SOLIDWORKS WORLD 2012

How to Build and Maintain Effective Design Tables

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How we run a session

- Show information on slide, then switch and show example in SolidWorks
- Simplified examples (not real world) to focus on specific topics
- Bring up questions as you have them
  - We might defer to a later point
  - The more of discussion we have, the better it is for everybody
- Please fill out review sheets

Agenda

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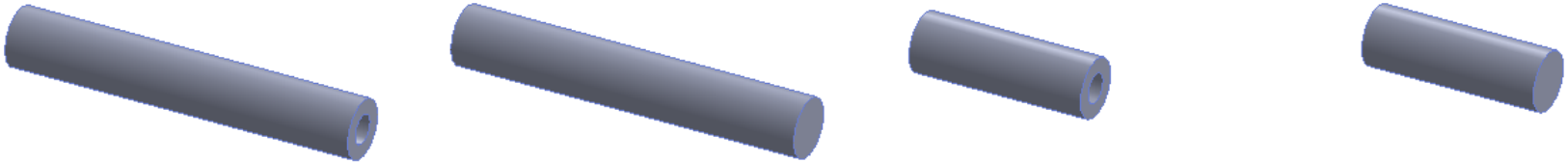
- Design Tables in part models
  - Configuration Basics
  - Design Table Basics
    - Formatting
    - Creating/Inserting
    - Editing
    - Options
  - Planning the Design Table
    - What Can a Design Table Control?
    - Big Picture Questions to Ask
    - Naming Features and Dimensions
  - Execution Tips
    - Displaying Dimensions
    - Start Simple
    - Trial and Error
    - Add User Notes (Comments)
    - Don't Add Too Much
    - Save a Design Table Copy
    - Don't Skip Rows/Columns
  - Bringing It Together - Pipe Example
    - Formulas
    - Drop Down Boxes
    - Conditional Formatting
    - Concatenations
- Taking it to the Next Level
  - Configuration Publisher
    - General Overview
    - Single-Line Design Table
    - Multi-Line Design Table
- Design Tables in Assembly Models
  - How is it Similar to Part Design Tables?
    - Custom Properties
    - Dimensions
    - Suppress
  - How is it Different from Part Design Tables?
    - Levels
    - Instances
- Design Tables in Drawings
  - A Model's Design Table Can Be Shown on a Drawing Sheet
  - The Design Table Needs to Be Cleaned Up First
  - What We See in the Model Edit Window is What We See on the Drawing Sheet

Design Tables in Part Models: Configuration Basics

- Different versions of a part within a single model file
  - Configuration Manager
    - Activate
    - Add
    - Edit
  - Most Common Items to Configure
    - Dimensions
    - Feature Suppression
    - Custom Properties

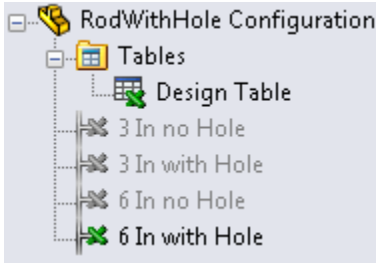


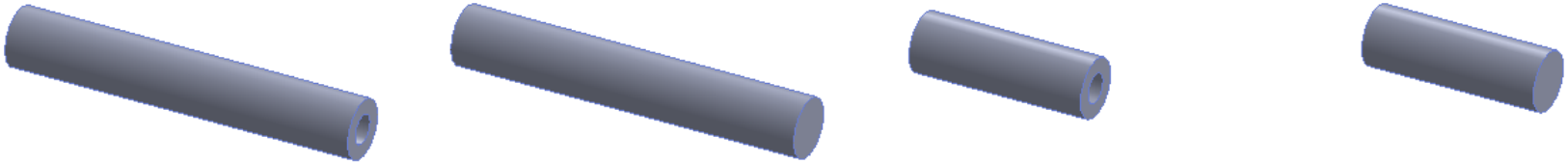
Design Tables in Part Models: Design Table Basics - Formatting

- Excel Spreadsheet Controls Configurations
  - Formatting
    - Configuration names down the left column
    - Parameters to control across the top
    - Careful with syntax

	A	B	C	D	E
1	Design Table for: RodWithHole-NoDT				
2		$PRP@PartNo	Length@Pipe	$STATE@Hole	
3	6 In with Hole	6 H	6	U	
4	3 In with Hole	3 H	3	U	
5	6 In no Hole	6 NH	6	S	
6	3 In no Hole	3 NH	3	S	
7					

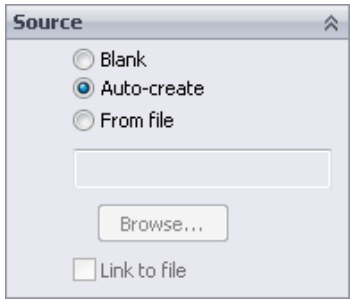
Sheet1

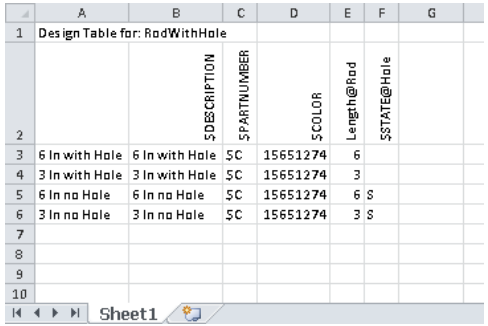




Design Tables in Part Models: Design Table Basics – Creating/Inserting

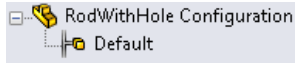
- Create (Insert, Tables, Design Table)
  - Blank
  - From File (Linked or Unlinked)
  - Auto-Create
    - Multiple Configs Already Exist
    - Only One Config Exists

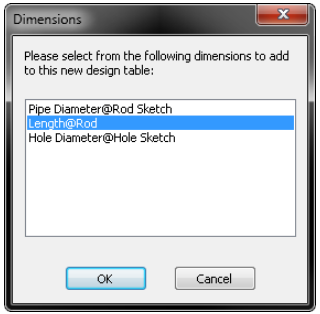


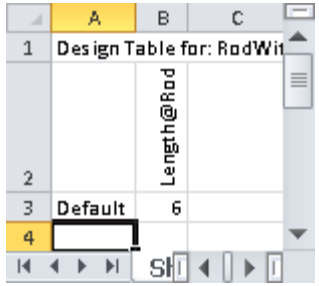


	A	B	C	D	E	F	G
1	Design Table for: RodWithHole						
2		$DESCRIPTION	$PARTNUMBER	$COLOR	Length@Rod	$STATE@Hole	
3	6 In with Hole	6 In with Hole	$C	15651274	6		
4	3 In with Hole	3 In with Hole	$C	15651274	3		
5	6 In no Hole	6 In no Hole	$C	15651274	6	S	
6	3 In no Hole	3 In no Hole	$C	15651274	3	S	
7							
8							
9							
10							

