CADWorx Plant Professional

#2807: Who knew configuring ISOGEN could be fun! See how using the new ISOGEN Configuration

Introducing the new way to configure ISOGEN

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Workshop

Introduction

New ISOGEN Configuration simplifies the customization of piping isometric drawings and reports produced by ISOGEN. ISOGEN Configuration provides an intuitive, visual approach to setting isometric drawing style properties and provides easy access to ISOGEN's substantial array of controls and files. Pick graphically the options you want and immediately see the impact spontaneous style modifications have on drawing output using the built-in drawing previewer.

ISOGEN Configuration de-mystifies ISOGEN and unlocks its powerful capabilities in a user friendly way, making it easier for CADWorx users to set-up their project deliverables, and, do it faster! During this workshop you will learn this and see how this exciting addition to I-Configure makes configuring ISOGEN, more fun!

Objective

The primary objective of this workshop is to introduce you to the new ISOGEN Configuration component of I-Configure.

Outline

During this session you will learn how to

- Create isometric directories, projects and isometric styles in I-Configure
- Use many of the features of ISOGEN Configuration
- Edit an isometric style using ISOGEN Configuration
- Use the isometric style in CADWorx to produce ISOGEN output
- Make changes to the isometric style to change ISOGEN output
- Upgrade your Project Manager projects and style so that you may administer and customize them using I-Configure and ISOGEN Configuration

Assumptions

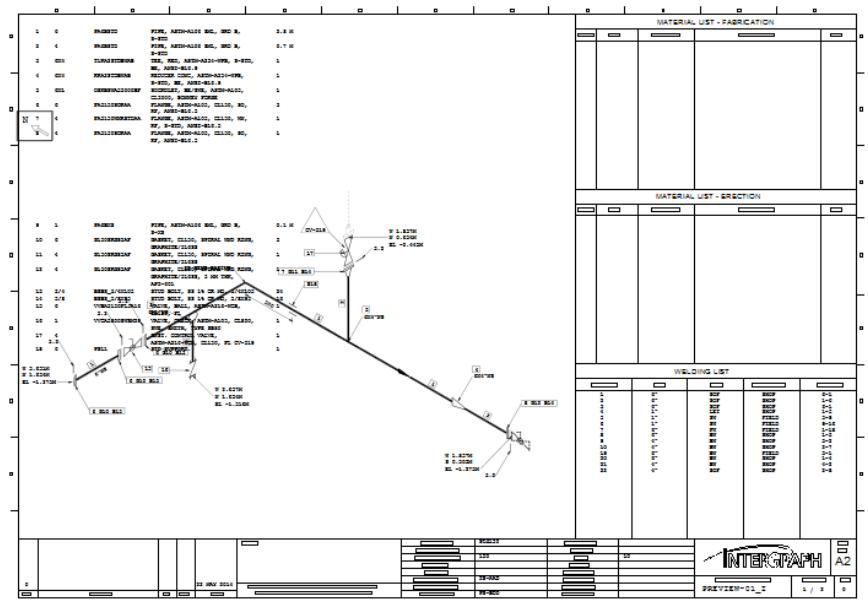
It is assumed that you will already know how to use I-Configure and CADWorx Plant Professional.

If not, the instructor is on-hand to assist you.

Getting started

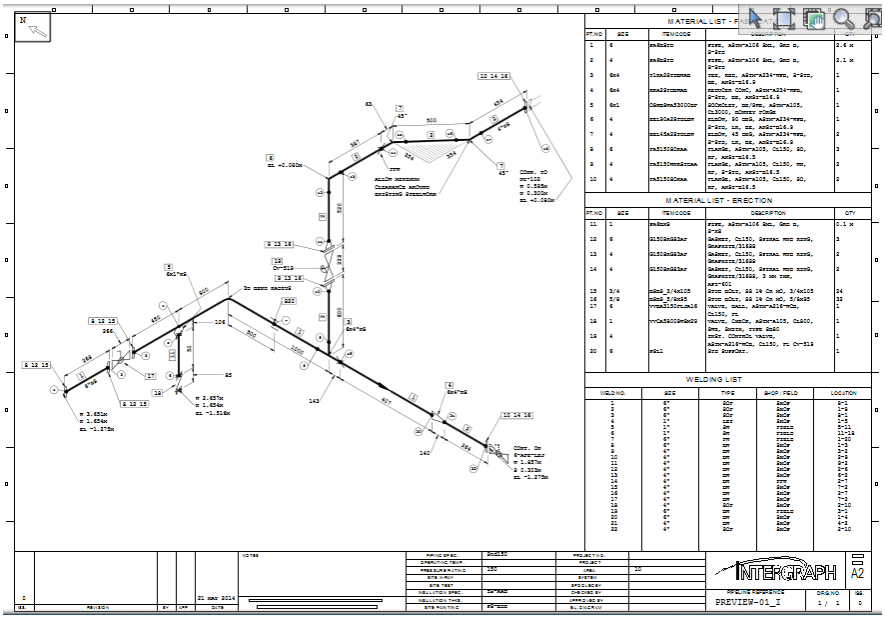
You’re going to work with a copy of the Final-Weld-Box style, which, for the purposes of this workshop, has been purposely corrupted to be unusable for production of isometrics and reports via ISOGEN.

Corrupted state:



Your task is to re-configure the Final-Weld-Box style to make it production ready.

Finished state:



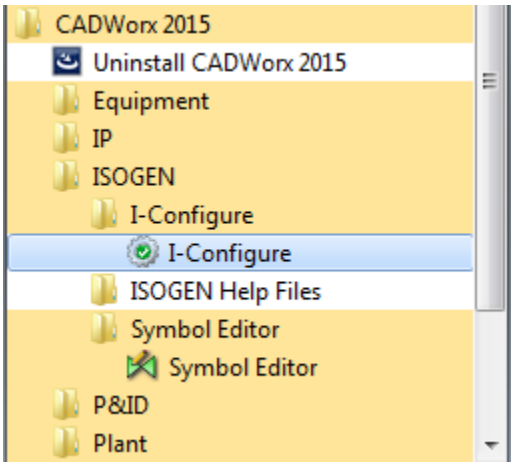
Let’s get started!

I-Configure basics

Creating an isometric directory, project and isometric styles

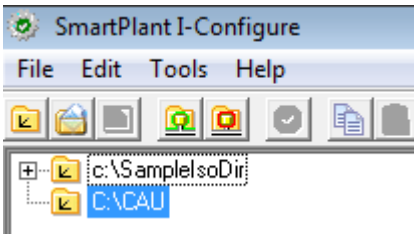
Note. If you already know how to use I-Configure, you can skip this section, it is optional.

Start I-Configure



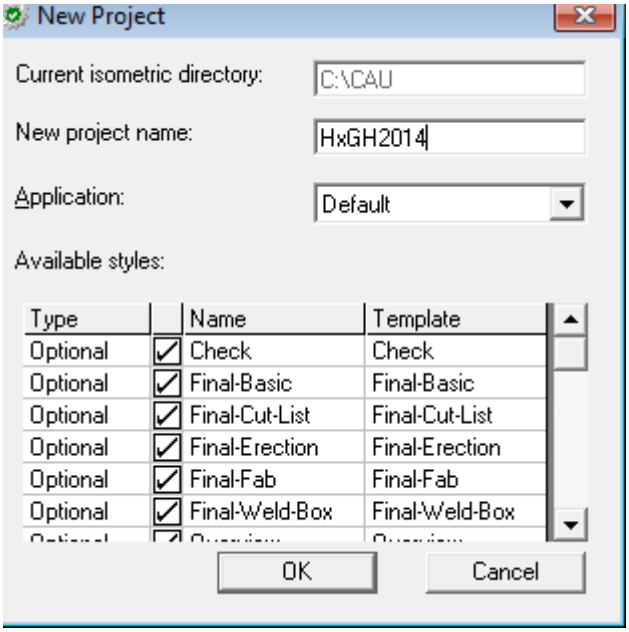
Click to create a new isometric directory.

Click to create a new folder on C:\, then enter CAU as the name, then click OK



Click OK.

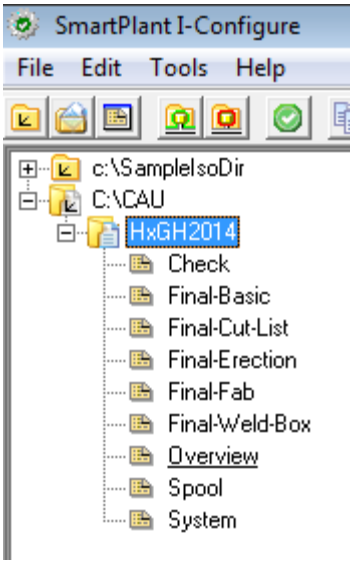
Click to create a new project - the New Project dialogue appears



Enter HxGN2014 as the project name, leave all other settings as they are, then click OK.

Please be patient whilst I-Configure creates the isometric styles under the project.

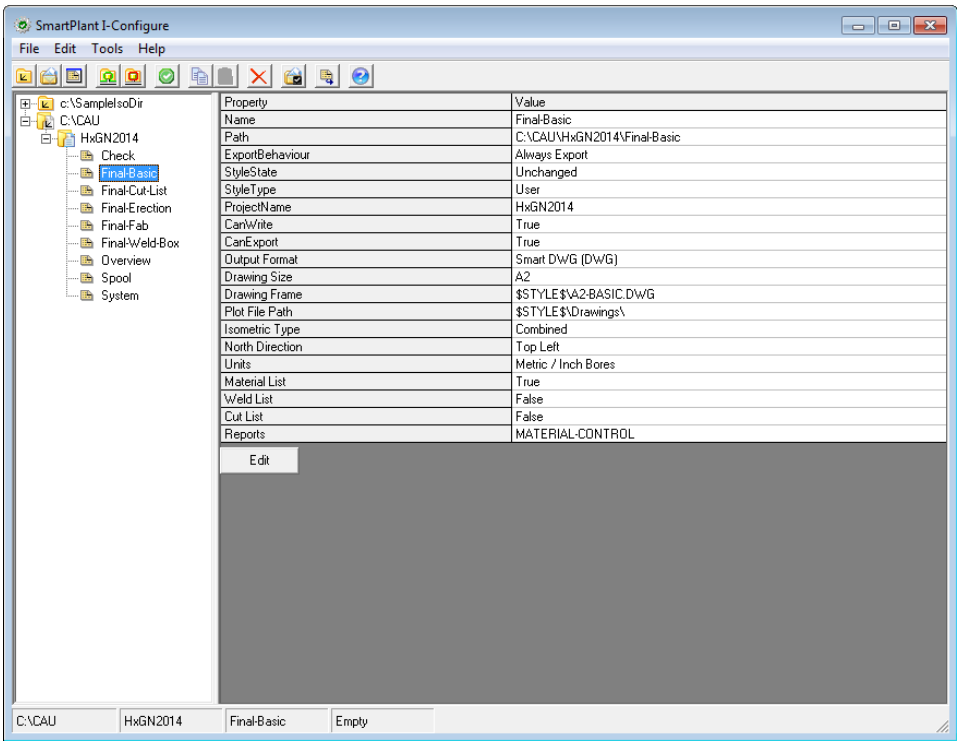
Expand the tree to show



These templates provide a start point for administrators to develop company specific styles in accordance with company drawing standards or the deliverable requirements of a project. Custom styles once configured can be established as a company template and reused on future projects.

Note. To prevent unauthorized changes being made to styles by users, a password can be set at the project level if required.

Select the Final-Basic style in the list and the Properties panel on the right updates to show

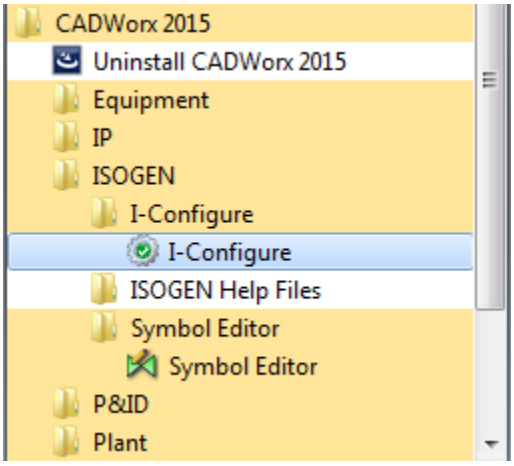


Using the LHB select the CAU entry in the tree, then click to delete the isometric directory, and all of its contents.

Note. There is no undo in I-Configure, so this feature needs to be used with care!

