IsoAlgo

IsoAlgo User Guide

V1.0

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The Piping Component File(PCF) is the primary input for Personal ISOGEN®.

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1. Introduction

IsoAlgo stands for piping Isometric drawing generation Algorithm. It can generate piping isometric drawings in DXF format from PCF[1]. IsoAlgo reads the Piping Component File(PCF). The PCF is a human readable text file containing physical and logical data on each piping object in the pipeline.

The Piping Component File(PCF) is the primary input for Personal ISOGEN®. PCFs are text files containing component and routing information. For each component, they will include various mandatory records to define the basic information of:

❖ Type - Flange, pipe, or valve, for example;
❖ Coordinates and size of the end-points;
❖ Shape(SKEY) to be used to represent the component on the isometric;

PCFs are created by the piping design system extracting information from the piping model. A single PCF can contain the data for a number of pipelines, but generally, the piping design system extracts piping data for single pipeline only. Then Personal ISOGEN will produce isometrics for one pipeline at a time.

The complex plant layouts and ship design result are drawings. Typically the design of piping layouts requires the production of large amouts of isometric detail drawings. The automatic generation of these isometric drawings will allow engineering staff to concentrate on design activities therefore reducing the design cycle time span. Nowdays many piping CAD software can layout piping in 3D and can generate Isometric drawing automaticly, also can produce PCF intermidate file for data exchange.

IsoAlgo gets piping data from PCF and generate isometric drawing in DXF format automatically.

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1. What is a PCFfile? --- http://www.alias.ltd.uk/pcf.asp

2. Usage

There are six files for IsoAlgo:

- ❖ IsoAlgo.dll
- ❖ IsoAlgoTest.exe
- ❖ IsoAlgoConfig.xml
- ❖ IsoAlgoSymbolTemplate.xml
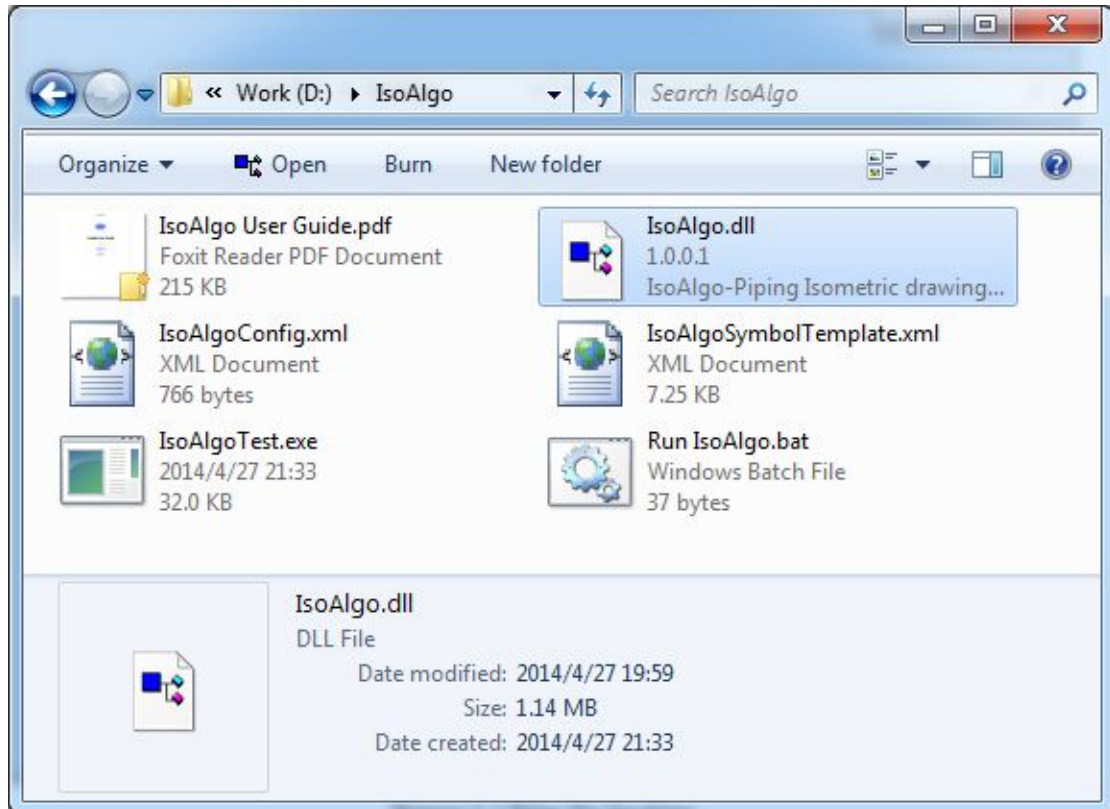- ❖ IsoAlgo User Guide.pdf
- ❖ Run IsoAlgo.bat

