
DGNLink 8

AutoCAD / MicroStation

Translator

User's Guide



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Table of Contents

WELCOME	7
Highlights	7
Always available right on your Desktop.....	7
Supports AutoCAD A2008 and MicroStation V8	7
Customize to meet your needs.....	7
A smart investment	7
Features.....	7
Configuration tables	7
Versions Supported.....	8
NETWORK LICENSE	9
USING DGMLINK.....	10
To Translate Files -	10
The DGNLink Interface	11
The DGNLink translation steps are:	11
Step 1 - Choosing Files to Translate	12
File Browse Dialog	13
Step 2 - Choose the Destination Directory	14
Directory Browse Dialog	14
Step 3 - Modify the Translation Settings	15
DWG to DGN Options Window	16
Settings Dwg > Dgn	17
Create	17
Load	17
Save.....	17
Save As...	17
Default.....	17
Layers Dwg > Dgn.....	18
Skip Frozen Layers	18
Skip Off Layers.....	18
Use Layer / Level Table	18
Colors Dwg > Dgn.....	19
Use Color Table	19
Use Color to Weight Table	19
Linetypes Dwg > Dgn	20
Use Linetype Table	20
Lineweight Dwg > Dgn	21
Use Lineweight Table.....	21
Xrefs Dwg > Dgn	23
Ignore.....	23
Convert to Reference Attachment	23
Do Not Convert XRefs.....	23
Text Dwg > Dgn	24
Use Textstyle / Font Table	24
Blocks / Hatches Dwg > Dgn	26
Use Cell / Block Table	26
Hatch Scale Factor.....	26
DGN Output Dwg > Dgn	27
Output DGN Version	27
Output DGN Dimension	27
Output DGN Units	27

User DGN Seed File	27
DGN to DWG Options Window	28
Settings Dgn > Dwg	29
Create	29
Load	29
Save	29
Save As	29
Default	29
Levels Dgn > Dwg	30
DGN Levels to Translate	30
Levels to Layers	30
Colors Dgn > Dwg	31
Colors	31
Use Weight to Color Table	32
Linetypes Dgn > Dwg	33
Linetypes	33
Force ByLayer Linetypes	33
Use Linetype Table	33
Weights Dgn > Dwg	35
Use Weight Table	35
Reference Files Dgn > Dwg	37
Bind – V7 Dgn Only	37
Convert to Block – V7 Dgn Only	37
Convert to XRef	37
Reference File Search Path	38
Text Dgn > Dwg	39
Use Font / Textstyle Table	39
Cells Dgn > Dwg	40
Explode All Cells	40
Use Cell / Block Table	40
DWG Output Dgn > Dwg	41
Output DWG Release	41
Output DWG Units	41
User DWG Prototype	41
Step 4 - Translate the Files	42
Translation Progress	42
Canceling a Translation	42
Checking the Results	43
DWG TO DGN SPECIFICATIONS.....	44
Arc Dwg > Dgn	44
Attribute Dwg > Dgn	44
Block Dwg > Dgn	44
ByBlock Dwg > Dgn	44
ByLayer Dwg > Dgn	44
Cell Dwg > Dgn	44
Circle Dwg > Dgn	45
Color Dwg > Dgn	45
Coordinates Dwg > Dgn	45
Curve Dwg > Dgn	45
Dimension Dwg > Dgn	45
Elevation Dwg > Dgn	45
Enter Data Field Dwg > Dgn	45
Ellipse Dwg > Dgn	46
Font Dwg > Dgn	46
Frozen Layers Dwg > Dgn	46
Hatches Dwg > Dgn	46
Insert Dwg > Dgn	46
Justification Dwg > Dgn	47

Layer	Dwg > Dgn	47
Level	Dwg > Dgn	47
Lightweight Polyline	Dwg > Dgn	47
Line	Dwg > Dgn	47
Linetype	Dwg > Dgn	48
Offset	Dwg > Dgn	48
Mtext	Dwg > Dgn	48
Point	Dwg > Dgn	48
Point Cell	Dwg > Dgn	48
Polyface Mesh	Dwg > Dgn	48
Polyline	Dwg > Dgn	49
Reference File	Dwg > Dgn	49
Ignore		49
Convert to Reference Attachment		49
Seed File	Dwg > Dgn	49
Shape	Dwg > Dgn	50
Solid	Dwg > Dgn	50
Text	Dwg > Dgn	50
Text Style	Dwg > Dgn	50
Trace	Dwg > Dgn	50
Units	Dwg > Dgn	51
UORs	Dwg > Dgn	51
Weight	Dwg > Dgn	51
Width	Dwg > Dgn	51
XRef	Dwg > Dgn	51
Ignore		51
Convert to Reference Attachment		51
3DFace	Dwg > Dgn	51
3DLine	Dwg > Dgn	52

DGN TO DWG SPECIFICATIONS.....53

Arc	Dgn > Dwg	53
Arrowhead	Dgn > Dwg	53
Attribute	Dgn > Dwg	53
Block	Dgn > Dwg	53
BSpline	Dgn > Dwg	54
Cell	Dgn > Dwg	54
Class	Dgn > Dwg	54
Clipped Reference File	Dgn > Dwg	54
Clip Void Areas	Dgn > Dwg	54
Color	Dgn > Dwg	55
Complex Shape	Dgn > Dwg	55
Complex String	Dgn > Dwg	55
Construction Class	Dgn > Dwg	55
Coordinates	Dgn > Dwg	55
Curve	Dgn > Dwg	55
Dimension	Dgn > Dwg	56
Ellipse	Dgn > Dwg	56
Filled Circle	Dgn > Dwg	56
Filled Shape	Dgn > Dwg	56
Font	Dgn > Dwg	56
Fractions	Dgn > Dwg	57
Justification	Dgn > Dwg	57
Layer	Dgn > Dwg	57
Level	Dgn > Dwg	57
Level Symbology	Dgn > Dwg	57
Line	Dgn > Dwg	58
Linetype	Dgn > Dwg	58
Linestring	Dgn > Dwg	58
Multiline	Dgn > Dwg	58
Point	Dgn > Dwg	58
Point Cell	Dgn > Dwg	58

Polyline Dgn > Dwg	59
Reference File Dgn > Dwg	59
Bind – V7 Only	59
Convert to Block – V7 only	59
Convert to XRef	59
Shape Dgn > Dwg	59
Shared Cell Dgn > Dwg	60
Text Dgn > Dwg	60
Text Style Dgn > Dwg	60
UORs Dgn > Dwg	60
Weight Dgn > Dwg	60
Width Dgn > Dwg	61
XRef Dgn > Dwg	61
ERROR MESSAGES	62
Number - Error Message	62
TECHNICAL SUPPORT	65
E-mail Questions	65
Telephone	65
Support PLUS	65
DGI Web Site	65
Sales	65

Welcome

DGNLink is the AutoCAD / MicroStation link designed especially for AutoCAD users. This fast, accurate, two-way translator is easy-to-use and handles your everyday translation needs. DGNLink is a powerful tool for AutoCAD shops who need compatibility with MicroStation files.

Highlights

Always available right on your Desktop

When you need to import or export an Intergraph MicroStation DGN file, you don't want to spend a lot of time quitting AutoCAD and then looking for your translator. You want a translator that works with you and is available when you need it. DGNLink is always available right from your Desktop. Pick DGNLink and you're ready to go.

Supports AutoCAD A2008 and MicroStation V8

DGNLink uses proven DWG and DGN technology to ensure the greatest degree of compatibility for your files. DGNLink supports AutoCAD releases 12 through 2008 and MicroStation releases 3, 4, 5, 95, SE, J and V8.

Customize to meet your needs

DGNLink's auto-configuration will give your files exactly the look you want and need most of the time. However, if you have special requirements, you can adjust DGNLink to your needs. The DGNLink configuration tables let you control the look of your files.

A smart investment

DGNLink provides the lowest cost of purchase of any major AutoCAD/MicroStation translator system. It is designed to lower your operating expenses throughout the lifetime of your corporate applications. Simplified licensing options help reduce licensing investments. Choosing the Support Plus maintenance program will keep your investment current. You will also have priority access to all of the expertise of the DGI technical staff to assist you when you need help.

Features

Configuration tables

Using DGNLink's configuration tables, you can control the assignment of translation parameters or accept the default settings.

- Layers / Levels
- Colors
- Text styles / Fonts
- Linetype / Linecode
- Lineweight / Weight
- Weight to Color
- Color to Weight
- Xrefs / Reference files

- Blocks / Hatches and Cells
- Dwg / Dgn Output

Versions Supported

DGNLink supports the following versions of AutoCAD and MicroStation:

AutoCAD - releases 12 through 2008

MicroStation - releases 3, 4, 5, 95, SE, J and V8.

Network License

DGNLink is provided with a single user floating network license. That means you can use it on any workstation on your network one user at a time. DGNLink will tell you if the software is already in use.

To set up additional workstations to use DGNLink, create a shortcut to the program file `dgnlink8.exe` on the computer where DGNLink was installed. That's all there is to it! All network users must have write access to the DGNLink 8 directory.

Additional user licenses can be purchased for \$480 each. Discounts are available for adding larger numbers of users. Just give our Sales Dept a call for a custom quotation.

Using DGNLink



Start DGNLink by double clicking the DGNLink linked hands icon.

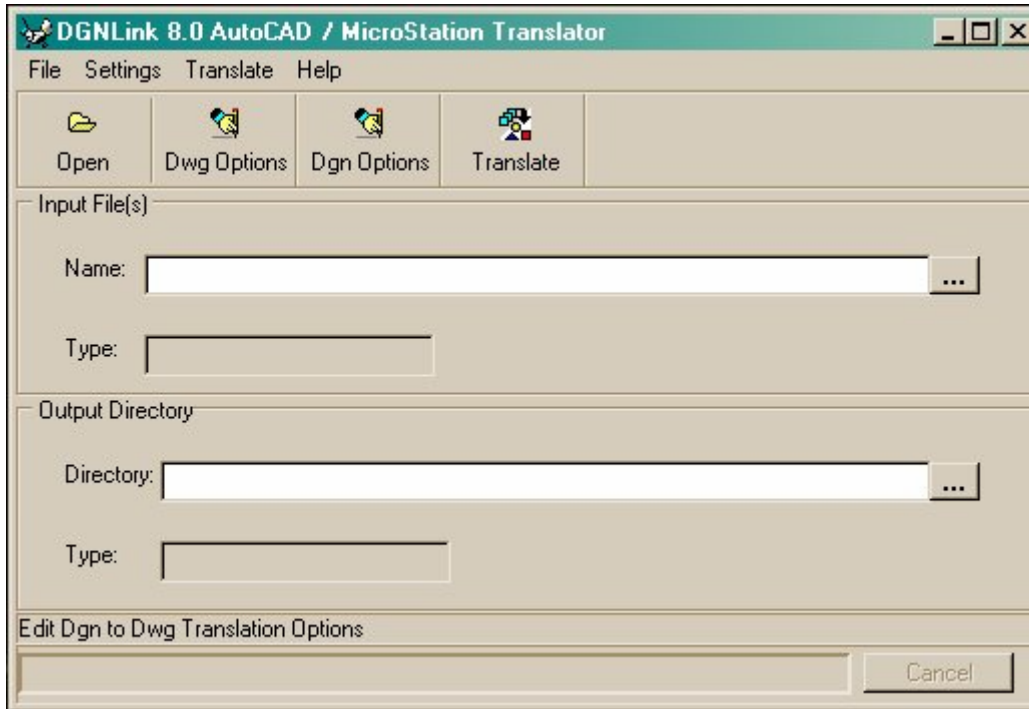
DGNLink is controlled through its primary interface window. Here you select files to translate, select the destination location, and run the translations. You can be customize the translations with the Options screens, save your parameters, and reload previously saved parameters. See DWG to DGN Options and DGN to DWG Options for details in setting up and customizing your translations.

To Translate Files -

1. Pick the File | Open menu command. The Select Files to Translate dialog is displayed. Select the files or files you wish to translate and click the OK button to close the dialog. The Input File(s) section will show the files you have selected and the type of file.
2. The Output Directory section will show the location where the translated files will be stored. If desired, change the output directory location using the associated browse button.
3. You may change the translation options using the File | Show DWG Settings menu command for Dwg to Dgn translations or the File | Show DGN Settings menu command for Dgn to Dwg translations.
4. Pick the Translate menu command to start the translation. Check the Translation Status at the bottom of the CATS Project Window until the translation is finished.

The DGNLink Interface

Start DGNLink by double clicking the DGNLink linked hands icon. You will see the DGNLink primary window:



The DGNLink translation steps are:

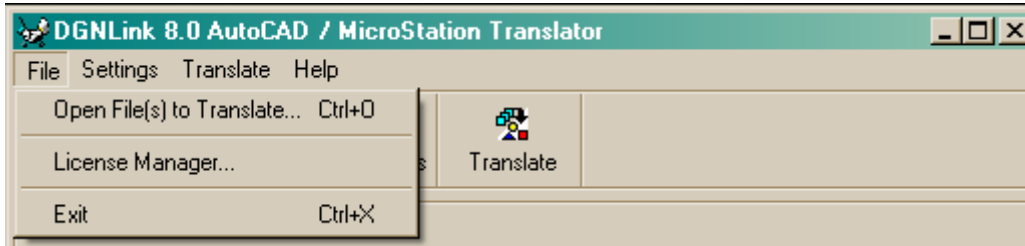
1. Choose the file(s) to be translated.
2. Choose the destination directory for the translated file(s).
3. Modify the translation options, if desired.
4. Translate the file(s).

The commands for performing these steps can be accessed by the toolbars, menus, or keyboard shortcuts:

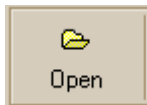
- Toolbars - clicking on a toolbar button selects the command. Holding the mouse pointer over a tool button will display the tooltip for the command.
- Menus - pull-down menus give access to all DGNLink commands.
- Keyboard Shortcuts - the <ALT> key can be used with the underlined letter on the menus to select the desired menu command.

Step 1 - Choosing Files to Translate

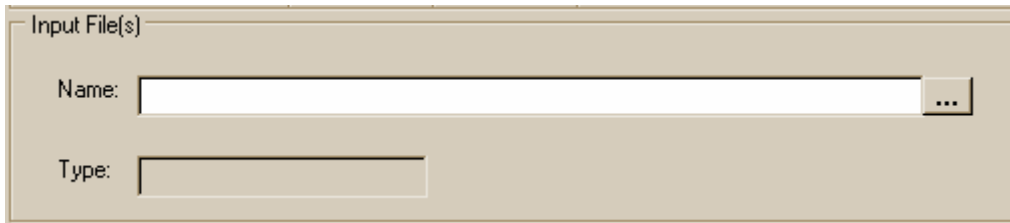
Choose the file(s) to be translated by:




select the **File Open** menu command, or:



click on the **Open** button, or:



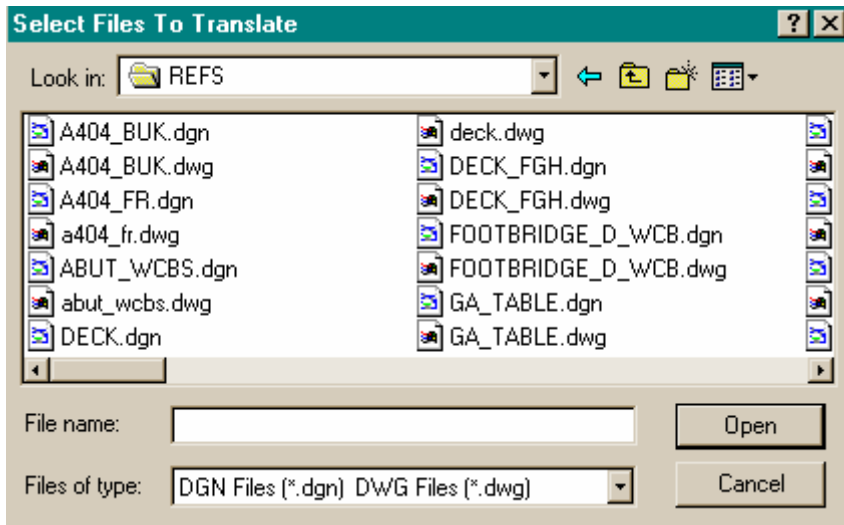
click on the **Input File(s)** browse button. 