ISOGEN Configuration

If not already running, start I-Configure



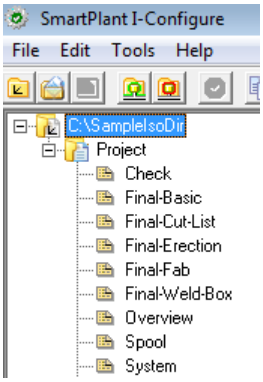
If you're familiar with previous versions of I-Configure, supplied in the CADWorx 2013 and 2014 releases, you will probably notice that the Detail and Overview tabs are no longer part of the application.

The function they performed is now handled by the new ISOGEN Configuration, which is accessed by this button

Explore the user interface

Home screen

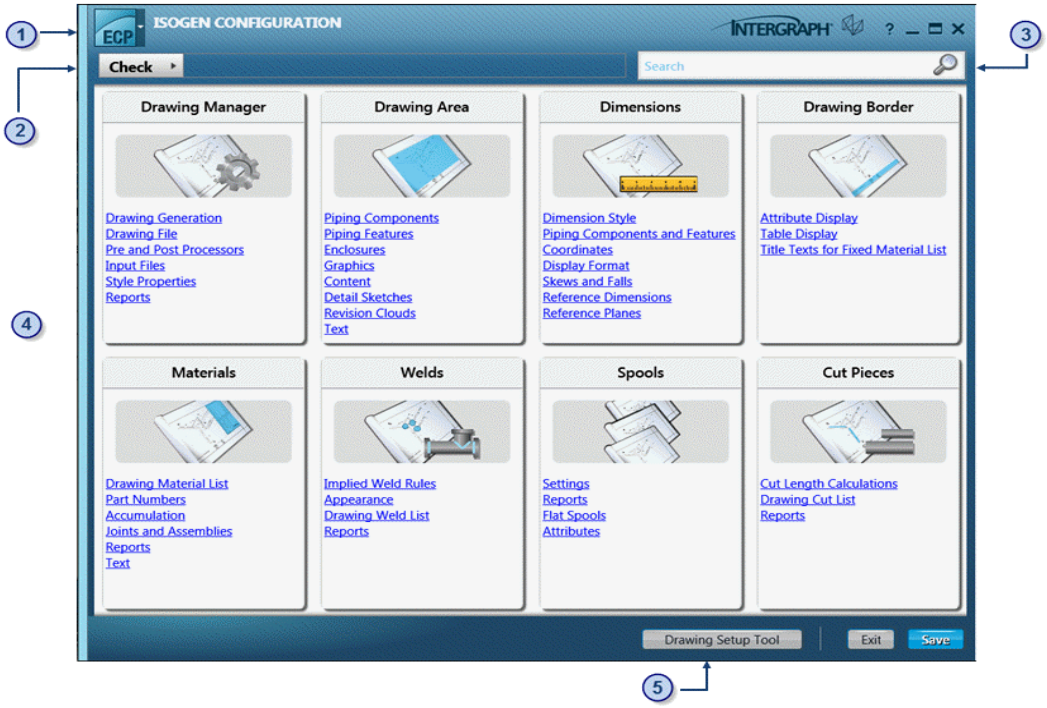
Your system should already have this entry



Select the Check style then click the

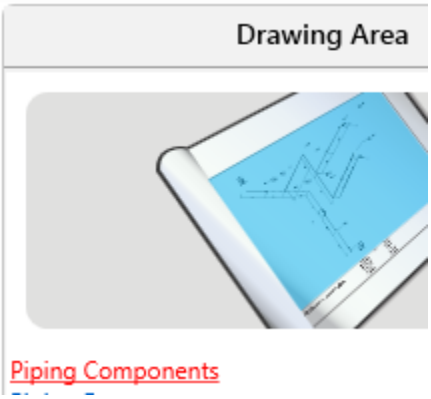
button

ISOGEN Configuration will start and you should see

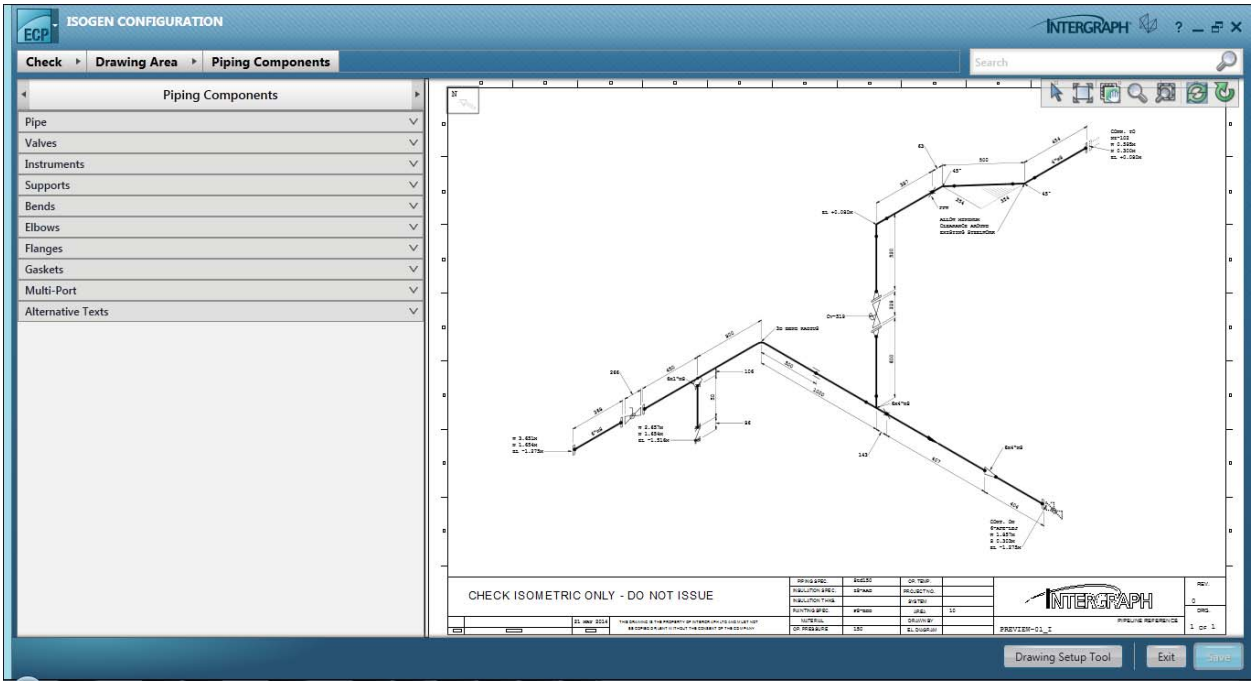


- (1) ISOGEN Configuration menu
- (2) Navigation bar
- (3) Search box
- (4) Category pane
- (5) Drawing Set-up Tool

Click on



The Configuration View appears



Navigation: breadcrumb trail

ISOGEN Configuration organizes the hundreds of ISOGEN drawing controls using a hierarchical structure that consists of three levels of content: style category, style group, and option group.

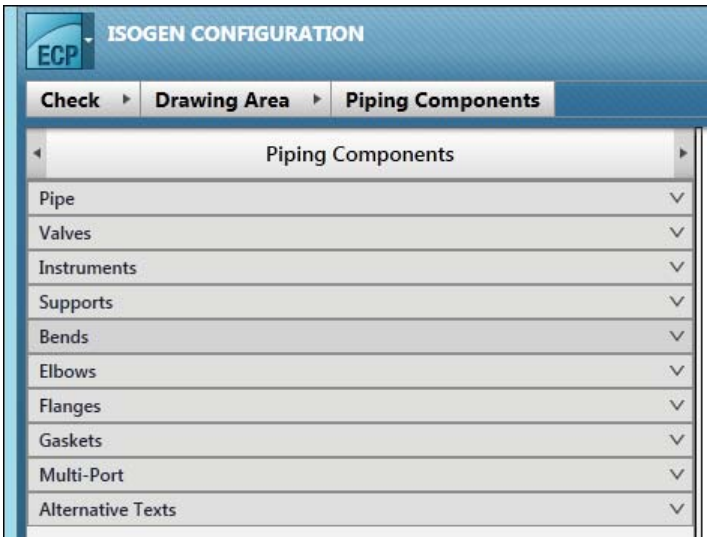
This hierarchical structure breaks down the wide array of ISOGEN controls into manageable chunks of information. To help you keep track and know where you are within the hierarchy, ISOGEN Configuration uses a location-based breadcrumb navigation style. By providing a breadcrumb trail that illustrates how the hierarchy of ISOGEN drawing controls is structured, you can use one-click access to freely move through the hierarchy to configure drawing properties.

- Style - Check
- Style category – Drawing Area
- Style group – Piping Components
- Option group – the list of options displayed in the panel below the Style group

The breadcrumb trail indicates in which collection of drawing properties you are, and more importantly allows you to navigate your way through the product to find other collections of drawing properties. The breadcrumb trail starts with the name of the active style. After this, the active style category is listed, followed by the active style group.

Option group panel

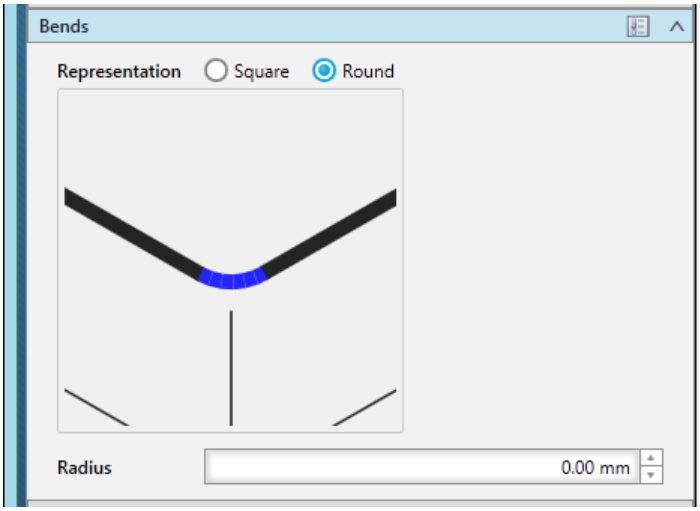
Below the breadcrumb trail is the Option group panel



Clicking expands the option group panel and displays all of its related isometric drawing style properties. You can modify any of these properties as needed. Some properties have a selection list from which you can select a value. Other properties require you to type a value or text string. Changing the value of each property ultimately determines the appearance of the isometric drawing and report file content produced during drawing generation.

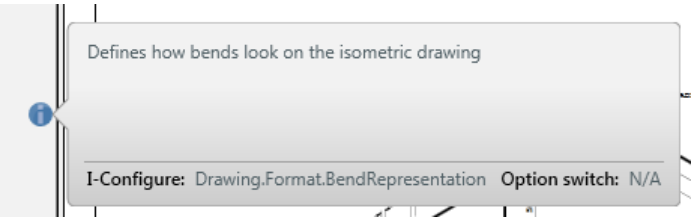
Click on next to

to see the options that can be set

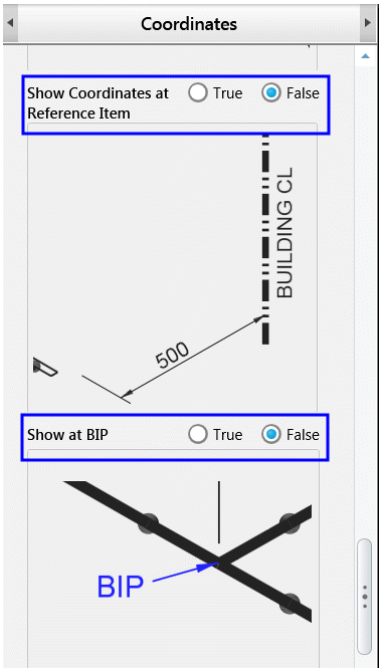


You'll notice as you move the cursor into the grey area that this icon appears

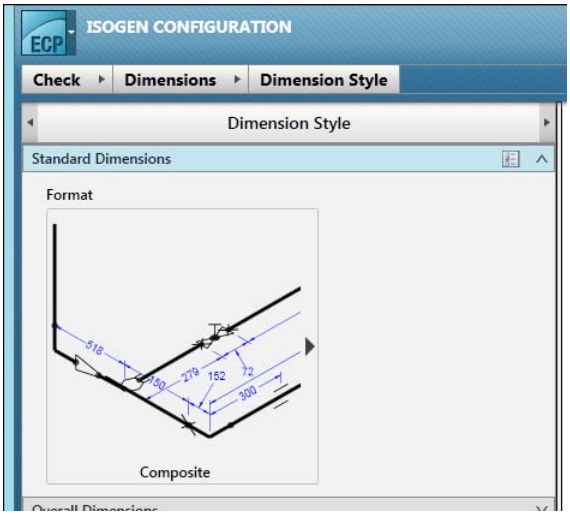
Place the cursor on top of the icon and an information pop-out appears explaining more about what the option does etc.



