

Metered-Dose Inhaler (MDI)

Rseel Mansour Alshohail



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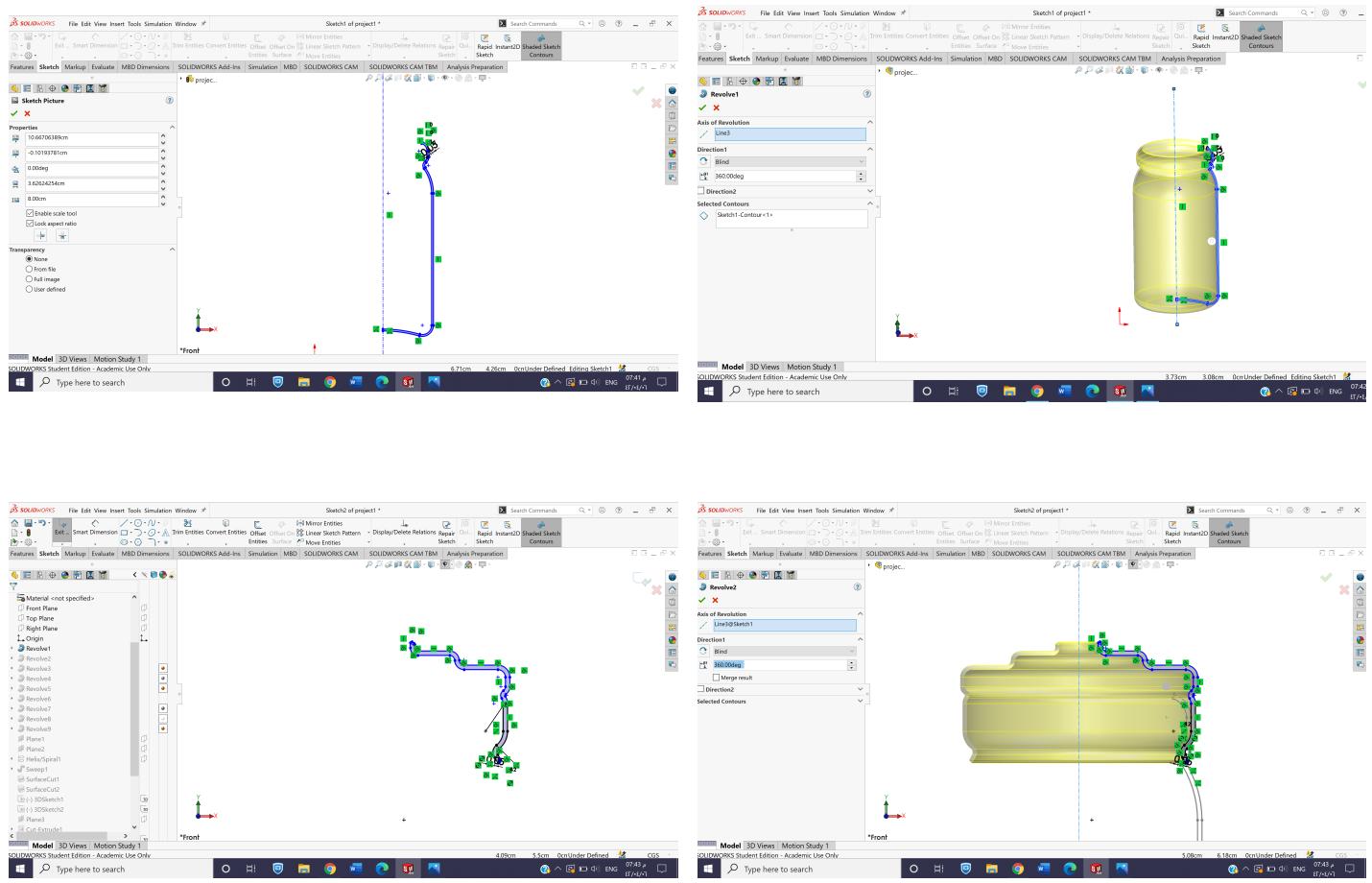
A metered-dose inhaler is a small, hand-held device filled with medicine. It helps deliver a certain amount of medicine through your mouth and into your lungs. It is commonly used to treat breathing difficulties related to asthma, chronic obstructive pulmonary disease (COPD), and other respiratory problems.

