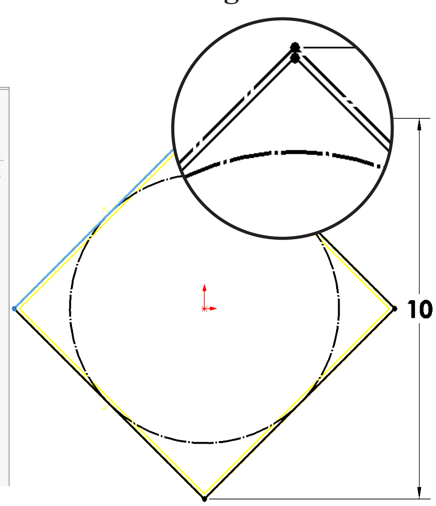


Fig. 7

Step 12. Click **Features** Features on the Command Manager toolbar.

Step 13. Click **Extruded Boss/Base** Extruded Boss/Base on the Features toolbar.

Step 14. In the Boss-Extrude Property Manager set:

under Direction 1, **Fig. 8**

End Condition **Blind**

Depth 8

Reverse Direction

click OK .

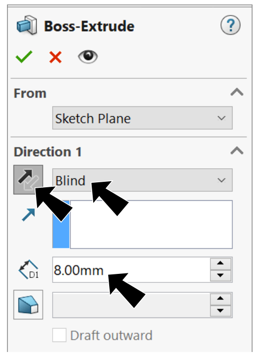


Fig. 8

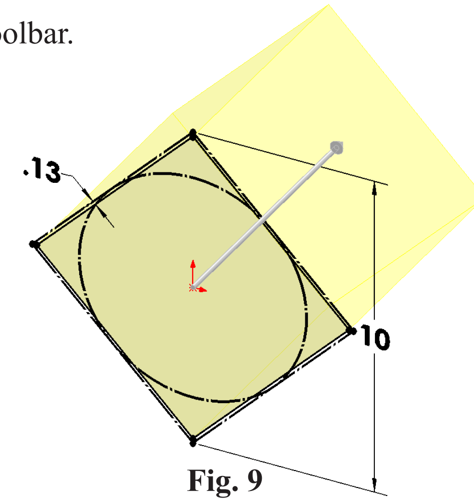


Fig. 9

B. Save as "PIN".

Step 1. Click File Menu > Save As.

Step 2. Key-in **PIN** for the filename and press ENTER.

C. Create Plane1.

Step 1. Click **Isometric** on the Standard Views toolbar. **(Ctrl-7)**

Step 2. Click **Front Plane** in the Feature Manager to display Plane is graphics area, **Fig. 10**.

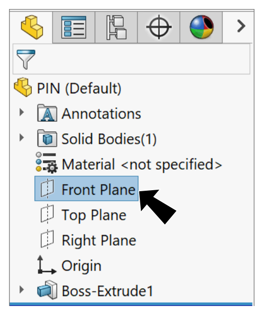


Fig. 10

Step 3. In graphics area **Ctrl drag Front plane to front (left)** and release, **Fig. 11**.

Step 4. In the Plane Property Manager set:

under First Reference, **Fig. 12**

Distance **2.7**

and press **ENTER**.

The new plane should be **towards front**, **Fig. 11**.

click OK .

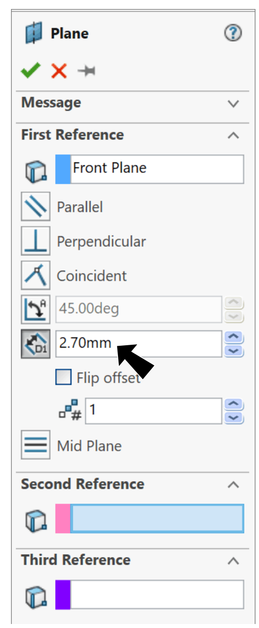


Fig. 12

Step 5. Save **(Ctrl-S)**.

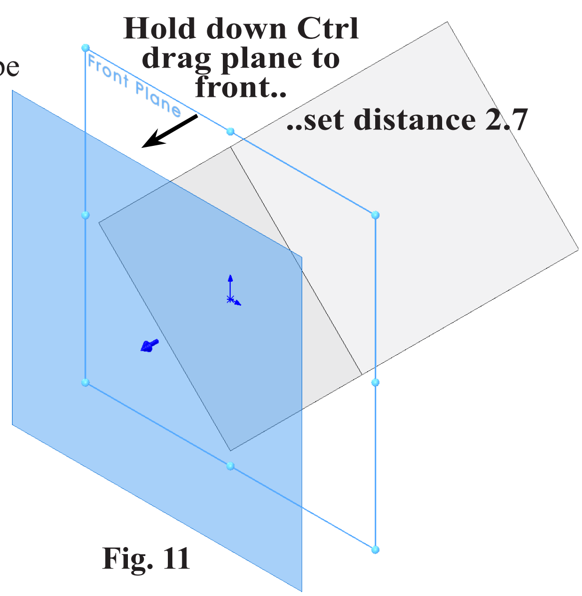


Fig. 11

D. Sketch2 Boundary Boss/Base.

Step 1. **Hide Plane1**. To hide, click **Plane1** in the Feature Manager and **Hide** on the context toolbar, **Fig. 13**.

Step 2. Click **Plane1** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 14**.