In the example below, changing the True/False settings control whether coordinates for reference items and break-in points are shown on the generated drawing.

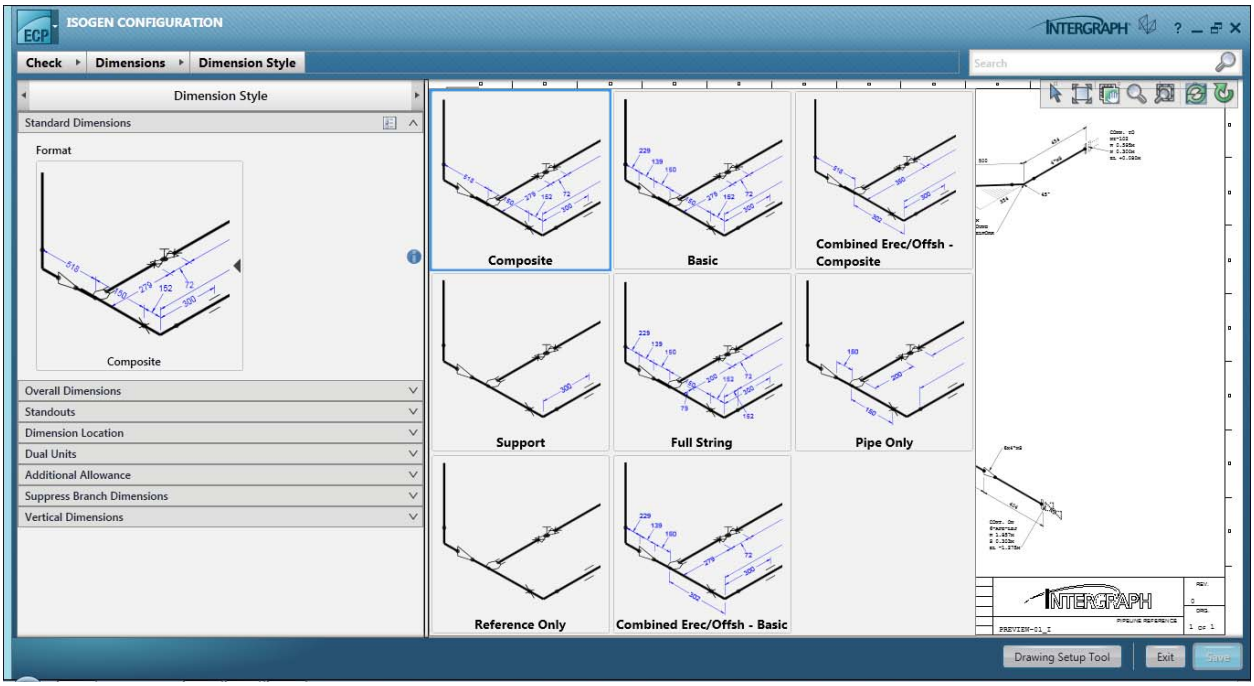


Change the breadcrumb trail as shown



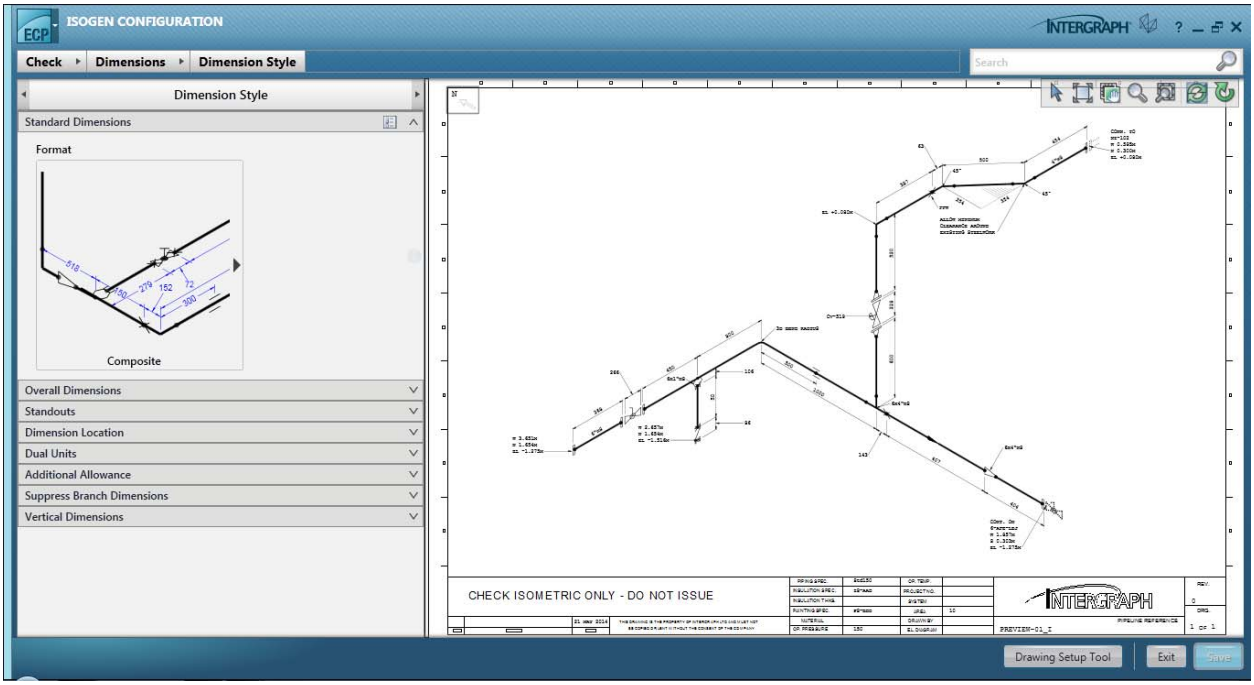
Notice the next to the graphic.

Click this and you will see a gallery of images showing all currently available standard dimension options

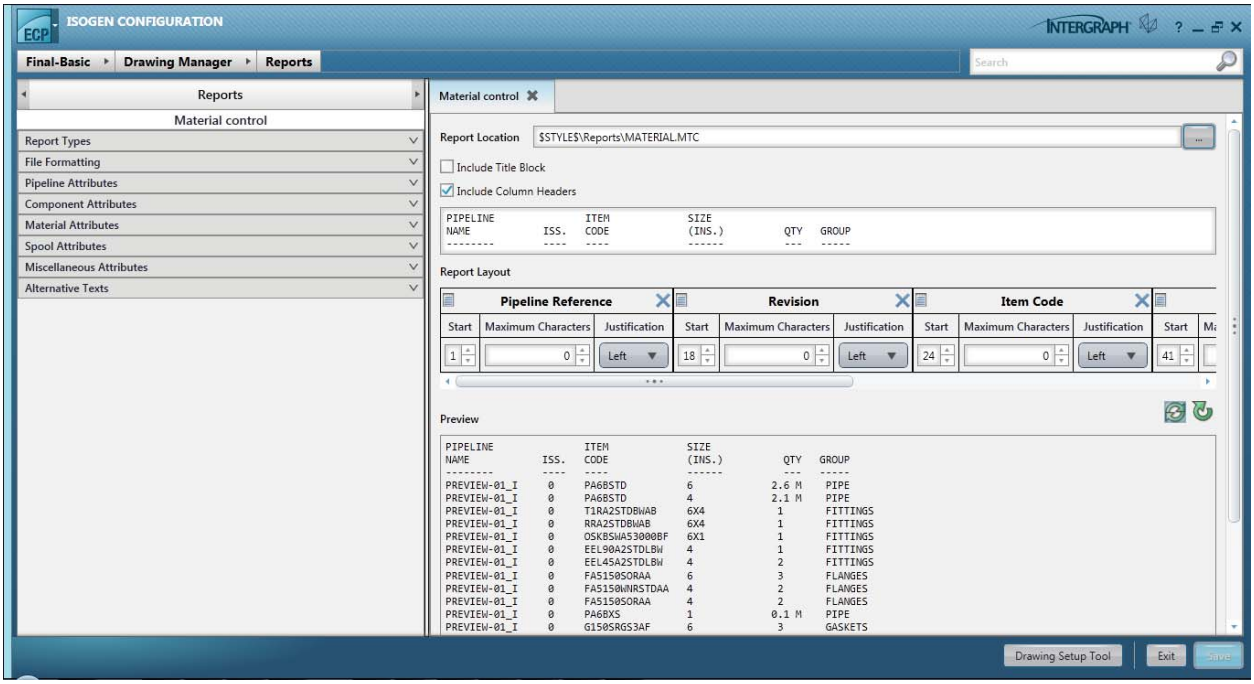


Drawing Preview panel

To the right of the Options panel is the Drawing Preview panel



Note. If a report style group had been selected (not applicable to the Check style, it has no reports to configure), this side of the interface would show the Report Definition Panel instead, like that shown in the example below



Drawing Preview tools

Directly above the Drawing Preview panel are the Drawing Preview tools

To understand what each tool does, pass the cursor over each icon to see its fly text.

Experiment with each of these tools to manipulate the view in the Drawing Preview panel.

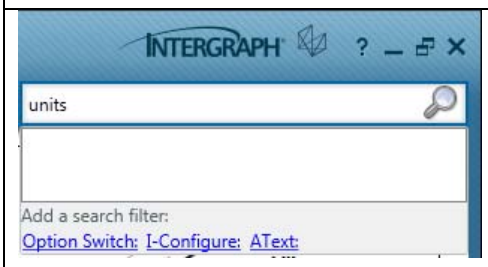
Note. If you want more information about how each tool functions, refer to online help, which is accessible via the icon.

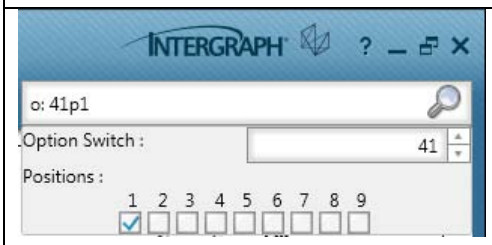
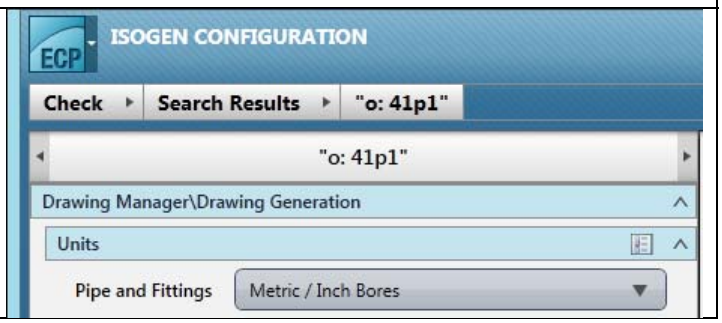
Note. To cancel the active View command, do one of the following: select a different command, click Select , or right-click anywhere in the Drawing Preview panel.