Figure 2.1 Files for IsoAlgo

The usage of IsoAlgo is easy, only need edit the Run IsoAlgo.bat file, give the PCF file name and the DXF file name, the content of the Run IsoAlgo.bat file is as follows:
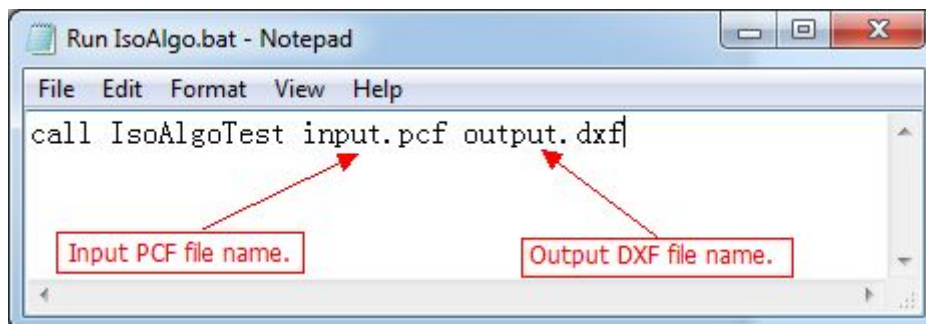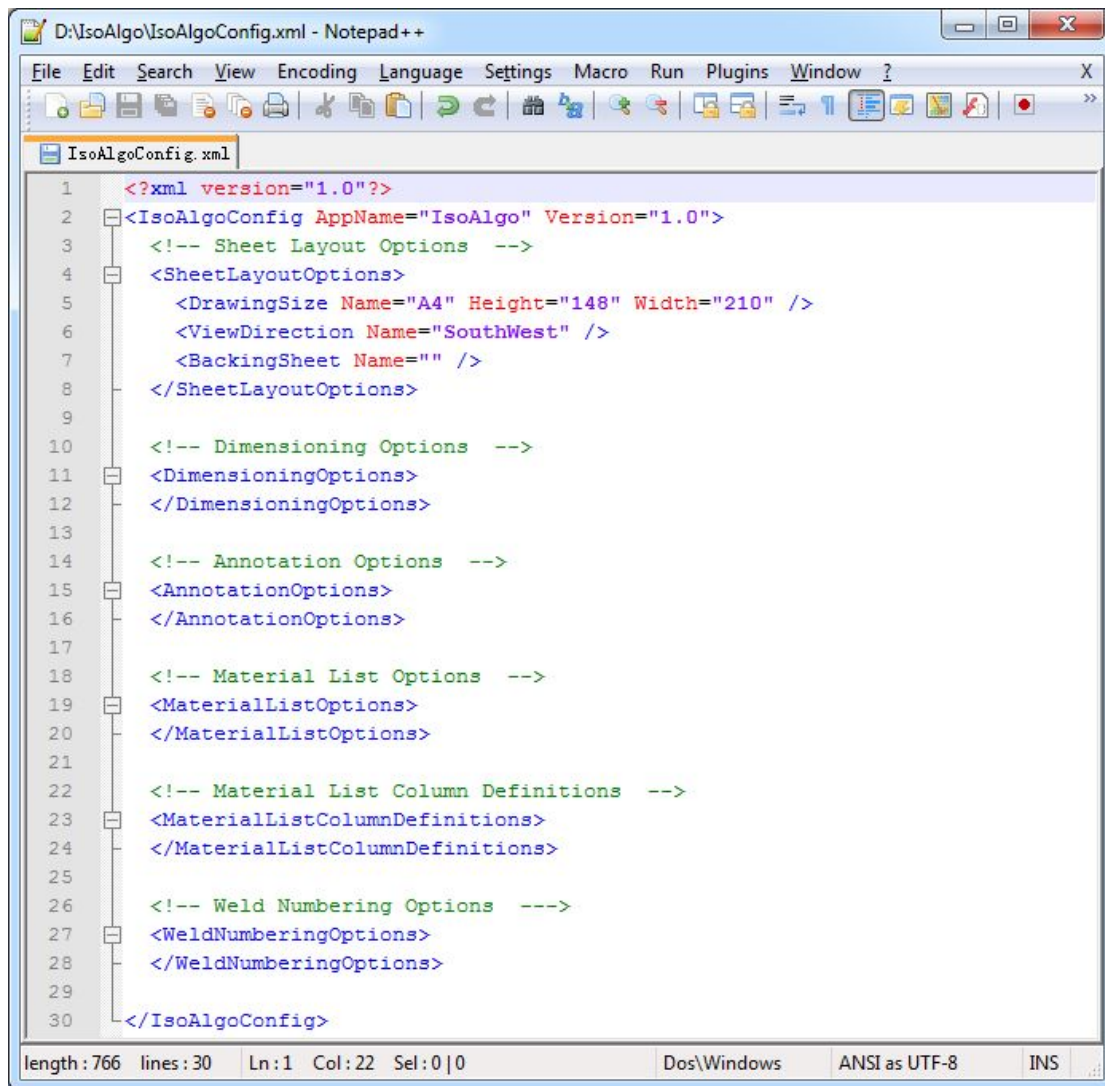