Note:

You cannot enter file names directly in the **Name** text field. You must choose one of the **Open** or **Browse** commands.

File Browse Dialog

The file browser is activated by the **File Open** menu, the **Open** tool button, or the browse file button. In all cases, the following window displays:



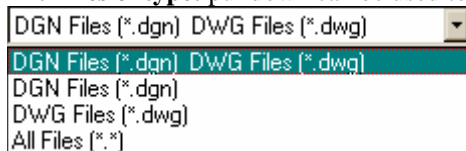
Select the desired file by highlighting with the mouse. Multiple files can be selected with the mouse and **<CTRL>** or **<SHIFT>** keys. To select a single file, click on the file name with the left mouse button. To select a range of files, click on the first file name with the left mouse button, then press and hold the **<SHIFT>** key and click on the last file name with the left mouse button. All of the files between the two clicks will be selected. To select individual files click on each file name with the left mouse button while pressing the **<CTRL>** key. These two methods can be combined to select the files to be translated.

When the desired file(s) are highlighted, click on the **Open** button.

Note:

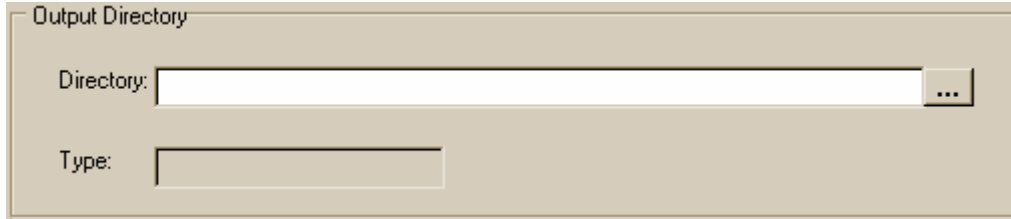
All files selected must be of the same type - DGN or DWG. Mixed selections are not allowed.


The **Files of type:** pulldown can be used to view files of a selected type:



Step 2 - Choose the Destination Directory

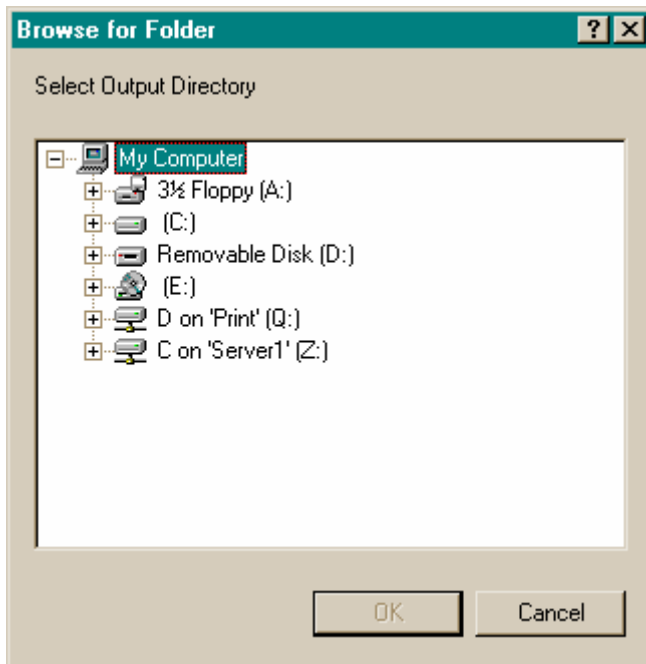
The **Output Directory** Window shows the name of the directory for the output file created when the input file is translated. The type of file to be created is also shown. By default, the directory of the input file will be used.



You can change the output directory by typing a new directory name in the text field or select the **Browse** Button  to open the Directory Browse Dialog to select the new Output Directory.

If you have selected a single file to convert, you can change the name of the converted file. Just type the new name in the text field.

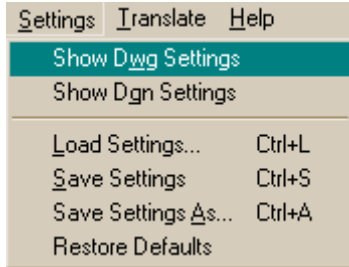
Directory Browse Dialog



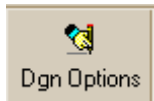
Use the **Directory Browse Dialog** to pick the output directory for the file(s) to be created.

Step 3 - Modify the Translation Settings

DGNLink provides translation flexibility through its configuration settings. The settings windows can be accessed by choosing from the **Settings** pull-down menu:

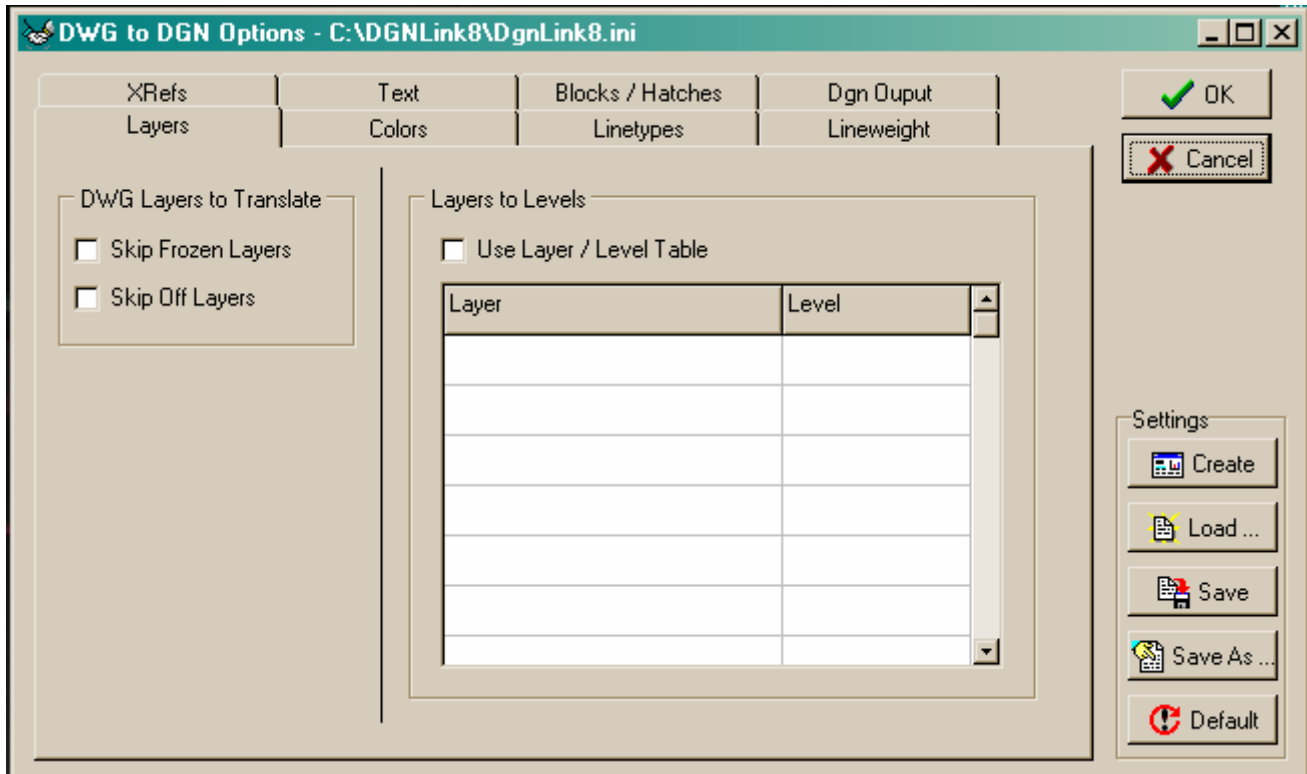


or, clicking one of the **DWG/DGN Options** buttons:



DWG to DGN Options Window

Selecting the **DWG to DGN Settings** brings up the following window:

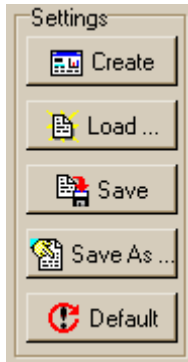


From this window, you can set up translation tables and select other translation options for translating from Dwg files to Dgn. These settings are stored in .INI files. Use the buttons under Settings to maintain your Settings files.

Settings

Dwg > Dgn

DGNLink gives you the ability to maintain different groups of translation settings. For example, if you have multiple drawing projects, each with a different set of drawing standards, you may need to set up different translation options for the different projects. These buttons allow you to manipulate multiple settings files.



Create

The **Create** Settings button prompts you to select a DWG. DGNLink will then scan this DWG file and set up default translation tables and options. These settings will then be displayed in the DWG to DGN options window.

Load

The **Load** Settings button prompts you to select an existing .INI file. The settings as previously saved in this file will be displayed in the options window.

Save

The **Save** Settings button will write the current values to the currently open .INI file (shown in the title bar).

Save As...

The **Save As...** Settings button will write the current values to an .INI file that you specify. This is advisable for retaining different settings for each project or client, etc.

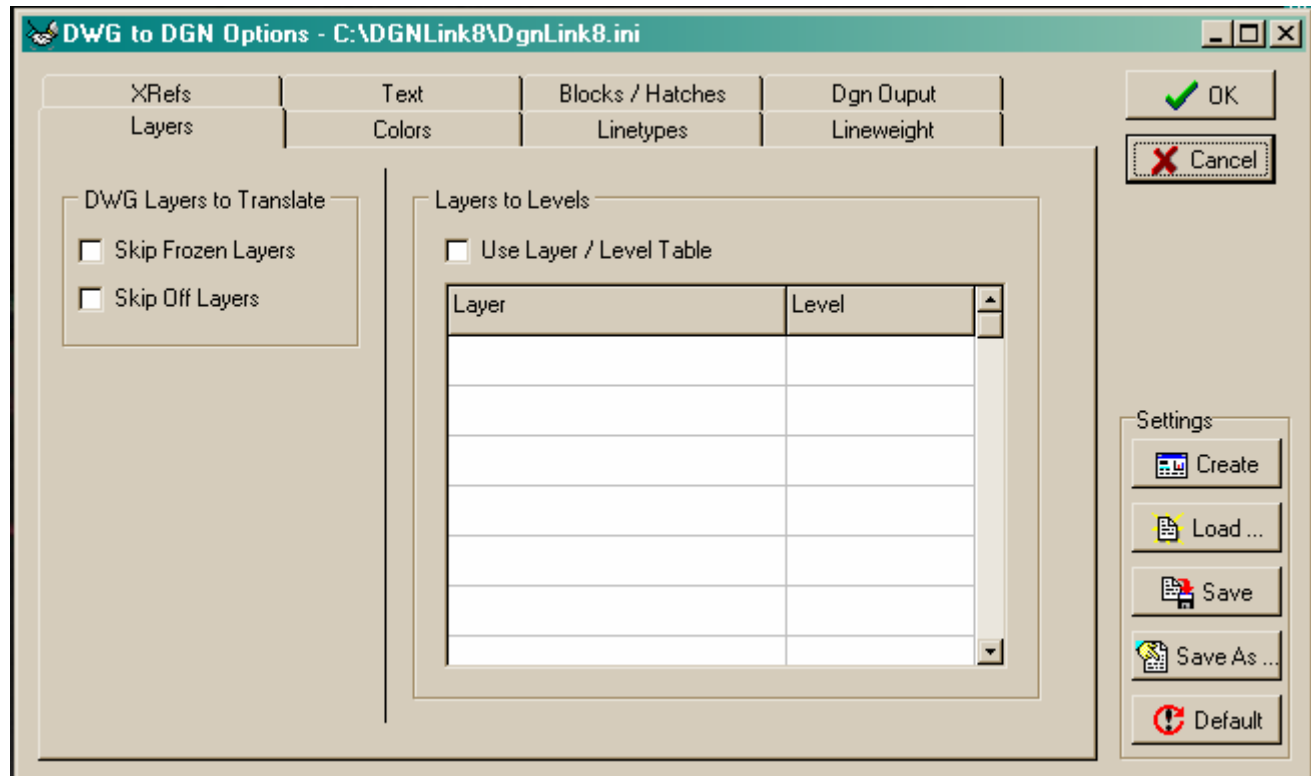
Default

The **Default** Settings button will restore the current values to the DGNLink standard defaults.

Layers

Dwg > Dgn

The **Layers** tab gives you access to defining your preferences for translating AutoCAD layers.



Skip Frozen Layers

Select this option to omit all AutoCAD layers which are frozen from the translation.

Skip Off Layers

Select this option to omit all AutoCAD layers which are turned off from the translation.

Use Layer / Level Table

Select this option to use the AutoCAD **Layer** to MicroStation **Level** assignments as defined in the accompanying table.

For output to Dgn versions below V8, level numbers are assigned sequentially. If more than 63 layers exist, level numbering restarts at 1 for each group of 63 layers. If you select **Use Layer / Level Table**, your assignment table will be used. Any layer names not found in your defined table will be assigned to level number based on the default rules.

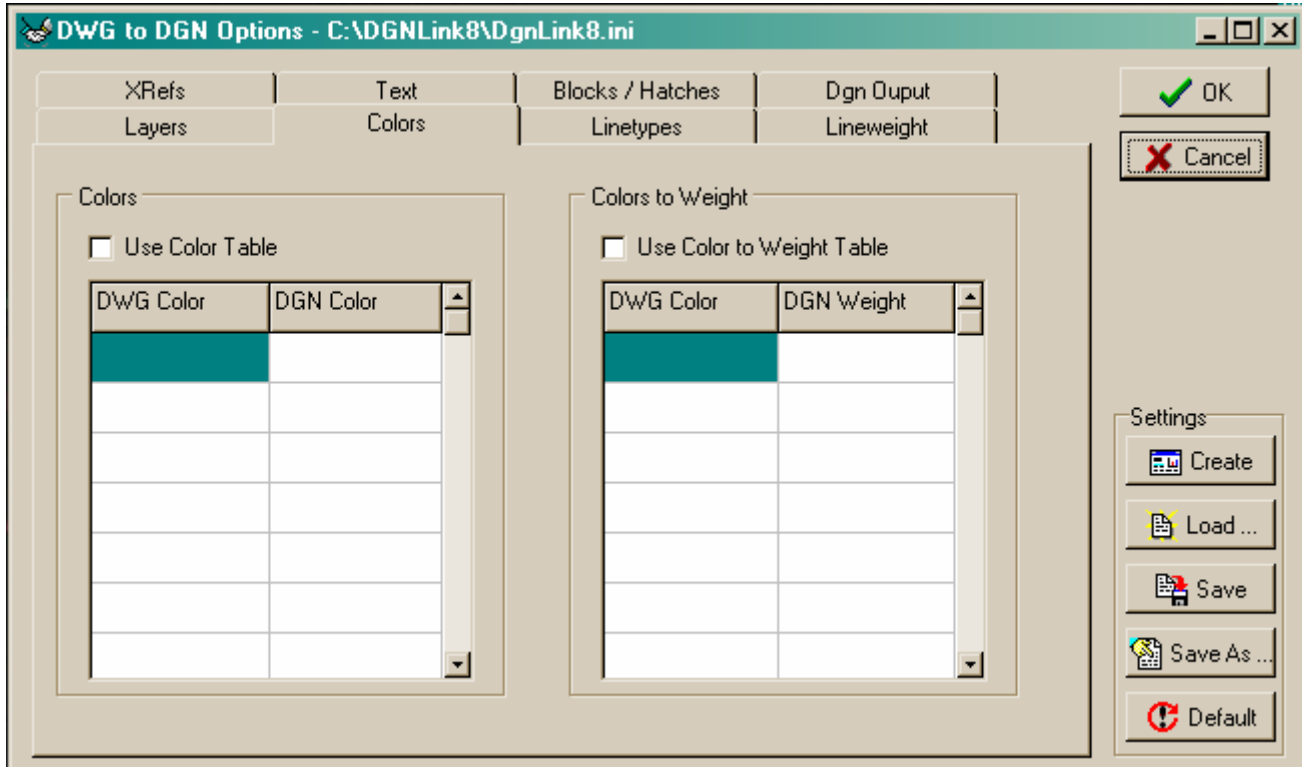
Note:

MicroStation also allows a level name to be associated with the level. The level number is still used, there is simply an additional name to enhance usability. The AutoCAD layer name will be assigned as the MicroStation level name.

Colors

Dwg > Dgn

The **Colors** tab gives you access to defining your preferences for translating AutoCAD colors.