Search

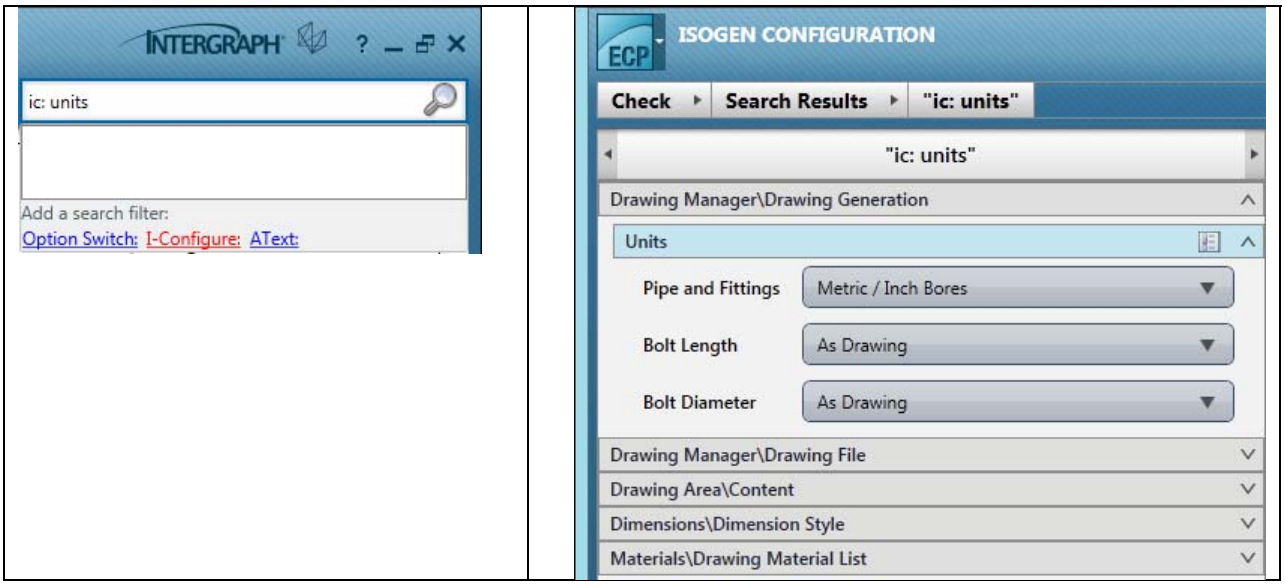
Just above the Drawing Preview tools is the Search box. Any word, number or symbol entered in this field acts as a filter. Various methods are provided to locate any ISOGEN control/option/property.

For example, if you wanted to find Units, you could filter based on either

Keyword:	Search result
	

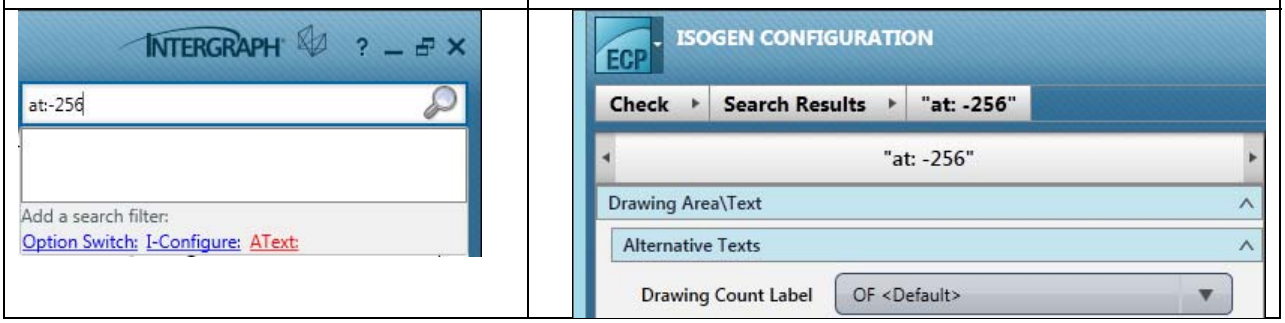
Option Switch:	Search result
	

I-Configure property name:	Search result



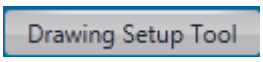
In the case of ATexts, you can enter the number if known or typing –ve will find the Alternative Texts applicable to the current breadcrumb trail.

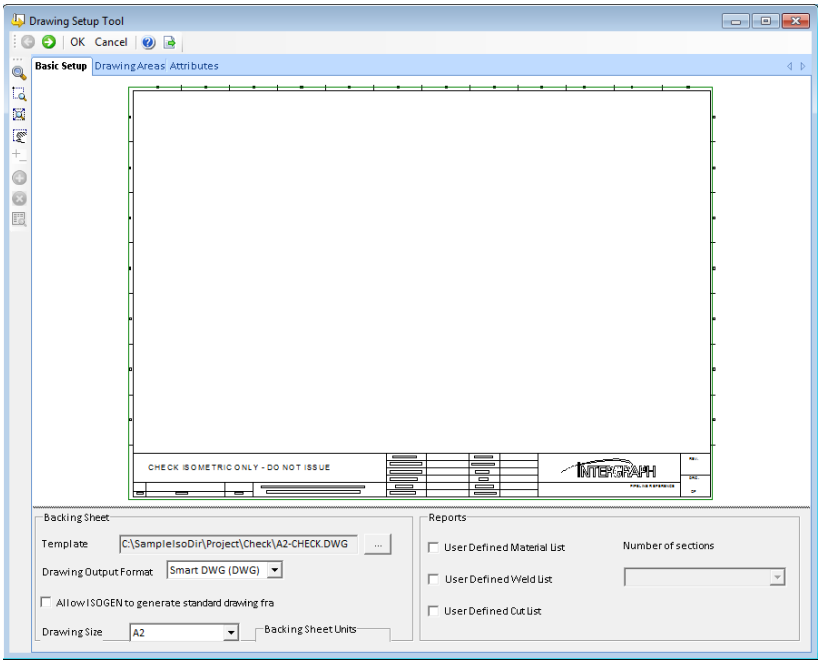
AText:	Search result



Drawing Setup Tool

Finally, take a quick look at the Drawing Setup Tool.

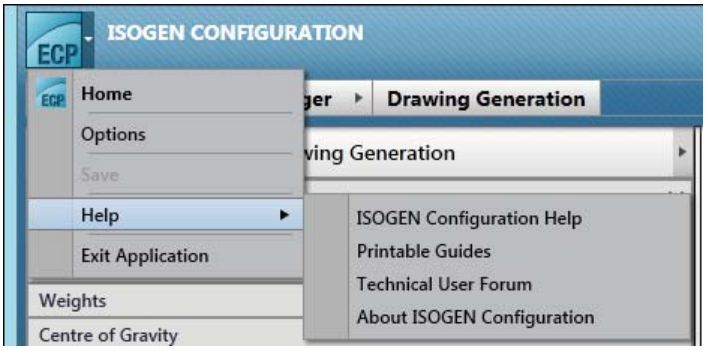
Click 



Quickly step through this using then click to Exit.

ISOGEN Configuration menu

The ISOGEN Configuration menu provides access to online help and printed documentation, the Technical User Forum on Linked In, and information needed when entering service requests into Smart Support.



Click Home then

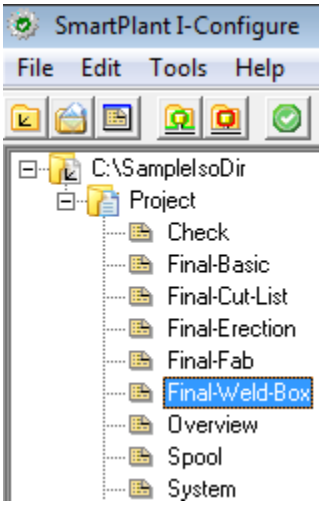
Click

Editing isometric styles in ISOGEN Configuration

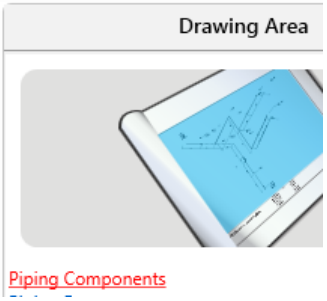
Now that you know what the interface looks like and how it works, it's time to update the Final-Weld-Box style to make it usable in CADWorx.

Select the Final-Weld-Box style then click the

button

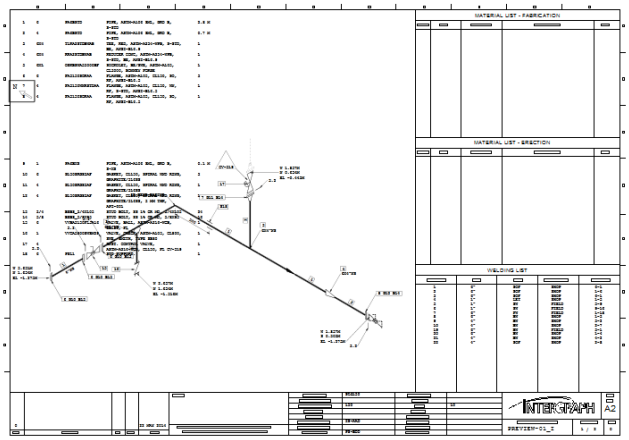


After a few moments the ISOGEN Configuration home screen will appear.

Click 

to see the Drawing Preview panel.

What's wrong with the drawing currently?



A number of issues exist:-

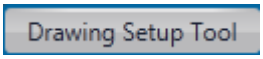
- Key dimensions are missing
- No weld numbers are shown
- Gasket graphics and dimensions are shown
- Bends are represented by a square graphic
- Connection references are not shown
- Elevation co-ordinates are not shown at direction changes
- The Instrument tag is displayed in a triangle enclosure
- The top margin is not set correctly
- The bill of material is not positioned correctly
- A Material Control report is missing.

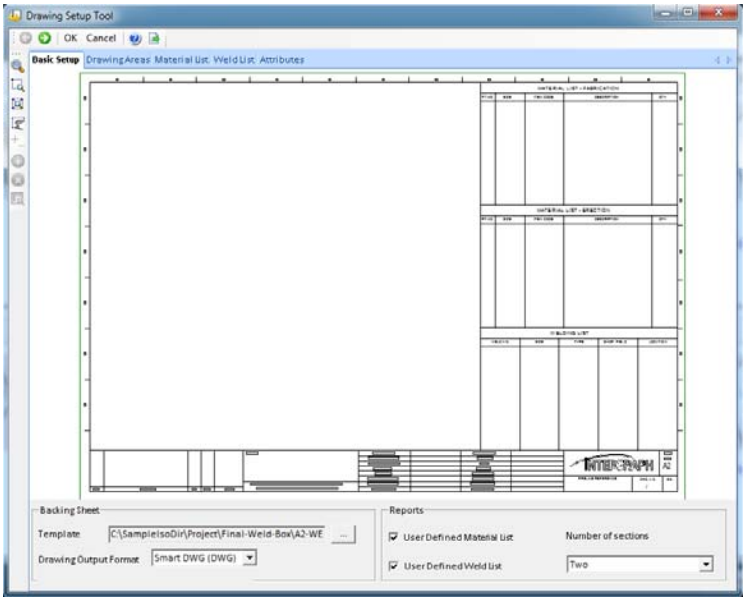
Basically, it's a mess!

Make the following changes using ISOGEN Configuration:-

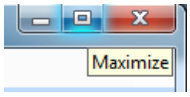
Drawing Setup Wizard: Margin and Bill of Material

So that it's easier to change the other settings later, set the correct drawing margin and reposition the material list first

On the Home screen click 

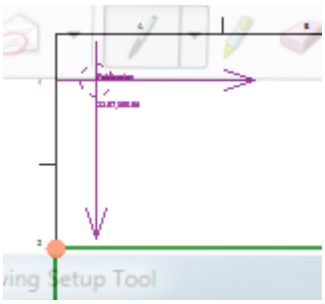


Click to move to the next screen

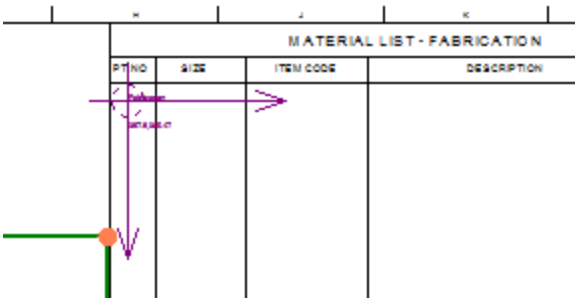
Tip: 

the Drawing Setup Wizard and click to fit the view.

