

VBA PORTFOLIO

CODING EXAMPLES AND DOCUMENTATION



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DOCUMENTATION

Material Access Button Changes

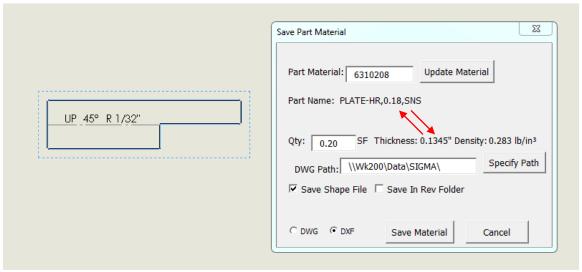


Figure 1: MATERIAL ACCESS

When the thickness of the SolidWorks part does not match the thickness for the material number and the user clicks "Save Material" button, an error message will pop up.

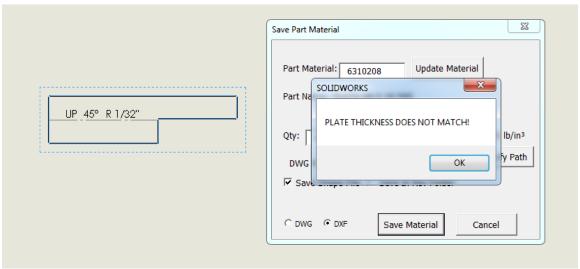


Figure 2: MATERIAL ACCESS

First message will display a message stating "Plate/Flat/Sheet Metal Thickness does not match!" Click ok.

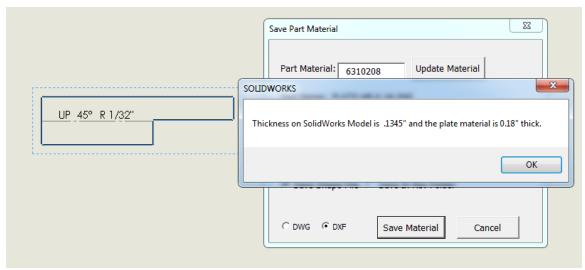


Figure 3: MATERIAL ACCESS

The second error message will tell you what the thickness on the model is and what the thickness for the material is. Click ok and the user will either have to click "Cancel" and make changes to the model or update the material number.

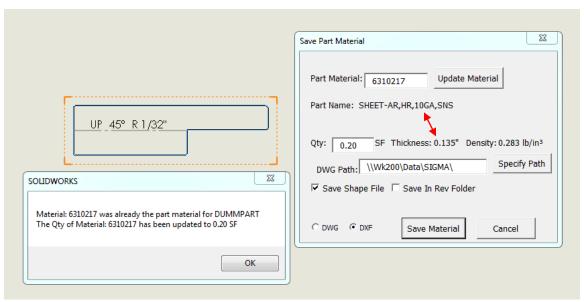


Figure 4: MATERIAL ACCESS

If the user mistakenly enters the wrong thickness while modeling the part but the thickness is within 5% of what the actual material thickness is then the software will allow it. For example, the figure above depicts 10GA material but the thickness on the SolidWorks part is 0.135" instead of 0.1345". The user can still proceed with creating the DXF file and saving the material even though the thicknesses are a little off.

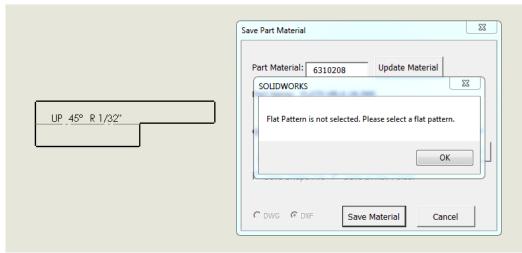


Figure 5: MATERIAL ACCESS

If the "Save Material" button is clicked without selecting a flat pattern, then the user is given an error message and will close out the form.

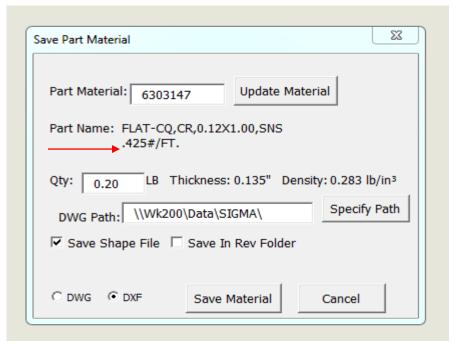


Figure 6: MATERIAL ACCESS

If the material has a part description in access depicting the pounds per foot for weight conversion, then that description will show up underneath the Part Name.

THESE CHANGES ACCOUNT FOR SHEET METAL, FLATS, AND PLATE MATERIALS ONLY

Pipes/Tubes and Blank Lengths

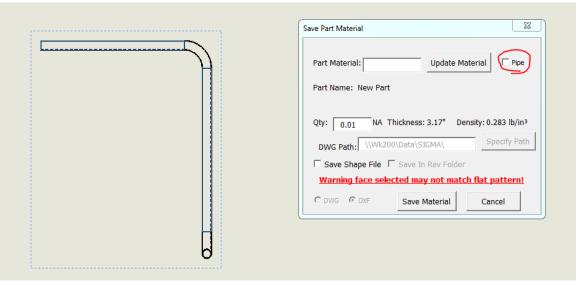


Figure 7: PIPE CALCULATIONS

There is a new feature added to the material access button. There is a check box now if the material is a pipe/tube.

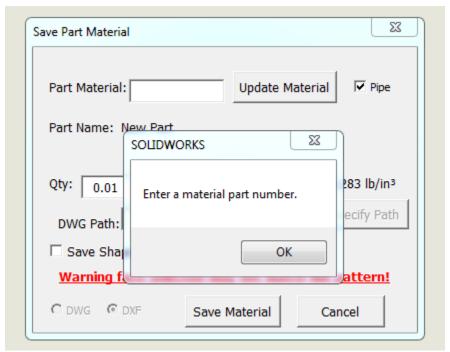


Figure 8: PIPE CALCULATIONS

If a material number is not entered, the user will be prompted to enter one in.

