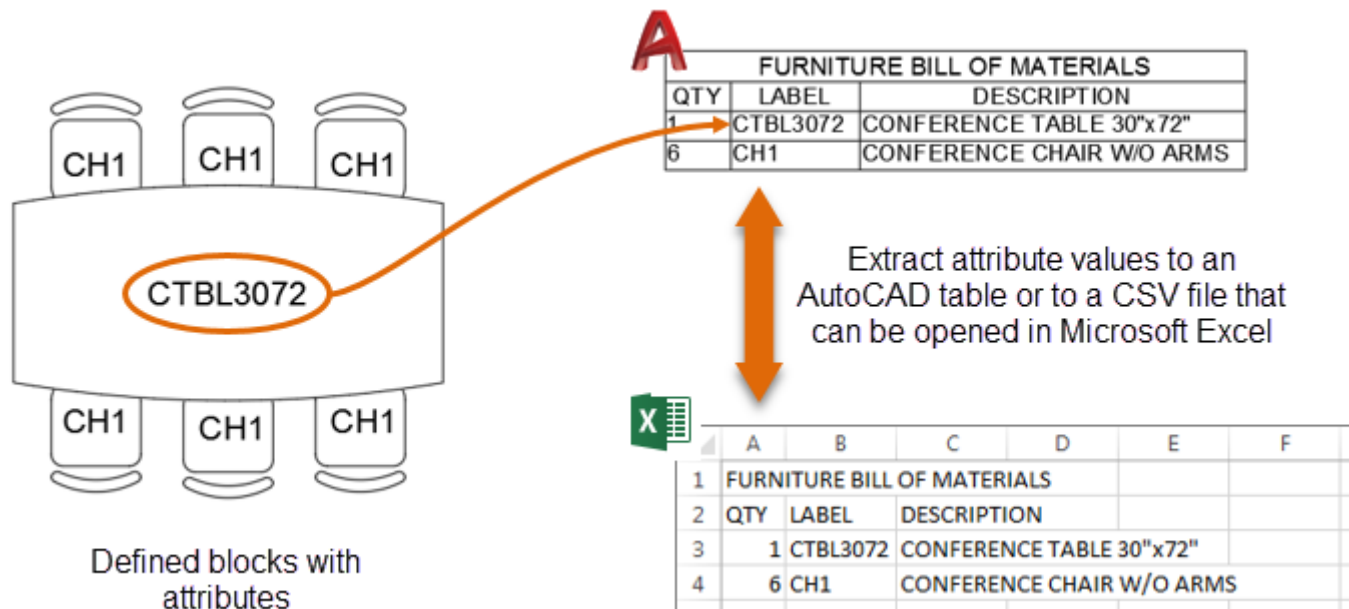


Have You Tried: Work with Attributes in Blocks

Blocks can contain special objects called *attribute definitions*, also known as *block attributes*. [Attributes can be added to a block to store values](#) such as part numbers, product names, ratings, descriptions, item cost, and so on. Some block attributes can contain static information such as a part number, while other block attributes can include information that varies from one block to the next such as its finish, cost or location. [All block attribute values can later be extracted into a table object](#) or CSV file that can be imported into another application.



Some of the common uses for attributes are:


- Title blocks which can contain different Project and Client information from drawing to drawing or even layout to layout
- Room, door, and window labels
- Blocks that represent physical objects or locations which need to be tracked in the real-world; screws, office furniture, and land plats

Extracted attribute values can be used to populate the cells of a table to create a bill of materials, or a schedule of doors, windows or room finishes in a floor plan.

FURNITURE BILL OF MATERIALS				
QTY	LABEL	DESCRIPTION	COST	EXTENDED COST
2	CTBL3072	CONFERENCE TABLE 30" x72"	\$1295.00	\$2590.00
14	CH1	CONFERENCE CHAIR W/O ARMS	\$387.00	\$5418.00
TOTAL				\$8008.00

