Creo Elements/Direct Drafting IGES 2D Translator

Creo Elements/Direct Drafting 20.1

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About this Manual

This manual covers operation of the IGES 2D Translator on platforms supported by Creo Elements/Direct Drafting. Differences between platforms are indicated by the following conventions:

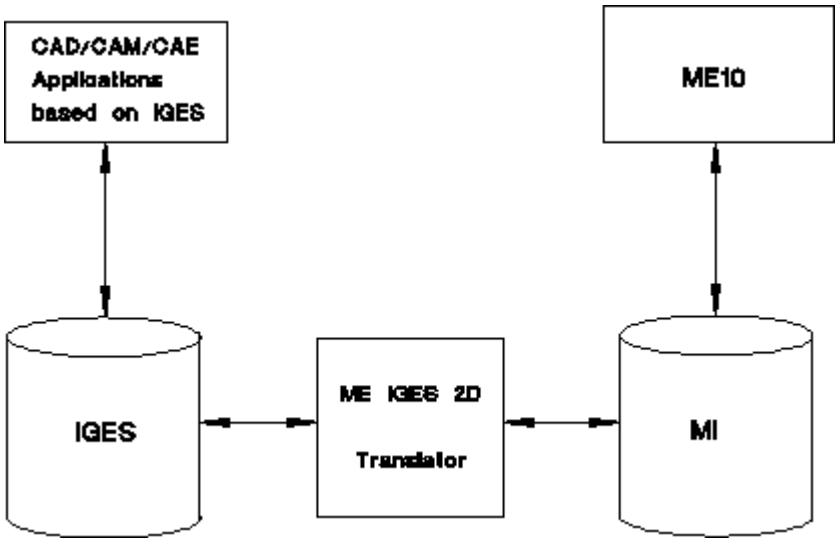
Windows-Based Systems Only	Refers to systems running Microsoft Windows.

1

Product Overview

The IGES 2D Translator supports the Initial Graphics Exchange Specifications (IGES) Revision 5.1.

The IGES 2D Translator can translate in two directions: From MI format to IGES format, and from IGES format to MI format. A two-way transfer of data between Creo Elements/Direct Drafting and another CAD system supporting IGES format is possible. The transfer operates as follows:



The IGES 2D Translator supports MI version 2.8 (read and write).

2

Installation and Security

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Before you can run the Translator, you must install the IGES 2D Translator filesets. To install these filesets and configure the software, run the `install` command located on your installation media and follow the directions that appear on your screen.

IGES 2D Translator Files

When you install the IGES 2D Translator, several files will normally be installed on your system. These include:

`iges.exe`	Execution code for the IGES translator
`iges.ms`	Message file for prompts
`igesi.con`	Configuration file (input)
`igeso.con`	Configuration file (output)

In addition, the installation program also installs standard font files.

Note

If you are working with IGES files on a system that has an ME CAD product installed but does not have the IGES 2D Translator installed, you must copy the four IGES text fonts onto the system.

Do not edit the `iges.ms`file because it affects the operation of the IGES 2D Translator.

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Using the IGES 2D Translator

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This chapter explains how to use the IGES 2D Translator in both single and batch translations.

The Translator translates files between Model Interface (MI) format and the Initial Graphics Exchange Specifications (IGES) Revision 5.10 format. Both are ASCII formats.

Before You Translate

- Make sure the files to be translated and the IGES 2D Translator are on the same system.
- Make sure the parameters in the appropriate configuration file are set correctly for your translation. Refer to Configuration File (MI to IGES) on page 21 or Configuration File (IGES to MI) on page 38 for information on setting and editing the parameters. If you need to edit a file, use an editor that saves files in ASCII format.
- To translate in batch mode, you must first create the required batch file. Refer to Batch File on page 50 for instructions on creating the file.
- To compress or uncompress IGES files, you must set the parameters source path and destination path in the configuration file `igeso.con`. Refer to Function of the Configuration File (MI to IGES) on page 22 for details.

Running the IGES 2D Translator

To run the Translator:

1. You must have already started the Windows system before you can start the IGES 2D Translator.
2. Open the "Creo Elements/Direct Drafting" program group in the Windows Program Manager.
3. With the mouse, double-click on the "IGES 2D Translator" icon.

The Translator's start-up screen (similar to that shown on the following page appears. This screen includes the Translator's main menu.

Associated File Search Rules

The following lists, in order of priority, the search paths:

1. Current directory
2. Directory specified in `igesdir`
3. Directory containing the program files
4. `\drafting\igs`

```
-----------------------------------------------------------------
                  PTC Creo Elements/Direct/IGES 2D Translator
Release xx.xx
Date Code: xx

Copyright (c) 2014 Parametric Technology GmbH.
(a subsidiary of PTC Inc.) All Rights Reserved.
```

```
                    RESTRICTED RIGHTS LEGEND
Use,  duplication, or disclosure by the U.S.  Government is
subject to
restrictions  set forth in subparagraph  (C) (1) (ii) of the
Rights in
Technical  Data and Computer  Software  Clause at DFARS  252.227-
7013.
Rights for non-DOD U.S. Government Departments and Agencies are as
set forth in
FAR 52.277-19(c)(1,2).
                         Parametric Technology GmbH
                                 Edisonstrasse 8
                       85716 Unterschleissheim
                                 Germany

                                    PTC Inc.
                              140 Kendrick Street
                     Needham,   Massachusetts    02494
                                      USA
Press Return to continue ...
 ----------------------------------------------------------------
 ----------------------------------------------------------------
                   PTC Creo Elements/Direct/IGES 2D Translator

Release xx.xx
Date Code: xx

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0 : Exit Program
1 : Translate          IGES -> MI
2 : Batch Translate    IGES -> MI
3 : Translate            MI -> IGES
4 : Batch Translate      MI -> IGES
5 : Compress/Uncompress        IGES
6 : Batch Compress/Uncompress  IGES

Enter Selection (0-6) :
 ----------------------------------------------------------------
```

To choose an option, enter the corresponding number at the keyboard, press [Enter], and follow the prompt. The next section describes each option.

You can also run the Translator using the Windows "Run" command, which is located in the File menu in either Program Manager or File Manager. With this method, you enter the name of the program as well as the appropriate options and file names. This method bypasses the main menu options. Refer to Using the IGES 2D Command Options on page 18 in this chapter.

Main Menu Options

Exit Program (0)

This option terminates the program.

Translate IGES to MI (1)

This option translates a file from IGES format to MI format. The following screen appears:

```
Translation : IGES to MI
Default source directory : \dwgs\iges\
Default destination directory : \dwgs\mi\
Enter source [dest [log] file name(s)
```

The default source and destination directories are `\dwgs\iges` and `\dwgs\mi`, respectively.

Note

The default source and destination directories can be changed by editing the configuration file. Refer to Configuration File (MI to IGES) on page 21 and Configuration File (IGES to MI) on page 38 for more information.

Responding to the Prompt

Respond to the prompt with the following file names (file names enclosed in brackets are optional):

```
source_file [destination_filename [log_filename]
```

The following guidelines will help you respond to the prompt correctly.

- You must specify the source file (input).
- Specifying a destination file name is optional. If you do not specify a destination file name, it will have the same name as the source file with the suffix `.m` added.
- Specifying a log file name after the destination file name is optional. If you do not specify a log file name, it will have the same name as the source file with the suffix `.l` added.
- To override the default directory paths, specify absolute or full path names for the files.

Example: Default File Names

To use the default destination and log file names, enter only the source name at the prompt.

If you enter `drawing` at the prompt (and it is a valid IGES file in directory `\dwgs\iges\` [UNIX: `/dwgs/iges/`]), the screen displays the following assumed destination and log file names. A prompt allows you to accept or re-specify the files, as shown below:

```
Source file : \dwgs\iges\drawing
Destination file : \dwgs\mi\drawing.m
Log file : \dwgs\mi\drawing.l
Press <ENTER> to accept or enter new [ dest [log] file name(s)
```

Enter new file names if you do not want to use the defaults.

Example: Specified File Names

To specify the destination file name, enter the source and destination file names at the prompt. The log file name will be taken from the destination file name.

If you enter `drawing newname`, the files will be named as follows:

```
Source file      : \users\iges\drawing
Destination file : \users\mi\newname
Log file         : \users\mi\newname.l
```

To specify the destination and log file names, enter the source, destination, and log file names at the prompt.

If you enter `drawing newname newlog`, the files will be named as follows:

```
Source file      : \users\iges\drawing
Destination file : \users\mi\newname
Log file         : \users\mi\newlog
```

You also can specify the path for the source, destination and log files. In this case the default directories are ignored, and the absolute path is used for both the destination and log files.

If you enter:

```
\users\project\drawing  \users\output\newname
```

The files will be named and located as follows:

```
Source file      : \users\project\drawing
Destination file : \users\output\newname
Log file         : \users\output\newname.l
```

Translating the Files

When you have entered the file names correctly, press `[Enter]`. The Translator begins the translation. If there is an error with the file names specified, the Translator displays a message about the error, then returns to the main menu.

When the translation is successfully completed, the Translator produces a destination (output) file in the MI format and a log file, then returns to the main menu.

If you have other files to translate, enter the appropriate number and continue. If not, enter `0` to exit. Go to Checking the Translation on page 19 in this chapter to verify the results of the translation.

Batch Translate: IGES to MI (2)

This option translates multiple files from IGES format to MI format.

The following screen appears when you choose this option:

```
Translation : IGES to MI
Default source directory : \dwgs\iges\
Default destination directory : \dwgs\mi\
Enter batch file name :
```

The screen shows the default source and destination directories and prompts you for the batch file name. Each line in the batch file must be a valid response to the `Enter source [dest [log]` file name(s) prompt that appears in the `Translate IGES to MI` (Option 1) screen. Refer to Batch File on page 50 for instructions on creating the batch file.

When you have entered the file name correctly, press `[Enter]`. The Translator begins the translation. If there is an error in the file name specified, the Translator displays a message about the error, exits from the Translator and returns to the operating system.

When the translation has been successfully completed, the Translator produces a destination (output) file in MI format and a log file for each source file specified in the batch file. It also produces a batch log file. Refer to Batch Log File on page 52 for information on the batch log file.

The Translator then exits and returns to the menu. Refer to Checking the Translation on page 19 to check the results of the translation.

Note

The default source and destination directories can be changed by editing the configuration file. Refer to Configuration File (MI to IGES) on page 21 and Configuration File (IGES to MI) on page 38 for more information.

Translate MI to IGES (3)

This option translates a file from the MI format to the IGES format. The following screen appears:

```
Translation : MI to IGES
Default source directory :
Default destination directory :
Enter source [ dest [log] file name(s)
```

The default source and destination directories (if any) are shown. In the example above, the default directories are not specified. Files will be saved in the current directory.

The Translator prompts you for the MI source (input) file name, and optionally the destination (output) file name and the log file name. Enter the information as instructed in the section "Translate IGES to MI (1)" in this chapter. (That section also explains how default output file names are assigned.)

Note

The default source and destination directories can be changed by editing the configuration file. Refer to Configuration File (MI to IGES) on page 21 and Configuration File (IGES to MI) on page 38 for more information.

Batch Translate MI to IGES (4)

This option translates multiple files from MI format to IGES format.

The following screen appears when you choose this option:

```
Translation : MI to IGES
Default source directory :
Default destination directory :
Enter batch file name :
```

The screen shows the default source and destination directories (if any) and prompts for the batch file name. In the example above, the default directories are not specified. Files will be saved in the current directory.

The Translator prompts you for the name of your batch file. Enter the file name, and continue as instructed in the section "Batch Translate IGES to MI (2)" in this chapter.

Note

The default source and destination directories can be changed by editing the configuration file. Refer to Configuration File (MI to IGES) on page 21 and Configuration File (IGES to MI) on page 38 for more information.

Compress/Uncompress IGES (5)

This option converts IGES files to or from a compressed format.

Because compressed files occupy less space on the disk, they are useful for storage purposes. However, files in a compressed format cannot be translated because the translator is unable to interpret this format. The files must be uncompressed before they can be translated.

The Translator recognizes the format of the input file and converts it in the appropriate direction.

The following screen appears when you choose this option:

```
Translation : Compress/Uncompress IGES
Default source directory :
Default destination directory :
Enter source [ dest [log] file name(s)
```

The response to the prompt and the path/file name are handled in the same way as explained in Translate IGES to MI (1) on page 13 except:

- The suffix `.ci` is automatically added to the default destination name for a compressed IGES file.
- The suffix `.i` is automatically added to the default destination name for an uncompressed IGES file (which is in the original IGES format).

Refer to Translate IGES to MI (1) on page 13 for more information on responding to the prompt.

Note

- If you use the `COMPRESS/UNCOMPRESS` command, make sure you set the parameters `source path` and `destination path` in the configuration file `igeso.con` to specify the default source and destination directories for the command. Refer to Function of the Configuration File (MI to IGES) on page 22 for details.
- Most other CAD/CAM/CAE software packages do not support the compressed IGES format. Therefore, it is recommended that you use the uncompressed IGES format for transferring data between CAD/CAM/CAE systems.

  If you transfer compressed IGES files, make sure the receiving system can interpret this format.

Batch Compress/Uncompress IGES (6)

This option converts multiple IGES files to or from a compressed format in batch mode. The following screen appears:

```
Translation : Compress/Uncompress IGES
Default source directory :
Default destination directory :
Enter batch file name :
```

The response to the prompt and the path/file name are handled in the same way as explained in Batch Translate: IGES to MI (2) on page 15 except:

- The suffix `.ci` is automatically added to the default destination name for a compressed IGES file.
- The suffix `.i` is automatically added to the default destination name for an uncompressed IGES file (which is in the original IGES format).

Refer to Batch Translate: IGES to MI (2) on page 15 for information on responding to the prompt. Refer to Batch File on page 50 for information on creating a batch file.

