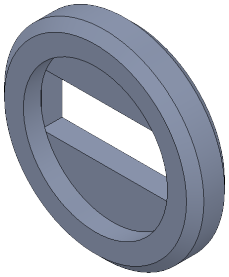
Chapter 23

Solar Train

Coupler Socket



A. Extrude.

Step 1. Click **New** on the Standard toolbar, click **Part Metric** and OK.

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

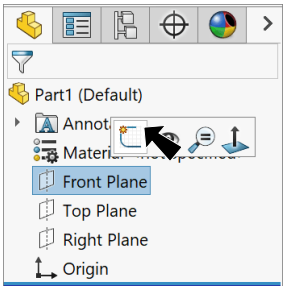


Fig. 1

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

Step 4. Sketch **circle at Origin**, **Fig. 2**.

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

Step 6. Dimension **diameter 11.5**, **Fig. 2**.

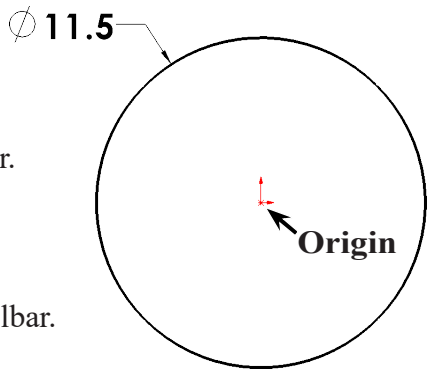


Fig. 2

Step 7. Click **Features** on the Command Manager toolbar.

Step 8. Click **Extruded Boss/Base** on the Features toolbar.

Step 9. In the Boss-Extrude Property Manager set:

under Direction 1, **Fig. 3**

End Condition **Mid Plane**

Depth **2.2**

click OK .

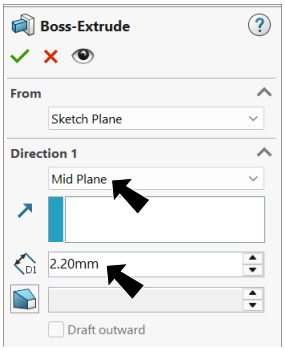


Fig. 3

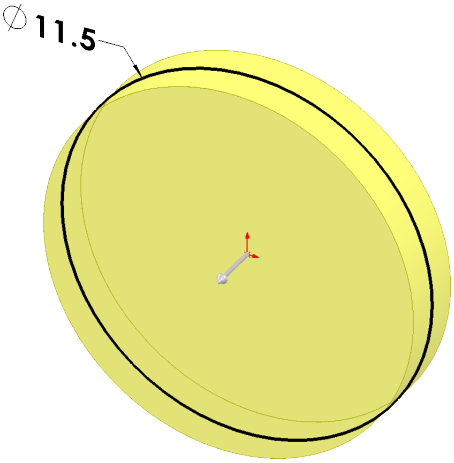


Fig. 4

B. Save as "SOCKET".

Step 1. Click File Menu > Save As.

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

C. Extruded Cut1.

Step 1. Click the **front face** and click **Sketch** on the context toolbar, **Fig. 5**.

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

Step 3. Sketch **circle at Origin** , **Fig. 6**.

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

Step 5. Dimension **diameter 8.3**, **Fig. 6**.

Step 6. Click **Features** on the Command Manager toolbar.

Step 7. Click **Extruded Cut** on the Features toolbar.

Step 8. In the Cut-Extrude Property Manager set:
under Direction 1, **Fig. 7**
End Condition **Blind**
Depth **1**
click OK .

