# Linking a Table to Excel Data

You can use existing data entered in a Microsoft® Excel spreadsheet or a CSV (comma-separated) file to create an AutoCAD table. This is an example of object linking. *Object linking* is referencing data from one application to use in another. In this case, an AutoCAD table references, or links to, spreadsheet data. The object, known as the OLE server, is the spreadsheet data. The *OLE server* is the source application in an object-linking operation. AutoCAD is the destination application, or *OLE client*. Linking a spreadsheet to an AutoCAD table allows changes made to the spreadsheet to update in the AutoCAD table. You can also write changes made to the AutoCAD table back to the spreadsheet.

Creating the Link

To create a table based on an existing Excel or CSV file, use the **TABLE** command to open the **Insert Table** dialog box. Pick the **From a data link** radio button in the **Insert options** area, as shown in **Figure 21A-1**. Next, establish a data link between Excel and AutoCAD. If you already formed a link, the link is available from the drop-down list for reuse. To create a new data link, pick the **Launch the Data Link Manager dialog** button, or choose the **Launch Data Link Manager…** option from the drop-down list. The **Select a Data Link** dialog box, which is the same as the **Data Link Manager** dialog box, appears. See **Figure 21A-2**.

Ribbon
Home
> Annotation
Annotate
> Tables
Table
Type
TABLE
TB
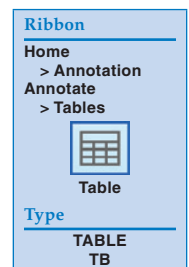
TABLE

NOTE

You can link data to an existing table cell by picking inside a table cell and then selecting the **Link Cell…** button from the **Table Cell** ribbon tab or right-clicking and picking **Data Link…**.

Figure 21A-1.
Inserting a table by linking data from an existing Excel or CSV file.

Select an existing link

Pick to launch the **Data Link Manager** dialog box

Insert options
- ○ Start from empty table
- ● From a data link
  - No data links found
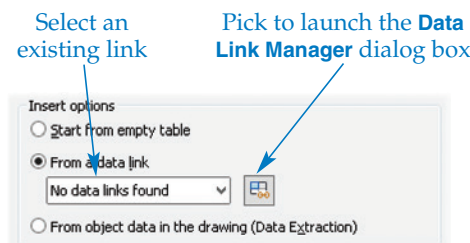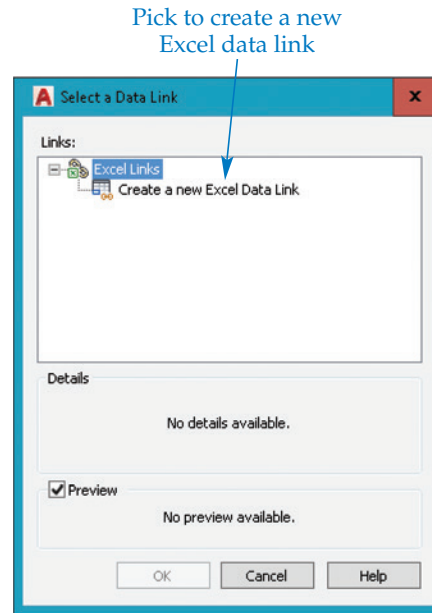- ○ From object data in the drawing (Data Extraction)

Figure 21A-2.
Picking the **Launch Data Link Manager…** option displays the **Select a Data Link** dialog box.

Pick to create a new
Excel data link

Pick the **Create a new Excel Data Link** button to display the **Enter Data Link Name** dialog box, and type a name for the data link in the **Name:** text box. See **Figure 21A-3**. The name does not have to be the same as the name of the source file, but using the same name can help you organize your files. Pick the **OK** button to display the **New Excel Data Link:** dialog box. See **Figure 21A-4**. If this is the first file linked to the drawing, pick the ellipsis button (**…**) to launch the **Save As** dialog box and browse for an Excel or CSV file. Choose a file and pick the **Open** button to return to the **New Excel Data Link:** dialog box. See **Figure 21A-5**. If the **Preview** check box is checked, a preview of the selected file is displayed. To expand the **New Excel Data Link:** dialog box, as shown in **Figure 21A-5**, pick the expansion arrow in the lower-right corner.

Specifying the Path Type

Use the **File** area of the **New Excel Data Link:** dialog box to select an existing Excel or CSV file and define the path type. The **Path type:** drop-down list allows you to set how AutoCAD stores the path to the object file. AutoCAD uses the path to find the Excel or CSV file when you open the AutoCAD file.