Using the IGES 2D Command Options

The IGES 2D Translator can be run without invoking the screen user interface by using the Run command in the Windows Program Manager or File Manager. All features are available by supplying the appropriate options. To execute The IGES 2D Translator from the Run command line, first click on File and then on Run in Program Manager or File Manager, then do the following:

To translate one or more files (default destination and log file names):

```
\iges\iges.exe [-i, o or c] [-n file] [-e file] files [Enter]
```

To translate in batch mode:

```
\iges\iges.exe [-i, o or c] [-n file] [-e  file] -b batch_file
[Enter]
```

To specify the destination and log file names:

```
\iges\iges.exe [-i, o or c] [-n file] [-e file] -f source [dest
[log] [Enter]
```

The commands and options are defined as follows:

`-i`	Translate from IGES to MI.
`-o`	Translate from MI to IGES.
`-c`	Compress/uncompress of IGES.
`-n`	The following string is the message file name. (Do not edit the message file, `iges.ms`. Use this option to specify the location of the message file when executing the command from a directory other than `mi_iges`.

`-e`	The following string is the configuration file name. (A standard configuration file, `igesi.con` or `igeso.con`, is used by default. Use this option to specify a customized file configuration file if you have created one.)
`files`	The files to be translated.
`-b`	Batch translate. (The default is single translation.)
`-f`	The following strings are the source, destination, and log file names. Refer to Translate IGES to MI (1) on page 13 for details on specifying file names.

Note

Options `-i`, `-o`, and `-c`are mutually exclusive. You must specify one of these options.

Options `-b`, `-f` and files (no option) are mutually exclusive.

The Run command requires that the full name of the IGES 2D Translator, including pathname and extension, be specified, for example, `\iges\iges.exe`.

Options 1 to 6 in the IGES main menu are equivalent to the following IGES command options:

Main Menu	IGES Command
1: Translate IGES to MI	`iges -i`
2: Batch Translate IGES to MI	`iges -i -b`
3: Translate MI to IGES	`iges -o`
4: Batch Translate MI to IGES	`iges -o -b`
5: Compress/Uncompress IGES	`iges -c`
6: Batch Compress/Uncompress IGES	`iges -c -b`

Checking the Translation

After the translation is completed, verify that the translation was successful by checking the log file.

The Translator creates a log file for each file translated. Use this file as follows:

1. Check the direction of translation and the settings of the source and destination file names. This ensures you are looking at the correct log file.

2. Check the values used for the configurable parameters. Make sure these parameters are set correctly. (Refer to Configuration File (MI to IGES) on page 21 or Configuration File (IGES to MI) on page 38 for more information.)

If you translated in batch mode, check the batch log file first. This file contains a one-line comment for each file translated. The comment only indicates whether the translation is successful or not, and no details of a problem are given. If a comment indicates a particular translation was unsuccessful, check the corresponding log file to find out why.

For more information on the batch log file, see Batch Log File on page 52.

Transferring the Files

Once you have checked the log file(s) and are satisfied with the translation, you may need to transfer the output file to the system where it will be used.

If you translated an IGES file into MI format, the output MI file is probably already on the system where it will be used. In this case you do not need to transfer the MI file.

If you translated an MI file into IGES format, the output IGES file will probably be used on an MS-DOS system.

4

Configuration File (MI to IGES)

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During the installation of the IGES 2D Translator, two configuration files are automatically loaded into the `\iges` directory. One configuration file, `igeso.con` translates from MI to IGES format; the other, `igesi.con`, translates from IGES to MI format.

This chapter explains the function and structure of `igeso.con`. It also gives a listing of this file and describes its parameters.

Note

For information about `igesi.con`, refer to Configuration File (IGES to MI) on page 38.

Function of the Configuration File (MI to IGES)

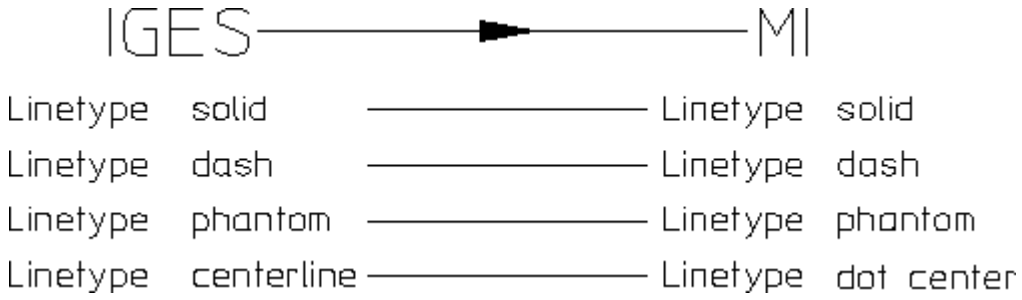
The output configuration file `igeso.con` listed in Listing of the Configuration File (MI to IGES) on page 25 controls the mappings of configurable entities in the IGES 2D Translator. `igeso.con` is used during MI to IGES translations to control the mappings where either the IGES or MI specifications are not available.

Note

`igeso.con` also sets the parameters source directory and destination directory to specify the default source and destination directories for the `COMPRESS/UNCOMPRESS` command. Edit `igeso.con` to set the parameters to the appropriate directories if you use `COMPRESS/UNCOMPRESS`. The other parameters in `igeso.con` are not used during `COMPRESS/UNCOMPRESS`.

Sometimes, more MI options exist for a certain entity than IGES options. For example, MI has 13 linetypes; IGES has only four. Therefore, during MI to IGES translations, the default parameter settings in the file `igeso.con` map several different MI linetypes to the same IGES linetype.

During the translation in the reverse direction, IGES to MI, the default parameter settings in the file `igesi.con` map the four IGES linetypes onto four of the 13 MI linetypes, which are considered to be the best match.



After you have carried out a few translations, you may decide to change some of the default parameter settings contained within the configuration files, either out of personal preference or to improve the translation in specific areas. For example, after an IGES to MI translation has been performed, a certain piece of text may no longer fit into its geometry, as shown in Figure 3. Text Length on page 23.

Figure 3. Text Length

By editing the file `igeso.con` and changing the text width adjust factor from the default of `1` to `0.8`, the width of the text is reduced 20 percent thus allowing the text to fit into its geometry. (Refer to the subsequent section for details on how to edit the `igesi.con` and `igeso.con` files and for listings and explanations of all parameters contained within these files.)

GEAR SPECIFICATION	
TYPE	STRAIGHT BEVEL
TOOTH FORM	CONFLEX
PITCH DIAMETER	44,77
No. OF TEETH	60

Editing the Configuration File (MI to IGES)

Use a text editor to change the parameter settings in `igeso.con`. You can use the built-in Creo Elements/Direct Drafting text editor or any other text editor that works with ASCII files. If you use an editor with special formatting capabilities, be sure to save the file in ASCII format.

If you use the Creo Elements/Direct Drafting editor, start Creo Elements/Direct Drafting, then select the EDIT FILE command from the FILE screen menu. Details about the editor's commands can be found in the help file.

Similarly, you can change the parameter settings in the configuration file `igesi.con`, which translates from IGES to MI.

Structure of the Configuration File (MI to IGES)

The output configuration file `igeso.con` has a specified format:

```
ParameterRange ** Comment : Parameter Value
```

Parameter Range

The Parameter Range defines the range of values for the parameter described by the Comment. Each parameter contained in the configuration file has its own particular range which could be:

A string (255 characters max.)	that is, a directory path name such as `\users\john\iges_fil`
A Boolean expression	that is, ON or OFF
A real number range	that is, = 0
An integer range	that is, < 256

These specified parameter ranges are fixed and cannot be altered.

Comment

The value range is followed by two asterisks (**) and a comment. The comment describes the various parameters contained in the configuration files and can be changed or modified to improve clarity for the individual user.

Note

The comment must be followed by a colon (:).

Parameter Value

The Parameter Value follows the colon. This value can be changed from the original default setting, to a value that falls within the specified Parameter Range.

Note

The order in which the parameters appear in both configuration files must not be altered.

Listing of the Configuration File (MI to IGES)

The following is a listing of the configuration file with default settings as supplied with the system:

```
$$ CoCreate/IGES 2D Translator HP-UX  Rev. 11.00
$$ MI to IGES configuration file
$$
$$ Each line has the format 'Value range  ** comment : 'value'
$$ You may change comments and values
$$ The colon ':' may not be removed
$$
$$ Hatch option          1-Section entity(IGES 2.0)
$$                       2-Sectioned Area entity(IGES 3.0)
$$
$$ Linetype table        0-No pattern specified
$$                       1-Solid  2-Dashed  3-Phantom  4-
Centerline  5-Dotted
$$
$$ Arrow head type       1-Wedge          2-Triangle         3-
Filled Triangle
$$                       4-No Arrowhead   5-Circle           6-
Filled Circle
$$                       7-Rectangle      8-Filled Rectangle 9-
Slash
$$                      10-Integral Sign 11-Open Triangle   12-
Dimension Origin
$$
$$ Balloon option        1-Flag Note  2-Lines and Circular Arcs
$$
$$ Default unit          1-Inches         2-Milimeters  4-Feet
5-Miles
$$                       6-Meters         7-Kilometers  8-Mils
9-Microns
$$                      10-Centimeters   11-Microinches
$$
$$ File output format    IGES  - No line delimiter
$$                       HP-UX - <LF>
$$                       DOS   - <CR><LF>
$$
$$ Drafting standard code   0-No standard specified
$$                          1-ISO 2-AFNOR 3-ANSI 4-BSI 5-CSA 6-DIN
7-JIS
$$
$$ For a detailed explanation of each parameter refer to the IGES
manual
$$
String   ** Source path                          :
String   ** Destination path                     :
ON/OFF   ** Create root part                     : ON
```

```
ON/OFF   ** Translate simple geometry           : ON
ON/OFF   ** Translate splines                   : ON
ON/OFF   ** Translate construction lines        : ON
ON/OFF   ** Translate dimensions                : ON
ON/OFF   ** Translate hatch                     : ON
ON/OFF   ** Translate text and leaders          : ON
Real >0  ** Pattern length( 1 DASHED)           : 8.0
Real >0  ** Pattern length( 2 DOTTED)           : 8.0
Real >0  ** Pattern length( 3 DOT_CENTER)       : 8.0
Real >0  ** Pattern length( 4 DASH_DOT_DOT)     : 8.0
Real >0  ** Pattern length( 5 LONG_DASHED)      : 8.0
Real >0  ** Pattern length( 6 DASH_CENTER)      : 8.0
Real >0  ** Pattern length( 7 PHANTOM)          : 8.0
Real >0  ** Pattern length( 8 old PHANTOM)      : 8.0
Real >0  ** Pattern length( 9 SHORT_DASH)       : 8.0
Real >0  ** Pattern length(10 CENTER_DASH_DASH) : 8.0
Real >0  ** Pattern length(11 LDASH_SDASH)      : 8.0
Real >0  ** Pattern length(12 LDASH_2X_SDASH)   : 8.0
ON/OFF   ** RGB colors                          : ON
ON/OFF   ** General Symbols                     : ON
ON/OFF   ** C-Spline conversion                 : OFF
1-10     ** Max number of arcs                  : 10
Real >=0 ** Maximum arc radius (mm)             : 0.0
Real >=0 ** Minimum arc radius (mm)             : 0.0
Real >=0 ** Minimum arc length (mm)             : 0.0
ON/OFF   ** DimGeo                              : ON
ON/OFF   ** Store Pixel Data                    : OFF
1-2      ** Hatch option 1-section,2-area       : 2
0-5      ** Linetype  0 SOLID                   : 1
0-5      ** Linetype  1 DASHED                  : 2
0-5      ** Linetype  2 DOTTED                  : 5
0-5      ** Linetype  3 DOT_CENTER              : 4
0-5      ** Linetype  4 DASH_DOT_DOT            : 3
0-5      ** Linetype  5 LONG_DASHED             : 2
0-5      ** Linetype  6 DASH_CENTER             : 2
0-5      ** Linetype  7 PHANTOM                 : 3
0-5      ** Linetype  8 (old PHANTOM)           : 3
0-5      ** Linetype  9 SHORT_DASH              : 2
0-5      ** Linetype 10 CENTER_DASH_DASH        : 3
0-5      ** Linetype 11 LONG_DASH_SHORT_DASH    : 2
0-5      ** Linetype 12 LONG_DASH_2XSDASH       : 3
1-3      ** Translate MI Pensize / Linesize     : 3
Int >=0  ** Label level                         : 111
Int >=0  ** Construction line level             : 222
Int >=0  ** DimGeo level                        : 333
1-12     ** Arrow head type (MI triangle)       : 1
1-2      ** Balloon option 1-flag 2-geom.       : 2
Real >0  ** Text width adjust factor            : 1.0
Int <256 ** Default character                   : 32>
Real >0  ** Dim text width adjust factor        : 1.0
String   ** Dimension text font                 : hp_i3098_v
```

```
1,2,4-11 ** Default unit                        : 2
String   ** File output format                  : IGES
String   ** Product ID (sending system)         :
String   ** Product ID (receiving system)       :
String   ** Author                              :
String   ** Organization                        :
0-7      ** Drafting standard code              : 0
Str/File ** IGES start section                  :
```

Description of Parameters (MI to IGES)

Source Path

This parameter specifies a directory path name from which the input file for the translation is read. The specified path name is prefixed to the input filename unless an absolute path name is specified. The `source path` is by default left blank, which has the same effect as specifying the current directory.

Example:
`\users\john\`

Destination Path

This parameter specifies a directory path name to which the output file from the translation is written. The specified path name is prefixed to all output filenames unless an absolute path name is specified. The `destination path` is by default left blank, which has the same effect as specifying the current directory.

Example:
`\users\john\`

Translate Root Part

The `root` part of an MI drawing will be translated into an IGES `subfigure` instance with a `subfigure` definition. For receiving systems that cannot load this IGES subfigure and definition, select the `OFF` option.

Note

If the `OFF` option is used, the complete drawing will still be transferred.

