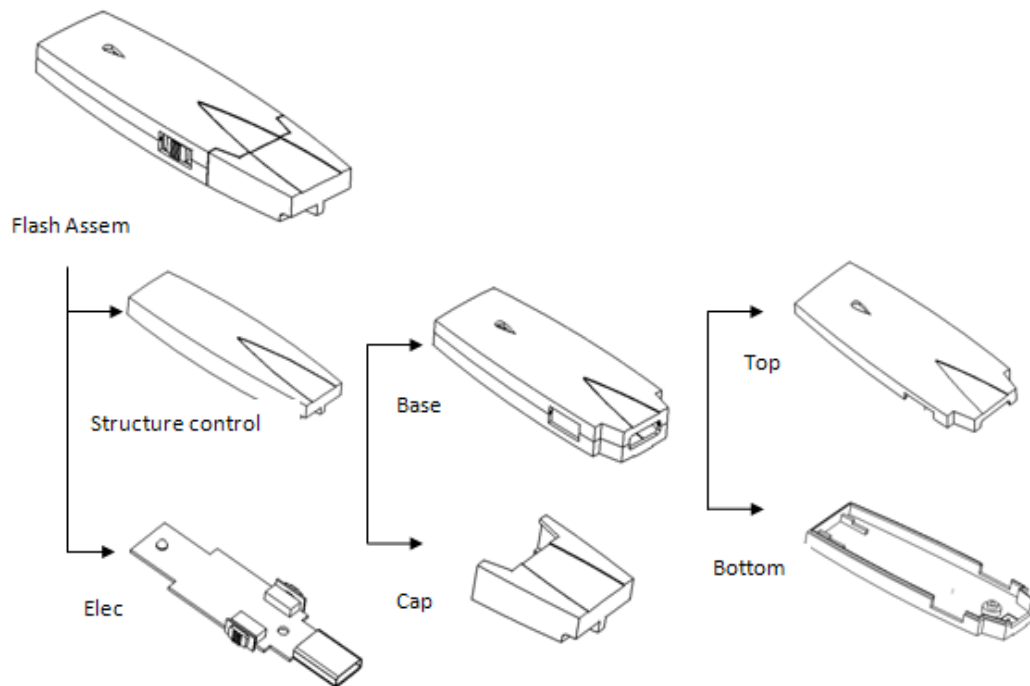


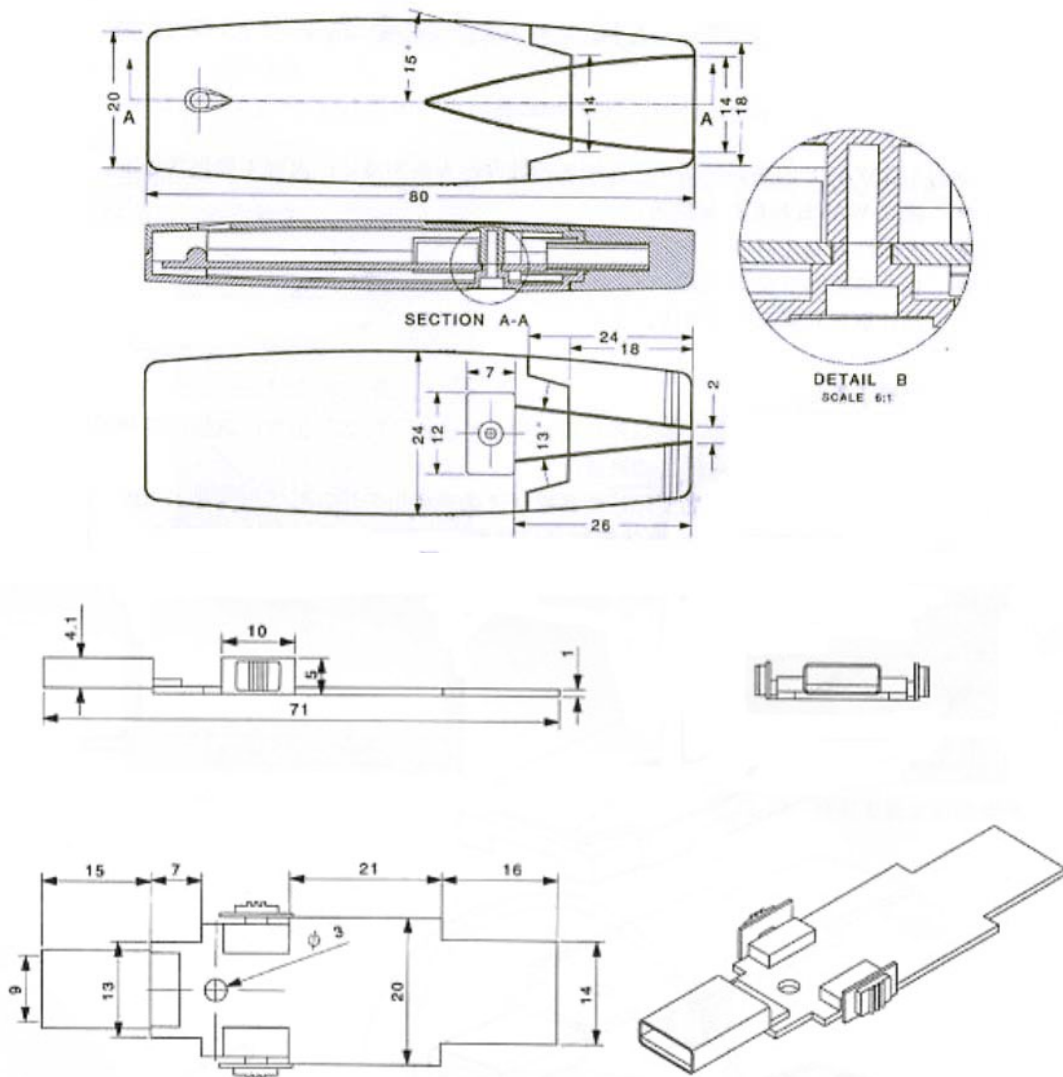
## ZW3D Top-Down Design

**Top-Down Assembly Design:** In short, in the Top-Down approach you create a blank assembly first and then you go on creating the sub-assemblies and individual parts in it. So, if the main assembly is at the top-most level and the components are at the bottom-most level, then you are designing from the top to the bottom and it's a Top-Down Assembly.

This is a highly efficient practice for Product and Mold Design. It's not just a method for managing big assemblies but is also an efficient way to fulfill your design intentions and to make a clear and concise organizational structure. What's more, it enables your team to smoothly communicate and freely share information.

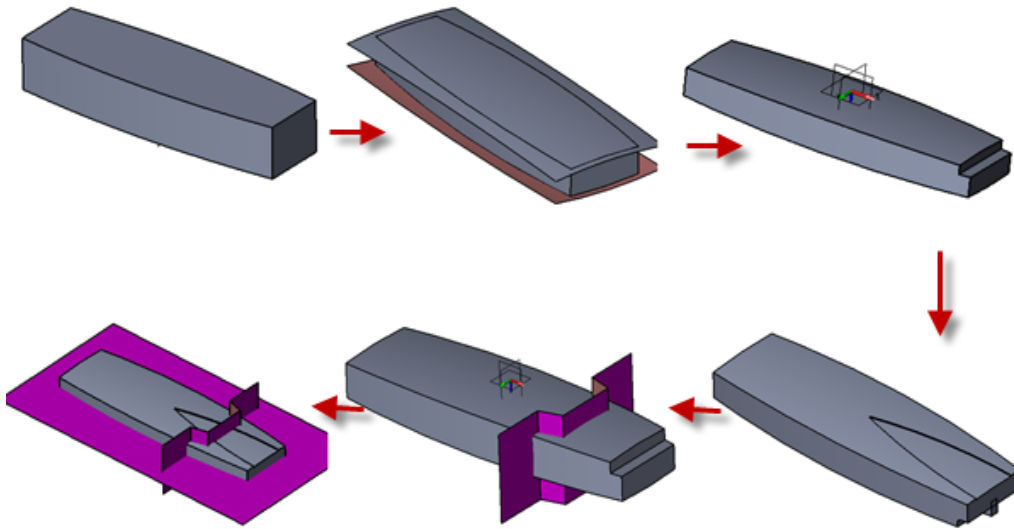
Let's take the design of a **Flash disk** assembly as an example as how the top-down design process works in ZW3D.





While working on the overall design, potential future needs should be considered, including possible changes of each component's parameters. This means you should fully understand the design intent. Furthermore, the overall parameters can adjust automatically to update the components, and the assembly control structure can be properly defined. If you change the parameters of the overall structure, ZW3D updates all the sub-components immediately. Now, let's see how it works step by step:

1. First, create the basic shape of the Flash disk which includes the key structure parameters. Give it a name "**Structure control**":

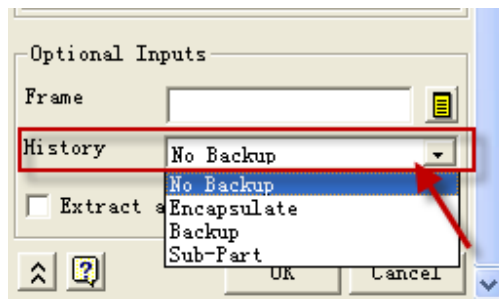


2. Add **Electronics** part. For our purposes here this will be an individual part.
3. Create the assembly structure of the **Flash disk**, and copy the shape and keep the associative relation:

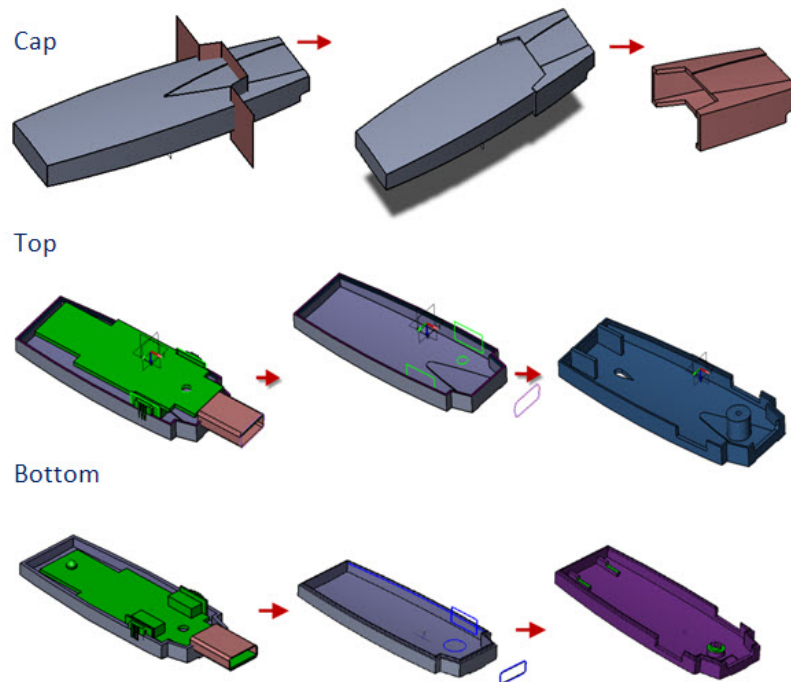
3.1 Open the **Structure control** to make it the active part. This part contains the geometry that will become the **BASE** and the **CAP**. Construction of these parts will occur in the same object but once complete, they need to be separated into their own part objects.

3.2 Use the **Copy Geometry to part** command, copy the main shape and split face to **Cap** and **Base**:

**Note:** In order for future regenerations of the destination part to always re-import geometry, select the **NO BACKUP – History option**. This makes an associated copy. The destination part will regen and re-import any updated geometry.



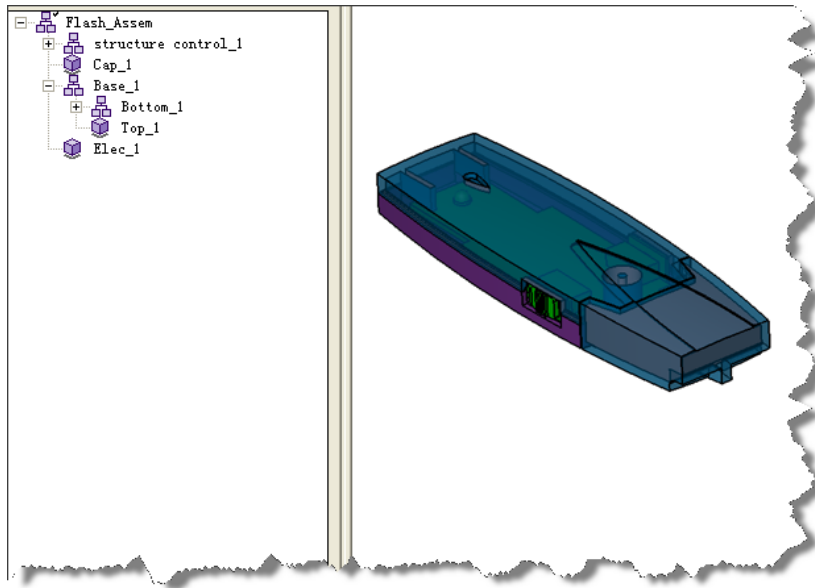
4. Activate the **Cap** and finish the detailed design as shown below:



5. As shown above the Base is made up of the Top, Bottom and Electronics

**Note:** In this step, Open the **Base** and use the **Copy Geometry to part** command again to control the associative relation between the **Electronics** and other sub component, **Top** and **Bottom**, so it can meet the structural design.

6. Use the **Link Manager** command, to do an automatic regen of the sub components every time the **Structure Control** and the **Base** are regenerated.
7. The final result:



The design of the **Flash disk** is complete. The main product form and fit is defined by the **Structure Control**. Product dimension modifications will directly affect its sub-components. Meanwhile, the established relationship between **Top & Bottom** components and **PCB** board ensure that changes in the **Structure Control** are passed along to all sub-components.

This example shows how **Top-Down Assembly Design** works to maintain the **design intent** in a simple way and produce designs more clearly.