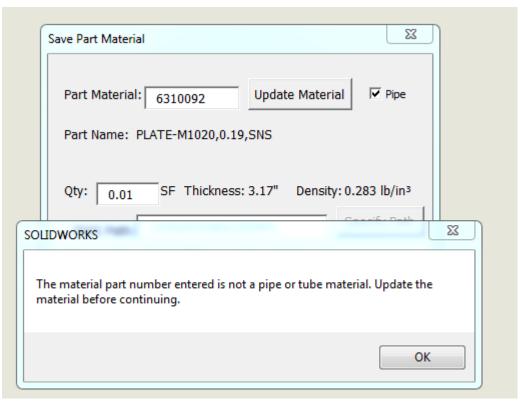


Figure 9: PIPE CALCULATIONS

If the material number entered is for anything besides a pipe/tube, then the user will be notified that the material number is wrong.

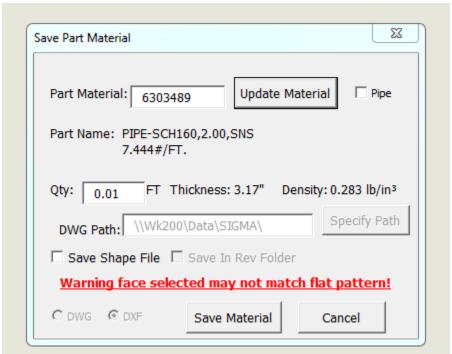


Figure 10: PIPE CALCULATIONS

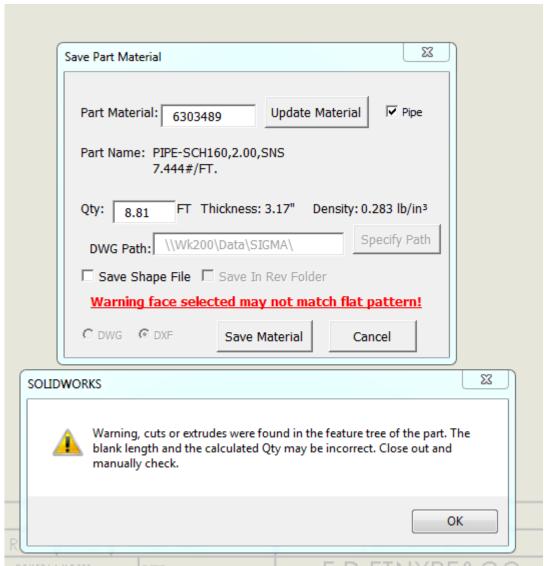


Figure 11: PIPE CALCULATIONS

Once the correct material part number is entered in, the program will calculate the quantity needed. If the part has "Cuts" or "Extrudes" in the feature tree of the part, the user will be notified to close out of the program and manually check that the quantity and blank length are calculated correctly.

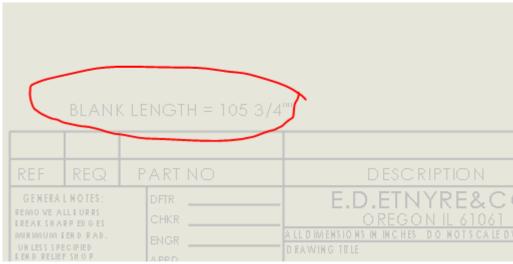


Figure 12: PIPE CALCULATIONS

The blank length will be shown here, above the drawing information. The blank length is rounded up to the nearest 1/8".

Auto LB Conversion

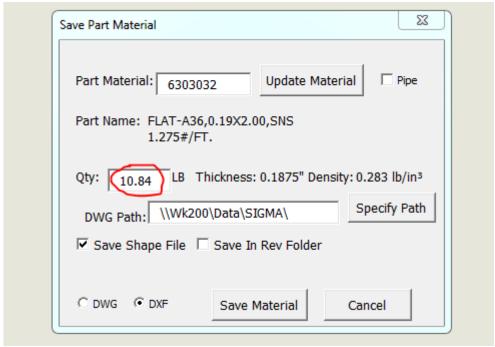


Figure 13: AUTO WEIGHT CALCULATION

When the user is creating a DXF file for FLATs/Angles, the weight is now automatically calculated for you using the conversion number found in the part description.

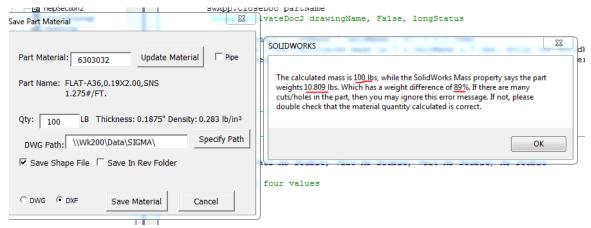


Figure 14: AUTO WEIGHT CALCULATION

The user will be prompted with an error message if the calculated weight ends up being more than 10% of what the mass property is of the part in SolidWorks. The user may continue with using the calculated quantity but is asked to manually check that the calculated amount is correct.

Virtual Button

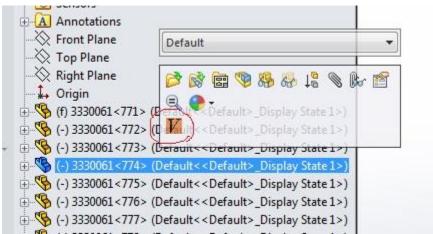
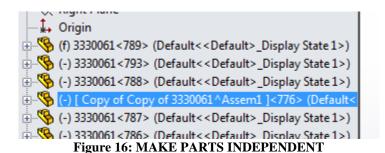


Figure 15: MAKE PARTS INDEPENDENT

Select a part and click the orange V Button to create a virtual independent part without changing any other instances of the same part in the assembly. The part must be selected from the list on the left side. **DO NOT** just click the part in the model.



(f) 3330061<817> (Default<<Default>_Display State 1>)

(-) 3330061<821> (Default<<Default>_Display State 1>)

(-) Copy (3) of Copy of 3330061^Assem1]<809> (Default)
(-) Copy of Copy of 3330061^Assem1]<776> (Default)
(-) Copy (2) of Copy of 3330061^Assem1]<795> (Default)
(-) 3330061<816> (Default<<Default>_Display State 1>)
(-) 3330061<815> (Default<<Default>_Display State 1>)

Figure 17: MAKE PARTS INDEPENDENT

Multiple independent parts can be made from the same part number and will be ordered accordingly.