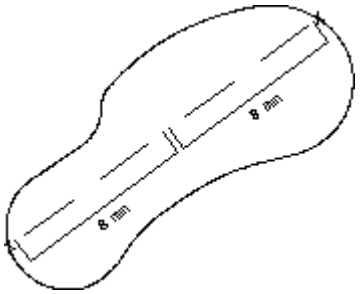
Translate

The six translate options determine whether particular elements, such as splines and hatches will be translated. ON, the default Boolean setting, means the element will be translated, OFF means it will not be translated.

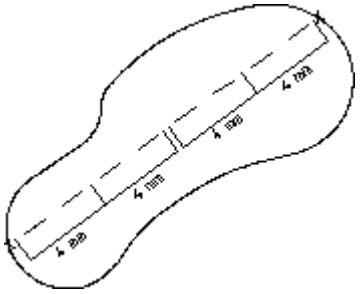
Pattern Length

The pattern lengths refer to the length of hatch line-patterns. The parameter value is a real number in millimeters; the default setting is 8 millimeters. This value defines a length into which the particular pattern has to be fitted. For example, a length of four millimeters would compress the pattern into half the default length. Refer to diagram.

Default Setting



Parameter Value of 4



RGB Colors

ON results in an exact representation of the RGB color, using IGES color definition entities.

Note

If the post-processor does not support the color definition entity, you must choose OFF.

General Symbols

This parameter decides whether `General Symbols` or `IGES 1001` symbol font is used. `ON` means `General Symbols` is used; `OFF` means `IGES 1001` is used.

Note

When `General Symbols` is not used, some surface symbols will not be translated.

C-Spline Conversion

This parameter decides the form into which a spline is to be converted. `ON` results in a spline being represented as lines and arcs. `OFF` results in a spline-to-spline conversion.

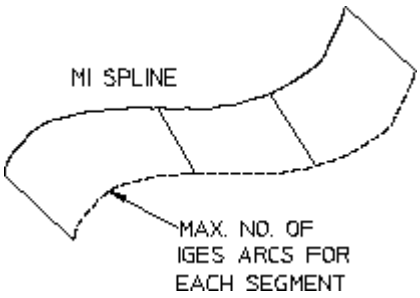
Note

When this parameter is `ON`, the IGES file size may be increased by a factor of ten.

MI B-splines are not affected by this switch (`ON` or `OFF`).

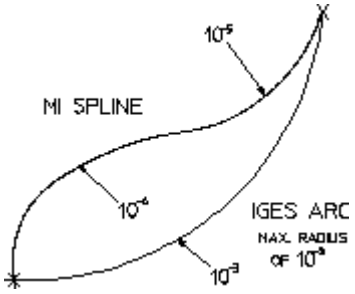
Max Number of Arcs

The parameter value is an integer defining the maximum number of IGES arcs that may be used when converting each MI spline segment. (Refer to diagram below.) The translator may use fewer arcs than the maximum but will never use more.



Maximum Arc Radius

This parameter value is a non-negative real number defining in millimeters the maximum radius an IGES arc may take when MI splines are translated. For example, if the spline contains two segments, one of radius 0.000001mm and the other of radius 0.00001mm, and the parameter value is set to 0.001mm, then these two segments might be translated as one arc of radius 0.001mm. (Refer to the following diagram.)



Note

A value of zero (default setting) imposes no limits on the translation.

Minimum Arc Radius

This parameter value is a non-negative real number, which defines in millimeters the minimum radius of an IGES arc during the translation of MI spline segments.

Note

A value of zero (default setting) imposes no limits on the translation.

Minimum Arc Length

This parameter value is a non-negative real number, which defines in millimeters the minimum length of an IGES arc during the translation of MI spline segments.

Note

A value of zero (default setting) imposes no limits on the translation.

DimGeo

To translate the HP-Draft dimensioning correctly, some additional geometry must be written. This Boolean parameter controls whether this additional HP-Draft geometry is translated. `ON` filters out all additional HP-Draft geometry, `OFF` allows the additional geometry to be translated. This parameter has no effect on Creo Elements/Direct Drafting geometry regardless of the parameter setting.

Store Pixel Data

This parameter specifies whether or not to save an image (pixmap) in a separate MI file. The translator does not support images. `ON` means to save the image in separate file: `OFF` means not to save it. The default is `OFF`.

If the switch is set to `ON` and the output directory does not have write permissions for the pixel data file, an error message is written to the log file.

Hatch Option 1-section, 2-sectioned Area

This parameter selects the hatch conversion type. If the destination system is compatible with IGES revision 3.0, select a value of `2`. The hatch will then be translated as area hatch. Otherwise select a value of `1`, which will translate the hatch lines without bounding curves (section hatch—IGES revision 1.0 and 2.0).

Note

Setting the hatch option to `1` can greatly increase the size of the output IGES file, since all of the hatching lines will be written out as individual lines.

Linetype Table

The linetype table parameters control the mapping of the 13 MI linetypes to the four IGES linetypes. The parameter values for the IGES linetypes range from `0` to `5`.

IGES linetypes

0	no pattern specified
1	solid linetype
2	dashed linetype
3	phantom linetype
4	center line linetype
5	dotted linetype

Translate MI Pensize / Linesize

Depending on the specified value, pensize or linesize of an entity is translated either into an IGES lineweight or 0.

Value	Translation
1	translate pensize and linesize into lineweight
2	translate pensize and linesize into 0
3	translate pensize into lineweight and linesize into 0

The default setting is `3`.

Label Level

This is a parameter with an integer range, which specifies the IGES level on which all NC labels should be placed. The default setting is `111`.

Construction Line Level

This parameter also has an integer range and specifies the IGES level on which all construction geometry should be placed. The default setting is `222`.

DimGeo Level

To translate the HP-Draft dimensioning properly, some additional geometry has to be written. This is a parameter with an integer range, which specifies the IGES level on which all additional HP-Draft geometry should be placed. The default setting is `333`.

Arrow Head Type (MI triangle)

The MI triangular arrow head shown in Figure 9. MI Triangular Arrow Head on page 32 is not supported by IGES and must be mapped to one of the other 12 IGES arrow heads as in Figure 10. IGES Arrow Heads on page 33.

Figure 9. MI Triangular Arrow Head

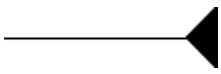
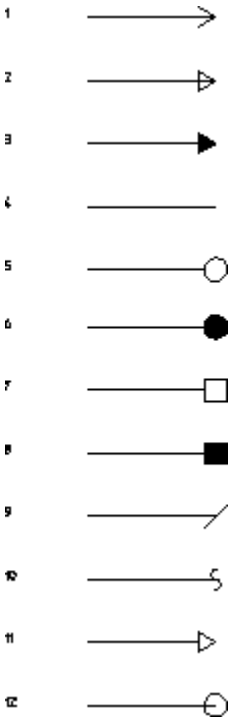
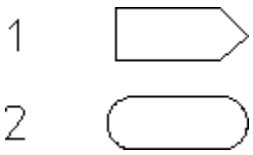


Figure 10. IGES Arrow Heads



Balloon Option 1-flag, 2-geometry

This parameter converts the MI text balloons. The value `1` converts the balloon as an IGES flag note, the value `2` converts the balloon into geometry consisting of straight lines and arcs, which will appear on the translated drawing in the shape of a balloon.



Text Width Adjust Factor

This parameter adjusts the width of text. The width of the text is multiplied by the value specified, and the text is adjusted accordingly during translation. For example, a value of `0.9` will reduce the width 10 percent; a value of `1.2` will increase the width 20 percent.

Default Character

This parameter is used during the mapping of 8-bit MI characters to 7-bit IGES fonts. The parameter value specified is an integer which refers to an ASCII character to be used when there is no counterpart in the IGES fonts for the MI characters. The default ASCII-character, `32`, maps these characters to a blank.

Note

Any negative parameter value, for example `-1`, will translate the MI characters directly into the IGES file. The characters will not be altered in any way from their original form.

Dim Text Width Adjust Factor

This parameter adjusts the width of dimension text. The width of the dimension text is multiplied by the value specified, and the text is adjusted accordingly during translation. For example, a value of `0.9` reduces the width by 10 percent; a value of `1.2` increases the width 20 percent.

Dimension Text Font

This parameter value is a string specifying the font to be used to calculate the width of dimension text during translation. The default setting is `osd_default`.

Note

If the parameter is set to anything other than a font supplied by Creo Elements/Direct Drafting, the file containing the font information must have the same name as the default font (`osd_default`).

Default Units

If the MI units of measurement used are not available in IGES (for example, yards), this parameter will specify the units to be used. The parameter value must be an integer. The default setting is `2` (millimeters).

IGES Units

1	Inches
2	mm

IGES Units (continued)

3	unavailable
4	Feet
5	Miles
6	Meters
7	Km
8	Mils
9	Microns
10	cm
11	Micro inches

File Output Format

This parameter lets you to specify the appropriate output file format for the target operating system. The following values may be used:

IGES	No line delimiters are used. This is the default value because it conforms to the IGES specification.
HP-UX	Line delimiter is a Linefeed character.
DOS	Line delimiters are Carriage Return and Linefeed characters.

The following five parameters belong to the global section. The global section of the file contains information describing the pre-processor and information needed by the post-processor to handle the file. All the parameter values for the following five parameters are copied directly from the configuration file into the IGES global section.

Product ID (sending system)

This parameter is a name used by the sender to reference the product. The parameter value should be a string.

In order to invoke the Kanji conversion for Japanese Kanji texts, the sending system should be set to `japanese` or `JAPANESE`. The string should be one of the following:

```
String   ** Product ID (sending system)          : JAPANESE
```

or

```
String   ** Product ID (sending system)          : japanese
```

Product ID (receiving system)

This parameter is a name to be used by the receiver to reference the product. The parameter value should be a string.

Author

This parameter is the name of the person who generated the data in the specific file. The parameter value should be a string.

Organization

This parameter is the organization or group with which the author is associated. The parameter value should be a string.

Creo Elements/Direct Drafting Standard Code

A parameter value between `0` and `7` specifies the drafting standard that was used during the generation of the specific file. The default value is `0`. Table 44 on page 36 explains the values.

Table 44

Value	Drafting Standard
0	None—standard specified
1	ISO—International Organization for Standardization
2	AFNOR—French Association for Standardization
3	ANSI—American National Standards Institute
4	BSI—British Standards Institute
5	CSA—Canadian Standards Institute
6	DIN—German Institute for Standardization
7	JIS—Japanese Institute for Standardization

IGES Start Section

This parameter belongs to the start section. This section should contain information about the specific IGES file to aid communication between operators. The parameter value should be a string or filename of arbitrary length.

Note

When entering a filename, it must be enclosed with single quotes. For example: `'PISTON'`

Font Mapping

At the end of the configuration file there is the font-mapping table. If the mapping table is missing, the internal font-mapping table is used. Fonts which are not in the table are also mapped by the internal table. The format of the table is:

```
MI font font_name ==> IGES font nr
```

Example:

```
MI font hp_i3098_v ==> IGES font 5
```

Limitations

- It is only possible to map regular IGES fonts. These are number 1 to 18 and number 1001 to 1002.
- The mi font `hp_Y14.5` can only be mapped if the General Symbols parameter is `OFF`. (But normally this font should not be mapped.)
- MI fonts that are used for mapping must be available in binary format.

To refresh your memory on the font translation procedure, do the following:

1. Start Creo Elements/Direct Drafting
2. Load your font into Creo Elements/Direct Drafting (INPUT 'font_file')
3. STORE_FONT 'font_name' 'bin_font_file' (STORE_FONT 'new_font' 'new_font')

   The name of the fontfile has to be the same as the name of the font itself.
4. The binary format of the font can be found in 'new_font'.

5

Configuration File (IGES to MI)

Function of the Configuration File (IGES to MI) 39
Description of Parameters (IGES to MI)..... 39

During the installation of the IGES 2D Translator, two configuration files are automatically loaded into the `\iges` directory. One configuration file, `igeso.con` translates from MI to IGES format; the other, `igesi.con`, translates from IGES to MI format.

This chapter explains the function and structure of `igesi.con`. It also gives a listing of this file and describes its parameters.

Note

For information about `igeso.con`, refer to Configuration File (MI to IGES) on page 21.

Function of the Configuration File (IGES to MI)

The input configuration file `igesi.con` listed in the section "Listing of Configuration File (IGES to MI)" controls the mappings of configurable entities in the IGES 2D Translator. `igesi.con` is used during IGES to MI translations to control the mappings where either the IGES or MI specifications are not available.

Note

- The file `igesi.con` is not used during the `COMPRESS/UNCOMPRESS` command.
- `igesi.con` has a similar function and structure to the output configuration file `igeso.con`. Refer to the sections Function of the Configuration File (MI to IGES) on page 22 and Structure of the Configuration File (MI to IGES) on page 23 for more details of the function and structure of the configuration file `igesi.con` and how to edit it.

Description of Parameters (IGES to MI)

Source Path

This parameter specifies a directory path name from which the input file for the translation is read. The specified path name is prefixed to the input filename unless an absolute path name is specified. The source path is by default left blank, which has the same effect as specifying the current directory.

Example:
```
\users\john\
```

Destination Path

This parameter specifies a directory path name to which the output file from the translation is written. The specified path name is prefixed to all output filenames unless an absolute path name is specified. The destination path is by default left blank, which has the same effect as specifying the current directory.

Example:
```
\users\john\
```

Default Color

This parameter value must be an integer between `0` and `7` which specifies the MI color to be used if the IGES color is unassigned or unspecified. The default setting is `7`.

MI colors

0	black
1	red
2	green
3	yellow
4	blue
5	magenta
6	cyan
7	white

Default Linetype

This parameter value must be an integer between `0` and `12` which specifies the MI linetype to be used if the IGES linetype is unassigned or unspecified. The default setting is `0`.

