



White Paper

Autodesk Raster Design for Manufacturing Professionals

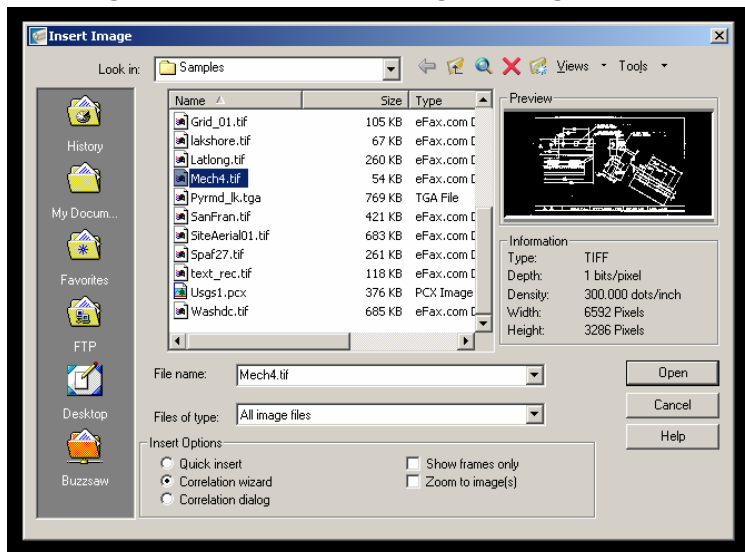
What Is Autodesk Raster Design?

Autodesk® Raster Design is the industry-leading software for working with and cleaning up raster data. With Autodesk Raster Design, users in any industry can clean up and reuse existing drawings, photographs, scans, and maps in the familiar AutoCAD® environment. You can also choose to convert raster data to vector-based data for easier manipulation in the AutoCAD environment. Raster Design can be used with AutoCAD-based products such as Autodesk® Mechanical Desktop®, Autodesk® Architectural Desktop, Autodesk® Land Desktop, and Autodesk Map™ software applications so that data crucial to those disciplines can be manipulated directly in industry-specific environments.

Businesses with existing designs and data in hard copy or digital format can use Autodesk Raster Design to effectively modify or convert data to vector format, eliminating the need to re-create designs from scratch.

Using Autodesk Raster Design

Getting started in Autodesk Raster Design is as simple as selecting your raster data and inserting it into a new or existing drawing file. You can work with several different types of



images, such as color, black and white, or grayscale, in formats such as TIFF, BMP, CALS, and JPEG as well as many others (see the Autodesk Raster Design documentation for a complete list of supported formats). You can insert single or multiple images into a drawing. Once inserted, these images become objects in the drawing and an automatic link is created between the AutoCAD DWG and the original image.

In most cases, it is not necessary to convert raster data to vector format. You may simply need to clean up an image to make the

raster data more presentable or usable. Autodesk Raster Design offers tools to adjust the appearance of an image. Is a scanned image too bright or too dark? Are shadows too dark while the rest of the image is readable? Is the raster data covered with speckles? Use brightness and contrast adjustments as well as other tonal adjustment features to correct these problems. The software includes a powerful despeckling feature that enables you to selectively eliminate impurities by size and area to clean the scanned images for use in

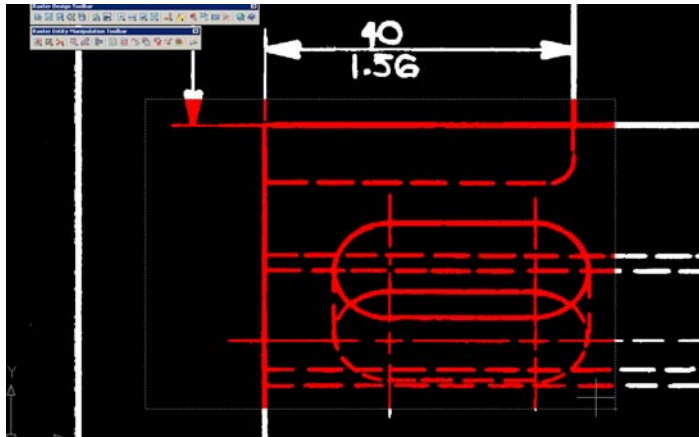
engineering documents. The software also includes powerful tools designed to help you clean up linework by creating smooth and thin lines.

