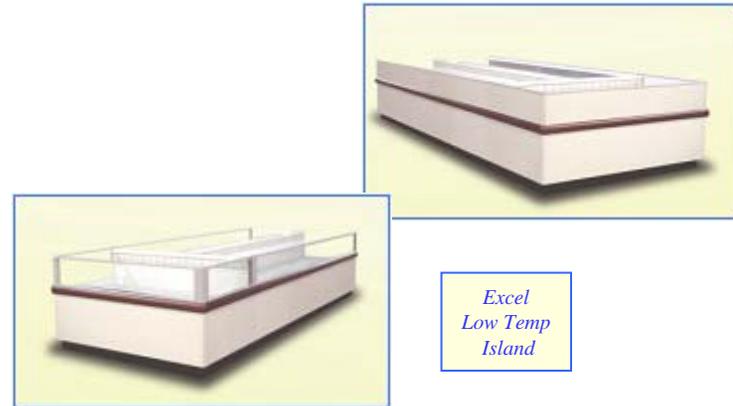


Tips and Techniques in SE V18

Marian Boultes
Hussmann Corporation
Marian_Boultes@irco.com
314-291-2000

HUSSMANN



Premium Partners:



Microsoft

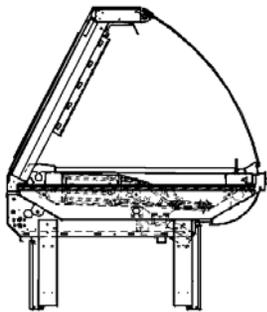
Hussmann Corporation

- World leader in merchandising equipment and refrigeration systems to customers in over 80 countries.
- Chief markets are supermarkets, convenience and specialty stores, and foodservice.
- An IR (Ingersoll-Rand) company, Hussmann is part of the IR Climate Control Sector, which also includes Thermo King.

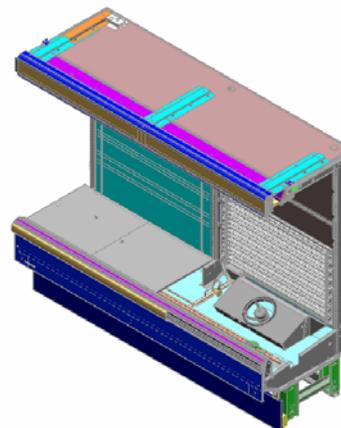
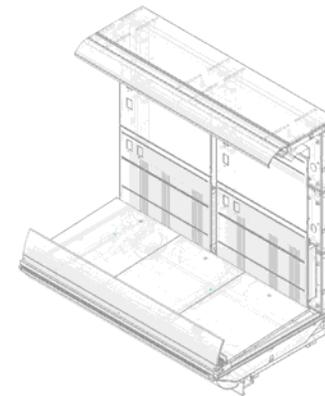
Husmann Refrigeration Cases

IMPACT CASE LINE

- Refrigerated Display Merchandisers



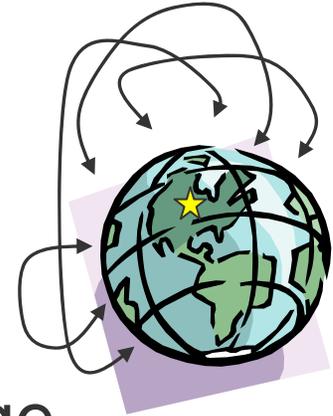
- Elite Display Merchandisers



- Excel Display Merchandisers

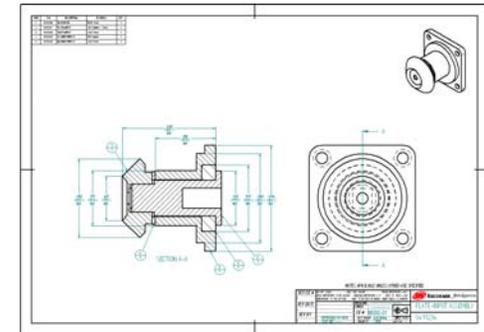
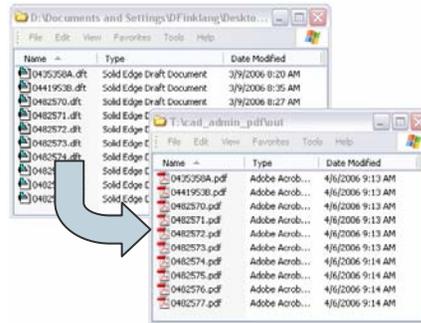
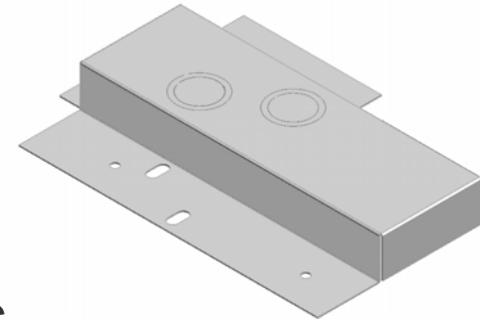
Hussmann Solid Edge Users