Sheet1

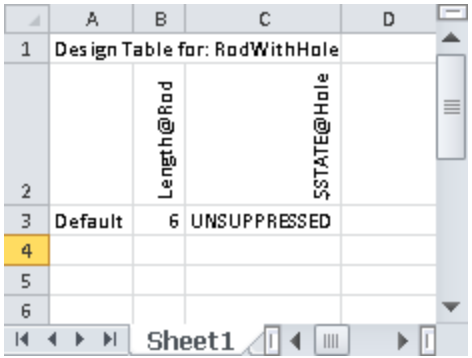






Design Tables in Part Models: Design Table Basics - Editing

- To Add a Feature or Dimension to a Design Table
  - Make Sure Appropriate Table Cell is Selected
  - Double-Click a Dimension to Add it to the Table
  - Double-Click a Feature to Add it to the Table



- Create New Configs by Adding Rows to the Table

Design Tables in Part Models: Design Table Basics - Editing

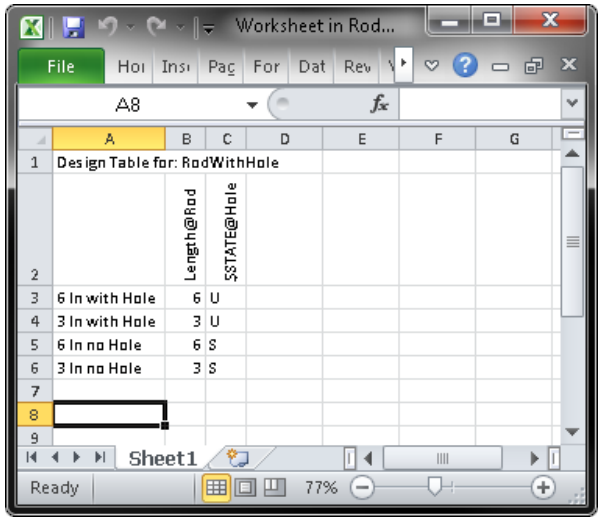
Edit Table
Edit Table in New Window

- Edit Table
  - Table is Edited in Sub-Window Inside SW Graphic Area
  - SW Ribbons replaced with Excel Ribbons

	A	B	C	D	E
1	Design Table for: RodWithHole				
2		Length@Rod	$STATE@Hole		
3	6 In with Hole	6	U		
4	3 In with Hole	3	U		
5	6 In no Hole	6	S		
6	3 In no Hole	3	S		
7					

Sheet1

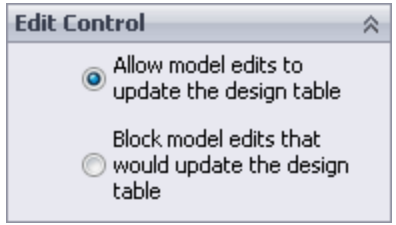
- Edit Table in New Window
  - Table is Edited in Separate Excel Window

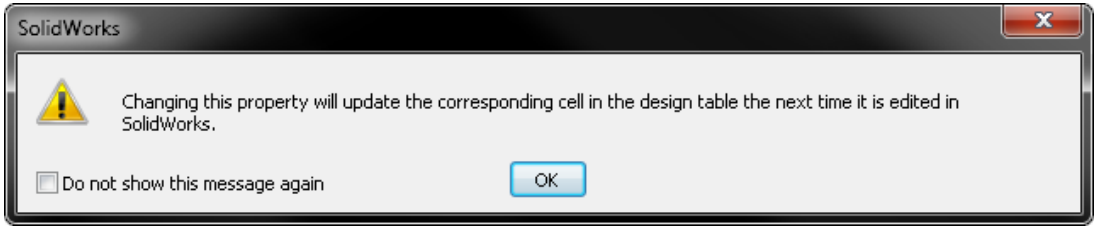


Design Tables in Part Models: Design Table Basics - Options

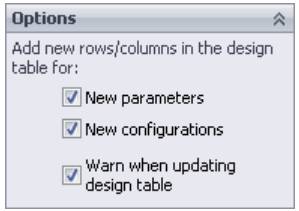
- Available when Table is Created and with 'Edit Feature'

- Allow:
  - Allows Design Table Parameters to be Edited in the SW Model
  - Design Table Updates to Reflect Model Changes (upon next edit)
- Block
  - Blocks Design Table Parameters from being Edited in the SW Model
  - A Warning Notice is Shown When a Model Edit is Attempted
- Warn When Updating Design Table
  - If 'Edit Control' Is Set to 'Allow', and This is Enabled, Whenever We Try to Modify a Dimension that is in the Table, We Will See a Warning that the Table will be Updated

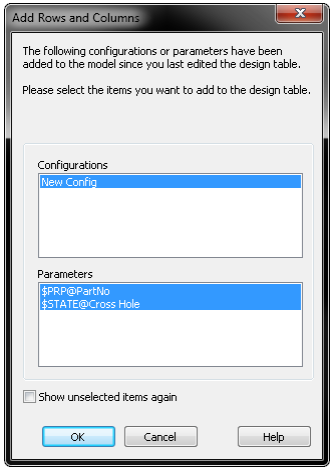




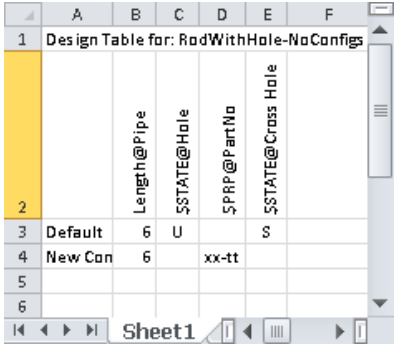
Design Tables in Part Models: Design Table Basics - Options



- New Parameters
  - In a Model that has a Design Table, If:
    - We Suppress a Feature in One Config but not Another
  - Or if:
    - We Change a Dimension in One Config but not Another
  - Or if:
    - We Assign or Change a Custom Property to a Config
  - The Next Time the Table is Edited, We Will See a List Including Those Features/Dimensions
    - We Can Select Any to Add to the Table



- New Configurations
  - In a Model that has a Design Table, If:
    - We Add a Configuration
  - The Next Time the Table is Edited, We Will See a List Including that New Configuration
    - We Can Select the New Configuration to Add to the Table



Design Tables in Part Models: Planning for the Design Table – Parameters

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- What Can a Design Table Control?

Parameter Syntax (header cell)	Legal Values (body cell)	Default if Value is Left Blank
Parts only		
$**configuration** @*part_name*	configuration name	not evaluated
$**configuration** @*feature_name*	configuration name	not evaluated
Parts and Assemblies		
$**comment**	any text string	empty
$**description**	any text string	configuration name
$**partnumber**	any text string	configuration name
$**state** @*feature_name*	Suppressed, S Unsuppressed, U	Unsuppressed
dimension @*feature_name* - or - **dimension**@*sketch_name*	any legal decimal value for the dimension	not evaluated
$**hw-size**	any value listed in **Size** in the **Hole Wizard** PropertyManager	smallest hole size available
$**parent**	parent configuration name	property is undefined
$**prp** @*property*	any text string	property is undefined
$**state** @*equation_number*@**equations**	Suppressed, S Unsuppressed, U	Unsuppressed
$**state** @*lighting_name*	Suppressed, S Unsuppressed, U	Unsuppressed
$**state** @*sketch_relation*@*sketch_name*	Suppressed, S Unsuppressed, U	Unsuppressed
$**user_notes**	any text string	not evaluated
$**color**	32-bit integer specifying RGB (red, green, blue) color	zero (black)
$**sw-mass**	any legal decimal value for the mass	The calculated value of mass in the **Mass Properties** dialog box.
$**sw-cog**	any legal decimal value for the coordinates of the center of gravity, in the format **x**, **y**, **z**	The calculated value of mass in the **Mass Properties** dialog box.
$**tolerance** @*dimension_name*	See **Tolerance Keywords and Syntax in Design Tables**.	**NONE**, or for a derived configuration, the tolerance value of its parent.