If you need to revise a design, you can keep your data in raster form or convert some or all objects to vector format. You can also save the data in a hybrid raster-vector format. The appropriate technique depends on the amount of change necessary.

Autodesk Raster Design Functionality

When you insert an image, you may need to adjust it to correct distortions or position it correctly in a drawing. Autodesk Raster Design has many powerful tools for this purpose.

Does your drawing have existing AutoCAD geometry? Use the powerful Match command to adjust the position, scale, and rotation in relation to other raster data or existing AutoCAD data. With a few clicks, you can adjust and position an image quickly and easily.

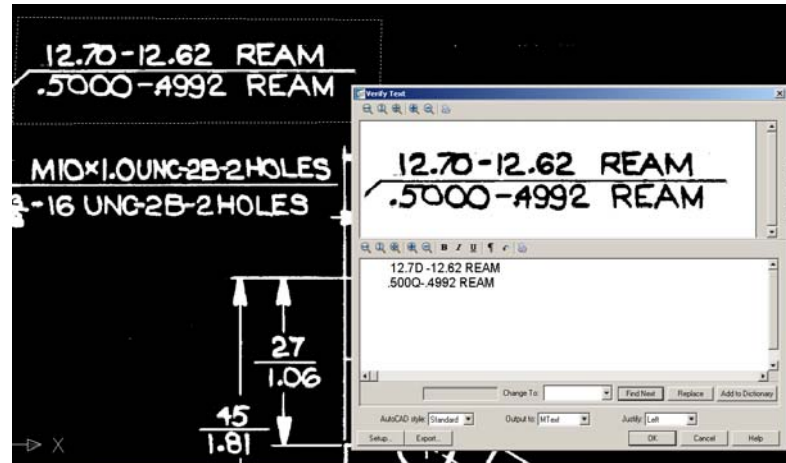


Was a drawing distorted through old blue-line processes or by making copies of copies? Use the rubbersheeting function to minimize or remove distortions in the image.

Michael C Johnson CEO of Advanced Career Development had this to say about the ability to fine-tune

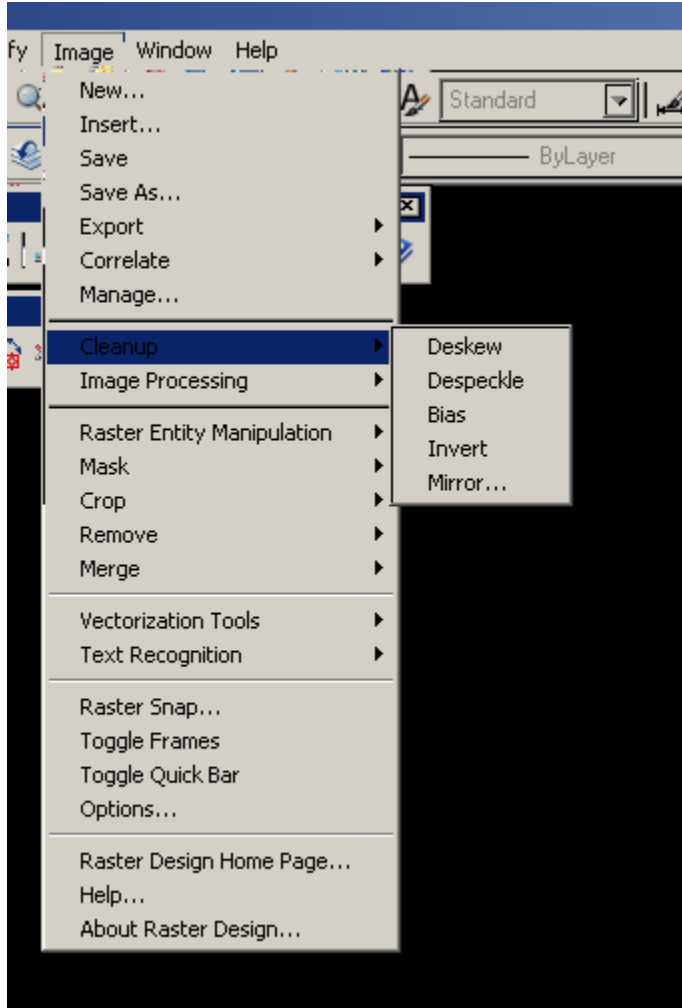
drawings: "When our customers bring in their old drawings that might have been sitting in a drawer for 30 years, it's safe to say that the quality of the drawings may have degraded from age, water damage, or just plain old dirt. Scans that result from such damaged drawings aren't the highest quality; however, with the powerful suite of tools in Raster Design, including rubbersheeting, despeckling, and others, we can massage the data and make it accurately convey the design intent once again."