Bill of materials containing office furniture located in two conference rooms

PLAN



WALL TYPES

1	ARCHITECTURAL CLADDING BUILDING PAPER 1/2" (12.5) PLYWOOD 2"x4"x10 x 1400 WOOD STUDS @ 16" (406) o/c RED BATT INSULATION VAPOR BARRIER 1/2" (12.5) GYPSUM BOARD	6	PRE-ENGINEERED CLADDING 3/4" (19.0) RIGID INSULATION/2x4"x10 2-GIRTS TUBING ON VP EXTERIOR DRYWALL 6" (152.4) STEEL STUDS @ 16" (406) o/c 5/8" (15.9) TYPE-X F.R. DRYWALL
2	PRE-ENGINEERED CLADDING 6" (152.4) METAL BUILDING INSULATION w/ SCREEN SHEET STEEL GUTS 2x4"x10 (406) STEEL STUDS @ 16" (406) o/c 5/8" (15.9) TYPE-X F.R. DRYWALL	7	EXISTING BLOCK WALL 2x1/2" (12.7) STEEL STUDS @ 16" (406) o/c 1/2" (12.7) DRYWALL
3	1/2" (12.5) GYPSUM BOARD 6" (152.4) STEEL STUDS @ 16" (406) o/c 6" (152.4) BATT INSULATION 1/2" (12.5) GYPSUM BOARD	8	1/2" (12.7) TYPE-X F.R. DRYWALL 1/2" (12.7) STEEL STUDS @ 400 o/c 2x BATT INSULATION 1/2" (12.7) TYPE-X F.R. DRYWALL
4	1/2" (12.5) GYPSUM BOARD 1/2" (12.5) STEEL STUDS @ 400 o/c RED BATT INSULATION 1/2" (12.5) GYPSUM BOARD	9	5/8" (15.9) TYPE-X F.R. DRYWALL 1/2" (12.7) STEEL STUDS @ 400 o/c RED BATT INSULATION 5/8" (15.9) TYPE-X F.R. DRYWALL
5	1/2" (12.7) GYPSUM BOARD 2x4"x10 1400 WOOD STUDS @ 400 o/c RED BATT INSULATION 1/2" (12.7) TYPE-X F.R. DRYWALL	10	* FULL HEIGHT PARTITIONS TO U/S DECK @ 11'-0" MAIN FLOOR U/S FURLING SECOND FLOOR #1 HANDRAIL TO MATCH

client

ALLAN CONSTRUCTION LTD.
123 MAIN ST.
SASKATOON, SK 99999

content

MAIN FLR PLAN, SECOND FLR PLAN,
WALL TYPE NOTES

drawn by;

NWP

checked by;

JDP

date;

JAN. 2003

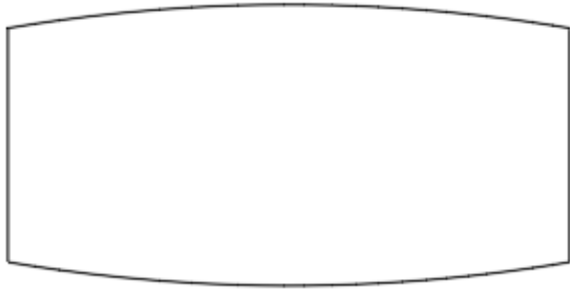
drawing no.

A-01

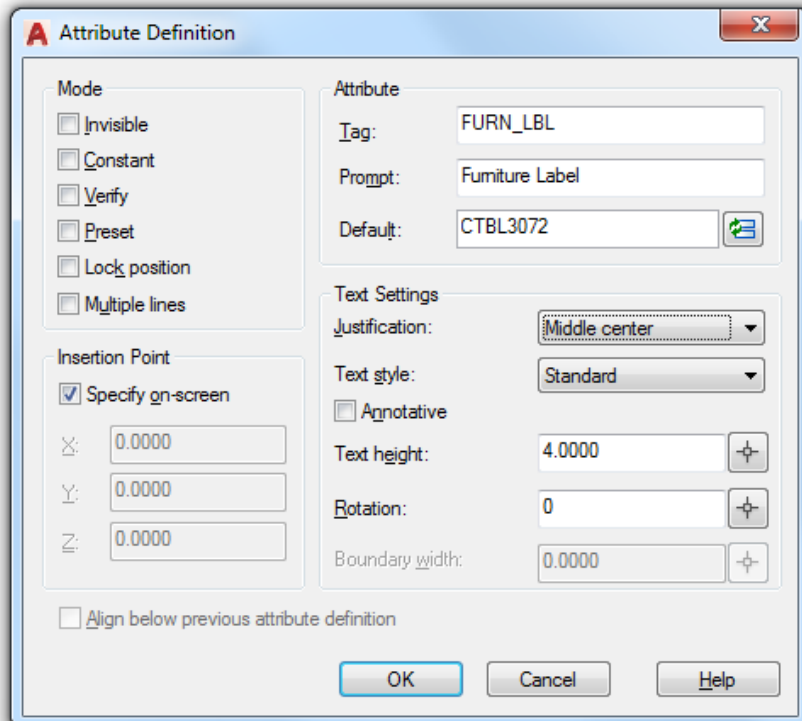
Title block containing attributes with fields

Attributes, like geometry, can be added to a block when it is initially created with the BLOCK command or later when being edited in the Block Editor (BEDIT command).