Use Color Table

Select this option to use the AutoCAD **Color** to MicroStation **Color** assignments in the accompanying table. If you do not define a color table or a color is not found in your table, the following defaults apply:

<u>AutoCAD</u>	<u>MicroStation</u>	<u>Color</u>
1	3	red
2	4	yellow
3	2	green
4	7	cyan
5	1	blue
6	5	magenta
7	0	white
30	6	orange

Use Color to Weight Table

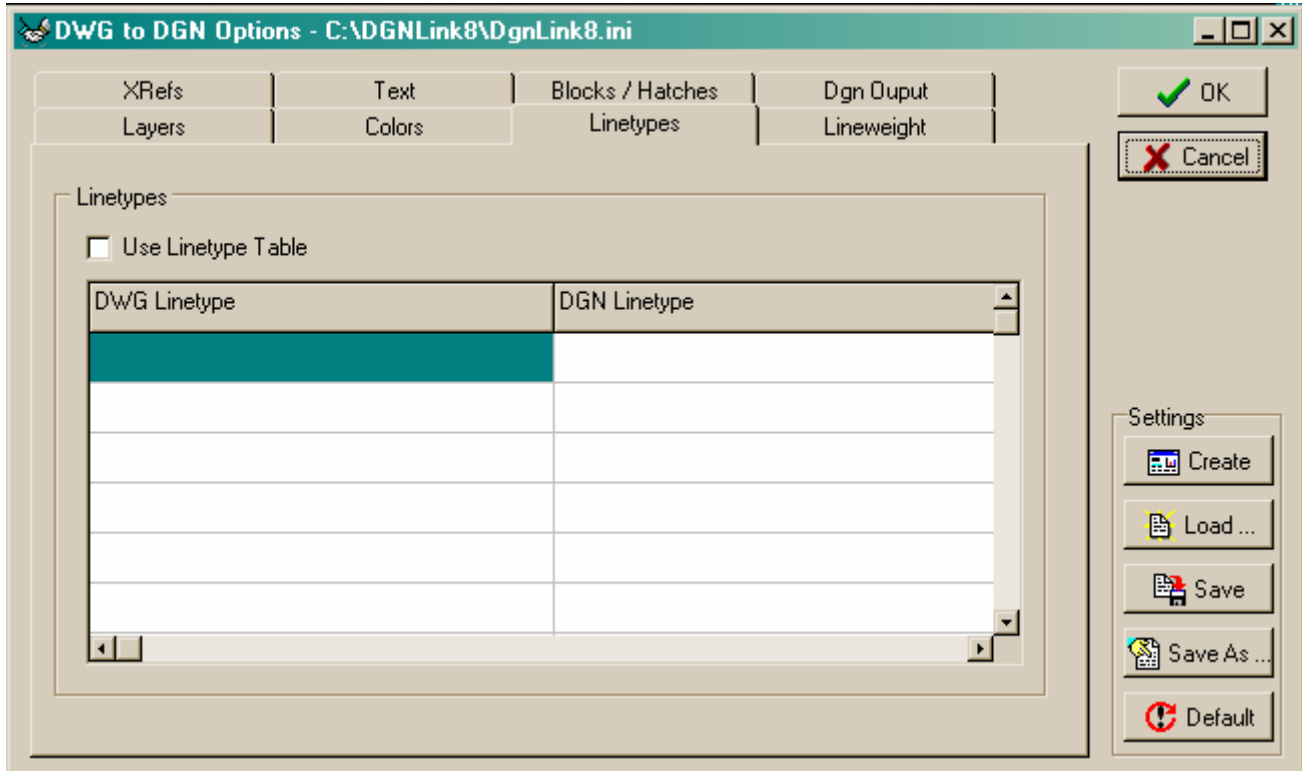
Select this option to assign MicroStation **Weight** based on the AutoCAD **Color** as defined in the accompanying table. This may be desirable when AutoCAD colors are used to select pens during plotting. MicroStation frequently used weight to select pens during plotting. There are no default weight assignments based on color.

Note: You can use both color to color and color to weight tables for a translation.

Linetypes

Dwg > Dgn

The **Linetypes** tab gives you access to defining your preferences for translating AutoCAD linetypes.



Use Linetype Table

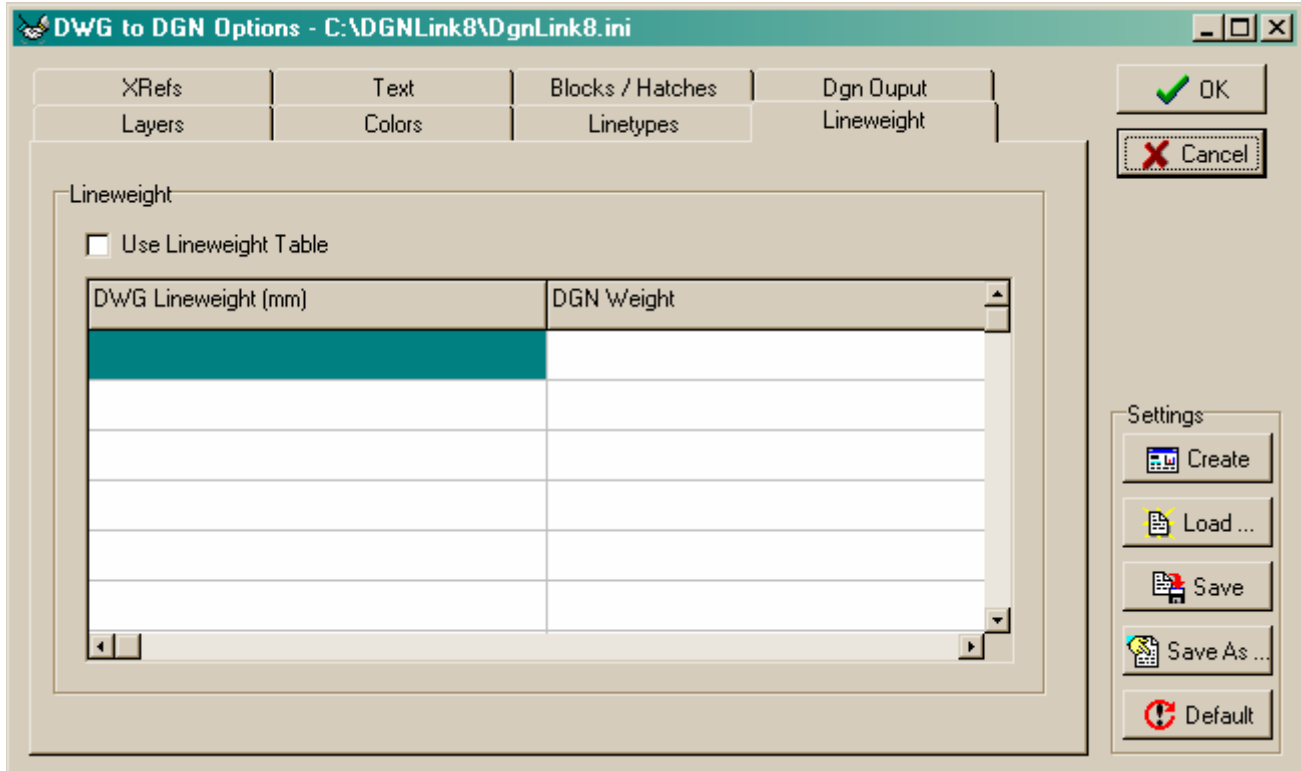
Select this option to use the AutoCAD **Linetype** to MicroStation **Linetype** assignments in the accompanying table. If you do not define a linetype table or a linetype is not found in your table, the following defaults apply:

<u>AutoCAD</u>	<u>MicroStation</u>	<u>Linetype</u>
CONTINUOUS	0	solid
DOT	1	dotted
HIDDEN	2	medium dashed
DASHED	3	long dashed
DASHDOT	4	dashed dot
DIVIDE	5	short dashed
PHANTOM	6	dash dot dot
CENTER	7	long dash short
BORDER	8	dashed

Lineweight

Dwg > Dgn

The **Lineweight** tab gives you access to defining your preferences for translating AutoCAD lineweights (available for A2000+ input only).



Use Lineweight Table

Select this option to use the AutoCAD **Lineweight** to MicroStation **Weight** assignments in the accompanying table. The AutoCAD lineweights are assigned using the mm designation in hundredths of mm (e.g. 5 equals 0.05 mm). The default assignments are:

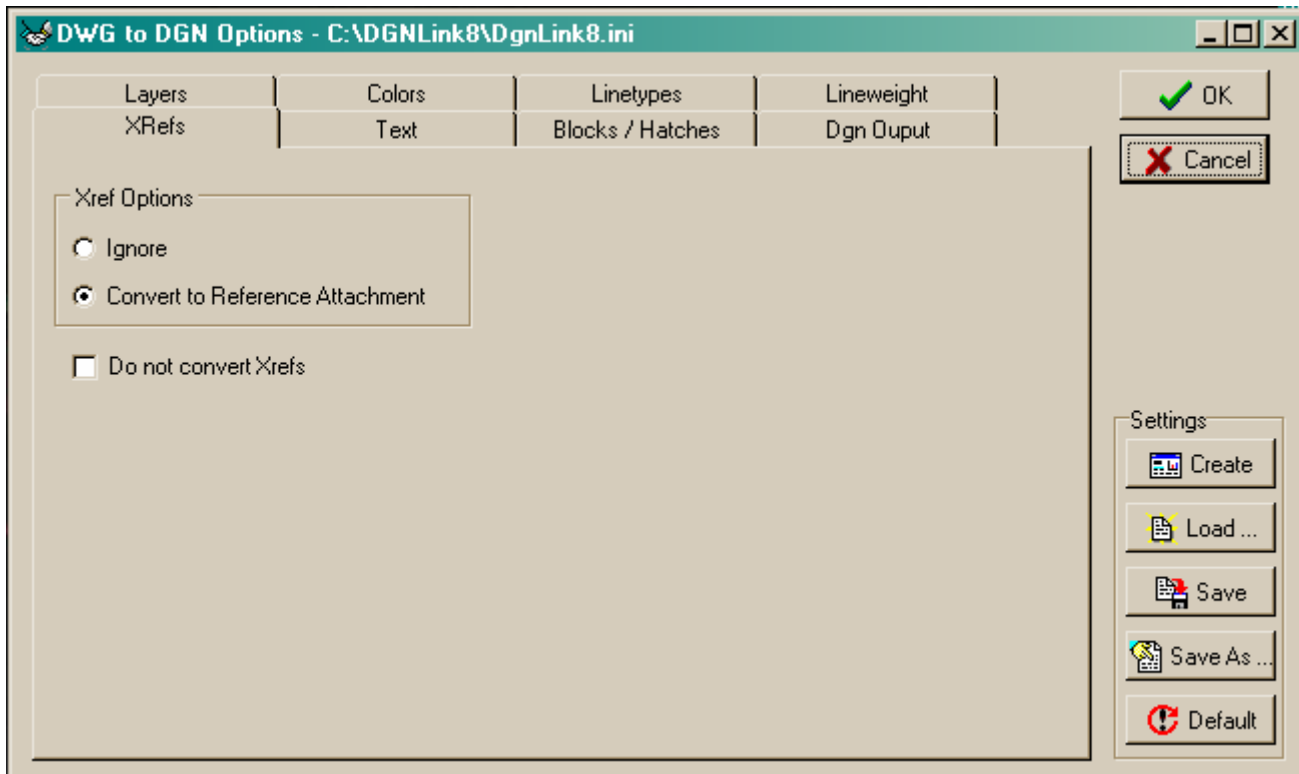
<u>Dwg Lineweight</u>	<u>Dgn Weight</u>
0	0
5	1
9	1
13	1
15	1
18	1
20	1
25	3
30	4
35	5
40	7
50	9
53	11
60	13
70	16

80	19
90	20
100	20
106	20
120	20
140	20
158	20
200	20
211	20

Xrefs

Dwg > Dgn

The **XRefs** tab gives you access to defining your preferences for translating AutoCAD XRefs.



You must choose one (and only one) of the following **XRef Options**. The option selected will be applied to all XRef files during the translation.

Ignore

Select this option to do nothing with XRef files. The files, their attachments, and their contents will be totally ignored during the translation.

Convert to Reference Attachment

Select this option to convert the AutoCAD XRef attachment to the equivalent MicroStation reference file attachment.

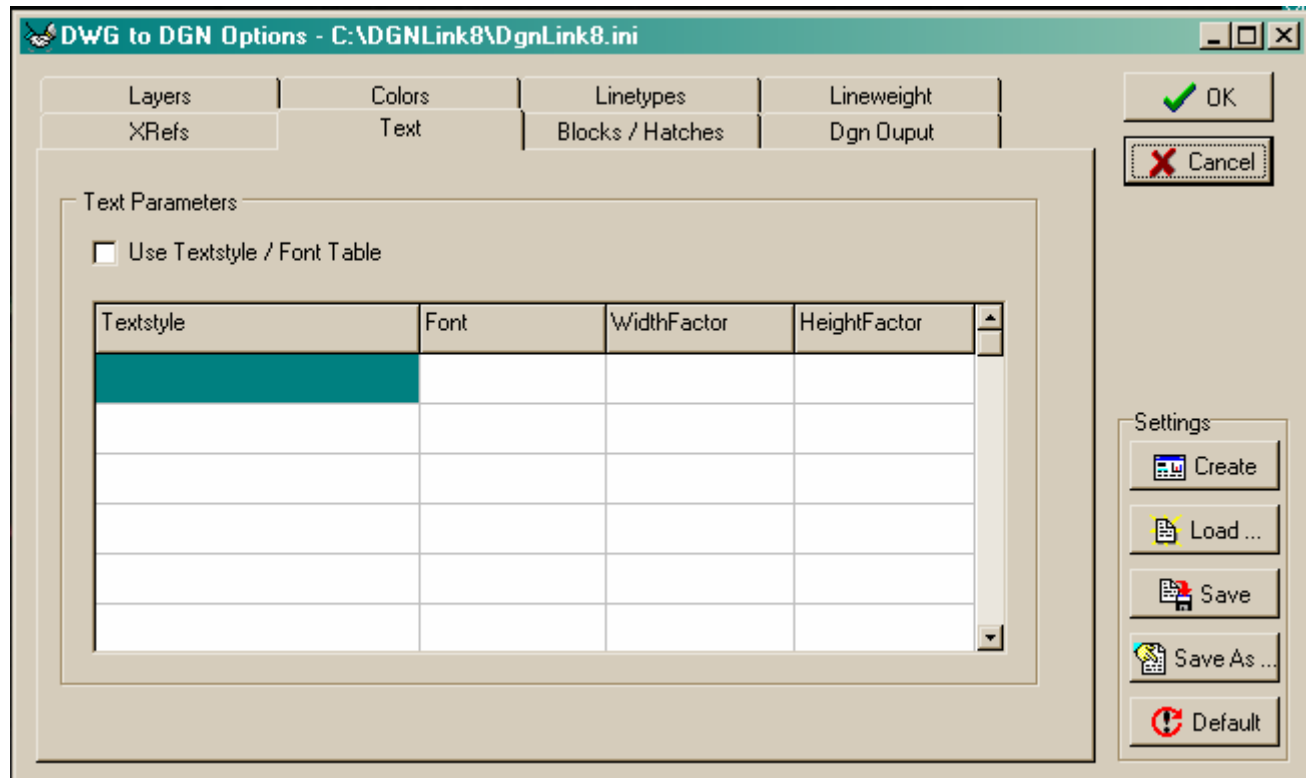
Do Not Convert XRefs

Check this option to skip the automatic translation of all XRefs. Only the main file will be converted. It will have

Text

Dwg > Dgn

The **Text** tab gives you access to defining your preferences for translating AutoCAD text.