- Hussmann has ~150 SE Users worldwide including the US, Brazil, Mexico, India, China, and Japan
- The Bridgeton facility has 64 Solid Edge Users (8 in New Product Development & 56 in Engineering)
- Hussmann has used Solid Edge since version 3.5



SE Tips and Techniques

- Techniques for creating models
- Techniques for creating drawings
- Other tools



- A few tips on features introduced in SE V18

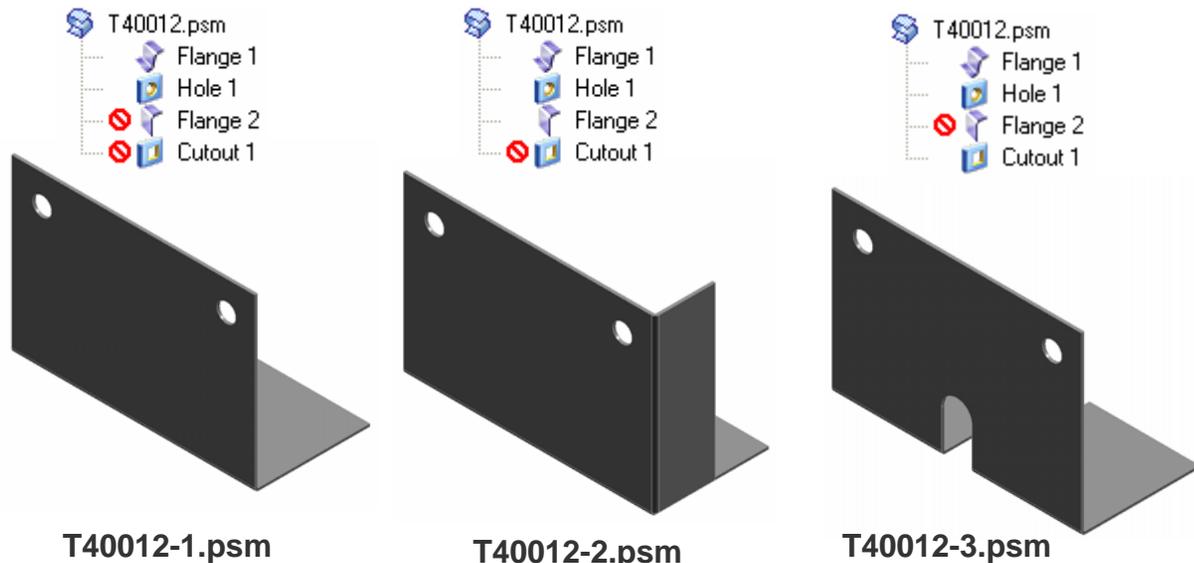
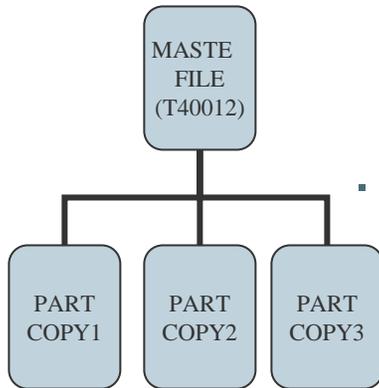
Techniques for Creating Models

- Simplify profiles
- Family of Parts (FOP)
 - What is FOP?
 - Creating FOP files
 - Moving FOP files
- Variable feature patterns
 - Patterns with even hole spacing
 - Patterns with uneven hole spacing
(Patterns of patterns)
- Property Manager

Techniques for Creating Models

What is Family of Parts (FOP)?