1. Open a new drawing, draw a rectangular object that is 30"x72" to represent a conference table. Not all conference tables are rectangular, so feel free to add some curved edges.



2. Enter ATTDEF at the command prompt.
3. In the Attribute Definition dialog box, specify the values shown in the following image:

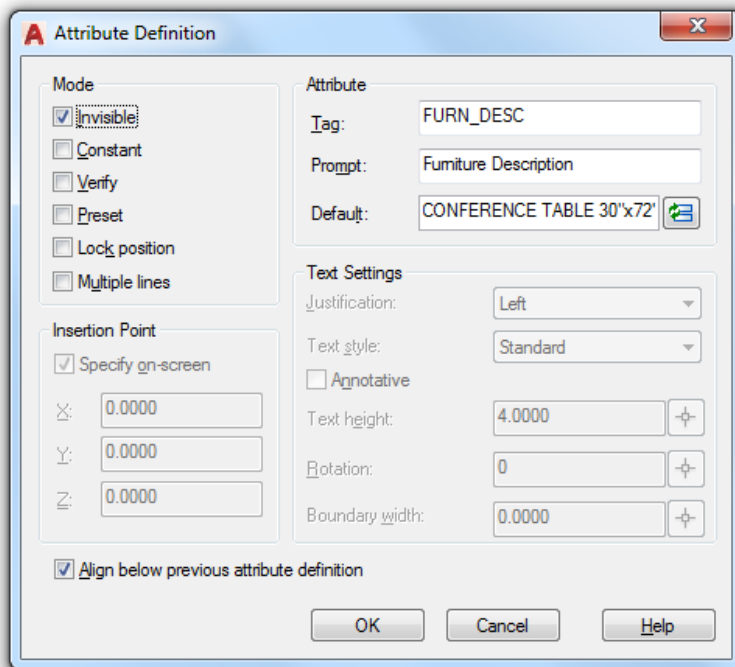


The properties in the Attribute section are used to control the text that is displayed in a drawing and the value assigned to the attribute.

- **Tag** - Visible placeholder text that is displayed in the drawing window prior to the attribute being added to a block; value provided is used to identify the attribute when extracting values from a block.
- **Default** - Replaces the Tag and is the value assigned to the attribute upon the insertion of a block.
- **Prompt** - Message string displayed in the Edit Attributes dialog box or at the Command prompt during the insertion of a block to let you know the type of information an attribute expects.

4. Accept the values provided and specify the insertion point for the attribute, the best place is inside of the geometry that defines the conference table.

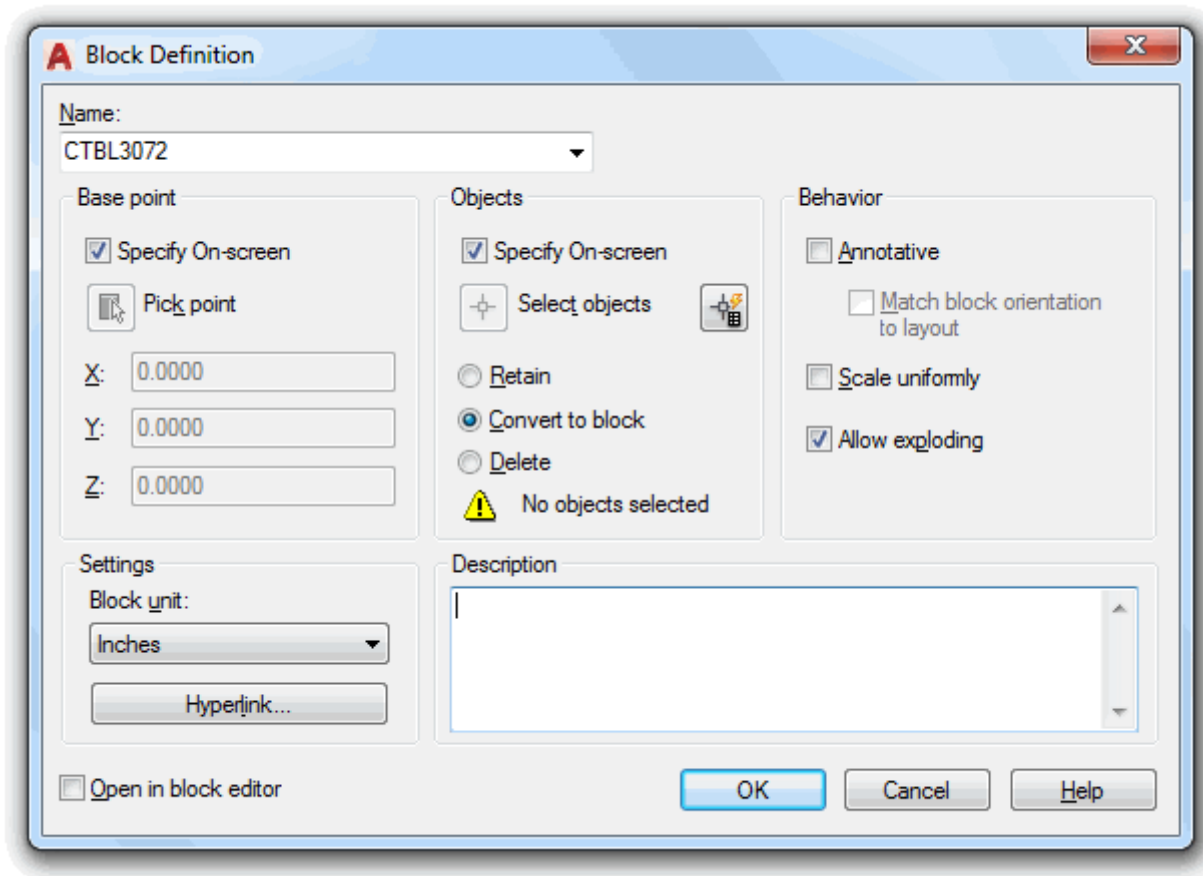
5. Start the ATTDEF command again to create a second attribute definition, and specify the values shown in the following image:



Note: The Invisible mode suppresses the visibility of the attribute on-screen and keeps the drawing from looking too crowded, while still providing the benefits of being able to add information to a block. The visibility of hidden attributes can be toggled with the ATTDISP command.



6. Enter BLOCK at the command prompt.
7. In the Block Definition dialog box, specify the values shown in the following image:



8. Accept the values provided and specify the center of the table as the base point for the block.

Tip: The Mid Between 2 Points object snap is an efficient way to find the center point of the table. When prompted to specify the base point, hold SHIFT and right-click to choose the Mid Between 2 Points option.

9. Select the geometry of the table, and then select the FURN_LBL attribute followed by the FURN_DESC attribute.

Note: The prompt order for attribute values is determined by the order in which attributes were selected while defining a block; this order can be important when creating scripts or AutoLISP programs. The BATTMAN command can be used to change the prompt order of attributes in a block.

10. In the Edit Attributes dialog box, accept the default values.



11. Chairs are commonly found in a conference room, so create a block named CH1 that represents a chair and add the same two attributes that you defined for the conference table in the steps 5-7. Assign the Default values of CH1 and CONFERENCE CHAIR W/O ARMS for the FURN_LBL and FURN_DESC attributes in the chair block, respectively.

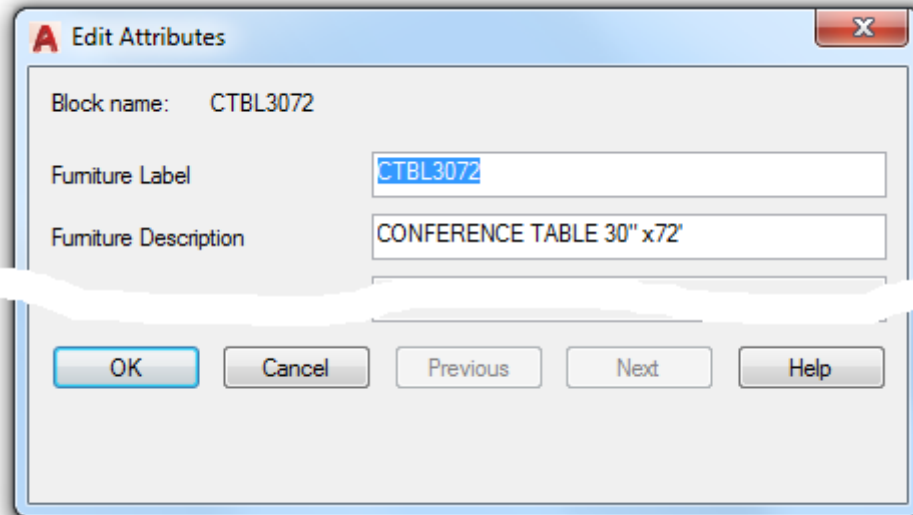


Insert a Block with an Attribute

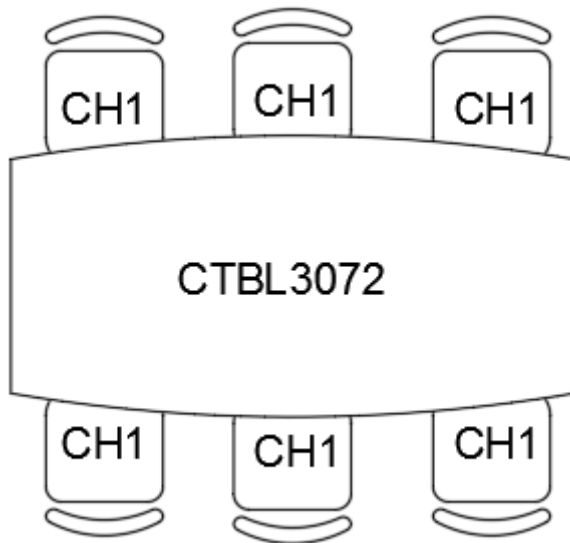