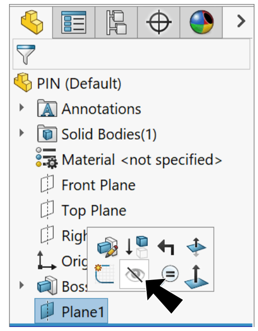


Fig. 13

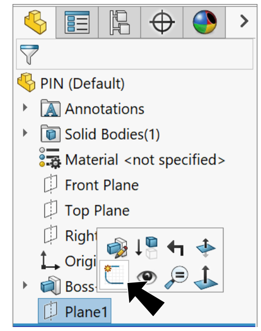


Fig. 14

Step 3. Click **Circle** (**S**) on the Sketch toolbar.

Step 4. Sketch circle at Origin, **Fig. 15**.

Step 5. Click **Smart Dimension** (**S**) on the Sketch toolbar.

Step 6. Dimension **diameter 12.4**, **Fig. 15**.

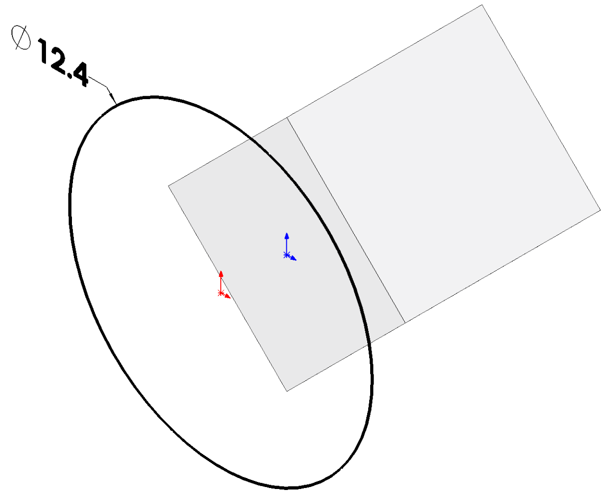


Fig. 15

Step 7. Click **Centerline** in the **Line flyout** on the Sketch toolbar.

Step 8. Sketch **vertical centerline from Origin to circle**, **Fig. 16**.

Step 9. Click **Exit Sketch** on the Sketch toolbar.

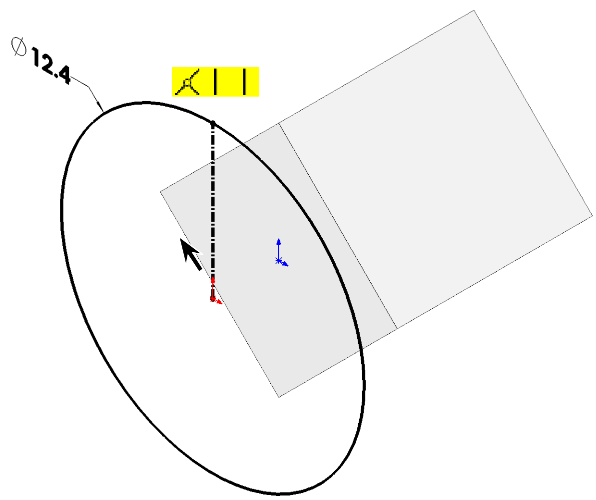


Fig. 16

E. Boundary Boss/Base.

Step 1. Click **Features** Features on the Command Manager toolbar.

Step 2. Click **Boundary Boss/Base** Boundary Boss/Base on the Features toolbar.

Step 3. In the Boundary Property Manager set:
under Direction 1, **Fig. 17**
click **front face of extrude towards the top**, **Fig. 18**
click **top endpoint of centerline**
connectors should be aligned
click OK .

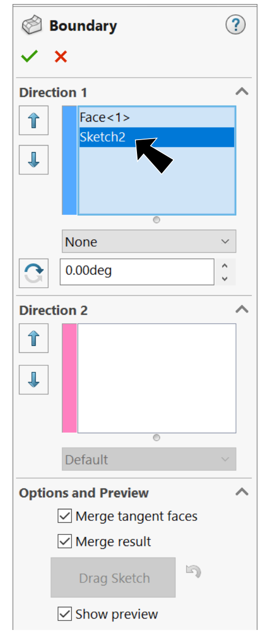


Fig. 17

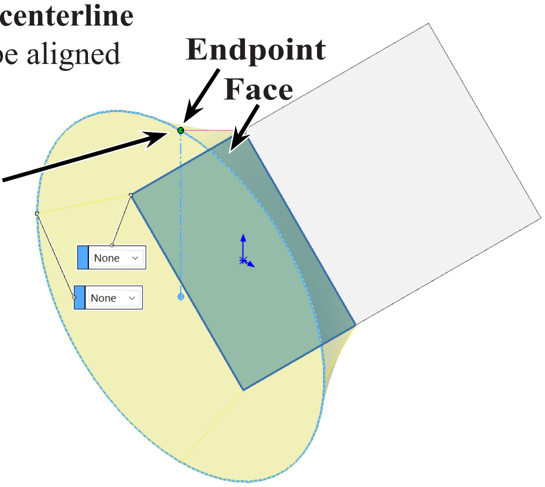


Fig. 18

F. Extrude2.

Step 1. Expand **Boundary1** in the Feature Manager and click **Sketch2** to select sketch, **Fig. 19**.

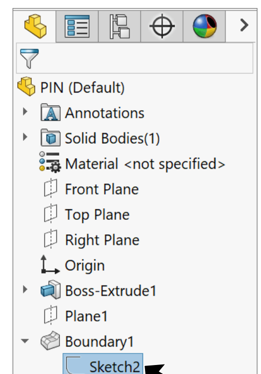


Fig. 19

Step 2. Click **Extruded Boss/Base** Extruded Boss/Base on the Features toolbar.