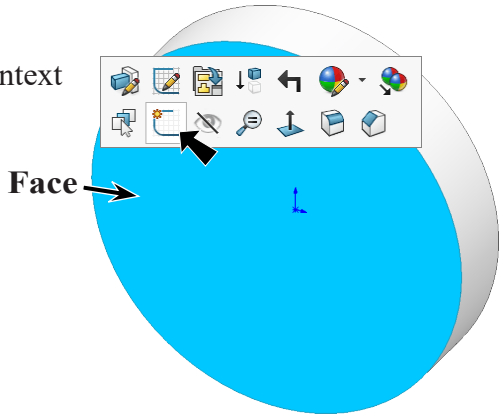


Fig. 5

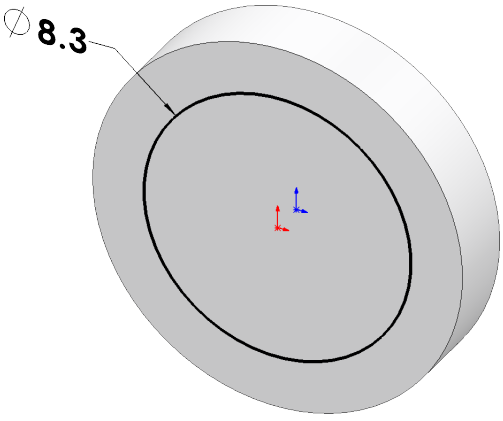


Fig. 6

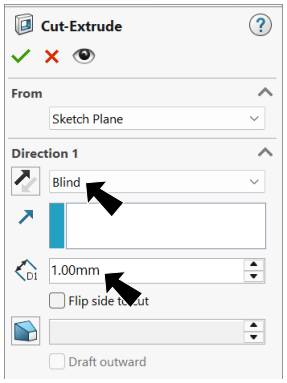


Fig. 7

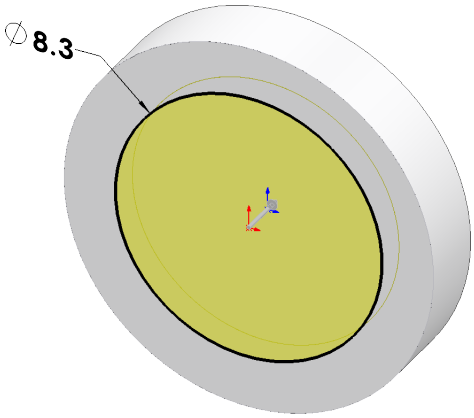


Fig. 8

D. Extruded Cut2.

Step 1. Click the **inside face** and click **Sketch** on the context toolbar, **Fig. 9**.

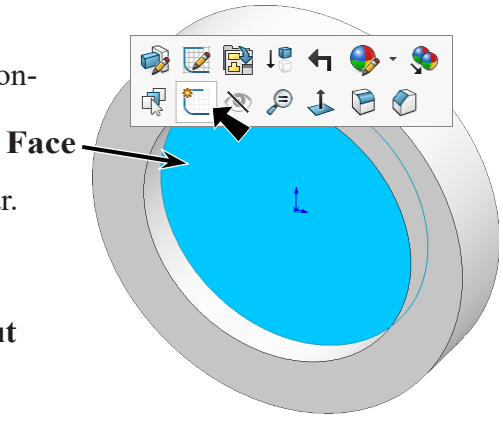


Fig. 9

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

Step 3. Click **Center Rectangle** in the **Rectangle flyout** on the Sketch toolbar.

Step 4. Sketch center rectangle at **Origin** , **Fig. 10**.

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

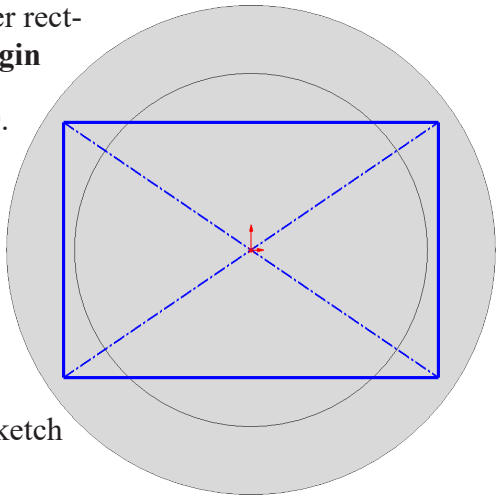


Fig. 10

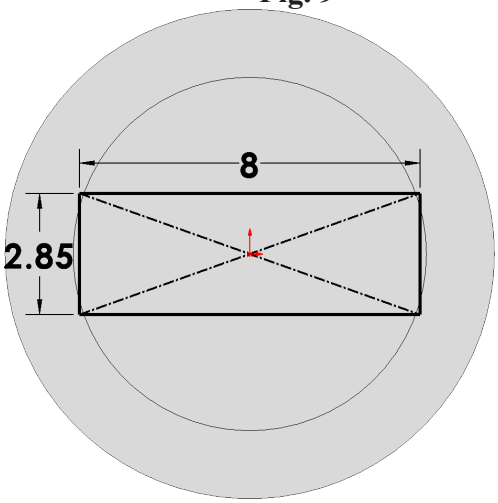


Fig. 11

Step 6. Add dimensions, **Fig. 11**.

Step 7. Click **Offset Entities** on the Sketch toolbar.

Step 8. In the Offset Entities Property Manager set:

under Parameters, **Fig. 12**

Distance .12

check **Selected chain**

under Construction geometry

check **Base geometry**

click a **line**, **Fig. 13**

yellow offset line on outside - base geometry (construction) on inside

click OK .