While inserting a block with attributes, you can accept the default value or provide a new value for each attribute in the block.

1. Start the INSERT command.
2. In the Insert dialog box, choose the block that represents the conference table that you previously created.
3. Accept the values provided and specify any expected values to insert the block.

4. In the Edit Attributes dialog box, edit the default value for each attribute as needed.

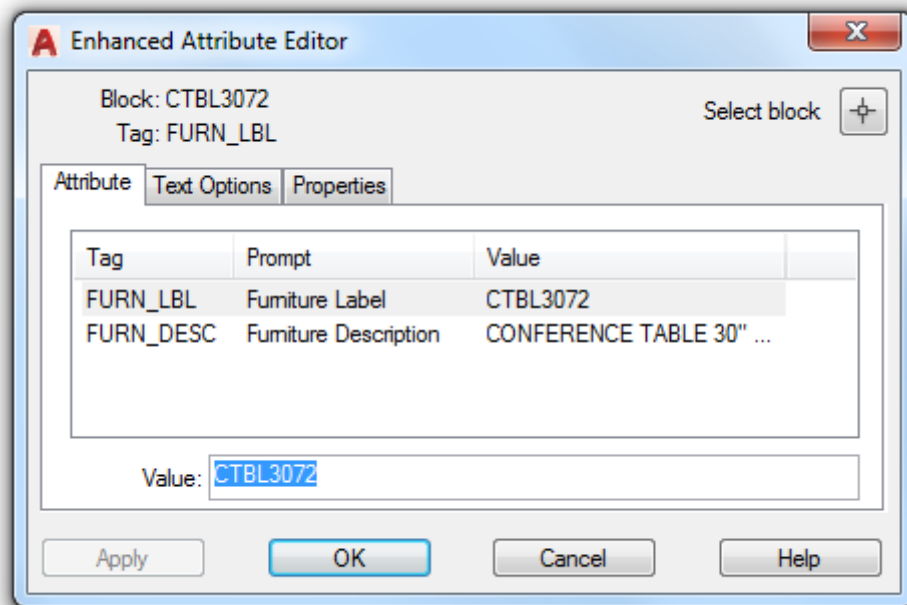


5. Insert several of the conference chair blocks along the two longer sides of the conference table.



6. Save the changes to the drawing.

Note: If the Edit Attributes dialog box isn't displayed when inserting a block, set both of the ATTREQ and ATTDIA system variables to a value of 1. After inserting a block with attributes, you can double-click the block to edit the current value of each attribute in the block.



Now that you have a basic understanding of defining and inserting blocks with attributes, you can extract the values of the block attributes into a table.

Extract Attribute Values from Blocks

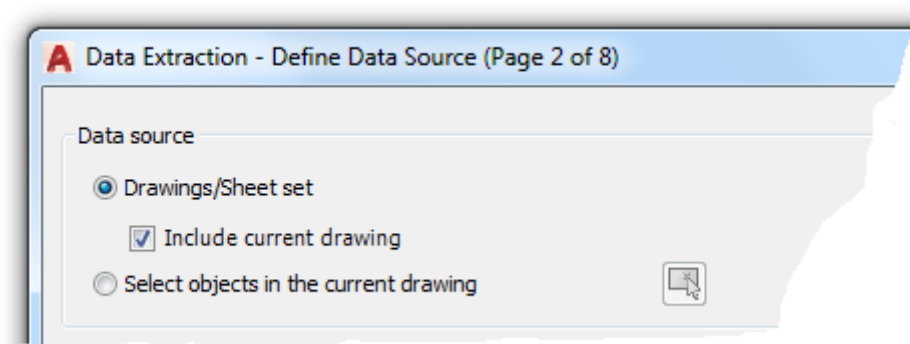
The ability to extract attribute information from blocks into a table object or CSV file for use in another application can help save time and reduce costly errors that might occur from re-entering the data. The Data Extraction wizard is the most efficient way to extract attribute information from blocks inserted into a drawing. It can also be used to extract property values that are associated with the other types of geometry defined in a drawing along with general information about a drawing file.

