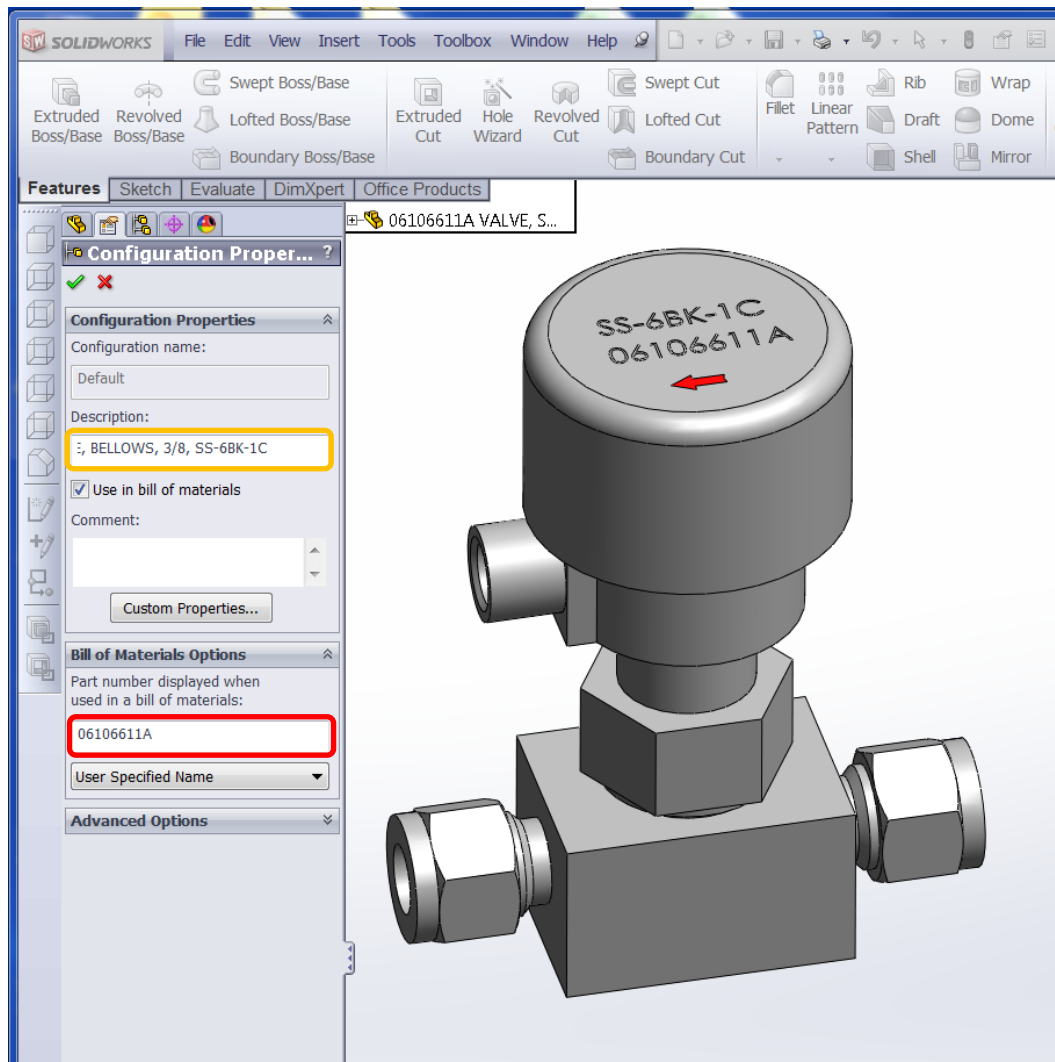


# Method for Assigning Port/Bit Data to SolidWorks Parts, Assemblies and Drawings

Jim Anders – M 9 July 2012

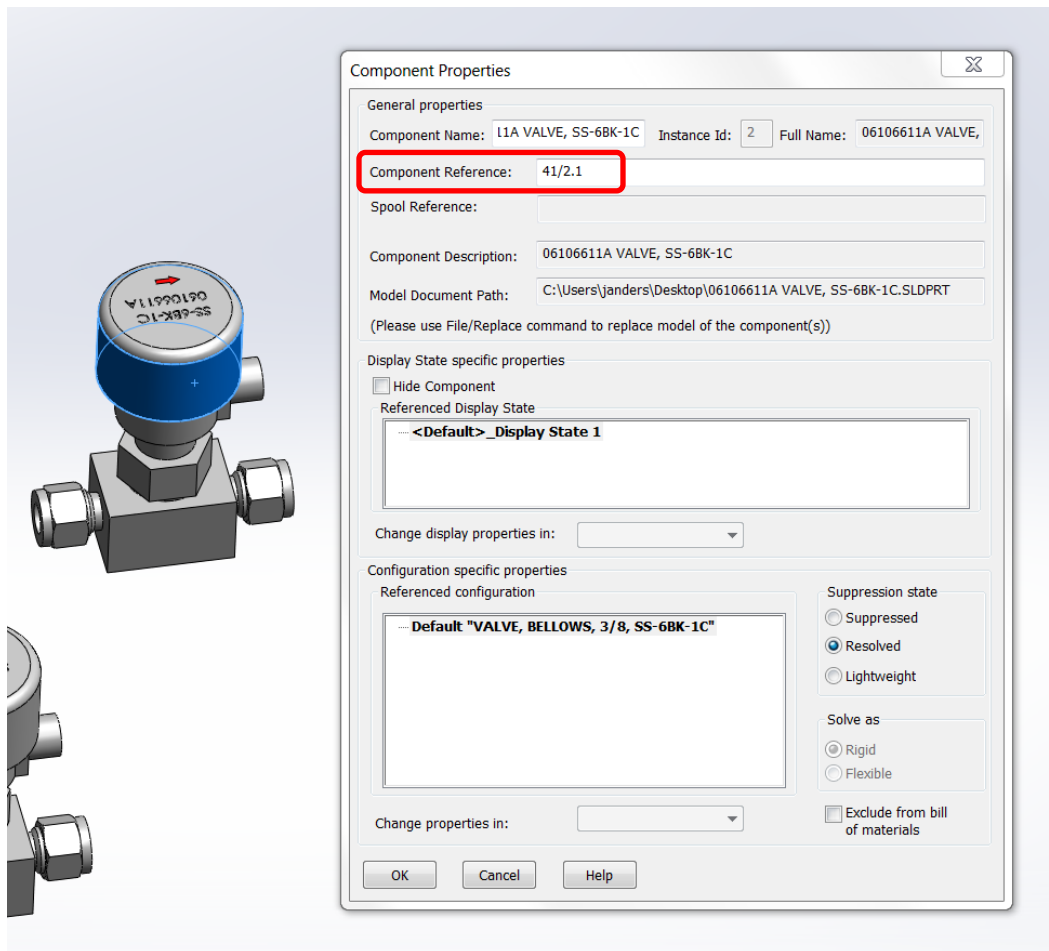
## **1. Assigning the proper drawing number and description to part.**

The part naming and numbering convention doesn't match well with the SolidWorks scheme. Our SolidWorks part names combine the part number and description (i.e. 06106611A VALVE, BELLOWS, .38, SS-6BK-1C). This issue can be addressed by using a SolidWorks Configuration where the "name" portion is entered into the Description field of the Configuration name. Likewise, only the part number is entered into the Bill of Materials Options as a User Specified Name (i.e. 06106611A). This will provide the correct data when the SolidWorks assembly and BOM are created. See the figure below.