Assemblies only		
$**displaystate**	display state name	For new configurations, **Display State-1**. For existing configurations, the name of that configuration's most recently active **display state**.
$**fixed**	**Yes** (or **Y**) for fixed **No** (or **N**) for not fixed (floating)	Not fixed (floating)
$**state** @*component_name<instance>*	Resolved, R Suppressed, S	Resolved
$**configuration** @*component_name<instance>*	configuration name	The name of the configuration that is active when you create the cell. **NOTE**: If the component uses a derived configuration, and the value is left blank, the configuration used is linked to its parent.
$**never_expand_in_BOM**	Yes (never expand) No (allow to expand)	No
Obsolete parameters		
$**show**@*component_name<instance>*	**$SHOW** is obsolete. See **Visibility of Components in Design Tables**.	

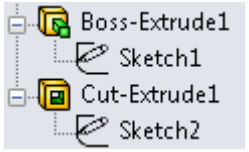
Design Tables in Part Models: Planning for the Design Table – Big Picture

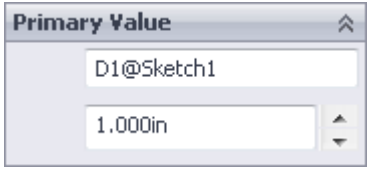
- When Possible, Build the Model with Configurations in Mind
  - Make Sure to Dimension Appropriately
  - Avoid Creating Children to Features That Will Be Suppressed

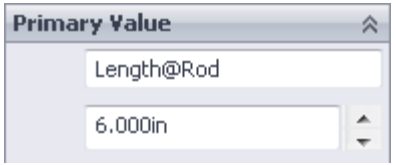
- How Complex is the Project?
  - How Many Features and Dimensions Will Be Involved?
  - How Many Configurations Do We Need to Create?
  - Is the Model Complete?
  - Is There Any Swoopy Geometry with Under-defined Curves/Splines?
  - Are There Any External References to Other Parts/Assemblies?
  - Will Equations Be Useful?
    - SolidWorks Equations?
    - Excel Functions?
    - Both?

Design Tables in Part Models: Planning for the Design Table – Naming

- What dimensions will change?
  - Name them
- What features will be involved?
  - Name them

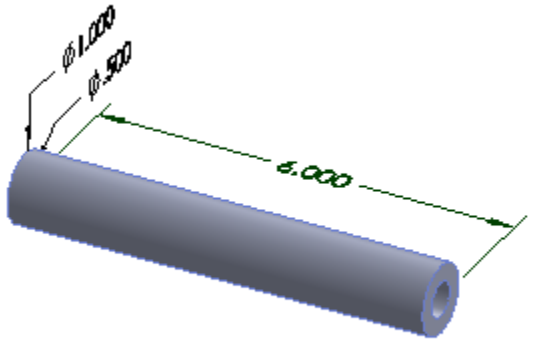


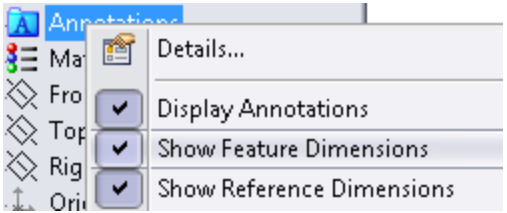


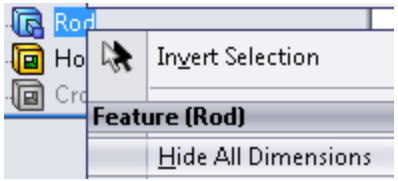


Design Tables in Part Models: Execution Tips – Dimension Display

- When Editing a Table, We Want to See Dimensions So We Can Double-Click Them
  - We Can Double-Click a Feature to Display Just Its Dimensions
    - Be Careful: This Can Add the Feature to the Table
  - We Can Right-Click the Annotations Folder and Select 'Show Feature Dimensions' to Display Every Dimension
    - This Might Show Too Many Dimensions
    - We Can Right-Click Any Feature and Hide Its Dimensions







Design Tables in Part Models: Execution Tips

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- Start Simple
- Trial And Error
- Add User Notes ($user_notes)
- Don't Add Too Much
- Save a Copy of the Design Table
- Don't Skip Any Rows or Columns

	A	B	C	D	E	F
1	Design Table for: RodWithHole					
2		Length@Rod	$STATE@Hole			
3	$user_notes	These Configs Have Holes				
4	6 In with Hole	6	U			
5	3 In with Hole	3	U			
6	$user_notes	These Configs DO NOT Have Holes				
7	6 In no Hole	6	S			
8	3 In no Hole	3	S			
9						
10						

Sheet1

	A	B	C	D	E
1	Design Table for: RodWithHole				
2		Length@Rod		$STATE@Hole	
3	6 In with Hole	6		U	
4	3 In with Hole	3		U	
5	6 In no Hole	6		S	
6	3 In no Hole	3		S	
7					

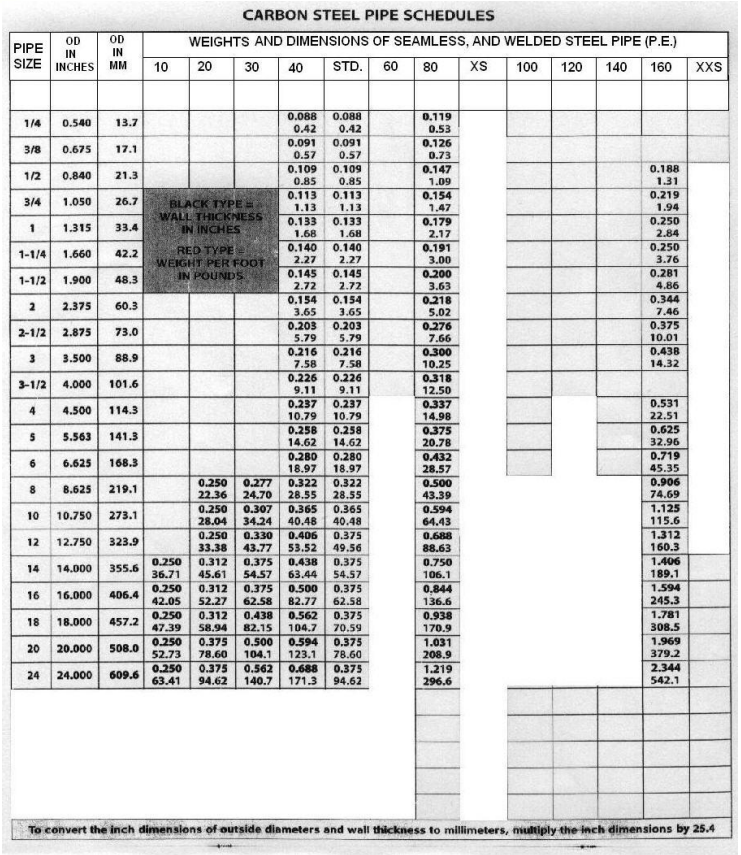
Sheet1

Design Tables in Part Models: Bringing it Together - Pipe Example

- Pipe Example:

- 106 Different Sizes and Schedules
  - 4 Different Materials for Each Size/Schedule => 424 Size/Schedule/Material Configs

- Each Size, Schedule, and Material in 1/8” Increments rom 1” – 20’
  - 20’ x 12” = 240” - 1” = 239” x 8 = 1912 Length Configs
  - 1912 Lengths x 424 = 810688 Total Configs



CARBON STEEL PIPE SCHEDULES

PIPE SIZE	OD IN INCHES	OD IN MM	WEIGHTS AND DIMENSIONS OF SEAMLESS, AND WELDED STEEL PIPE (P.E.)											
			10	20	30	40	STD.	60	80	XS	100	120	140	160	XXS
1/4	0.540	13.7				0.088 0.42	0.088 0.42		0.119 0.53						
3/8	0.675	17.1				0.091 0.57	0.091 0.57		0.126 0.73						
1/2	0.840	21.3				0.109 0.85	0.109 0.85		0.147 1.09					0.188 1.31	
3/4	1.050	26.7	BLACK TYPE = WALL THICKNESS IN INCHES RED TYPE = WEIGHT PER FOOT IN POUNDS			0.113 1.13	0.113 1.13		0.154 1.47					0.219 1.94	
1	1.315	33.4				0.133 1.68	0.133 1.68		0.179 2.17					0.250 2.84	
1-1/4	1.660	42.2				0.140 2.27	0.140 2.27		0.191 3.00					0.250 3.76	
1-1/2	1.900	48.3				0.145 2.72	0.145 2.72		0.200 3.63					0.281 4.86	
2	2.375	60.3				0.154 3.65	0.154 3.65		0.218 5.02					0.344 7.46	
2-1/2	2.875	73.0				0.203 5.79	0.203 5.79		0.276 7.66					0.375 10.01	
3	3.500	88.9				0.216 7.58	0.216 7.58		0.300 10.25					0.438 14.32	
3-1/2	4.000	101.6				0.226 9.11	0.226 9.11		0.318 12.50						
4	4.500	114.3				0.237 10.79	0.237 10.79		0.337 14.98					0.531 22.51	
5	5.563	141.3				0.258 14.62	0.258 14.62		0.375 20.78					0.625 32.96	
6	6.625	168.3				0.280 18.97	0.280 18.97		0.432 28.57					0.719 45.35	
8	8.625	219.1		0.250 22.36	0.277 24.70	0.322 28.55	0.322 28.55		0.500 43.39					0.906 74.69	
10	10.750	273.1		0.250 28.04	0.307 34.24	0.365 40.48	0.365 40.48		0.594 64.43					1.125 115.6	
12	12.750	323.9		0.250 33.38	0.330 43.77	0.406 53.52	0.375 49.56		0.688 88.63					1.312 160.3	
14	14.000	355.6	0.250 36.71	0.312 45.61	0.375 54.57	0.438 63.44	0.375 54.57		0.750 106.1					1.406 189.1	
16	16.000	406.4	0.250 42.05	0.312 52.27	0.375 62.58	0.500 82.77	0.375 62.58		0.844 136.6					1.594 245.3	
18	18.000	457.2	0.250 47.39	0.312 58.94	0.438 82.15	0.562 104.7	0.375 70.59		0.938 170.9					1.781 308.5	
20	20.000	508.0	0.250 52.73	0.375 78.60	0.500 104.1	0.594 123.1	0.375 78.60		1.031 208.9					1.969 379.2	
24	24.000	609.6	0.250 63.41	0.375 94.62	0.562 140.7	0.688 171.3	0.375 94.62		1.219 296.6					2.344 542.1	

To convert the inch dimensions of outside diameters and wall thickness to millimeters, multiply the inch dimensions by 25.4

Design Tables in Part Models: Bringing it Together - Pipe Example

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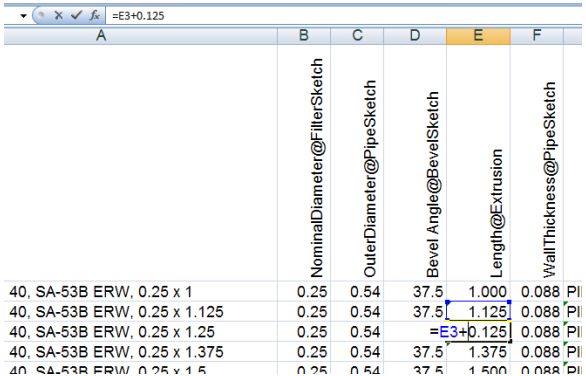
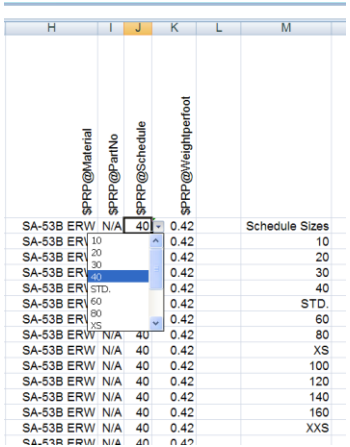
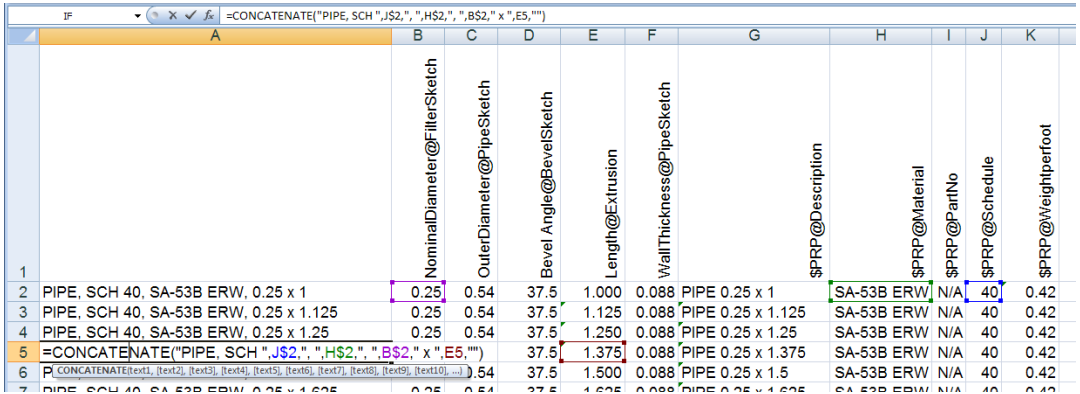
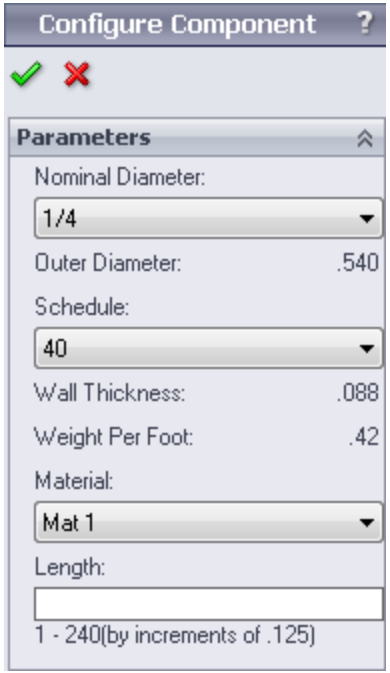
- Formulas
- Drop Down Boxes
- Conditional Formatting
- Concatenations