If you aren't familiar with block attributes and how to create them, check out the **Have You Tried: Work with Attributes in Blocks** topic first.

1. Open the drawing that was completed using the steps outlined in the **Have You Tried: Work with Attributes in Blocks** topic, or open another drawing that contains blocks with attributes that you want to extract.
2. Enter DATAEXTRACTION at the command prompt.
3. In the Data Extraction Wizard, choose Create a New Data Extraction and click Next to continue.
4. Specify a name and location for the new DXE file, such as *Office Furniture.dxe* and place it in your *My Documents* folder.

A DXE file is a data extraction file which is used to store the extraction settings chosen in the Data Extraction wizard, and to then be able to use those same settings when extracting data from other drawing files.

5. Use the Drawings/Sheet Set and Include Current Drawing options, and click Next to continue.



6. Clear the Display All Object Types checkbox and choose Display Blocks Only, and click Next to continue.

Data Extraction - Select Objects (Page 3 of 8)

Select the objects to extract data from:

Objects

Object	Display Name	Type
<input checked="" type="checkbox"/> CH1	CH1	Block
<input checked="" type="checkbox"/> CTBL3072	CTBL3072	Block

Preview

Display options

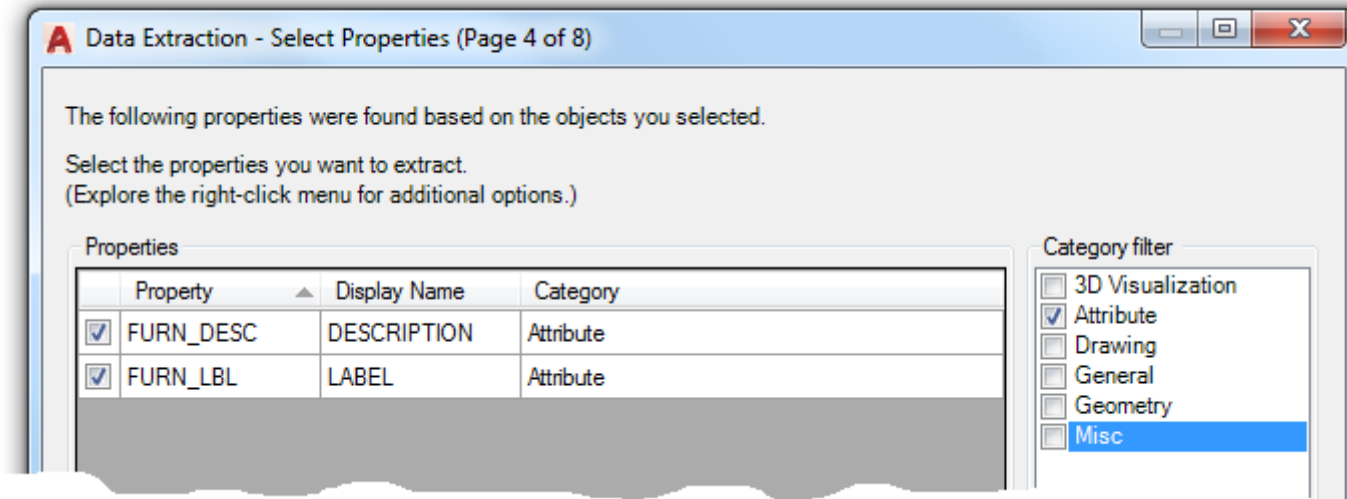
☐ Display all object types ☐ Display blocks with attributes only