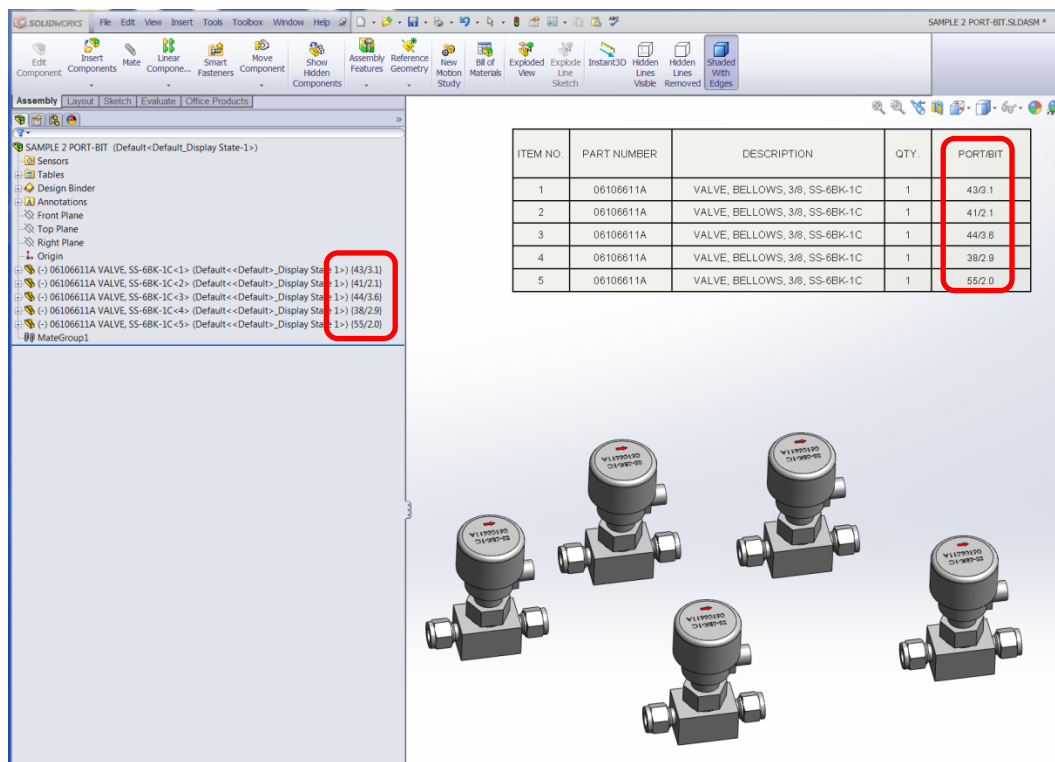
## 2. Place parts into assembly and assign Port/Bit values.

Once properly configured with the proper name and number, the parts are added into the assembly model. In this example, there are five like valves which have been placed into the assembly. Each valve needs to have a unique Port/Bit value assigned. This is done by right-clicking on a valve part and selecting the Component Properties dialog box from the pop-up. The Port/Bit values are entered into the Component Reference field as shown below. The Port/Bit values need to be entered for all required devices.



### 3. Port/Bit Values in Assembly Model

Once the Port/Bit values are entered, the assigned values can be seen at the end of each item in the assembly tree at the left. The values will also show up in a BOM table that can be placed in the assembly model as shown. In order to see the Port/Bit column, however, you need to add a column to the BOM table named "Component Reference". This will link the Component Reference data to the BOM table. You can rename the column to "Port/Bit" without breaking the link. See below.



The screenshot displays the SolidWorks interface for an assembly model. The left pane shows the assembly tree with the following items:

- SAMPLE 2 PORT-BIT (Default<Default\_Display State-1>)
- Sensors
- Tables
- Design Binder
- Annotations
- Front Plane
- Top Plane
- Right Plane
- Origin
- 06106611A VALVE, SS-6BK-1C<1> (Default<Default\_Display State-1>) (43/3.1)
- 06106611A VALVE, SS-6BK-1C<2> (Default<Default\_Display State-1>) (41/2.1)
- 06106611A VALVE, SS-6BK-1C<3> (Default<Default\_Display State-1>) (44/3.6)
- 06106611A VALVE, SS-6BK-1C<4> (Default<Default\_Display State-1>) (38/2.9)
- 06106611A VALVE, SS-6BK-1C<5> (Default<Default\_Display State-1>) (55/2.0)
- MateGroup1