Use Textstyle / Font Table

Select this option to use the AutoCAD **Textstyle** to MicroStation **Font** assignments in the accompanying table. If you do not define a text style or a text style is not found in your table, the following defaults (based on shape file used) apply:

<u>AutoCAD</u>	<u>V7 MicroStation</u>	<u>V8 MicroStation</u>
TXT	0	0
MONOTXT	3	3
ROMANS	1	3
ROMANC	2	2
ROMAND	2	2
ROMANT	2	2
ITALICC	23	23
SCRIPTS	30	30
SCRIPTC	30	30
ARIAL	43	1025
OUTLINE	42	1166
TIMES		1029

Note:

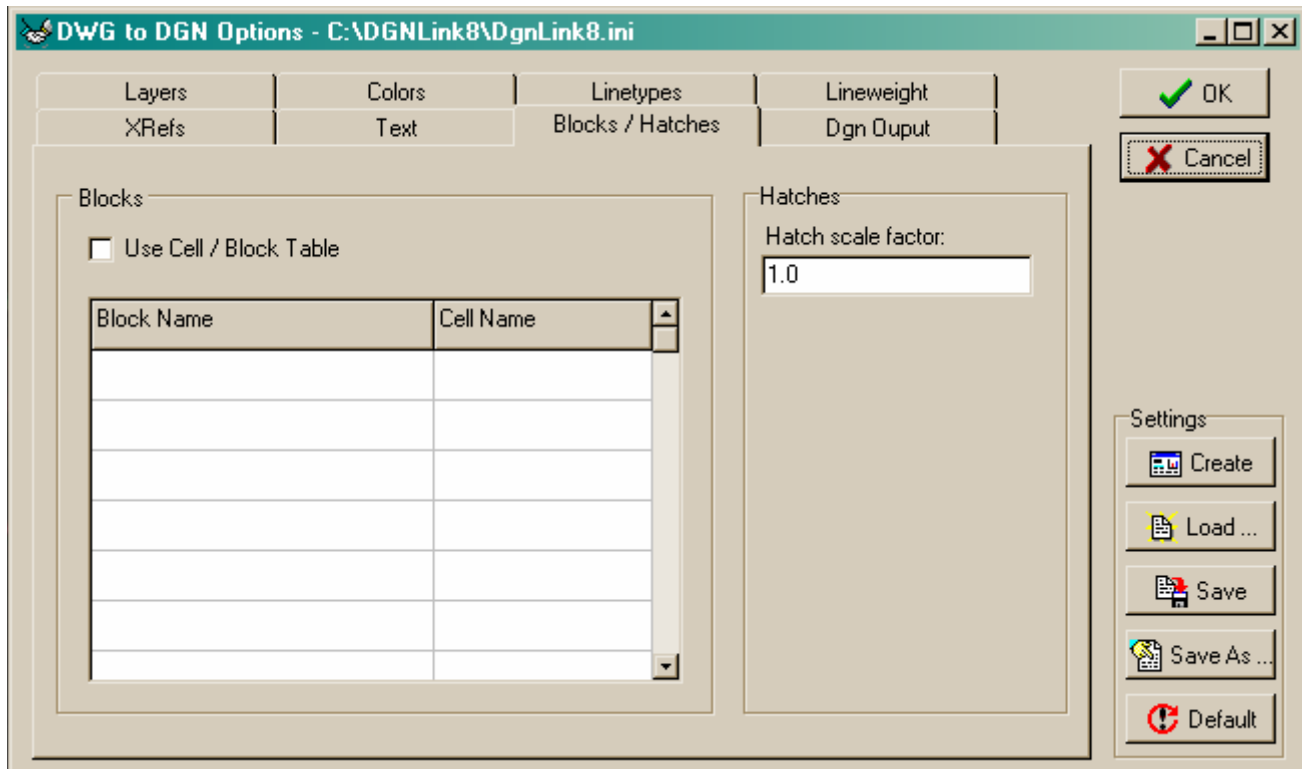
The additional **WidthFactor** and **HeightFactor** entries in the table enable you to apply a scale factor to the resulting text size. Font definitions can vary between the 2 systems resulting in your translated

text being larger or smaller than the original. This is most critical when you have text within title blocks or bubbles that doesn't quite fit. The default height and width factors is always 1.0. You will need to experiment on your drawings with an appropriate value should they need any size adjustment.

Blocks / Hatches

Dwg > Dgn

The **Blocks / Hatches** tab gives you access to defining your preferences for translating AutoCAD blocks and defining a new Hatch scale for R14 and above hatches.



Use Cell / Block Table

Select this option to use the AutoCAD **Block Name** to MicroStation **Cell Name** assignments in the accompanying table. If you do not define an assignment table or the block name is not found in your table, the AutoCAD block name will be used for the MicroStation cell name. For V7 Dgn, if the block name is longer than 6 characters (the maximum allowed in V7 MicroStation), a unique name of the form zznxxx will be generated. The log file will show the original block and the corresponding generated cell name.

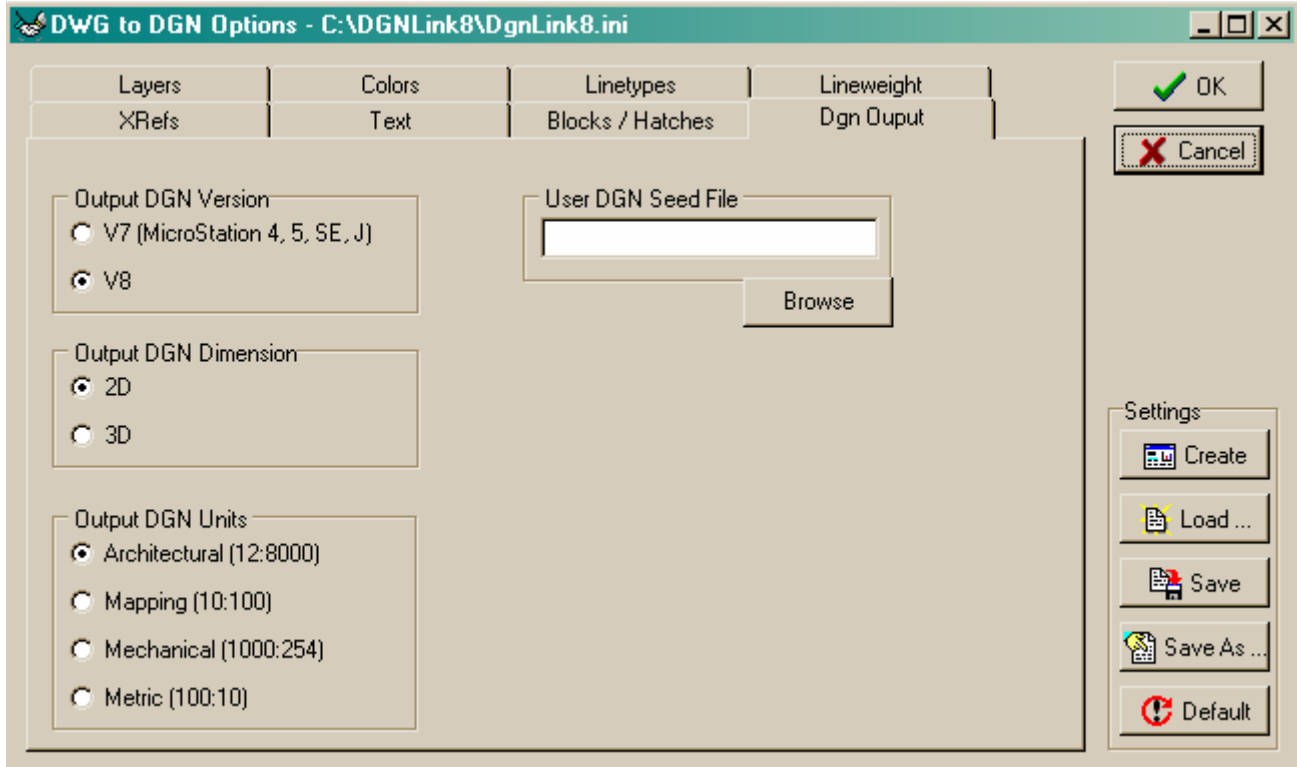
Hatch Scale Factor

Specify a new scale factor for sizing R14 and above hatches.

DGN Output

Dwg > Dgn

The **DGN Output** tab gives you access to a variety of DGN file settings.



Output DGN Version

Select whether you want to generate a **V7** MicroStation file or a **V8** MicroStation file.

Output DGN Dimension

Select whether you want to generate a **2D** MicroStation file or a **3D** MicroStation file.

Output DGN Units

Select the desired conversion units: **Architectural**, **Mapping**, **Mechanical**, or **Metric**.

User DGN Seed File

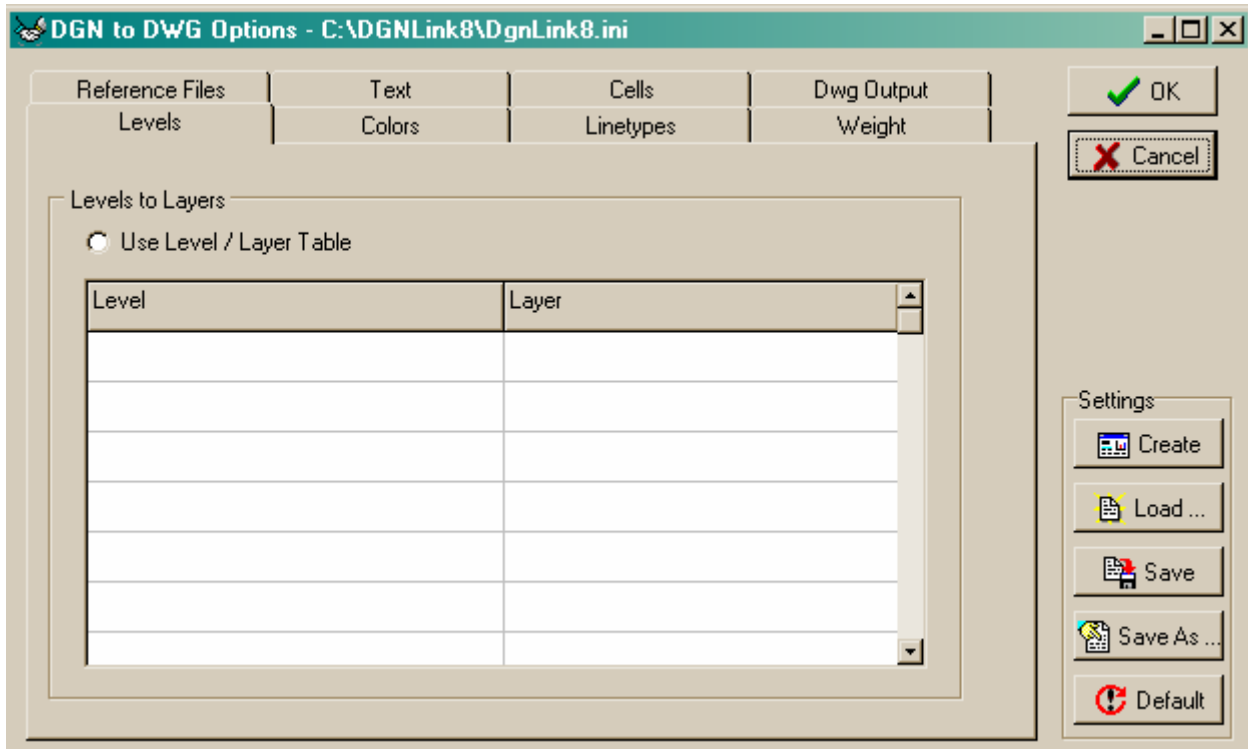
Select the desired seed file by clicking the **Browse** button. For example, you may receive a seed file from your client that corresponds to their drawing standards.

Note:

When selecting a seed file you do not need to define DGN Dimension or DGN Units. This information will be extracted from the selected seed file.

DGN to DWG Options Window

Selecting the DGN to DWG Settings brings up the following window:

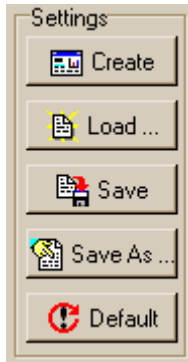


From this window, you can set up translation tables and select other translation options for translating Dgn files to Dwg. These settings are stored in .INI files. Use the buttons under Settings to maintain your Settings files.

Settings

Dgn > Dwg

DGNLink gives you the ability to maintain different groups of translation settings. For example, if you have multiple drawing projects, each with a different set of drawing standards, you may need to set up different translation options for the different projects. These buttons allow you to manipulate multiple settings files.



Create

The **Create** Settings button prompts you to select a DGN. DGNLink will then scan this DGN file and set up default translation tables and options. These settings will then be displayed in the DGN to DWG options window.

Load

The **Load** Settings button prompts you to select an existing .INI file. The settings as previously saved in this file will be displayed in the options window.

Save

The **Save** Settings button will write the current values to the currently open .INI file (shown in the title bar).

Save As...

The **Save As...** Settings button will write the current values to an .INI file that you specify. This is advisable for retaining different settings for each project or client, etc.

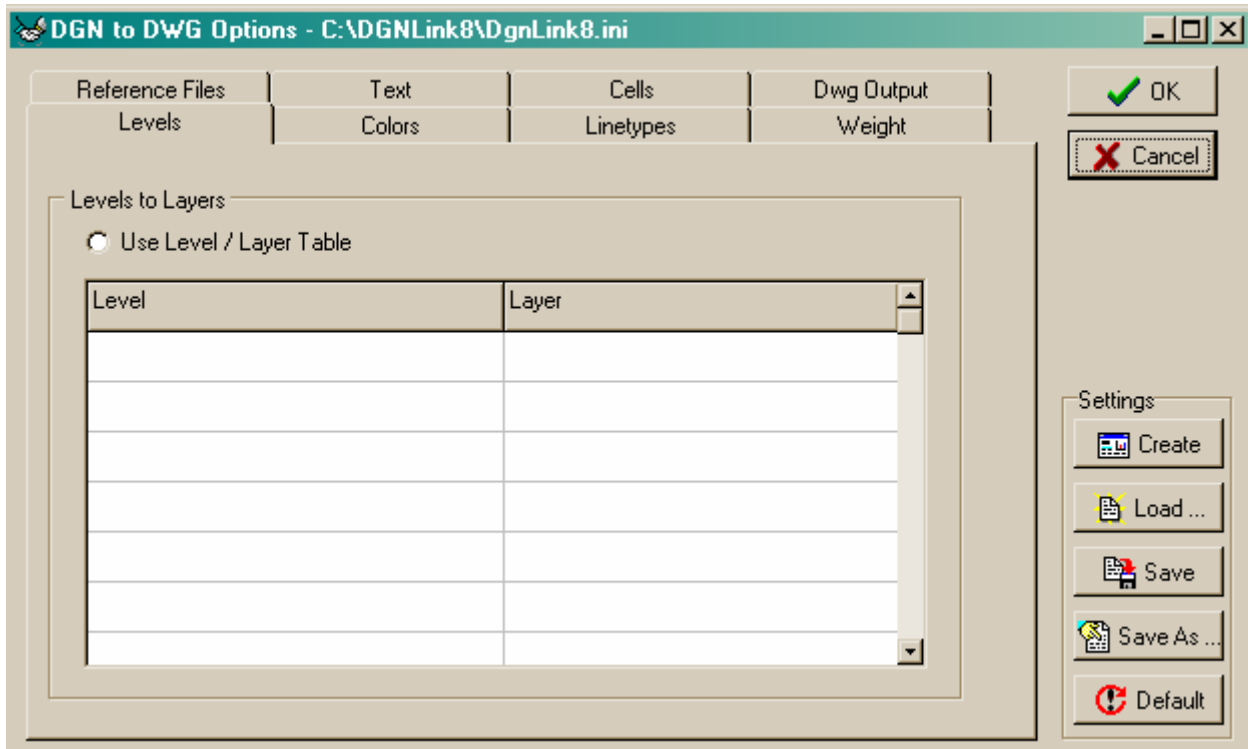
Default

The **Default** Settings button will restore the current values to the DGNLink standard defaults.

Levels

Dgn > Dwg

The **Levels** tab gives you access to defining your preferences for translating MicroStation levels.



The **Levels** tab enables you to select which levels to translate and define how to assign the resulting layers.

DGN Levels to Translate

Levels to Layers

Within the **Levels to Layers** group, choose one of the following options:

Use Level Numbers

Choosing **Use Level Numbers** will result in AutoCAD layers created using the MicroStation level number as the AutoCAD layer name. MicroStation elements will be placed on the AutoCAD layer bearing the same name as the MicroStation level number. For example, elements on level 10 will be placed on AutoCAD layer named 10.

Use Level Names If Available

MicroStation also allows a level name to be associated with the level. The level number is still used, there is simply an additional name to enhance usability. Choose **Use Level Names If Available** if you want to use the level names when creating AutoCAD layers. If a level does not have an associated level name, the level number will be used as described for **Use Level Numbers**.