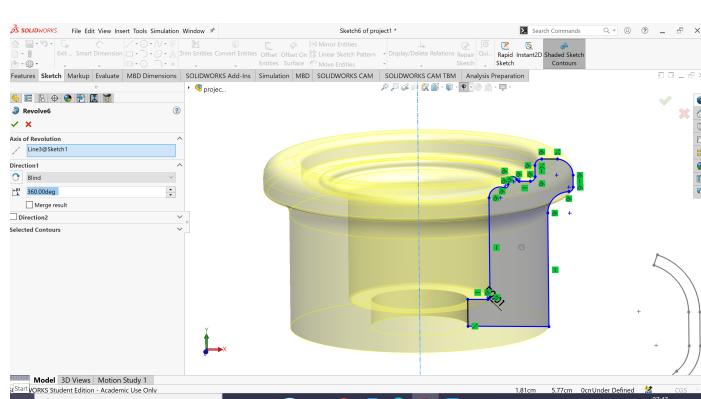
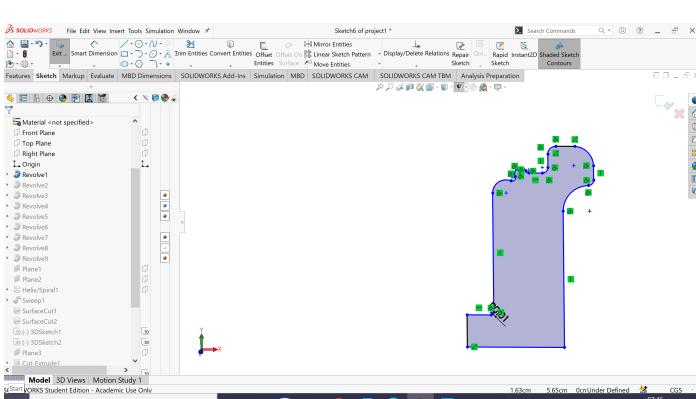
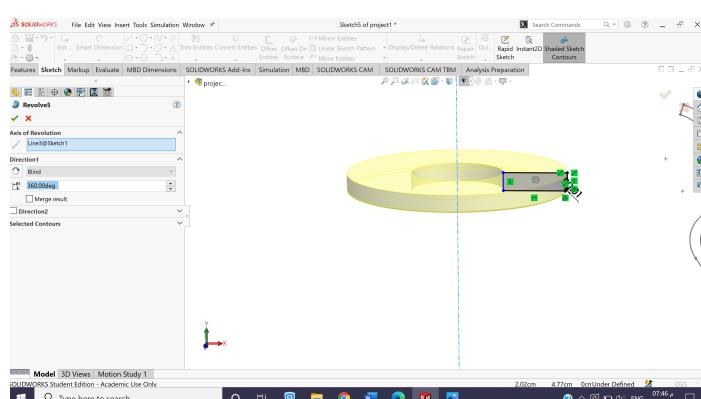
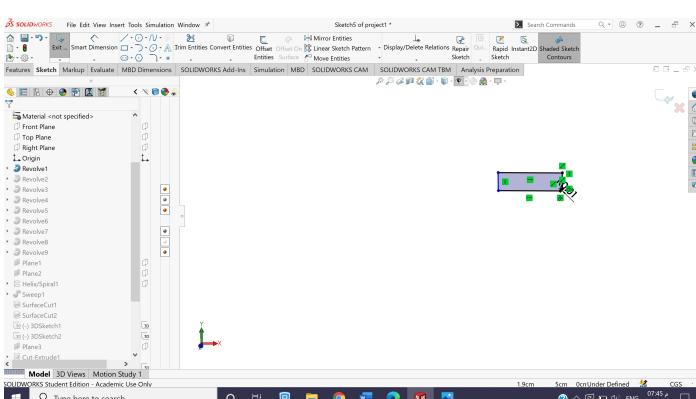
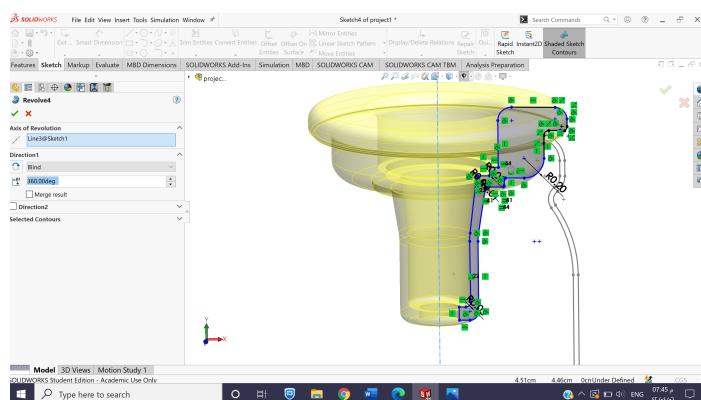