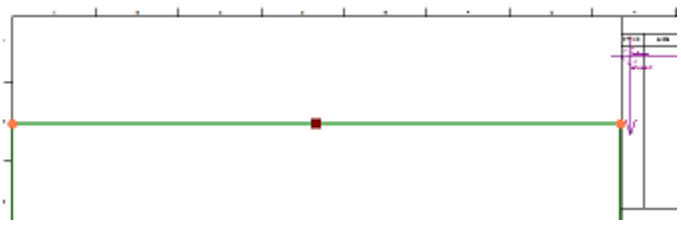
Using the Left-hand mouse button (LHB), grab and move the topmost purple arrow at the top of the screen



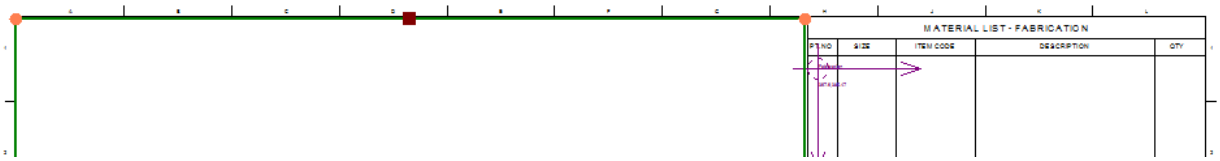
Reposition it in the PT-NO column of the FABRICATION section of the bill of material



Next, using the LHB, click on the orange square in the centre of the top green line and drag the green line to the top border edge

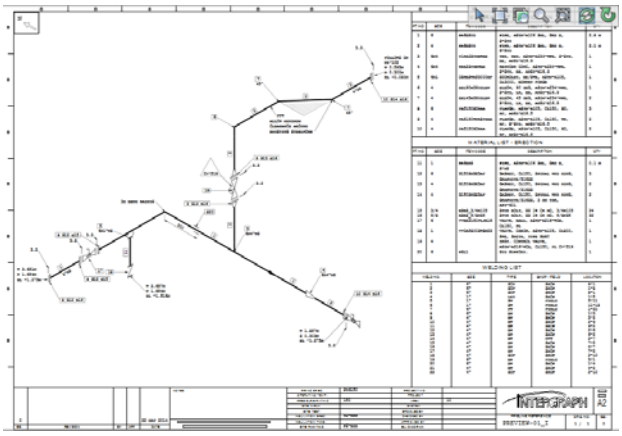


Until it is like shown below, then release the LHB.



Click OK to accept the changes. The Drawing Setup panel closes.

The Drawing Preview Panel is displayed and you will see that these two out of the eleven problems are now resolved, the drawing looks much better already!

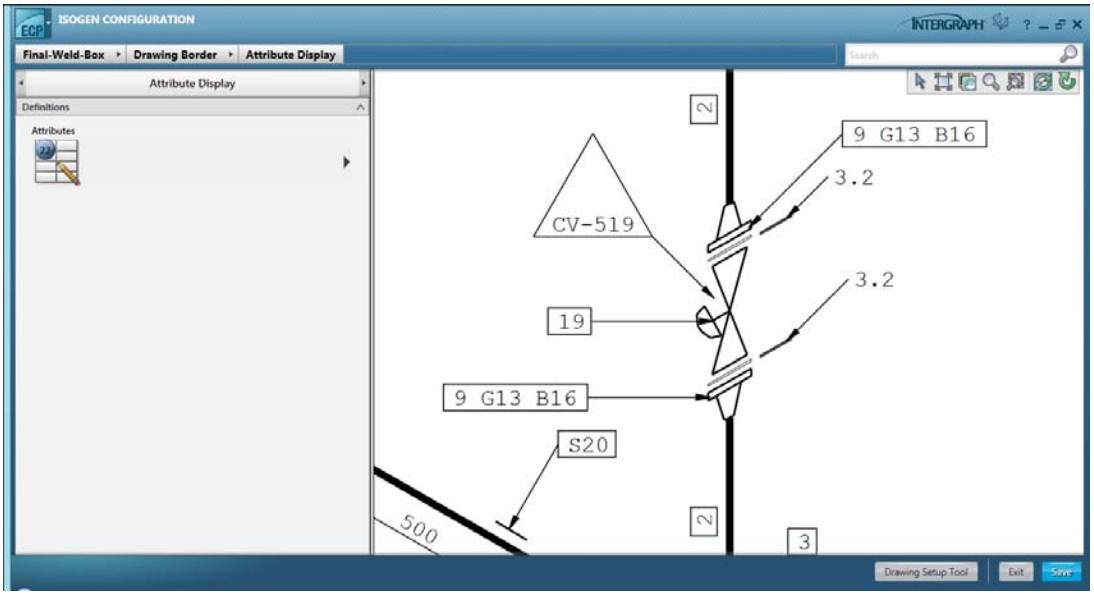


Click

.

Instrument enclosure

Zoom in so that the Drawing Preview panel is as shown



Next, change the instrument enclosure

Type

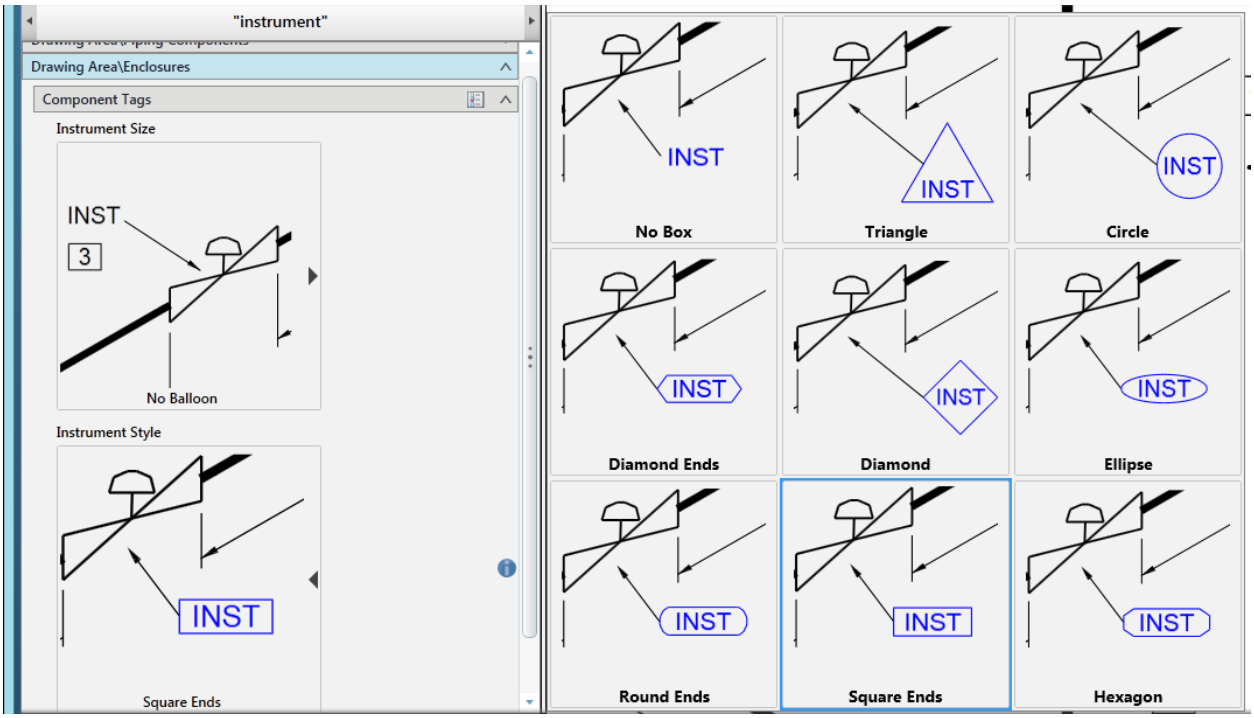
in the Search field then click the Search icon.

The Option group updates to show

Now, we know that the feature of the isometric that we want to change is in the Drawing Area part of the isometric, and what it is that we want to alter is an enclosure, so…

Click on next to

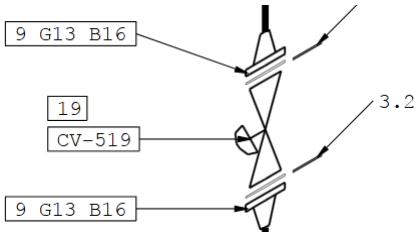
then select Square Ends



Note. By default, the drawing view in the Drawing Preview panel updates automatically whenever a drawing property is modified. However, if Automatically Refresh is turned off, you must manually update the drawing view by clicking Refresh on the View toolbar. Each time ISOGEN has to regenerate the display in the Drawing Preview panel, you will see this icon appear in the Drawing

Preview tool bar. Sometimes the refresh can take a few seconds, so please be patient whilst the update completes.

You should now see



Note. To cancel the active View command, do one of the following: select a different command, click Select , or right-click anywhere in the Drawing Preview panel.

Still focusing on the same area of the drawing, there are two further changes needed here…

- 'F' is missing from the part number box
- We want to turn off the display of gasket dimensions and gasket graphics

But, how do you find those if you're new to ISOGEN Configuration, or even, ISOGEN?

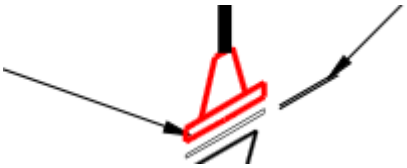
Click

.

Flange part number

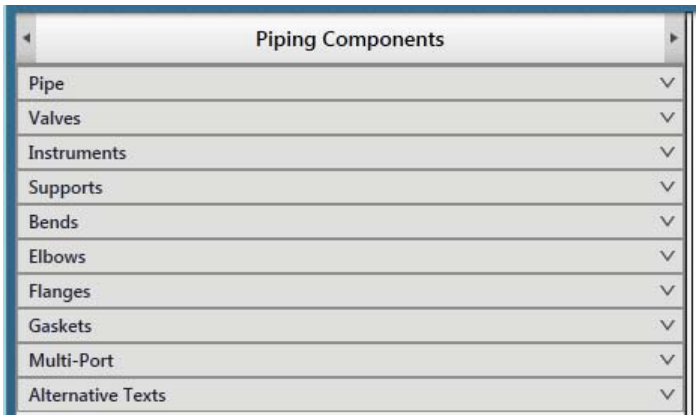
A good way to find relevant options is to click on the pipeline graphics themselves. When you do this, ISOGEN Configuration determines that you want to see all options applicable to the drawing feature. Normally however, this returns a higher number of options than a more focused search will. This is very useful though when you want to find and work with a number of related options in parallel.

Select then double click on the flange so that it highlights as shown



Note. The highlight is only temporary; as soon as all applicable options have been found by the software, the Drawing Preview returns to its normal appearance.

You'll see that the Option panel updates to show

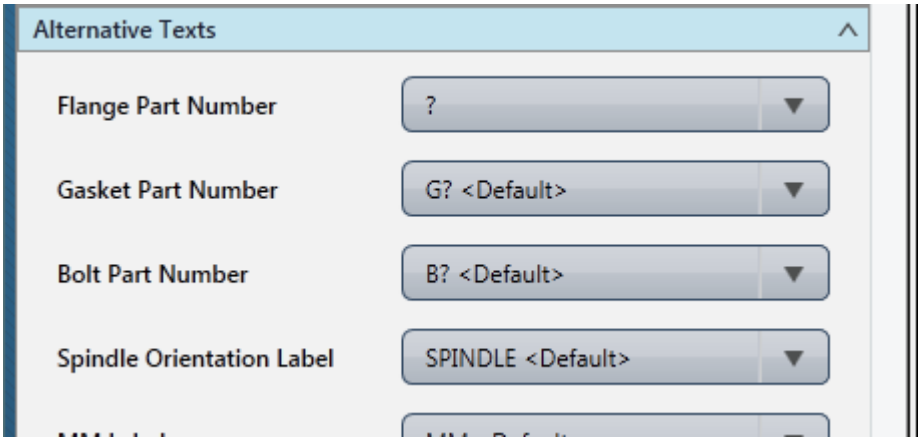


Now, you might expect, if you click on Flanges that you will find exactly what you need, but that isn't the case for the change that needs to be made here. Why is this? The display of an 'F' character in the part number box is controlled via ISOGEN's Alternative Text (AText) facility.

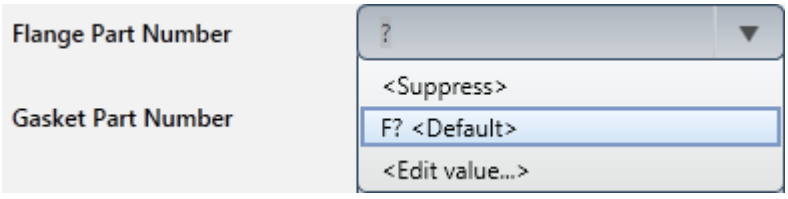
So, instead of clicking on

, click on

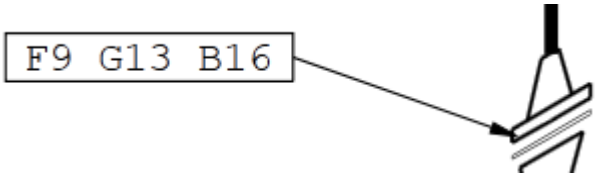
to see



Now, fortunately, the AText you need to change is the first one in the list.

Click and choose 

The Drawing Preview panel updates to show



Click

.

Gasket display

Next, make the required changes to gaskets.

Do you need to search again or are the options you need accessible already? Well, one of them is!

