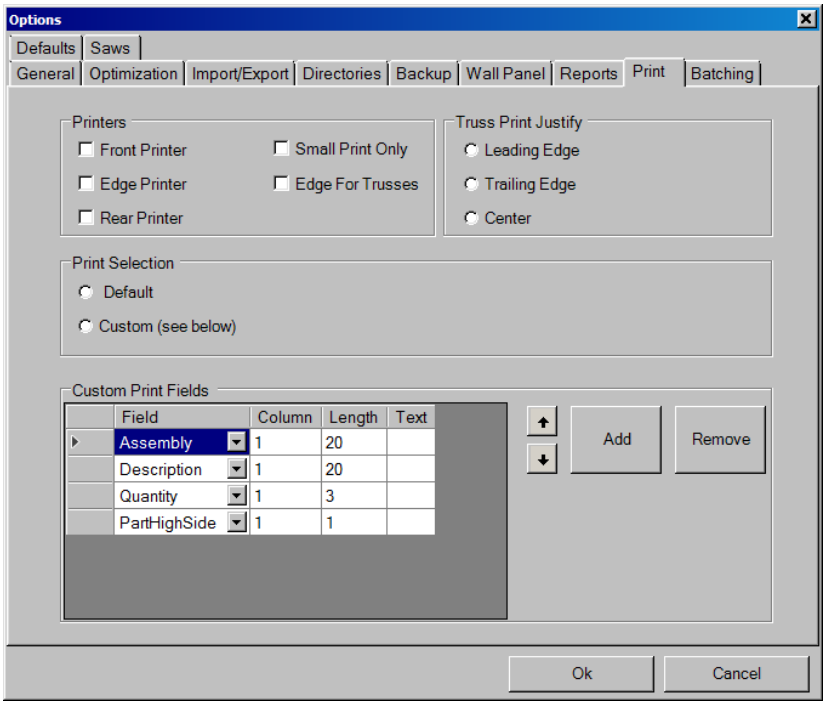
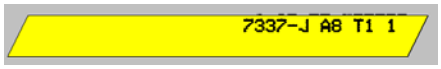
Settings for Blade Print

Board Stretcher Tools – Options - Print



1. Select if the saw has a print head in these locations:
    a. **Front Printer** - Window side of the board. All saws have a print head in this location so this should always be selected.
    b. **Edge Printer** – Top edge of the board.
    c. **Rear Printer** – Opposite the front print head.
2. **Small Print Only** – Only 7 valve high (about 1 inch) print will be used on all heads. Examples of small and large print on shown below on a 2x4.
    a. 

    b. 

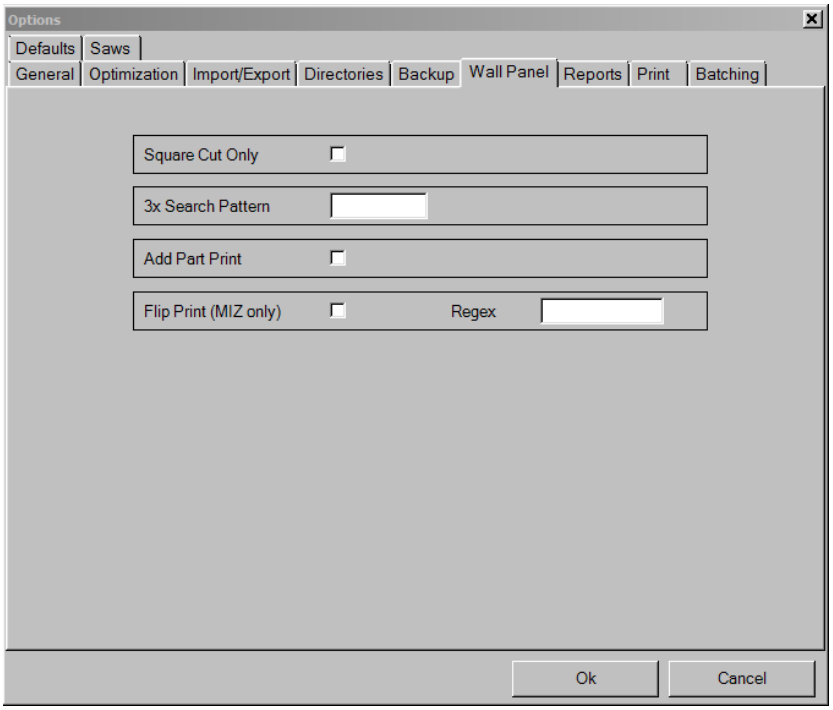
3. **Edge For Trusses** – Label print (defined below) which is placed on the front face will also be placed on the edge as well using 7 valve high print for trusses only.
4. Truss Print Justify – Label print (defined later in the document) will be justified on the part in the selected manner on trusses only.
    a. **Leading Edge**
    b. **Trailing Edge**
    c. **Center**

