TommySoftware® T3G->DXF Version 1.10

1. Usage

1.1 Execution

A TommySoftware® file converter can be started either directly or from within a TommySoftware® application. The usage is equal in both cases.

The program does not require any parameter, but optionally, a path can be supplied, that will be used as the standard setting in the file selector boxes. The TommySoftware® applications automatically pass the current standard path for drawings (e.g."C:\WINCAD3\DRAWING").

To be able to call the converter from within a TommySoftware® application, it has to be copied into a specific directory. This is, depending on the application, the directory "SYSTEM\CONVERT" oder "CONVERT" inside the applications's directory. You can call the convert afterwards using the CONVERT DRAWING command in the FILE menu of the application.

Otherwise, you can start the program from within the File Manager or the Program Manager of Windows.

1.2. Handling

To convert a single file, select the CONVERT FILE command in the FILE menu or press the key F2. First a file selector box appears, where you have to enter the name of the T3G file to be converted. Then another file selector box appears, where you must enter the name that the produced DXF file shall receive.

After the file name input, the conversion starts. In the lower right corner of the window, the number of converted lines of the T3G file is displayed. A short beep sounds when the conversion is finished.

To convert a complete directory, select the CONVERT DIRECTORY command in the FILE menu or press the key F3. First a file selector box appears, where you have to select the directory that contains the T3G files to be converted. Then another file selector box appears, where you must select the directory into which the produced DXF files shall be stored.

ATTENTION! When converting a complete directory, files within the target directory might be overwritten without warning! In order to avoid trouble, create a new directory to be used as the target directory.

After the directory name input, the conversion starts. In the lower right corner of the window, the number of converted lines of each T3G file is displayed. A short beep sounds when the conversion is finished.

1.3. Parameters

The conversion is influenced by several parameters:

Unit of the DXF drawing
Most international DXF drawings use the unit [inch] as the standard unit. But some DXF files will be modified using [mm] or another unit. As the DXF header does *not* contain any information about the used unit, this unit should be stated here in order to allow a correct translation into the T3G coordinates.
If the desired unit is neither [inch] nor [mm], you can state a custom unit by entering the definition of that unit in millimeters (e.g. `914.4` for [yard]). This custom unit can also be used to scale the drawing: If you enter `2.0`, a drawing based in [mm] will be scaled down by the factor 2.0. If the drawing is based on [inch], enter `5.08` (2×2.54) in order to scale the drawing down by factor 2.0.

Accuracy The accuracy determines, into how many lines objects shall be converted, that do not exist in the T3G format (ellipses, splines, Bézier curves). The value entered determines the average line length in mm. It may be between 0,001 and 1000 mm. Best values are between 0,5 and 5 mm.

Buffer size The buffer size determines the size of a memory area that is used to store temporary results during the conversion. It can be between 64 and 1024 KBytes.
The smaller the accuracy values is, the larger the buffer size has to be, because more lines are calculated.

2. Conversion features

When converting a T3G file into a DXF file, some information gets lost. This is caused by several limitations

in the DXF file format.

Definition of line patterns, layers and blocks are retained. Though, due to the fact that names within a DXF file may only consist of very few characters, the names of these elements have to be replaced by continuous numbers, so that they remain definite. Line patterns get the names L01 to L40, layers the names E001 to E300, and blocks the names B00001 to B99999.

External refernces to symbols are not supported, nor are marks and comments.

As line patterns in DXF files can not be depending on the line width, those line patterns are calculated for a line width of 0.5 mm.

Fillings are ignored during conversion. If an objct was only filled, but not framed, it will be framed in the file, though, to be visible.

Advice: The DXF format produced by this converter can be imported by CorelDRAW! and most of the other graphic systems for Windows. If an exact transfer of objects is needed, this should be done using the DXF format instead of the clipboard, because the DXF format is more exact.

Unfortunately, just this CorelDRAW! in the version 2.0 tested has an unkind bug in the DXF import: Circular arcs larger than 180 degrees are displayed indeed, but they are only approximated very inaccurately using two Bézier curves.

3. Important file formats

The TommySoftware® conversion programs can handle several different file formats, that can normally be distinguished by their file name extension. Following a short description of the most important file extensions:

DXF   The DXF-Format was initially used by the CAD-System AutoCAD® (registered trademark of AutoDesk Inc.). It became a standard and can be read and/or written by most of the CAD and graphic applications.
DXF files cannot handle filled area that are more complex than quadrangles. Due to this reason, most applications do not export any fillings, or they have to "emulate" complex areas using triangles and quadrangles.
The DXF file format is frequently changing, because each new release of the CAD system stated above results in more or less extensive changes in the file format. Although this change is necessary for progress, it makes it nearly impossible to be up-to-date.

MPG   The format MPG 1.0 is used by all graphical applications of TommySoftware®. It is compact and easy to read. Complex filled areas can be described using lines and Bézier curves. The only restriction is the lack of block definitions.

TVG   The format TVG 1.0 is used by TommySoftware® WINCAD® Release 1. It is mainly aquivalent to the MPG format, so both can be converted to each other without any loss of information.

TVL   The format TVL 1.0 is used by most of TommySoftware®'s applications for storing libraries. Its internal structure is similar to MPG and TVG.

T2G   The format TVG 2.0 is used by TommySoftware® WINCAD® Release 2. Is is the successor of the TVG format and was extended by block definitions and external references. Furthermore, filled areas can now also be described using circular arcs in addition to lines and Bézier curves.
T2G files are more compact than TVG files. Having the same information content, T2G files use only 70% of the storage in average.

T2L   The format TVL 2.0 is also used by TommySoftware® WINCAD® Release 2. It is used to store libraries. Its internal structure is similar to T2G.

VEK   The format VEK 1.0 is used by the vector graphic program MegaPaint® ST since Version 2.3 on the Atari ST. It features complex areas and groups similar to the MPG format.

We wish you success using our applications and this conversion program!

Your TommySoftware® Team.

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