

Milling



Operating Manual

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HOLOS-UX Operating Manual

Contents

1 *General information*

The "IGES processors" programs can be obtained as additional options for HOLOS-UX.

They are integrated into the menu under the "IGES" designation and can be called up from there.

There are two IGES processors:

- With the **post-processor** you can read IGES data into HOLOS, where it can then be interpreted.
- The **pre-processor**, on the other hand, saves HOLOS format models, as IGES files.

General information

About this operating manual

The chapters and sections are divided into

- general information about the commands and
- step-by-step operating instructions

The following symbols are used to describe operating sequences:



Necessary action



Response to an action, displayed on the screen



Result of an action after processing

Other symbols are:

<...> for calling up commands

[R] for letters on the keyboard, e.g. hotkeys



denotes cross references to other chapters or sections.

2 *IGES post-processor*

The post-processor reads IGES data into HOLOS where it can then be interpreted.

2.1 *Starting the post-processor*

After starting the program it may be a few seconds until the start window is displayed.



Select <IGES> - <IGES post-processor>



The start window is displayed:

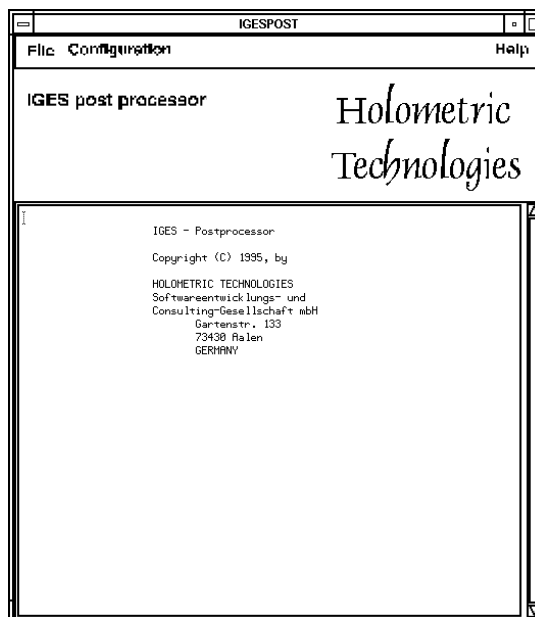


Figure 2-1

2.2 Interpreting IGES files

By interpreting IGES files you obtain HOLOS models. During interpretation all adopted entities are stored in their exact configuration in the HOLOS data structure; no approximation algorithms are used to deal with NURBS or B-SPLINE curves and surfaces.

The post-processor recognizes the following IGES entities in the current version:

| Type | Entity | Stored in HOLOS as |
|------|-----------------------------|---|
| 100 | CIRCLE | NURBS CURVE (2D or 3D) |
| 102 | COMPOSITE CURVE | COMPOSITE CURVE |
| 106 | COPIOUS DATA | CAD point |
| 110 | LINE | CURVE |
| 112 | PARAMETRIC SPLINE CURVE | B-SPLINE CURVE |
| 114 | PARAMETRIC SPLINE SURFACE | B-SPLINE CURVE |
| 116 | POINT | CAD point |
| 124 | TRANSFORMATION MATRIX | is not stored, used only for internal calculation |
| 126 | NURBS CURVE | NURBS CURVE |
| 128 | NURBS SURFACE | NURBS SURFACE |
| 142 | CURVE ON PARAMETRIC SURFACE | CURVE ON PARAMETRIC SURFACE |
| 144 | TRIMMED PARAMETRIC SURFACE | TRIMMED PARAMETRIC SURFACE |

The following entities are **not** supported:

| Type | Entity |
|------|-----------------------|
| 104 | CONIC ARC |
| 108 | PLANE |
| 118 | RULED SURFACE |
| 120 | SURFACE OF REVOLUTION |
| 122 | TABULATED CYLINDER |
| 130 | OFFSET CURVE |
| 140 | OFFSET SURFACE |

In order to replace these IGES entities, the CAD system which generated the file must convert them into NURBS surfaces.

Operation

✚ Copy the IGES files onto the hard disk of your HOLOS system. It is advisable to select the directory/users/holos/data/iges, as HOLOS searches this directory for IGES files by default.