Table 50

0*	SOLID
1*	DASHED
2*	DOTTED
3*	DOT_CENTER
4	DASH_DOT_DOT
5*	LONG_DASHED
6*	DASH_CENTER
7*	PHANTOM
8	old PHANTOM
9	SHORT_DASH
10*	CENTER_DASH_DASH
11	LONG_DASH_SHORT_DASH
12	LONG_DASH_2x_SHORT_DASH

*Currently valid in Creo Elements/Direct Drafting. Additional linetypes provided for compatibility with earlier releases.

Translate IGES Lineweight

Depending on the specified value, the lineweight of an entity in IGES is translated into MI pensize, linesize, or 0.

Value	Translation
1	translate lineweight into pensize
2	translate lineweight into linesize
3	translate lineweight into 0

The default setting is 1.

Linetype Table

The linetype table parameters control the mappings of the four IGES linetypes to the 13 MI linetypes. The parameter values for the MI linetypes range from `0` to `12`. See Table 50 on page 40 for a list of linetypes.

Default Length Unit Factor

This parameter specifies the default length in millimeters for the MI unit if the IGES units are not recognized. The parameter value must be a real number greater than zero; the default setting is `1`. For example, if yards are used in IGES, the default length could be set to `912`, thus translating one yard as `912` millimeters.

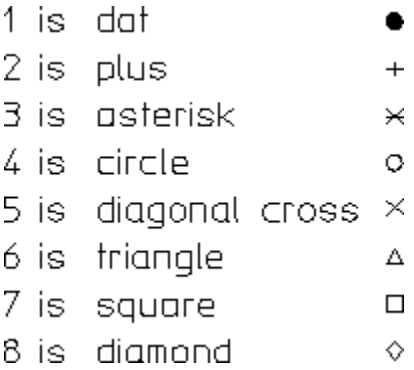
Associated Text

These three parameters represent strings to be added as info attributes to all entities of the specified type. Three values should be specified: for hatch lines, witness lines, and center lines, respectively. These parameters can be blank, which means the attributes are not used in the entities.

Marker Type

This parameter represents the eight MI marker types that will be mapped onto the one IGES marker type. The default setting is `1`.

MI Markertypes



Text Font Spacing

The parameter value here is a string representing the type of spacing to be used for text. The two options are `constant` and `variable`. Variable is the default setting.

Note

The text width remains the same regardless of which option is chosen. The appearance of the text itself, however, is different.

Text Width Adjust Factor

This parameter adjusts the width of the text. The width will be multiplied by the value specified and the text will be adjusted accordingly during translation. For example, a value of `0.9` reduces the width by 10 percent; a value of `1.2` increases the width by 20 percent.

Default Text Font

This parameter value is a string which defines the MI text font to be used during translations for the IGES text fonts `1` to `7` and `10` to `17` inclusive.

Values	Input IGES text fonts	Output MI text fonts
1	Standard Block	default text font*
2	LeRoy	default text font
3	Futura	default text font
4	Fastfont	default text font
5	Calcomp	default text font
6	Comp 80	default text font

Values	Input IGES text fonts	Output MI text fonts
7	Micro-Film Standard	default text font
8	ISO Standard	hp_i3098_c(v)
9	DIN Standard	hp_d17_c(v)
10	Military Standard	default text font
11	Gothic	default text font
12	News Gothic	default text font
13	Lightline Gothic	default text font
14	Simplex Roman	default text font
15	Italic	default text font
16	APL	default text font
17	Century Schoolbook	default text font
18	Helvetica	hp_block_c(v)
1001	Symbol Font 1	hp_i1001_c(v)
1002	Symbol Font 2	hp_i1002_c(v)
1003	Creo Elements/Direct Drafting Font	hp_i1003_c(v)
2001	Kanji	hp_kanji_c

*The default font is `osd_default`.

Note

If a default text font is to be anything other than the font supplied by Creo Elements/Direct Drafting, the file containing the font information must have the same name as the default font (`osd_default`).

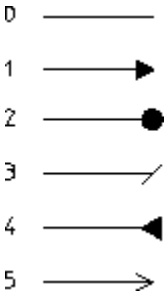
Fill Characters

This parameter specifies if text created in a block font should be filled or not. `ON` means to fill the text. `OFF` means no fill. The default is `ON`.

Arrow

These ten options define the mapping of the IGES arrow heads to the five MI arrow heads.

MI Arrow Heads



The following five parameters belong to the global section. The global section of the file contains information describing the pre-processor and information needed by the post-processor to handle the file. All the parameter values for the following five parameters will be copied directly from the configuration file into the MI global section.

User Specified MI Filename

This parameter should be a string specifying a name for the MI file.

MI File Description

This parameter should be a string giving a description of the MI file.

Model Revision Code

This parameter should be a string specifying the revision number for the particular file.

Creator

This parameter allows you to enter the name of the person who created the data in the file. The parameter value should be a string.

Department

This parameter allows you to enter the name of the department responsible for creating the data in the file. The parameter value should be a string.

Translate

The 22 translate options determine whether particular elements (such as offset curve, conic arc, and so on) will be translated. `ON`, the default means an element will be translated. `OFF` means it will not be translated.

Spline Interpolation Points

This value is a factor applied to the default number of points used in a spline interpolation; more points result in a higher accuracy. Spline interpolation is used for post-processing of conic arcs, offset curves, parametric spline curves and B-spline curves.

For example, a factor of two results in twice as many points being used.

Spline Damp Value

This parameter controls the rigidity of a spline. The higher the damp value, the greater the rigidity.

Smash Parts Flag

This parameter smashes the IGES subfigures when set to `ON`. If you want to transfer views of IGES subfigures containing 3D model data, this parameter must be set to `ON` to get an accurate transfer of drawings.

Generate B-Spline Flag

If this parameter is set to `ON` all IGES B-splines (BSPL) that are non-rational are translated to MI B-splines (BSPL). All other splines are translated to C-splines (SPL). If this parameter is set to `OFF`, only C-splines are generated. The default is `ON`.

Associative Dimensions Flag

If this parameter is set to `ON`, IGES linear dimensions, angular dimensions, radius dimensions and diameter dimensions are translated to Creo Elements/Direct Drafting associative dimensions. (To read associative dimensions, CoCreate Drafting version 3.0 or CoCreate Modeling version 2.0 or higher is required.) However, if the dimensions cannot be translated into Creo Elements/Direct Drafting dimensions, they are translated into text and lines.

If this parameter is set to `OFF`, all IGES dimensions are converted to text, lines and leader lines.

Associated Text (converted dimensions)

In some cases, the IGES dimensions are incompatible with Creo Elements/Direct Drafting dimensions. When this occurs, the IGES dimensions are converted to text and lines, and a user-specified text is associated to them if the associative dimensions flag is set to `ON`. The purpose of this text is to enable the user to identify any such converted dimensions in Creo Elements/Direct Drafting.

Drawing Name/Number

This parameter enables you to select a drawing for translation from a collection of drawings in an IGES file (an IGES file can contain more than one drawing). The parameter value can be a string or an integer. If it is a string, it indicates the name of the drawing to be translated. If it is a number, it indicates the position within the IGES file of the drawing to be translated.

DTF Flag

The seven DTF Flag options are described in the following.

Linear Unit

This parameter specifies the default Dimension Code for linear dimensions. These are the units the dimension value is measured in. The default is 0. The options you can specify are:

- 0–selects a value from the IGES global data-unit flag with natural mappings
- 1–millimeter
- 2–centimeter
- 3–meter
- 4–kilometer
- 5–decimal inch with unit abbreviation "
- 6–fractional inch with unit abbreviation "
- 7–feet and fractional inch without unit abbreviation
- 8–feet and fractional inch with signed notation (' ")
- 9–feet and fractional inch with text notation (FT, IN)

Angular Unit

This parameter specifies the default Dimension Code for angular dimensions. These are the units the dimension value is measured in. The default is 10. The options you can specify are:

- 10–degree in decimal notation
- 11–degrees, minutes, seconds
- 12–radian
- 13–gradian (grad)

Sign and Zero Suppression Code

This is the sum of the following values:

0	Trailing zeros are displayed

or

1	Trailing zeros are suppressed

Plus

0	Leading zeros are displayed

or

2	Leading zeros are suppressed

Plus

0	+ and - signs are not displayed

or

4	+ and - signs are displayed

The default is 0.

Linear Fractional Resolution

Use this parameter to specify the fractional resolution:

- If the linear dimension is in fractional units, this parameter represents the value of the fractional denominator.
- If the linear dimension is in decimal notation, this parameter represents the maximum number of digits following the decimal point or decimal comma.

Angular Fractional Resolution

If the angular dimension is in decimal notation, this parameter represents the maximum number of digits following the decimal point or decimal comma.

Radix Marker

This parameter specifies the character to be used for a radix marker. The default value is 0. The options you can specify are:

- 0–period
- 1–comma

The decimal comma is not supported by Creo Elements/Direct Drafting.

DE Debug Flag

This parameter is used for problem analysis. When set to `ON`, the program adds INFO in the form `` `DE: xxxx' `` to each translated entity. The INFO identifies the IGES entity from which it was derived. This can significantly increase the size of the MI file and should be done only for debugging purposes.

When set to `OFF`, no debugging is done.

MI Start Section

This parameter belongs to the start section. This section should contain information about the specific MI file to aid communication between operators. The parameter value should be a string or filename of arbitrary length.

Note

When entering a filename, it must be enclosed in single quotes. For example: `'PISTON'`.

Font Mapping

At the end of the configuration file there is the font-mapping table. If the mapping table is missing, the internal font-mapping table is used. Fonts which are not in the table are also mapped by the internal table. The format of the table is:

```
IGES font nr ==> MI font font_name
```

Example:

```
IGES font 8 ==> MI font hp_i3098_v
```

Limitations

- It is only possible to map regular IGES fonts. These are number 1 to 18 and number 1001 to 1002.
- The mi font `hp_Y14.5` can only be mapped if the General Symbols parameter is `OFF`. (But normally this font should not be mapped.)
- MI fonts that are used for mapping must be available in binary format.

6

Log File

A Log File consists of three main sections:

- The first section contains information about the direction of the translation, that is, from IGES to MI or from MI to IGES. It also lists the names of the input (source) file and the output (destination) file for the translation.
- The second section lists the values or settings of all the parameters in the configuration file used for the translation.
- The third section lists all the warnings and errors that it encounters during the translation, and concludes with a translation summary.

7

Batch File

Creating a Batch File 51

The IGES 2D Translator can run in Batch Mode, which enables you to translate more than one file at a time. Refer to the sections "Batch Translate IGES to MI" and "Batch Translate MI to IGES" in Chapter 3 for details of how to run the translation in batch mode.

To translate in batch mode, you must create a Batch File as described in the next section Creating a Batch File on page 51. A batch file is a text file where each line contains an input string to the prompt:

```
Enter source [ dest [ log ] file name(s):
```

This prompt comes up on the screen when you select either Option 1 or Option 3 from the main menu of the IGES 2D Translator. Refer to Running the IGES 2D Translator on page 11 for more information responding to the prompt.

The following is a listing of a batch file:

```
test1
test2 test2.out
test3 test3 testlog
```

Creating a Batch File

To create the batch file, you can use the built-in Creo Elements/Direct Drafting editor or any other text editor that works with ASCII files. If you use a text editor with special formatting capabilities, be sure to save the file in ASCII format.

If all the files for translation are in one directory, an easy way to create the required batch file is shown below:

Windows-Based Systems:

```
dir /w \path\directory > batchfile [Enter]
```

This command lists the directory called `directory` into a file called `batchfile`, which is the batch filename you specify in your batch translation. The file may need further editing if you want to specify destination names or modify suffixes, or if you used the `DIR` command to generate it.

8

Batch Log File

The IGES 2D Translator can run in Batch Mode, which enables you to translate more than one file at a time. Refer to the sections Batch Translate: IGES to MI (2) on page 15 and Batch Translate MI to IGES (4) on page 16 for details of how to run the translation in batch mode.

At the end of a batch translation, the Translator produces a Batch Log File in addition to log and output files for each translated file.

A batch log file consists of two main sections. The first section contains information about the direction of translation, that is, from IGES to MI or from MI to IGES. The second section gives a one-line description of the translation for each file in the batch file. This one-line description indicates briefly the result of each translation so that you can go back and check a file if there are some errors encountered during translation.

The following is a listing of a batch log file:

```
Translation : IGES to MI
No Errors/Warnings in IGES file 'test1'.
** Errors/Warnings in IGES file 'test2'. See log file 'test1.2'
No Errors/Warnings in IGES file 'test3'.
** Errors/Warnings in IGES file 'test4'. See log file 'test1.4'
```

9

Output File

Listing of an MI Output File....54
Listing of an IGES Output File....56

At the end of each translation, the IGES 2D Translator produces an output file, which contains a translated version of the input file. The output file is either an MI file or an IGES file, depending on the direction of the translation. Refer to the following sections for listings of these output files.