Figure 2.2 IsoAlgo Usage

When set the input PCF file name and the output DXF file name, then double click the Run IsoAlgo.bat to run the IsoAlgo to generate the DXF file automatically.

3. Configuration

Through the IsoAlgoConfig.xml file to configure the IsoAlgo, The IsoAlgoConfig.xml content is as follow figure:

Figure 3.1 IsoAlgoConfig.xml

There are many options to configure the IsoAlgo, mainly include the following:

- ❖ Sheet Layout Options;
- ❖ Dimensioning Options;
- ❖ Annotation Options;
- ❖ Material List Options;
- ❖ Material List Column Definitions;
- ❖ Weld Numbering Options;

For example, if you want to change the paper size, you can modify the DrawingSize Name to "A3". Or you can change the ViewDirection to "NorthEast". etc.

4. Customize Symbol Template

IsoAlgo allows user to coutomize the symbol for some symbol keys by symbol template. The symbol template is in the Cartesian coordinate system, as the following figure shows:

Figure 4.1 Gate Valve Symbol Template

The you can save the polylines for the symbol in IsoAlgoSymbolTemplate.xml file, as following figure shows:

Figure 4.2 Save Symbol Template Data

First, you should specicfy the Symbol Key(SKEY) for the symbol template;

Then, give the arrive point and leave point for the symbol template;

Finally, define the symbol graphics by polylines.

