Volume

1

FENETECH, INC.

FeneVision® Configuration Guideline

WinIG Configuration

FeneVision® WinIG Configuration Guideline

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1

Introduction

Configuring your Bill of Materials (BOM) to work correctly with the FeneVision® WinIG Interface for both rectangular and shaped windows can be a complicated and difficult process. The purpose of this document is to simplify the IG configuration by providing useful instruction and guidance in the most effective BOM and WinIG Interface setup techniques.

Prerequisites

To order/schedule glass through the FeneVision® WinIG Interface you must first have the FeneVision® WinIG Interface as part of your FeneVision® Production Control package, and must obtain a list of WinIG glass type, WinIG grid type and WinIG Shape codes from your glass provider (or glass cutting hardware provider).

What is the WinIG Interface?

The FeneVision® WinIG Interface gives you the ability to automatically generate glass order import files using the glass size and type calculations configured in the FeneVision® Bill of Materials. This powerful tool will enable you to generate a glass import file for each production schedule that you release through FeneVision. Depending on your glass provider, these glass files can then be sent via email, online or via disk to your glass provider for production.

Using the FeneVision® WinIG Interface also simplifies your window assembly process, as customer information, schedule, batch and bin information are all sent to your glass provider (via the import file) and can be put on glass labels to organize your finished IG units.

Chapter

2

Rectangular Glass Setup

Overview

Setting up your FeneVision® WinIG Interface is a fairly complex process that incorporates several areas of the FeneVision System. The majority of the setup work will be done in the Bill of Materials Part setup window, but this document will also cover setup in the Bill of Materials Option Setup and WinIG setup windows. This chapter of the document will briefly cover basic IG setup in the Bill of Materials Part and Option Setup screens.

Note: This document is not intended as a Bill of Materials configuration manual. The various functionalities of the FeneVision® Production Control software will only be covered in this document as they apply to setting up the WinIG interface. For more detailed information on configuring and using each aspect of the system, consult the FeneVision® Production Control Users' Manual.

Setting up your IG Options

IG Options should be set up in a way that they can easily be used in all of your window series'. When designing your glass option and question setup, it is important to keep the same question/option format in all cases. For instance, to specify a glass type for an entire window you should use a question such as "GLASS", which is generic enough to be used in all of your windows. Using a question such as "Double Hung Window Glass Type" may complicate your glass configuration farther along in the setup process.

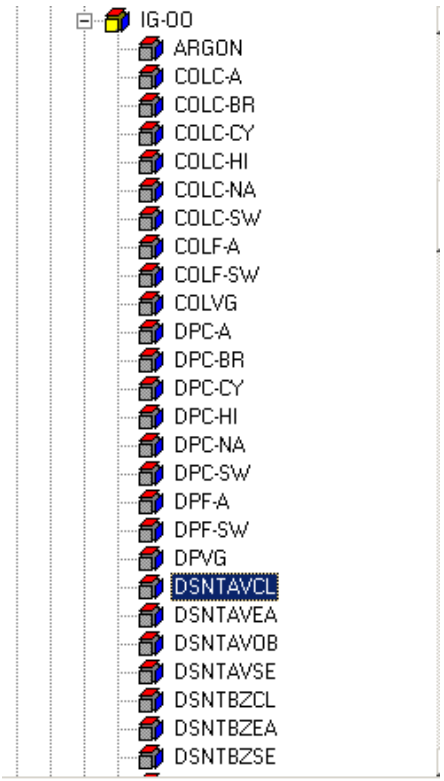
An example of a standard question/option configuration is as follows:

Notice here that the "GLASS" question can be used in any window and that questions for keeper and lock sash glass are only available when the "CGL" option is selected. This will simplify the glass configuration.

Another useful options configuration tip is to standardize your glass option codes. For instance, if your option code for Clear/Clear IG is going to be "CLCL", then your option code for Clear/Clear IG in a single sash of the window should be "CLCLS" or some similarly standardized format. This will be useful when tying option codes to parts in the Bill of Materials Parts setup.

BOM Part Setup

After you've configured your IG options and questions, you can begin to configure the parts setup for your IG. Like the option/question setup, the best way to configure your IG parts in the system is to configure IG parts that can be used in every window in your system without major modification. To accomplish this, some care must be taken in your IG part naming convention. For example, it is typical to group all of your single strength glass under one IG part. This master IG part should carry a generic name such as "IG-OO" with attributes that are global to all instances of this part. Once this is accomplished, individual glass parts can be added to the "IG-OO" part.



Master IG parts (such as the IG-OO part shown) should carry all of the parts that will combine to make up an IG unit. For example, the IGSS part shown in the figure below has IG, Grid and Spacer parts as its children.

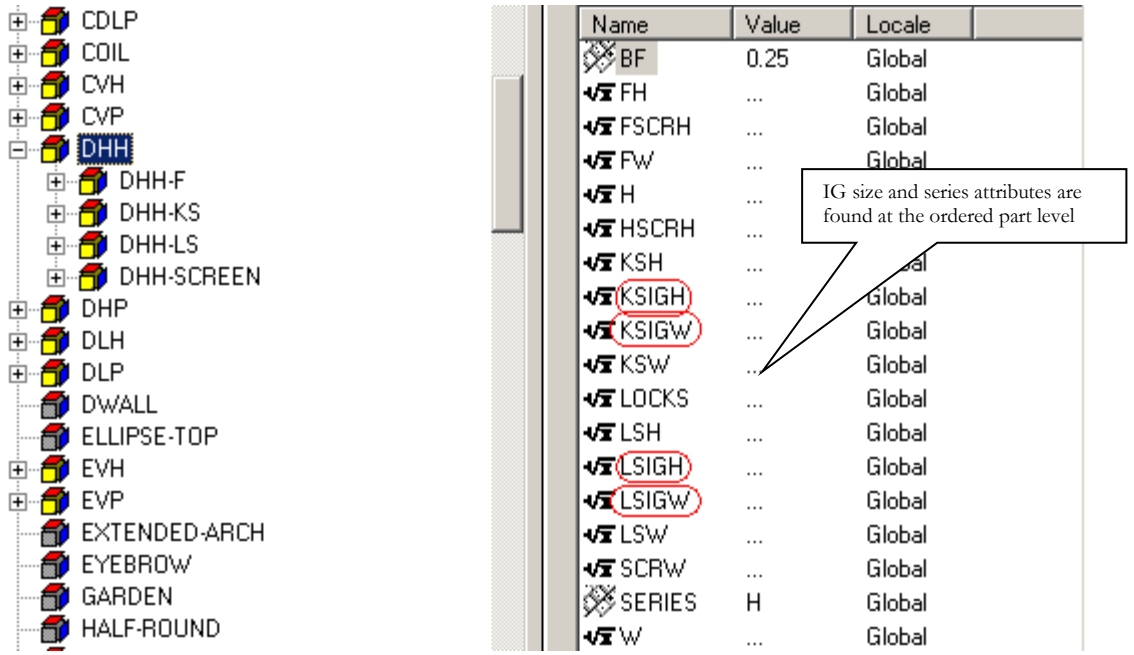
After you've set up master IG parts, you can nest your master IG parts within the sash/frame parts for your windows. To do this, simply drag each IG part (IG-OO, IGDS, Etc.) into your sash part to make the IG a part of the sash. Because these same master IG parts are now used in many different sashes, frames and windows, it will become very important that the attributes on the master IG parts are global and that each of the sash/frame parts that house the master IG parts are set up properly. The next section of this document will detail this attribute setup.

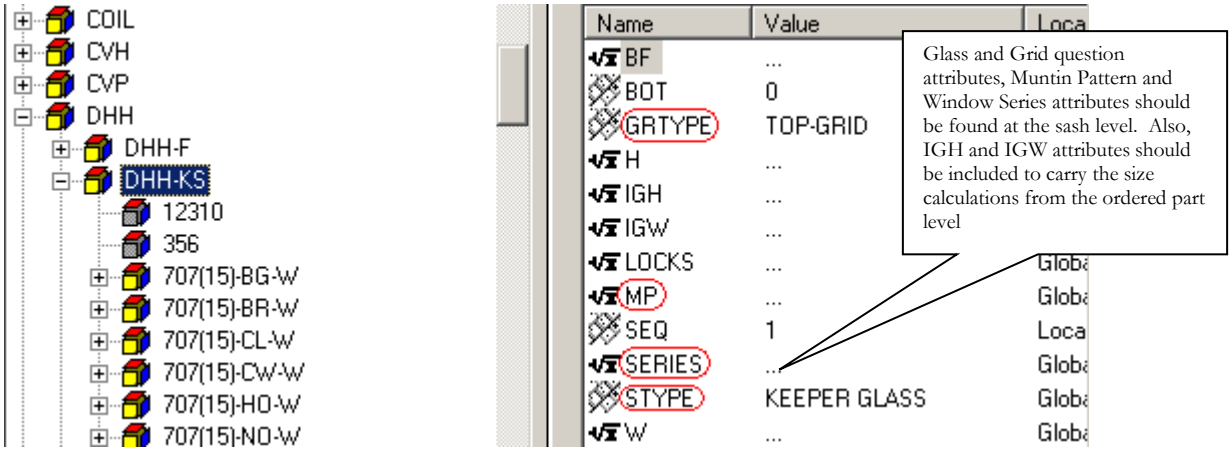
BOM Attribute Setup

Setting up IG part attributes is perhaps the most complicated part of any BOM configuration. However, if done properly the IG configuration can be quite useful and portable to any new configurations that you may do in the future.

The most effective way to set up IG attributes is to do as much calculation as possible at the ordered part level. If all of the calculation is done at the orderable part level, then changes can be made to the configuration with relative ease and the same master IG parts can be used in all of the window systems without having to reconfigure each master IG part. At a minimum, the IG size calculations should be done at the ordered part level. It may also be helpful to include a "SERIES" attribute at the ordered part level. This attribute should house the part number (or some text unique to the part). The Muntin Pattern calculations for each IG in the

window should be found either at the ordered part level, or at the sash level. Also, attributes containing the question text for each sash's grid and glass questions should be found at the ordered part or the sash level (see example below).

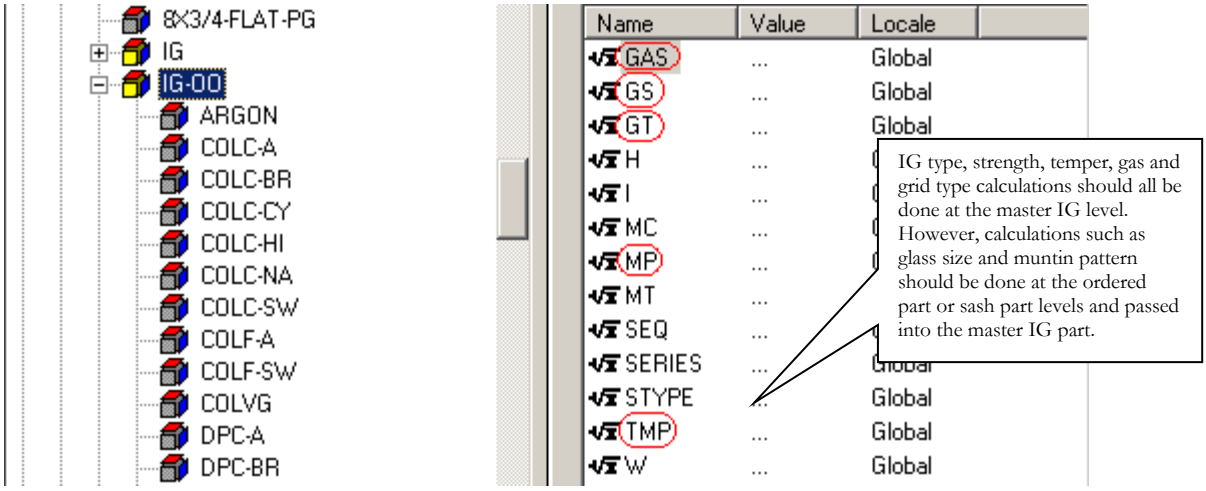




Once you've set up your ordered part and sash part level attributes, you can use the calculations from these parts in your master IG part. The master IG part should have attributes that pick the correct type of IG, grids, gas and spacer for your IG unit. To do this, the master IG part will rely on the information calculated at the ordered part and sash part levels. The most important thing to remember when setting up the attributes on your master IG part is that whatever calculations are made on this level will be made on every window that the master IG part is included in. Therefore, only calculations that are common to all of your windows should be done at the master IG part level. For example, the type of glass ("GT" attribute in the example below) should be calculated the same way for all of your windows and can therefore be calculated at the master IG part level.

