

ISO-RC v2.0 User's Guide

Conversion of absolute to relative coordinates in Isogen drawings

Summary:

1. General description.
2. Concept.
3. Hardware/Software requirements.
4. Installation. Directory structure. Configuration.
5. Using ISO-RC.
6. Recommendations.

1. General Description

The main functions performed by this program are:

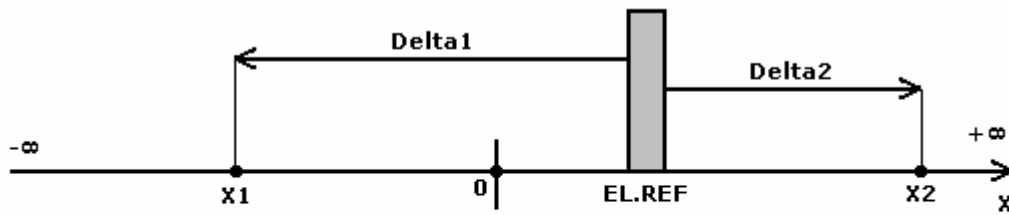
- a. Reading the output drawings of the Tribon-Isogen flow.
- b. Reading the project specific reference file.
- c. Regenerating the Isogen drawing by modifying the absolute coordinates to relative coordinates, according to the principles stated below.

2. Concept

The purpose was to make the drawings obtained from Tribon-Isogen more useful, so that the coordinates shown on them to have a real meaning for the production department. Hence the need to automatically convert the absolute coordinates given by Isogen to relative coordinates, specific for each project.

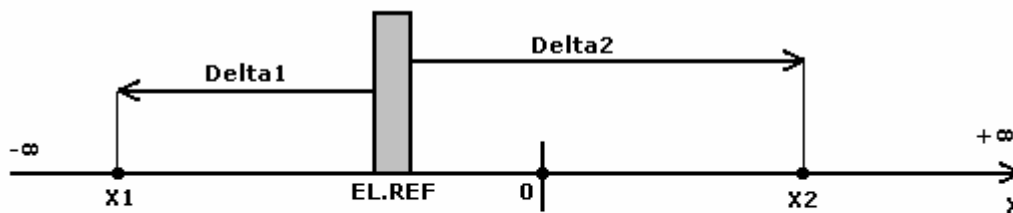
The program is reading the reference file (which must be previously edited for each project) and applies these references to the selected DXF drawings.

The absolute value of a coordinate is replaced by the name of the closest physical element (frame, deck, etc.) plus or minus the difference between the two coordinates. The thickness of the reference element can be specified in the reference file so that the resulting coordinate value to be measurable and not just theoretical. The signs “+” or “-” are depending on orientation of the vector between the 2 points as shown in the example figures below. If the vector is oriented to the origin than “-“is used. Otherwise the sign is “+”.



$$X1=EL.REF -Delta1$$

$$X2=EL.REF +Delta2$$



$$X1=EL.REF +Delta1$$

$$X2=EL.REF -Delta2$$

3. Hardware/Software Requirements

- Windows XP/Vista
- Microsoft .NET 2.0 Framework

4. Setup. Directory Structure. Configuration.

To install the program you have to use the setup application provided and you have to specify the program path. The program will be installed along with this user guide and some examples: reference files and drawings. Shortcuts will be created on desktop and in the Start menu.

The program has some configuration options which can be edited in the ISO-RC.ini file from the application folder. This is a plain text file and can be edited with Notepad or any other text editor.

Note! All these options must be configured. This file must exist in the application folder. Otherwise the program will not run due to the lack of info.

```

##### ISO-RC Configuration File #####
#
# Global settings
#
REFERENCE_FILE=C:\ISO-RC\REF-N324.txt
CONVERSION_SUFFIX=_CONVERTED
#
# Isogen Settings
#
ISO_ATEXT_201_E=ST----
ISO_ATEXT_202_N=FWD---
ISO_ATEXT_203_W=PS----
ISO_ATEXT_204_S=AFT---
ISO_ATEXT_205_EL+=EL+
ISO_ATEXT_205_EL-=EL-
#
# END settings

```

- REFERENCE_FILE = the complete path to the default reference file. Can be edited in the program as well.
- CONVERSION_SUFFIX = the default suffix to be applied to the converted files. This parameter cannot be modified from the program.
- ISO_ATEXT_20*_* = Coordinates names prefixes as they are set in the Isogen project.

Alternate Text Isogen example configuration file:

```

ATEXT
NO. ALTERNATIVE TEXT CAT
-----
-201 ST----
-202 FR----
-203 PS----
-204 AR----
-205 OH +
-206 OH -