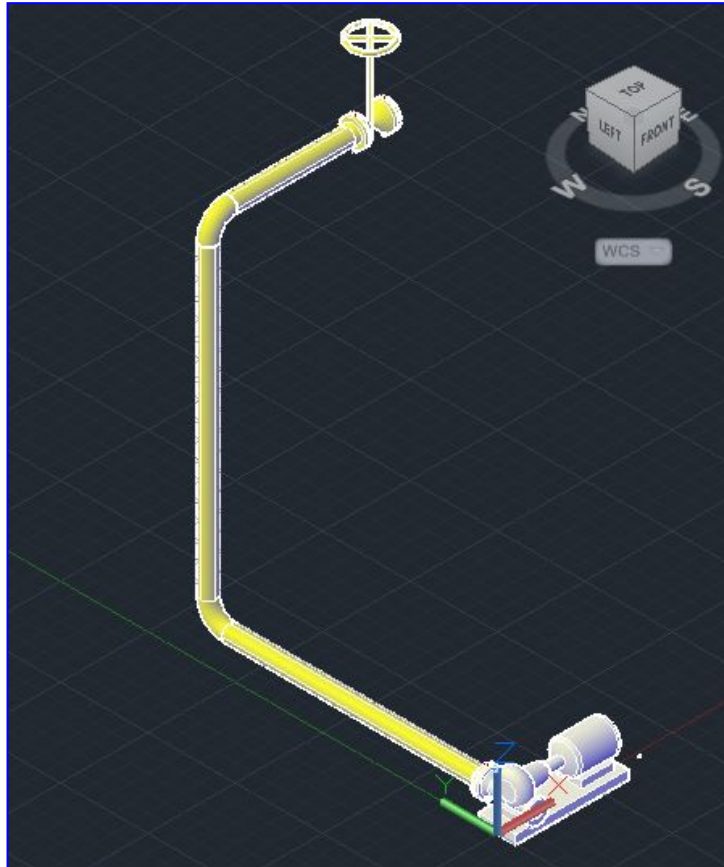## 5. Examples of Isometric Plots Generated by IsoAlgo

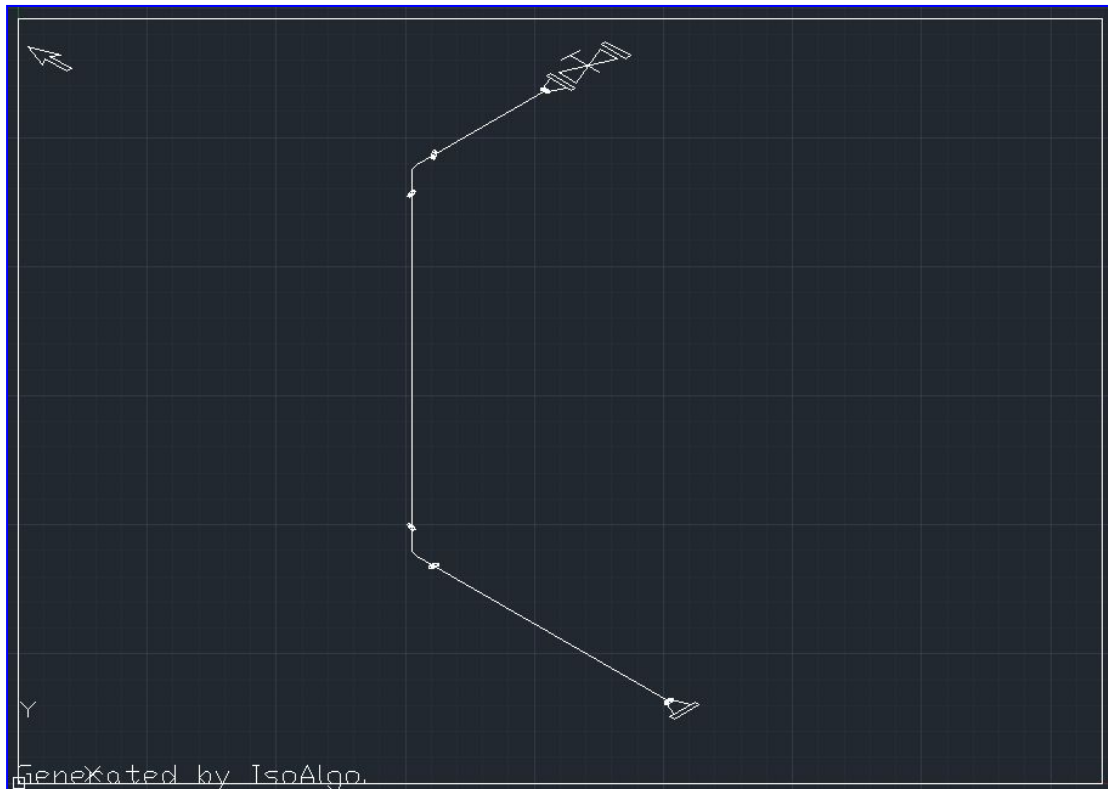
Figure 5.1 Piping model in AutoCAD Plant3D

