Abaqus/CAE Plug-in Suite for Importing Bearing Properties from ROMAC Bearing Software

(The following applies to any Abaqus release.)

An Abaqus/CAE plug-in suite for importing bearing properties from ROMAC bearing software can be downloaded from the [Process Automation Portal](#).

The plug-ins are used for importing the ROMAC bearing properties from THPAD, THBRG, and MAXBRG, and writing them in Abaqus input file format. You can also fill out the bearing properties manually and write them in Abaqus input format.

Installation

To install the plug-in, save the attached archive file to one of the following directories:

abaqus_dir\abaqus_plugins where *abaqus_dir* is the Abaqus parent directory
home_dir\abaqus_plugins where *home_dir* is your home directory
current_dir\abaqus_plugins where *current_dir* is the current directory

Note that if the abaqus_plugins directory does not exist in the desired path, it must be created. The *plugin_dir* directory can also be used, where *plugin_dir* is a directory specified in the abaqus_v6.env file by the environment variable *plugin_central_dir*. You can store plug-ins in a central location that can be accessed by all users at your site if the directory to which *plugin_central_dir* refers is mounted on a file system that all users can access. For example,

plugin_central_dir = r'\\fileServer\sharedDirectory'

On Windows platforms, right click on the archive file and select **WinZip → Extract to here**. On Linux platforms, type **unzip ROMAC_plugins.zip** at the command prompt. A folder named ROMAC_plugins will be extracted. Note that the plug-in will not function properly if this procedure is not followed.

Usage

The Abaqus input file (Abaqus_input_connector_property.inc), which contains the properties of the connector element for the bearing (with a bearing name given by the user), is created by the plug-in. You can then use these properties for the associated connector element in your full model.

Three separate plug-ins allow for three different approaches to entering the bearing properties. The associated dialogs are shown in Figure 1:

1. Calculate Coefficients
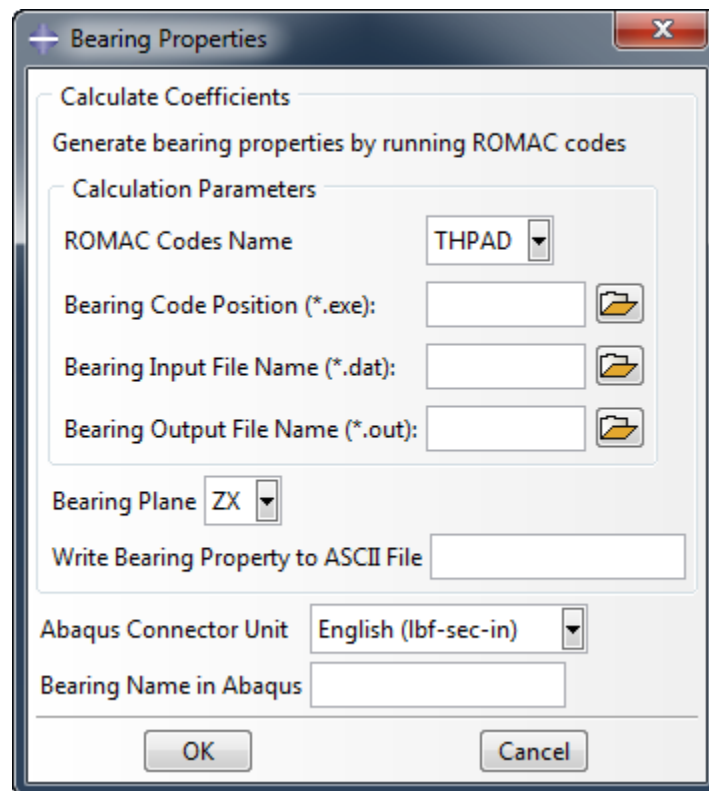
2. Manual Input

3. Read from File

The **Calculate Coefficients** plug-in directly runs the ROMAC bearing software (THPAD or THBRG) and writes the bearing properties in an Abaqus input file. The output file name is set as `Abaqus_input_connector_property.inc` by default, after importing the bearing results. You must have the ROMAC bearing software (THPAD or THBRG).

The **Manual Input** plug-in allows you to enter the bearing properties manually and write them to an Abaqus input file.

The **Read from File** plug-in reads the ROMAC bearing output file and writes the bearing properties in an Abaqus input file.

<u>Notes</u>

1. By default, ROMAC uses English units. The plug-in can convert it to SI units.
2. Currently, only the ZX plane is available for the bearing plane in the plug-in.
3. Currently, cross-coupled stiffness and damping terms, such as K12 or C12, are ignored.
4. The detailed information can be found in attached Power Point presentation.

Calculate Coefficients *Dialog*

Manual Input Dialog

Read from File Dialog