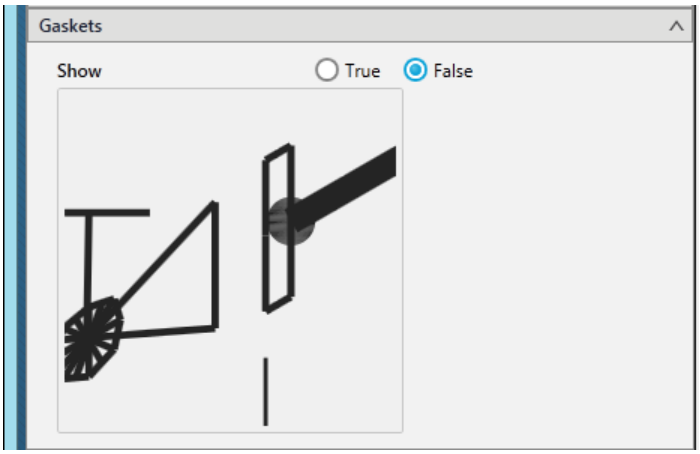
If you look further up the Option group panel, you can see there's a Gaskets option.

Click to close

Click to open

The option available controls the graphical display of gaskets, but not the display of gasket dimensions.

Click



Click

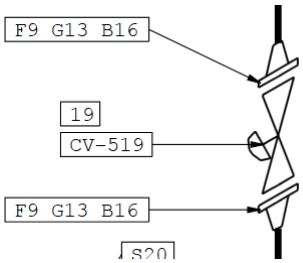
.

Gasket dimensions

A gasket is a piping component, and what you want to change now is how dimensions are displayed for it.

Using this information use the breadcrumb trail to find the relevant option to change.

Having done that, the Drawing Preview panel should look like this – there should be no gasket graphics, and no gasket dimensions shown



Click

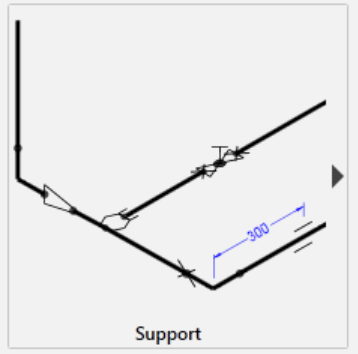
.

Dimension style

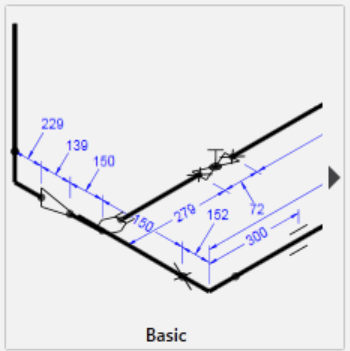
Next you will set the style of dimensions for the pipe.

Again, where are you in the hierarchy? Can you find the option from here? Two clicks are all you need to find the right option!

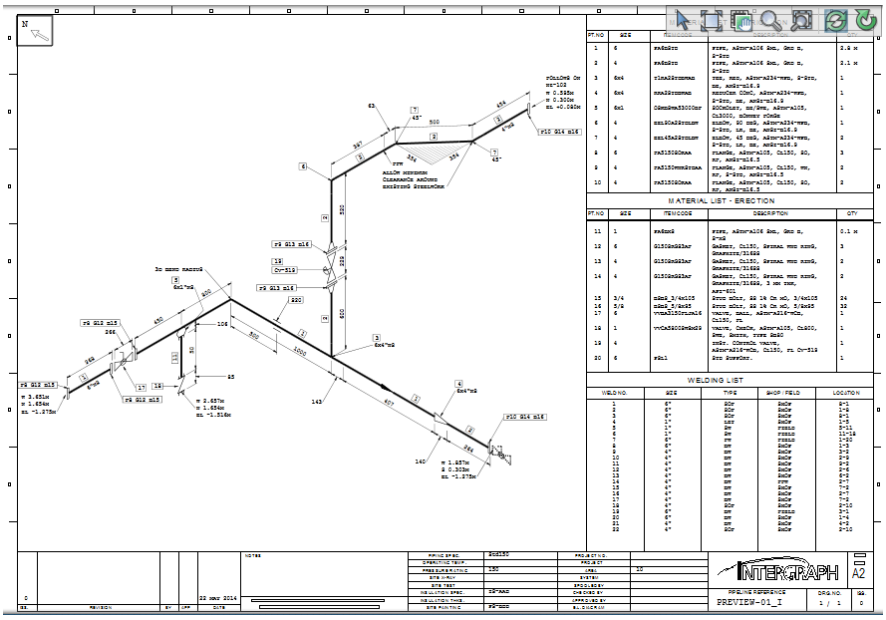
Use the breadcrumb to find this option



Then select this



After updating, the Drawing Preview panel should show



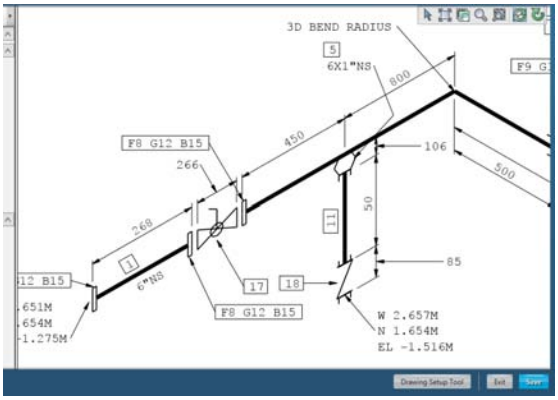
Click

.

Weld numbers

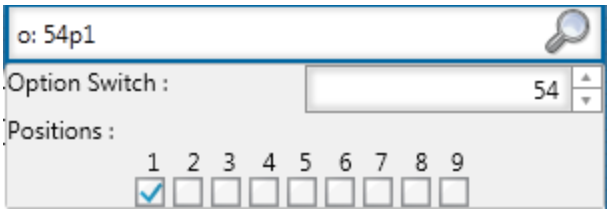
Next, you want to control the appearance of weld numbers.

Zoom in so that the Drawing Preview panel shows

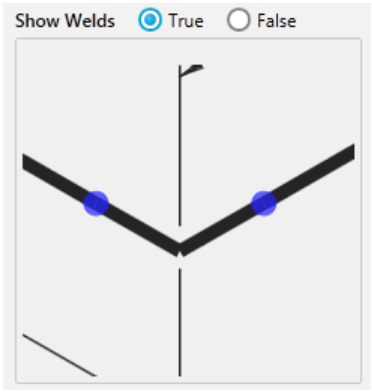


You will see that welds are not visible, so before you can show the numbers, you have to show the welds themselves.

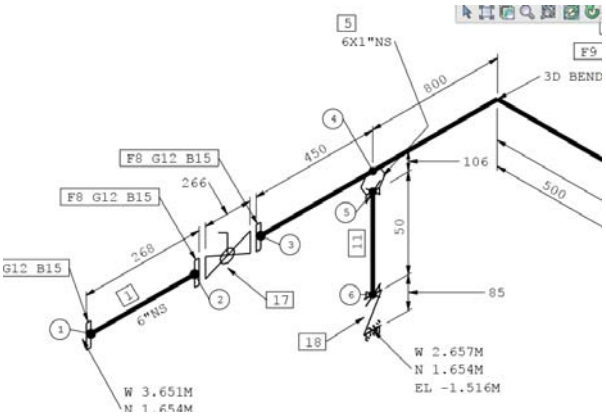
Search for



Select



The Drawing Preview panel updates to show



Note. Some ISOGEN controls are mutually inclusive. For example, if the display of welds is False, then weld numbers are not visible. On the other hand, some ISOGEN controls are mutually exclusive, for example, if the display of weld numbers is False, welds can still be visible. Unfortunately users can fall foul of this condition, which often leads to frustration when trying to configure ISOGEN.

Tip: Always check the to see if these conditions exist for a particular option you wish to use.

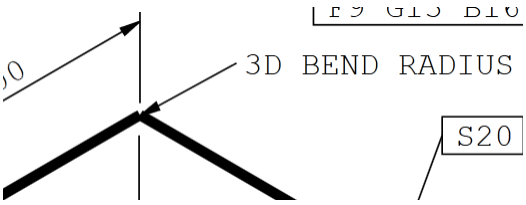
Click

.

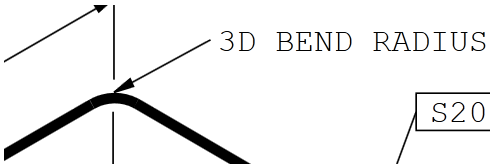
Bend representation

Next, change the display of the bend, which is a piping component, in the drawing area.

From square



to round



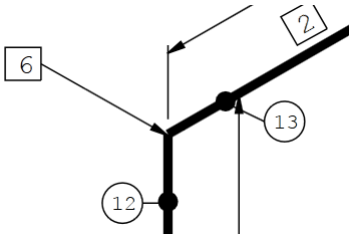
Click

.

Elevation co-ordinates at direction changes

Co-ordinates and dimensions are related and can be output when a direction change occurs in the pipeline - either at a branch or elbow/bend.

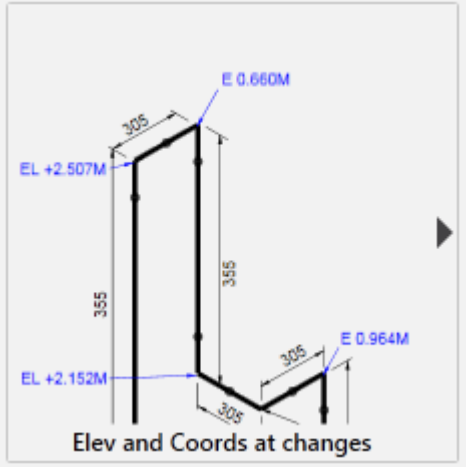
Currently they are not shown



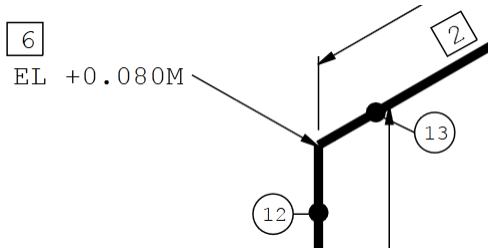
Click Home

then, remembering that you want to change co-ordinates, pick the most relevant style category.

Select this option



The Drawing Preview panel should show

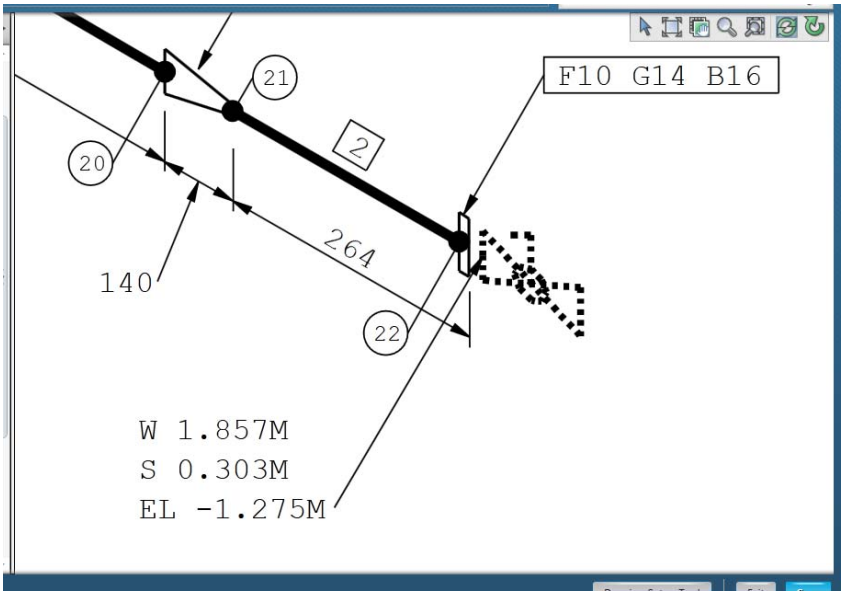


Click

.

Pipeline continuation message

Zoom in to this area



Pipeline continuations are part of drawing area content.

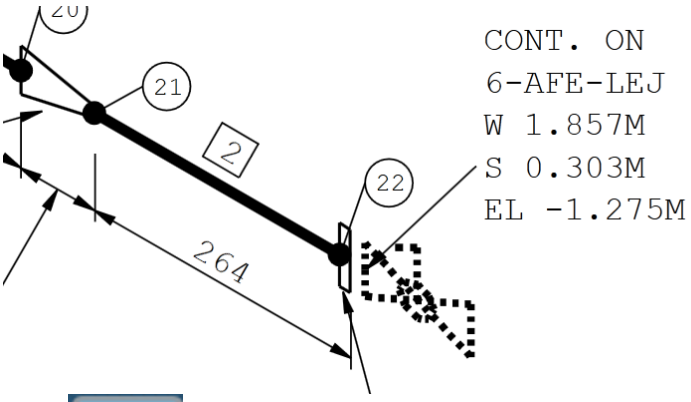
Which of these breadcrumb trails controls the display of pipeline continuation messages?