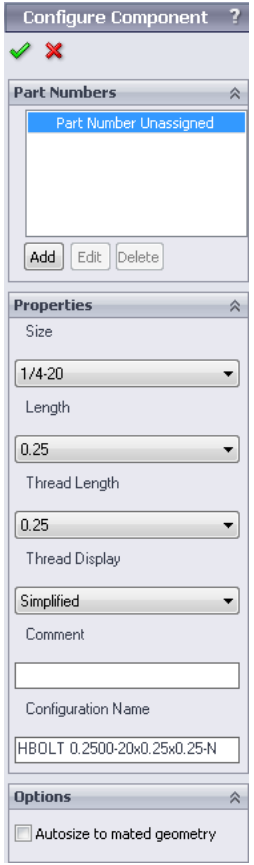




Taking It To The Next Level
Configuration Publisher - Basics



- Creates a Property Manager to Allow Easy Configuration Selection when:
  - Inserting the Part into an Assembly
  - Downloading a Model from 3DContent Central
- Similar to the Property Managers we see when inserting Toolbox Hardware into an Assembly



Taking It To The Next Level
Configuration Publisher - Single-Line Table

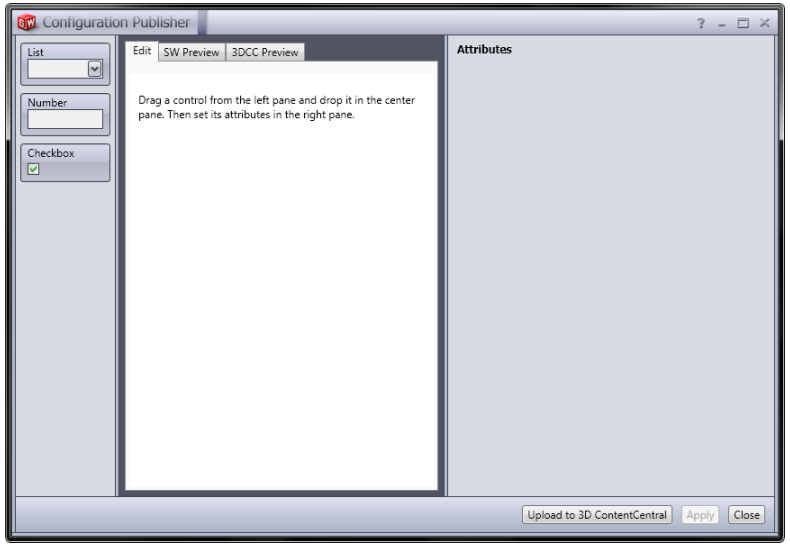
- Includes All Parameters that might Change
- Only Includes One Configuration Line
- $partnumber Used to Control Name of new Config
  - Concatenate Name Based on Text and Other Cells

	A	B	C	D	E	F	G	H	I	J	K
1		$partnumber	NominalDiameter@FilterSketch	OuterDiameter@PipeSketch	$PRP@Schedule	WallThickness@PipeSketch	$PRP@Weightperfoot	$PRP@Material	Length@Extrusion	$PRP@Description	
2	Default	PIPE, SCH 40, Material 1, 0.25 x 1	0.25	0.54	40	0.088	0.42	Material 1	1.000	PIPE 0.25 x 1	
3											
4											

Sheet2 Sheet3

Taking It To The Next Level
Configuration Publisher - Single-Line Table

- Create Model, and Single-Line Table
- Right-Click in Config Manager, “Configuration Publisher”



Taking It To The Next Level
Configuration Publisher - Single-Line Table

SOLIDWORKS WORLD 2012

Attributes

Name: Nominal Diameter

Design Table Variable: NominalDiameter@FilterSketch

Type: List

Values:

1/4
3/8
1/2
3/4
1

Attributes

Name: Outer Diameter

Design Table Variable: OuterDiameter@PipeSketch

Type: List

Data

Parent: Nominal Diameter

Values:

1/4	3/8	1/2	3/4	1
.540	.675	.840	1.05	1.315

Taking It To The Next Level
Configuration Publisher - Single-Line Table

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Attributes

Name: Schedule

Design Table Variable: $PRP@Schedule

Type: List

Data

Parent: Nominal Diameter

Values:

1/4	3/8	1/2	3/4	1
40	40	40	40	40
STD.	STD.	STD.	STD.	STD.
80	80	80	80	80

Attributes

Name: Wall Thickness

Design Table Variable: WallThickness@PipeSketch

Type: List

Data

Parent: Nominal Diameter

Schedule

Values:

1/4, 40	1/4, STD.	1/4, 80	3/8, 40	3/8,
.088	.088	.119	.091	.091

Attributes

Name: Weight Per Foot

Design Table Variable: $PRP@Weightperfoot

Type: List

Data

Parent: Nominal Diameter

Schedule

Values:

1/4, 40	1/4, STD.	1/4, 80	3/8, 40	3/8,
.42	.42	.53	.57	.57

Taking It To The Next Level
Configuration Publisher - Single-Line Table

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Attributes

Name: Material

Design Table Variable: $PRP@Material

Type: List

Data

Parent: None

Values:

Mat 1
Mat 2
Mat 3
Mat 4

Attributes

Name: Length

Design Table Variable: Length@Extrusion

Data

Parent: None

Range Requirements:

Minimum	Maximum	Increment
1	240	.125

Taking It To The Next Level
Configuration Publisher - Single-Line Table

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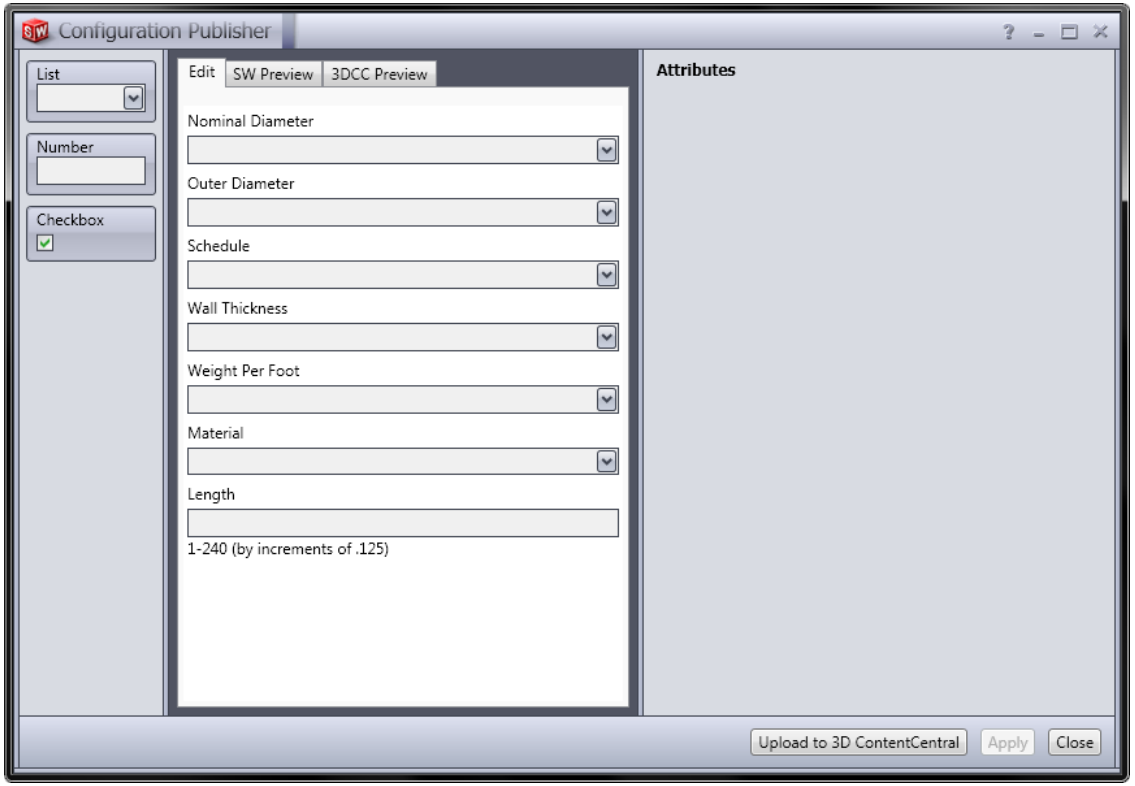