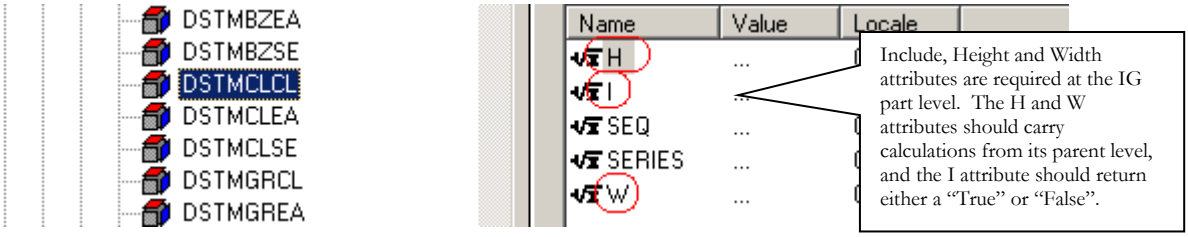
But the size of the IG unit is dependant on its specific application, so these calculations are done at the ordered part or sash part level and then the value is passed down to the master IG part.

It also may be useful to create height (HA) and width (WA) adjustment attributes at the Master IG part level. These attributes are used by the WinIG Interface to align grids in windows where the glass in each sash are different sizes. (Most double-hung windows need this type of adjustment) Typically, these attributes are found on the Master IG level, and are local to each instance of the part. For the smaller sash, both HA and WA attributes can be set to Zero, but in the larger sash, either the HA or WA may need to be adjusted to allow for grid alignment.



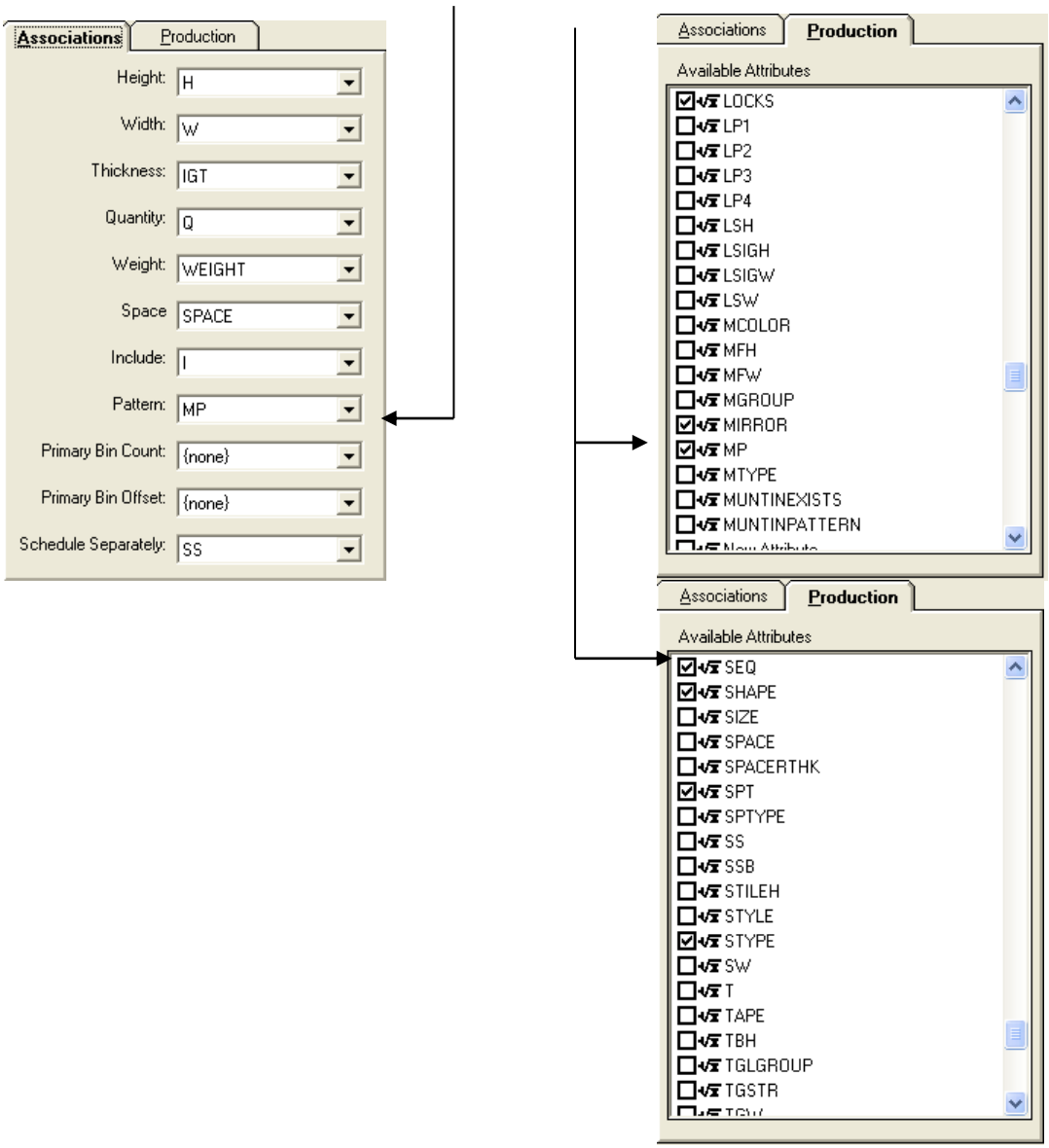
The final level of IG setup is the IG part level. If properly configured, there should only one calculation occurring at this level. Each IG part will need an "I" attribute. This attribute will retrieve the glass type calculation from the master IG part level, and based on the value of that calculation, it will return either a "true" (if the part is selected), or a "false" (if the part is not selected).

Other attributes found at the IG part level will carry values that are calculated at the master IG part, sash part or ordered part levels. These attributes include "H" for height, "W" for width and other attributes such as shape dimensions, shape ID, HA, WA and sequence (which are discussed further in a later section of this document). On the Grid parts, you'll need to have the same "H", "W", and "I" attributes, as well as your muntin pattern attribute, which will carry the value of your muntin pattern calculation from the master IG level.



After you've configured your parts and attributes in the BOM, you will need to assign attributes to production. To do this, go to setup – Attributes. From the attributes menu, you need to press the "Production" tab and check your muntin pattern and sequence attributes (if using sequencing). Then you need to assign your muntin pattern attribute to the "Pattern" field in the "Associations" tab, by using the dropdown menu. (see below)

Note: There are other attributes that will need assigned to production when configuring WinIG shapes. These attributes will be covered later in this document.



This basic IG part setup will allow rectangular glass parts, gas, spacer and grid parts to be selected in the BOM. More BOM configuration is required for shaped and sequenced glass to be used in the WinIG interface, and will be covered further in this document. The next section of this document will detail setting up your rectangular glass parts in the FeneVision® WinIG Interface.

Ultimately, the attributes used for WinIG in Machine Setup must be placed on the parts that are added to the WinIG interface. They can inherit values from parent subassemblies.

Note: If you wish to configure both rectangular and shaped IG parts, it is highly recommended that you read the "Shaped Glass Setup" portion of this document BEFORE proceeding with the FeneVision® WinIG Interface setup.

Chapter

3

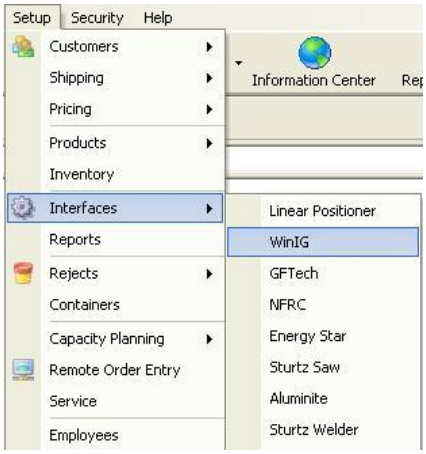
FeneVision® WinIG Interface Setup (for rectangular glass)

Overview

After you've set up your IG parts in the Bill of Material, you can begin to configure your FeneVision® WinIG Interface. This chapter of the document will cover configuring rectangular glass, spacer, gas and grid parts from the BOM into your WinIG interface.

Accessing the FeneVision® WinIG Interface

The WinIG Interface can be accessed through FeneVision® Production control the same way that you access any other FeneVision Interface. The WinIG setup can be found under 'Interfaces' in the Setup menu.



Note: Items in the Interfaces Menu will only appear if they have been enabled. If you have purchased the FeneVision® WinIG Interface but do not see it in the Interfaces Menu, contact Fenetech for a server module unlock.

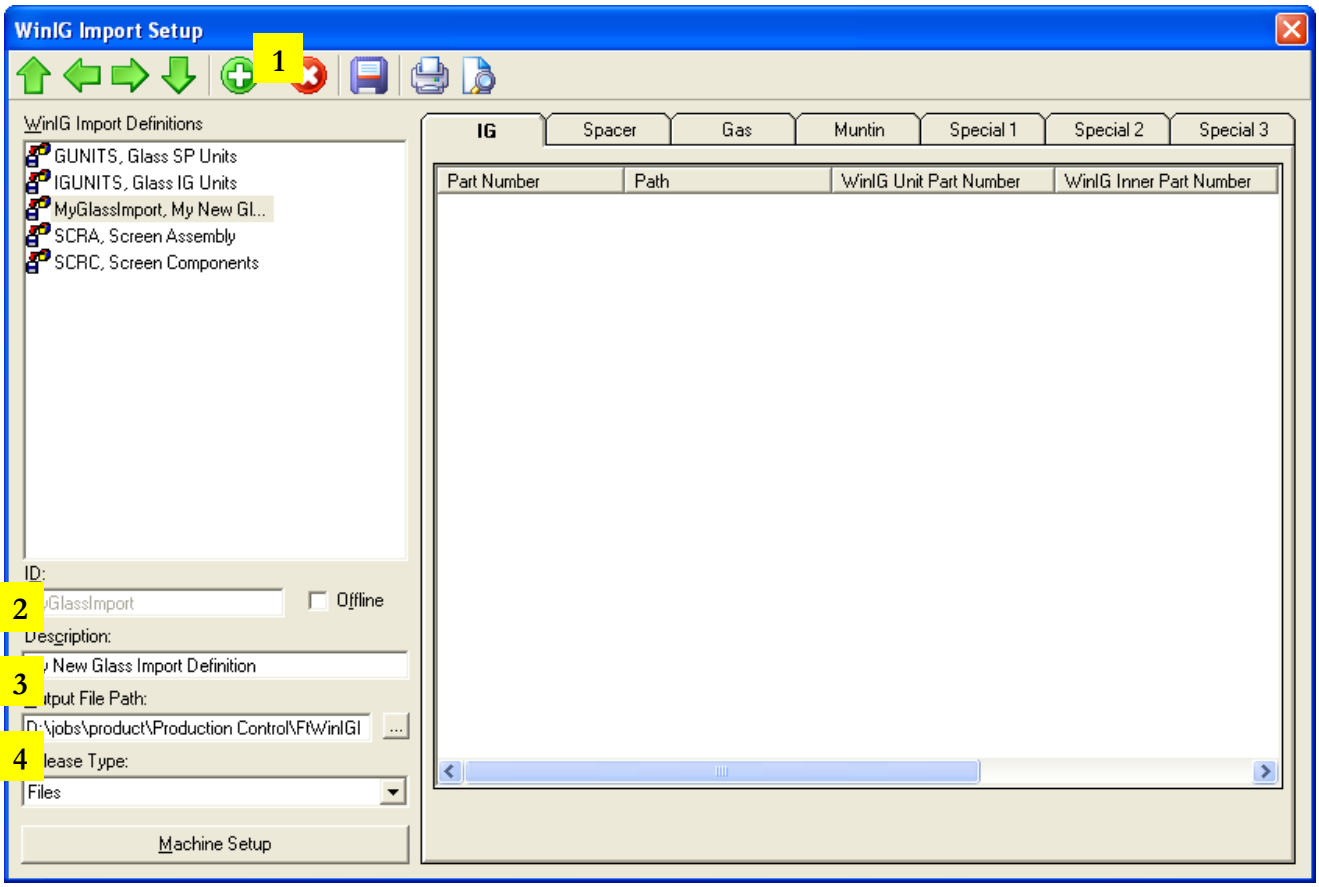
WinIG Main Screen

From the main screen of the FeneVision® WinIG Interface you can create and edit WinIG order import definitions, add and remove parts from your import definitions, and assign WinIG part numbers (from your glass supplier) to your FeneVision® part numbers (that you've just configured in the BOM) The first step in this process creating order import definitions.