✚ Select the functions <IGES>-<File>-<open>.

💻 A selection window for files with the .iges file extension opens:

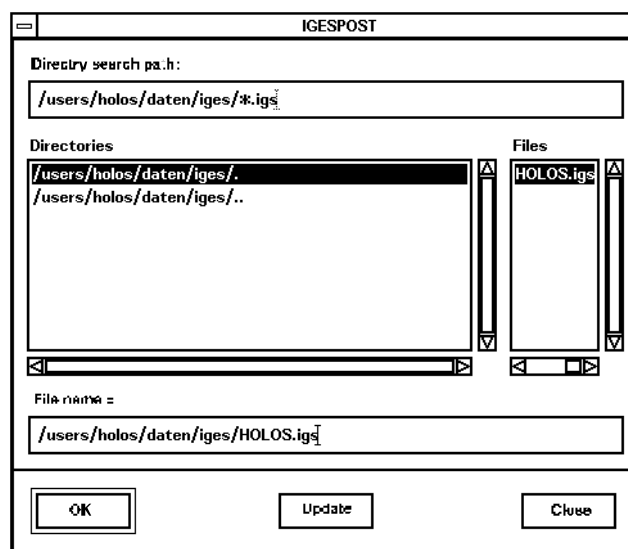


Figure 2-2

✚ Select the required files and confirm with <OK>.

✚ When the HOLOS models generated from the IGES files have been interpreted, they are located in the directory /users/holos/data/model.

💻 If the processor establishes that a corresponding model already exists, you are asked whether you wish to overwrite the model or construct a new model:



Figure 2-3

IGES post-processor



Select the required function:

- <YES> overwrites the existing model. All data and information existing for the old model are lost.
- <No> generates a new model.
- <Close> terminates the selection.

The names for new models are generated from the names of the corresponding IGES files.

Example:

| | | |
|-----------------------|------------|-------|
| present in the system | HOLOS.igs | |
| generated model | HOLOS_IGS | |
| if model exists | HOLOS_IGS0 | |
| | HOLOS_IGS1 | |



After confirmation the interpretation commences.



During the interpretation the IGES entities that have been found and interpreted are displayed:

```
MODEL: BEISPIEL_IGS

SURFACES
  NURBS SURFACES <128>..... 19
  TRIMMED SURFACES <144>..... 17

CURVES
  NURBS CURVES<126>..... 205
  CIRCLES <100>..... 6
  LINES <110>..... 37
  CONS <142>..... 20
  COPIUS DATA <106>..... 1

TRANSFORMATION MATRIX <124>..... 11
```

Figure 2-4



When an IGES file has been processed, the successful interpretation is displayed. The list contains an enumeration of the elements which have been adopted into the HOLOS file structure:

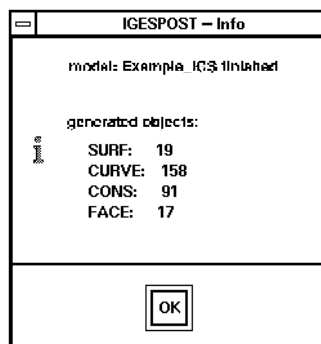


Figure 2-5

2.3 Configuration

You can limit the interpretation of the entities contained in an IGESfile with the configuration options.
This is useful where, for example, you only wish to interpret curves or points and ignore all other elements.

Operation



Select the function <IGES>-<CONFIGURATION>.



A window opens for selecting options.