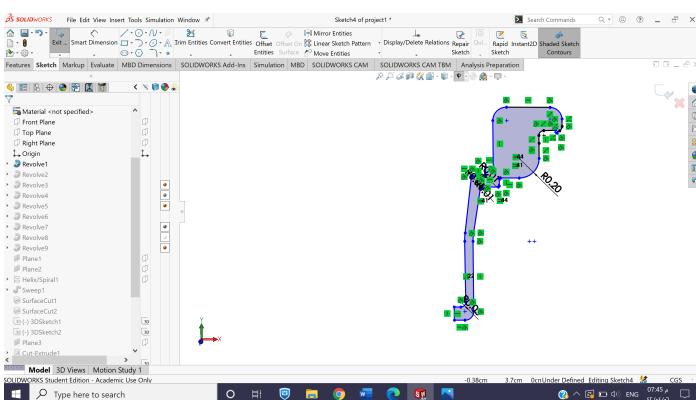
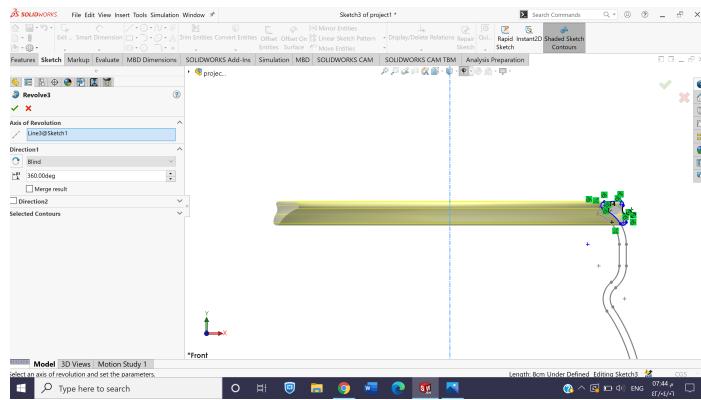
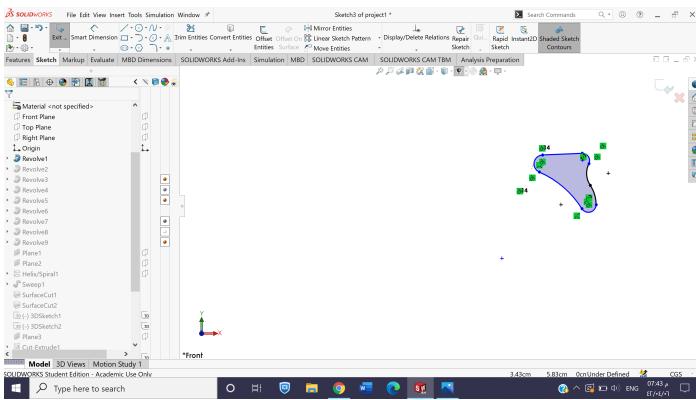
The main features used for building the **metered-dose inhaler** are:

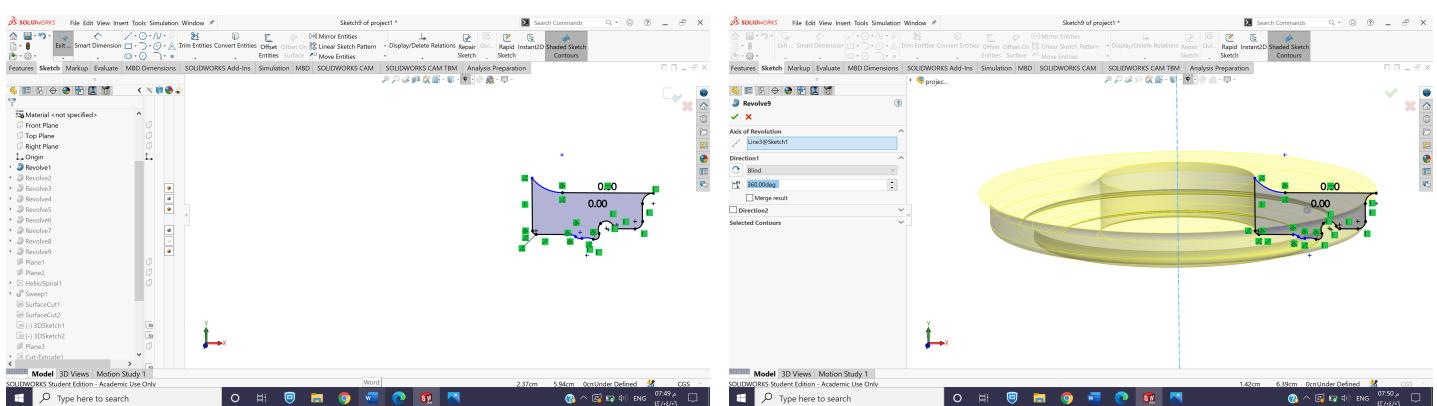
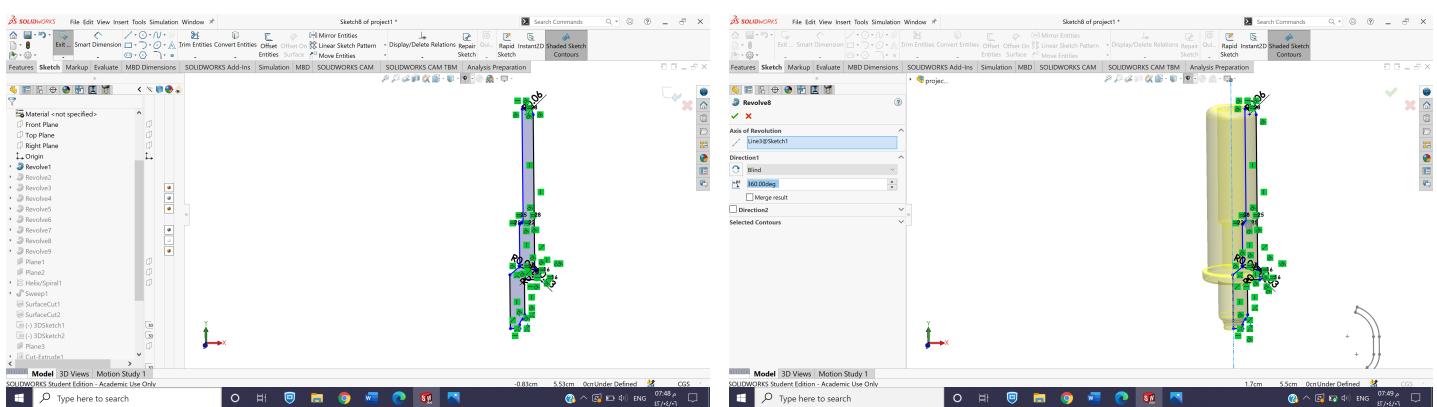
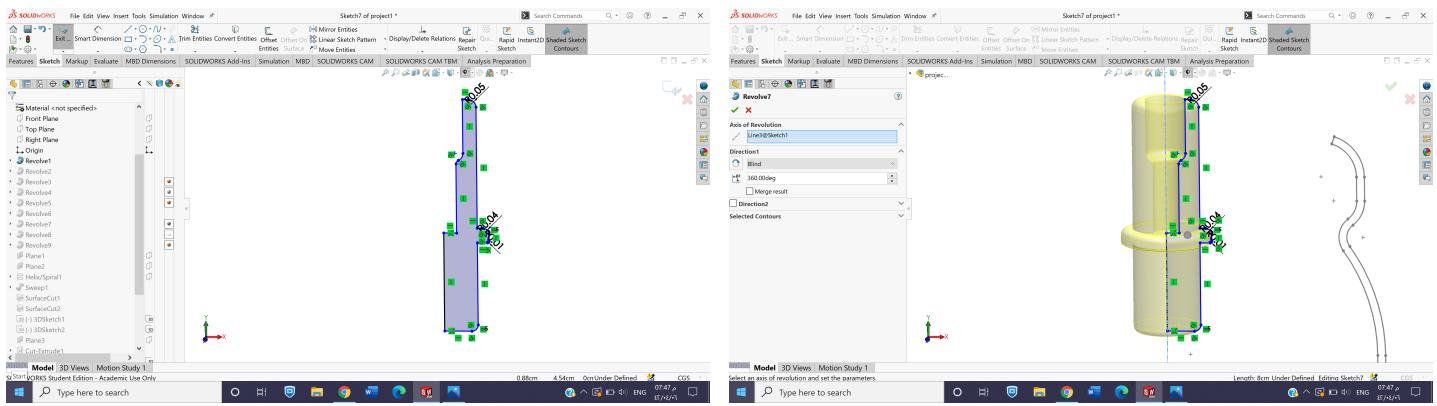
- Revolve
- Reference Geometry
- Sweep
- Surface cut
- Extruded cut