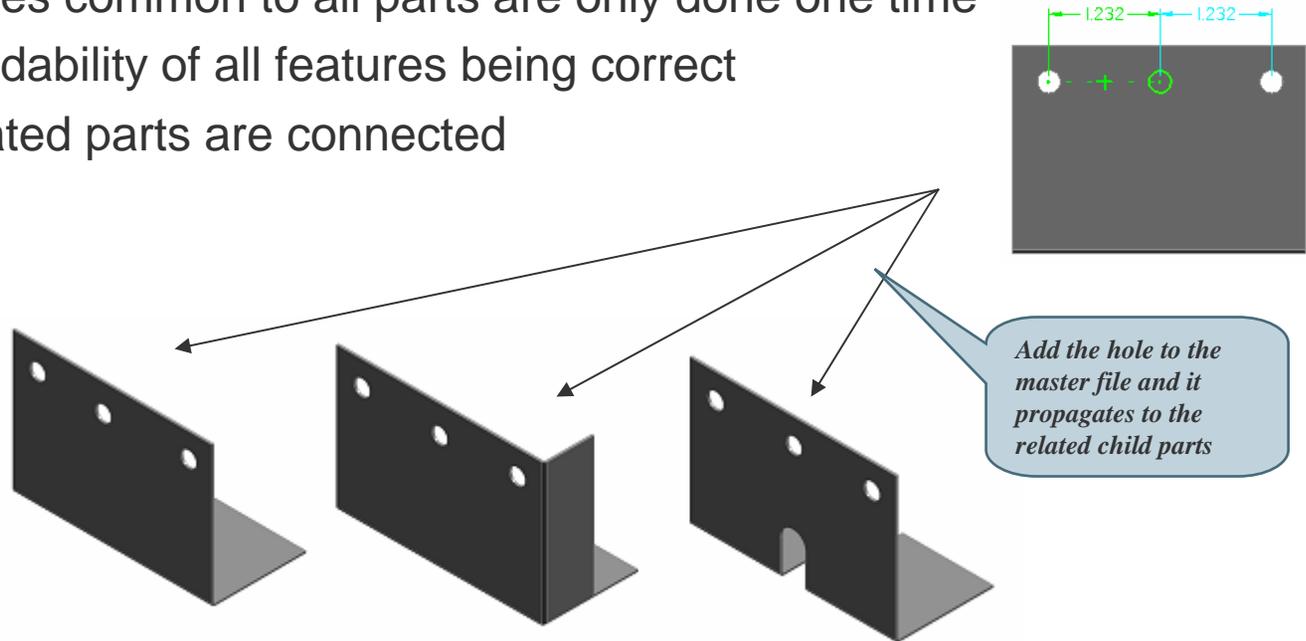
- FOP is the creation and use of one master file that controls a set of similar parts that are represented by associatively linked part-copy files
- All changes to the part copies are made in the master file by suppressing features and creating variables



Techniques for Creating Models

PROS

- Changes common to all parts are only done one time
- Dependability of all features being correct
- All related parts are connected



CONS

- Most changes made to one part-copy put all part-copies out of date
- Only one person can work on the entire group of files at a time

Techniques for Creating Models

Using and managing family of parts

- Creating family of parts files
 - Create basic part
 - Go to the Family of Parts tab
 - Click on New button, type in a name, repeat as necessary
 - Add any necessary variables

The image shows a CAD software interface with a 'Family of Parts' dialog box and a 'Variable Table' window. The 'Family of Parts' dialog has a 'New' button highlighted with a callout. The 'Variable Table' window shows a table of variables with columns for Type, Expose, Name, and Value.

Type	Expose	Name	Value
Var	<input type="checkbox"/>	PATT1_X_SP	20.000 in
Var	<input type="checkbox"/>	PATT1_Y_SP	10.000 in
Var	<input type="checkbox"/>	LENGTH	72.000 in
Var	<input type="checkbox"/>	CUTOUT1_START	6.000 in
Var	<input type="checkbox"/>	QTY_PATT1	4.000 in

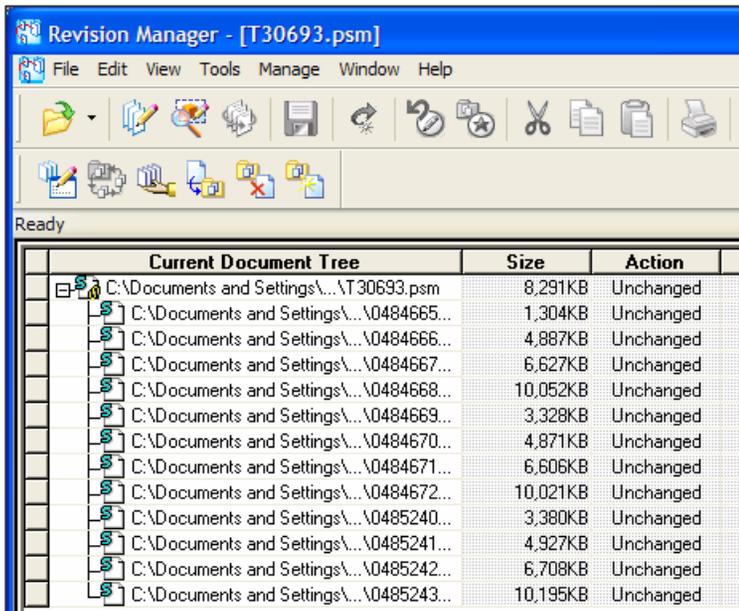
The 'Family of Parts' dialog shows a 'Members' list, a 'Suppressed features' list, and a 'Variables' table. The 'Variables' table has the following data:

Name	Value
LENGTH	72.000 in

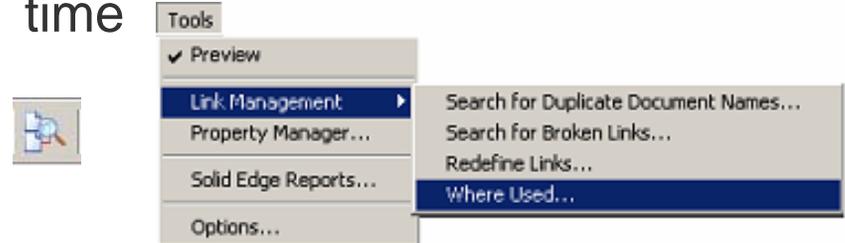
Techniques for Creating Models

Using and managing family of parts

- Moving family of parts files
 - Revision Manager shows the master file and the associated part copies



- The files can and should be moved together in one action
- Using Link Management and doing a 'Where Used' allows you to move any associated drafts at the same time



Techniques for Creating Models

Variable feature patterns

- Two main types that cover most situations
 - Feature pattern with same spacing between features and different leftover dimension at end



VARIABLEPATTERN
S1.doc



VPATTERNS1.psm



- Feature pattern with same leftover dimension at end and different spacing between features



VARIABLEPATTERN
S2.doc



VPATTERNS.psm

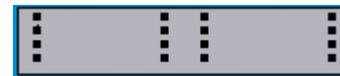


Techniques for Creating Models

Variable feature patterns

- Patterning features that do not have even spacing between features

- Use patterns of patterns



- Create the main feature



- Create a fit pattern of the first spacing

- Then create a fill pattern including the main feature and the first pattern

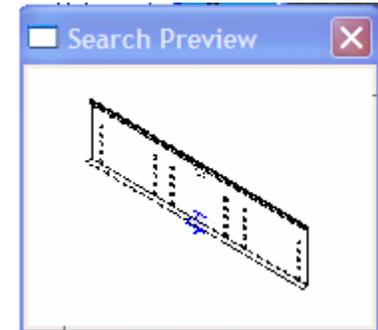
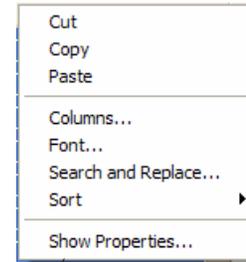
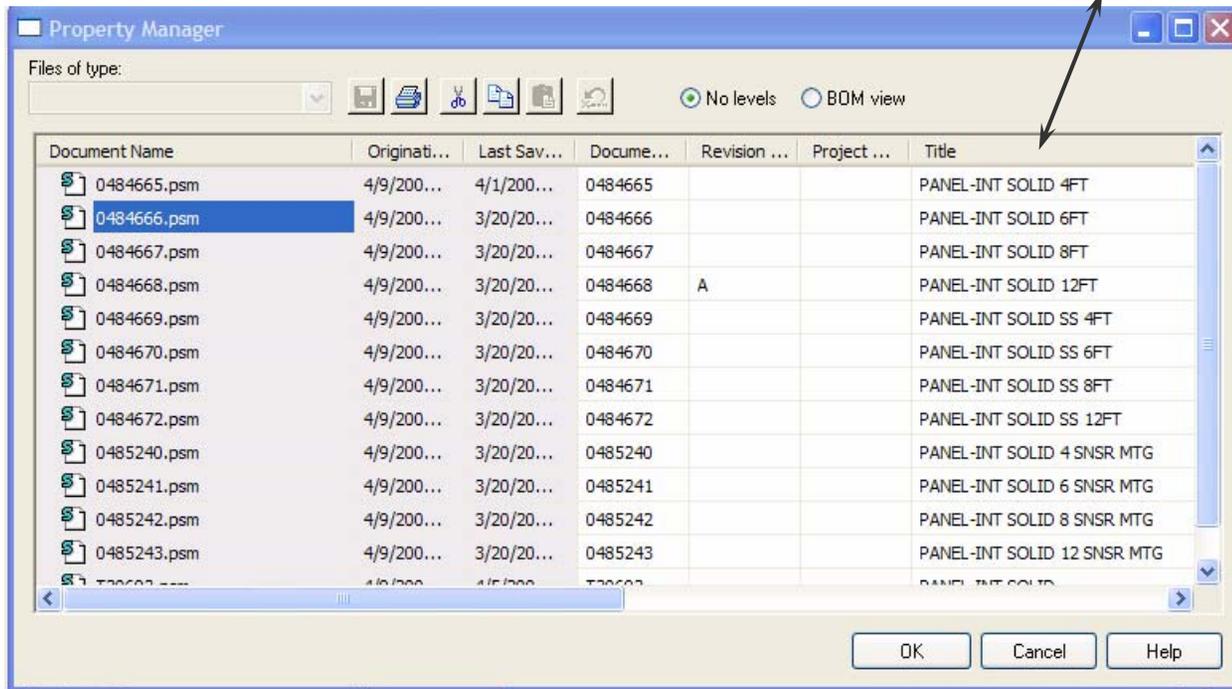