Creating Order Import Definitions

The WinIG interface has the ability to manage multiple order import definitions. Each definition specifies a location for the manufacturing of the parts assigned to it. For example, a company that uses WinIG to cut some of its glass products 'in house', but also orders some glass products from a glass manufacturer would set up more than one order import definition. Each definition would generate a glass order file with its own individual glass units. The key to using multiple order import definitions is that the same parts (from the BOM) should not be assigned to both definitions. If parts are assigned to more than one definition, then a glass order will be generated for the part by BOTH order import definitions. Instead, you should assign parts to only one definition. If the same part can be ordered from two different manufacturers, then a new part should be added to the BOM, and each part (new and old) should have a condition in which they are ordered or not ordered. For example, if your order your CLCL IG units from two manufacturers, create a CLCL-1 part and add it to your master IG part. Now modify your include statement on the CLCL part to only be included under the circumstance that it is ordered from manufacturer #1, and similarly make the CLCL-1 part only included when ordering from manufacturer #2. This will avoid the issue of creating duplicate orders for the same unit.

Setting up order import definitions is a fairly simple process. From the main WinIG setup screen, click the  button and you will see a new definition appear. Then assign the definition a unique ID (typically an abbreviation of your supplier's name) and give the definition an intuitive description. Next you need to specify the output path of the order file. This output path is the path that the interface will use to place glass orders. It is best practice to make your output path a network directory that points to a shared folder on your FeneVision® Server.



Adding Parts

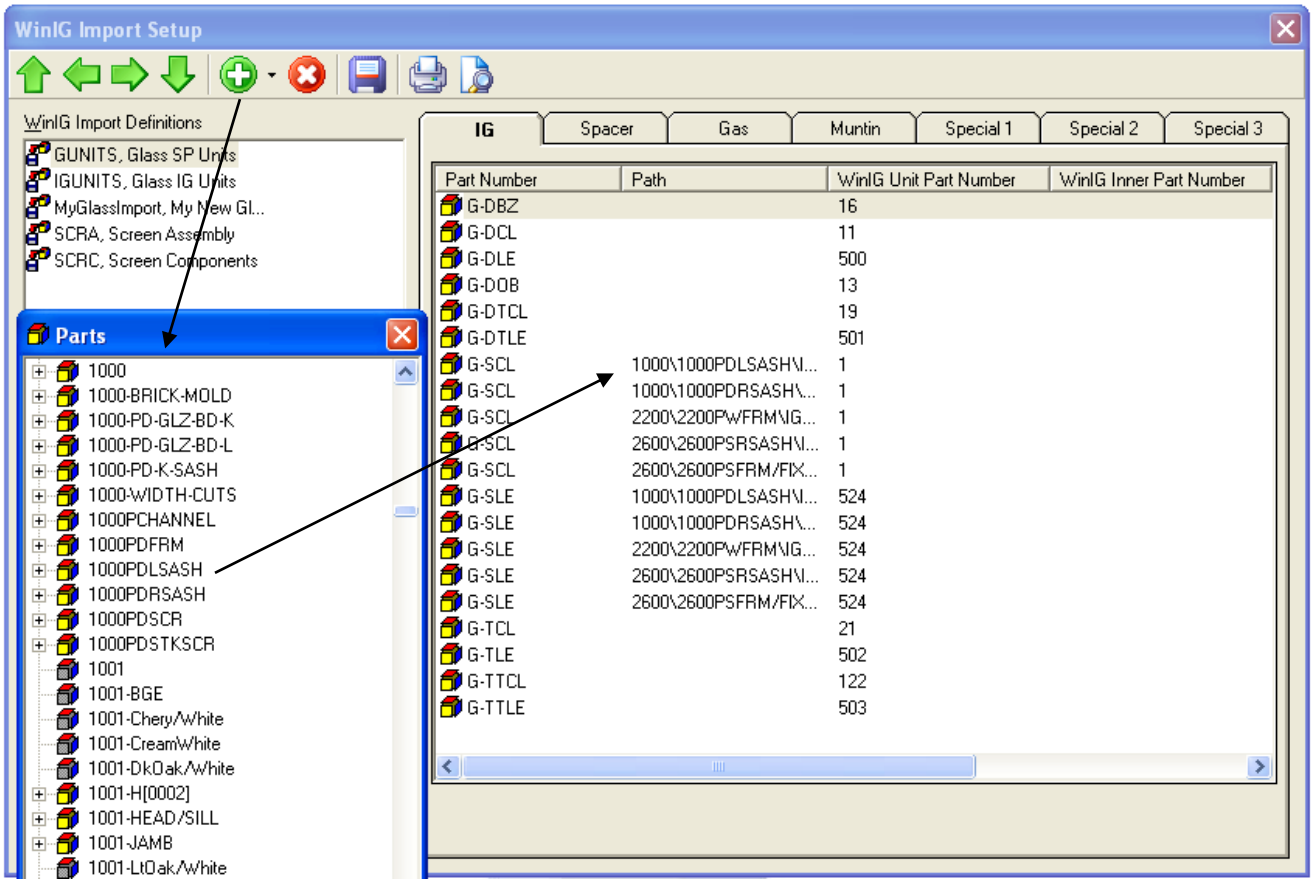
Parts can be added to each order import definition by selecting the Add Part item from the  button drop down menu 

. Once you press this button, a window will appear with the master parts list. You can drag parts out of the master parts list into the parts screen to assign the part to WinIG.**

**Note: You MUST drag IG, gas, spacer and grid parts out of your master IG part for the interface to work properly. Dragging parts out of the root level will not work! (see example below)

The same procedure can be used for inserting spacer, gas and grid parts.

Note: the attributes used for WinIG in Machine Setup must be placed on these parts that are added to the WinIG interface. They can inherit values from parent subassemblies.



The next step is to assign WinIG part numbers to your BOM part numbers. To do this, click in the white space to the right of the 'Path' column and enter information into four fields (as needed).

If your IG supplier uses a single part number for an IG unit (for instance, clear-clear IG is "CLCL") then enter that number into the "WinIG Unit Part Number" column. Otherwise, if your supplier's part numbers are specified for each individual piece of glass, enter part numbers into the "WinIG Inner Part Number", "WinIG Center Part Number", and "WinIG Outer Part Number" columns (as needed). For example, if your BOM Part Number is "DSNCLCL" and your supplier's part number for clear glass is "CLR" then enter "CLR into the columns for Inner and Outer part numbers.

The procedure for setting up spacer, gas and grids is the same, with the exception that there is only one WinIG Part Number column.

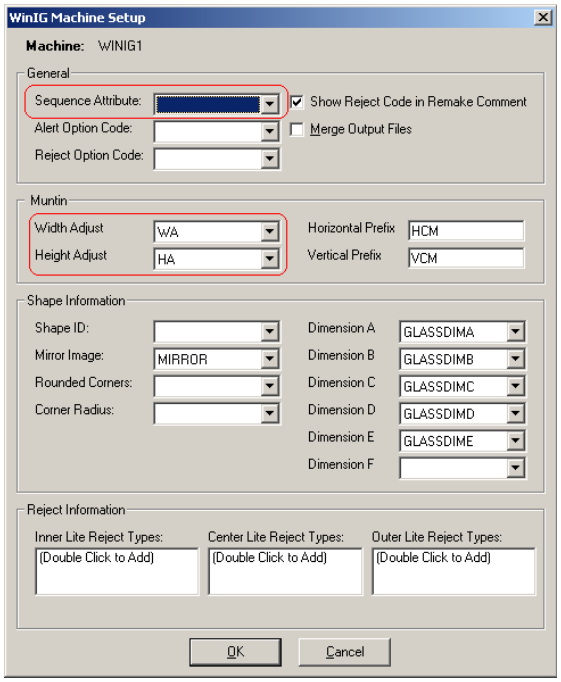
Note: If you don't specify a WinIG part number for glass, spacer, gas or grid parts, the BOM part number will be placed in the WinIG order. In many circumstances this can cause your order file to be unusable by your glass provider.

Special Fields

Special fields (Special 1-3) are designed for ordering parts that are not glass, spacer, gas or grid parts. These parts will vary from supplier to supplier, but may oftentimes include special grid types (for shaped glass, etc.) or specialty add-on parts. Contact your IG supplier for more information.

Machine Setup

The machine setup screen can be accessed through WinIG setup by pressing the "Machine Setup" button on the bottom of the WinIG setup screen. Through the machine setup screen you can assign attributes to many different functions, which will be discussed individually in later sections of this document.



Sequencing

The WinIG Interface gives you the ability to specify a "Sequence" attribute, which will sequence the items in your order file. This way, orders will be grouped by unit number, and sequenced by sequence number.

Muntin Spacing

To align muntins in differently sized sashes, you'll need to specify height and width adjustment attributes in the WinIG Machine Setup menu.

Chapter

4

Custom Notch Locations for Grid Parts

Overview

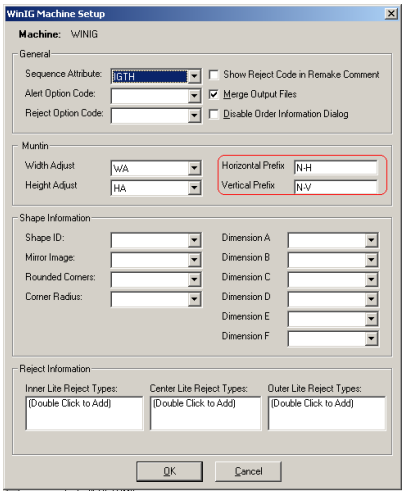
The FeneVision® WinIG Interface supports specifying up to twenty vertical and horizontal custom notch locations for non-standard grid patterns. This section of the document will explain the steps to setting up this feature.

BOM Attributes

Specifying custom notch locations in the WinIG interface requires more setup to the BOM. Like the other glass and grid calculations, these custom notch attributes should be calculated at the Master IG Part level or higher in the BOM. The first BOM modification that has to be made is in the muntin pattern attribute. For the WinIG interface to look at the custom notch attributes at all, the muntin pattern attribute MUST return a value of "CUSTOM".

```
ElseIf OptionExists("MARG") Then
retval = "CUSTOM"
```

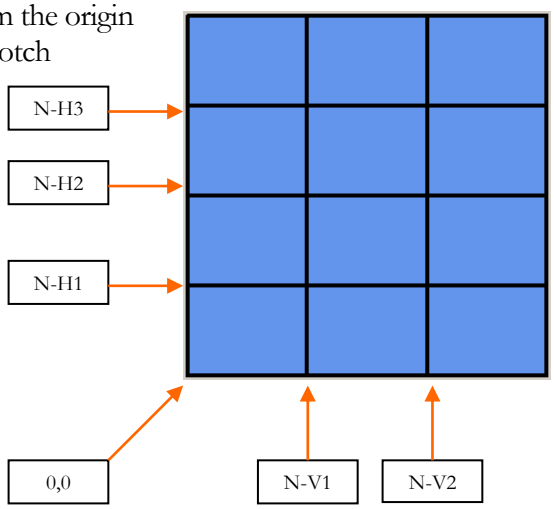
If the muntin pattern attribute returns any value other than "CUSTOM", the WinIG interface will not even place the custom notch calculations in the WinIG Order Import file (even if those calculations exist in the BOM).



Next, the location of each custom notch must be specified in a unique attribute. This process MUST be done in a very uniform way. The prefix of each custom notch attribute has to be specified in the WinIG machine setup, and all of the custom notch location attributes must be named with the Prefix + #. For example, the Horizontal prefix shown in the figure is "N-H". Therefore, the horizontal custom notch attributes have to be named "N-H1", "N-H2", etc.

Horizontal and vertical notch attributes have to return the location of

each individual notch. These calculations should be done from the origin of the bottom left hand corner of the IG. (See illustration.) Notch attributes that are not needed for the given grid pattern (ex. N-V20 the illustration shown) should be given a value of "". Also, notch locations that are used should calculate the distance from the origin to the desired notch location. For example, N-V1 may be 5" from the origin, so it's return value should be "retval = 5". Similarly, N-V3 may need to be the total height minus 5", so in that case, "retval = attributes("H") – 5".

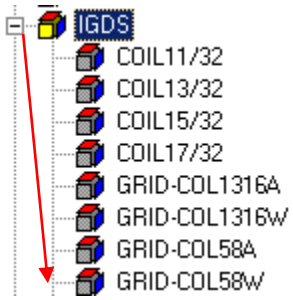


Note: Custom notch location attributes need to be assigned as production attributes! See the section on BOM Attributes in Chapter 2 for more information.

Warning: Unused notch attributes must be set to "" as described above. As soon as a numeric value is detected in the notch location, the FeneVision WinIG interface will force the muntin pattern (MP) attribute to "CUSTOM". Consider this situation for a given customer. For one grid type (perhaps colonial) the notch locations do not need to be stored, just the grid pattern 2VX2H is required. For another grid type (perhaps prairie) the notch locations must be stored. If the unused notch locations for colonial are set to 0 (instead of ""), "CUSTOM" would be placed in the muntin pattern attribute. Then WinIG would try to use a bunch of zeros for notch locations. Use the script attribute type to return "" for unused notch locations. The expression attribute type always returns a numeric, so it will convert "" to 0.

BOM Parts

The custom notch location attributes in the BOM should be calculated at the Master IG part level (or higher in the BOM). These attributes then need to be passed down the bill onto the actual Muntin parts that are assigned to the WinIG interface.