Revolve:

I applied revolve feature to build most of the MDI parts. I opened a new sketch in the front plane then I drew a centerline that goes through the MDI then I drew the sketches shown below. And after drawing each of them I used the revolve feature.



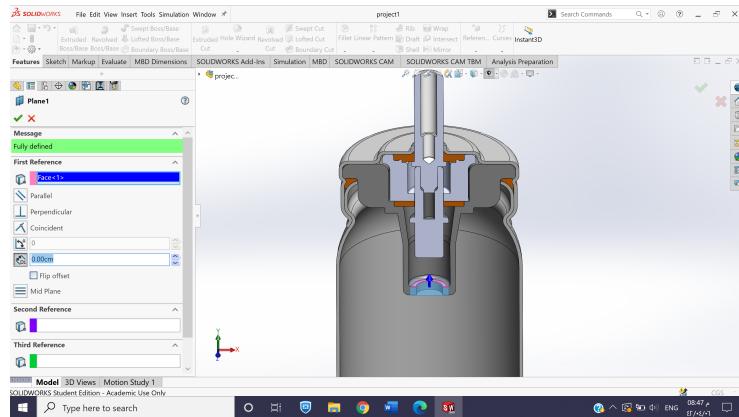




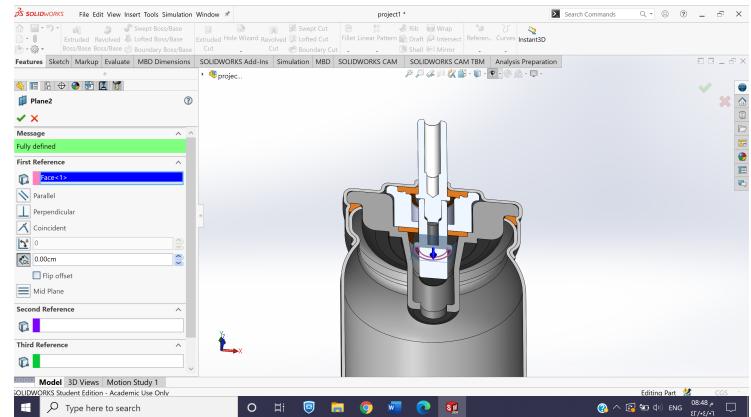
Reference Geometry:

From Reference Geometry I add two new plane to make the spring.