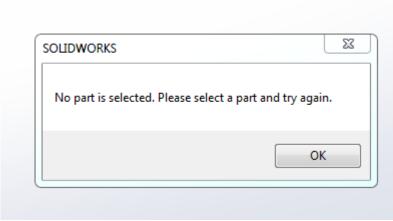


Figure 18: MAKE PARTS INDEPENDENT

An error message will pop up, prompting the user to select a part and try again if no part was selected to begin with.

- **Please note that the larger the assembly is the slower the macro might run. **
- **Also note that mirrored or patterned parts will also become independent, if the original part is independent. **
- ** If a mirrored or patterned part is selected, they will NOT become independent.**

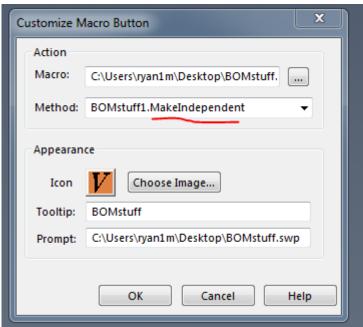


Figure 19: MACRO SET UP

The method in "BOMStuff" is called "MakeIndependent". The "V" image is what I recommend selecting. **New macro picture designs are welcome.**

BOM Compare In SolidWorks

This macro is very similar to the BOM Compare we have for access, except it is opened in SolidWorks. The macro will show the user a list of parts found in a referenced BOM that are missing in the current SolidWorks model that is open. The user will have the option to scroll through the list of missing components and select/insert them into their open model. The user will also have the option to look at a list of parts in the open model that are not found in the Referenced BOM part number.

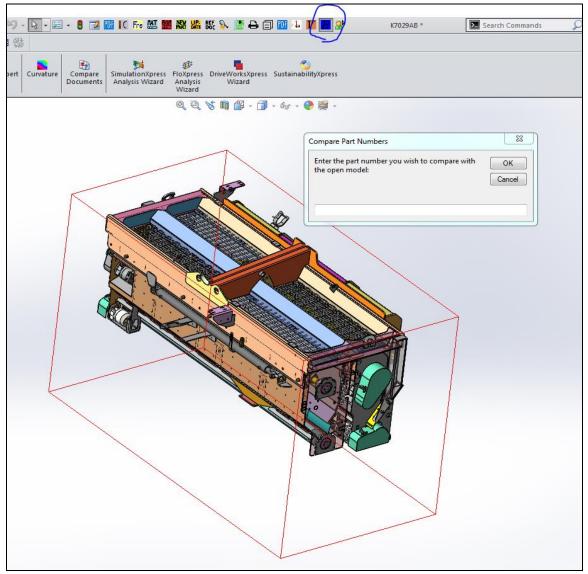


Figure 20: BILL OF MATERIAL COMPARISON

Start with opening a model and then clicking the B button. The user will be prompted to enter a part number with which the user wants to compare the BOM, for that part number, with their open model.

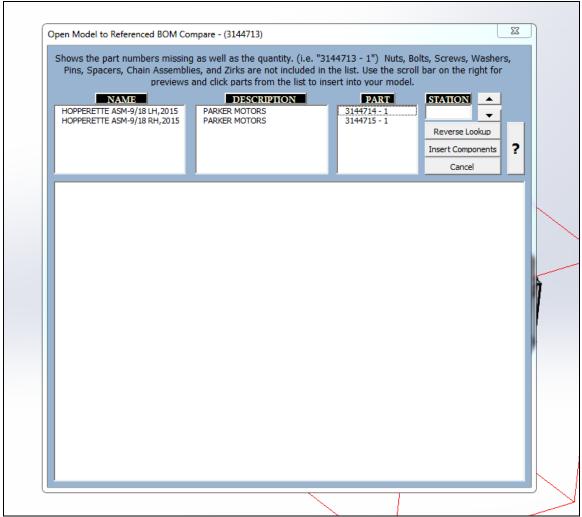


Figure 21: BILL OF MATERIAL COMPARISON

A userform will pop up showing a short description at the top of what the user is looking at. This where the BOM compare for access is different than the one for SolidWorks. No Nuts, Bolts, Screws, Washers, ect. will be shown in the list of parts missing. There are four list boxes each showing the Name, Description, Part Number with missing quantity, and Station Number.

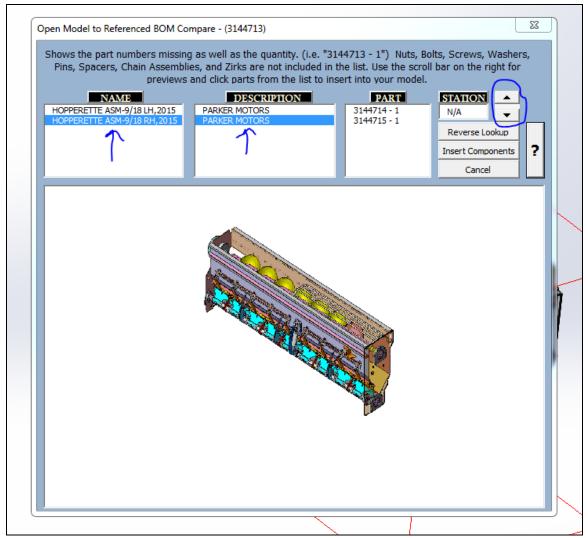


Figure 22: BILL OF MATERIAL COMPARISON

By clicking the up and down arrows on the scrollbar in the upper right hand corner, the name/description boxes will highlight with what part number is being shown in the preview box below. For longer lists of missing parts, the name/description/part number boxes will have synchronized scrolling. In the title of this userform, it will show the part number in () for what the user entered on the initial prompt. Click the "Reverse Lookup" button for this next step.