VPATTERN3.psm

Techniques for Creating Models

Using Property Manager

- Tools menu



- Right click in column title area for options
- Click on a row to display a preview

Techniques for Creating Drawings

- Unique dimension styles for different drawing elements
- Leader lines
- Associative callouts
- Self-populating title blocks
- Parts lists on drawings
- Custom toolbar buttons

Techniques for Creating Drawings

Unique dimension styles for different drawing elements

- Format menu

- Style

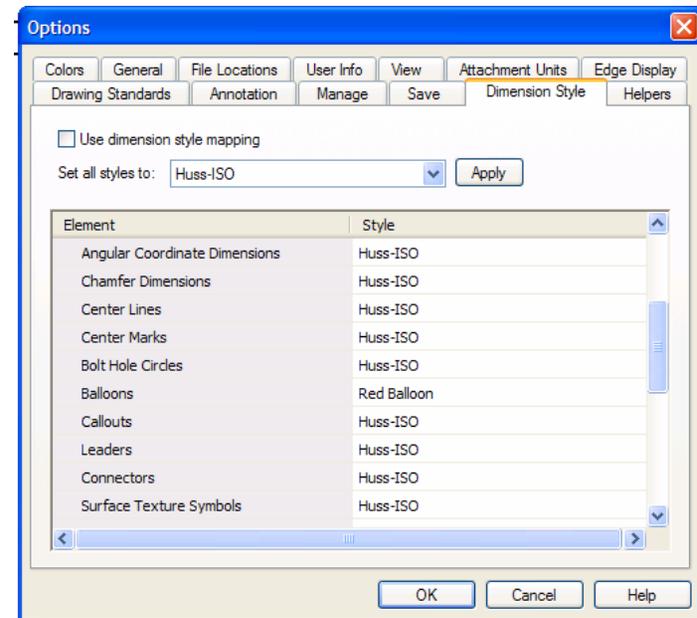
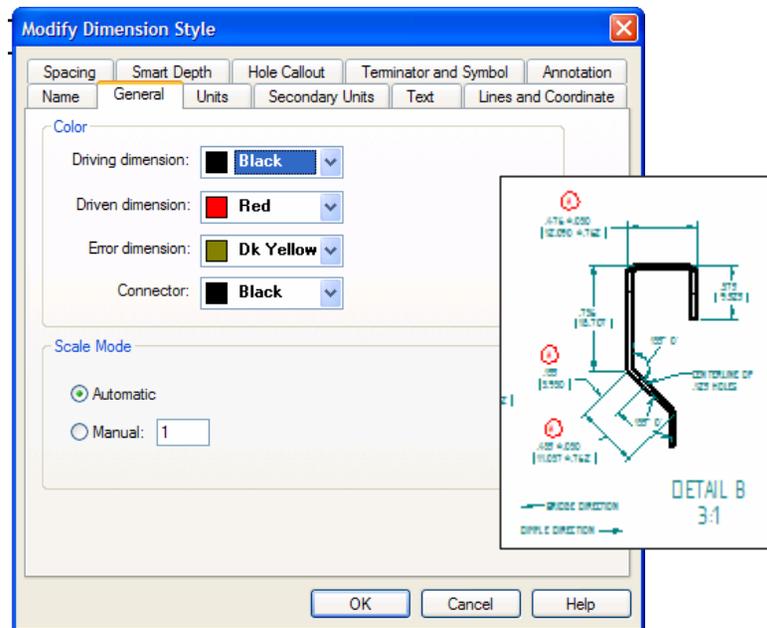
- General tab

- Change driven dim to red

- Tools menu

- Options

- Dimension style tab

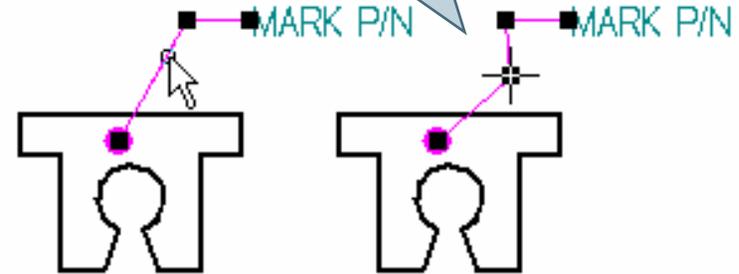


Techniques for Creating Drawings

Leader lines

- Breaking leader lines
- Changing attachment location of leader

You can insert and delete vertices from leaders using the ALT key on the keyboard