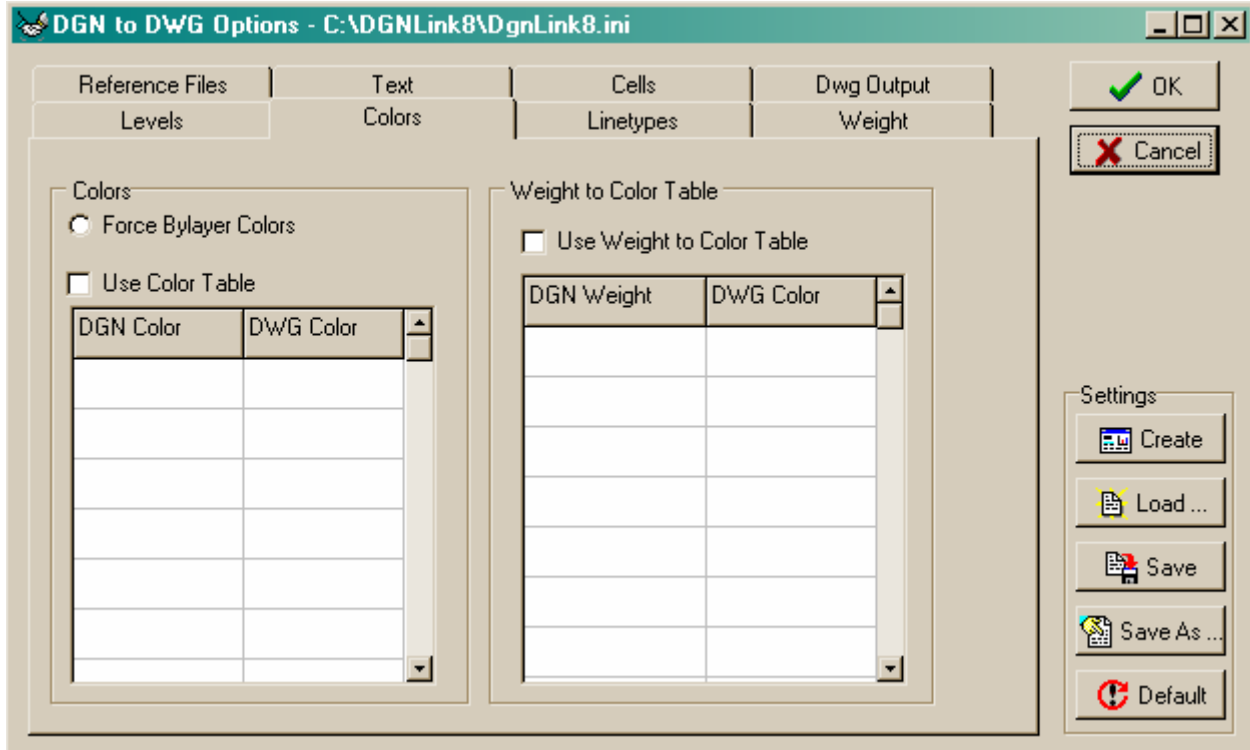
Use Level / Layer Table

Select this option to use the MicroStation **Level** to AutoCAD **Layer** assignments in the accompanying table. For V8 MicroStation, the layer will have the same name as the V8 Level. For V7 MicroStation, the layer will be named the same as the level associated name if it exists, otherwise the level number will be used.

Colors

Dgn > Dwg

The **Colors** tab gives you access to defining your preferences for translating MicroStation colors.



Colors

AutoCAD allows colors to be assigned on a by entity basis or ByLayer. Choose one of the following options to define how you want colors assigned to the AutoCAD entities.

Note:

This selection does not effect the color value, just the method of assigning color.

Force ByLayer Colors

Choosing **Force ByLayer Colors** results in all AutoCAD colors being assigned ByLayer. By default, V8 MicroStation colors will be assigned BYENTITY or BYLAYER to match the Dgn file.

Use Color Table

Select **Use Color Table** to use the **DGN Color** to **DWG Color** assignments in the accompanying table. If you do not define a color table or a color is not found in your table, the following defaults apply:

<u>MicroStation</u>	<u>AutoCAD</u>	<u>Color</u>
0	7	white
1	5	blue
2	3	green
3	1	red
4	2	yellow
5	6	violet
6	30	orange
7	4	cyan

8	8	gray
9	8	gray

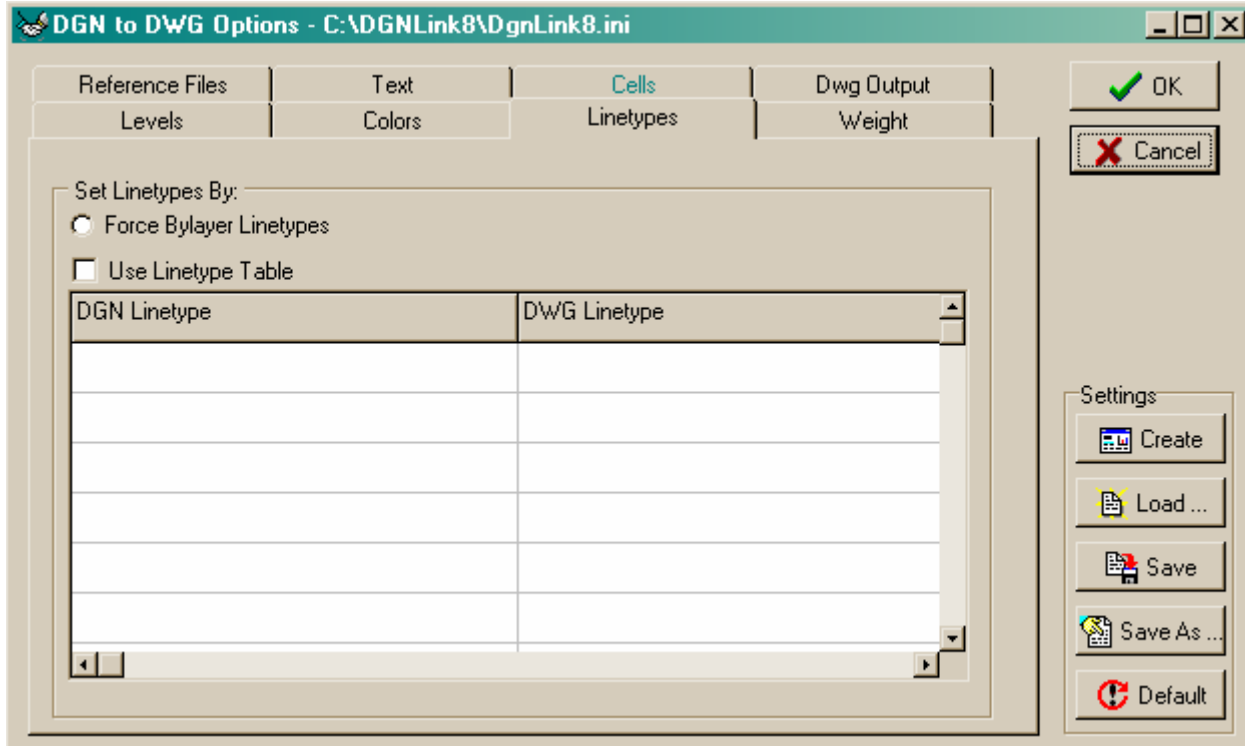
Use Weight to Color Table

In addition to assigning AutoCAD colors based on MicroStation colors, you can also set AutoCAD colors based on MicroStation weight. Select **Use Weight to Color Table** to use the **DGN Weight to DWG Color** assignments in the accompanying table. If you have enabled the **Weight to Color** table, these settings will take precedence over any **Color to Color** and default settings. If an element's weight is not listed in this table, the color to color settings will apply.

Linetypes

Dgn > Dwg

The **Linetypes** tab gives you access to defining your preferences for translating MicroStation linetypes.



Linetypes

AutoCAD allows linetypes to be assigned on a by entity basis or ByLayer. Choose one of the following options to define how you want linetypes assigned to the AutoCAD entities.

Note:

This selection does not effect the linetype value, just the method of assigning linetype.

Force ByLayer Linetypes

Choosing **Force ByLayer Linetypes** results in all AutoCAD linetypes being assigned ByLayer. By default, V8 MicroStation linetypes will be assigned BYENTITY or BYLAYER to match the Dgn file.

Use Linetype Table

Select **Use Linetype Table** to use the **DGN Linetype** to **DWG Linetype** assignments in the accompanying table. If you do not define a linetype table or a linetype is not found in your table, the following defaults apply:

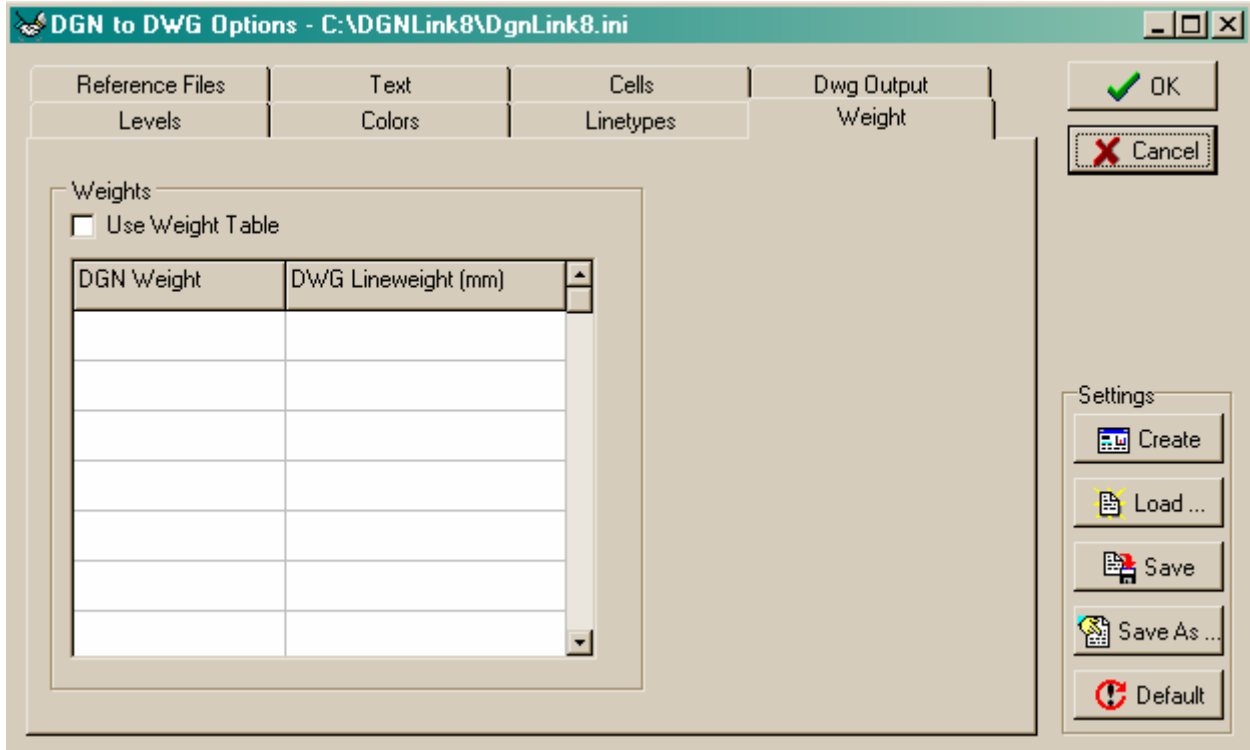
<u>MicroStation</u>	<u>AutoCAD</u>	<u>Linetype</u>
0	CONTINUOUS	solid
1	DOT	dotted
2	HIDDEN	medium dashed
3	DASHED	long dashed

4	DASHDOT	dashed dot
5	DIVIDE	short dashed
6	PHANTOM	dash dot dot
7	CENTER	long dash short dashed
8	BORDER	dashed

Weights

Dgn > Dwg

The **Weights** tab gives you access to defining your preferences for translating MicroStation weights.



Use Weight Table

Select this option to use the MicroStation **Weight** to AutoCAD **Lineweight** assignments in the accompanying table. The AutoCAD lineweights are assigned using the mm designation in hundredths of mm (e.g. 5 equals 0.05 mm). The default assignments are:

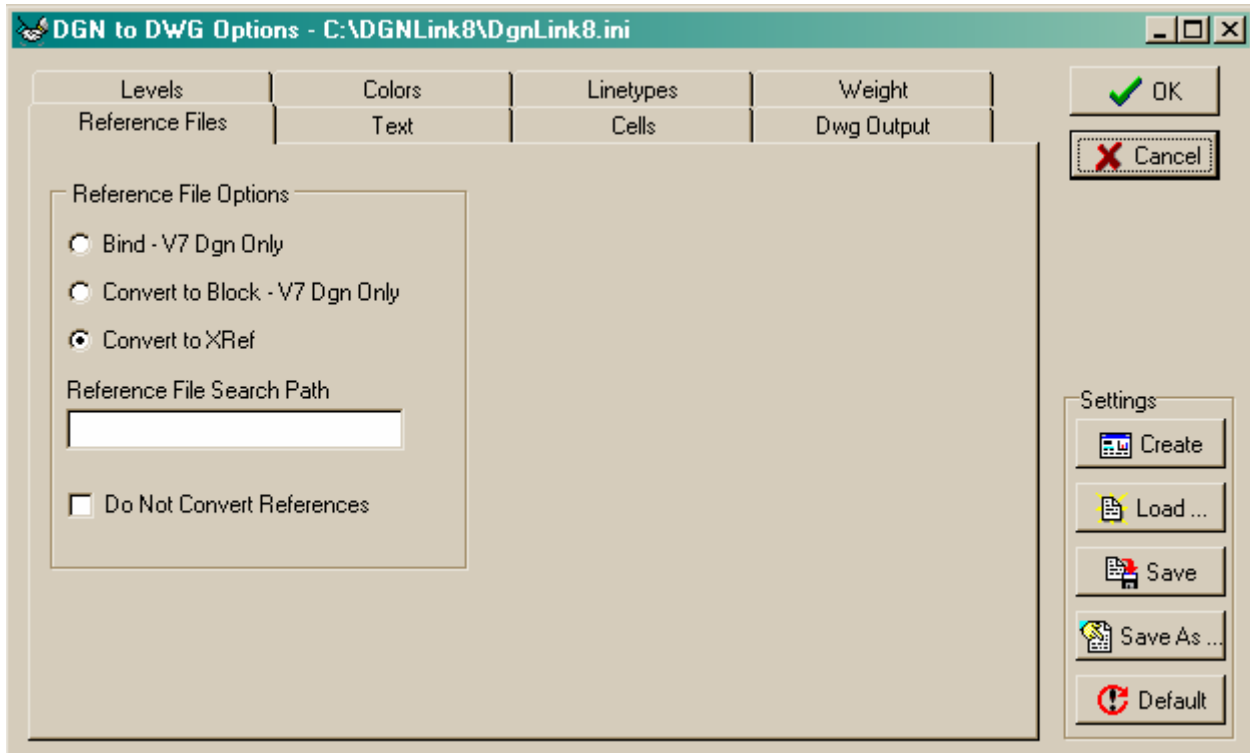
<u>Dgn Weight</u>	<u>Dwg Lineweight</u>
0	0
1	20
2	20
3	13
4	25
5	30
6	30
7	35
8	40
9	40
10	50
11	50
12	53
13	53
14	60
15	60
16	70

17	70
18	70
19	80
20	80
21	80
22	80
23	80

Reference Files

Dgn > Dwg

The **Reference Files** tab gives you access to defining your preferences for translating MicroStation reference files.



You must choose one of the following **Reference File Options**. The option selected will be applied to all reference files during the translation.

Bind – V7 Dgn Only

Choose **Bind** to clip and include all attached MicroStation reference files to a single output file. This option translates the master DGN file and all attached clip-bound reference files to a single AutoCAD file. Reference file scaling, rotation, offsets, and clipping are handled automatically.

Convert to Block – V7 Dgn Only

Choose **Convert to Block** to translate the master DGN file to a single AutoCAD file. Each attached reference file is converted to a block and inserted in the AutoCAD file. Reference file scaling, rotation, offsets, and clipping are handled automatically.

Convert to XRef

Choose **Convert to XRef** to translate the master design file to an AutoCAD file with attached XRefs. The XRef attachment is generated retaining the reference file name, scaling, rotation, and origin. Clipping is converted to Xclip, however, clip voids are not supported by this feature.