Step 3. In the Boss-Extrude Property Manager set:
under Direction 1, **Fig. 20**
End Condition **Blind**
Depth D1 **1.5**
click OK .

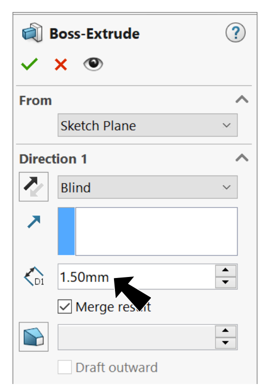


Fig. 20

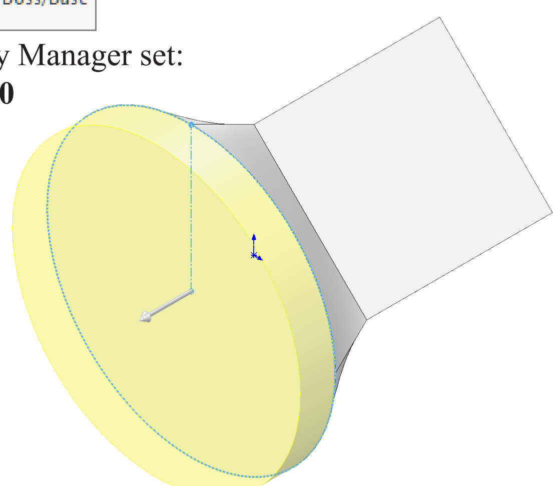


Fig. 21

G. Extrude3.

Step 1. Click the **front face** and click **Sketch** on the context toolbar, **Fig. 22**.

Step 2. Click **Circle** (**S**) on the Sketch toolbar.

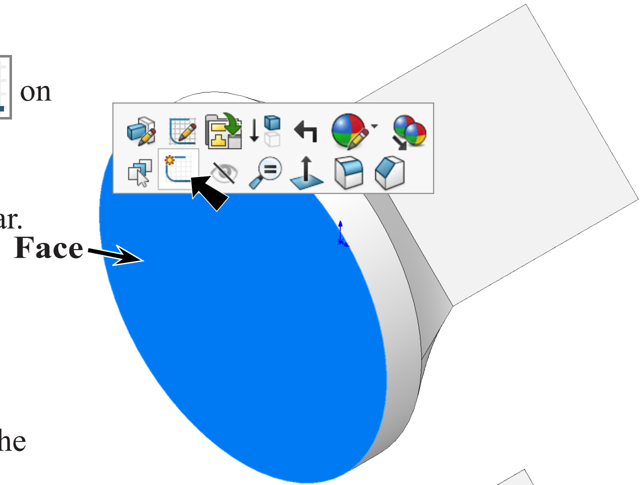


Fig. 22

Step 3. Sketch circle at Origin , **Fig. 23**.

Step 4. Click **Smart Dimension** (**S**) on the Sketch toolbar.

Step 5. Dimension **diameter 10**, **Fig. 23**.

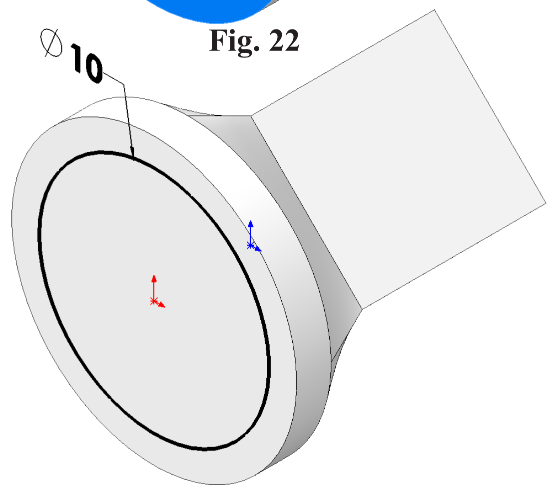


Fig. 23

Step 6. Click **Offset Entities** on the Sketch toolbar.

Step 7. In the Offset Entities Property Manager set:
under Parameters, **Fig. 24**

Distance **.2**
(negative clearance of hole in Rotor)
check **Reverse**

under Construction geometry
check **Base geometry**
click **circle**, **Fig. 25**
Yellow offset circle on inside - base geometry (construction) on outside

click OK .

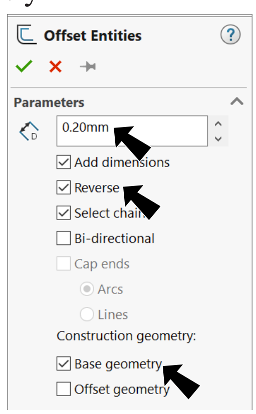


Fig. 24

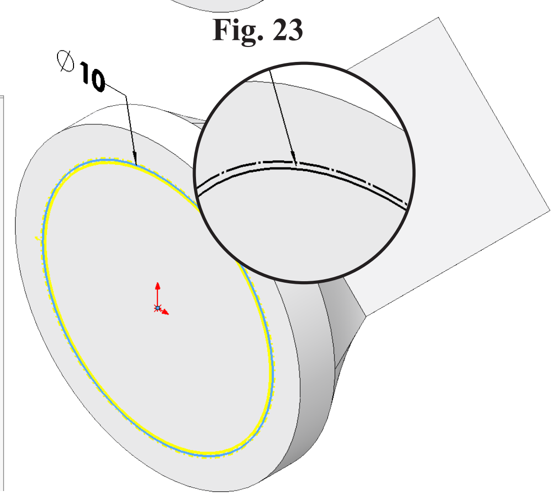


Fig. 25

Step 8. Click **Features** on the Command Manager toolbar.