Taking It To The Next Level
Configuration Publisher - Multiple-Line Table

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- Full Design Table Exists and Includes All Configurations

	A	B	C	D	E	F	G	H	I
1	Design Table for: Missing_Link								
2		Length@Body-Sketch	Width@Body-Sketch	Depth@Body-Extrude	Left_Hole_Dia@Left_Hole-Sketch	Right_Hole_Dia@Right_Hole-Sketch	$STATE@Right_Hole-Cut-Extrude	$prp@hole	
3	4 x 1, 0.125, HOLE	4	1	0.125	0.5	0.5	U	HOLE	
4	4 x 1, 0.125, NO HOLE	4	1	0.125	0.5	0.5	S	NO HOLE	
5	4 x 1, 0.25, HOLE	4	1	0.25	0.5	0.5	U	HOLE	
6	4 x 1, 0.25, NO HOLE	4	1	0.25	0.5	0.5	S	NO HOLE	
7	4 x 1.5, 0.125, HOLE	4	1.5	0.125	0.75	0.75	U	HOLE	
8	4 x 1.5, 0.125, NO HOLE	4	1.5	0.125	0.75	0.75	S	NO HOLE	
9	4 x 1.5, 0.25, HOLE	4	1.5	0.25	0.75	0.75	U	HOLE	
10	4 x 1.5, 0.25, NO HOLE	4	1.5	0.25	0.75	0.75	S	NO HOLE	
11	5 x 1, 0.125, HOLE	5	1	0.125	0.5	0.5	U	HOLE	
12	5 x 1, 0.125, NO HOLE	5	1	0.125	0.5	0.5	S	NO HOLE	
13	5 x 1, 0.25, HOLE	5	1	0.25	0.5	0.5	U	HOLE	
14	5 x 1, 0.25, NO HOLE	5	1	0.25	0.5	0.5	S	NO HOLE	
15	5 x 1.5, 0.125, HOLE	5	1.5	0.125	0.75	0.75	U	HOLE	
16	5 x 1.5, 0.125, NO HOLE	5	1.5	0.125	0.75	0.75	S	NO HOLE	
17	5 x 1.5, 0.25, HOLE	5	1.5	0.25	0.75	0.75	U	HOLE	
18	5 x 1.5, 0.25, NO HOLE	5	1.5	0.25	0.75	0.75	S	NO HOLE	
19	6 x 1, 0.125, HOLE	6	1	0.125	0.5	0.5	U	HOLE	
20	6 x 1, 0.125, NO HOLE	6	1	0.125	0.5	0.5	S	NO HOLE	
21	6 x 1, 0.25, HOLE	6	1	0.25	0.5	0.5	U	HOLE	
22	6 x 1, 0.25, NO HOLE	6	1	0.25	0.5	0.5	S	NO HOLE	
23	6 x 1.5, 0.125, HOLE	6	1.5	0.125	0.75	0.75	U	HOLE	
24	6 x 1.5, 0.125, NO HOLE	6	1.5	0.125	0.75	0.75	S	NO HOLE	
25	6 x 1.5, 0.25, HOLE	6	1.5	0.25	0.75	0.75	U	HOLE	
26	6 x 1.5, 0.25, NO HOLE	6	1.5	0.25	0.75	0.75	S	NO HOLE	
27	7 x 1, 0.125, HOLE	7	1	0.125	0.5	0.5	U	HOLE	

Sheet1

Taking It To The Next Level
Configuration Publisher - Multiple-Line Table

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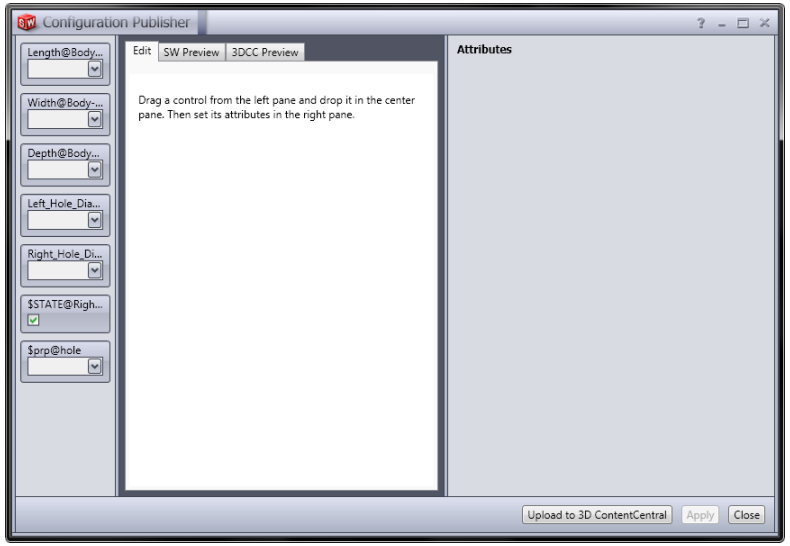
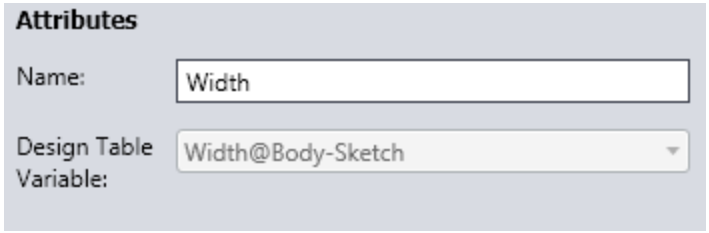
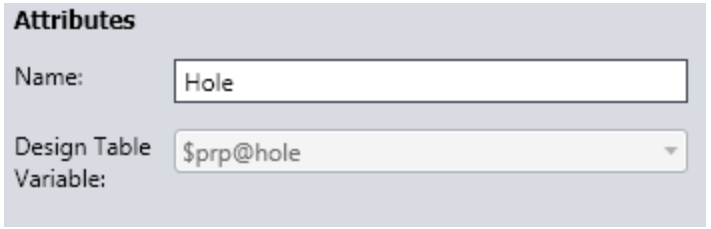
- Create Model, and Full Design Table
- Right-Click in Config Manager, “Configuration Publisher”