☒ Display blocks only ☒ Display objects currently in-use only

☐ Display non-blocks only

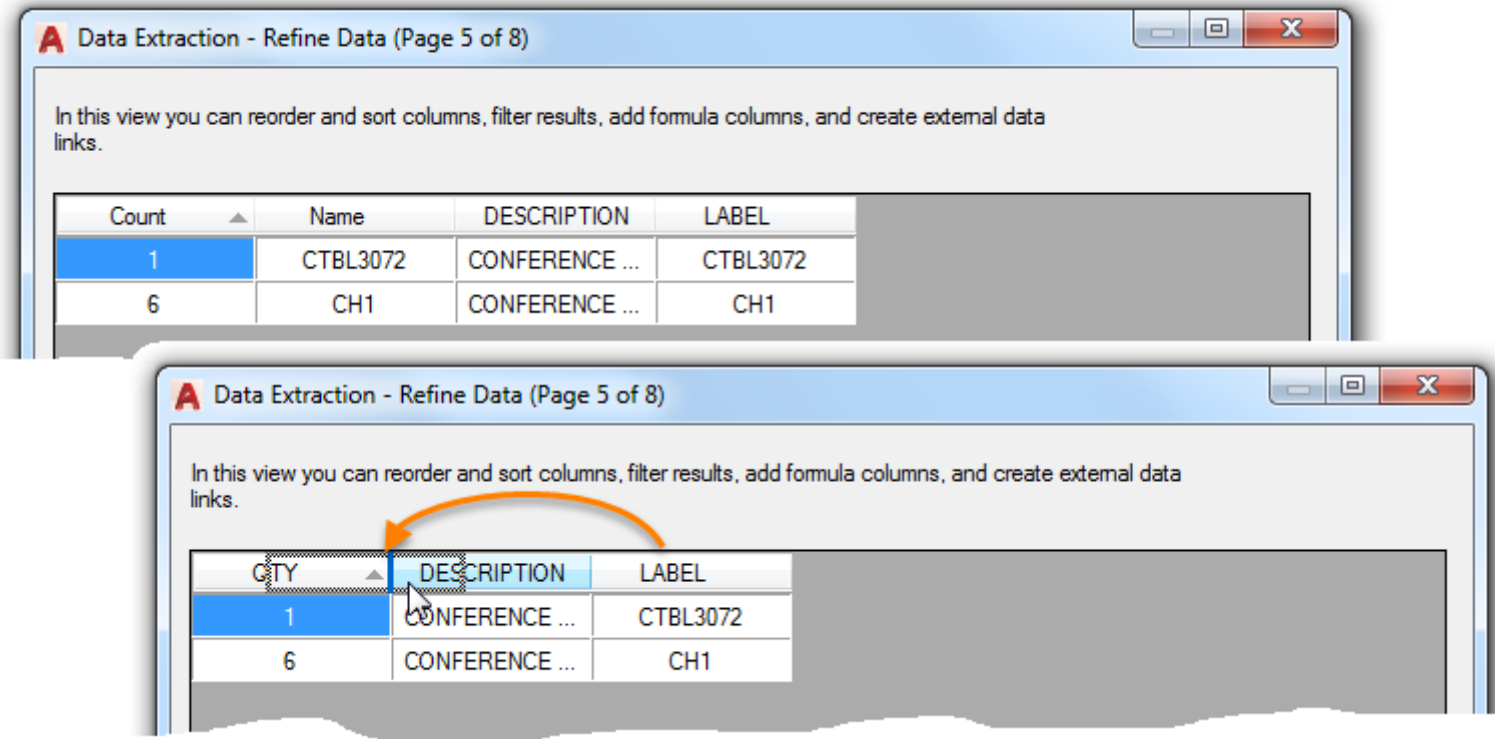
< Back Next > Cancel

7. Under Category Filter, clear all options except Attribute and then make sure the properties checked match the attribute values to extract.



8. Double-click the Display Name field for each attribute and change its value to match the previous image. Click Next to continue.

9. On the Refine Data page, reorder, rename and hide columns to control the extracted output. Click Next to continue.



10. On the Choose Output page, check Insert Data Extraction Table into the Drawing and click Next.

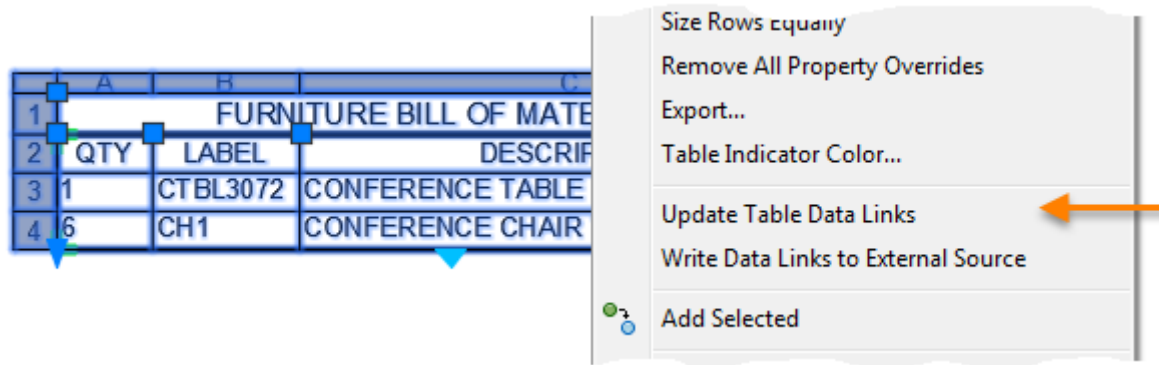
11. On the Table Style page, select the table style to use and type an appropriate name for the title of the table. Click Next and then Finish to place the table in the drawing.