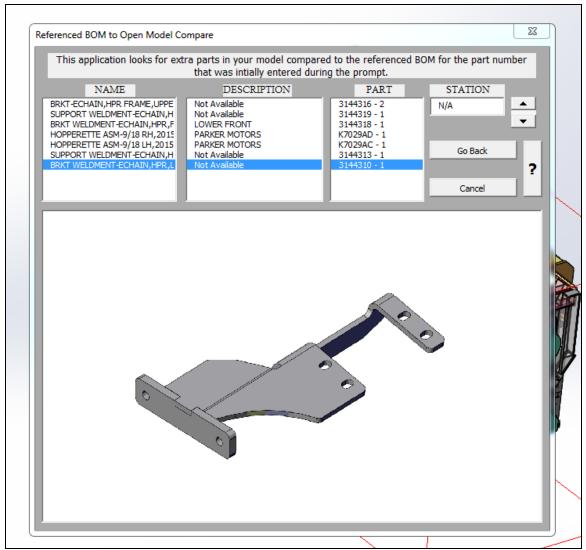


Figure 23: BILL OF MATERIAL COMPARISON

This userform, similar to the BOM compare for access, will show a list of parts that are in the open model but not found in the referenced BOM. The user can use the scrollbar in the upper right hand corner to scroll through the lists and show previews of the parts. Similarly, if the user clicks the "Go Back" button, the user will be brought back to the first userform.

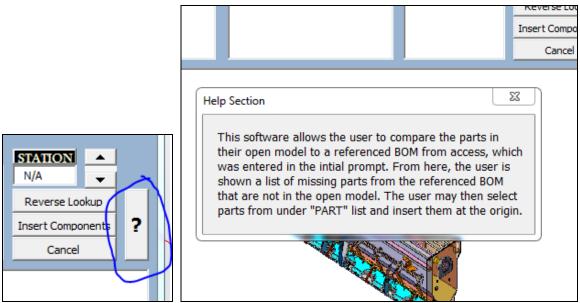


Figure 24: BILL OF MATERIAL COMPARISON

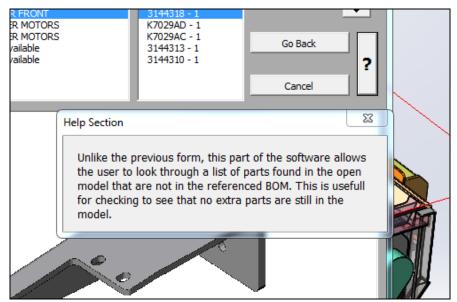


Figure 25: BILL OF MATERIAL COMPARISON

Both userforms have "?" boxes on them. When the user clicks these boxes, a "Help Section" will pop up which will further explain how the software works in case the user is confused.

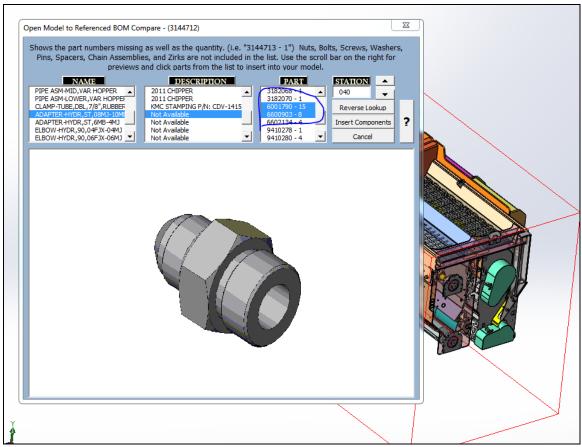


Figure 26: BILL OF MATERIAL COMPARISON

To insert components into the open model, select the part number(s) under the "PART" list and click the button "Insert Components". Notice under the "PART" list, we have the format "Part Number - Missing quantity". In this example we have, "6001790 - 15" and "6600903 - 8" selected already. By selecting these parts and clicking the "Insert Components" button, the user will insert exactly 15 parts of 6001790 and 8 parts of 6600903 in the model.

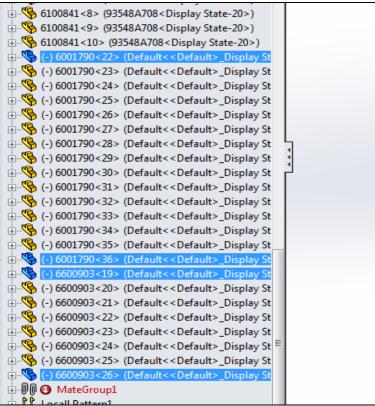


Figure 27: BILL OF MATERIAL COMPARISON

Picture above shows the parts, mentioned previously, inserted into the model.

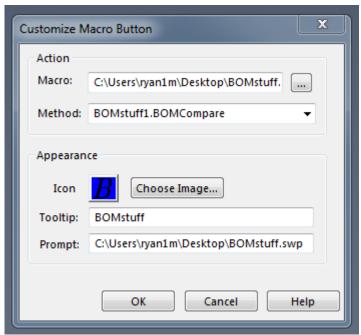


Figure 28: MACRO SET UP

The method in "BOMStuff" is called "BOMCompare". The "B" image is what I recommend selecting. **New macro picture designs are welcome.**

Drafting Tool, PDF/Drawing Release Button

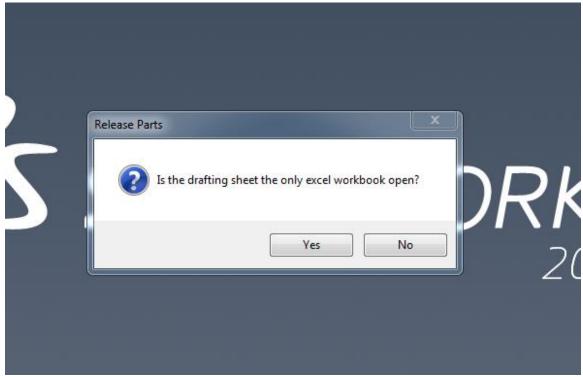


Figure 29: AUTO DRAWING AND PDF RELEASE

A pop up window will ask the user if there is only one excel workbook open. Click yes, if true, and no to exit the macro to close out other workbooks.