```

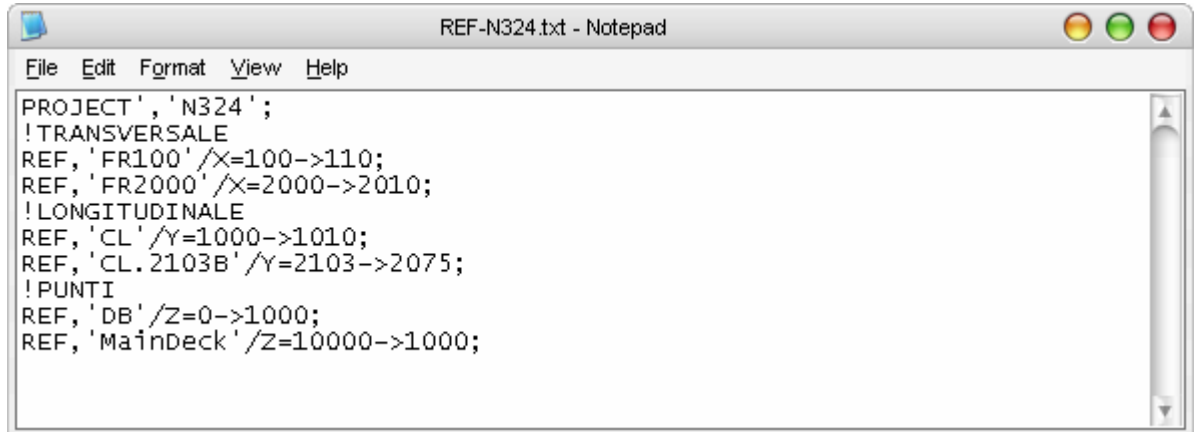
The meanings of the options are:

-201	E	East of origin.
-202	N	North of origin.
-203	W	West of origin.
-204	S	South of origin.
-205	EL +	Positive elevation.
-206	EL -	Negative elevation.

More details regarding these settings can be found in the Isogen documentation.

Important! The ISO_ATEXT_20* parameters must correspond to the values set in the Isogen project. Otherwise the absolute coordinates cannot be determined and the drawings from this project cannot be converted.

Configuring the reference file:



```
PROJECT 'N324';
!TRANSVERSALE
REF, 'FR100' /X=100->110;
REF, 'FR2000' /X=2000->2010;
!LONGITUDINALE
REF, 'CL' /Y=1000->1010;
REF, 'CL.2103B' /Y=2103->2075;
!PUNTI
REF, 'DB' /Z=0->1000;
REF, 'MainDeck' /Z=10000->1000;
```

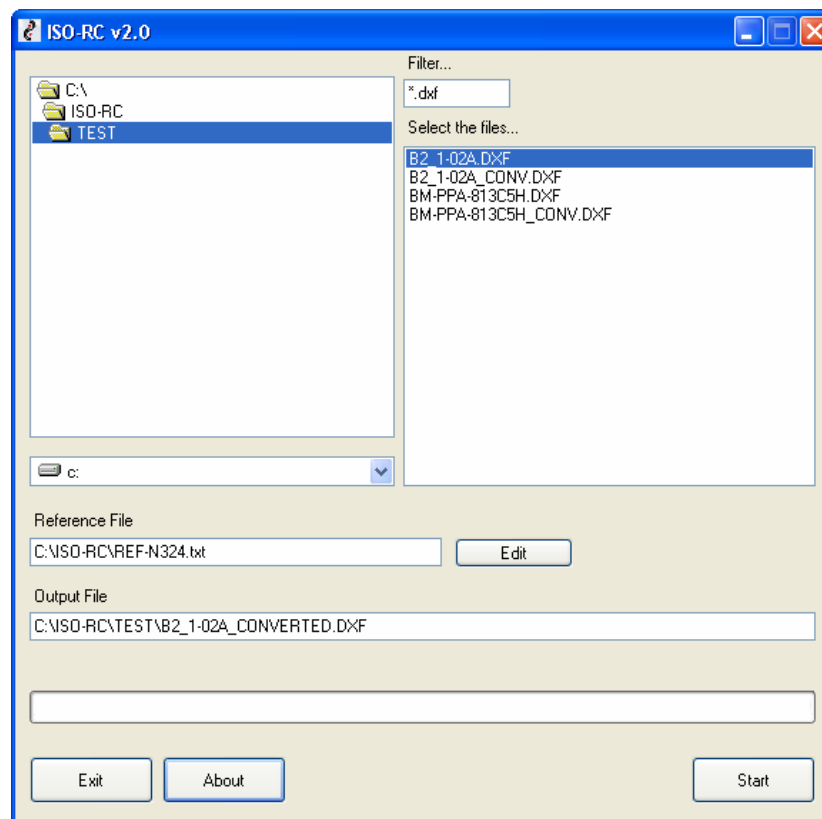
The reference file has the syntax that you can see above. The keyword is **REF**, followed by the reference element name ('**FR100**' i.e.) and then followed by the coordinate on one of the axis (**X=100**).

"->110" means that the element has thickness and its value is given by the difference between the 2 coordinates. If this is not specified then the element will be considered as theoretical, with 0 thickness.

Elements can be defined on all 3 axes or just on some of them, entirely up to the user. However they must have a real meaning for the production department.

5. Using ISO-RC

Note! The program needs a special security code that does not allow it to run on another workstation. This code is provided only by NASDIS.



Stages:

- Check the reference file path to correspond to the working project. Eventually you may check the content of this file by using the Edit button.
- Browse to the dxf project files and select the files to be converted.
- Initiate the “Start” command and wait for the confirmation message “Operation Complete!” You may as well double-click a file to start the conversion process immediately for that file.

6. Recommendations.

- Inspect carefully the Isogen project settings and the drawings to ensure that the settings for the coordinates prefixes are correct.
- Create a separate reference file for each project.
- Keep both the original drawings and the converted ones in order to be able to debug errors if needed.
- Always check the first converted drawings to ensure that the results are according to what is expected.