Chapter

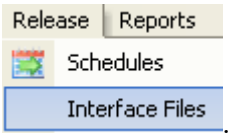
5

Using the FeneVision® WinIG Interface

Overview

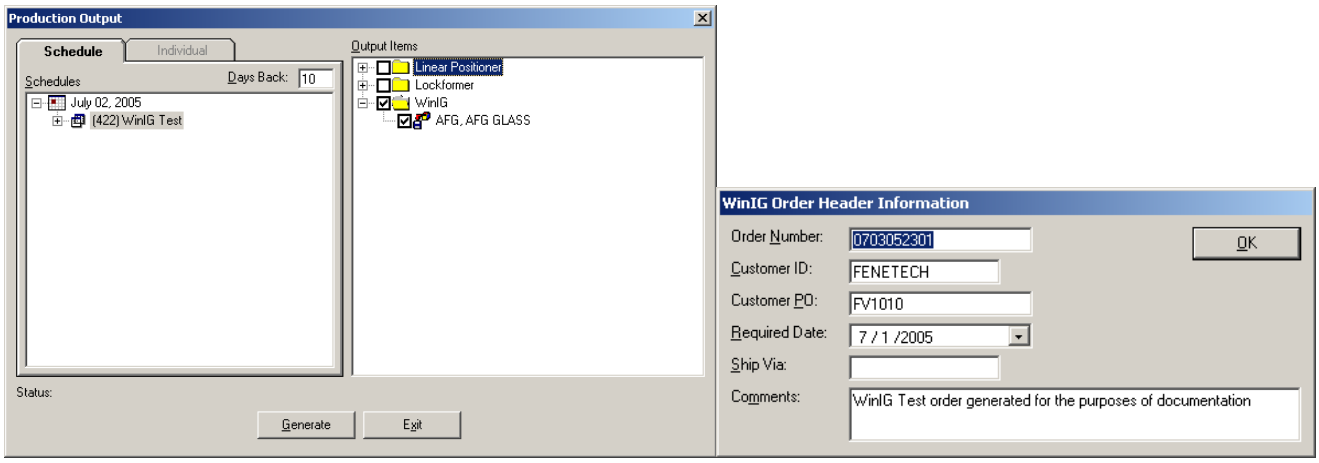
After you have configured your Bill of Materials and set up the WinIG interface, you can begin to order glass through FeneVision® Production Control. This section of the document will detail the steps to generating glass order files and will discuss the glass file format.

Generating Glass Files

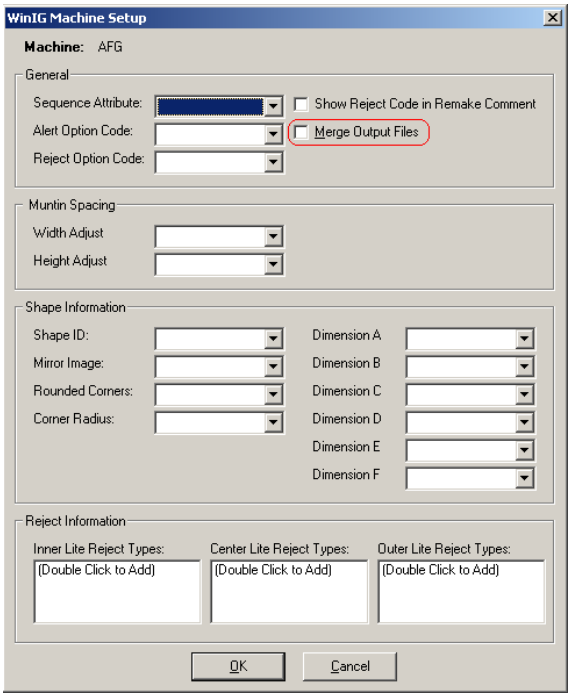
Glass files can be generated on any production schedule that has been released to production. The process for generating a glass order file is the same as the process for releasing any other FeneVision® Interface file. From the main screen of Production Control, select Release Interface Files 

. This will cause the 'Production Output' screen to appear (see below). From this screen you can select the schedule/batch that you wish to release glass orders for (left section of screen), and click the check box to select which WinIG Order Import Definition to release (right section of screen), then click the 'Generate' button. Following these steps will cause the WinIG Order Header Information screen to appear. From this screen, you can edit the order number for the glass order file, as well as the customer ID, customer PO, required date and Shipping Via information. You can also add comments to your glass order for your glass supplier to read.

After you've set up your Order Header Info once, it will automatically save your info so that you don't have to type it in every time you release glass orders. However, the order number will automatically update for every glass order.



By default, the production output screen will generate a glass order file for each production batch of the selected production schedule. If you wish to merge these files into only one glass order file for an entire schedule, you can do that by checking the "Merge Output Files" option in the WinIG setup. To access this option, enter WinIG setup, then select your Glass Import Definition and click the "Machine Setup" button. The Merge Output Files checkbox is located in the "General" section of the Machine Setup screen. (see figure)



Glass File Format

The WinIG glass order file is generated in the .dat file format, and can be viewed and edited using notepad. Order and line item information is carried in the glass order file by comma delineated fields, each of which stores specific information for the given order/line item. For detailed information on the function and format of each field, see the appendix.

Chapter

6

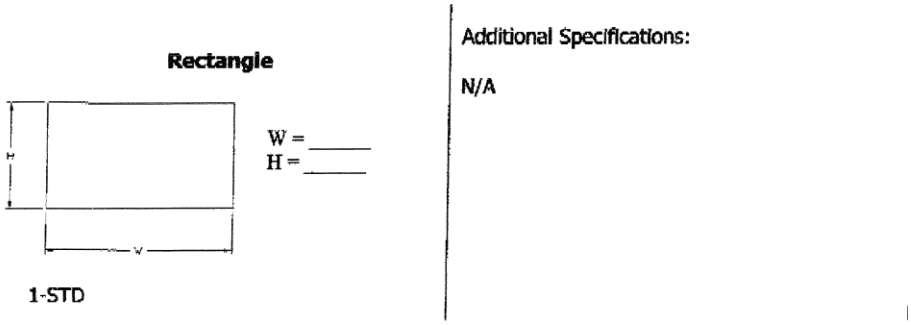
Shaped Glass Setup

Overview

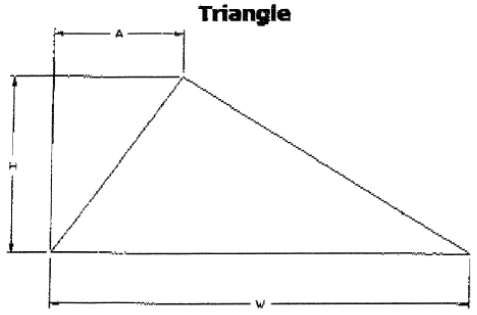
The FeneVision® WinIG Interface gives you the ability to order non-rectangular shaped glass and grids. However, there is additional Bill of Materials and WinIG Interface configuration that must be done for the interface to work properly.

Supported Shapes

The WinIG Interface is capable of ordering sixteen different shapes of glass, with each shape requiring different dimensions to specify its size. These shapes and the dimensions that they require are shown below:



Triangle



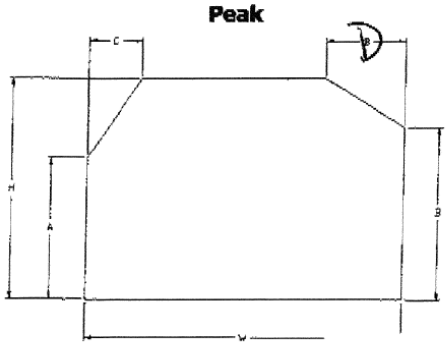
W = _____
H = _____
A = _____

2-STD

Additional Specifications:

For a right angle triangle set A=0.

Peak



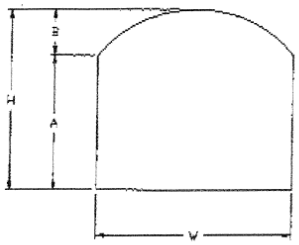
W = _____
H = _____
A = _____
B = _____
C = _____
D = _____

3-STD

Additional Specifications:

To create a point at the top of this shape, provide only dimensions W, H, A, and B. Dimensions C and D will default to the center point of the base.

Dome



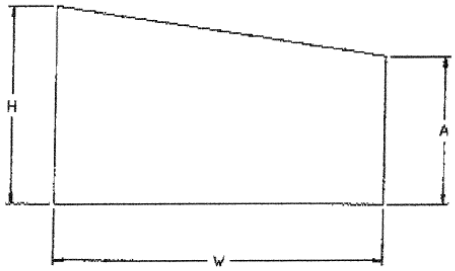
W = _____
H = _____
A = _____
B = _____

4-STD

Additional Specifications:

The top of this dome does not need a true semi-circle (H = W/2). The customer can provide W, H, and A or B. WinIG will insert the appropriate dimension for A or B.

Trapezoid

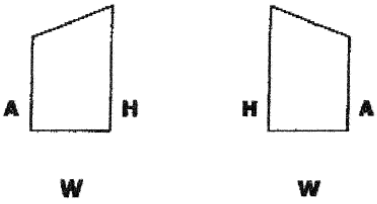


W = _____
H = _____
A = _____

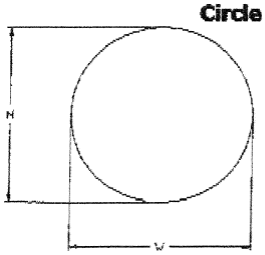
5-STD

Additional Specifications:

H must always equal the tallest leg height. For Example,



Circle



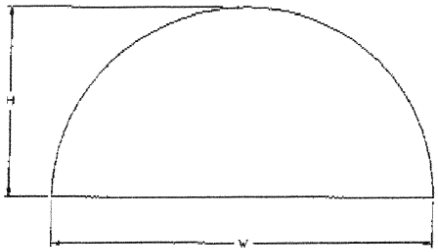
W = _____
H = _____

6-STD

Additional Specifications:

This must be a true circle. Therefore, W will always equal H. This shape cannot be used for an ellipse or oval.

Semi-Circle



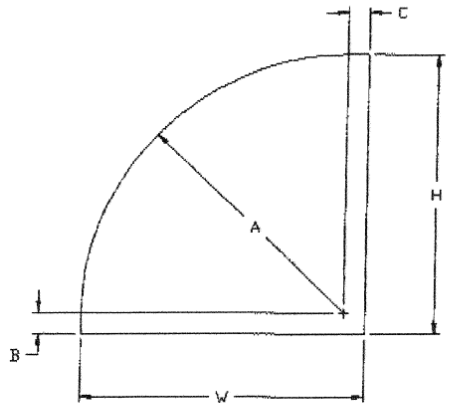
W = _____
H = _____

7-STD

Additional Specifications:

This drawing is not required to be a true semi-circle.

Quarter Circle



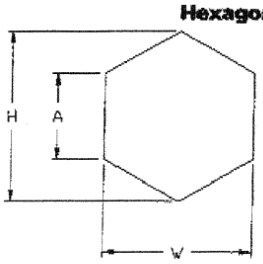
8-STD

W = _____
H = _____
A = _____
B = _____
C = _____

Additional Specifications:

To make this a true quarter circle, make W equal to H. In this case, no other dimensions are required. If the desired shape is not a true quarter circle, the customer must provide (in addition to W and H) B and C, or B=0 and C=X, or B=X and C=0. If B or C equals 0 the radius will cut directly from W or H instead of B or C.

Hexagon



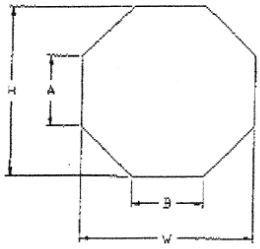
9-STD

W = _____
H = _____
A = _____

Additional Specifications:

If all legs are equal in length, the customer needs to provide only W or H. In this case, W will always equal H. WinIG will determine the length of the leg automatically.

Octagon



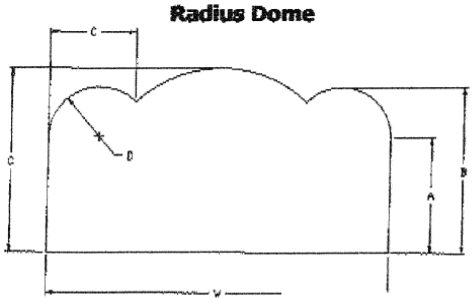
10-STD

W = _____
H = _____

Additional Specifications:

If all legs are equal in length, the customer needs to provide only W and H. In this case, W will always equal H. WinIG will determine the length of the leg automatically.