Step 9. Click **Extruded Boss/Base** Extruded Boss/Base on the Features toolbar.

Step 10. In the Boss-Extrude Property Manager set:
under Direction 1, **Fig. 26**
End Condition **Blind**
Depth 10
click **Draft** 1.5º
click OK .

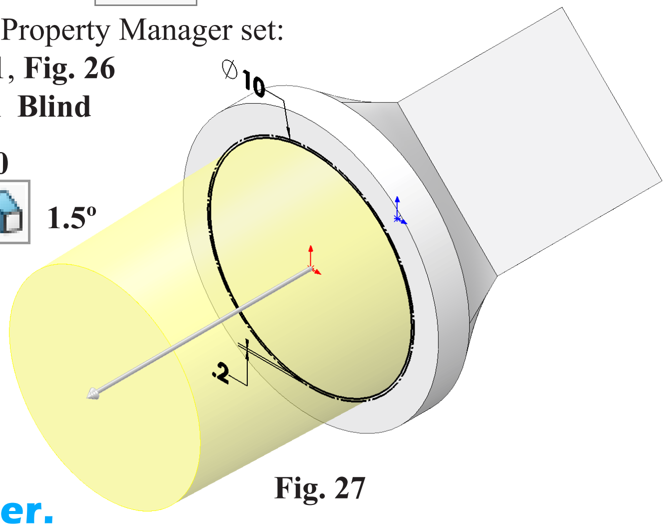


Fig. 27

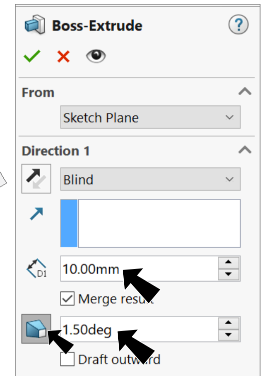


Fig. 26

Step 11. Save (Ctrl-S).

H. Extrude4 Pointer.

Step 1. Click **Top Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 28**.

Step 2. Click **Normal To** on the Standard Views toolbar. (**Ctrl-8**)

Step 3. Click **Line** (L) on the Sketch toolbar.

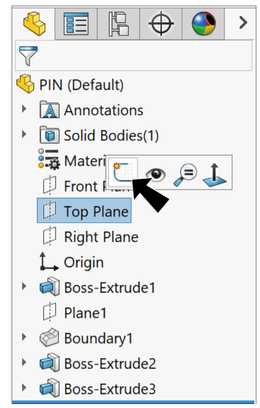


Fig. 28

Step 4. Sketch **3 lines starting with horizontal line across edge** and after clicking top endpoint of vertical line click **Construction Geometry** on the context toolbar, **Fig. 29**.

Step 5. Drag a selection to select all geometry, **Fig. 30**.

Step 6. Click **Mirror Entities** Mirror Entities on the Sketch toolbar, **Fig. 31**.

Tip: Issues with this sketch, confirm **Boundary1** connector is aligned to endpoint of centerline (**Fig. 18**)

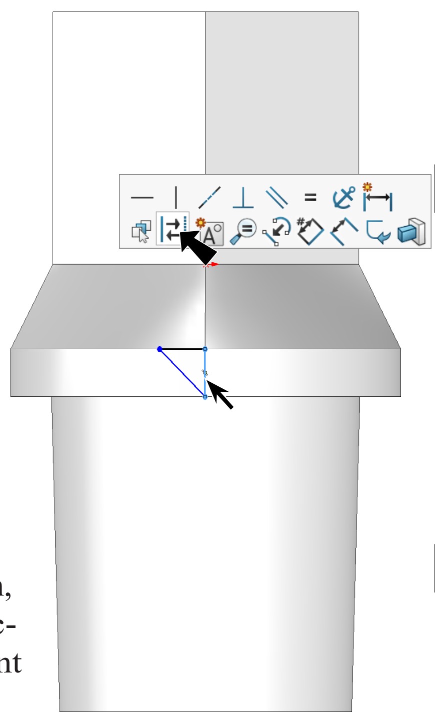


Fig. 29

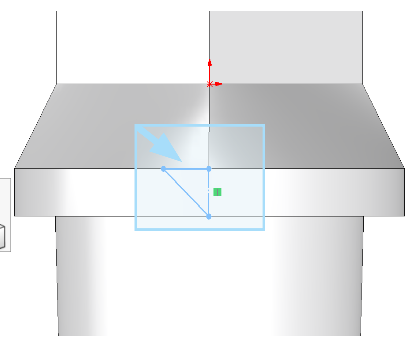


Fig. 30

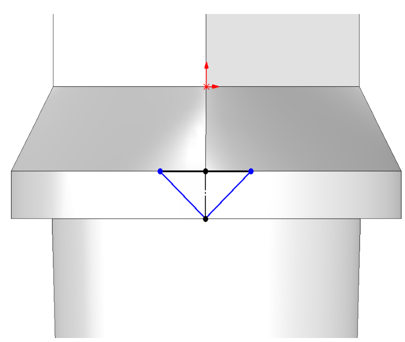


Fig. 31

Step 7. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 8. Add 1.5 dimension, **Fig. 32**.