Pick the **Full path** option to form an absolute path to the Excel or CSV file. An *absolute path* is a path to a file defined by the location of the file on the computer system. The Excel or CSV file object location is set according to its location on the computer system, which means that you must locate the file in the same drive and folder specified in the saved path. You can move the AutoCAD drawing to any location, but the Excel or CSV file must remain in the saved path. This option is acceptable if it is unlikely that you will copy or move the AutoCAD and Excel or CSV files to another folder, drive, or computer.

Figure 21A-3.
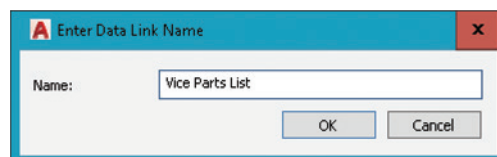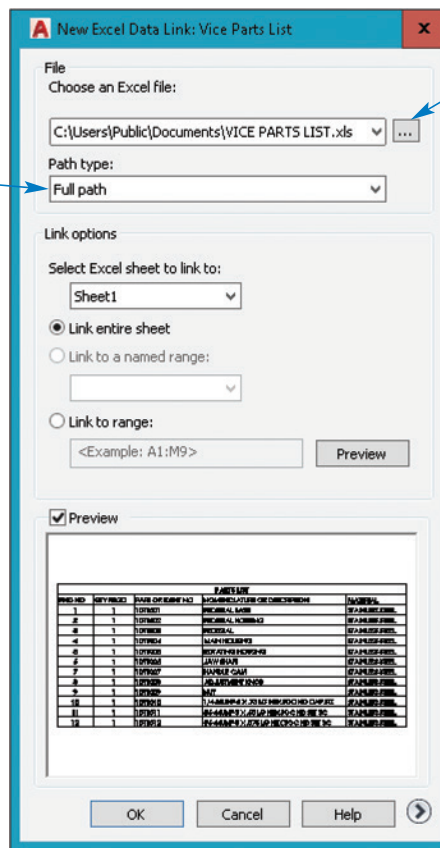Enter a name for the data link in the **Name:** text box.

Figure 21A-4.
The **New Excel Data Link:** dialog box allows you to browse for a file to link to the AutoCAD file.
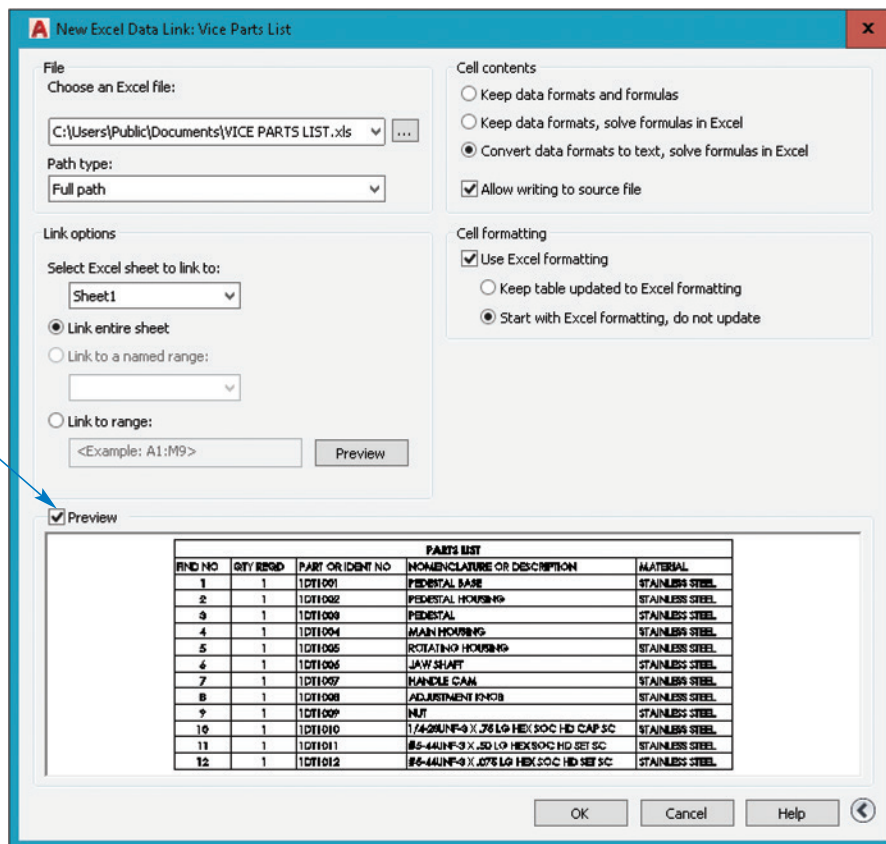
Pick to browse for an Excel or CSV file

Specify how AutoCAD will store the path to the object file

Figure 21A-5.
The expanded **New Excel Data Link:** dialog box with the **Preview** check box selected.