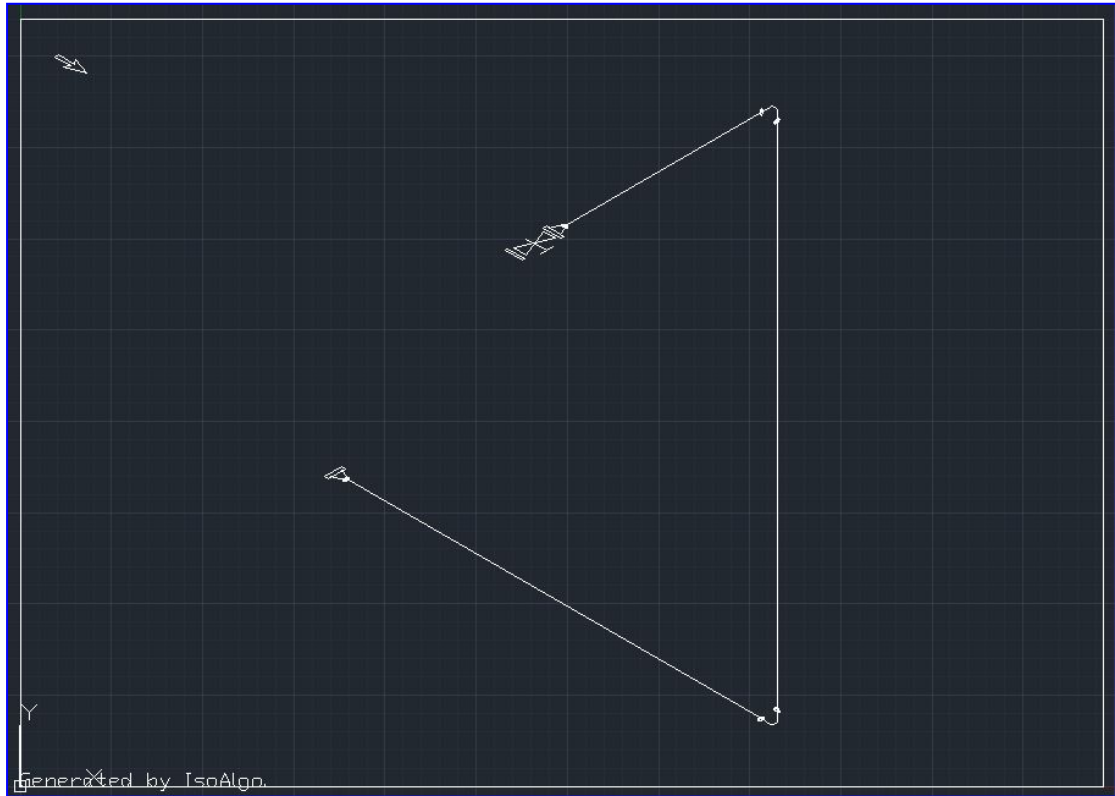Figure 5.2 Piping Isometric drawing generated by IsoAlgo