Plane 1

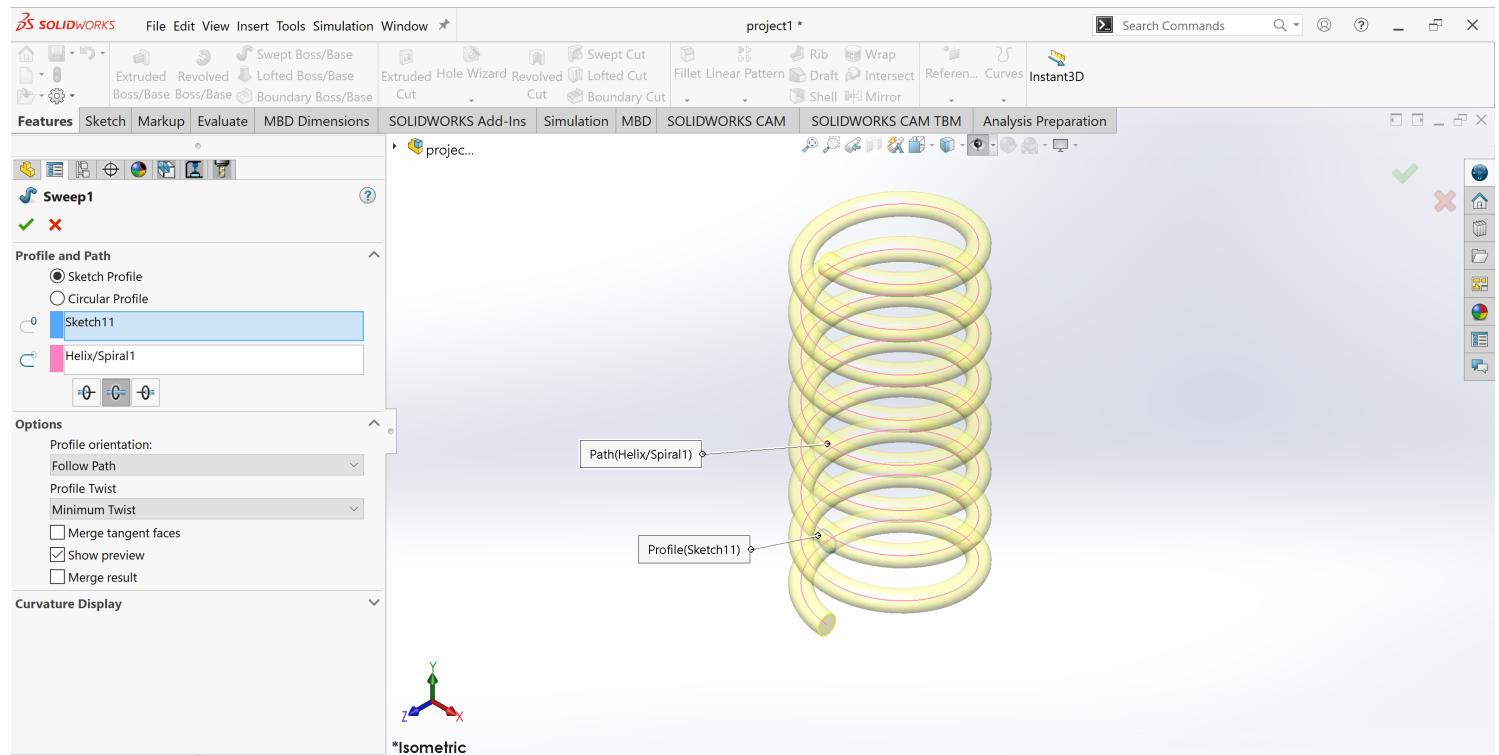


Plane 2



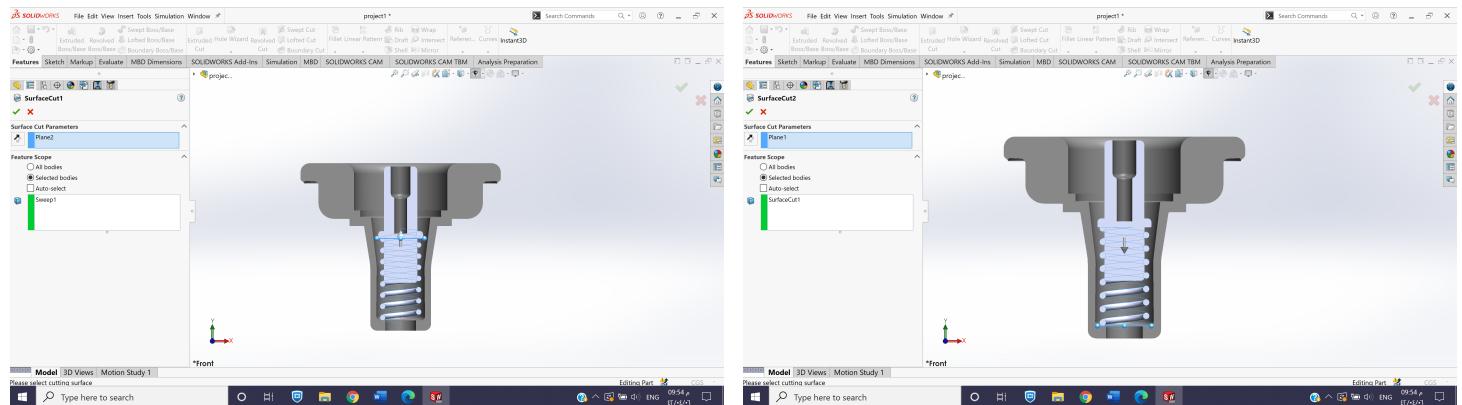
sweep:

After adding the planes, form **Insert -> Curve** I selected **Helix/spiral**. Then to make the spring I drew a circle in the beginning of the spinal line, after that I applied sweep feature.