Deselect to hide preview

Specify a relative path if you share your drawings with a client or eventually archive the drawings. A *relative path* is a path to a file defined according to the location of the file relative to the host drawing. You cannot use the **Relative path** option if the Excel or CSV file is on a local or network drive other than the drive that stores the AutoCAD file. If you locate the AutoCAD drawing and Excel or CSV files in a single folder and subfolders, you can copy this folder to any location without losing the connection between files. For example, you can copy the folder from the C: drive of one computer to the D: drive of another computer, to a folder on a CD, or to an archive server. If you perform these types of transfers with the **Full path** option, you need to open the AutoCAD drawing after copying and redefine the saved path for the Excel or CSV file.

The **No path** option does not save the path to the Excel or CSV file. AutoCAD can only find and load the Excel or CSV file if the path to the file is included in one of the Support File Search Path locations, or if the Excel or CSV file is in the same folder as the AutoCAD file. The **Files** tab of the **Options** dialog box specifies the Support File Search Path locations.

Specifying the Data to Link

The **Link options** area of the **New Excel Data Link:** dialog box allows you to specify how much of the selected file to link to AutoCAD to form the table. Pick the **Link entire sheet** radio button to link a sheet selected from the **Select Excel sheet to link to:** drop-down list. If a named range is available in the selected Excel file, you can choose the named range by picking the **Link to a named range:** radio button and selecting the named range from the drop-down list. The third option is to pick the **Link to range:** radio button and enter a range of cells in the text box. For example, enter A1:M9 to select only cells A1 through M9. Pick the **Preview** button to update the preview display.

Specifying Cell Contents

The **Cell contents** area defines how to convert cell entries from Excel to AutoCAD. The **Convert data formats to text, solve formulas in Excel** radio button is active by default and converts all data types, such as currency or percentage, to text. Select the **Keep data formats, solve formulas in Excel** radio button to maintain Excel data formats supported by AutoCAD. Formulas are not imported, so you must make changes to a formula using Excel. Pick the **Keep data formats and formulas** radio button to maintain Excel data formats and formulas supported by AutoCAD. You must select the **Allow writing to source file** check box in order to write changes you make in the AutoCAD table back to the Excel spreadsheet.

Specifying the Cell Format

The **Cell formatting** area includes a **Use Excel formatting** check box. When this box is checked, AutoCAD uses the format settings in the Excel spreadsheet to create the AutoCAD table. You can choose to allow formatting changes made in the Excel spreadsheet to update in the AutoCAD table by selecting the **Keep table updated to Excel formatting** radio button. Pick the **Start with Excel formatting, do not update** radio button to draw the initial table using the Excel format, but prevent formats from updating when you make changes in Excel. Deselect the **Use Excel formatting** check box to convert the format used for the Excel spreadsheet to the current table style.

Placing the Linked Table

After selecting options in the **New Excel Data Link:** dialog box, pick the **OK** button to return to the **Select a Data Link** dialog box. Then pick the **OK** button in the **Select a Data Link** dialog box to return to the **Insert Table** dialog box. To place the linked table, pick the **OK** button and select the table insertion point. **Figure 21A-6** shows a table and the linked Excel spreadsheet.

Figure 21A-6.
An example of an Excel spreadsheet used to create an AutoCAD table. This table is a parts list added to an assembly drawing.
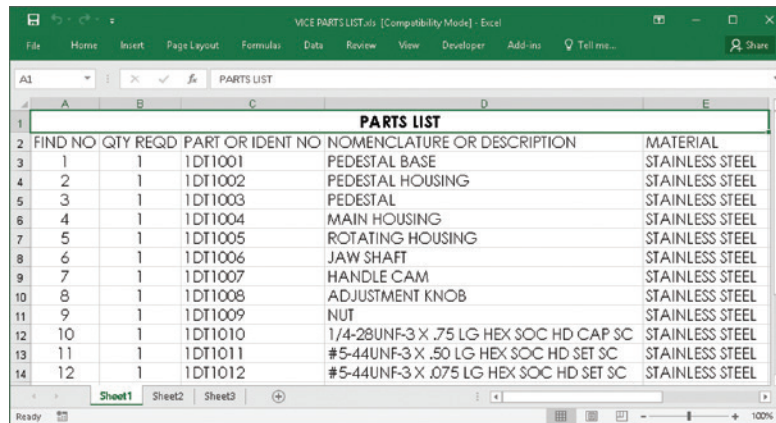
Excel Spreadsheet

