

The value of multi-Configuration parts files

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Before I moved over to Solidworks, I used Inventor for 5 years. Surprisingly, one of the biggest differences was that a much higher percentage of library parts for Inventor from the user community were multi-configuration parts (or "factory" parts).

This meant that in the Inventor environment that with about 50 different part downloads, I had hundreds of parts readily available. However, when I moved over to Solidworks, a very high percentage of the part files are only single parts. Not only were the results quite limited for Solidworks after a fair amount of downloading time, but it soon became quite difficult to find specific parts. Individual files require considerably more "management". As an example, one Solidworks multi-part file is for electric motors. There are about 200 motors in this single file. If each of these configurations are in an individual file, it soon becomes quite tedious to find the correct motor in the Parts Library because of volume of parts to short through alone.

There are other advantages of multi-configuration part files. One example was a machine that had a 3/4" bearing. When the design was done, the question was asked if the bearing could be oversized. Because the bearing was a multi-configuration file, all that was needed was to right click on the bearing, click on the properties and select alternate bearing sizes. With this approach it was quite easy to verify if there were appropriate clearances, etc.

On another occasion, with a single part file, the exercise was quite different. First, the next larger size needed to be located and dropped into the assembly. Before some of the constraints could be made, the original part needed to be hidden. As the new part was constrained into position the number of button clicks started to add up. And then if it is found that a larger size is not appropriate, the "test" part needs to be deleted and the original part needs to be unhidden.

There are a lot of advantages for multi-configuration files, but these types of files are seldom found in the Solidworks World.

BTW, a number of multi-configuration piping component part files can be found at:
http://www.msioregon.com/SW_Products.html

While these files are designed for the SW Pipe Rout Add-in, the individual parts can be used within standard Solidworks assembly models as for any other library part. A great advantage is that if the pipe size needs to be changed, each of the components can be modified without affecting the constraints.

Challenge: Find a model of a 3/4" schedule 40, 90 degree elbow.

One of the reasons why I have spent so much time on these extended library components was when I needed a single schedule 40 elbow for a project to check clearances. I was amazed how difficult it was to find a good model.