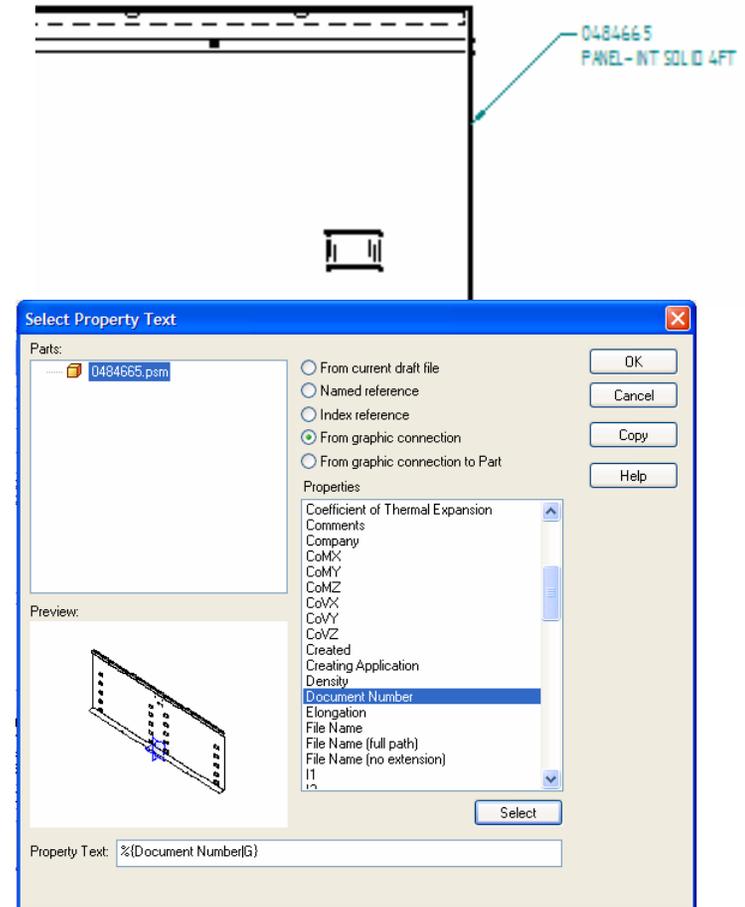
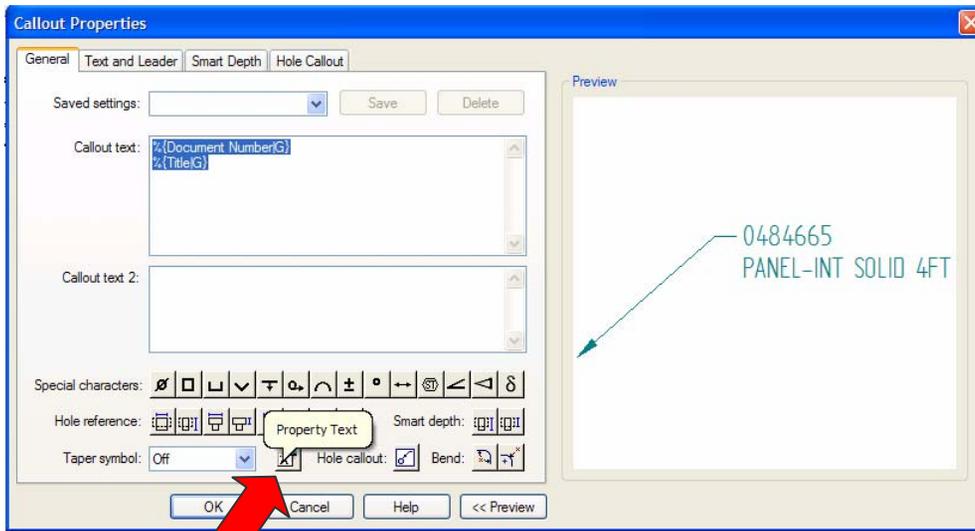


You can also move the attachment of leaders using the ALT key on the keyboard



Techniques for Creating Drawings

Associative callouts



Techniques for Creating Drawings

Self-populating title blocks

Defining where the property is extracted from for the title block has been the hardest part about using a self-populating title block.

Saving time is another challenge. If a designer has to update properties in several different places where is the advantage? Using the property manager or a prop synch add on may be a good option...