Taking It To The Next Level
Configuration Publisher - Multiple-Line Table

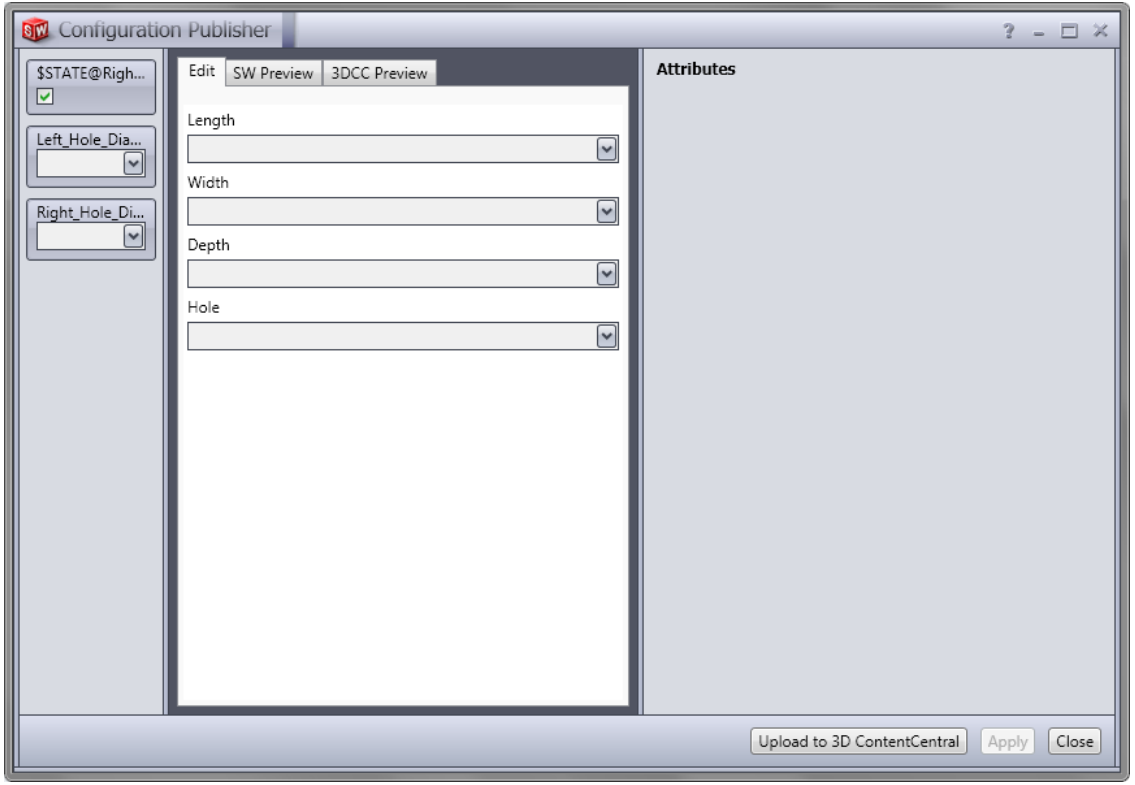
SOLIDWORKS WORLD 2012





Taking It To The Next Level
Configuration Publisher - Multiple-Line Table

SOLIDWORKS WORLD 2012



Design Tables in Assembly Models
How Is It Similar To Part Models?

- Custom Properties Work the Same Way
- Dimensions Work the Same Way
  - Mate Dimensions
  - Reference Geometry Dimensions
- Suppress and Unsuppress Work the Same Way
  - In a Part, We Suppress Features
  - In an Assembly, We Suppress Components and Assembly Features
  - In an Assembly, We Resolve Components (rather than Unsuppress)

Design Tables in Assembly Models
How Is It Similar To Part Models?

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These Parameters are Similar Between Part Design Tables and Assembly Design Tables

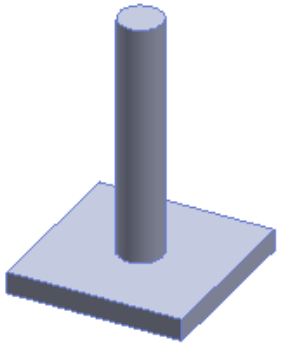
Parts and Assemblies		
$comment	any text string	empty
$description	any text string	configuration name
$partnumber	any text string	configuration name
$state @*feature_name*	Suppressed, S Unsuppressed, U	Unsuppressed
dimension @*feature_name* - or - **dimension**@*sketch_name*	any legal decimal value for the dimension	not evaluated
$hw-size	any value listed in **Size** in the **Hole Wizard** PropertyManager	smallest hole size available
$parent	parent configuration name	property is undefined
$prp @*property*	any text string	property is undefined
$state @*equation_number*@**equations**	Suppressed, S Unsuppressed, U	Unsuppressed
$state @*lighting_name*	Suppressed, S Unsuppressed, U	Unsuppressed
$state @*sketch_relation*@*sketch_name*	Suppressed, S Unsuppressed, U	Unsuppressed
$user_notes	any text string	not evaluated
$color	32-bit integer specifying RGB (red, green, blue) color	zero (black)
$sw-mass	any legal decimal value for the mass	The calculated value of mass in the **Mass Properties** dialog box.
$sw-cog	any legal decimal value for the coordinates of the center of gravity, in the format **x**, **y**, **z**	The calculated value of mass in the **Mass Properties** dialog box.
$tolerance @*dimension_name*	See **Tolerance Keywords and Syntax in Design Tables**.	**NONE**, or for a derived configuration, the tolerance value of its parent.

Design Tables in Assembly Models
How Is It Different From Parts? - Levels

- We Consider Levels
  - We Don't Suppress a Part Feature or Change Part Dimensions From the Assembly Level
    - At the Part Level:
      - We Create a New Part Config
      - In the New Part Config, We Suppress Part Features or Change Part Dimensions
    - At the Assembly Level:
      - We Create a New Assembly Config
      - In the New Assembly Config, We Change Which Part Config is Being Referenced
        - $configuration@component_name<*instance*>

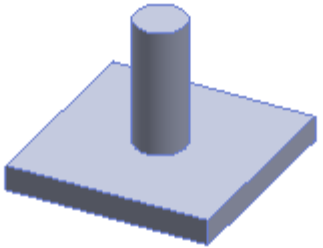
	A	B	C
1	Design Table for: Post Assembly		
2		$configuration@RodWithHole-DT<1>	
3	6 In Post	6 In no Hole	
4	3 In Post	3 In no Hole	
5			