Radius Dome



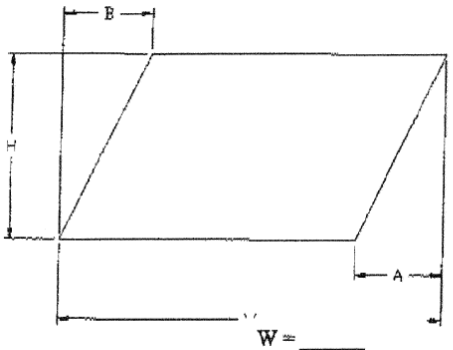
W = _____
H = _____
A = _____
B = _____
C = _____
D = _____

11-STD

Additional Specifications:

N/A

Parallelogram



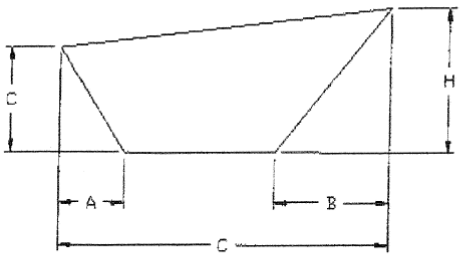
W = _____
H = _____
A = _____
B = _____

12-STD

Additional Specifications:

To create a right corner at the left or right of the base, make A or B equal to 0. If A is equal to B, only the A dimension is required. WinIG will assume A is equal to B.

Narrow Base Trapezoid



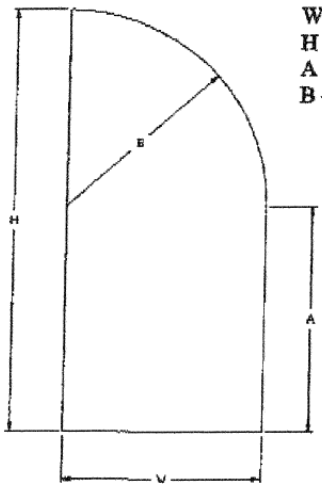
W = _____
H = _____
A = _____
B = _____
C = _____

13-STD

Additional Specifications:

To create a right corner at the left or right of the base, make A or B equal to 0. If A is equal to B, only the A dimension is required. WinIG will assume A is equal to B.

Partial Dome

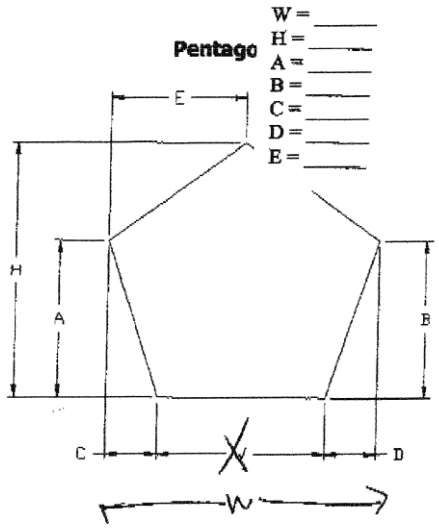


14-STD

Additional Specifications:

On this shape B must always equal W. If it does not, please use the Quarter Circle.

Pentago

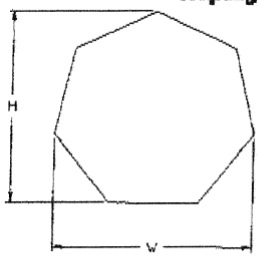


15-STD

Additional Specifications:

If the top of the peak is at the center point of the base, then the customer does not need to provide E.

Heptagon



16-STD

Additional Specifications:

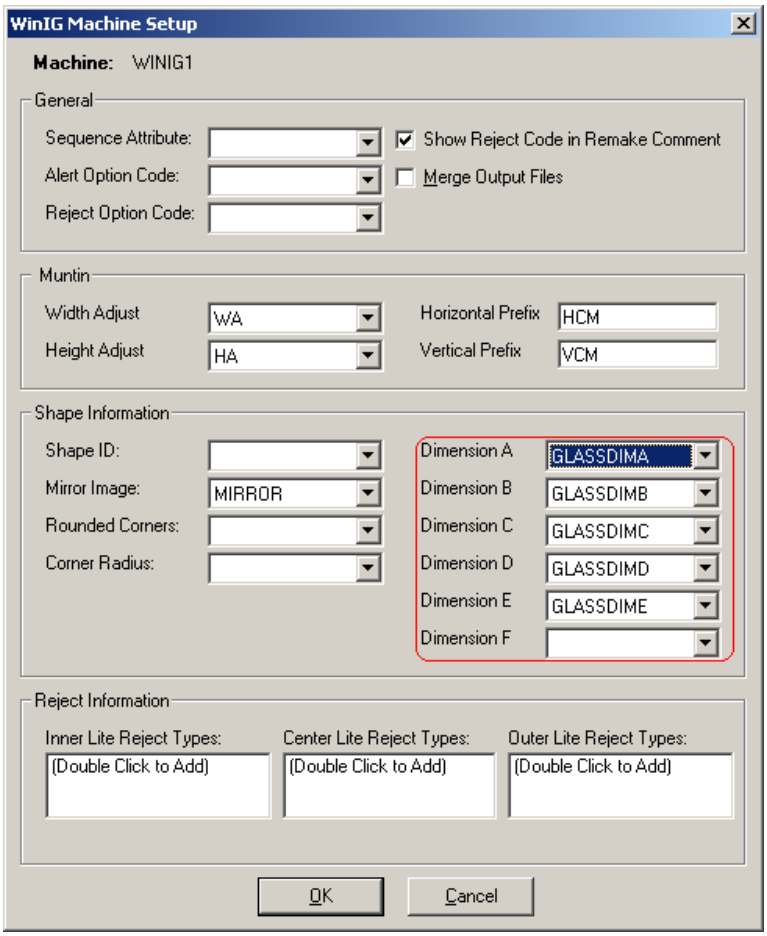
This shape will only work when H is slightly less than W. It does not provide any ordering flexibility. The best was to use this shape is to provide W and let WinIG calculate H.

Defining Dimensions

The dimensions that the WinIG Interface requires (Dim A-F) are calculated in your Bill of Materials and assigned to the WinIG Interface by using the Machine Setup Menu. Because each dimension has a different purpose for each shape, dimension calculations are calculated at the ordered part level of each shape's BOM. To specify which shape to use for each ordered part, the "Shape ID" must be set to an attribute which returns the shape code of each WinIG recognized shape. (see above, example: Rectangle – 1-STD)

The "Mirror Image" field must also be set to an attribute which returns either a "TRUE" or a "FALSE" value (in string format), which tells the WinIG which direction shapes such as the quarter round will face.

***Attributes can not be designated for use in the WinIG Machine Setup screen until they have been set for production in the Setup-Attributes Menu.



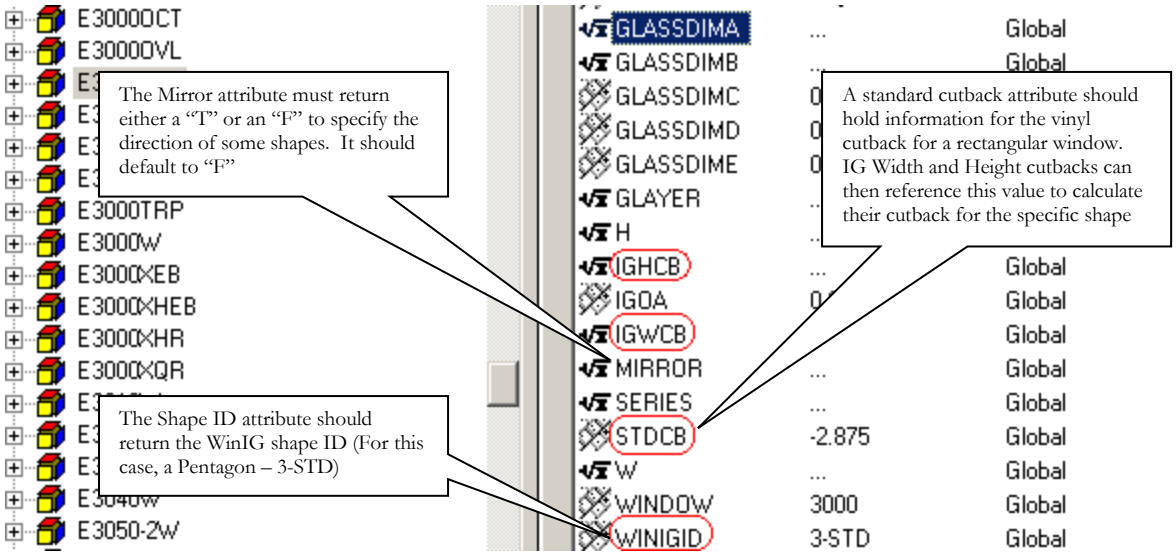
Note: If you configure shapes in your BOM and use the same IG parts for both shapes and rectangular glass, you must configure dimension and shape ID attributes on all ordered parts that have glass subparts, including rectangular windows.

Attributes

The attribute calculations for shape glass will be very unique depending on the shape being calculated. However, all shape glass calculations can and should follow the same format. All calculations for shape glass sizes and types should be done at the ordered part level, and all of the glass dimensions attributes that are assigned in the WinIG Interface Machine Setup screen should be present on your parts (**the parts that are added to the WinIG interface**), regardless of whether or not they are needed for the specific shape.

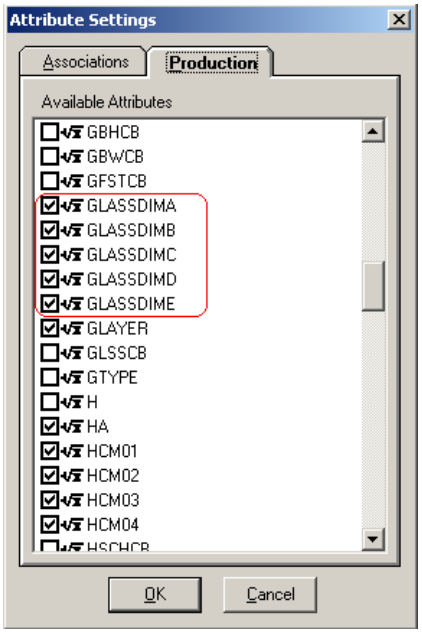
The best way to set up shapes is to specify a standard IG cutback attribute that holds the IG cutback for the window series as if the window were a rectangle. Then, attributes for IG Height cutback and IG Width cutback can use the standard cutback plus or minus the difference between a rectangle cutback and the cutback for the shape being configured. The IG Height cutback and IG Width cutback values can then be used to calculate the IGH and IGW values. The IG Dimension attributes (A-F) should follow the same format.

Another required attribute is the "Mirror Image" attribute, which must return either "TRUE" or "FALSE" (in string format) based on options. It should default to "FALSE". The Boolean values True and False will also work, as will 1 and 0. However, returning "TRUE" or "FALSE" is more readable on reports.



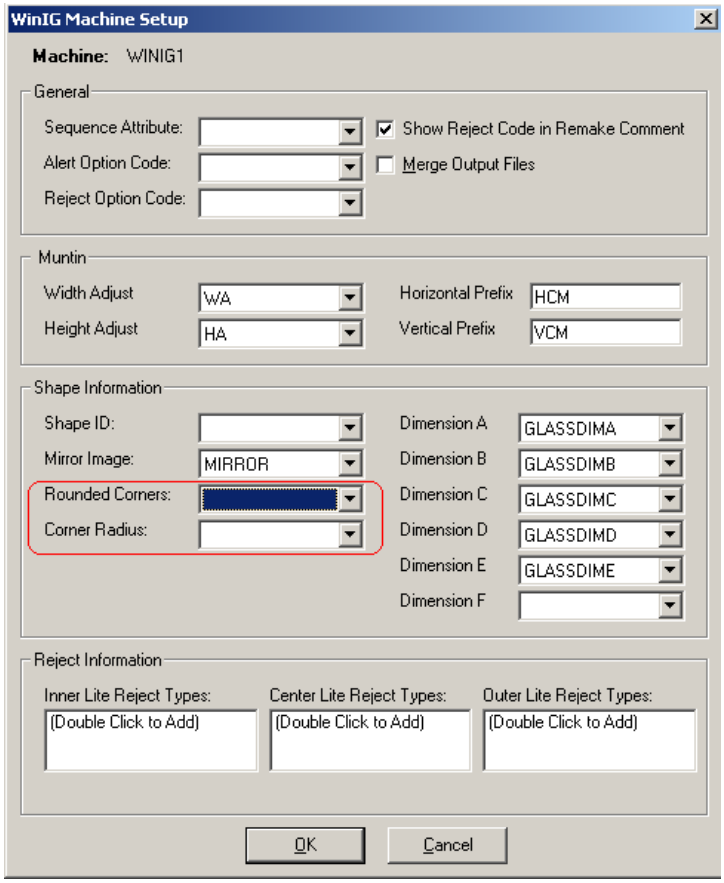
After the shape glass calculations take place at the ordered part level, they can be passed into the Master IG part and IG part levels, much like the calculations for rectangular glass were (see section on rectangular glass BOM setup). Each shape glass calculation MUST be carried down to the IG part level to be recognized by the WinIG interface.