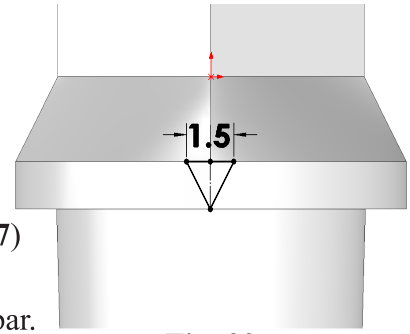


Fig. 32

Step 9. Click **Isometric** on the Standard Views toolbar. **(Ctrl-7)**

Step 10. Click **Features** on the Command Manager toolbar.

Step 11. Click **Extruded Boss/Base** on the Features toolbar.

Step 12. In the Boss-Extrude Property Manager set:

under From, **Fig. 33**

Start Condition **Surface/Face/Plane**

click **circular face of Extrude2**

under Direction 1, **Fig. 34**

End Condition **Blind**

Depth **.5**

uncheck **Merge result**

click OK .

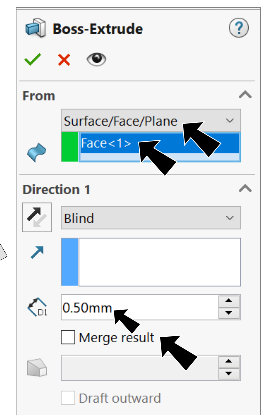


Fig. 33

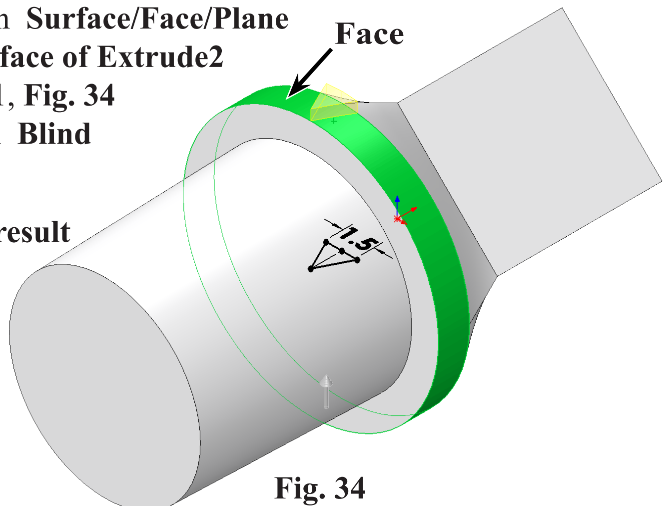


Fig. 34

Fig. 35

I. Swept Cut Sketch.

Step 1. Click **Right Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 35**.

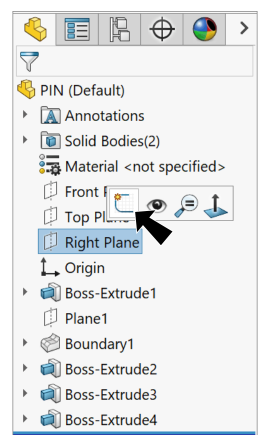


Fig. 35

Step 2. Click **Normal To** on the Standard Views toolbar. (**Ctrl-8**)

Step 3. Zoom in around the **pointer Extrude4**, **Fig. 36**.

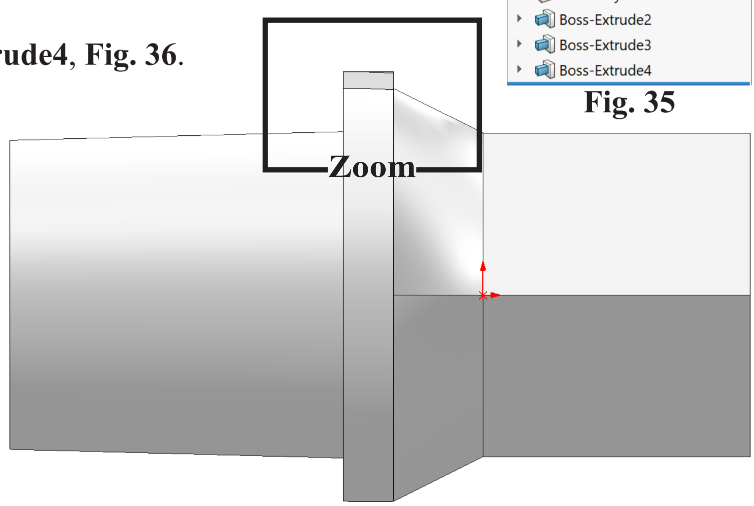


Fig. 36

Step 4. Click **Line** (**L**) on the Sketch toolbar.

Step 5. Sketch **3 lines starting at vertex of Boundary up on edge, across with horizontal line and back to starting endpoint at angle, Fig. 37**.

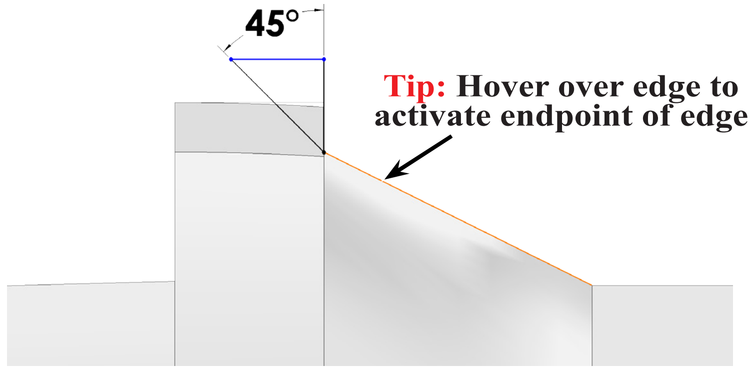


Fig. 37

Step 6. Click **Smart Dimension** (**S**) on the Sketch toolbar.