- Final-Weld-Box ▸ Drawing Manager ▸ Style Properties
- Final-Weld-Box ▸ Drawing Area ▸ Piping Features
- Final-Weld-Box ▸ Drawing Area ▸ Content

You're looking for this option

Select this from the drop down

The Drawing Preview panel updates to show

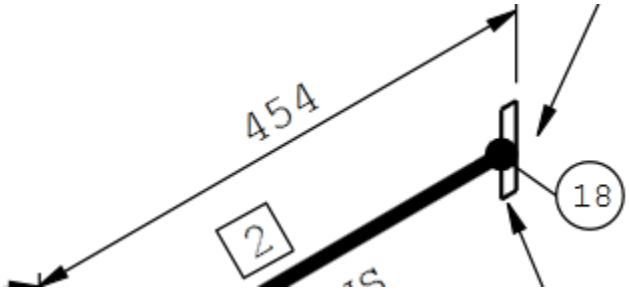


Click

.

Show equipment nozzle graphic

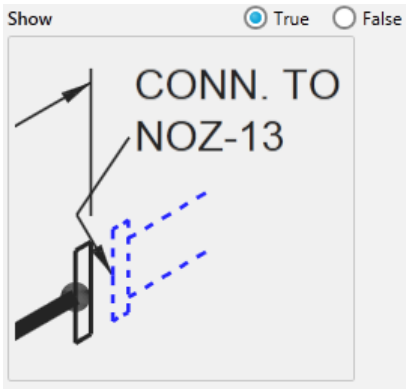
Next, show the nozzle piping feature here



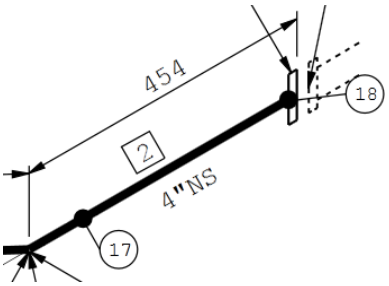
Enter show into the search field

Chose the correct Option group from the list

Select the required option



The Drawing Preview panel should show



Click Save.

Equipment connection message

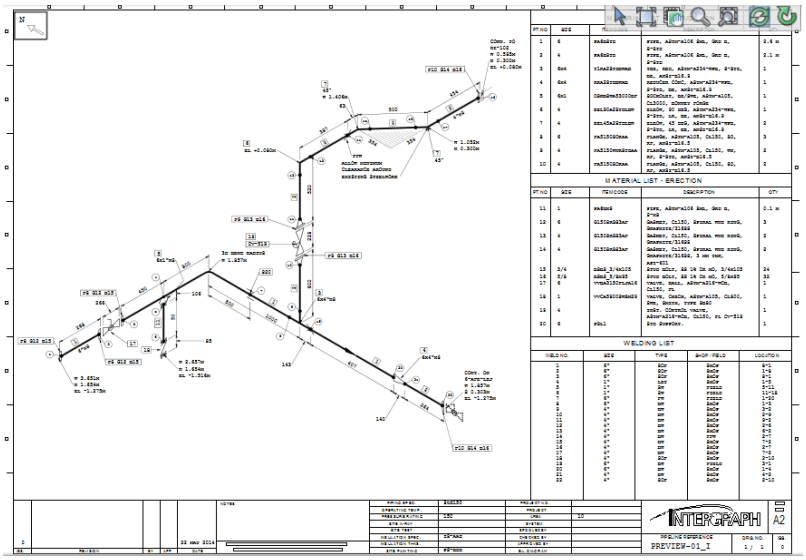
Enter AText -208 into the search field and change this text to the default value

```
FOLLOWS ON
```

The Drawing Preview panel should show

```
CONN. TO
NZ-102
W 0.595M
N 0.300M
EL +0.080M
```

The drawing should be in much better shape now!

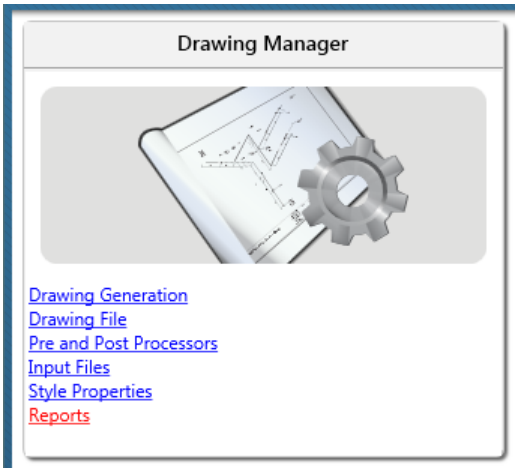


Click Save.

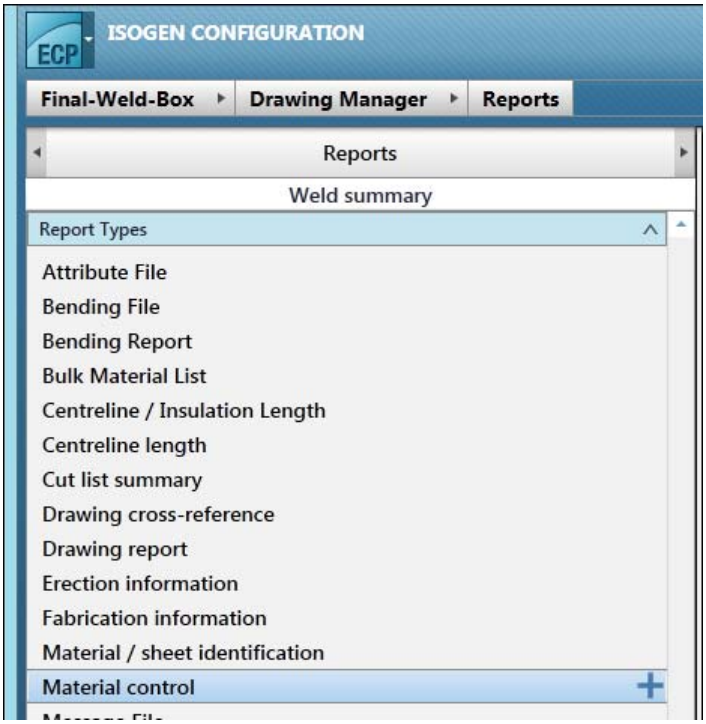
Material Control report

Finally, for the Final-Weld-Box style, create a Material Control report.

On the Home screen, click on



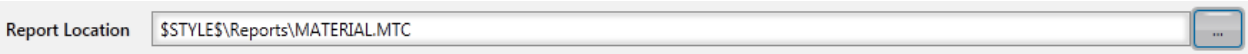
Click to create the report



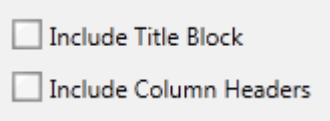
Click the browse button

Browse to the C:\SampleIsoDir\Final-Weld-Box folder, enter MATERIAL.MTC as the name then click OK.

The field updates to show

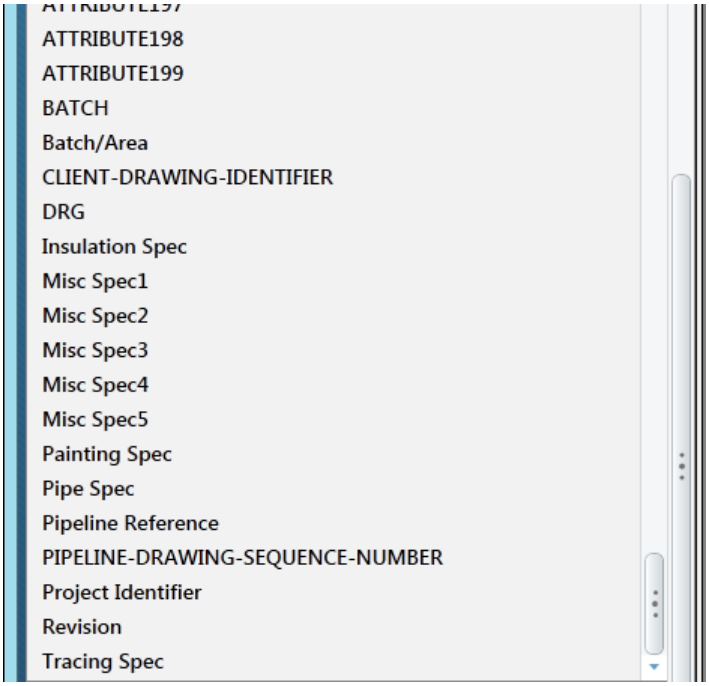


Leave these un-checked



Click on Pipeline Attributes to expand the list

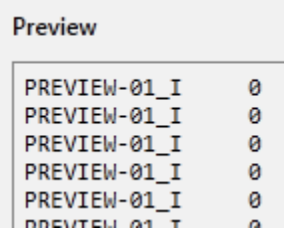
Use both scroll bars, find these attributes towards the bottom of the list



Use , add these Pipeline attributes to the list, setting the spacing and justification per the table below

Attribute	Start	Maximum Characters	Justification	Value
Pipeline Reference	1	0	Left	PREVIEW-01_I
Revision	18	0	Left	0

The Preview should look like this



Note. It doesn't matter that the Attribute boxes directly above the Preview don't reflect the report layout. The order of these can be changed if you wish though.

Close the Pipeline Attributes option.

Open

Use to add this Material attribute to the list, setting the spacing and justification per the table below

Attribute	Start	Maximum Characters	Justification	Value
Item Code	24	0	Left	Various

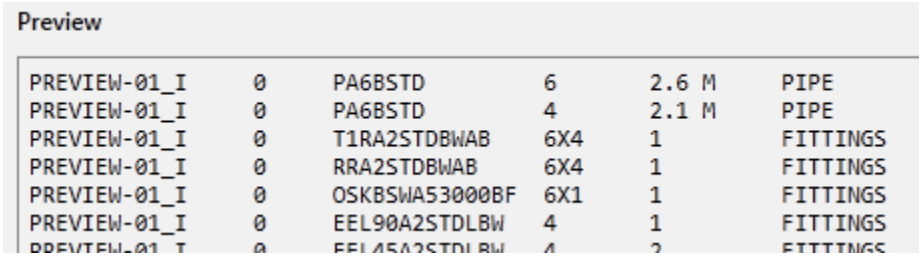
Close the Material Attributes option

Open

Use to add these Miscellaneous attributes to the list, setting the spacing and justification per the table below

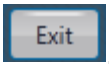
Attribute	Start	Maximum Characters	Justification	Value
N.S.	40	0	Left	Various
Qty	48	0	Left	Various
Group	58	0	Left	Various

The Preview should now look like this



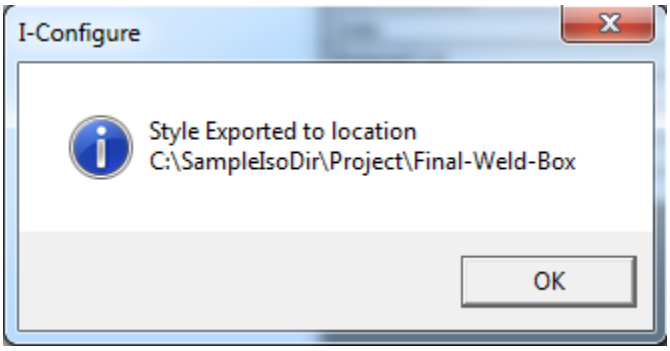
Click

to change to the report.

Configuration is complete. Return to the Home screen and click 

.

Important! Click on the I-Configure toolbar to export the style to disk.



Note. This action creates the data input files that ISOGEN needs when generating drawings using this style, including the ISOGEN.FLS file, which CADWorx reads to connect to the style.