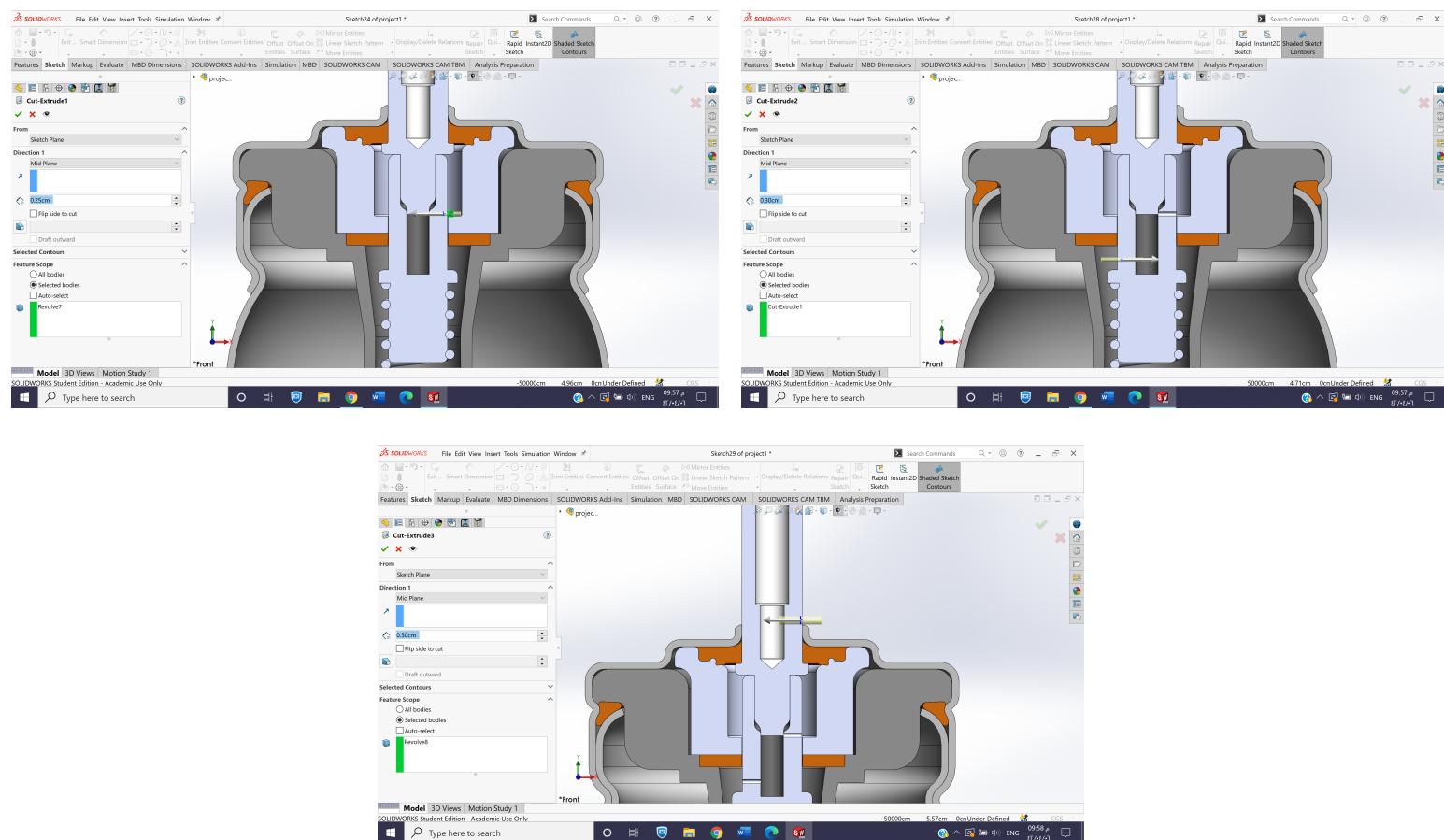
Surface cut:

To cut the extra part from the spring I applied Surface cut as shown below:



Extruded cut:

to make the orifices that allow the liquid to flow I applied the Extruded cut feature as shown below:



Want I learned from this project:

- helps me to understand how does the things work
- practice more in solid works
- how to understand the relation between the things

suggestions:

- make the size of the orifices bigger to allow the liquid flow faster

References:

<https://familydoctor.org/how-to-use-a-metered-dose-inhaler/>

<https://www.youtube.com/watch?v=qVkCBsgUPfE>