Step 7. Add **45º** dimension, **Fig. 37**.

Step 8. Click **Exit Sketch** on the Sketch toolbar.

J. Swept Cut.

Step 1. Rotate view to **view rear of Extrude4**, **Fig. 39**. Use **Left Arrow key** and **Down Arrow key** .

Step 2. Click **Features** on the Command Manager toolbar.

Step 3. Click **Swept Cut** on the Features toolbar.

Step 4. In the Cut-Sweep Manager:

under Profile and Path, **Fig. 38**

Profile click **Sketch5**, **Fig. 39**

Path click **rear edge of Extrude2**

under Options

check **Tangent propagation**

click OK .

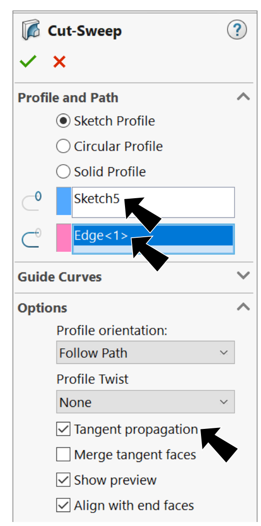


Fig. 38

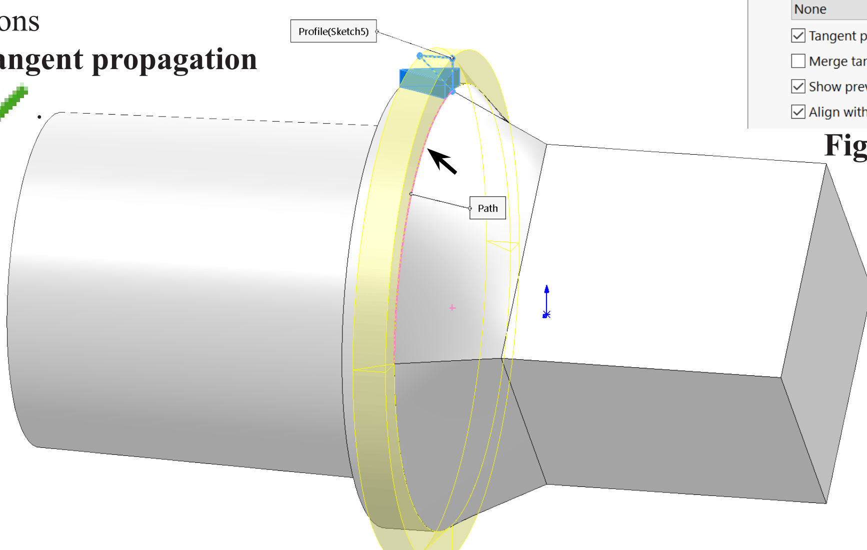


Fig. 39

K. Combine Bodies.

Step 1. Click Insert Menu > Features > Combine.

Step 2. In the Combine Property Manager:
under Operation Type, **Fig. 40**
select **Add**
click **both bodies, Fig. 41**
click OK .

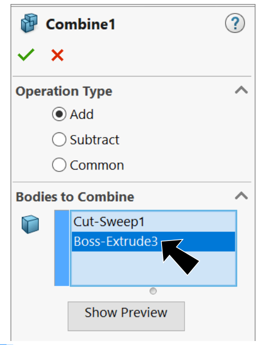


Fig. 40

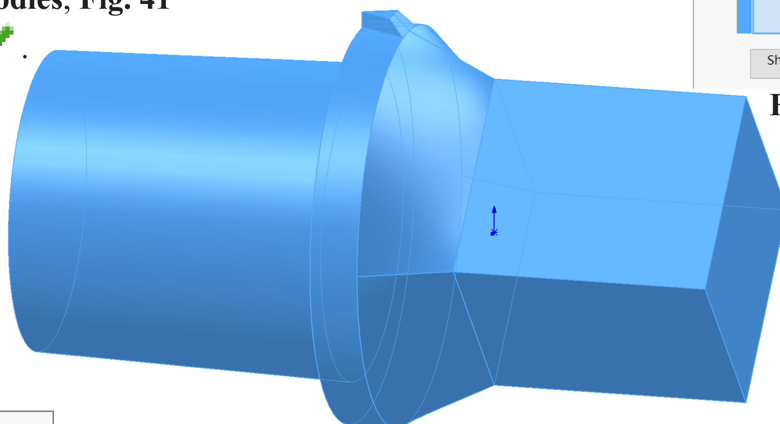


Fig. 41

L. Chamfers.

Step 1. Click **Chamfer** Chamfer on the Features toolbar.

Step 2. In the Chamfer Property Manager set:
under Chamfer Type, **Fig. 42**
select **Angle Distance**
under Chamfer Parameters
Distance .8
Angle 45º
under Items To Chamfer
click **square face at rear**, **Fig. 43**
click **cylindrical edge at front**
click OK .

Step 3. Save (**Ctrl-S**).