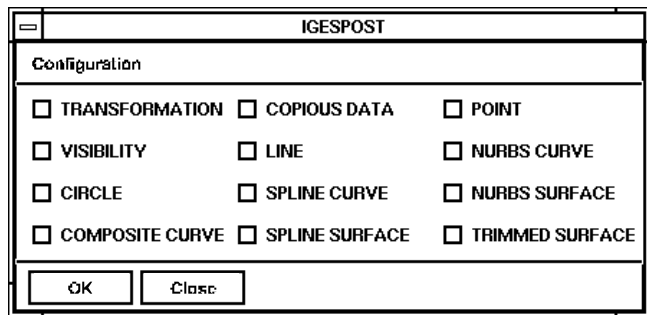


Figure 2-6

| Option | Preset. | Meaning |
|-----------------|---------|--------------------------------------|
| TRANSFORMATION | on | TRANSFORMATION MATRIX is interpreted |
| VISIBILITY | on | BLANK STATUS is evaluated |
| CIRCLE | on | CIRCLE(100) is interpreted |
| COMPOSITE CURVE | on | COMPOSITE CURVE(102) is interpreted |
| COPIOUS DATA | on | COPIOUS DATA (106) is interpreted |
| LINE | on | LINE (110) is interpreted |
| SPLINE CURVE | on | SPLINE CURVE (112) is interpreted |
| SPLINE SURFACE | on | SPLINE SURFACE (114) is interpreted |
| POINT | on | POINT (116) is interpreted |
| NURBS CURVE | on | NURBS CURVE (126) is interpreted |
| NURBS SURFACE | on | NURBS SURFACE (128) is interpreted |
| TRIMMED SURFACE | on | TRIMMED SURFACE (144) is interpreted |

If you select the **TRIMMED SURFACE** option, then the following options are automatically selected:

| | |
|-----------------|----------------|
| TRANSFORMATION | SPLINE CURVE |
| CIRCLE | SPLINE SURFACE |
| COMPOSITE CURVE | POINT |
| COPIOUS DATA | NURBS CURVE |
| LINE | NURBS SURFACE |

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IGES post-processor

If you select the **COMPOSITE CURVE** option, then the following options are automatically selected:

| | |
|--------------|--------------|
| CIRCLE | SPLINE CURVE |
| COPIOUS DATA | POINT |
| LINE | NURBS CURVE |

NOTE

In case of doubt work with the preset values.



Select the required options and confirm with <OK> or <Close>.

<OK> ends the configuration options and saves them in a file. When the processor is next called up, they can be used again.

<Close> ends the configuration options, adopts and processes the configurations, but does **not** save them in a file. When the processor is next called up, the original defined values will be used.

2.4 Protocol file

If while a model is being processed errors occur, this is indicated as a warning in a window with a red background.

Information about the precise cause of the error is stored in an error file. The following information is contained in the file:

Date: IGESPOST: Thu Jun 29 12:03:05 MESZ 1995

Date and time the processor started, for identification.

Model name: Model: EXAMPLE

Name of the processed IGES file for identification.

You can display the error file using the <File> - <Display error file> function in the text window of the IGES processor.

The file is deleted with the <File> - <Delete error file> function.

3 *IGES pre-processor*

You can use the IGES pre-processor to save HOLOS formatted models as IGES files.

When converting HOLOS models the following rules apply:

- Models which have been read into HOLOS-UX in the IGES format can be saved in the IGES format.
- Models which have been generated in HOLOS-UX can be saved in the IGES format.

Note that the surface segments of segmented surfaces may not have different polynomial degrees in any parameter direction. The polynomial degrees in the parameter directions *u* and *v* may be different, but in the parameter direction *u* and/or in *v*, each segment must show the same polynomial degree.

- Models which have been read into HOLOS-UX in the VDA-FS format can **not** be saved in the IGES format, as this is not a VDA-IGES converter.
- The VDA header generated with HOLOS is adopted into the IGES file.

3.1 *Starting the pre-processor*

After the program has been started it may be a few seconds before the start window is displayed.



Select <IGES> - <IGES pre-processor>.



The start window is displayed:

IGES pre-processor

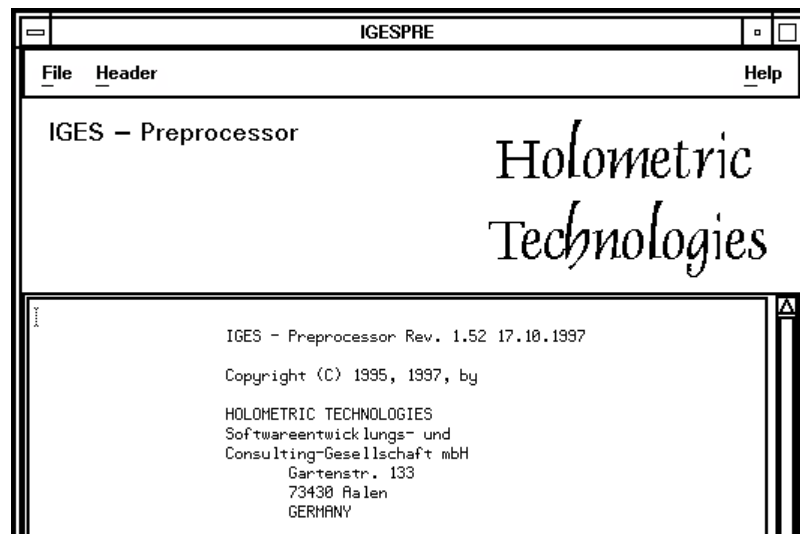


Figure 3-1

- Select the <Header> function and then, using the subfunctions, select whether a header is to be entered or not.
A header can only be entered if a VDA header is set up from which the information can be taken.
- Selecting <Header> - <enter> enters header information in the opening section of the IGES file.
- Select the functions <File>-<open>.
- 💻 A selection window of the existing HOLOS models opens:

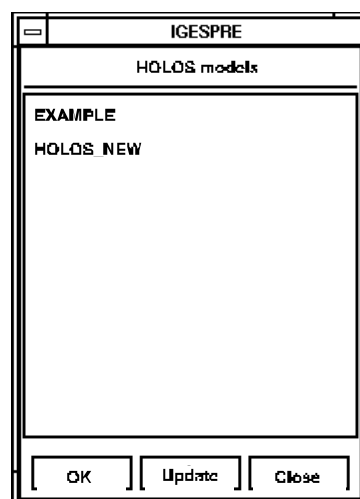


Figure 3-2



Select the required model by clicking and confirm with <OK>.



A selection list of the elements to be saved is displayed:

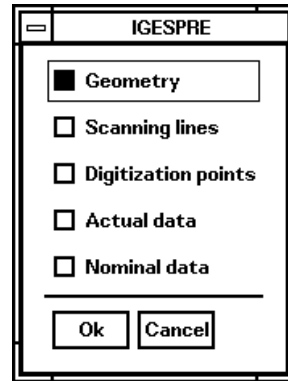


Figure 3-3



Select which elements are to be saved in the IGES file.

Geometry: Curves, surfaces and faces

Scanning lines

digitization points: Individual digitization points

Act. & nom.values: Selection of individual values.

In the "Actual values" and "Nominal values" are selected:



Selection lists are displayed for the individual values:

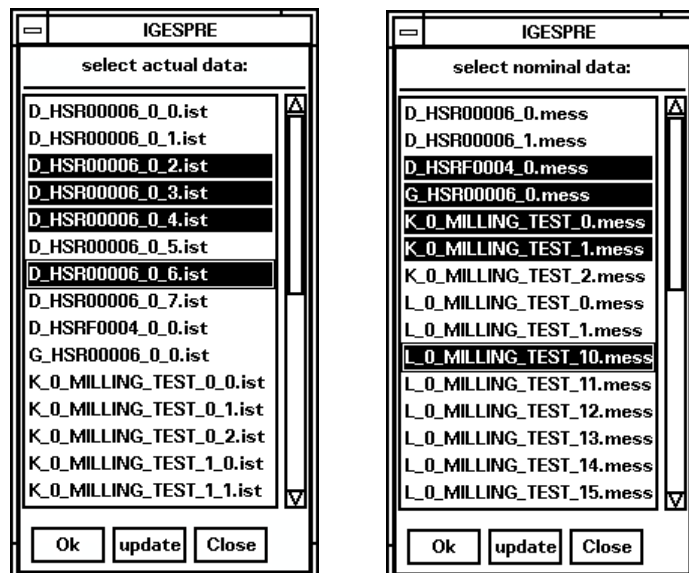






Figure 3-4

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IGES pre-processor

-  Select the required data by clicking and confirm your selection with "OK".
-  The program returns to the "IGESPRE" dialog window.
-  Confirm selection of the elements to be saved with "OK".
-  The elements to be processed are displayed:

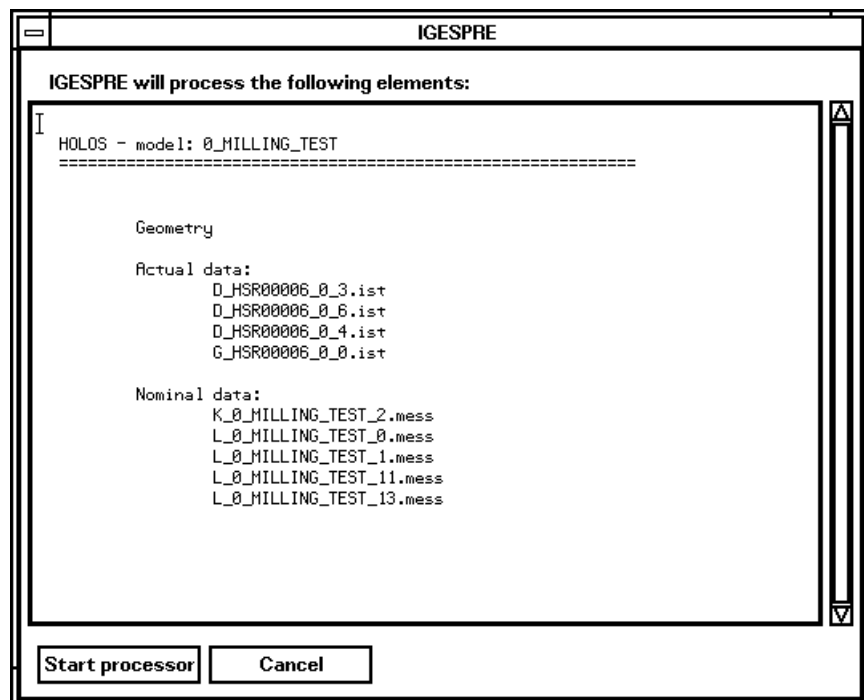




Figure 3-5

-  "Cancel" invalidates the selection, and allows you to reselect. "Start processor" continues the program.
-  When the model has been successfully processed, a dialog window opens:

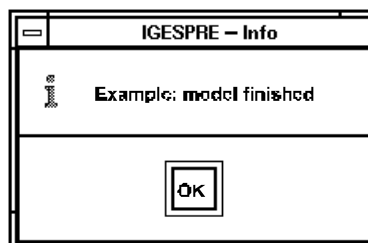


Figure 3-6



Confirm with <OK>.



The generated IGES file is stored in the directory
/users/holos/data/iges.



If the processor indicates that a corresponding file already exists, you are asked whether you wish to overwrite the file or if you wish to set up a new file:

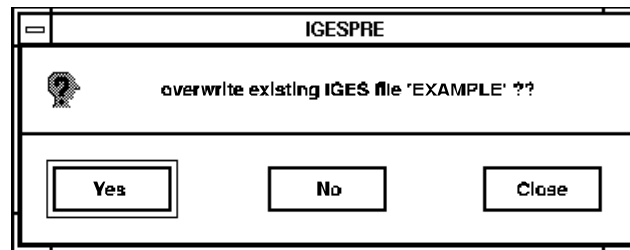


Figure 3-7



Select the required function:

- <YES> overwrites the existing file.
- <No> the file is saved under a new name.
- <Close> cancels the selection.

The names of new files are generated from the model name, a number and the .igs extension.

Example:

| | |
|------------|----------------------------------|
| Model name | EXAMPLE |
| IGES file | EXAMPLE.igs already exists |
| New name | EXAMPLE1.igs if not in existence |
| | EXAMPLE2.igs |

IGES pre-processor

3.2 *Info file*

Parallel to the generated IGES file an info file is created. You can display the info file via the <File> - <Display info file> function in the text window of the IGES processor.

3.3 *Protocol file*

If while a model is being processed errors occur, this is displayed in a window with a red background as a warning note.

Information about the precise cause of the error is stored in an error file. The following information is contained in the file:

Date: IGESPRE: Thu Jun 29 12:03:05 MESZ 1995

Date and time the processor started, for identification.

Model name: Model: EXAMPLE

Name of the processed model for identification.

You can display the error file via the <File> - <Display error file> function in the text window of the IGES processor.

The file is deleted with the <File> - <Delete error file> function.