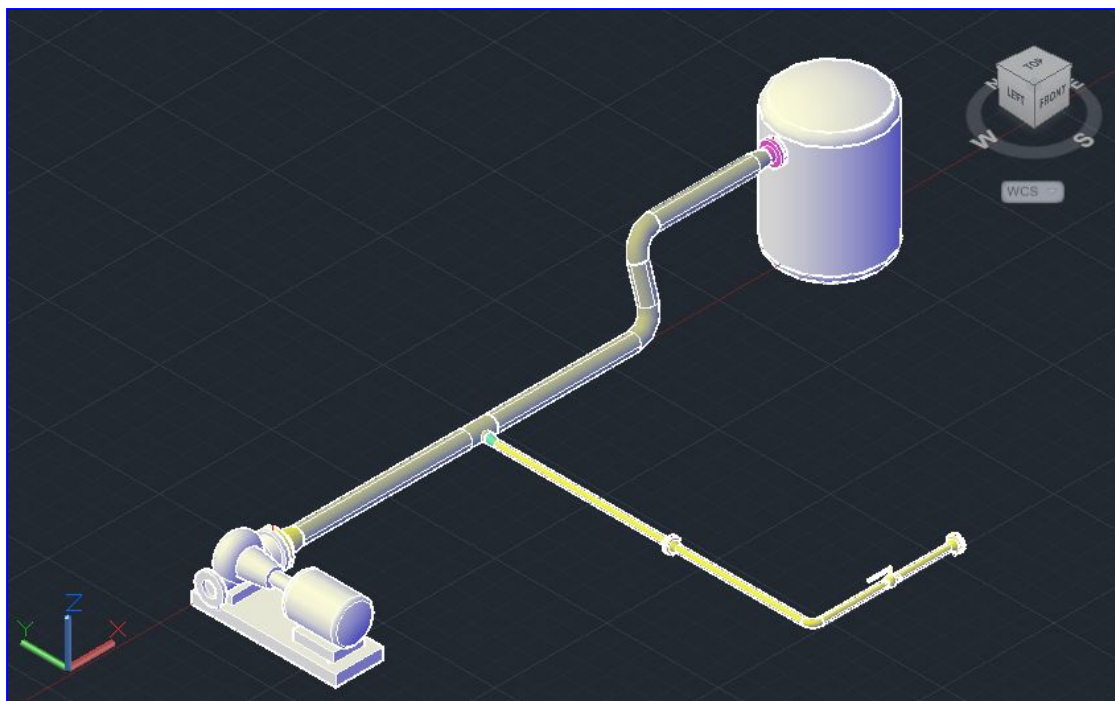Figure 5.3 Piping Isometric drawing generated by IsoAlgo
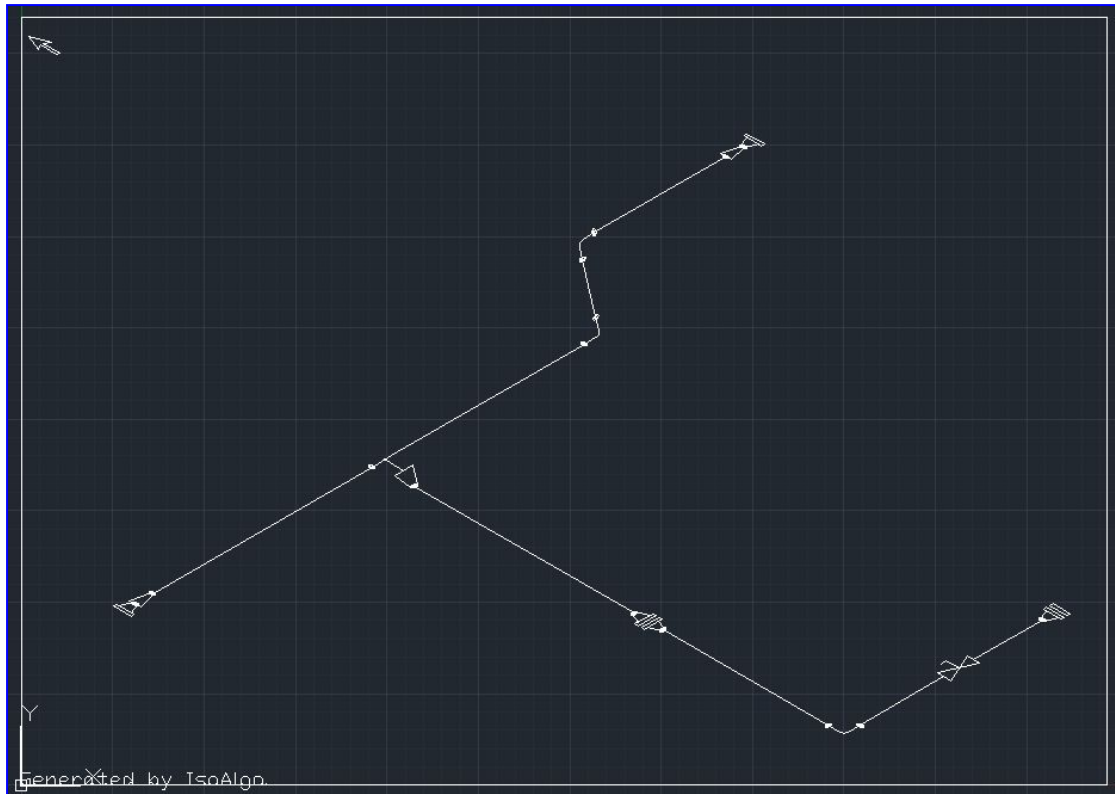