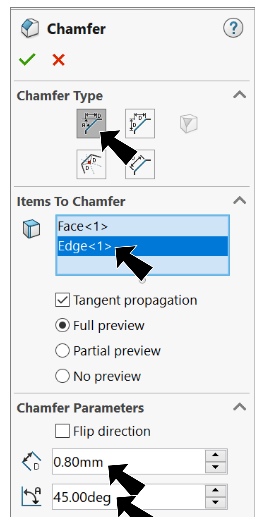


Fig. 42

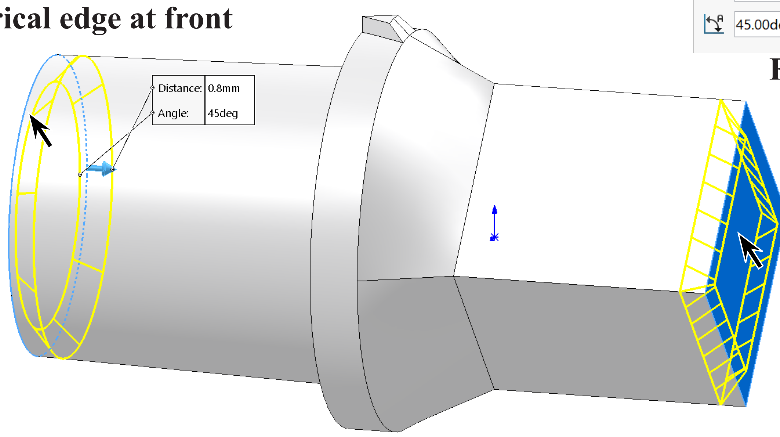


Fig. 43

M. Fillet Edges.

Step 1. Click **Fillet** Fillet on the Features toolbar.

Step 2. In the Fillet Property Manager set:

select **FilletXpert**, **Fig. 44**

Radius **.5**

click **edge between boundary sketches**, **Fig. 45**

click **Internal to feature** **3 edges** on the Fillet pop-up

click **Apply**

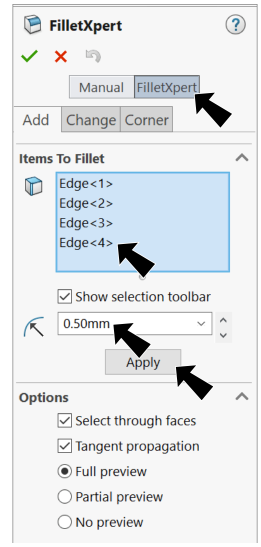


Fig. 44

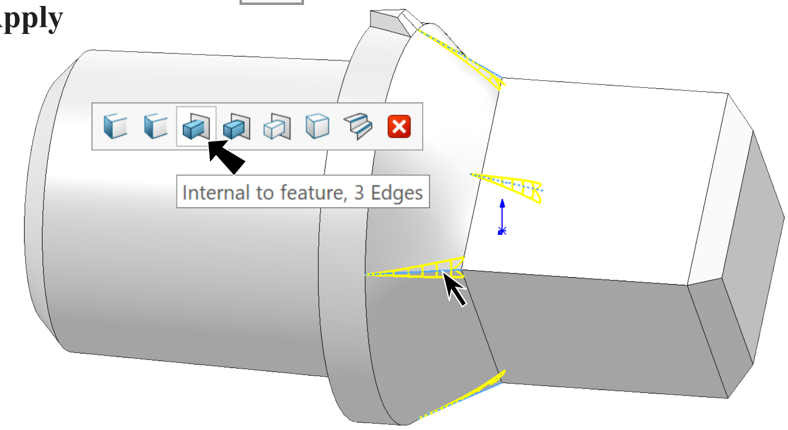


Fig. 45

Uncheck **Tangent propagation**, **Fig. 46**

click **an edge at fillet and square face**, **Fig. 47**

click **Between right feature and left feature** **7 edges** on the Fillet pop-up, **Fig. 48**

click OK

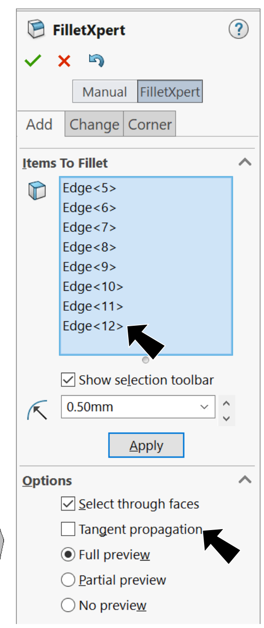


Fig. 46

Step 3. Save **(Ctrl-S)**.