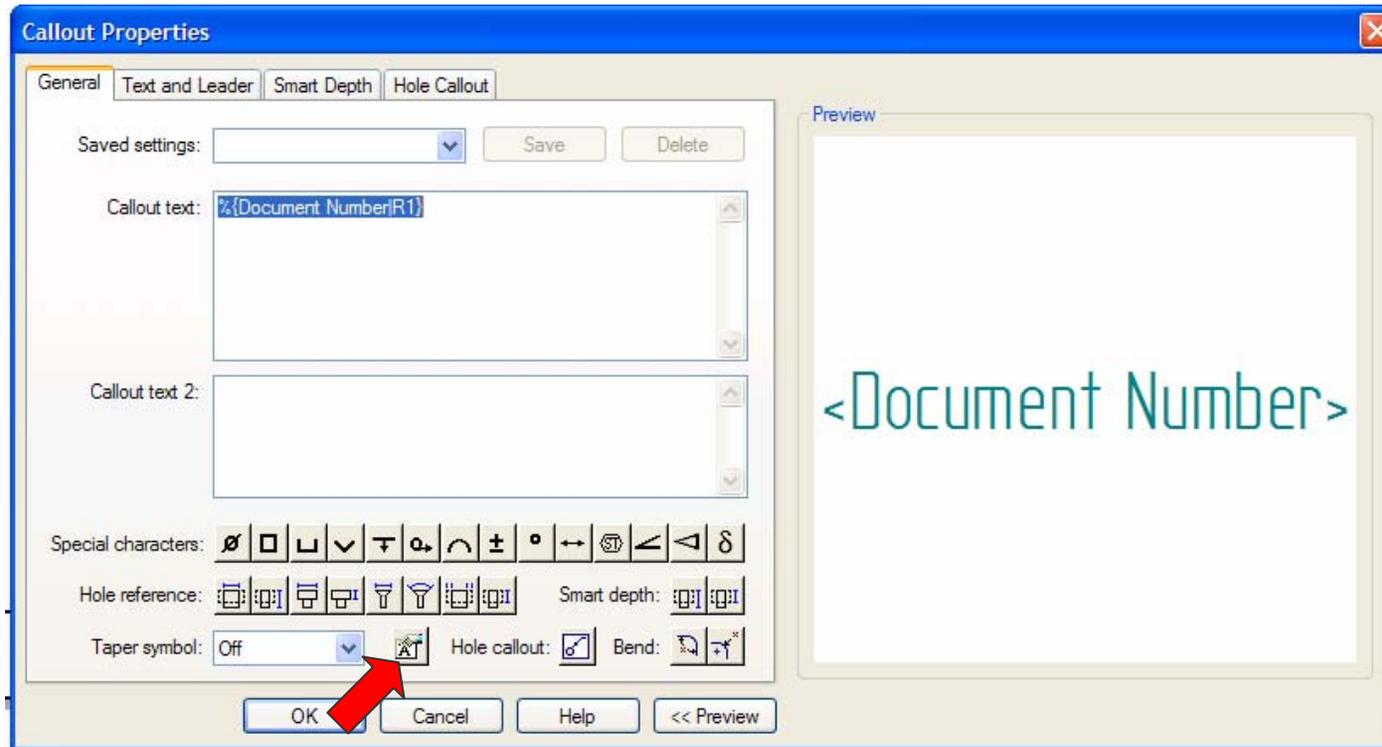


REV EO #			MATERIAL	.033 MIN C.R.S. TXTD		BEND DOWN	HUSSMANN.		KOXKA	
-			FINISH	99000		BEND UP	An IR Ingersoll-Rand business			
REV DATE			DIM. EXT	-			BRACKET-FRONT LWR			
-			SHEET METAL	SCRAP	QUANTITY SHEET METAL		D5LZ - 8, 12			
REV BY			PAINT	QUANTITY PAINT	kg	ORIGINAL PART NUMBER & REV	0379011			
-	- SUPERSEDES: -		EO #	DRAWN BY	DATE	Sheet No.	UNITS	-		
-	REVIEWED BY: MTB	APPROVED BY: -	N1006-05	DCF	040506	1/1	in/mm	-		

Techniques for Creating Drawings

Self-populating title blocks

- Create associative callout, attach without leader



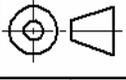
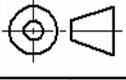
Techniques for Creating Drawings