Listing of an MI Output File

The following is a listing of an MI output file:

```
#~1
Creo Elements/Direct ME IGES 2D Translator  <OP-SYS>  Rev. xx.xx
#~2
2
TC41:1
TC5:3
Top`~1
3
TC61:4
TC62:6
PLAST:6
LAST:6
#~3
workfile.i.m

21-Sep-93
10:47:29

22-Sep-93
11:10:14

Creo Elements/Direct ME IGES 2D Translator  <OP-SYS>  Rev. xx.xx
2.20
2D
-75
75
-75
75
0
0
0
XX
1
mm
rad
7.5E-11
7.5E-11
32
1
1
1
0
0
0
0
1
0
0
```

```
0
0
1
0
0
0
0
1
3
0
0
0
35
#~41
PSTAT
1
0
0
|~
ASSP
2
3
LAYER: 1
LAYER: 2
LAYER: 3
|~
#~5
ASSE
3
1
1
Top`~1
1
0
0
0
0
0
|~
#~6
Top`~1
#~61
P
4
25
25
|~
P
5
75
75
```

```
|~
#~62
LIN
6
7
0
0
1
2
4
5
|~
##~~
```

Listing of an IGES Output File

The following is a listing of an IGES output file:

```
Creo Elements/Direct ME IGES 2D Translator  <OP-SYS>  Rev. xx.xx
S      1
,,,10Hworkfile.i,46HHP ME IGES 2D Translator  <OP-SYS>  Rev. xx.
xx,     G      1
20H<OP-SYS>  Rev. xx.
xx,32,308,15,308,15,,1.0,2,2HMM,32767,3.2767D1,    G      2
13H930921.111013,7.5D-11,7.5D1,,,9,0,13H930921.104729;
G      3
     406       1       0       1       0       0       0
000000201D      1
     406       0       0       1       1       0       0  LEVELS
0D      2
     110       2       0       1      -1       0       0
000010201D      3
     110       0       8       1       0       0       0    LINE
0D      4
     308       3       0       1       0       0       0
000000201D      5
     308       0       0       1       0       0       0  SUBFIG
0D      6
     408       4       0       1       0       0       0
000000301D      7
     408       0       0       1       0       0       0SUB INST
0D      8
406,3,1,2,3,0,0;
1P      1
110,2.5D1,2.5D1,0.0,7.5D1,7.5D1,0.0,0,0;
3P      2
308,0,3HTop,1,3,0,0;
5P      3
408,5,0.0,0.0,0.0,1.0,0,0;
7P      4
```

```
S       1G      3D      8P      4
T       1
```

10

IGES to MI Entity Mappings

This chapter contains an entity mapping table, which lists all the entities supported by the IGES 2D Translator. Most entities are represented pictorially.

Table 55. Simple Geometry (IGES to MI)

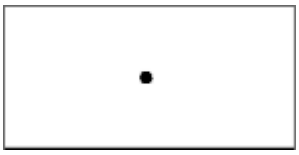
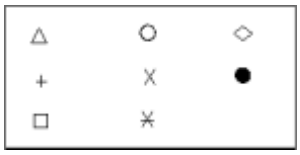
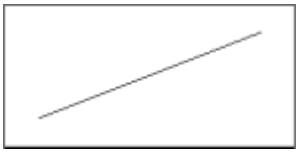
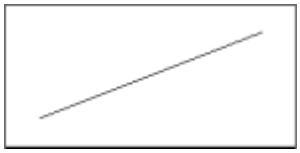
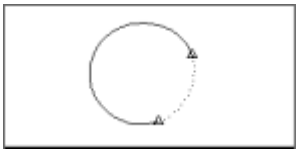
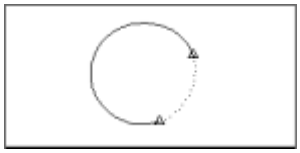
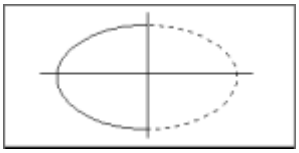
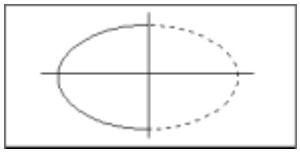
Points		Polymarker	
Line		Line	
Circular arc		Arc or circle	
Conic arcs			
Elliptical, Hyperbolic, Parabolic		Spline (SPL)	
Parametric			

Table 55. Simple Geometry (IGES to MI) (continued)

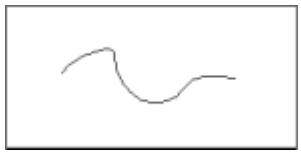
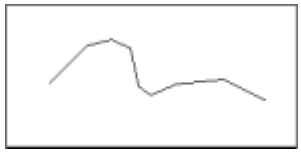
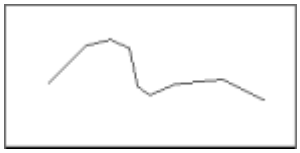
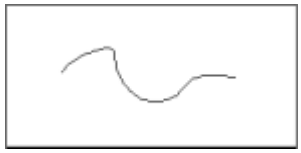
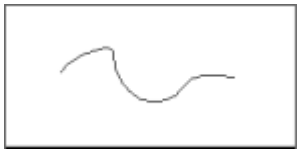
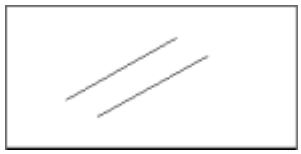
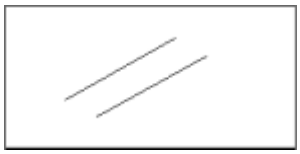
splines			
Non-linear		Spline (SPL)	
Linear		Polyline	
B-spline (non-rational)		1. B-spline (BSPL — depends on current B-spline setting) or 2. Spline (SPL)	
B-spline (rational)		Spline (SPL)	
Offset curves		Line or arc or spline (SPL)	

Table 55. Simple Geometry (IGES to MI) (continued)

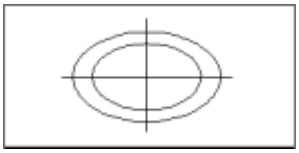
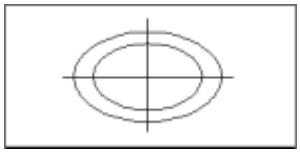
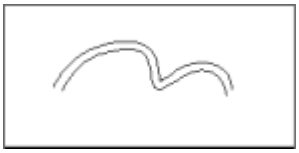
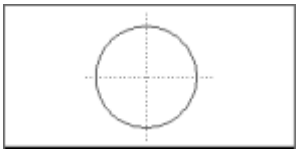
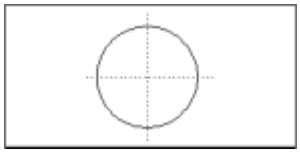
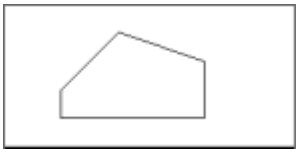
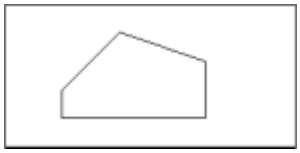
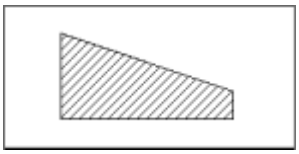
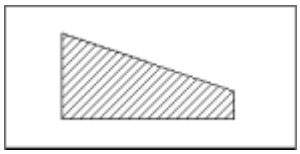
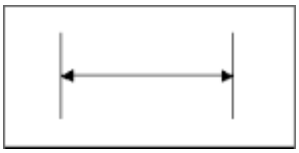
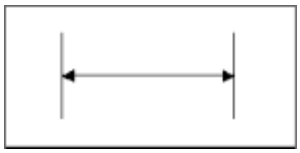
			
			
Copious data		Polymarker, lines or leader (without arrow)	
			
			
			

Table 55. Simple Geometry (IGES to MI) (continued)

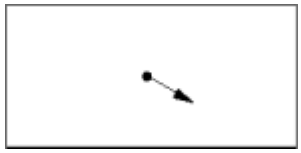
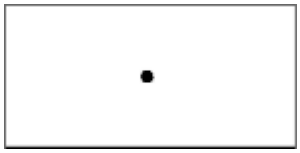
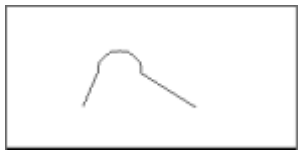
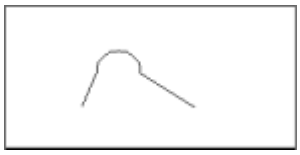
			
Compo-site curve		Composite curve	

Table 56. Annotation (IGES to MI)

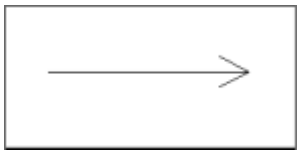
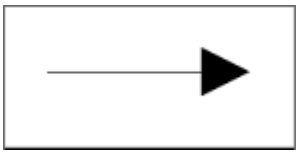
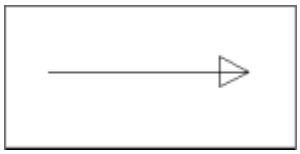
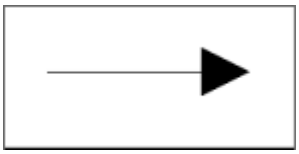
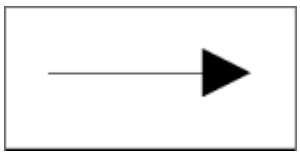
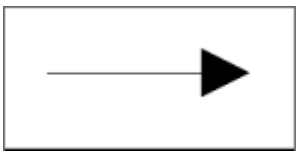
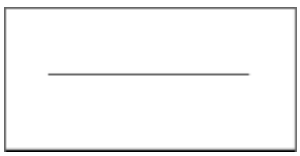
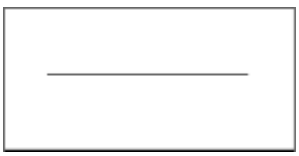
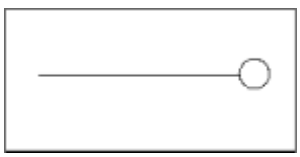
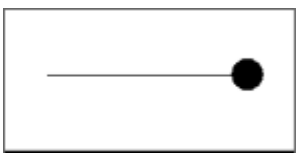
Flag note		Text and lines	
Leader arrow		Leader arrow	
			
			
			
			

Table 56. Annotation (IGES to MI) (continued)

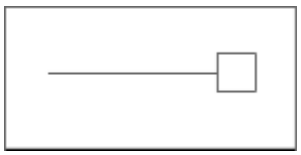
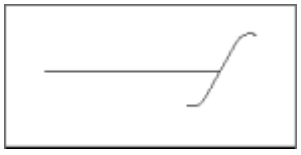
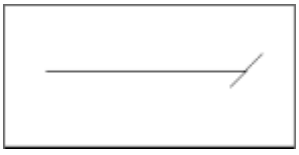
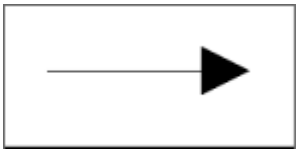
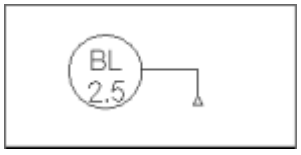
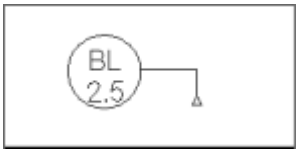
(Leader arrow continued)			
			
			
			
Point dimension		Leader line and circle, arc or composite curve and text	

Table 56. Annotation (IGES to MI) (continued)

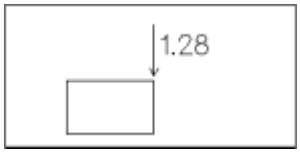
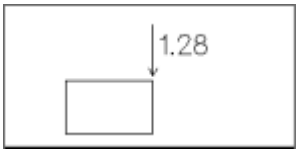
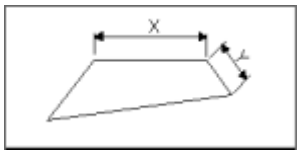
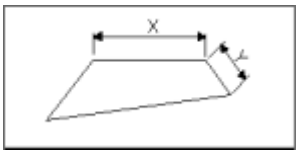
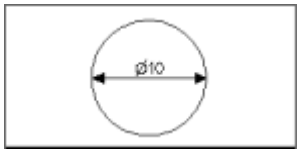
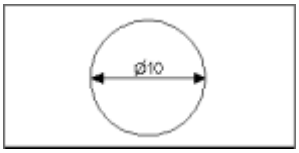
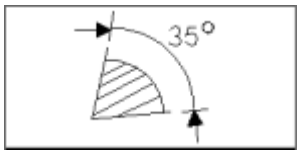
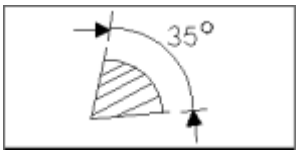
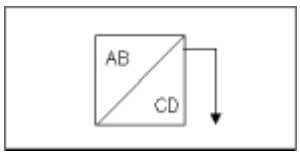
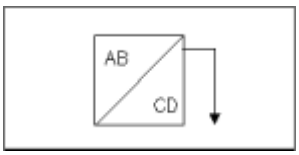
Ordinate dimension		Leader lines, geometric and text	
Linear dimension		Linear dimension	
Radius dimension		Radius dimension	
Diameter dimension		Diameter dimension	
Angular dimension		Angular dimension	
General note		Text	
General label		Text and leader lines	
General symbol		Leader lines, geometry entities and text	
Symbol • IGES 1001 • IGES		Creo Elements/ Direct Drafting	

Table 56. Annotation (IGES to MI) (continued)

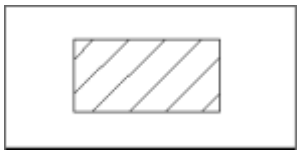
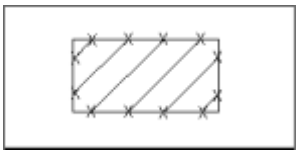
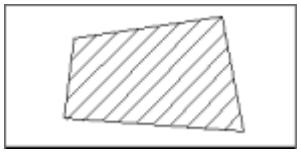
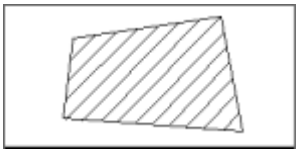
1002		binary text fonts (delivered with IGES software `hp_i1001_v(c)` `hp_i1002_v(c)`	
Hatch (defined by section) IGES Rev 2.0		Lines or leader line (without arrow)	
Hatch (defined by section area) IGES Rev 3.0		Hatch	

Table 57. Structures (IGES to MI)