For mechanical designers and engineers, Autodesk Raster Design offers powerful tools such as Text Recognition to make working with raster drawings faster and easier. Typical mechanical drawings include notes, specifications, dimensions, and other types of text documenting the different aspects of a design. It could take many hours to manually reenter text, thereby costing you time and money. Raster Design offers a powerful interactive Text Recognition feature that analyzes selected text and converts it to AutoCAD text or multiline text (mtext) using the same style attributes, scaling, and height as other text in the AutoCAD drawing, or you can assign properties as needed.



Why Use Autodesk Raster Design?

Should I edit a raster drawing or convert it to vector data? This question often arises when working with raster data and AutoCAD software. The most cost effective solution usually comes down to how the drawing will be used and the extent of the changes.



Ed Dombrowski of the Stanley Louis Company had this to say about the advantages of using Autodesk Raster Design for maintaining drawings: "In our business we have tons of old drawings in our library, most on paper. In the past when we needed to update an old design, we needed to totally recreate the design in AutoCAD. Now, thanks to Autodesk Raster Design, when we have an old boiler or heater design that needs updating, we just scan the old drawing, clean it up, and edit it as needed. The savings in cost and time are significant."

Regarding the ability to convert raster data on demand, Dombrowski said, "Being able to choose which data is converted gives us much-needed flexibility. When we have an older design of something such as a boiler that we are designing a new part for, we might only be concerned with a small area of the drawing. Using Raster Design allows us to convert just the area we are concerned with and leave the rest of the data alone as a reference. The ability to either leave raster data alone or convert it to vector on demand allows us to manipulate designs faster."

Why use Autodesk Raster Design? Because minor changes may not warrant redrawing of data, and at other times using existing data by converting raster data to vector data can save your company time and money.

Conclusion

The key benefit in using Autodesk Raster Design to work with scanned drawings is flexibility. You can extend the usefulness of an existing drawing by making only the changes necessary or by fully converting the drawing to vector format. This flexibility saves you time, effort, and money because you can take the process as far as you need for a given situation. If your goal is to convert all your drawings to vector, you can do it incrementally as designs come up for major revision or when most of a drawing has already been converted in past revisions. How you choose to manage your raster drawing archive depends on many factors, but whatever approach you take, Autodesk Raster Design offers the flexibility to do as much or as little as needed to address your particular needs.

About the Author

Sean-Philip Oriyano is a consultant and instructor with K-Tek Solutions, based in Petaluma, California. He has more than 14 years' experience in the mechanical design and engineering fields, focusing on the defense, aerospace, and manufacturing industries. As an instructor, Oriyano has developed and delivered courses on Autodesk Inventor[®], AutoCAD, and Autodesk Mechanical Desktop software. He is also an MCSE, MCSA, MCT, CTT+, CISSP, and A+ certified instructor.

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