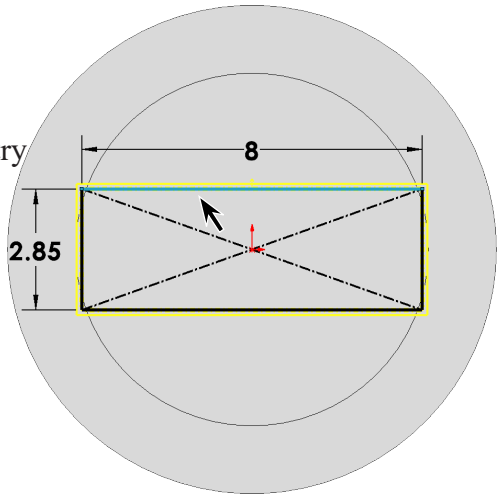


Fig. 13

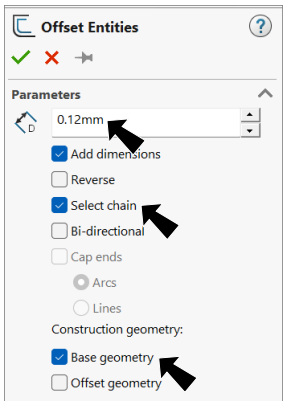


Fig. 12

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

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

Step 11. Click **Extruded Cut** Extruded Cut on the Features toolbar.

Step 12. In the Cut-Extrude Property Manager set:
under Direction 1, **Fig. 14**
End Condition **Through All**
click OK .

Step 13. Save (**Ctrl-S**).

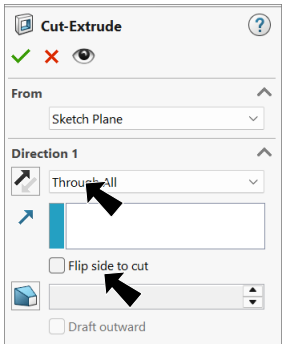


Fig. 14

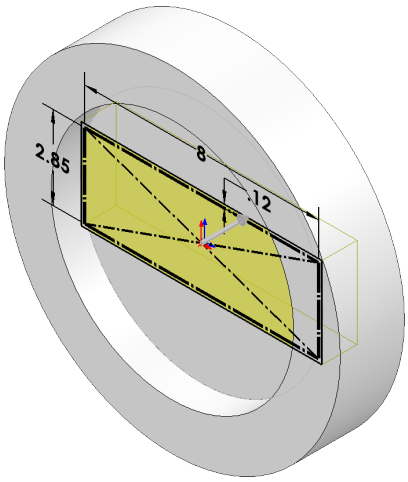


Fig. 15

E. Chamfers.

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

Step 2. In the Chamfer Property Manager set:
under Chamfer Type, **Fig. 16**
select **Angle Distance**
click **both outside circular edges**, **Fig. 17**
under Chamfer Parameters
Distance **.5**
Angle **45°**
click OK .

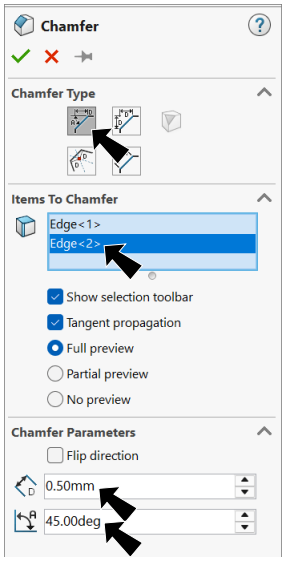


Fig. 16

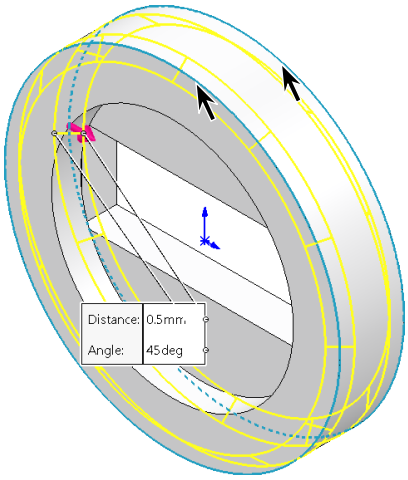


Fig. 17

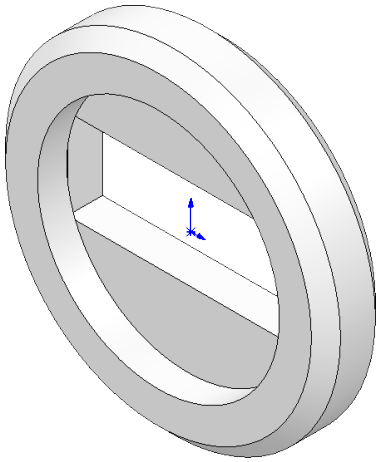


Fig. 18

F. Appearance: Blue Plastic.

Step 1. Click part, click **Appearance Callout** on the context toolbar and click **SOCKET**, **Fig. 19**.