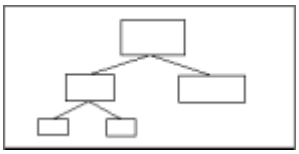
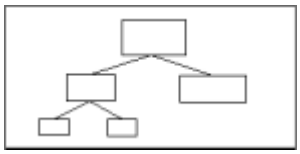
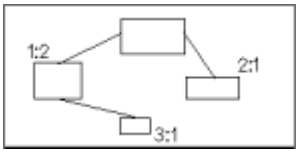
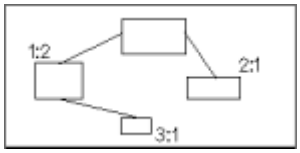
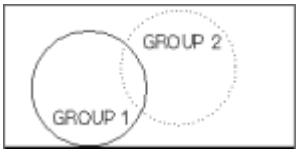
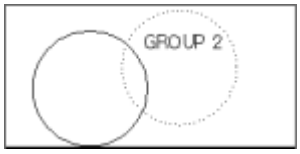
Subfigure definition and singular subfigure instance		Assembly hierarchy element part	
Drawing scale		Drawing scale	
Group		Group info attributes	

Table 57. Structures (IGES to MI) (continued)

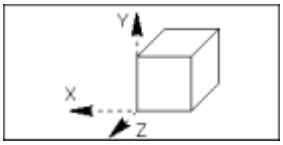
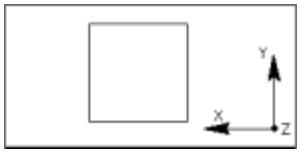
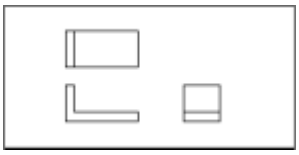
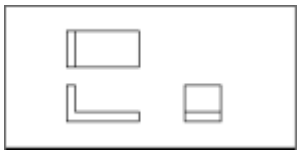
View along Z axis		View to plane X, Y	
Drawing		Drawing	

Table 58. Entity Attributes (IGES to MI)

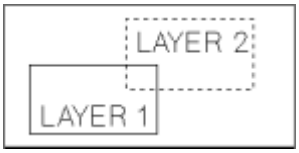
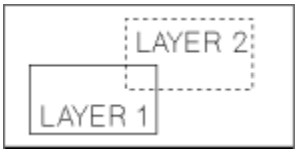
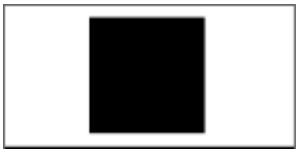
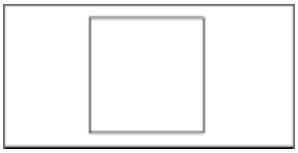
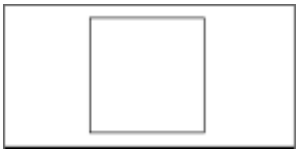
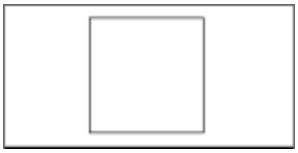
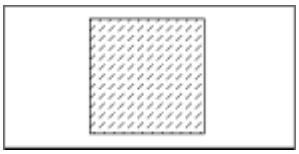
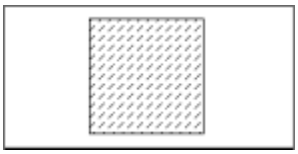
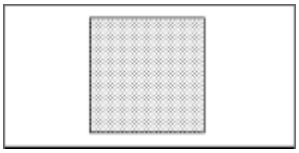
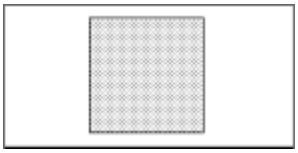
Levels		Layer info attributes	
Colors			
Black		White (since black is invisible in Creo Elements/ Direct Drafting)	
White		White	
Red(1)		Red	
Yellow		Yellow	

Table 58. Entity Attributes (IGES to MI) (continued)

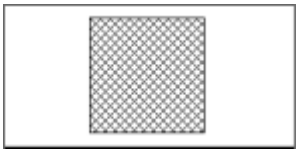
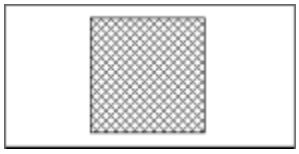
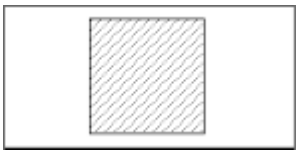
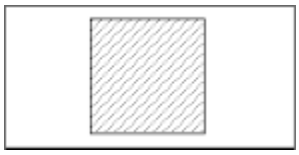
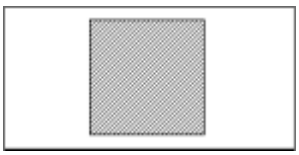
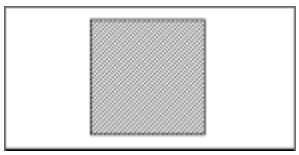
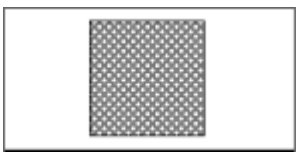
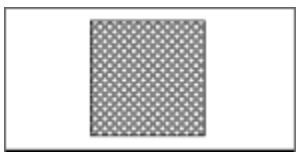
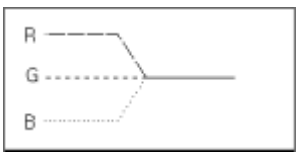
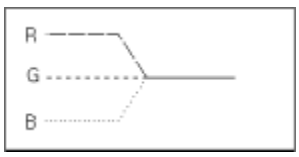
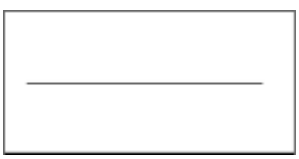
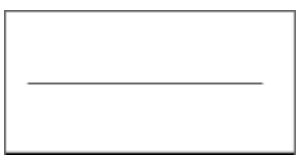
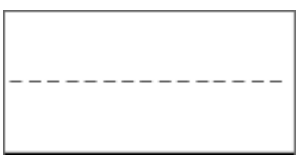
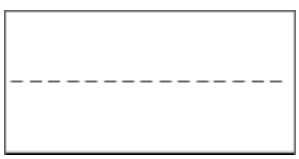
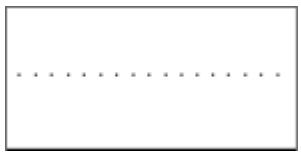
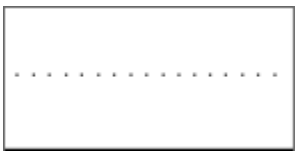
Green		Green	
Cyan		Cyan	
Magenta		Magenta	
Blue		Blue	
Color Definition		RGB Color	
Line font (The five IGES line fonts are mapped to eight of the MI linetypes)			
Solid		Solid	
Dashed		Dashed	

Table 58. Entity Attributes (IGES to MI) (continued)

Phantom		Phantom	
Center line		Dot center	
Dotted		Dotted	
Blanked		Color = black (since black is invisible in ME10, text info is added to the entity)	
Visible		Normal translation	
Line-weight (geome-try) (depend-ing on config. switch)		Pensize / Linesize	

(1) Shading is used to give the effect of different colors.

11

MI to IGES Entity Mappings

This chapter contains an entity mapping table, which lists all the entities supported by the IGES Translator. Most entities are represented pictorially.

Table 59. Simple Geometry (MI to IGES)

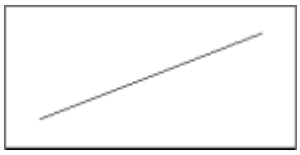
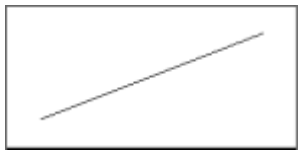
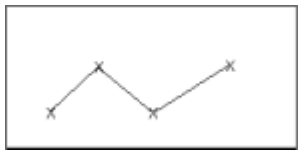
Line		Line	
Pensize / Line-size (geometry) (depending on config. switch)		Lineweight	
Poly-line		Lines	

Table 59. Simple Geometry (MI to IGES) (continued)

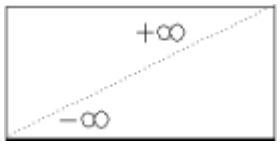
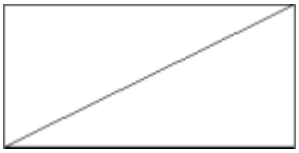
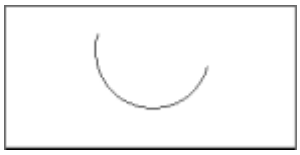
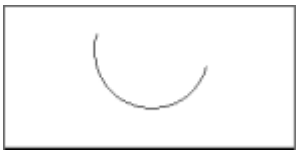
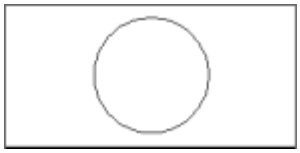
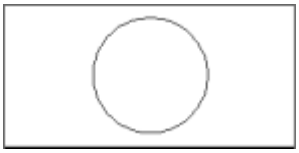
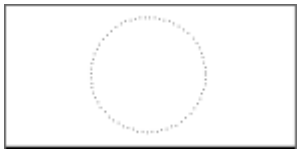
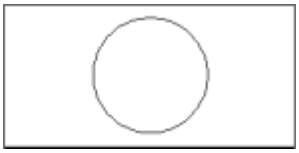
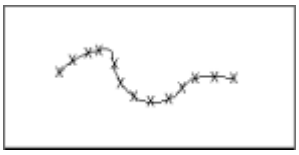
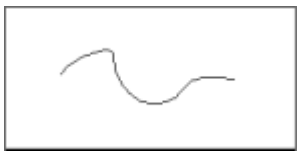
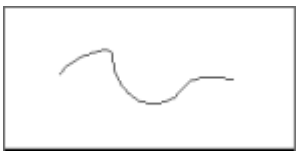
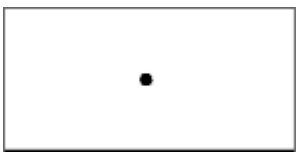
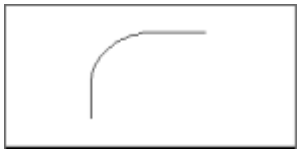
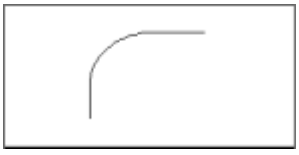
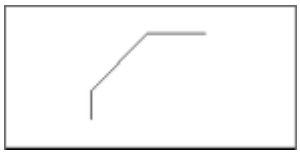
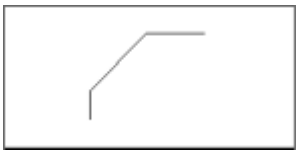
Construction Line		Line (clipped to model window)	
Arc		Circular arc	
Circle		Circular arc	
Construction circle		Circular arc	
Spline (SPL)		Lines and circular arcs	
B-Spline (BSPL)		B-Spline	
Polymarker		Points	
Fillet		Circular arc	
Chamfer		Line	

Table 60. Composite Geometry (MI to IGES)

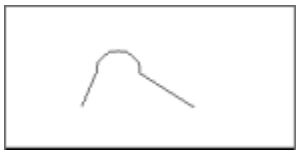
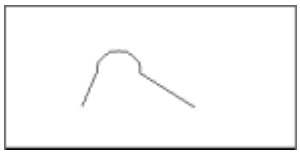
Composite curve & polyelem		Composite curve	

Table 61. Simple Annotation (MI to IGES)

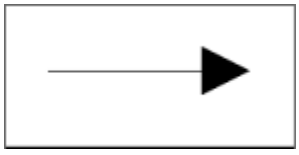
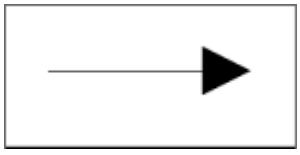
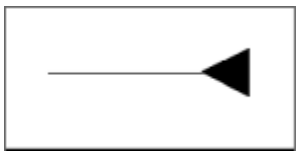
	Leader arrow	Leader arrow (and copious data)	
			
		Configurable	

Table 61. Simple Annotation (MI to IGES) (continued)

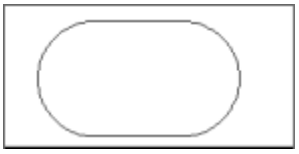
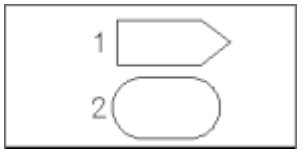
Balloon		1. Part of a flag note 2. Lines and circular arcs	

Table 62. Composite Annotation (MI to IGES)

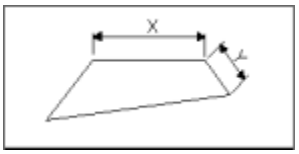
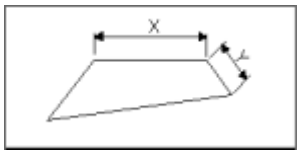
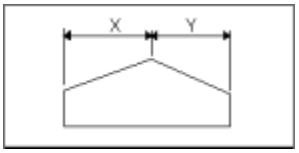
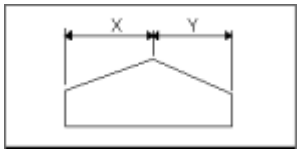
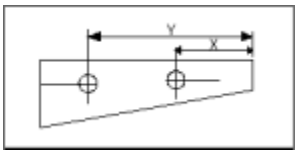
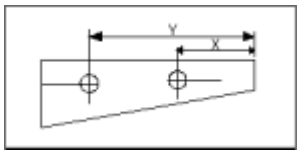
Single dimension		Linear dimension leader lines, witness lines and general note	
Chain dimension		Linear dimension leader lines, witness lines and general note	
Datum dimension		Linear dimension or ordinate dimension leader lines, witness lines and general note	

Table 62. Composite Annotation (MI to IGES) (continued)