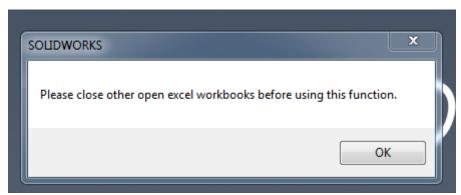


Figure 30: AUTO DRAWING AND PDF RELEASE

If the user clicks "yes" while there are other excel documents open, the user will be prompted to close them out before continuing.

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1	-	Water Spra	y System					o Drafting:				
2	Unit S/N:							Released:				
3	Engineer:	Ryan Moudy	/	Directory: C:\Data\sldworks\							+	
4											+	
5	Reference	New	Material		Des	cription		Draftii		+		
6		6604671	PUR.	SPR	AY NOZZLE, 1	/4 MNPT,	0.5GPM				\perp	
7		6604672	PUR.	ADA	PTER,ELBOW	/,04-MP-04				+		
8		6604673	PUR.	ADA	PT,STR,04MP	-04FPX				+		
9		6604668	PUR.	40 GAL SPRAY WASHER							+	
10		6604675	PUR.	T-ADAPTER,06FP-04FPX-04FPX							+	
11		3161164		AUT	WATER SP			+				
12	3161164	3161165		ON/OFF WATER SPRAY DECAL							_	
13		9306442	ASM.	WATER SPRAY switch/DECAL PLACEME						+		
14		3122320		BRA	CKET,BOLT-C	ON,40GAL	TANK				+	
15		3103748	ASM.	40 GAL, SPRAY SYSTEM ASM						+		
16		3103749	ASM.	WATER SPRAY SYSTEM ASM						_		
17		6309551	PUR.	TIE-E	OOWN STRAF	S W/ RAT				+		
18		3182533	PUR.	HOS	E-H20,AM04,2	5FT					\perp	
19		6704597	PUR.	WIR	E-18GA,RED,1	I5FT					+	
20		6704598	PUR.	WIR	E-18GA,BLAC	K,15FT					+	
21		K7060AA	ASM.	WIRI	NG DRAWING	, WATER	SPRAY				\perp	
22		XBK7060	GROUP		WATER SE	PRAY SYS	TEM				+	
23											+	
24				-							+	
25				_							+	
26											\perp	
27												

Figure 31: AUTO DRAWING AND PDF RELEASE

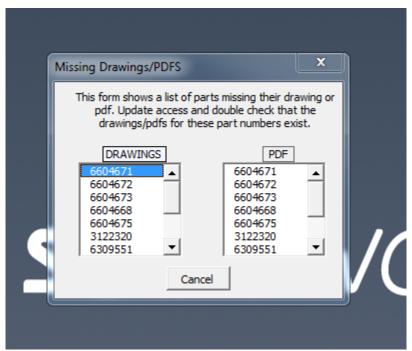


Figure 32: AUTO DRAWING AND PDF RELEASE

When the user only has one drafting sheet open, the program will run through the list of parts searching for drawings/pdfs, associated with those parts numbers, and checking if they are in access. If they are not, the user will be shown a form that lists which parts are missing drawings or pdfs. Double check that the part numbers have drawings/pdfs and update access.

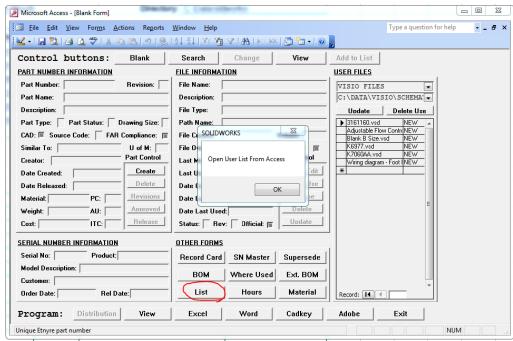


Figure 33: AUTO DRAWING AND PDF RELEASE

Once all the parts have drawings/pdfs, the Etnyre access form will pop up and the user will be prompted to open the User List.

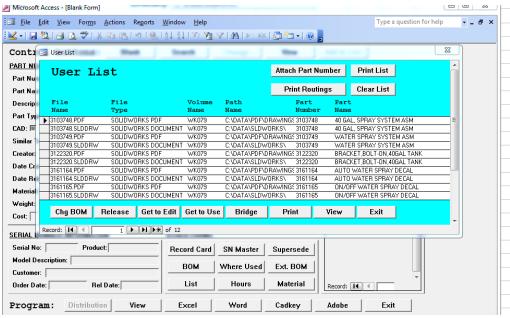


Figure 34: AUTO DRAWING AND PDF RELEASE

The user list in access is now populated with all the drawings/pdfs for the part numbers in the excel sheet. Click the "Release" button to release them all.

**Note: Have the shortcut for the "Etnyre" access on your desktop.

BEAWARE: THIS DOES NOT RELEASE THE PART NUMBER ITSELF. NOTE: ONLY WORKS FOR THOSE WHO DID THEIR OWN DRAFTING. CANNOT RELEASE DRAWINGS/PDF IF THEY WERE DRAFTED BY ANOTHER.

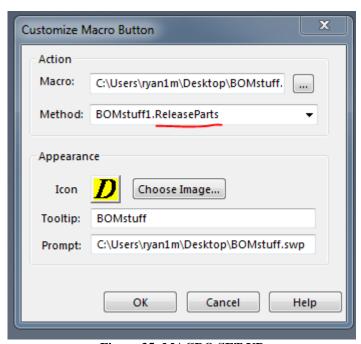


Figure 35: MACRO SET UP

The method in "BOMStuff1" is called "ReleaseParts". The "D" image is what I recommend selecting. **New macro picture designs are welcome.**

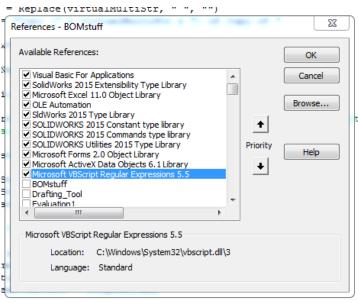


Figure 36: REFERENCES

List of references that need to be checked to run the newer macros.