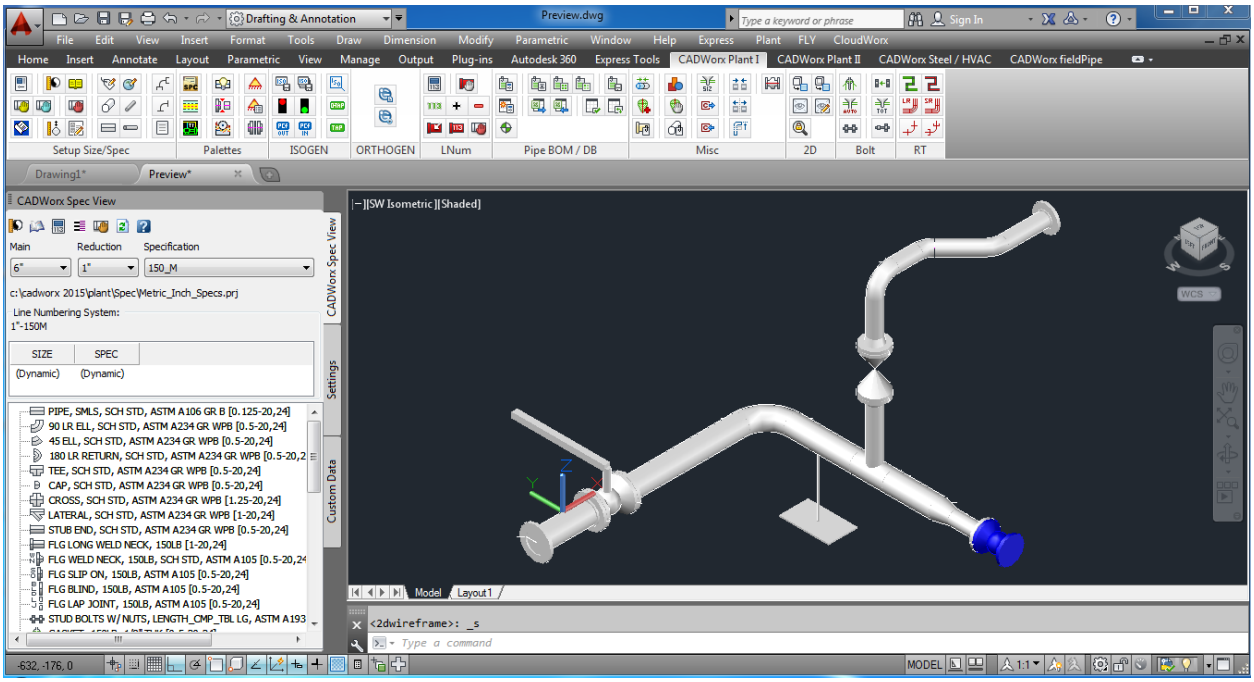
Using the isometric style in CADWorx

Note. The CADWorx 2015 release will be the first CADWorx release that contains ISOGEN Configuration.

For this part it is assumed that you know how to operate CADWorx.

1. Start CADWorx 2015.

2. Open C:\CADWorx\Piping\Preview.dwg



3. Run the ISOGENOUT command to execute the ISOGEN process.

4. Check the drawing deliverable ensuring that all of the edits that you made to the style have been applied.

5. Open C:\SampleIsoDir\Final-Weld-Box\MATERIAL.MTC and review this too (if prompted by Windows to select an application capable of opening files with a .MTC extension, pick Notepad).

Note. You won't see an equipment connection reference on the isometric drawing because the piping model does not contain a connection to an equipment nozzle. Furthermore, the dimensions may not necessarily match with those that you see in the Drawing Preview panel in ISOGEN Configuration.

###

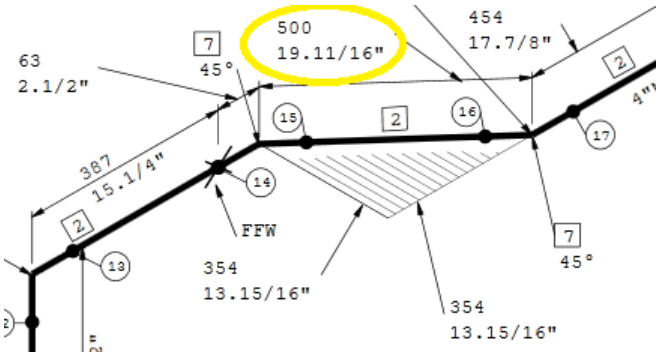
The main objective of this workshop was to introduce you to the new ISOGEN Configuration, so if you've reached this point by the end of the 45mins, you've achieved what you needed to!

Everything else that follows is considered to be optional. If you have time, please continue, otherwise, don't forget, this document is yours to take away!

Making changes to the isometric style

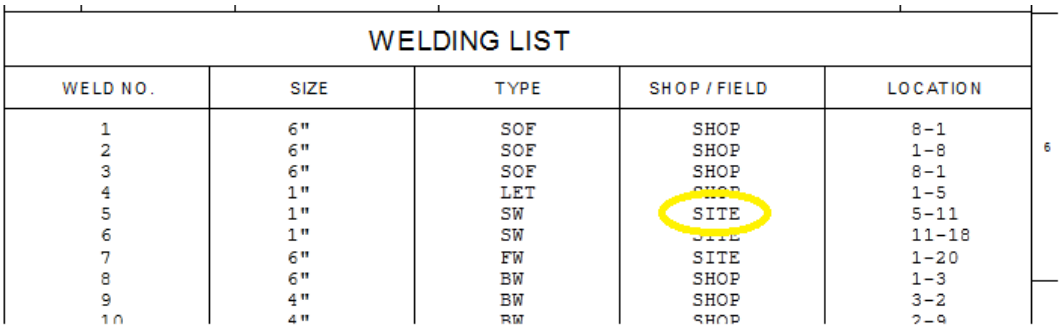
If you have time, using the navigation techniques that you learnt earlier, make the following changes to the style then run ISOGENOUT in CADWorx again on the pipe model to see the effect of those changes on the isometric drawing.

Double Units:



Hint: Dimension style

Change FIELD to SITE in Welding list:

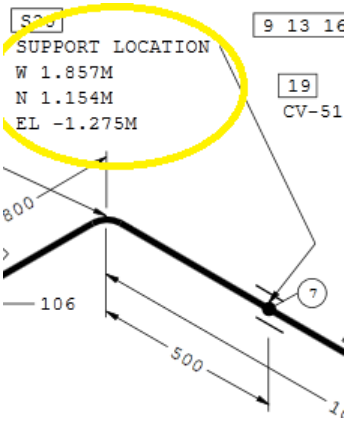


WELDING LIST

WELD NO.	SIZE	TYPE	SHOP / FIELD	LOCATION
1	6"	SOF	SHOP	8-1
2	6"	SOF	SHOP	1-8
3	6"	SOF	SHOP	8-1
4	1"	LET	SHOP	1-5
5	1"	SW	SITE	5-11
6	1"	SW	SITE	11-18
7	6"	FW	SITE	1-20
8	6"	BW	SHOP	1-3
9	4"	BW	SHOP	3-2
10	4"	BW	SHOP	2-9

Hint: AText

Output co-ordinates at support locations:



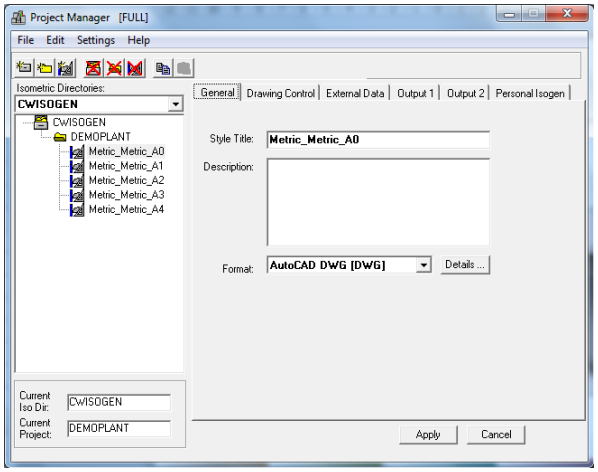
Hint: Co-ordinates

Note. Answers are provided at the back of this document.

Appendix I: Upgrading from Project Manager to I-Configure

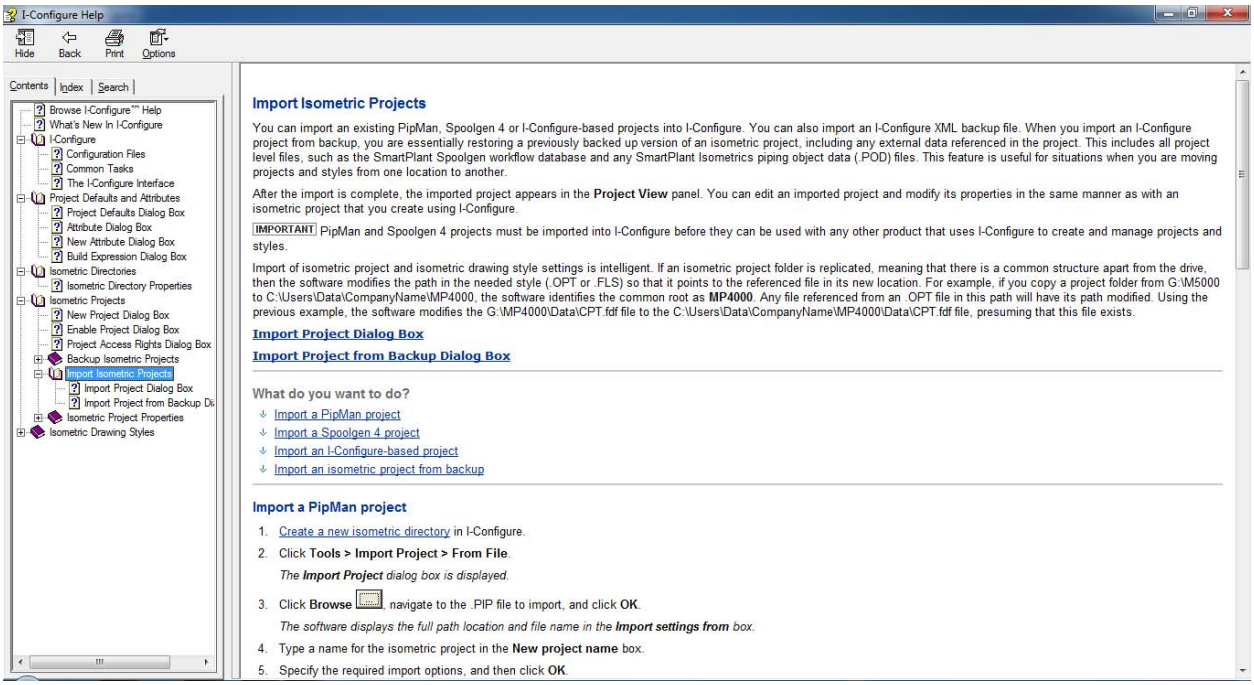
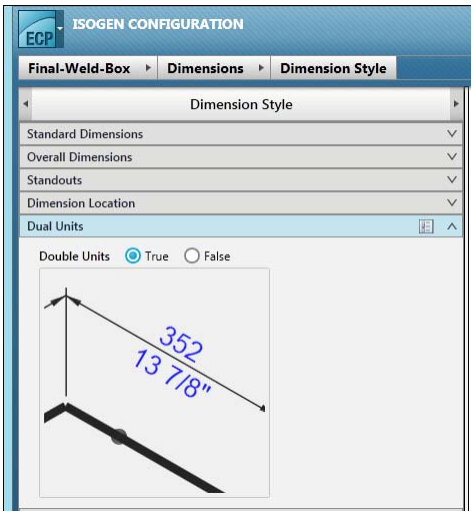
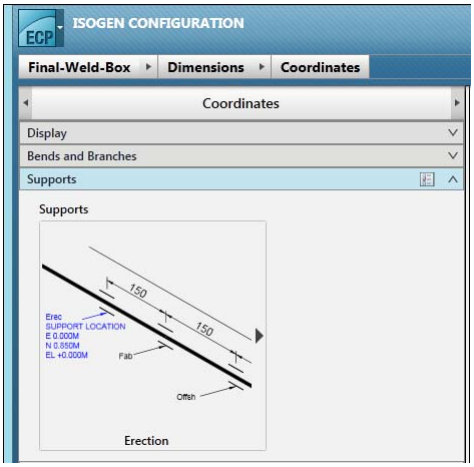
Upgrading Project Manager (PipMan v2) projects and styles to I-Configure format for editing in ISOGEN Configuration

Many CADWorx users still use the old Project Manager (PipMan v2) application to configure ISOGEN



If you are one of them, the good news is you can easily migrate from this application to I-Configure and then take advantage of ISOGEN Configuration to more easily configure and manage your isometric directories, projects and styles.

The I-Configure help file provides detailed instructions explaining how to do this



Appendix II: Answers