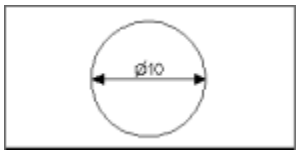
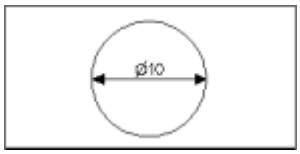
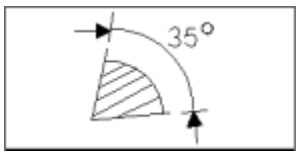
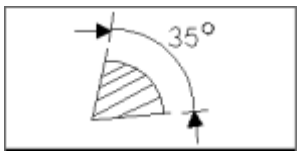
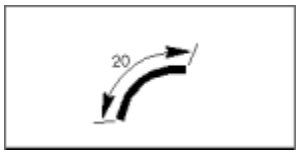
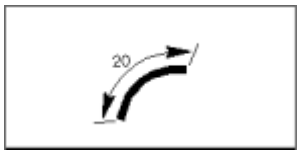
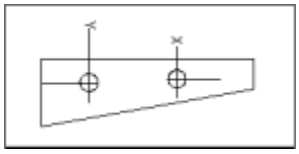
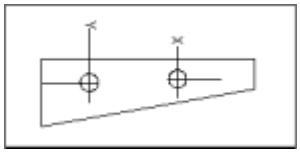
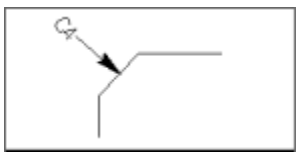
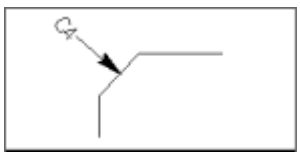
Radius dimension		Radius dimension leader line and general note	
Diameter dimension		Diameter dimension leader lines and general note	
Angular dimension		Angular dimension leader lines, circular arcs and general note	
Arc dimension		Circular arcs, leader lines, lines and general note	
Coordinate dimension		Ordinate dimension	
Chamfer dimension		Single dimension	

Table 62. Composite Annotation (MI to IGES) (continued)

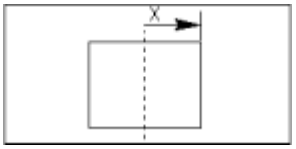
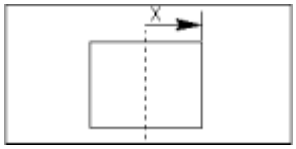
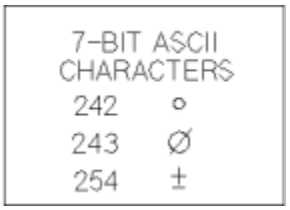
Symmetric dimension		Single dimension	
Text 7-bit ASCII characters: Chr 242 (degree sign) Chr 243 (diameter sign) Chr 254 (plus minus sign)		General note	

Table 63. MI Symbols (hp_Y14.5) (MI to IGES)

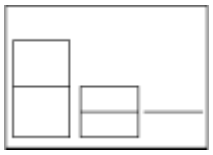
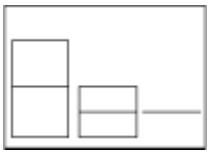
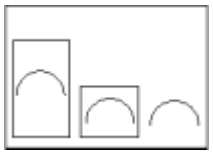
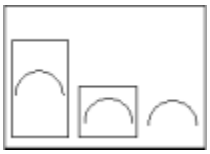
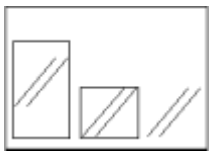
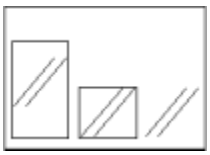
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font
		
		
		

Table 63. MI Symbols (hp_Y14.5) (MI to IGES) (continued)

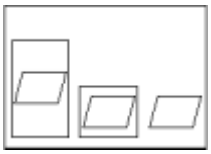
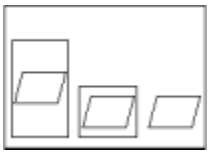
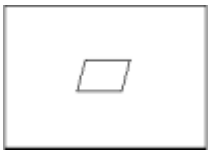
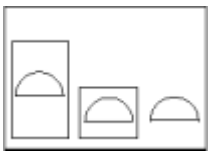
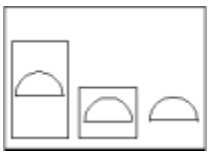
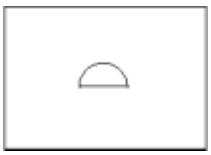
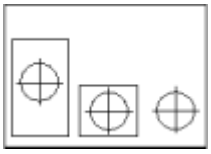
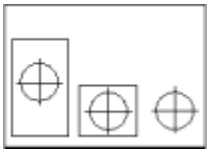
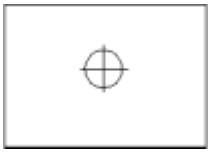
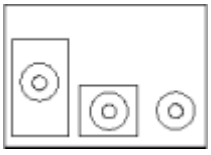
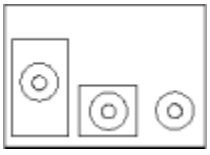
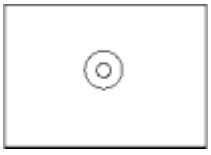
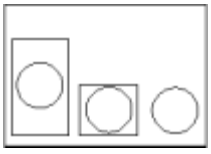
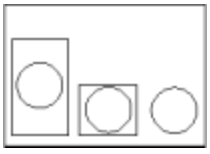
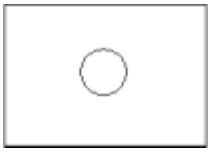
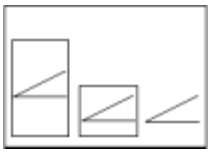
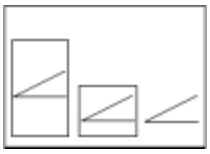
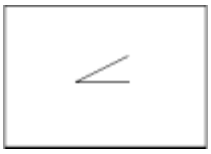
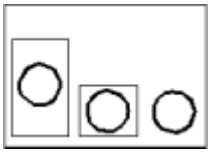
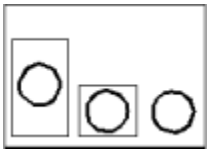
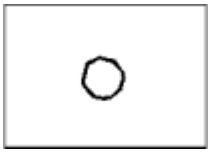
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font
		
		
		
		
		
		
		

Table 63. MI Symbols (hp_Y14.5) (MI to IGES) (continued)

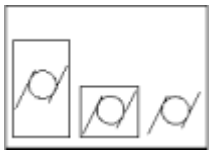
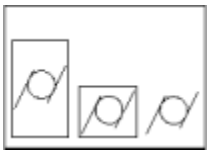
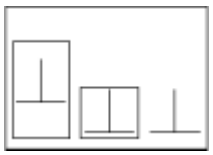
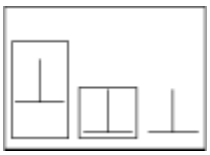
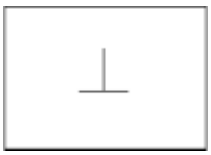
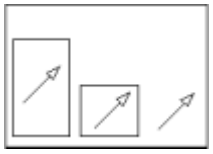
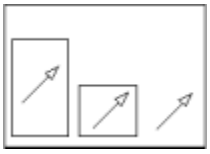
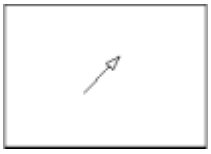
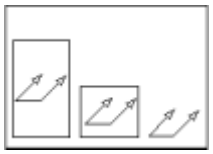
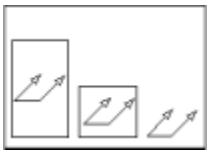
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font
		
		
		
		

Table 64. (MI to IGES)

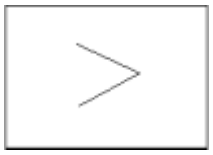
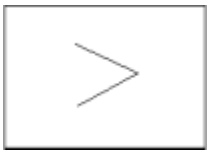
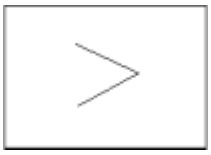
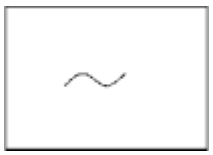
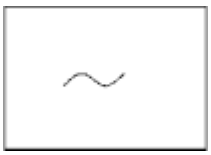
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font
		
		

Table 64. (MI to IGES) (continued)

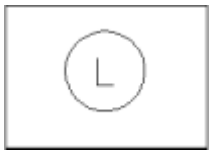
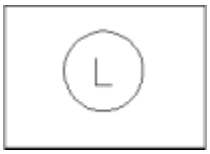
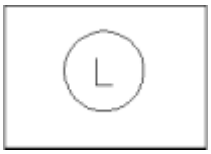
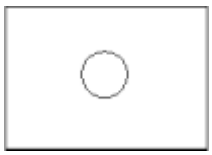
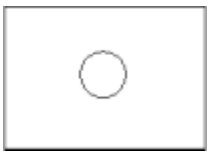
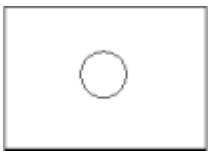
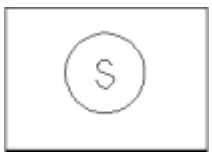
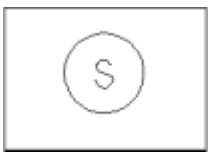
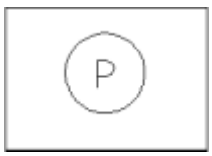
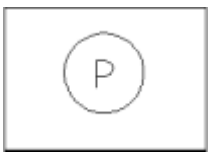
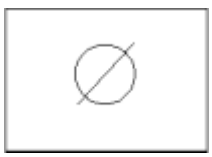
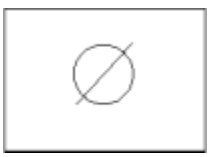
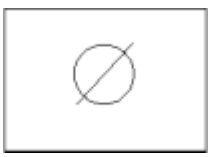
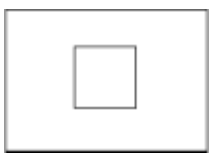
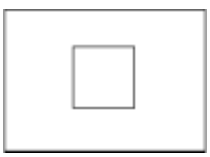
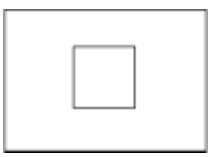
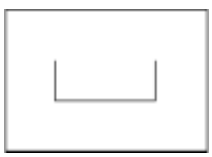
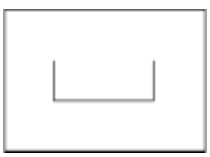
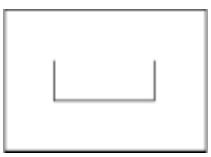
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font
		
		
		
		
		
		
		

Table 64. (MI to IGES) (continued)

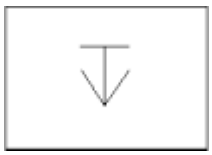
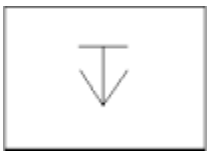
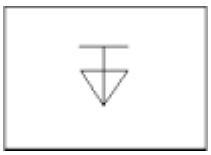
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font
		

Table 65. (MI to IGES)

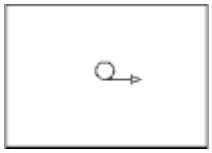
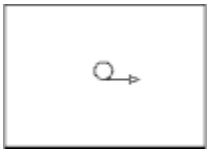
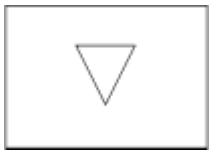
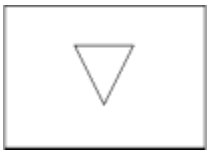
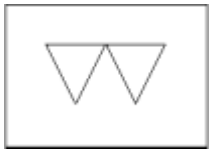
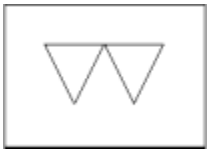
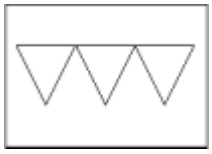
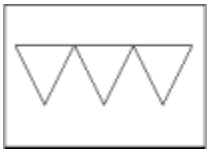
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font (not supported)
		
		
		
		

Table 65. (MI to IGES) (continued)

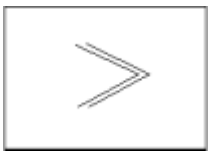
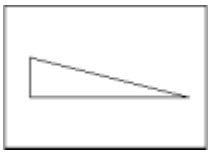
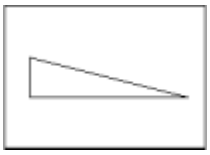
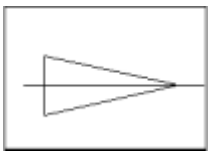
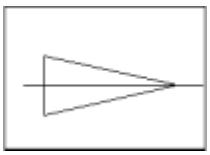
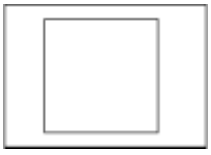
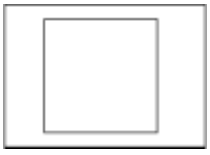
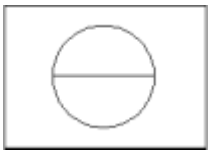
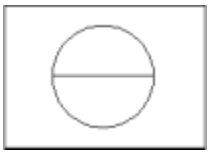
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font (not supported)
		
		
		
		
		

Table 65. (MI to IGES) (continued)

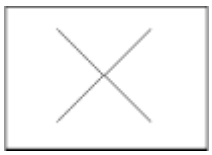
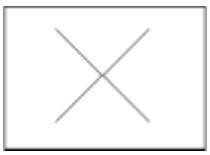
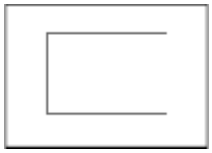
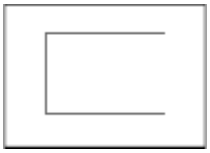
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font (not supported)
		
		

Table 66. (MI to IGES)

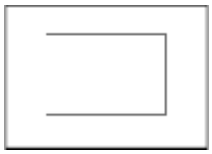
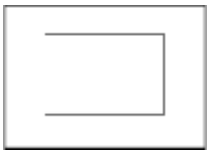
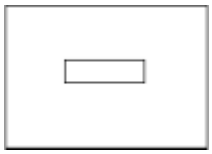
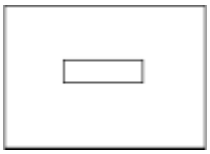
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font (not supported)
		