Visio Macros

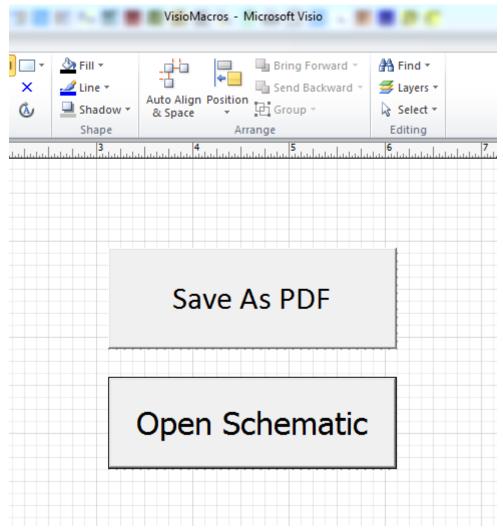


Figure 37: VISIO MACROS

Unlike SolidWorks and Microsoft Excel, there currently is not a way (unless someone has figured it out?) to add macro buttons to the toolbars of open visio documents. To circumvent this, we now have a visio document set-up with macro buttons on the page.

**WARNING: If you have 2003 Visio, you will not be able to use the "Save As PDF". Talk to IT about getting an upgraded seat.

**WARNING: If you have 2007 Visio, click the link below and download the pdf add-in to use the "Save As PDF" button.

https://www.microsoft.com/en-us/download/details.aspx?id=7

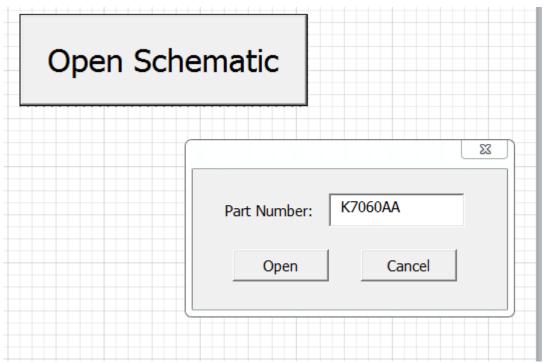


Figure 38: OPEN SCHEMATIC

Type in the part number for the schematic you would like to view and click "Open".

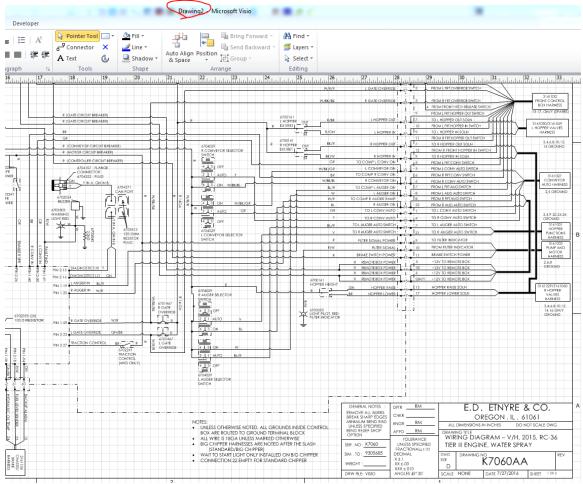


Figure 39: OPEN SCHEMATIC

A copy of the schematic will be opened for the user to view without having to get the schematic "To Edit" from Access. Please note that the title of this newly opened schematic is "Drawing2". The file is opened as a "Copy" of the original so any changes made to this document will not be reflected on the drawing stored on the I: Drive.

Save As PDF



Figure 40: SAVE AS PDF

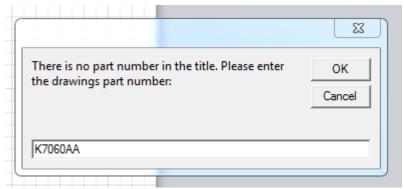


Figure 41: SAVE AS PDF

The second button "Save As PDF" is pretty self explanatory. There are a couple things that need to be pointed out before using it. If the user uses the "Open Schematic" button to open a drawing, it's opened as a "copy" of the drawing. The user will be prompted to enter a part number (or whatever they would like) to save as. If you have a drawing open that was "Get to Edit", it will just use the part number in the title.

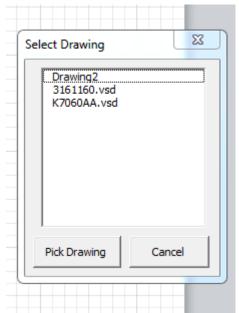


Figure 42: SAVE AS PDF

If there are multiple schematics open, the user will be prompted to choose from the list of open documents. Select one and click "Pick Drawing".

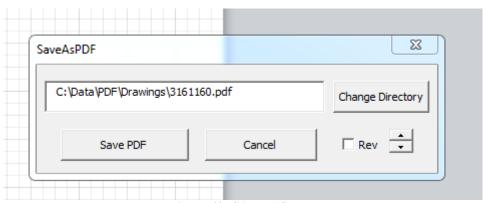


Figure 43: SAVE AS PDF

The selected drawing will automatically be set up to save in your PDF/Drawings folder. Click Save PDF to save the document to the specified path.

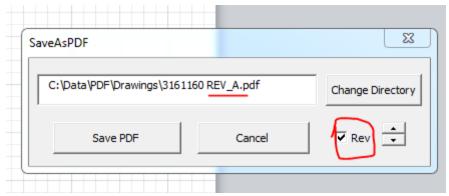


Figure 44: SAVE AS PDF

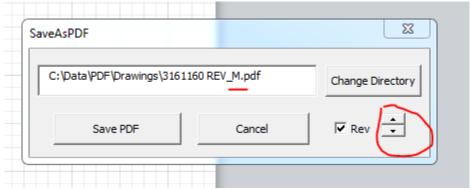


Figure 45: SAVE AS PDF

A feature was added at the request of someone else but others might find this useful as well. If the user checks the box next to "Rev", it will add a revision to the title. (i.e. "3161160 REV_A) This may be useful for when the user has to make a revision to a drawing where an outside vendor is responsible for assembling it and we want to help the vendor keep track of the revision levels. The user can also change the revision level by clicking the scrollbar.

For example: If the drawing is on the 4th or 5th revision that was done, click the scrollbar next to "Rev" to change from "REV_A" to "REV_B" and so on.