Sheet1



Post Assembly (6 In Post

(-) RodWithHole-DT<1> (6 In no Hole



Post Assembly (3 In Post

(-) RodWithHole-DT<1> (3 In no Hole

Design Tables in Assembly Models
How Is It Different From Parts? - Instances

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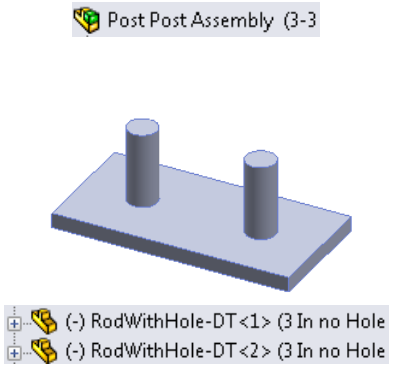
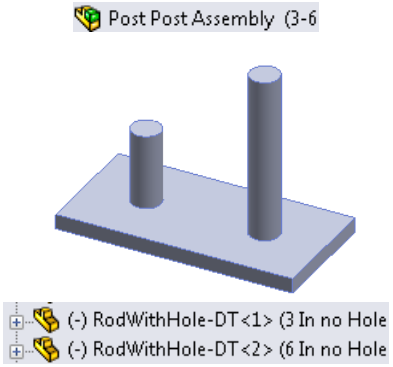
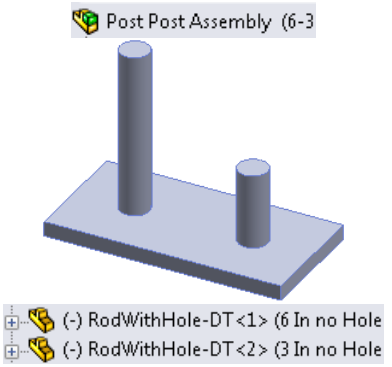
- We Consider Instances
  - We Might Want to Suppress One Instance of a Component that has Multiple Instances in the Assembly
  - We Include the Instance Number(s) in the Parameter Row
    - $configuration@component_name<3>
    - $configuration@component_name<1,3>
    - $configuration@component_name<1-3>
    - $configuration@component_name<*>

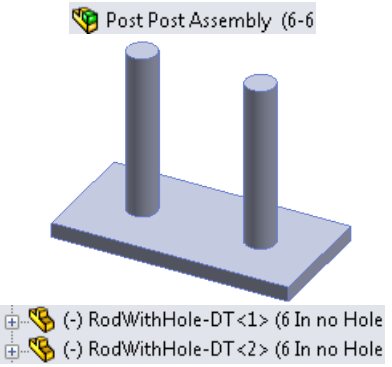
	A	B	C	D
1	Design Table for: Post Post Assembly			
2		$configuration@RodWithHole-DT<1>	$configuration@RodWithHole-DT<2>	
3	3-3	3 In no hole	3 in no hole	
4	3-6	3 In no hole	6 in no hole	
5	6-3	6 in no hole	3 in no hole	
6	6-6	6 in no hole	6 in no hole	
7				

Sheet1









Design Tables in Assembly Models
How Is It Different From Part Models?

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These Design Table Parameters are Unique to Assemblies

Assemblies only		
$**displaystate**	display state name	For new configurations, **Display State-1**. For existing configurations, the name of that configuration's most recently active **display state**.
$**fixed**	**Yes** (or **Y**) for fixed **No** (or **N**) for not fixed (floating)	Not fixed (floating)
$**state** @*component_name<instance>*	Resolved, R Suppressed, S	Resolved
$**configuration** @*component_name<instance>*	configuration name	The name of the configuration that is active when you create the cell. **NOTE**: If the component uses a derived configuration, and the value is left blank, the configuration used is linked to its parent.
$**never_expand_in_BOM**	Yes (never expand) No (allow to expand)	No
Obsolete parameters		
$**show**@*component_name<instance>*	**$SHOW** is obsolete. See **Visibility of Components in Design Tables**.	

Design Tables In Drawings

- A Model's Design Table Can be Shown on a Drawing Sheet
  - Select a View, Insert, Tables, Design Table
  - Right-Click a View, Tables, Design Table

Design Table for: RodWithHole-NoDT

	$PRP@PartNo	Length@Pipe	$STATE@Hole	
6 In with Hole	6 H	6	U	
3 In with Hole	3 H	3	U	
6 In no Hole	6 NH	6	S	
3 In no Hole	3 NH	3	S	

Design Tables In Drawings

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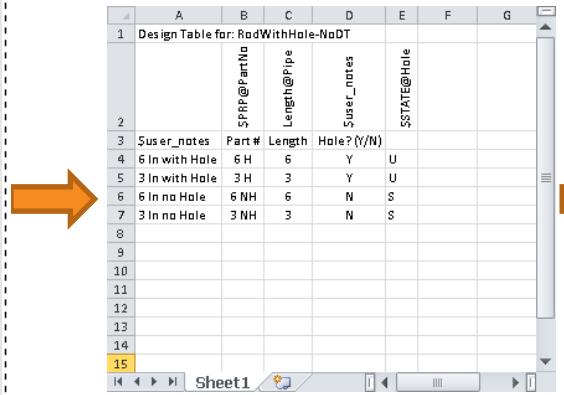
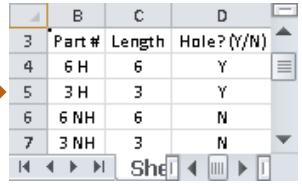
- What We See on the Drawing Should Match What We See When Editing the Design Table in the Internal Window ('Edit Table', not 'Edit Table in Separate Window')
  - We Can Hide Rows We Don't Want to See on the Drawing
  - We Can Resize the Sub-Window to show only a Portion

Design Table for: RodWithHole-NoDT

	$PRP@PartNo	Length@Pipe	$STATE@Hole
6 In with Hole	6 H	6	U
3 In with Hole	3 H	3	U
6 In no Hole	6 NH	6	S
3 In no Hole	3 NH	3	S





Part #	Length	Hole? (Y/N)
6 H	6	Y
3 H	3	Y
6 NH	6	N
3 NH	3	N

Design Tables In Drawings - Final Points

- There is a Microsoft OLE Size Limitation That Might Cut-Off Some of the Design Table on the Drawing
  - Editing the Table to Decrease Font Size and Resize the Sub-Window Can Sometimes Address This Problem

- If We Double-Click a Design Table on a Drawing Sheet, SolidWorks Will Open the Model and Execute the Edit Table Command

Agenda

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- Design Tables in part models
  - Configuration Basics
  - Design Table Basics
    - Formatting
    - Creating/Inserting
    - Editing
    - Options
  - Planning the Design Table
    - What Can a Design Table Control?
    - Big Picture Questions to Ask
    - Naming Features and Dimensions
  - Execution Tips
    - Displaying Dimensions
    - Start Simple
    - Trial and Error
    - Add User Notes (Comments)
    - Don't Add Too Much
    - Save a Design Table Copy
    - Don't Skip Rows/Columns
  - Bringing It Together - Pipe Example
    - Formulas
    - Drop Down Boxes
    - Conditional Formatting
    - Concatenations
- Taking it to the Next Level
  - Configuration Publisher
    - General Overview
    - Multi-Line Design Table
    - Single-Line Design Table
- Design Tables in Assembly Models
  - How it is Similar to Part Design Tables
    - Custom Properties
    - Dimensions
    - Suppress
  - How it is Different from Part Design Tables
    - Levels
    - Instances
- Design Tables in Drawings
  - A Model's Design Table Can Be Shown on a Drawing Sheet
  - The Design Table Needs to Be Cleaned Up First
  - What We See in the Model Edit Window is What We See on the Drawing Sheet

Thank You for Attending

For a copy of the presentation visit www.cati.com