		

Table 66. (MI to IGES) (continued)

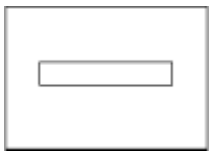
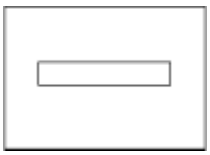
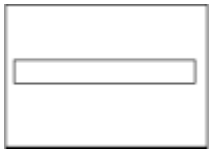
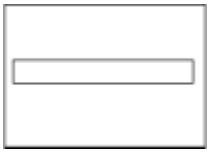
MI Symbols	IGES General Symbols	IGES 1003 Symbol Font (not supported)
		
		

Table 67. Info Attributes (MI to IGES)

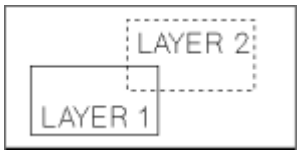
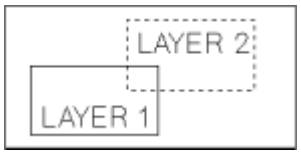
Layer Info		Level numbers	

Table 68. Hatch (MI to IGES)

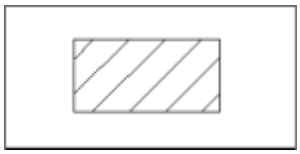
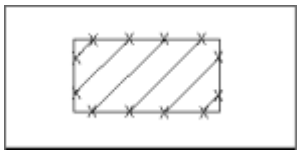
Hatch, face, compo-site curves and hatch pattern		Section entity—IGES 2.0	

Table 69. Assembly Hierarchy (MI to IGES)

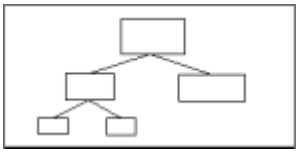
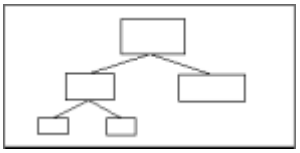
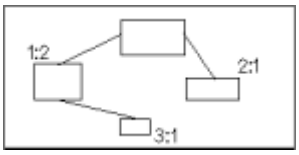
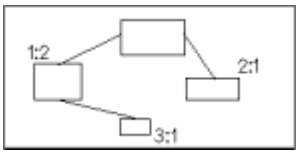
Parts and assemblies		Subfigure definition and singular subfigure instance. The translation of shared isometric parts in not always possible.	
Drawing scale		Drawing scale	

Table 70. Component Attributes (MI to IGES)

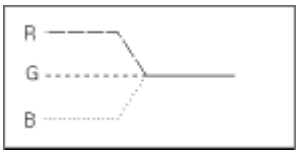
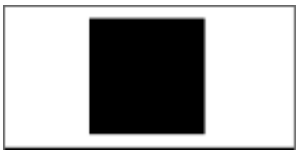
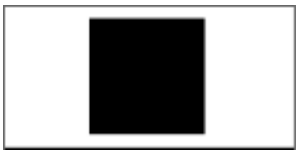
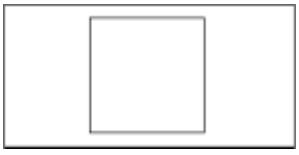
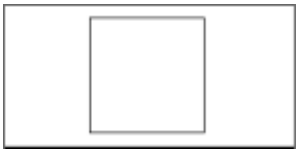
Colors			
RGB color		Approximated	
Black		Black	
White		White	

Table 70. Component Attributes (MI to IGES) (continued)

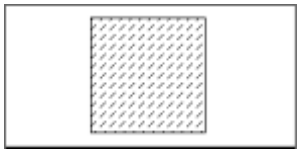
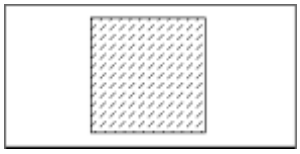
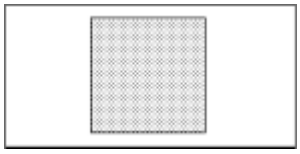
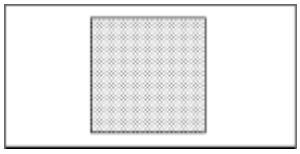
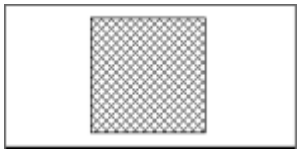
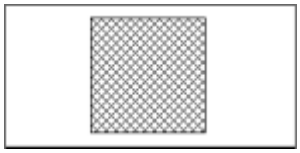
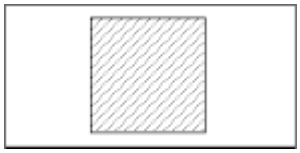
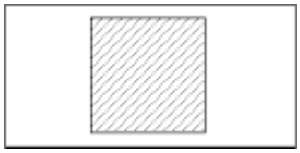
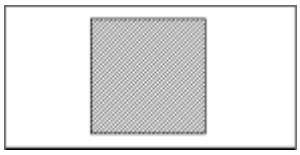
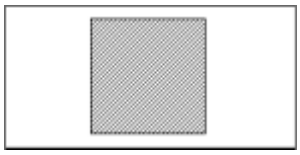
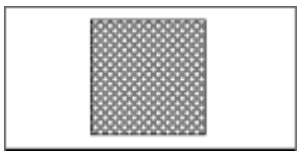
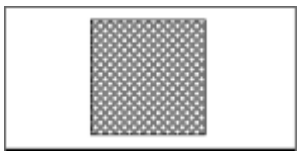
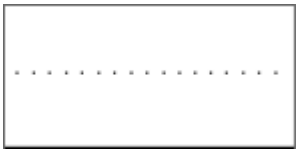
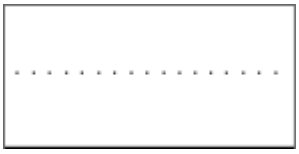
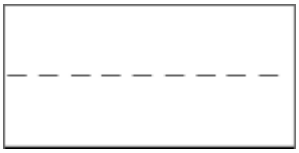
Red(1)		Red	
Yellow		Yellow	
Green		Green	
Cyan		Cyan	
Magenta		Magenta	
Blue		Blue	
Line-types (Eight of the MI linetypes are mapped to the four IGES line-types)			

Table 70. Component Attributes (MI to IGES) (continued)

Solid		Solid	
Dotted		Dotted	
Dashed		Dashed	
Long dashed		Dashed	
Dot center		Center line	
Dash center		Dashed	
Phantom		Phantom	
Center dash dash		Phantom	

(1) Shading is used to give the effect of different colors.

A

IGES Symbol Fonts

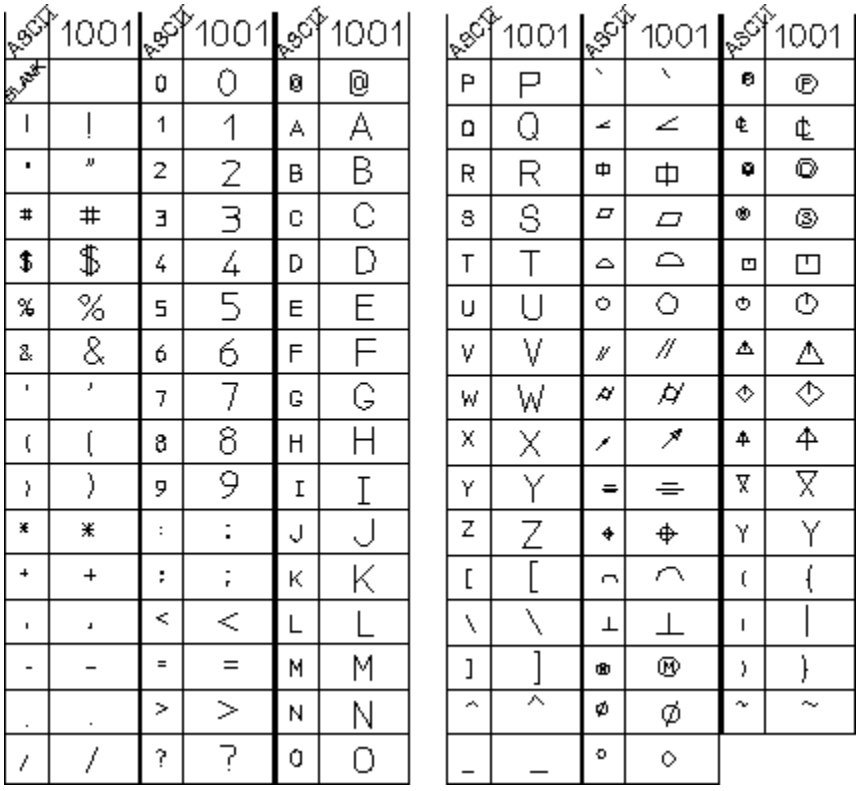
The `hp_i1001_c(v)` Font 85
The `hp_i1002_c(v)` Font 86

This appendix contains listings of the IGES symbol fonts, `hp_i1001_c(v)` and `hp_i1002_c(v)`. To view the `hp_i1003_c(v)` font, use the FONT EDITOR in the **TEXT 2** menu:

1. Pick **FONT EDIT** in **TEXT 2**
2. Pick **MOD FONT**
3. Select the font (for example, `hp_i1003_c`) from the menu.

   If the font is not loaded, use **LOAD FONT** to load it.
4. Pick **SHOW FONT**

The `hp_i1001_c(v)` Font



The `hp_i1002_c(v)` Font

ASCII	1002	ASCII	1002	ASCII	1002
BLANK		0	0	@	@
!	!	1	1	A	A
"	"	2	2	B	B
#	±	3	3	C	C
$	°	4	4	D	D
%	%	5	5	E	E
&	&	6	6	F	F
'	'	7	7	G	G
(	(	8	8	H	H
)	)	9	9	I	I
*	*	:	:	J	J
+	+	;	;	K	K
,	,	<	<	L	L
-	-	=	=	M	M
.	.	>	>	N	N
/	/	?	?	O	O

ASCII	1002	ASCII	1002	ASCII	1002
P	P	`	`	ϕ	ϕ
Q	Q	⧖	⧖	θ	θ
R	R	÷	÷	τ	τ
S	S	≤	≤	ψ	ψ
T	T	≥	≥	ω	ω
U	U	△	△	λ	λ
V	V	√	√	α	α
W	W	×	×	δ	δ
X	X	≡	≡	μ	μ
Y	Y	≠	≠	π	π
Z	Z	∫	∫	¯	¯
[	[	⊃	⊃		
\	\	∨	∨		
]	]	∧	∧		
^	^	≈	≈		
_	_	Σ	∑		

B

Entity Lists

Pre-Processor Entity Output....88
Post-Processor Entity Input....89

This appendix contains two entity lists. The first lists the IGES entities created during the output transfer, with their corresponding IGES entity numbers. The second lists the IGES entities supported during the input transfer, again with the corresponding IGES entity numbers.

Pre-Processor Entity Output

Table 71. Geometry

Entity number	Description
100	Circular arc
102	Composite curve
106	Copious data
110	Line
112	Parametric spline curve*
116	Point
124	Transformation matrix
126	Rational B-Spline Curve

*Damp values in MI splines are not supported.

Table 72. Annotation

Entity number	Description
106/20 line	
106/31-38	Section
106/40	Witness line
202	Angular dimension
206	Diameter dimension
208	Flag note
212	General note
214	Leader (arrow)
216	Linear dimension
218	Ordinate dimension
222	Radius dimension
228	General symbol
230	Sectioned area

Table 73. Structure

Entity number	Description
308	Subfigure definition
314	Color definition
402/13	Associativity instance
406/01	Definition Levels
408	Singular subfigure instance

Post-Processor Entity Input

In the following table, the E/L appended after the IGES description indicates the level of support for that post-processor entity.

- `E` means `E`xact and complete one-to-one, or one-to-many support (all form numbers).
- `L` means `L`imited or approximate one-to-one, or one-to-many support.

Table 74. Geometry

Entity number	Description	Level of Support
100	Circular arc	E
102	Composite curve	E
104	Conic arc	L *
106	Copious data	L
106/1,2 points		L**
106/11,12 path		L**
106/63	Simple closed area	E
108	Plane	L***
110	Line	E
112	Parametric spline curve	L *
116	Point	E
124	Transformation matrix	E
126	Non-rational B-spline curve	E
126	Rational B-spline curve	L*
130	Offset curve	L****

*	Approximated by twice continuously differentiable cubic splines.
**	Associated vectors (forms 3 & 13) are not translated.
***	Only used with relation to view as a clipping plane. Clipping is restricted to geometric entities.
****	The translator supports uniform distance (FLAG = 1) offset from line, circular arc, conic arc, parametric spline curve and rational B-spline curve. All entities except for lines and arcs are approximated by twice continuously differentiable cubic splines.

Table 75. Annotation

Entity number	Description	Level of Support
106/20 line	E	
106/31-38	Section	E
106/40	Witness line	E
202	Angular dimension	E
206	Diameter dimension	E
208	Flag note	E
210	General label	E
212	General note	E
214	Leader (arrow)	E
216	Linear dimension	E
218	Ordinate dimension	E
220	Point dimension	E
222	Radius dimension	E
228	General symbol	E
230	Sectioned area	E

Table 76. Structure

Entity number	Description	Level of Support
308	Subfigure definition	E
314	Color definition	E
402/1,3,4,7,13,14 instance		L
404	Drawing	L
406/1,15,16,17	Property	L
408	Singular subfigure instance	E
410	View Clipping is restricted as explained on page Appendix B-4	L

C

Limitations of the Creo Elements/Direct Drafting IGES 2D Translator

It is sometimes necessary to load an MI file and restore it with a recent revision of Creo Elements/Direct Drafting to translate dimensions correctly from MI to IGES.

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