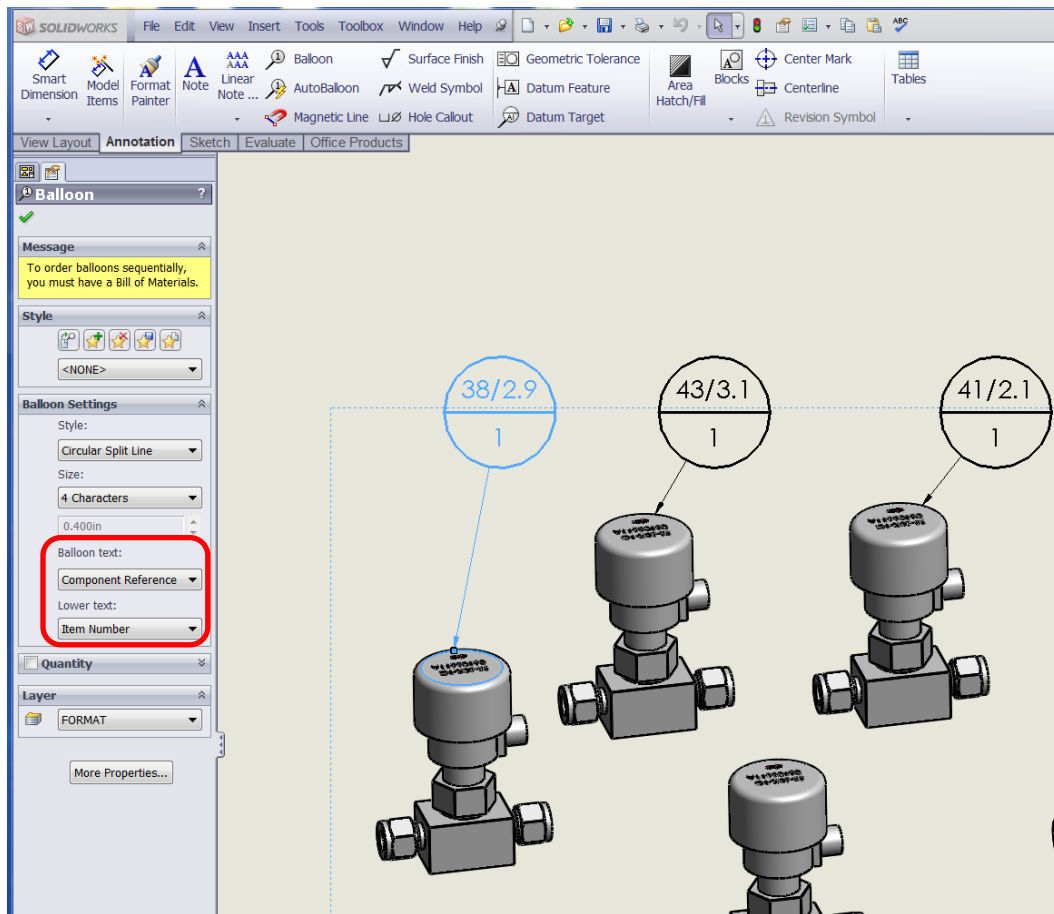
The right pane shows a BOM table with the following data:

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	PORT/BIT
1	06106611A	VALVE, BELLOWS, 3/8, SS-6BK-1C	1	43/3.1
2	06106611A	VALVE, BELLOWS, 3/8, SS-6BK-1C	1	41/2.1
3	06106611A	VALVE, BELLOWS, 3/8, SS-6BK-1C	1	44/3.6
4	06106611A	VALVE, BELLOWS, 3/8, SS-6BK-1C	1	38/2.9
5	06106611A	VALVE, BELLOWS, 3/8, SS-6BK-1C	1	55/2.0

The BOM table is displayed in a 3D view of the assembly, showing five valves. The 'PORT/BIT' column is highlighted in red.

#### 4. Place parts into assembly and assign Port/Bit values.

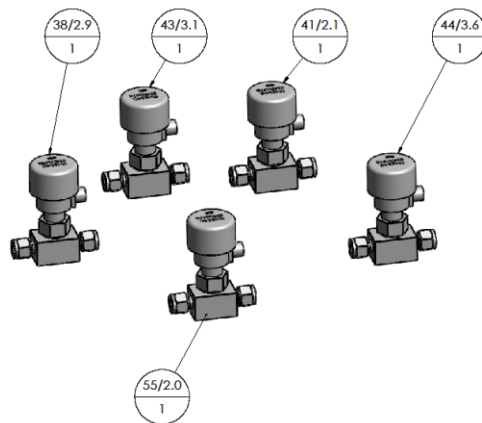
When the assembly model is complete, a drawing of the model is generated. The Item Number of the component and the Port/Bit data can be displayed in a balloon reference as shown below. The Balloon Settings dialog provides a way to specify that the Component Reference text and the Item Number are both displayed in a Circular Split Line balloon style.



## 5. SolidWorks Drawing has Correct BOM Entry and Port/Bit Data.

The final SolidWorks assembly drawing will have the proper BOM table entry with the correct part number and description and the Port/Bit data is displayed above the Item Number in the appropriate balloon. Ideally, it would be great if we could find a way to display the Port/Bit data directly on the valve.

We also need to figure out how best to handle multi-valve manifolds, where one SolidWorks part has multiple valve ports and multiple Port/Bit entries. This could make this scheme of using the Component Reference number in SolidWorks problematic.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	08106611A	VALVE, BELLOWS, 3/8, SS-4BK-1C	5