Reference File Search Path

The Reference File Search Path text box is used to specify a list of directories to search when trying to locate reference files attached to DGN files. Enter the directories separated by semicolons, e.g.,

c:\temp\f:\dgn\sub\refs;h:\mydir

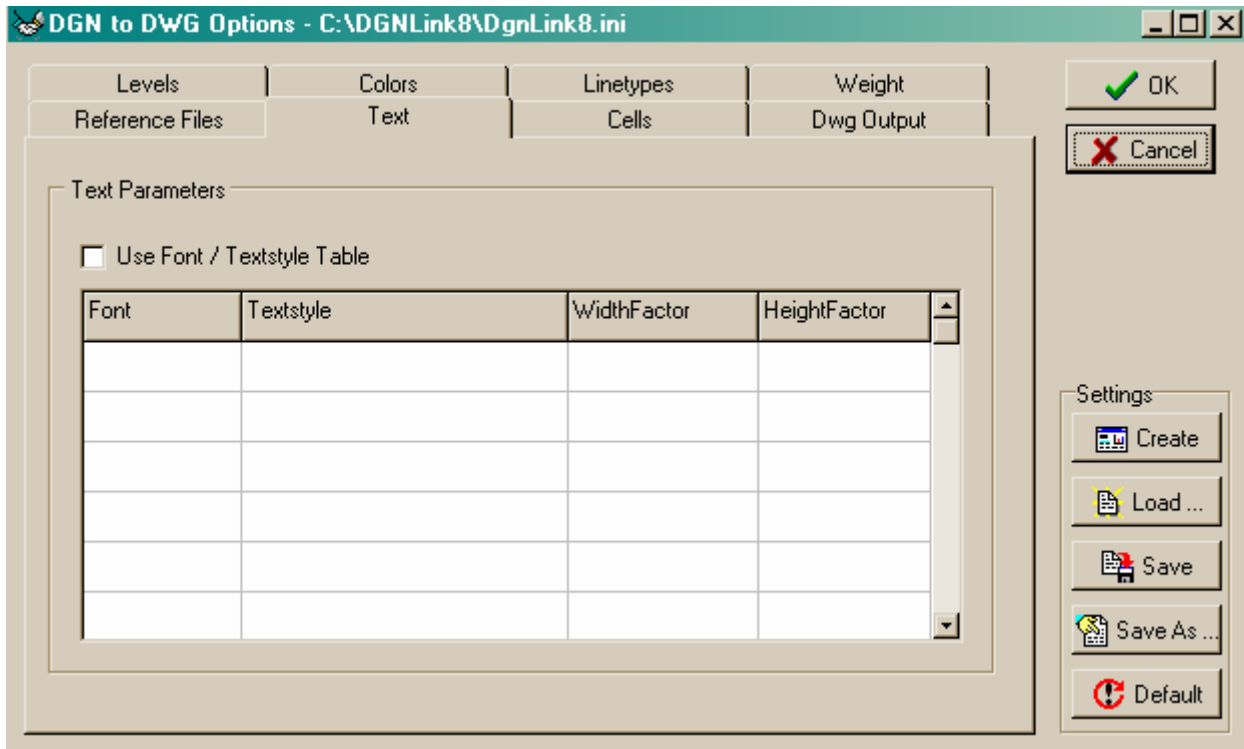
DGNLink searches for reference files in the following order:

1. The directory of the DGN being translated.
2. The directory given in the attachment.
3. The directories listed in the **Reference File Search Path** field.

Text

Dgn > Dwg

The **Text** tab gives you access to defining your preferences for translating MicroStation text.



Use Font / Textstyle Table

Select this option to use the MicroStation **Font** to AutoCAD **Textstyle** assignments in the accompanying table. If you do not define a font or a font is not found in your table, the following defaults apply:

<u>V7 Dgn Font</u>	<u>V8 Dgn Font</u>	<u>AutoCAD Style</u>
0	0	TXT
1	1	ROMANS
2	2	ROMANC
3	3	MONOTXT
23	23	ITALICC
30	30	SCRIPTS
43	1025	ARIAL
42	1166	SWISS OUTLINE
1029	TIMES	

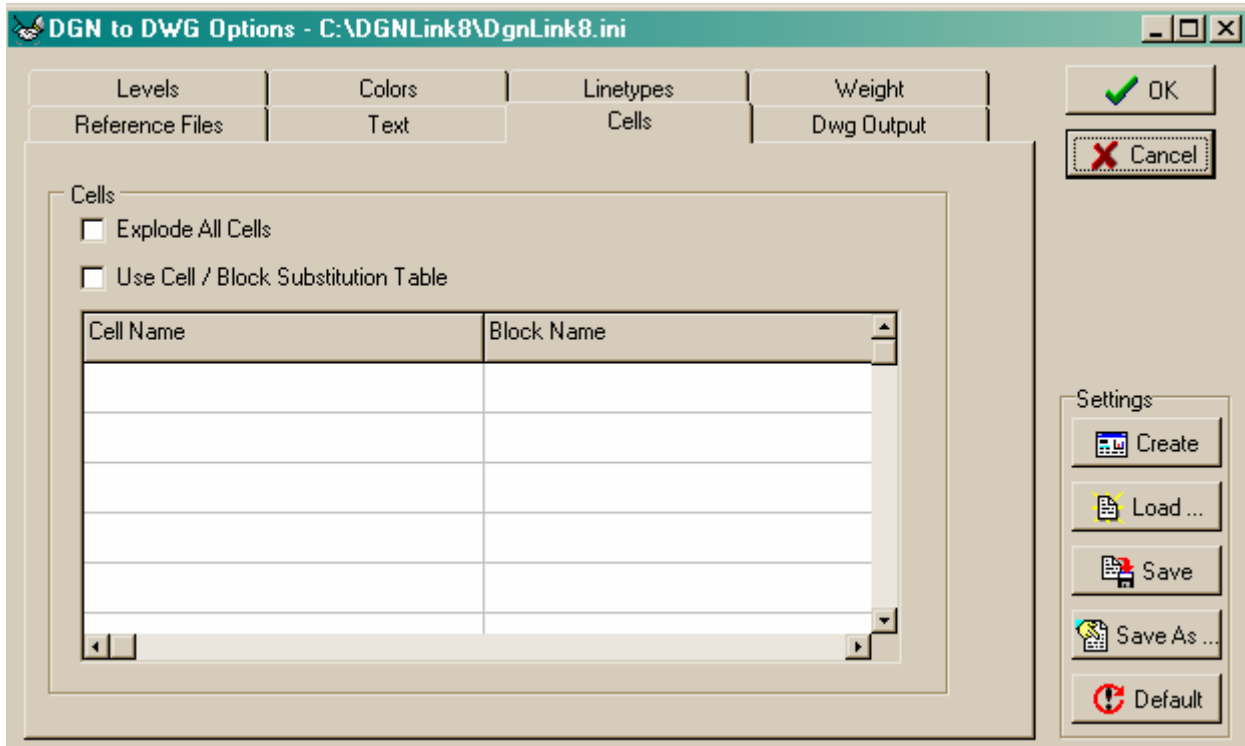
Note:

The additional **WidthFactor** and **HeightFactor** entries in the table enable you to apply a scale factor to the resulting text size. Font definitions can vary between the 2 systems resulting in your translated text being larger or smaller than the original. This is most critical when you have text within title blocks or bubbles that doesn't quite fit. The default height and width factors is always 1.0. You will need to experiment on your drawings with an appropriate value should they need any size adjustment.

Cells

Dgn > Dwg

The **Cells** tab gives you access to defining your preferences for translating MicroStation cells.



Explode All Cells

MicroStation cells can be exploded to their component graphics during translation. This can be desirable when the cell definition has changed resulting in cells not always translating as they appeared in the original file.

MicroStation shared cells do not explode. To explode all regular cells during translation to AutoCAD, check this option.

Use Cell / Block Table

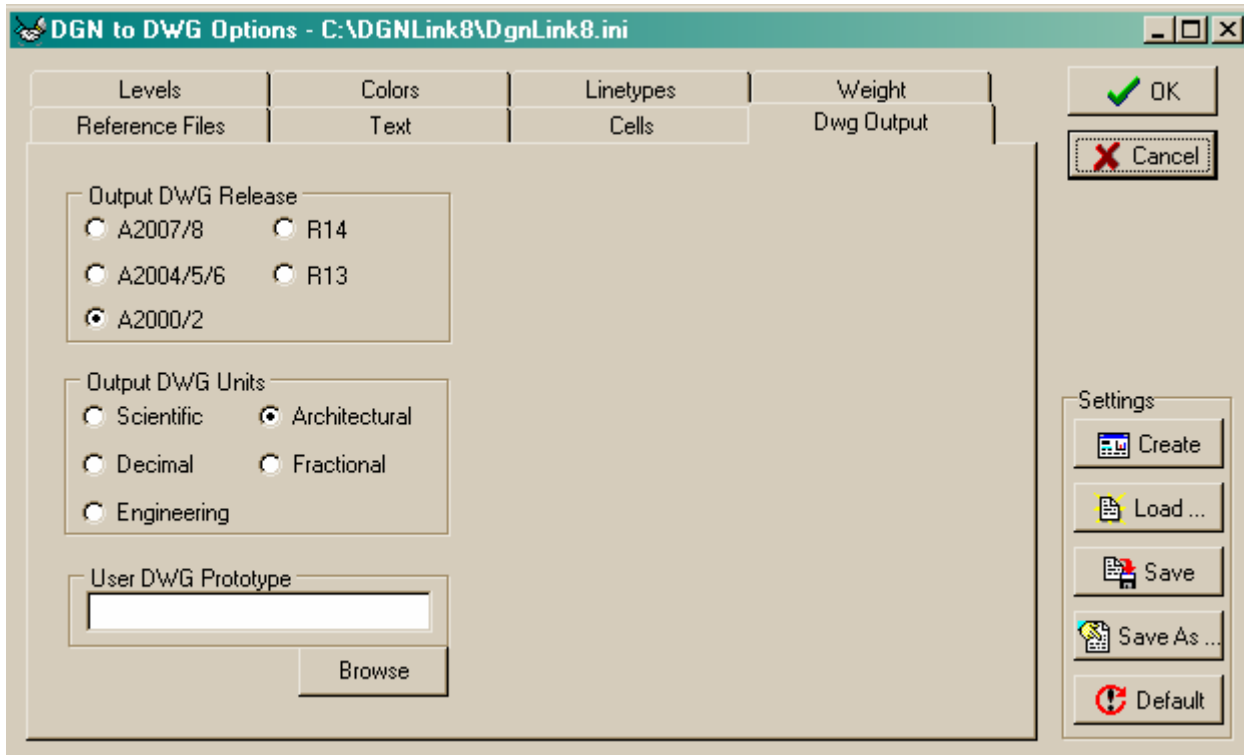
Select this option to use the MicroStation **Cell Name** to AutoCAD **Block Name** assignments in the accompanying table. If you do not define an assignment table or the block name is not found in your table, the MicroStation cell name will be used for the AutoCAD block name.

If you want to explode an individual cell, type explode in the AutoCAD block name field.

DWG Output

Dgn > Dwg

The **DWG Output** tab gives you access to a variety of DWG file settings.



Output DWG Release

Choose the version of AutoCAD you need the file to be compatible with. DGNLink can produce a DWG file compatible with AutoCAD releases 2007/8, 2004/5/6, 2000/2, 14, or 13.

Output DWG Units

Select the desired conversion units: **Architectural**, **Decimal**, **Engineering**, **Fractional**, or **Scientific**.

User DWG Prototype

Select the desired prototype file by clicking the **Browse** button. For example, you may receive a prototype file from your client that corresponds to their drawing standards.

Note:

If you specify a prototype file the AutoCAD version will be that of the prototype file.

Step 4 - Translate the Files

Once you have reviewed the settings and chosen the most appropriate options for you, execute the translation from the **Translate** menu item:

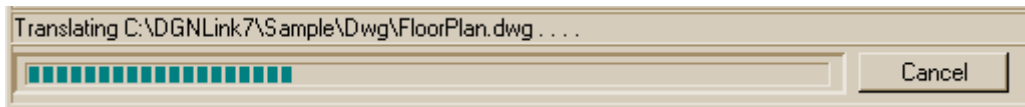


or the **Translate** button.



Translation Progress

As DGNLink runs, you will see the currently translating file displayed with the moving dots to indicate progress. When you are translating multiple files, the progress bar indicator shows the progress for the set of files.



Canceling a Translation



To the right of the progress bar, you will see a **Cancel** button. Should you need to terminate this process, click on the **Cancel** button.



Checking the Results

DGNLink also produces an execution log file, DGNLink8.log. You can print it or view it with WordPad, NotePad, or any other text editor/word processor. An example of a log file appears below.

DGNLink Version 8

Copyright (c) Decision Graphics, Inc. 1994 - 2007. All Rights Reserved.

Main Control file: c:\windows\temp\temp.con

**** Processing input file: c:\dgnlink\test\main.dgn

Output file: c:\dgnlink\test\main.dwg

Main Control file: c:\windows\temp\temp.con

**** Processing input file: c:\dgnlink\test\bor.dgn

Output file: c:\dgnlink\test\bor.dwg

Main Control file: c:\windows\temp\temp.con

**** Processing input file: c:\dgnlink\test\border.dgn

Output file: c:\dgnlink\test\border.dwg

Main Control file: c:\windows\temp\temp.con

**** Processing input file: c:\dgnlink\test\building22m.dgn

Output file: c:\dgnlink\test\building22m.dwg

Main Control file: c:\windows\temp\temp.con

**** Processing input file: c:\dgnlink\test\arch.dgn

Output file: c:\dgnlink\test\arch.dwg

Processing reference: bor.dgn

5 File(s) Translated.

DWG to DGN Specifications

This section defines the DGNLink specifications for a DWG to DGN translation. The topics are listed alphabetically by topic for easy reference.

Arc

Dwg > Dgn

AutoCAD arc entities are translated to MicroStation arc elements.

Attribute

Dwg > Dgn

The AutoCAD attribute entity is converted only if defined as visible. Invisible attributes are ignored.

MicroStation text elements with enter data fields are generated as cell components from the visible attributes. Attribute entities which follow the associated insert entity are used to fill in the enter data fields of the previously defined text element. ATTDEF entities which occur in the entities section of the AutoCAD file but are not associated with a block are translated to text elements.

Block

Dwg > Dgn

The AutoCAD block entry defines a block name; origin point; and the AutoCAD entities that make up the block. A MicroStation cell is defined and the entities of the block are translated normally to MicroStation graphic elements. The first 27 characters of the AutoCAD block name will be used as the cell description in the cell library. For V7 Dgn, if the block name exceeds 6 characters in length, a unique cell name will be generated as **ZZnnnn**; if the block name is 6 or fewer characters in length, the block name will be used as is for the cell name. You can define a block name to cell name assignment via the Blocks tab on the Settings menu. Blocks that contain no graphic entities will be omitted during translation.

ByBlock

Dwg > Dgn

Entities that have their layer, color, and/or linetype defined **ByBlock** will have the corresponding MicroStation level, color, and linetype assigned at placement time.

ByLayer

Dwg > Dgn

Entities which have their color and/or linetype defined **ByLayer** will have the corresponding MicroStation color, and linetype assigned using the defined layer defaults.

Cell

Dwg > Dgn

MicroStation cells are created from AutoCAD block definitions. For V7 Dgn, if the block name exceeds 6 characters in length, a unique cell name consisting of **ZZ** followed by the AutoCAD block name index (**ZZnnnn**) will be generated for each cell created; if the block name is 6 or fewer characters in length, the block name will be used as is for the cell name. You can define a block name to cell name assignment in Blocks settings.

Circle**Dwg > Dgn**

The AutoCAD circle entity is translated to a MicroStation ellipse element with equal axes.

Color**Dwg > Dgn**

MicroStation elements generated will be given the AutoCAD entity color after default table lookup unless specified otherwise in Colors settings. The default color table follows:

<u>AutoCAD</u>	<u>MicroStation</u>	<u>Color</u>
1	3	red
2	4	yellow
3	2	green
4	7	cyan
5	1	blue
6	5	magenta
7	0	white
30	6	orange

Coordinates**Dwg > Dgn**

AutoCAD coordinates are converted to MicroStation coordinates by multiplying the AutoCAD coordinates by the MicroStation UORs value (obtained from the Units setting or seed file), adding in the offset (obtained from the seed file), and multiplying by the conversion factor (obtained from the Units setting or seed file).