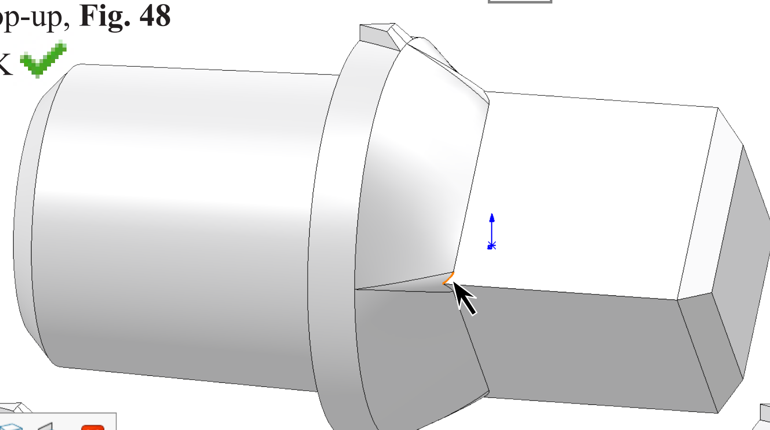


Fig. 47

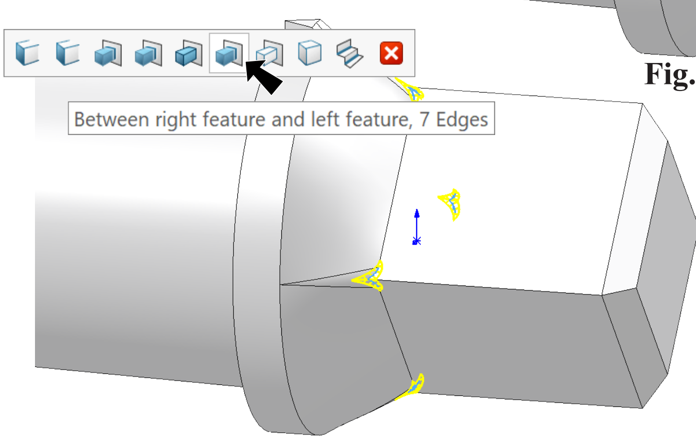


Fig. 48

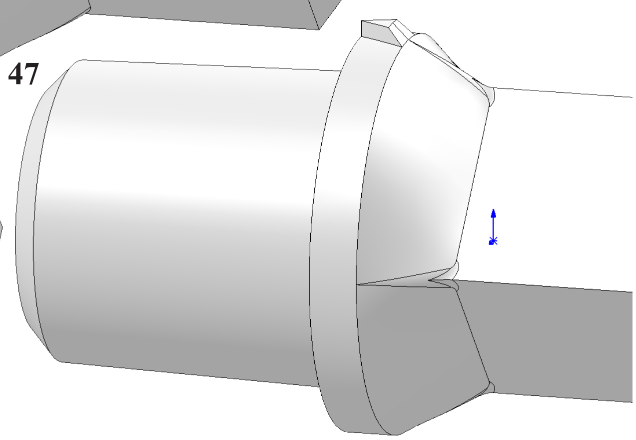


Fig. 49

N. Appearance: White Plastic.

Step 1. Click the Pin to select part, click **Appearances Callout** on the context toolbar and click **PIN**, **Fig. 50**.

Step 2. In the Appearances Task pane, expand **Plastic**, click **High Gloss** and in the lower pane select **white high gloss plastic**, **Fig. 51**.

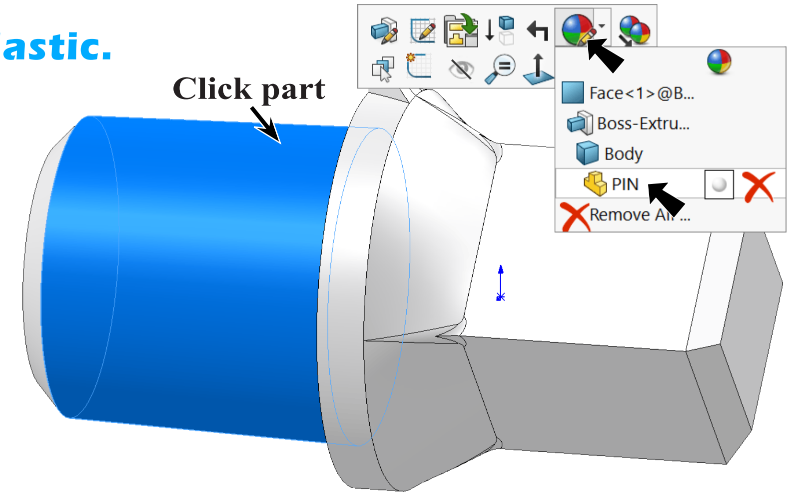


Fig. 50

Step 3. Click OK in the Appearances Property Manager.

Step 4. Save **(Ctrl-S)**.

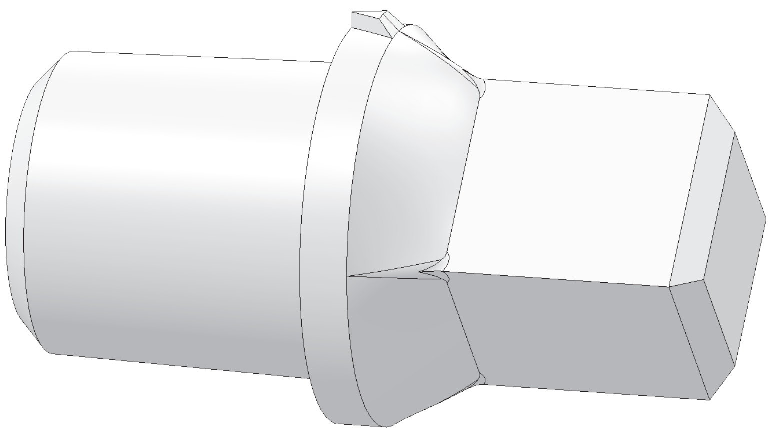


Fig. 52

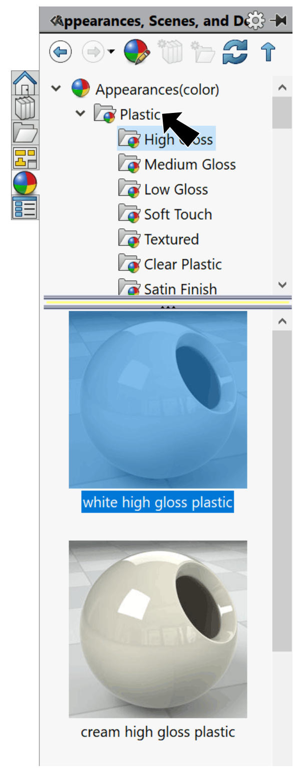


Fig. 51