The last step in setting up shape IG attributes is to designate the dimension, mirror and shape ID attributes as "Production Attributes". This is done through the Setup-Attributes Menu. Simply checkmark the box next to each shape attribute, and hit the OK button to send these attributes to production. Also, these attributes should now be available to designate in the WinIG Machine Setup Screen.



Rounded Corners

The WinIG interface supports ordering rounded corners on shaped IG units. This is accomplished by specifying a Rounded Corners attribute which will return either a "T" or an "F", and a Corner Radius attribute that will return the radius of the IG corners.



Chapter

7

Shape Glass Size Calculations

Overview

This section of the document will detail and give examples of glass shape calculations. These calculations should serve as a guideline to configuring shaped glass, but your calculations may vary slightly.

Circle

The circle is an uncomplicated shape to configure in the BOM. It requires only a height, width and shape ID. The remainder of the dimensions (mirror, and dimension A-F) must be present, should return no value (or "FALSE" in the case of mirror).

The following is the script values for the calculated attributes:

ShapeID: Retval = "6-STD"

STDCB: Retval = 2.875

IGHCB: Retval = attributes("STDCB").value

IGWCB: Retval = attributes("STDCB").value

Half Round

This shape requires only height, width and shape ID. It uses the "Semi-Circle" WinIG shape template. The remainder of the dimensions (mirror, and dimension A-F) must be present, should return no value (or "F" in the case of mirror).

The following is the script values for the calculated attributes:

ShapeID: Retval = "7-STD"

STDCB: Retval = 2.875

IGHCB: Retval = attributes(”STDCB”).value

IGWCB: Retval = attributes(“STDCB”).value

Eyebrow

The eyebrow requires only the glass width, height and shape ID. The remainder of the dimensions (mirror, and dimension A-F) must be present, should return no value (or “FALSE” in the case of mirror).

The following is the script values for the calculated attributes:

ShapeID: Retval = “7-STD”

STDCB: Retval = 2.875

IGHCB: Retval = attributes(”STDCB”).value

IGWCB: Retval =

```
Dim h As Single
Dim w As Single
Dim U4 As Single
Dim X4 As Single
Dim Z4 As Single
Dim cutback As Single
Dim frad As Single
Dim grad As Single
cutback = attributes("STDCB").Value
w = attributes("W").Value
h = attributes("H").Value
U4 = Atn(h/(w))
X4 = 3.14159/2 - 2*U4
Z4 = Tan(X4) *w
frad = Z4 + h
grad = frad + cutback/2
retval = Sqr(grad*grad - (Z4-cutback/2)*(Z4-cutback/2)) + cutback/2 - w
```

Octagon

Assuming that all of the legs are equal in length, the WinIG Interface only requires a height, width and Shape ID value. The remainder of the dimensions (mirror, and dimension A-F) must be present, should return no value (or “FALSE” in the case of mirror).

The following is the script values for the calculated attributes:

ShapeID: Retval = “10-STD”

STDCB: Retval = 2.875

IGHCB: Retval = attributes(”STDCB”).value

IGWCB: Retval = attributes(“STDCB”).value

Hexagon

The hexagon requires overall glass height and width values, as well as a Glass Dimension A value which specifies the size of the vertical sides. The remainder of the dimensions (mirror, and dimension B-F) must be present, should return no value (or “FALSE” in the case of mirror).

The following is the script values for the calculated attributes:

ShapeID: Retval = “9-STD”

STDCB: Retval = 2.875

IGHCB: Retval = attributes(”STDCB”).value

IGWCB: Retval = attributes(“STDCB”).value

```
GlassDimA:    Dim x As Single
              Dim w As Single
              Dim fleg As Single
              Dim gleg As Single
              Dim h As Single
              w = attributes("W").Value
              h = attributes("H").Value
              x = 3.14159*60/180

              fleg = (w/2)/(Tan(x)) * 2
              gleg = fleg - 1.55162884
              retval = h -2*1.65988202 – gleg
```

Pentagon

The Pentagon requires the IG Height, Width, Shape ID and glass dimensions A and B. Dimension’s A and B indicate the leg height of the glass. The remainder of the dimensions (mirror, and dimension C-F) must be present, should return no value (or “FALSE” in the case of mirror).

The following is the script values for the calculated attributes:

ShapeID: Retval = “3-STD”

STDCB: Retval = 2.875

IGHCB: Dim h As Single

```
Dim w As Single
Dim leg As Single
Dim igwcb As Single
Dim cutback As Single
h = attributes("H").Value
w = attributes("W").Value
leg = OptionValue("LEG")
stdcb = attributes("STDCB").Value
cutback = (stdcb/2)/(Sin(Atn((w/2)/(h-leg))))
retval = cutback + stdcb/2
```

IGWCB: Retval = attributes("STDCB").value

GlassDimA/B:
```
Dim w As Single
Dim leg As Single
Dim igwcb As Single
Dim h As Single
Dim cutback As Single
h = attributes("H").Value
w = attributes("W").Value
leg = OptionValue("HEIGHS")
igwcb = attributes("IGWCB").Value
cutback = igwcb/2* Tan(3.14159/2 - (3.14159 - Atn((w/2)/(h-leg)))/2)
retval = leg+cutback+igwcb/2
```

Quarter Octagon

The Quarter Octagon shape uses the glass height, width, shape ID and glass dimensions A, B, C and D. Dimension A is the same as the glass height. Dimension B is the value of the leg height, minus a cutback. Dimension C is the value of the leg width minus a cutback and dimension D is zero. The remainder of the dimensions (dimension E-F) must be present, should return no value. This shape can be mirrored by setting the mirror attribute to "TRUE".

The following is the script values for the calculated attributes:

ShapeID: Retval = "3-STD"

STDCB: Retval = 2.875

IGWCB: Retval = attributes("STDCB").value

IGHCB: Retval = attributes("STDCB").value

GlassDimA: Retval = attributes("IGH").value

GlassDimB:
```
Dim Leg As Single
Dim h As Single
```

```
Dim w As Single
Dim cutback As Single
Dim R4 As Single
h = attributes("H").Value
w = attributes("W").Value
cutback = attributes("STDCB").Value
leg = OptionValue("HEIGHS")
R4 = Atn((h-leg)/w)
retval = leg + cutback/2 - ((-1*cutback/2)/(Cos(R4)) - (-1*cutback/2)*Tan(R4))
```

GlassDimC:
```
Dim Leg As Single
Dim h As Single
Dim w As Single
Dim cutback As Single
Dim R4 As Single
h = attributes("H").Value
w = attributes("W").Value
cutback = attributes("STDCB").Value
leg = OptionValue("WIDTHS")
R4 = Atn((h-leg)/w)
retval = leg + cutback/2 - ((-1*cutback/2)/(Cos(R4)) - (-1*cutback/2)*Tan(R4))
```

GlassDimD: Retval = 0

Quarter Round

The quarter round shape uses only the IG height, width and shape ID. The remainder of the dimensions (dimension A-F) must be present, should return no value. This shape can be mirrored by setting the mirror attribute to "TRUE".

The following is the script values for the calculated attributes:

ShapeID: Retval = "8-STD"

STDCB: Retval = 2.875

IGHCB:
```
Dim w As Single
Dim h As Single
Dim RAD As Single
Dim cutback As Single
cutback = attributes("STDCB").Value
h = attributes("H").Value
w = attributes("W").Value
RAD = h + cutback
retval = Sqr(RAD*RAD - (-1*cutback/2)*(-1*cutback/2)) - h
```

IGWCB:
```
Dim w As Single
Dim h As Single
Dim RAD As Single
Dim cutback As Single
cutback = attributes("STDCB").Value
h = attributes("H").Value
w = attributes("W").Value
RAD = w + cutback
retval = Sqr(RAD*RAD - (-1*cutback/2)*(-1*cutback/2)) – w
```

Triangle

The triangle uses the IG height, width, shape ID and dimension A. Dimension A should be set to zero for a right triangle. The remainder of the dimensions (dimension B-F) must be present, should return no value. This shape can be mirrored by setting the mirror attribute to "TRUE".

The following is the script values for the calculated attributes:

ShapeID: Retval = "8-STD"

STDCB: Retval = 2.875

IGHCB:
```
Dim w As Single
Dim h As Single
Dim cutback As Single
Dim R5 As Single
Dim S5 As Single
Dim U5 As Single
Dim W5 As Single
w = attributes("W").Value
h = attributes("H").Value
cutback = attributes("STDCB").Value
R5 = Atn(h/w)
S5 = (cutback/-2)/(Tan(R5/2))
U5 = 3.14159/2 - R5
W5 = (cutback/-2)/(Tan(U5/2))
retval = -1*(cutback/-2 + W5)
```

IGWCB:
```
Dim w As Single
Dim h As Single
Dim cutback As Single
Dim R5 As Single
Dim S5 As Single
Dim U5 As Single
Dim W5 As Single
w = attributes("W").Value
h = attributes("H").Value
```

```
cutback = attributes("STDCB").Value
R5 = Atn(h/w)
S5 = (cutback/-2)/(Tan(R5/2))
U5 = 3.14159/2 - S5
W5 = (cutback/-2)/(Tan(U5/2))
retval = -1*(cutback/-2 + S5)
```

GlassDimA: Retval = 0

Trapezoid

The trapezoid requires IG width, height, shape ID and Dimension A attributes. The Dimension A attribute calculates the leg height of the glass. The remainder of the dimensions (dimension B-F) must be present, should return no value. This shape can be mirrored by setting the mirror attribute to "TRUE".

The following is the script values for the calculated attributes:

ShapeID: Retval = "5-STD"

STDCB: Retval = 2.875

IGWCB: Retval = attributes("STDCB").value

IGHCB:
```
Dim Leg As Single
Dim h As Single
Dim w As Single
Dim cutback As Single
Dim R4 As Single
h = attributes("H").Value
w = attributes("W").Value
cutback = attributes("STDCB").Value
leg = OptionValue("HEIGHS")
R4 = Atn((h-leg)/w)
retval = h + cutback/2 - (-1*cutback/2)/(Cos(R4)) - (-1*cutback/2)*Tan(R4) - h
```

GlassDimA:
```
Dim Leg As Single
Dim h As Single
Dim w As Single
Dim cutback As Single
Dim R4 As Single
h = attributes("H").Value
w = attributes("W").Value
cutback = attributes("STDCB").Value
leg = OptionValue("HEIGHS")
R4 = Atn((h-leg)/w)
retval = leg + cutback/2 - ((-1*cutback/2)/(Cos(R4)) - (-1*cutback/2)*Tan(R4))
```

Extended Leg Eyebrow

The Ext. EB requires an IG height, width and Dimension A value. Dimension A refers to the leg height of the glass. The remainder of the dimensions (mirror, and dimension B-F) must be present, should return no value (or "FALSE" in the case of mirror).

The following is the script values for the calculated attributes:

ShapeID: Retval = "4-STD"

STDCB: Retval = 2.875

IGHCB:
```
Dim h As Single
Dim w As Single
Dim grad As Single
Dim frad As Single
Dim cutback As Single
Dim U4 As Single
Dim X4 As Single
Dim Z4 As Single
h = attributes("H").Value
w = attributes("W").Value
cutback = attributes("STDCB").Value
U4 = Atn(h/(w))
X4 = 3.14159/2 - 2*U4
Z4 = Tan(X4) *w
frad = Z4+h
grad = frad +cutback/2
retval = (Sqr(grad*grad - (cutback/-2)*(cutback/-2)) - (frad-h)+cutback/2) - h
```

IGWCB:
```
Dim h As Single
Dim w As Single
Dim U4 As Single
Dim X4 As Single
Dim Z4 As Single
Dim cutback As Single
Dim frad As Single
Dim grad As Single
cutback = attributes("STDCB").Value
w = attributes("W").Value
h = attributes("H").Value
U4 = Atn(h/(w))
X4 = 3.14159/2 - 2*U4
Z4 = Tan(X4) *w
frad = Z4 + h
grad = frad + cutback/2
retval = Sqr(grad*grad - (Z4-cutback/2)*(Z4-cutback/2)) + cutback/2 – w
```

```
GlassDimA:    Dim leg As Single
              Dim cutback As Single
              Dim w As Single
              Dim h As Single
              Dim U4 As Single
              Dim X4 As Single
              Dim Z4 As Single
              Dim frad As Single
              Dim grad As Single
              Dim gwidth As Single
              Dim elh As Single
              w = attributes("W").Value
              h = attributes("H").Value
              cutback = attributes("STDCB").Value
              leg = OptionValue("HEIGHS")
              If OptionExists("HEIGHS") Then
              gwidth = w+cutback
              elh=h-leg
              U4 = Atn(elh/(w/2))
              X4 = 3.14159/2 - 2*U4
              Z4 = Tan(X4)*w/2
              frad = Z4 + elh
              grad = frad + cutback/2
              retval = Sqr(grad*grad - (gwidth/2)*(gwidth/2)) + (h-frad) + cutback/2
              Else
              retval = ""
              End If
```

Extended Leg Half Eyebrow

This shape requires an IG width, height, shape ID and Dimension B value. Dimension B specifies the glass leg height. The remainder of the dimensions (dimension A-F) must be present, should return no value. This shape can be mirrored by setting the mirror attribute to "TRUE".