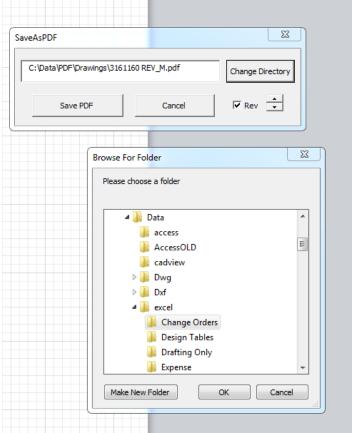


Figure 46: SAVE AS PDF

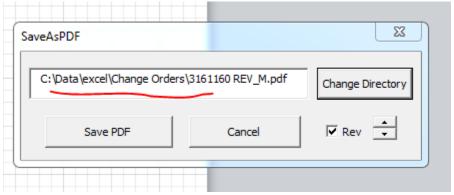


Figure 47: SAVE AS PDF

The user can change the directory of where to save the pdf to by clicking "Change Directory". The file path will automatically be updated to reflect this. **Note: If someone wants their default path to be set to somewhere else, please let me know and I will write in an exception for you.**

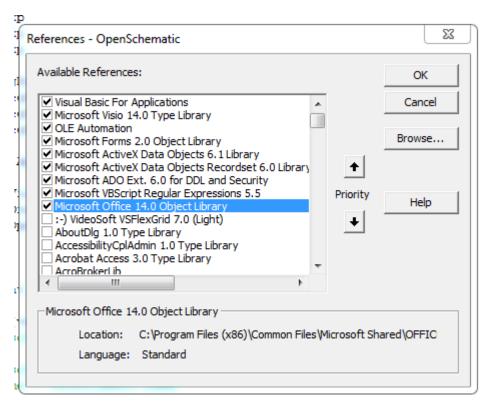


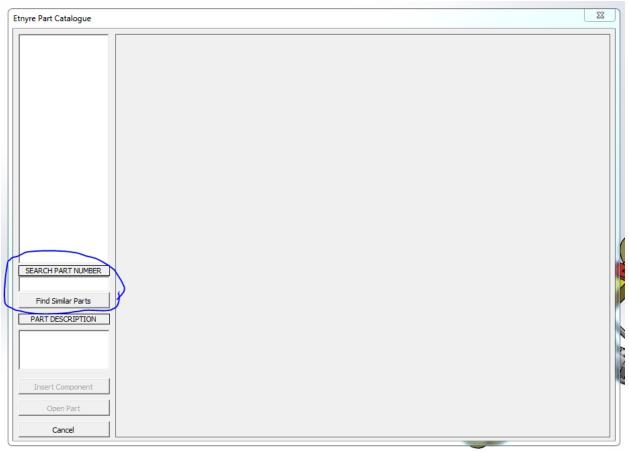
Figure 48: REFERENCES

List of references that need to be checked to run the visio macros.

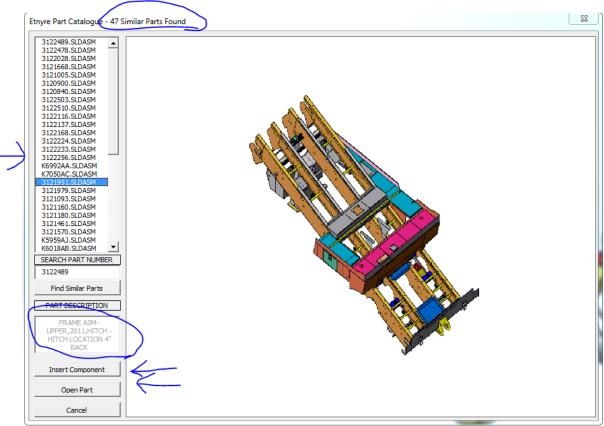
Etnyre Part Catalogue Macro



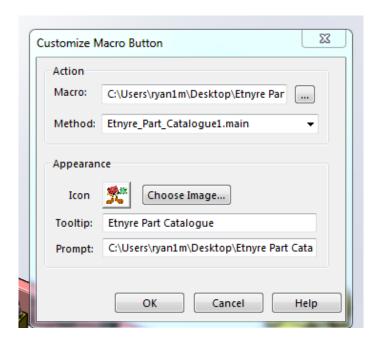
Click the macro icon shown above.



Use the "SEARCH PART NUMBER" textbox to enter part numbers and click "Find Similar Parts" button. All part numbers that are similar to the one you are searching for will populate the scroll box.



Move the mouse cursor over the list of part numbers and use the scroll wheel to scroll through the list of parts. The total number of similar parts found are shown at the top of the userform. The currently selected part number will show both its 'Part Name' and 'Description' in the "PART DESCRIPTION" box, as shown in access. Clicking the "Insert Component" button will insert the currently selected part into your open model. Clicking the "Open Part" button will open the currently selected part separately.



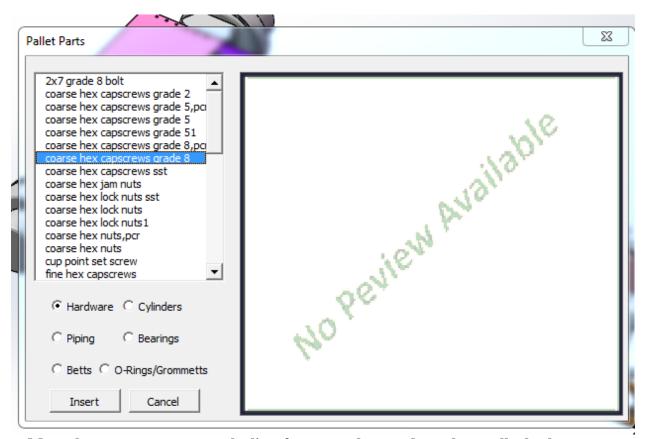
The picture can be found with the rest of the macro pictures located on the G drive. It is called "catalogue".

 $G: \DATA \SLDWORKS \Macros \Access Integration \catalogue.bmp$

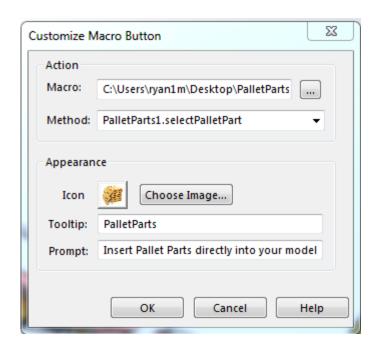
Pallet Parts Macro



Click the macro icon shown above.