Step 2. In the Appearances Task pane, expand **Plastic**, click **Medium Gloss** and in the lower pane select **blue medium gloss plastic**, **Fig. 20**.

Step 3. Over in the Appearances Property Manager, under Color, **Fig. 21**
set **RGB values**
R 132
G 142
B 165
and OK .

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

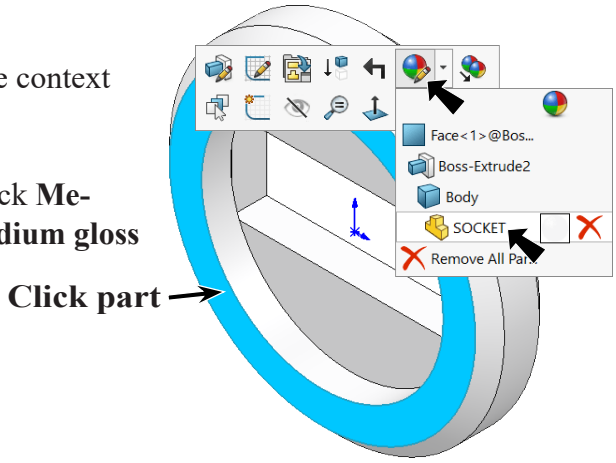


Fig. 19

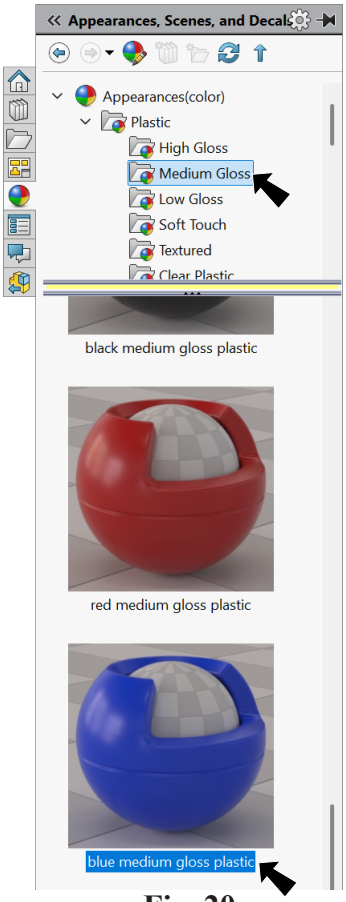


Fig. 20

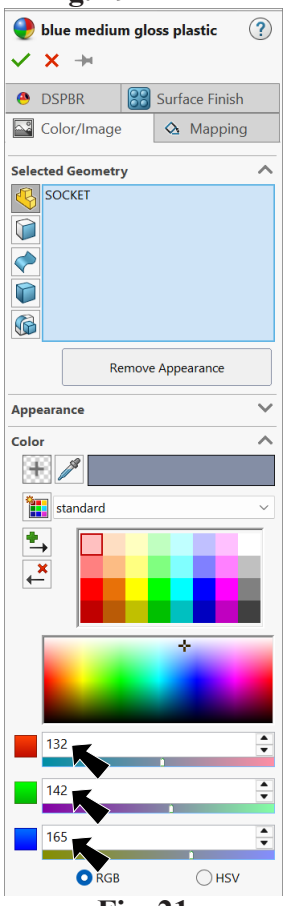


Fig. 21

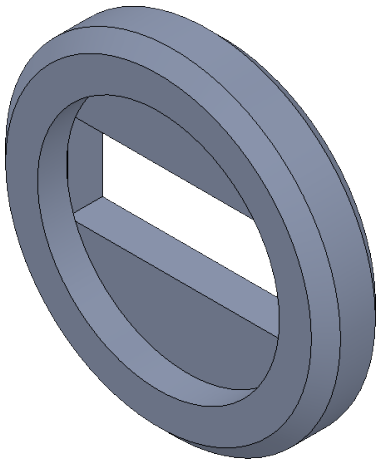


Fig. 22