PARTS LIST				
FIND NO	QTY REQD	PART OR IDENT NO	NOMENCLATURE OR DESCRIPTION	MATERIAL
1	1	1DT1001	PEDESTAL BASE	STAINLESS STEEL
2	1	1DT1002	PEDESTAL HOUSING	STAINLESS STEEL
3	1	1DT1003	PEDESTAL	STAINLESS STEEL
4	1	1DT1004	MAIN HOUSING	STAINLESS STEEL
5	1	1DT1005	ROTATING HOUSING	STAINLESS STEEL
6	1	1DT1006	JAW SHAFT	STAINLESS STEEL
7	1	1DT1007	HANDLE CAM	STAINLESS STEEL
8	1	1DT1008	ADJUSTMENT KNOB	STAINLESS STEEL
9	1	1DT1009	NUT	STAINLESS STEEL
10	1	1DT1010	1/4-28UNF-3 X .75 LG HEX SOC HD CAP SC	STAINLESS STEEL
11	1	1DT1011	#5-44UNF-3 X .50 LG HEX SOC HD SET SC	STAINLESS STEEL
12	1	1DT1012	#5-44UNF-3 X .075 LG HEX SOC HD SET SC	STAINLESS STEEL

Extracted AutoCAD Table

NOTE

An alternative method for creating a table from Excel data is to copy the spreadsheet data from the Excel file and paste it into the drawing using the **Paste Link** option of the **Paste Special** command (**Edit>Paste Special**). Paste the copied Excel data using the **AutoCAD Entities** option.

Adjusting Data Links

Pick inside a table cell to adjust specific data link options. Brackets identify table content linked to data, and the data link icon displays when you move the cursor over linked data. See **Figure 21A-7**. Several options for adjusting linked data are available when you select a cell linked to data and then right-click to access the **Data Links** cascading menu. Pick the **Download Changes from Source File** option to update the table to include changes made to the source file—in this case, the Excel spreadsheet. You can also activate the **Download from Source** feature from the ribbon.

Select the **Upload User Changes to Source File** option to update the source file to include any changes made to the AutoCAD table. Pick the **Edit Data Link** option to edit the data link using the **Modify Excel Link:** dialog box. This dialog box is the same
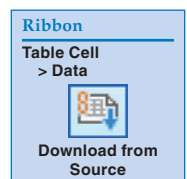
Ribbon

Table Cell
> Data

Download from Source

Figure 21A-7.
Brackets at all four corners of the linked data identify table content linked to data. The data link icon appears when you move the cursor over linked data.

Data link brackets

Data link icon

Data link cells are automatically locked

as the **New Excel Data Link:** dialog box used to create a data link. The **Open Data Link File…** option opens the source file. Choose the **Detach Data Link** option to break the link between the AutoCAD table and the source file. Detaching a data link creates a static table that no longer links to the source file.
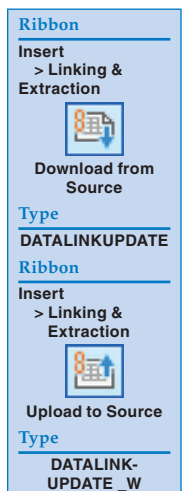
NOTE

The content of cells created as data links is locked by default. You must unlock the cells in order to make changes to the content. Unlocking a cell does not break the data link.

Updating and Writing Data Link Changes

Use the **Download from Source** command to update the AutoCAD table to reflect changes made to the source file (the Excel spreadsheet). This is the same function as the **Download Changes from Source File** option available when you select a table cell. Access the **Upload to Source** command to update the source file to reflect changes made to the AutoCAD table. This is the same function as the **Upload User Changes to Source File** option available when you select a table cell.

NOTE

You can also access updating and writing commands by picking a table cell edge, and then right-clicking to access a shortcut menu.

Ribbon
Insert
> Linking & Extraction

Download from Source

Type
DATALINKUPDATE

Ribbon
Insert
> Linking & Extraction

Upload to Source

Type
DATALINK-UPDATE _W

Activity 21A-1

Perform the following steps to practice linking Excel files to AutoCAD tables.

1. Start a new drawing from scratch or use a template of your choice. Save the file as ACT21A-1.dwg.

2. Open the **Insert Table** dialog box.

3. Pick the **From a data link** radio button from the **Insert options** area.

4. Select the **Launch the Data Link Manager dialog** button and choose the **Create a new Excel Data Link** button.

5. Enter Vice Parts List in the **Name:** text box and select the **OK** button to display the **New Excel Data Link:** dialog box.

6. Pick the ellipsis button (**…**) to launch the **Save As** dialog box and browse for the file Vice Parts List.xls on the companion website. Choose the file and pick the **Open** button to return to the **New Excel Data Link:** dialog box.

7. Pick the **OK** button to return to the **Select a Data Link** dialog box, and then pick the **OK** button to return to the **Insert Table** dialog box.

8. Pick the **OK** button and select the table insertion point.

9. Resave and close the file.