Self-populating title blocks

- Without a model attached to the draft

REV EO #	DO NOT SCALE HOLE DIMENSIONS TO BE ± 0.005 " DIMENSIONS TO THE OUTSIDE	FACE SIDE SHOWN ANGULAR DIMENSIONS = 2° PART TO BE FREE OF BURRS, SHARP EDGES, & CORNERS	LINEAR DIMENSIONS = 0.31" HOLE TO HOLE = .010"	 Husmann. Bridgeton
REV DATE	-	MATERIAL	Error: No reference	
-	-	FINISH	Error: No reference	
REV BY	-	EO #	Error: No reference	
-	Error: No reference	DATE DRAWN	Error: No reference	
-	Error: No reference	DRAWN BY	Error: No reference	UNIT INCHES SHEET NO. 1 / 1

- With a model attached to the draft

REV EO #	DO NOT SCALE HOLE DIMENSIONS TO BE ± 0.005 " DIMENSIONS TO THE OUTSIDE	FACE SIDE SHOWN ANGULAR DIMENSIONS $\pm 2^\circ$ PART TO BE FREE OF BURRS, SHARP EDGES, & CORNERS	LINEAR DIMENSIONS ± 0.31 " HOLE TO HOLE $\pm .010$ "	 Husmann. Bridgeton
REV DATE	-	MATERIAL	.035 MIN GALV (G-60U)	
-	-	FINISH		
REV BY	-	EO #	N10883	
-	-	DATE DRAWN	3/16/2006	
-	-	DRAWN BY	PAL	UNIT INCHES SHEET NO. 1 / 1

Techniques for Creating Drawings

Custom toolbar buttons

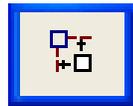
- Dimension category



Attach Dimension (also on Tools menu)



Prefix Copier (also on Format menu)

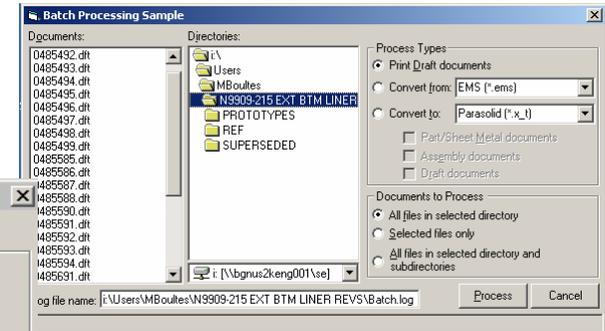
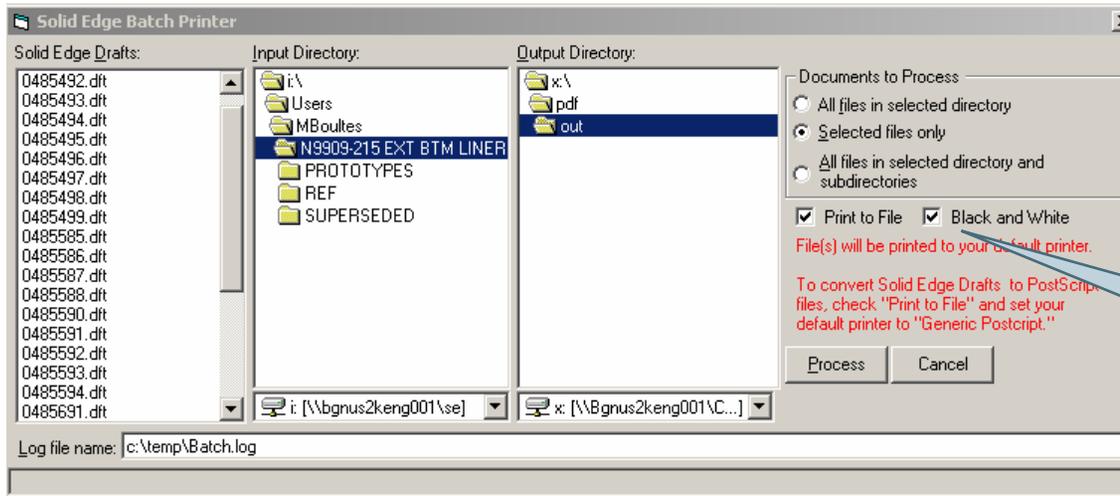


Line Up Text (also on Tools menu)

Other Tools

PDF generator

- Uses Ghostwriter and a postscript processor to generate a PDF from a “Print to File” operation in Solid Edge
- Reconfigured the SEBatchprint to allow mass PDF generation of SE draft files by folder location



PDF's can be generated in black & white or color, letter or 11X17, depending on the PS printer configuration

A few tips on features introduced in SE V18

- In V18 you can drag and drop a part from the Assembly PathFinder into an assembly.
- When using FlashFit, the Unlock Rotation and Lock Rotation buttons are now available when you are using an axial align relationship.
- You can also turn on the reference plane of the target part when using FlashFit.

Thank You

- Questions?