Curve**Dwg > Dgn**

AutoCAD polylines that are defined as curves are converted to MicroStation curve elements. Curve-fit points are not placed in the MicroStation curve. Only the original polyline vertices are used to define the MicroStation curve string.

Dimension**Dwg > Dgn**

Automatic dimensioning produces INSDIM entities. They are handled by DGNLink much like insert entities and result in a cell definition and placement.

Elevation**Dwg > Dgn**

AutoCAD elevation (group 38) data will be converted to MicroStation Z coordinates. Most often, elevation data was generated by AutoCAD release 9.

Enter Data Field**Dwg > Dgn**

AutoCAD attributes will be converted to MicroStation enter data fields.

Ellipse

Dwg > Dgn

AutoCAD ellipse entities are converted to MicroStation ellipse elements.

Font

Dwg > Dgn

MicroStation text elements generated will be given the associated MicroStation font after default table lookup unless specified otherwise in Text settings. The default font table follows:

<u>AutoCAD</u>	<u>MicroStation</u>
TXT	0
MONOTXT	3
ROMANS	1
ROMANC	2
ROMAND	2
ROMANT	2
ITALICC	23
SCRIPTS	30
SCRIPTC	30

Frozen Layers

Dwg > Dgn

AutoCAD entities on frozen layers will be translated or not based on the Layers setting.

Hatches

Dwg > Dgn

AutoCAD filled, user defined, ANSI, and selected pre-defined R14 and above Hatches are converted to equivalent MicroStation area patterns.

<u>AutoCAD supported pre-defined hatches</u>			
AR-B816	AR-B816C	AR-B88	AR-BRELM
AR-BRSTD	AR-CONC	AR-HBONE	AR-RSHKE
AR-SAND	BRASS	BRICK	CLAY
CORK	CROSS	DASH	DOLMIT
EARTH	FLEX	GRASS	GRATE
HEX	HONEY	INSUL	PLAST
PLASTI	SQUARE	STARS	TRIANG
ZIGZAG			

The hatch scale setting can be used to adjust the size of hatches to match your requirements.

Insert

Dwg > Dgn

AutoCAD insert entities define the specifications for the placement of a block defined in the blocks section of the AutoCAD file. The insert entity specifies placement coordinates; a block name; X and Y scale factors; and a rotation angle.

The cell placement point; rotation; and X and Y scale factors are taken from the insert specifications. The cell will then be placed as a type 2 MicroStation cell. If either the X or Y scale factors are 0, the cell will not be placed.

Insert names can be assigned to cell names in the Blocks settings.

Justification

Dwg > Dgn

AutoCAD text justification will be converted using the closest possible justification in MicroStation. These values and their MicroStation defaults are:

<u>AutoCAD</u>	<u>MicroStation</u>	<u>Justification</u>
0	2	Left
1	8	Center
2	14	Right
3	2	Aligned
4	7	Middle
5	2	Fit
10	2	Bottom Left
11	8	Bottom Center
12	14	Bottom Right
20	1	Middle Left
21	7	Middle Center
22	13	Middle Right
30	0	Top Left
31	6	Top Center
32	12	Top Right

Layer

Dwg > Dgn

By default, All layers will be translated. For Versions below V8, Level numbers are assigned sequentially. For V7 Dgn, if more than 63 layers exist, level numbering restarts at 1 for each group of 63 layers. If you select Use Layer / Level Table, your assignment table will be used. Any layer names not found in your defined table will be assigned to level number based on the default rules.

Level

Dwg > Dgn

For Versions below V8, MicroStation levels are numbers ranging from 1 to 63 for versions below V8. If you select Use Layer / Level Table, your assignment table will be used. Any layer names not found in your defined table will be assigned to level number based on the default rules. Level numbers are assigned sequentially. If more than 63 layers exist, level numbering restarts at 1 for each group of 63 layers.

Lightweight Polyline

Dwg > Dgn

AUTOCAD R14 and above supports lightweight polylines. They are treated in the same way as regular polylines.

Line

Dwg > Dgn

The AutoCAD line entity is translated to a MicroStation line element.

Linetype

Dwg > Dgn

MicroStation elements generated will be given the AutoCAD entity linetype after default table lookup unless specified otherwise in Linetype settings. The default linetype table follows:

<u>AutoCAD</u>	<u>MicroStation</u>	<u>Linetype</u>
CONTINUOUS	0	solid
DOT	1	dotted
HIDDEN	2	medium dashed
DASHED	3	long dashed
DASHDOT	4	dashed dot
DIVIDE	5	short dashed
PHANTOM	6	dash dot dot
CENTER	7	long dash short
BORDER	8	dashed

Offset

Dwg > Dgn

MicroStation allows users to define drawing origin at any coordinate through use of the global origin setting. The global origin value will be extracted from the MicroStation seed file in use to adjust MicroStation coordinates.

Mtext

Dwg > Dgn

AutoCAD mtext entities will be converted to MicroStation text string elements. Special operations inside mtext entities (e.g., changing font, bolding, etc.) are not supported. Also, multiline text with automatic wrapping at the mtext boundary may not wrap at the same location due to differences in font sizes.

Point

Dwg > Dgn

A MicroStation zero-length line element is produced with equivalent end point coordinates set to the coordinates of the AutoCAD point.

Point Cell

Dwg > Dgn

Point cells are the closest MicroStation equivalent to AutoCAD blocks with layer, color, and linetype assigned **ByBlock** (i.e., assigned to current values at placement time). If blocks have layer, color, and/or linetype assigned **ByBlock** on all graphic entities within the block definition, a MicroStation point cell will be defined.

Polyface Mesh

Dwg > Dgn

The AutoCAD polyface mesh is defined by a series of vertices and a series of pointers to the vertices. A set of pointers is defined for each edge of the mesh. Invisible edges are also indicated. A series of MicroStation closed shapes and/or linestrings is generated according to the pattern of edges and invisible edges.

Polyline

Dwg > Dgn

The AutoCAD polyline sequence is defined by a series of vertices. The polyline header defines the default start and end widths, and control flags.

Vertices are accumulated as a coordinate string until an arc is defined or the MicroStation weight changes. At that time, any accumulated vertices will be placed as a MicroStation linestring element.

If the polyline header denotes a closed polyline, a MicroStation closed shape element is created instead of a linestring.

Vertices flagged as frame points for a B-spline curve are ignored in the curve string generation.

A MicroStation arc element will be generated for each polyarc segment.

When the polyline terminator entity is located, any accumulated vertex coordinates are written as a linestring or closed shape element.

If the polyline sequence requires generation of multiple MicroStation elements, a complex header will be placed to retain the elements as a single entity.

When the polyline tapers from one vertex to the next, a MicroStation filled shape will be generated to represent the shape of the vertex taper.

Reference File

Dwg > Dgn

DGNLink provides 3 options for translating XRef attachments to MicroStation. Choose one method by accessing the XRefs tab under DWG to DGN settings.

Ignore

Select this option to do nothing with XRef files. The files, their attachments, and their contents will be totally ignored during the translation.

Convert to Reference Attachment

Select this option to convert the AutoCAD XRef attachment to the equivalent MicroStation reference file attachment.

Seed File

Dwg > Dgn

MicroStation seed files define the working units type for a design file along with specifying whether a design file is 2D or 3D. Several files are included with DGNLink giving you this flexibility. They are:

- SeedArc2.dgn** - 2D Architectural Units
- SeedArc3.dgn** - 3D Architectural Units
- SeedMap2.dgn** - 2D Mapping Units
- SeedMap3.dgn** - 3D Mapping Units
- SeedMe2.dgn** - 2D Mechanical Units
- SeedMe3.dgn** - 3D Mechanical Units
- SeedMetric2.dgn** - 2D Metric Units
- SeedMetric3.dgn** - 3D Metric Units

You can choose the seed file most appropriate for your project in the DGN Output tab. Or, your client may provide you with their seed file enabling you to translate to their standards more easily.

Shape**Dwg > Dgn**

The AutoCAD shape entity is defined by the X and Y coordinates of the placement point; the shape name; the shape size; the rotation angle; and the X axis scale factor.

A MicroStation cell will be generated as described for inserts. The only difference is that the shape must already exist in the MicroStation cell library. Since the shape's graphics are not defined in the AutoCAD file, the equivalent symbol must be pre-defined on the MicroStation system.

Solid**Dwg > Dgn**

The AutoCAD solid entity is defined much like the trace entity. The only difference is for 3-sided solids, in which the third and fourth points are given equal X and Y coordinates.

The MicroStation shape element generated will consist of all the vertices specified in the AutoCAD solid, only the third and fourth vertices will be swapped, and the fifth vertex coordinates will be set equal to the first to close the solid. The filled attribute will be set.

Text**Dwg > Dgn**

The MicroStation text element will be placed at the origin defined in the AutoCAD file. The text string will have rotation, scaling, and justification applied as specified by the AutoCAD file. If there is not a match from the text style table, elements will be created using MicroStation font 0.

Text Style**Dwg > Dgn**

AutoCAD Text Style will be used to assign a font to the generated MicroStation text element. You can specify a font assignment table through the Text tab. If you do not define a text style or a text style is not found in your table, the following defaults (based on shape file used) apply:

<u>AutoCAD</u>	<u>MicroStation</u>
TXT	0
MONOTXT	3
ROMANS	1
ROMANC	2
ROMAND	2
ROMANT	2
ITALICC	23
SCRIPTS	30
SCRIPTC	30

Trace**Dwg > Dgn**

The AutoCAD trace entity is defined by the coordinates of the 4 corners of the trace outline.

A MicroStation closed shape element is created consisting of 5 vertices. The first and fifth vertices have equivalent coordinates, thereby closing the shape. The filled attribute will be set.

This method of conversion is used to maintain the exact placement of the trace upon translation. It will not be filled in as it appeared in AutoCAD. If traces are used in AutoCAD to have width, it is preferable to use a polyline which will convert to a string element with weight.

Units

Dwg > Dgn

AutoCAD coordinates are converted to MicroStation coordinates by multiplying the AutoCAD coordinates by the MicroStation UORs value (obtained from the seed file) and adding in the offset (also obtained from the seed file).

UORs

Dwg > Dgn

For Versions below V8, MicroStation coordinates are stored as 4 byte integer UORs - Units Of Resolution. The possible UOR range is -2 billion to +2 billion. This range is divided by the user into master units, sub units, and positional units to calculate the actual coordinate. This number is then added to the global origin to compute the final coordinate. Translation coordinates are master units plus global origin. These coordinates correspond to those seen using MicroStation tentative point with tpmode set to locate.

Weight

Dwg > Dgn

Weight is a logical line thickness that does not vary with scale. If you zoom in and out, the apparent thickness of the line does not vary. Weight is supported in MicroStation and AutoCAD 2000+.

DGNLink ignores element weight values for versions below AutoCAD 2002.

For AutoCAD 2000+, the Dwg weight is used to set the Dgn weight.

If you need to assign weights during the translation, you can define a Weight Table.

Width

Dwg > Dgn

DGNLink ignores polyline width values.

XRef

Dwg > Dgn

DGNLink provides 3 options for translating XRef attachments to MicroStation. Choose one method by accessing the XRefs tab under DWG to DGN settings.

Ignore

Select this option to do nothing with XRef files. The files, their attachments, and their contents will be totally ignored during the translation.

Convert to Reference Attachment

Select this option to convert the AutoCAD XRef attachment to the equivalent MicroStation reference file attachment.

3DFace

Dwg > Dgn

The AutoCAD 3DFace entity is defined by the coordinates of the 4 corners of the face. Each vertex is defined with X, Y, and Z values. The Z values are ignored by DGNLink to generate a 2D representation.

A MicroStation closed shape element is created consisting of 5 vertices. The 4 corners are the first 4 vertices and the fifth vertex is set equal to the first to close the shape.

3DLine

Dwg > Dgn

The AutoCAD 3DLine entity is defined by the X, Y, and Z coordinate values of the end points of the line. The Z values are ignored by DGNLink to generate a 2D representation.

A MicroStation line element is generated with the start and end point coordinates set to the X and Y coordinates from the AutoCAD line.

DGN to DWG Specifications

This section defines the DGNLink specifications for a DGN to DWG translation. The topics are listed alphabetically by topic for easy reference.

Arc

Dgn > Dwg

MicroStation arc elements have 5 possible AutoCAD equivalents: arc, circle, point, polyarc, or polyline.

MicroStation circular arcs are translated directly to AutoCAD arcs.

MicroStation arcs with a sweep angle of 0 or +/- 360 degrees are converted to an AutoCAD circle.

MicroStation arcs with an axis length of 0 are translated to an AutoCAD point.

Since AutoCAD arcs must be circular for R12 and below, DGNLink converts elliptical arcs (partial ellipses) to AutoCAD polylines. For each 5 degree interval of the arc's sweep, a straight segment is drawn to approximate that portion of the arc. Since DGNLink creates several segments per elliptical arc, it can be expected that the size of the output AutoCAD file will increase depending on the number of elliptical arcs in the drawing.

For release 13 and above conversions, elliptical arcs are converted to AutoCAD elliptical arcs.

Arrowhead

Dgn > Dwg

MicroStation arrowheads which are text characters referencing fonts 85, 102, 111, and 126 are translated to special AutoCAD block **XXXXAHD**. The block **XXXXAHD** contains an AutoCAD solid entity appearing as a filled arrowhead symbol.

Attribute

Dgn > Dwg

Enter data text in a MicroStation cell is translated to AutoCAD attribute text in a block. The enter data text will be placed as regular text after the insert for the block.

MicroStation tags are also converted to AutoCAD attributes.

Block

Dgn > Dwg

MicroStation cells are translated to AutoCAD blocks with insert references. Whenever a cell header is encountered, an AutoCAD insert entity is placed in the AutoCAD file with a block name; insertion point; rotation; and X and Y scale factors.

The first occurrence of each cell in the design file is used to create the block definition.

If Explode All Cells has been checked, the cell header will be ignored and its component graphic elements will be translated individually. Only regular cells can be exploded.

If you do not define an assignment table or the block name is not found in your table, the MicroStation cell name will be used for the AutoCAD block name.

Blank cell names are not translated. If a MicroStation cell has an all blank name the graphics are translated individually but the block is not created.

Text elements which consist of enter data fields will be placed in the AutoCAD block as attribute data to maintain the actual text characters in AutoCAD.

BSpline

Dgn > Dwg

MicroStation Bsplines are stroked to the visually equivalent polyline sequence. For AutoCAD release 13 and above, spline entities are created.

Cell

Dgn > Dwg

MicroStation cells are translated to AutoCAD blocks with insert references. Whenever a cell header is encountered, an AutoCAD insert entity is placed in the AutoCAD file with a block name; insertion point; rotation; and X and Y scale factors.

The first occurrence of each cell in the design file is used to create the block definition.

If Explode All Cells has been checked, the cell header will be ignored and its component graphic elements will be translated individually. Only regular cells can be exploded.

If you do not define an assignment table or the block name is not found in your table, the MicroStation cell name will be used for the AutoCAD block name.

Blank cell names are not translated. If a MicroStation cell has an all blank name the graphics are translated individually but the block is not created.

Text elements which consist of enter data fields will be placed in the AutoCAD block as attribute data to maintain the actual text characters in AutoCAD.

Class

Dgn > Dwg

Each MicroStation element contains a class field giving the class of the element. AutoCAD does not have an equivalent for class so this parameter is ignored by DGNLink.

Clipped Reference File

Dgn > Dwg

DGNLink supports clipping to clip boundaries and voids in attached reference when Bind or Convert To Block is checked. Graphic elements will normally be clipped at the boundaries and partial elements written to the generated AutoCAD file. Text elements are handled as either in or out of the clip boundaries. The actual text string is not clipped.

Clipping is converted to Xclip when Convert To XRef is checked. However, clip voids are not supported in this mode.

Clip Void Areas

Dgn > Dwg

DGNLink supports clip void (mask) areas during translation to AutoCAD when Bind or Convert To Block is checked. Clip voids are not handled when Convert To XRef is checked.