FURNITURE BILL OF MATERIALS		
QTY	LABEL	DESCRIPTION
1	CTBL3072	CONFERENCE TABLE 30" x72"
6	CH1	CONFERENCE CHAIR W/O ARMS

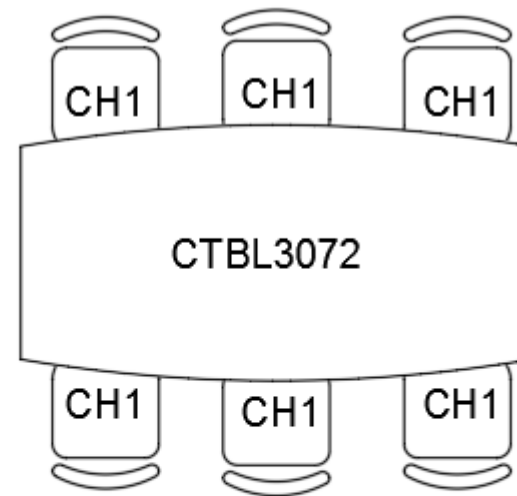
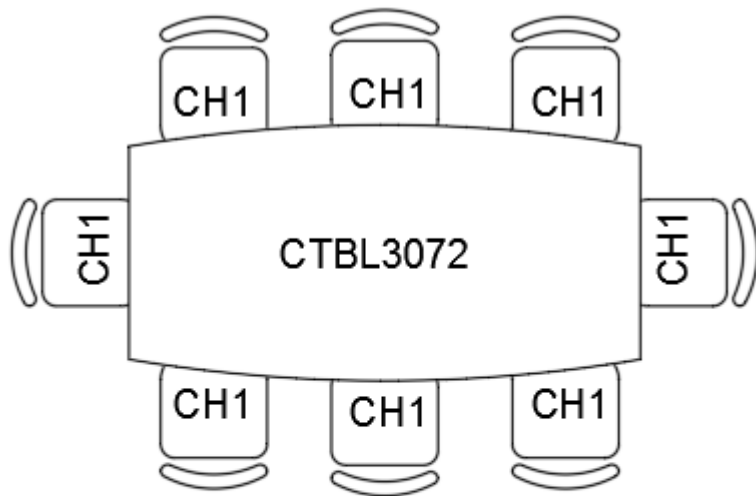
Update Extracted Data in Tables

Data extracted and placed in a table can be updated using the original extracted data settings. For example, if you were to add additional blocks to a drawing and you could update the data link associated with a table to include the latest block counts instead of having to repeat the extraction process.

1. Add some new instances of the blocks that were included in the original data extraction.
2. Select the table that contains the extracted data, right-click and choose Update Table Data Links.

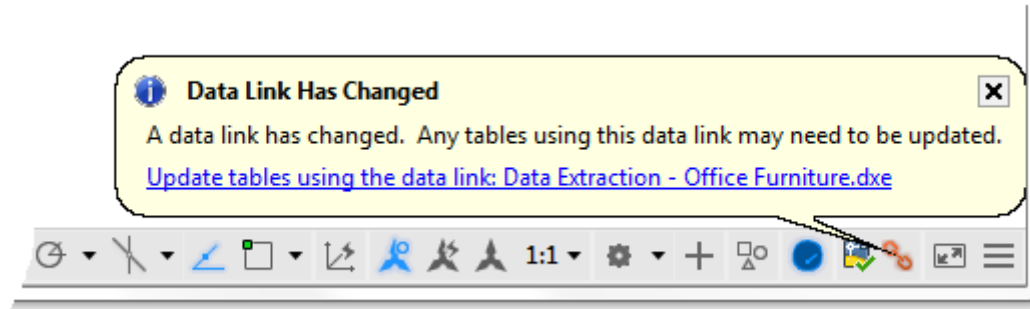


The following shows the results of updating the extracted data in a table after adding some additional blocks to a drawing.



FURNITURE BILL OF MATERIALS		
QTY	LABEL	DESCRIPTION
2	CTBL3072	CONFERENCE TABLE 30" x72"
14	CH1	CONFERENCE CHAIR W/O ARMS

Tip: When at least one table in a drawing contains extracted data, the Data Links icon is displayed in the system tray of the AutoCAD application window. While the icon is displayed, you can right-click the icon to manage and update the data links in a drawing. The DATALINKNOTIFY system variable controls the appearance and functionality of the Data Links icon.



For More Have You Tried Articles

Discover more features in AutoCAD that we think are useful but that you might not have tried yet in the [Have You Tried series of articles](#). (Note that this url will take you to the Autodesk website.)



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