The following is the script values for the calculated attributes:

ShapeID: Retval = "8-STD"

STDCB: Retval = 2.875

IGWCB: Retval = Attributes("STDCB").value

```
IGHCB:        Dim h As Single
              Dim w As Single
              Dim grad As Single
              Dim frad As Single
              Dim cutback As Single
```

```
Dim U4 As Single
Dim X4 As Single
Dim Z4 As Single
h = attributes("H").Value
w = attributes("W").Value
cutback = attributes("STDCB").Value
U4 = Atn(h/(w))
X4 = 3.14159/2 - 2*U4
Z4 = Tan(X4) *w
frad = Z4+h
grad = frad +cutback/2
retval = (Sqr(grad*grad - (cutback/-2)*(cutback/-2)) - (frad-h)+cutback/2) – h
```

GlassDimB:

```
Dim leg As Single
Dim cutback As Single
Dim w As Single
Dim h As Single
Dim U4 As Single
Dim X4 As Single
Dim Z4 As Single
Dim frad As Single
Dim grad As Single
Dim gwidth As Single
Dim elh As Single
w = attributes("W").Value
h = attributes("H").Value
cutback = attributes("STDCB").Value
leg = OptionValue("HEIGHS")
If OptionExists("HEIGHS") Then
gwidth = w+cutback
elh=h-leg
U4 = Atn(elh/(w/2))
X4 = 3.14159/2 - 2*U4
Z4 = Tan(X4)*w/2
frad = Z4 + elh
grad = frad + cutback/2
retval = Sqr(grad*grad - (gwidth/2)*(gwidth/2)) + (h-frad) + cutback/2
Else
retval = ""
End If
```

Extended Leg Half Round

This shape requires an IG height, width, Shape ID and Dimension A value. Dimension A specifies the leg value of the glass. The remainder of the dimensions (mirror, and dimension B-F) must be present, should return no value (or "FALSE" in the case of mirror).

The following is the script values for the calculated attributes:

ShapeID: Retval = "4-STD"

STDCB: Retval = 2.875

IGWCB: Retval = Attributes("STDCB").value

IGHCB: Retval = Attributes("STDCB").value

GlassDimA:
```
Dim leg As Single
Dim cutback As Single
cutback = attributes("STDCB").Value
leg = OptionValue("HEIGHS")
If OptionExists("HEIGHS") Then
retval = leg + cutback/2
Else
retval = ""
End If
```

Extended Leg Quarter Round

This shape requires an IG height, width, shape ID and Dimension B value. Dimension B specifies the leg value of the glass. The remainder of the dimensions (dimension A-F) must be present, should return no value. This shape can be mirrored by setting the mirror attribute to "TRUE".

The following is the script values for the calculated attributes:

ShapeID: Retval = "8-STD"

STDCB: Retval = 2.875

IGWCB: Retval = Attributes("STDCB").value

IGHCB:
```
Dim gwidth As Single
Dim gleg As Single
Dim cutback As Single
Dim w As Single
Dim h As Single
Dim grad As Single
w = attributes("W").Value
h = attributes("H").Value
gleg = attributes("GLASSDIMB").Value
grad = attributes("GLASSDIMA").Value
cutback = attributes("STDCB").Value
retval = Sqr(grad*grad - (-1*cutback/2)*(-1*cutback/2)) + gleg - h
```

```
GlassDimB:    Dim leg As Single
              Dim cutback As Single
              cutback = attributes("STDCB").Value
              leg = OptionValue("HEIGHS")
              If OptionExists("HEIGHS") Then
              retval = leg + cutback/2
              Else
              retval = ""
              End If
```

Chapter

8

Rejects

Overview

When used with the FeneVision® Reject Reprocessing Module, the FeneVision® WinIG Interface can generate reprocessing part orders for glass parts that have been broken during the manufacturing process.

Showing Reject Codes

When used with FeneVision® Reject Reprocessing, the WinIG Interface requires no additional setup to generate a glass reprocessing order. However, the user can set the WinIG interface to display a reject code in the reprocessing order comment, which will help the glass manufacturer to know why the glass was reprocessed. This can be done in two ways.

1.) By selecting the 

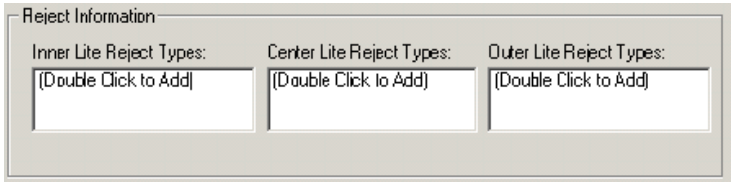
checkbox in WinIG Machine Setup, the user can enable the reject reason code to show in the reprocessed order comment, which will be generated through Reject Reprocessing

2.) By specifying an option in the 

dropdown, the user can specify an option code whose option value will display in the order comment of a non-reprocessing order. This can be used to show reject codes (via the option value) on WinIG import order files without using the Reject Reprocessing Module.

Single Lite Rejecting

The WinIG Interface also supports reprocessing just a single lite of glass. To do this, the user must assign reject codes to the individual lite of glass. This assignment can be made in the WinIG Machine Setup, by double-clicking and adding rejects to each individual lite displayed. After this is complete, only the individual lite assigned to a reject code will be reprocessed when a reprocessing order is placed.



Note: This functionality ONLY works when WinIG glass part numbers are assigned per lite.

Appendix A: WinIG File Format

Overview

The information in this appendix explains the format of each part of a WinIG Merge file.

Note: The information within this Appendix is NOT the property of Fenetech, Inc.

ORDER HEADER RECORD:

Each order starts with an order record which gives general information about the data. Specific information about units is contained in the line item record of the next section. The following table describes the order record fields.

Field	Data Type	Field Name	Description
0	Special * (required)	Order Start	The start of an order record is marked by an asterisk (*) at the BEGINNING of the line. See the section on special characters.
1	String(16) (required)	Order Number	This is the customer order number. This field is alphanumeric. There can not be duplicate orders in the system.
2	String(10)	Customer ID	This is the customer cross reference identifier maintained in the WinIG inventory file. It is alphanumeric and predetermined in WinIG.
3	String(16) (required)	Customer PO	This is the customer purchase order number. It is alphanumeric. There can be no duplicate purchase order numbers in the system, this includes space filling or not using this field. Do not space fill this field, import the order number into this field.
4	Date Numeric	Required Date	The date the unit is required to be made for assembly and/or shipping. Note that the ordered date is captured from the computer's system date.
5	String(8)	Ship Via	This is a comment which displays the shipping method. (i.e. FED EX, TRUCK, etc.).
6	String(70)	Order Comments	This is free form text used to describe the entire order.

ORDER TOTALS RECORD (Format 1.5 Only)

This record gives additional order data not supplied in the Order Header Record. It follows the Order Header Record. For more information on each field see the WinIG Database Reference. The following table describes the order record fields.

Field	Data Type	Field Name	Description
0	Special "T" (required)	Record Type	The start of an Order Totals Record is marked by a "T" at the BEGINNING of the line.
1	Integer	Order Status	

2	Date	Order Date	
3	Integer	Line Items	Number of line items.
4	Integer	Units	Total number of units.
5	Float	Sub Total	Subtotal of all line items.
6	Float	Misc Charges	Miscellaneous charges.
7	Float	Tax	Taxes on order.
8	Float	Ship Charges	Shipping charges.
9	Float	Total Price	Total price of entire order.
10	Float	Ship Weight	Total shipping weight (lbs)
11	Float	Area	Total area (sq ft)
12	n/a	Reserved1	Reserved for future use.
13	n/a	Reserved2	Reserved for future use.
14	String(8)	Truck Route	Trucking route.
15	String(35)	Misc Desc	Miscellaneous description.

LINE ITEM RECORD:

There needs to be at least one line item record for each order. For every line item in an order, there should be a corresponding line item record in this file. These line item records must immediately follow the order record. After reading an order record, the program will continue reading line item records until on of the following conditions is encountered. A new order record (indicated by an *), an empty line, or the end of the import file (indicated by a #). Note that if the unit is a rectangle, fields 17 through 26 do not need to be included in the line item record. The following table describes the line item record fields.

Field	Data Type	Field Name	Description
0	Numeric (required)	Item Number	This is the line item number in the order, starting at 1.
1	Numeric (required)	Quantity Ordered	The number of units to make. Upon import the program will explode the unit into the defaulted lites or pieces of glass, the glass types, and the special processes.
2	Numeric	Quantity Made	This represents the number of units already made. The number of units that WILL be made is the (Quantity Ordered - Quantity Made). The default is zero.
3	String(10) (required)	Stock Number	This is the inventory name of the i.g. unit type for each line item record. The stock number is predetermined in the WinIG program. It references the inventory file maintained in the WinIG program. This number represents an insulated glass unit made of different glass types and special processes.
4	Float (required)	Width	This field represents the unit width to be made. The value must be in decimal form.
5	Float (required)	Height	This field represents the unit height to be made. The value must be in decimal form.
6	Float	Overall Unit Thickness	This field will import the overall unit thickness for the stock number desired. The value must be in decimal form. The default is 7/8". It is recommended to space fill field. If a spacer stock is assigned to the unit, through field #7, then this value is calculated based on the glass thickness and spacer thickness, no matter what is passed in this field.
7	String(10)	Spacer Stock	It is recommended that this field always be used. This is the inventory name of the spacer type, which is predetermined in the WinIG program. This field will over-ride the overall unit thickness and the default spacer setup for the unit stock number in the WinIG program. The default spacer stock in WinIG is an intercept spacer.
8	String(10)	Gas Stock	This is the inventory name of the gas type, which is predetermined in the WinIG program. If this field is left blank, then no gas will be assigned to the unit.
9	String(10)	Muntin Stock	This is the inventory name of the muntin type, which is predetermined in the WinIG program. If the field is left blank, then no muntins will be assigned to this unit.
10	String(10)	Muntin Size and Type	This field is where the pattern of muntin and type of muntin are sent. The letter C translates to component(s) or bar(s), the letter P translates to pane(s) or viewing area, the word "CUSTOM" translates to a custom component configuration. For example, "3Vx2HC" translates to three vertical components and two horizontal components. The size "1Vx4HP" translates to one vertical pane and four horizontal panes. Usually, components indicated by the C at the end of the size are used for the colonial muntin pattern, while the diamond muntin pattern is measured in panes, indicated by a P at the end of size. The vertical number needs to preceed the horizontal number. The word "CUSTOM", is component based with the notching locations defined in the custom muntin record. The custom muntin must immediately follow the line item record.

11	Float	Width Adjust	This field adjusts the spacing of the muntins by the specified value. The muntin spacing can be calculated for a unit that is larger in width by the specified amount. A unit that is 20 inches wide with an adjustment of 1 inch will have muntins calculated for a 21 inch unit. This feature is used to space muntins the same for two different size units. The value must be in decimal form.
12	Float	Height Adjust	Same as above only for the height.
13	String(10)	Special Stock #1	This is the inventory name of the special stock type, which is predetermined in the WinIG program. If this field is left blank, then no stock will be assigned to the unit. This is for any option that is NOT a spacer, gas, or muntin.
14	String(10)	Special Stock #1	Same as above but for #2.
15	String(10)	Special Stock #1	Same as above but for #3.
16	String(40)	Line Comment	This is free form text used to describe the entire line item record. Only the first twenty characters will be printed on the labels or sent to the inkjet printer.
17	String(6)	Shape ID	This is the shape identifier field. It indicates the shape of the unit. The default is rectangle. See the section on shape data for more details.
18	Logical	Mirror Image	If true, the shape will be the mirror image of it's normal orientation. On a trapezoid the tallest side is normally on the left with the top sloping down to the right. When the mirror image is true, the tallest side will be on the right with the top sloping down to the left.
19	Logical	Rounded Corners	If true, rounded corners will be used. The radius of the corners is specified by the Corner Radius field name.
20	Float	Corner Radius	The radius dimension to be used by the Rounded Corners field name.
21	Float	Dimension A (required only if field 17 is used)	If dimension A-F is available then a value must be sent. The dimensions A-F depend on the unit shape. The width and height are used from fields 4 and 5. See the section on shape data for more details. The value must be in decimal form.
22	"	"	"
23		Dimension F (required only if field 17 is used)	If dimension A-F is available then a value must be sent. The dimensions A-F depend on the unit shape. The width and height are used from fields 4 and 5. See the section on shape data for more details. The value must be in decimal form.