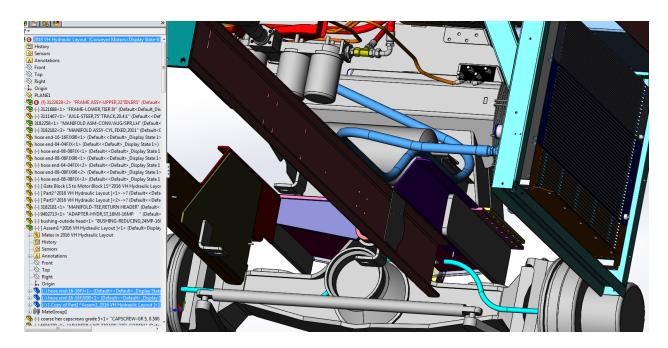
Move the mouse cursor over the list of part numbers and use the scroll wheel to scroll through the list of parts. With the item selected, click the "Insert" button to insert the selected parts directly into your open assembly. Click the empty circle next to the category to peruse its contents. Be aware that hardly any of the parts will have a "preview" available, most do not.



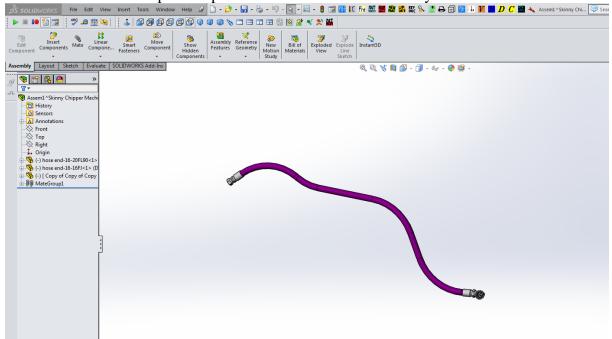
The picture can be found with the rest of the macro pictures located on the G drive. It is called "palletParts".

 $G: \DATA \SLDWORKS \Macros \Access Integration \Pallet Parts. Bmp$

Hose Assembly Creator 2.0

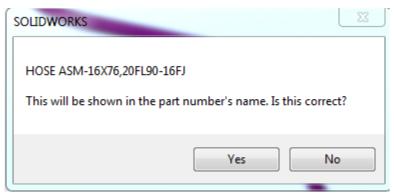


This macro is similar to the last one except I took it one step further to help the user set up a new part number for the hose assembly.

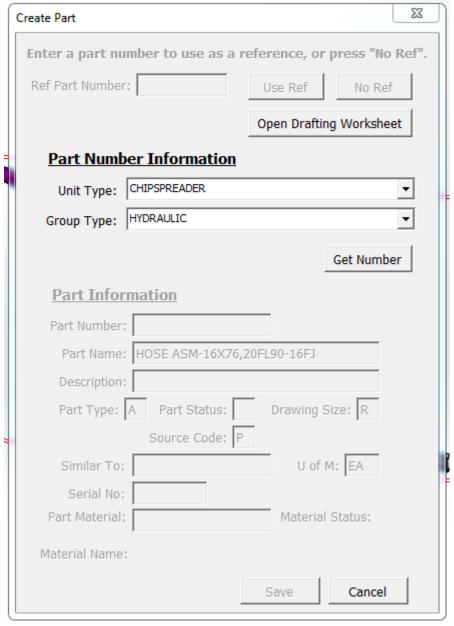


Just like the last time, select your hose and two ends, right click the selected components and "Form New Assembly". Open the new hose assembly.





Click the macro button. The user will be prompted to answer yes or no, for whether or not the nomenclature for this particular hose assembly is correct.

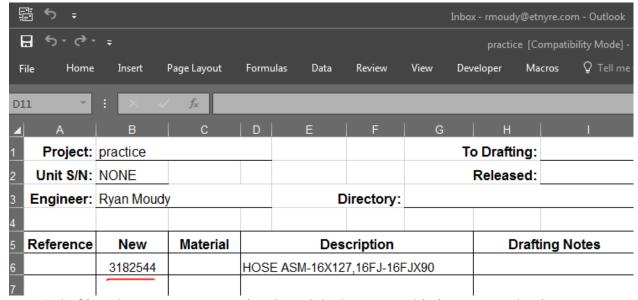


The first part of the "Create Part" form is entirely skipped. The Unit/Group type is already preselected for chipspreaders and the hydraulic group numbers. Observe how the "Part Name" is already populated with the nomenclature previously shown and how Part Type, Drawing Size, Source Code and U of M are all filled in as well. Click the "Get Number" button.

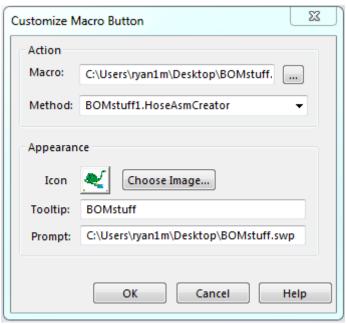
Note The user has the option to click the "Open Drafting Worksheet" button still.

(Create Part							
Enter a part number to use as a reference, or press "No								
	Ref Part Number: Use Ref No Ref							
	Open Drafting Worksheet							
	Part Number Information							
١	Unit Type: CHIPSPREADER ▼							
	Group Type: HYDRAULIC ▼							
	Get Number							
	Part Information							
	Part Number: 3182547							
	Part Name: HOSE ASM-16X76,20FL90-16FJ							
	Description:							
	Part Type: A Part Status: N Drawing Size: R							
	Source Code: P							
	Similar To: U of M: EA							
	Serial No: NONE							
	Part Material: Material Status:							
	Material Name:							
	Save Cancel							

The information stays filled in and now the user just has to click the "Save" button.



A drafting sheet was set up previously and the hose assembly is now saved to it.



The method for this macro is "HoseAsmCreator", which is built into the BOMstuff macro.