Color**Dgn > Dwg**

AutoCAD entities generated will be assigned an element color using the MicroStation color for color table lookup. Level symbology for both the main and reference files, if enabled, will be retrieved prior to conversion and colors adjusted accordingly. You can define a Color Table in the DGN to DWG settings. If you do not define a table or the incoming MicroStation color is not found in your table, the following defaults will be used:

<u>MicroStation</u>	<u>AutoCAD</u>	<u>Color</u>
0	7	white
1	5	blue
2	3	green
3	1	red
4	2	yellow
5	6	violet
6	30	orange
7	4	cyan
8	8	gray
9	8	gray

Complex Shape**Dgn > Dwg**

MicroStation complex shapes are translated to AutoCAD closed polylines. All of the elements within the complex shape definition will be converted into a single polyline to maintain the closed property of the complex shape. Complex shapes with no component elements are ignored.

Complex String**Dgn > Dwg**

MicroStation complex strings are translated to an AutoCAD polyline. All of the elements within the complex string definition will be converted into a single polyline to maintain the single element status. Complex strings with no component elements are ignored.

Construction Class**Dgn > Dwg**

MicroStation construction class elements are excluded by DGNLink.

Coordinates**Dgn > Dwg**

AutoCAD coordinates are computed using MicroStation master units minus global origin. These coordinates correspond to those seen using MicroStation tentative point with tpmode set to locate. If sub units are 12, i.e., inches, then coordinates are output in inches for use with AutoCAD architectural units (4). You can select your desired Units in DWG to DGN settings.

Curve**Dgn > Dwg**

The MicroStation curve element will be translated into an AutoCAD polyline entity in much the same manner as linestring elements. Additional curve fit vertices are added for smoothing.

Dimension

Dgn > Dwg

MicroStation associative dimension elements are not handled directly by DGNLink. You must freeze them through MicroStation prior to translation. Regular dimension elements are converted to their component lines and text.

Ellipse

Dgn > Dwg

There are 3 possible AutoCAD entity equivalents of a MicroStation ellipse: a circle entity, a special **ELLIPSE** insert entity, and a point entity.

An AutoCAD circle entity is produced if the major and minor axis lengths of the MicroStation ellipse are equal. A circle entity is defined by center point coordinates and the radius.

If the major and minor axes are not equal, an AutoCAD insert will be generated with a block name of **ELLIPSE** for release 12 and below. The **ELLIPSE** insert entity will have X and Y axis scale factors calculated to represent the major and minor axes; and it is given the rotation angle of the MicroStation ellipse element.

For AutoCAD release 13 and above, an ellipse entity is created.

An AutoCAD point entity is created when the MicroStation ellipse major axis length equals 0.

Filled Circle

Dgn > Dwg

MicroStation filled circle elements are converted to AutoCAD solid hatches for AutoCAD R14 and above.

Filled Shape

Dgn > Dwg

MicroStation filled shape elements are defined in much the same way as shape strings. They have the filled attribute in user data set which causes them to display filled in.

MicroStation filled shape elements are normally translated to a series of AutoCAD solids. For AutoCAD R14 and above, solid hatches are created.

Font

Dgn > Dwg

AutoCAD text entities generated will be given the associated AutoCAD text style after default table lookup unless you define your own Text Style Table in DGN to DWG settings. The default font table follows:

<u>MicroStation Font</u>	<u>AutoCAD Style</u>
0	TXT
1	ROMANS
2	ROMANC
3	MONOTXT
23	ITALICC
30	SCRIPTS

Fractions

Dgn > Dwg

MicroStation text fonts include special characters for fraction values - halves, fourths, eighths, sixteenths, thirty-seconds, and sixty-fourths. The characters are translated to the individual characters of the fraction, e.g., 3 / 8. The width factor of the text string is adjusted to keep the approximate length of the string equivalent.

Justification

Dgn > Dwg

MicroStation text justification will be converted using the closest possible justification in AutoCAD. These values and their AutoCAD defaults are:

<u>MicroStation</u>	<u>AutoCAD</u>	<u>Justification</u>
0	30	Left Top
1	20	Left Center
2	0	Left Bottom
6	31	Center Top
7	21	Center Center
8	1	Center Bottom
12	32	Right Top
13	22	Right Center
14	2	Right Bottom

Layer

Dgn > Dwg

For V8 Dgn, layers are assigned to match the level names.

For V7 Dgn, the MicroStation level number is set to the layer name unless other assignments are made in the Levels Table in DGN to DWG settings.

If MicroStation level names have been used, the level name will be used for the AutoCAD layer name unless other assignments are made in the Levels Table in DGN to DWG settings.

Level

Dgn > Dwg

For V8 Dgn, layers are assigned to match the level names.

For V7 Dgn, the MicroStation level number is set to the layer name unless other assignments are made in the Levels Table in DGN to DWG settings.

If MicroStation level names have been used, the level name will be used for the AutoCAD layer name unless other assignments are made in the Levels Table in DGN to DWG settings.

Level Symbolology

Dgn > Dwg

Level symbolology is processed prior to the actual element conversion. The incoming MicroStation element will have its color, linetype, and/or weight reset per any level symbolology defined and enabled. The enabled level symbolology settings are used by DGNLink for any parameter table lookups, assignments, etc. Please keep this in mind when setting up your parameter assignment tables.

Line

Dgn > Dwg

MicroStation line elements have 3 possible AutoCAD equivalents: the line entity, the point entity, and the polyline entity.

A point entity will be generated if the X and Y coordinates of the start point are equivalent to the X and Y coordinates of the end point of the MicroStation line element.

Otherwise, an AutoCAD line or polyline entity will be generated. A line or polyline consists of the X and Y coordinates of the start and end points of the line element.

Linetype

Dgn > Dwg

AutoCAD entities generated will be given the MicroStation element linetype after default table lookup unless specified otherwise in Linetypes tab . The default linetype table follows:

	<u>MicroStation</u>	<u>AutoCAD</u>	<u>Linetype</u>
0	CONTINUOUS	solid	
1	DOT	dotted	
2	HIDDEN	medium dashed	
3	DASHED	long dashed	
4	DASHDOT	dashed dot	
5	DIVIDE	short dashed	
6	PHANTOM	dash dot dot	
7	CENTER	long dash short dashed	
8	BORDER	dashed	

Linestring

Dgn > Dwg

MicroStation linestring elements are normally translated into AutoCAD polyline entities.

Multiline

Dgn > Dwg

MicroStation multiline elements are not handled directly by DGNLink. You must freeze them through MicroStation prior to translation.

Point

Dgn > Dwg

MicroStation points are actually zero-length line elements. They are translated normally to AutoCAD point entities.

Point Cell

Dgn > Dwg

Point cells are translated the same as regular cells except for layer references. The block and its graphic components are all placed on layer 0. Each insert reference will be placed on the layer corresponding to the first level used by that occurrence of the point cell.

Individual entities in the block definition will have the color and linestyle defined as **ByBlock**.

Polyline

Dgn > Dwg

AutoCAD polylines are created from MicroStation linestring, shape, curve, complex string, complex shape, and bspline elements.

Reference File

Dgn > Dwg

DGNLink will translate up to 255 reference files attached to the main file being translated. The reference file will be translated if display is on for the selected view in the attachment and if the file can be located. If level symbology is enabled in the main file, reference file level symbology will be used when processing the reference file.

DGNLink provides three options for translating reference files. You must choose one (and only one) of the following Reference File Options. The option selected will be applied to all reference files during the translation.

Bind – V7 Only

Choose Bind to clip and include all attached MicroStation reference files to a single output file. This option translates the master DGN file and all attached clip-bound reference files to a single AutoCAD file. Reference file scaling, rotation, offsets, and clipping are handled automatically.

Convert to Block – V7 only

Choose Convert to Block to translate the master DGN file to a single AutoCAD file. Each attached reference file is converted to a block and inserted in the AutoCAD file. Reference file scaling, rotation, offsets, and clipping are handled automatically.

Convert to XRef

Choose Convert to XRef to translate the master design file to an AutoCAD file with attached XRefs. The XRef attachment is generated retaining the reference file name, scaling, rotation, and origin. Clipping is converted to Xclip. However, clip voids are not supported by this feature.

The Reference File Search Path text box is used to specify a list of directories to search when trying to locate reference files attached to DGN files. Enter the directories separated by semicolons, e.g.,

c:\temp\;f:\dgn\sub\refs\;h:\mydir

DGNLink searches for reference files in the following order:

- | | | | |
|----|----|----|---|
| 1. | 1. | 1. | The directory of the DGN being translated. |
| 2. | 2. | 2. | The directory given in the attachment. |
| 3. | 3. | 3. | The directories listed in the Reference File Search Path field. |

Shape

Dgn > Dwg

MicroStation shape elements are defined in much the same way as linestrings except that the first and last vertices of the shape have the same coordinates, thus closing the shape.

MicroStation shape elements are normally translated to AutoCAD closed polyline entities.

Shared Cell

Dgn > Dwg

MicroStation shared cells consist of 2 element types: (34) shared cell definition, and (35) shared cell instance. Typically, the type 34 definition occurs once in a MicroStation file, and the type 35 instance is present for each occurrence.

Shared cell definitions are converted to AutoCAD block definitions. An AutoCAD insert entity is placed for each shared cell instance. The individual elements within the shared cell definition are translated as described for regular cells and the individual component elements.

Shared cell name assignments are handled the same as for regular cells. In addition, the suffix **_SH** will be appended to the end of the block name being generated. This will differentiate between a type 2 cell and a type 34 shared cell that may have the same name yet entirely different graphics associated with them. If a shared cell definition and/or instance has an all-blank name, it will be ignored.

Text

Dgn > Dwg

MicroStation text elements are translated to AutoCAD text entities. MicroStation text strings consisting of enter-data fields will be translated to an AutoCAD attribute entity. MicroStation text characters which are arrowheads in fonts 85, 102, and 126 are translated to special AutoCAD block **XXXXAHD**. Block **XXXXAHD** contains an AutoCAD solid entity appearing as a filled arrowhead symbol.

Text elements which cross reference file clipping boundaries will be totally included in the translation. Text elements are not clipped, they are translated as either in or out.

Text Style

Dgn > Dwg

AutoCAD text entities generated will be given the associated AutoCAD text style after default table lookup unless specified otherwise in Font settings. The default font table follows:

<u>MicroStation Font</u>	<u>AutoCAD Style</u>
0	TXT
1	ROMANS
2	ROMANC
3	MONOTXT
23	ITALICC
30	SCRIPTS

UORs

Dgn > Dwg

For Versions below V8, MicroStation coordinates are stored as 4 byte integer UORs - Units of Resolution. The possible UOR range is -2 billion to +2 billion. This range is divided by the user into master units, sub-units, and positional units to calculate the actual coordinate. This number is then added to the global origin to compute the final coordinate. Translation coordinates are master units plus global origin. These coordinates correspond to those seen using MicroStation tentative point with tpmode set to locate. If subunits are 12, i.e., inches, then coordinates are output in inches for use with AutoCAD architectural units (4).

Weight

Dgn > Dwg

Weight is a logical line thickness that does not vary with scale. If you zoom in and out, the apparent thickness of the line does not vary. The Weight table can be used set AutoCAD lineweights based on the MicroStation weight.

Width**Dgn > Dwg**

Width in an AutoCAD drawing is an actual thickness in drawing units. As you zoom in and out the thickness varies with the scale. DGNLink does not support AutoCAD widths.

XRef**Dgn > Dwg**

To convert MicroStation reference files to AutoCAD XRefs, choose Convert to XRef on the Reference Files tab. This option translates the master design file to an AutoCAD file and uses the XRef facility to create an attachment for the reference file. The XRef attachment is generated retaining the reference file name, scaling, rotation, and origin. Clipping is supported as xclip. However, clip voids are not supported by this feature.

Error Messages

DGNLink generates error messages to the screen and in the message file `dgnlink7.log`. A description of each message follows:

Number - Error Message

1 - File Not Found *filename*

The *filename* given could not be located.

3 - Invalid Design File

The input design file was not a MicroStation design file or has serious errors and is not usable.

8 - Error Reading DGN File

An unrecoverable error occurred reading the input DGN file.

13 - Layer Table Overflow

An input AutoCAD DWG file contained more layers than could be handled by DGNLink. Please contact DGI Technical Support for help with this problem.

14 - Invalid Layer

A reference to a layer not defined in the layer table was encountered reading an AutoCAD DWG file.

15 - Invalid DWG Entity Type

An unrecognized entity type was encountered reading a DWG file.

16 - Invalid Options Table Entry

An unrecognized entry was encountered in an options table.

17 - Invalid Options Table Entry

An unrecognized entry was encountered in an options table.

18 - Invalid Color

An invalid color was encountered in an options table.

19 - Invalid Linetype

An invalid linetype item was encountered in an options table.

20 - Invalid Level Number

An invalid level item was encountered in an options table.

21 - Invalid Layer Name

An invalid layer item was encountered in an options table.

22 - Invalid Width

An invalid width item was encountered in an options table.

23 - Invalid Weight

An invalid weight was encountered in an options table.

24 - Invalid Text Style Name

An invalid text style item was encountered in an options table.

25 - Invalid Font

An invalid font item was encountered in an options table.

26 - Invalid Symbol Name

An invalid symbol, cell, or block item was encountered in an options table.

32 - Invalid Cell Name

An invalid cell was encountered in an options table.

33 - Invalid File Directory

An invalid file directory item was encountered in an options table.

38 - Invalid Text Height Factor

An invalid text height factor item was encountered in an options table.

39 - Invalid Text Width Factor

An invalid text width factor item was encountered in an options table.

43 - Invalid Keyword

An unrecognized value was encountered in an options table.

45 - Max Number Cells Exceeded

An input MicroStation DGN file contained more cells than could be handled by DGNLink. Please contact DGI Technical Support for help with this problem.

50 - Linetype Not Defined

A linetype was requested which was not predefined in the selected AutoCAD prototype file. All linetypes must be predefined in the prototype file when translating to DWG.

51 - Invalid DWG File

The selected AutoCAD prototype file used for creating new DWG files is not a valid AutoCAD drawing file.

52 - Block Not Defined

An insert was requested for a block which had not been defined in the DWG file.

53 - Block Table Overflow

A DWG file contained more blocks than could be handled by DGNLink. Please contact DGI Technical Support for help with this problem.

54 - Linetype table Overflow

A DWG file contained more linetypes than could be handled by DGNLink. Please contact DGI Technical Support for help with this problem.

55 - Shape Table Overflow

A DWG file contained more shapes than could be handled by DGNLink. Please contact DGI Technical Support for help with this problem.

57 - Cell Not Defined

An attempt was made to place a cell in a Dgn file that was not defined.

61 - Associative Dimension Skipped

A Dgn Associative dimension was encountered and skipped. DGNLink does not support associative dimensions.

62 - Error reading Dwg

An error occurred reading a Dwg file. The Dwg may be bad. Try using the AutoCAD recover or audit command to fix the file.

63 - Clip void not supported

A Dgn reference file with clipping and voids was converted to a Dwg Xref with Xclipping. The clipping voids were ignored.

Technical Support

DGI will provide technical support for 90 days after software purchase at no additional charge to the registered user.

E-mail Questions

Ask questions and receive detailed answers from the Technical Support Department. Just send e-mail to the account listed below. You will receive a reply by e-mail.

support@dgnlink.com

Telephone

You can reach DGI Technical Support by phone between 8:30 AM and 5:00 PM Central Time, Monday through Friday.

When you call, please be at your computer, have your documentation in hand, and be prepared to provide the following information:

- The type of computer hardware you are using
- The software version number of Windows
- The serial number and software version number of DGNLink
- Exact wording of any messages that appear on your screen
- What you were doing when the problem occurred
- How you tried to solve the problem

DGI Technical Support Phone Number:

256-417-6640

Support PLUS

To receive unlimited toll-free priority support, be sure to sign up for Support PLUS. The cost is only \$240 per year. As a Support PLUS subscriber, you will also receive access to the update files on our web site and email notifications. In addition, any time we have a major upgrade with new documentation, we will ship these to you automatically at no additional charge. Since DGNLink upgrades are currently priced at \$600, you can see the savings right there. For more details or to sign up, check our web site or call the Support PLUS Subscription Dept at 866-514-2994.

DGI Web Site

Visit our web site **www.dgnlink.com** for technical support tips, FAQs, updates available for downloading, and information on our other products and services.

Sales

To sign up for Support PLUS, purchase additional copies of this software, or order any other DGI products, call our Sales Dept at 866-514-2994.