EXTENDED LINE ITEM RECORD:

This record contains additional line item information not supplied in the Line Item Record. The following table describes the line item record fields.

Field	Data Type	Field Name	Description
0	Special "X" (required)	Record Type	The start of an Order Totals Record is marked by a "X" at the BEGINNING of the line.
1	Numeric	Quantity Backorderd	
2	Numeric	Quantity Invoiced	
3	Float	Price	
4	Float	Unit Price	
5	Numeric	Option Mode	
6	Numeric	Spacers Required	
7	Float	Weight	
8	Float	Area	
9	Numeric	Custom Vert Positions	0 if non custom
10	Numeric	Custom Horz Positions	0 if non custom
11	String(40)	Remarks	Special remarks.

CUSTOM MUNTIN RECORDS:

This record imports the custom muntin component configuration for the insulated glass unit. This record is component based. The location of each vertical and horizontal bar must be imported. The number of vertical or horizontal bars will not be imported. It will be assumed that the number of fields passed in field zero, will be the number of components desired for the unit. There is a limitation of 20 components for both the vertical bars and horizontal bars. Also, each component notch location will be referenced from the bottom left corner of the insulated glass unit. For example if the unit is 40 inches by 30 inches, and 3 vertical notch locations by 2 horizontal notch locations are desired, then the import file will look like the example below.

"V", 10.00, 20.00, 30.00
"H", 10, 20

VERTICAL CUSTOM MUNTIN RECORD:

Field	Data Type	Field Name	Description
0	Special "V" (required)	Vertical Muntin	This field identifies the component locations to be on the vertical side of the unit, vertical is along the width.
1	Float	Notch Location #1	This field is the measurement from the bottom left corner of the glass to the first notch location. The value must be in decimal form.
2	Float	Notch Location #2	This field is the measurement from the bottom left corner of the glass to the second notch location. The value must be in decimal form.
"	"	"	"
"	"	"	"
20	Float	Notch Location #20	This field is the measurement from the bottom left corner of the glass to the twentieth notch location. The value must be in decimal form.

HORIZONTAL CUSTOM MUNTIN RECORD:

Field	Data Type	Field Name	Description
0	Special "H" (required)	Horizontal Muntin	This field identifies the component locations to be on the horizontal side of the unit, horizontal is along the height.
1	Float	Notch Location #1	This field is the measurement from the bottom left corner of the glass to the first notch location. The value must be in decimal form.
2	Float	Notch Location #2	This field is the measurement from the bottom left corner of the glass to the second notch location. The value must be in decimal form.
"	"	"	"
"	"	"	"
20	Float	Notch Location #20	This field is the measurement from the bottom left corner of the glass to the twentieth notch location. The value must be in decimal form.

END OF FILE RECORD:

Field	Data Type	Field Name	Description
0	Special #	File End	The end of file record must follow the last line item of the last order. The end of the file transfer is marked by a pound sign (#) at the beginning of the line. See the section on special characters.

SHAPE DATA STRING:

The Shape ID is used to identify the shape of the unit. Each non-rectangle shape has a width and a height dimension imported through the line item record, fields four and five respectively. The width is labeled W and the height is labeled H. Some non-rectangle shapes require additional dimensions. These dimensions are labeled A through F. The following table shows the available shapes and the dimensions needed for each shape. Note that when mirror image is true, then all dimensions will be affected accordingly.

Shape ID	Name	Dimensions
"1-STD"	Rectangle	Only the width and height are needed, field 4 and 5.
"2-STD"	Triangle	Dimension A is the offset of the peak from the left side. If A is 0.0, then the shape is a right triangle.
"3-STD"	Peak	Dimension A is the height of the left vertical side leg. Dimension B is the height of the right vertical side leg. The overall height (H) = A + B. Dimension C is the offset of the peak from the left side. Dimension D is the offset of the peak from the right side. If C and D are 0.0, then the peak is a right triangle, and the shape could be a trapezoid. Dimension C and D must be less than W. **Additional Dimensions.** Dimension E is W - D.

"4-STD"	Dome	Dimension A is the height of the vertical side legs. Dimension B is the height of the rounded portion, which does not have to be the radius. The overall height (H) = A + B. If A is 0.0, then B = H, and if B = W/2, then dimension B is the radius and the shape is a semi-circle. If Dimension B is the radius, it can not be less than half the width.
"5-STD"	Trapezoid	Dimension A is the height of the shortest side leg, which will be the right side unless mirror image is true. **Additional Dimensions.** Dimension B is H - A.
"6-STD"	Circle	Only the width and height are needed, field 4 and 5. This is not an oval, the width and height must be equal.
"7-STD"	Semi-circle	Only the width and height are needed, field 4 and 5. The height can not be less than half the width.
"8-STD"	Quarter-circle	Dimension A is the radius of the arc. The dimensions B + C are the length of the side legs. **Additional Dimensions.** Dimension D is W - C.
"9-STD"	Hexagon	Dimension A is the length of the vertical side legs. **Additional Dimensions.** Dimension B is H - (A / 2). Dimension C is A + B. Dimension D is W / 2.

"10-STD"	Octagon	Dimension A is the length of the vertical side legs. Dimension B is the length of the horizontal side legs. **Additional Dimensions.** Dimension C is H - (A / 2). Dimension D is A + C. Dimension E is W - (B / 2). Dimension F is B + E.
"11-STD"	3 Radius Dome	Dimension A is the height of the vertical side legs. Dimension B is the height at which the radii meet, must be less than H. Dimension C is the distance from the side to the intersection of the radii, must be less than W. Dimension D is the radius of the side arcs. **Additional Dimensions.** Dimension E is H - B. Dimension F is W - C.
"12-STD"	Parallelogram	Dimension A is the distance from the right side to the lower right corner, must be less than or equal to W. Dimension B is the distance from the left side to upper left corner, must be less than or equal to W. **Additional Dimensions.** Dimension C is W - A.
"13-STD"	Narrow Base Trap	Dimension A is the distance from the left side to the lower left corner, must be less than or equal to W. Dimension B is the distance from the right side to the lower right corner, must be less than or equal to W. Dimension C is the height of the left side, must be less than or equal to H. **Additional Dimensions.** Dimension D is W - B.
"14-STD"	Partial Dome	Dimension A is the height of the right side, must be less than H. Dimension B is the radius of the arc, must be greater than or equal to W.
"15-STD"	Pentagon	Dimension A is the distance from the bottom to the point on the left side of the shape, must be less than or equal to H. Dimension B is the distance from the bottom to the point on the right side of the shape, must be less than or equal to H. Dimension C is the distance from the left side to the lower left corner, must be less than or equal to W. Dimension D is the distance from the right side to the lower right corner, must be less than or equal to W. Dimension D is the distance from the top left side to the point of the peak. **Additional Dimensions.** Dimension F is W - D.
"16-STD"	Heptagon	Only the width and height are needed, field 4 and 5. The width and the height must be greater than zero. **Additional Dimensions.** Dimension A is W * (0.277479). Dimension B is W - A. Dimension C is W * (0.099031). Dimension D is W - C. Dimension E is W * (0.347947). Dimension F is W * (0.781830). Dimension G is W / 2. Dimension H is W * (0.974927).

Example Merge File

MERGE.DAT

<V1.0>, "WinIG Import File"
*, "1234567890123456", "1234567890", "ABCDEFGHIJKLMNOP", "110894", "SHIP VIA", "ORDER COMMENT → 70 CHARACTERS"
1, 1, 0, "IG12345678", 32.75, 28.25, 0.75, "SP12345678", " ", ", " ", 0.0, 0.0, " ", " ", " ", "LINE COMMENT → 40 CHARACTERS", "1-STD"
*, "001", "001", "A", "110894", " ", " "
1, 1, 0, "IG1CL", 28.750, 34.125, 0.750, "SP17", "ARG1", "COLMUN1", "3Vx2HC", 1.0, 0.0, " ", " ", " ", " ", "1-STD"
2, 2, 0, "IG1CL", 29.750, 34.125, 0.750, "SP17", "ARG1", "COLMUN1", "3Vx2HC", 0.0, 0.0, " ", " ", " ", " ", "1-STD"
3, 1, 0, "IG1CL", 28.750, 34.125, 0.750, "SP17", "ARG1", "COLMUN1", "1Vx4HP", 1.0, 0.0, " ", " ", " ", " ", "1-STD"
4, 2, 0, "IG1CL", 29.750, 34.125, 0.750, "SP17", "ARG1", "COLMUN1", "1Vx4HP", 0.0, 0.0, " ", " ", " ", " ", "1-STD"
5, 1, 0, "IG1CL", 40.000, 30.000, 0.750, "SP17", "ARG1", "CUSMUN1", "CUSTOM", 0.0, 0.0, " ", " ", " ", " ", "1-STD"
"V", 10.0, 20.0, 30.0
"H", 10.0, 20.0
6, 1, 0, "IG1CL", 40.000, 30.000, 0.750, "SP17", "ARG1", "CUSMUN1", "CUSTOM", 0.0, 0.0, " ", " ", " ", " ", "1-STD"
"V", 10.0, 20.0, 30.0

“H”, 10.0, 20.0
*, “002”, “001”, “B”, “110894”, “ ”, “SHAPE DATA”
1, 2, 0, “IG1CC”, 25.125, 21.125, , “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “1-STD”
2, 1, 0, “IG1CC”, 24.625, 23.875,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “1-STD”
3, 1, 0, “IG1CL”, 29.500, 15.125,, “SP17”, “ARG1”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “1-STD”
4, 1, 0, “IG1CC”, 22.875, 18.125,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “1-STD”
5, 1, 0, “IG1CC”, 26.875, 13.500,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “1-STD”
6, 1, 0, “IG1CL”, 20.875, 16.125,, “SP17”, “ARG1”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “1-STD”
*, “003”, “001”, “C”, “110894”, “ ”, “ ”
1, 2, 0, “IG1CL”, 27.125, 43.125,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “1-STD”
2, 1, 0, “IG1CL”, 27.125, 43.125,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “2-STD”, N, N, 0.0, 3.0
3, 1, 0, “IG1CL”, 25.125, 44.875,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “3-STD”, N, N, 0.0, 25.0, 15.0, 5.0, 10.0
4, 1, 0, “IG1CL”, 24.125, 43.125,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “4-STD”, N, N, 0.0, 22.0, 30.0
5, 3, 0, “IG1CC”, 22.125, 44.875,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “5-STD”, N, N, 0.0, 30.0, 14.875
6, 1, 0, “IG1CL”, 22.125, 22.125,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “6-STD”, N, N, 0.0
7, 5, 0, “IG1CL”, 22.125, 11.625,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “7-STD”, N, N, 0.0
8, 2, 0, “IG1CL”, 22.125, 44.875,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “8-STD”, N, N, 0.0
9, 3, 0, “IG1CC”, 21.125, 43.125,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “9-STD”, N, N, 0.0
10, 1, 0, “IG1CL”, 21.125, 43.125,, “SP17”, “ ”, “ ”, “ ”, 0.0, 0.0, “ ”, “ ”, “ ”, “ ”, “10-STD”, N, N, 0.0
*, “004”, “001”, “D”, 110894, “ ”, “ ”
1, 3, 0, “IG1CL”, 30.875, 31.875, 0.75, “ ”, “ ”, “ ”, “ ”, , , “ ”, “ ”, “ ”, “ ”, “ ”
2, 3, 0, “IG1CL”, 29.875, 30.125, 0.75, “ ”, “ ”, “ ”, “ ”, , , “ ”, “ ”, “ ”, “ ”, “ ”
3, 2, 0, “IG1CC”, 28.125, 38.875, 0.75, , , , , , , , , ,
4, 1, 0, “IG1CC”, 22.125, 38.875, 0.75, , , , , , , , , ,
5, 3, 0, “IG1CL”, 28.125, 32.875, 0.75
6, 2, 0, “IG1CC”, 27.125, 37.125, 0.75
7, 1, 0, “IG1CC”, 21.125, 37.125, 0.75
8, 3, 0, “IG1CL”, 27.125, 31.125, 0.75
9, 1, 0, “IG1CL”, 21.5625, 36.125, 0.75
10, 1, 0, “IG1CL”, 20.5625, 34.375, 0.75
11, 1, 0, “IG1CL”, 22.250, 33.125, 0.75
12, 1, 0, “IG1CL”, 33.9375, 21.000, 0.75
13, 1, 0, “IG1CL”, 22.125, 32.875, 0.75
14, 6, 0, “IG1CC”, 22.125, 32.875, 0.75
15, 1, 0, “IG1CL”, 22.125, 32.875, 0.75
16, 1, 0, “IG1CL”, 21.125, 31.125, 0.75
17, 6, 0, “IG1CC”, 21.125, 31.125, 0.75
#