

Technique for Creating Parametric Hole Charts

Two dimensional repeat regions are used to display the information contained in a model's family table such as the instance names, parameters, dimensions, and their values. They can be used to create tabulated drawings of parts and assemblies that belong to a family of parts or assemblies.

Procedure

Create a table with 2 rows and 2 columns, as seen in figure 1. (Do not enter the letters A, B, C, and D. These are used to reference the cells in the table.). For this example an ascending and leftward table is used.

A	B
C	D

Add a 2D repeat region to the table using the commands: **Table > Repeat Region > Add > Two-D**. When prompted to "Locate corners of the outer boundary of the two-dimensional region", one of the following four cases will apply. The following cells should be selected, in order, depending on how the table will expand:

If table is descending and rightward, select cells A and D

If table is descending and leftward, select cells B and C

If table is ascending and leftward, select cells D and A

If table is ascending and rightward, select cells C and B

When this is done, the outer border of the table will be highlighted in red.

Notice that if a line is drawn through the cells in one of the orders listed above, this line will show how the table will expand. A line drawn through A and D will extend down and to the right, the same way the table will expand with information from the family table. This will be important when entering symbolic information later.

When prompted to "Select a cell to set the upper border of the row & column subregions", one of the following cells should be selected, depending on how the table expands:


If table is descending and rightward, select cell D

If table is descending and leftward, select cell C

If table is ascending and leftward, select cell A

If table is ascending and rightward, select cell B

When this is done, all of the lines (inner and outer) that define the table will be highlighted in red, as seen in Figure 2.



A	B
C	D

Example: A table is created that will expand up and to the left. To correctly add the repeat region, cells D and A should be selected for the outer repeat region (see step 2), and cell A should be selected for the inner region (see step 3 above).

The following parameters need to be placed in 3 of the cells:

&FAM.INST.NAME

&FAM.INST.PARAM.VALUE

&FAM.INST.PARAM.NAME

The cells that these parameters are placed in depends on how the table is to expand. The parameter **&FAM.INST.PARAM.VALUE** is always placed in the cell that points in the direction of table expansion, the cell selected in step 3. There are two choices for placing **&FAM.INST.NAME** and **&FAM.INST.PARAM.NAME**. The two remaining parameters need to be placed adjacent to **&FAM.INST.PARAM.VALUE**, depending on how the table is to be filled out.

Example: Continuing with the previous example of a table which expands up and to the left, the above three parameters can be placed one of the following two ways:

Instance names are listed vertically, and parameter names are listed horizontally.

For this configuration, **&FAM.INST.NAME** should be entered into cell B, **&FAM.INST.PARAM.NAME** should be entered into cell C, and **&FAM.INST.PARAM.VALUE** is entered into cell A.

Note: It is not necessary to enter text into cell D.

If the repeat region is displayed as a magenta box, use the commands **Table > Repeat Region > Switch Syms** to get the table to fill out with family table information. Figure 4 shows an expanded table.

fam.inst.param.value	fam.inst.name
fam.inst.param.name	

24	8	16	27.71	M16
21	7	14	24.25	M14
18	6	12	20.78	M12
16	5	10	18.48	M10
13	4	8	15.01	M8
10	3.2	6	11.55	M6
8	2.7	5	9.24	M5
WIDTH	THICK	DIAMETER	CORNERS	

Instance names are listed horizontally, and parameter names are listed vertically.

For this configuration, **&FAM.INST.NAME** should be entered into cell C, **&FAM.INST.PARAM.NAME** should be entered into cell B, and **&FAM.INST.PARAM.VALUE** is again entered into cell A, as seen in Figure 5. Figure 6 shows an expanded table.

fam.inst.param.value	fam.inst.param.name
fam.inst.name	

24	21	18	16	13	10	8	WIDTH
8	7	6	5	4	3.2	2.7	THICK
16	14	12	10	8	6	5	DIAMETER
27.71	24.25	20.78	18.48	15.01	11.55	9.24	CORNERS
M16	M14	M12	M10	M8	M6	M5	