Figure 5.4 Piping model in AutoCAD Plant3D

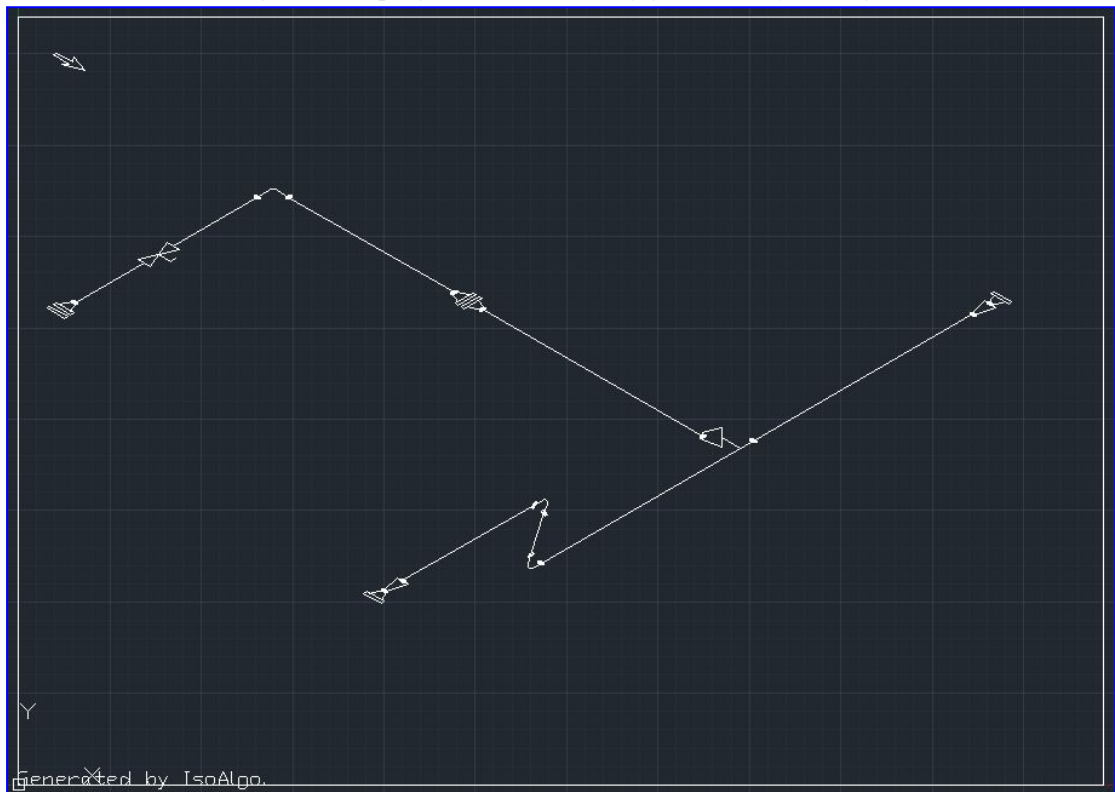Figure 5.5 Piping Isometric drawing generated by IsoAlgo

Figure 5.6 Piping Isometric drawing generated by IsoAlgo

6. Feedback and Support

IsoAlgo is not finish yet, any feedback or suggestion is welcome, please send email to the author: IsoAlgo@gmail.com.

For more information about IsoAlgo, please visit:
http://code.google.com/p/isoalgo/