    Note: If print other than label print (e.g., AGS or AGS+) is placed on the part the label will be placed in the widest open area and justified within that area.
5. Print Selection – This section is what defines "label print" for each part. The two options are as follows.

a. **Default** – Prints the following:
    i. Assembly (same as Job)
    ii. "QTY "
    iii. Quantity of same parts
    iv. Description
    Example: TRUSSJOBA QTY 3 W3
b. **Custom** – Prints the data selected in Custom Print Fields
    i. The number of fields is controlled by using the "Add" and "Remove" buttons.
    ii. Items are printed in the order shown from top to bottom. To move a field up or down the list select the field and use the up and/or down arrows.
    iii. The pull down (button with the upside down triangle) is used on each field to select what is printed.
    iv. Column is the character number in the field to start printing with. For example if the field selected is Assembly (same as Job) and the Column = 3 then the print for a part with an Assembly of "TRUSSJOBD" would be "USSJOBD".
    v. Length is how many characters to print for the field. Using the example for Column above, if Length = 5 then "USSJO" would be printed.
    vi. If Length is larger than the number of characters possible to be printed, all characters will be printed. Using the same example, if Length = 20 then "USSJOBD" will be printed even though there are only 7 characters to print. No spaces will be appended to the end of the print.
    vii. Special items in the pull down menu:
        1. "Text" - Whatever is placed in the "Text" column will be printed.
        2. "PartHighSide" – Places an arrow on the part pointing to the end of the part which is higher when placed in the truss. If the part is horizontal (level) then no arrow will be printed. Example below.
            a. 

c. Notes about label printing:
    i. 16 valve high (2 ½ inches) text print will be used on print heads which have 16 or more valves unless one of the following is true in which case 7 valve high (1 inch) text print will be used:
        1. AGS or AGS+ printing is used
        2. There is not enough space for 16 valve high print
        3. Small Print Only is turned on

Board Stretcher Tools – Options – Walls



1. **Add Part Print** – This option should always be checked unless no print is desired on wall parts. Wall marks are set by the imported job file. Board Stretcher does not create these marks.
2. **Flip Print** – Flips the print from end to end if the string in the "Regex" box matches a string of characters in the part's description. "Regex" is short for Regular Expressions which is a string pattern matching language. Contact support for assistance. Only available for the MIZ file format.

Board Stretcher Configuration Printing Settings

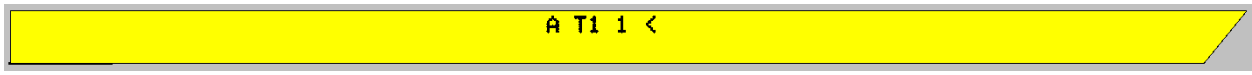
Note: This is a subset of configuration settings for printing. The settings shown in Tools – Options are not shown below.

1. Eng.Print.AddTrussPlatePrint – AGS+ printing which consists of plate outlines, joint numbers, plate sizes, and joint alignment marks.

a. 

b. Print heads necessary:
   i. 32 valve front
   ii. 32 valve rear

2. Eng.Print.AddLabelOpposingTrussPrint - Places “label print” on the opposite side (‘down side’) of the board from the main AGS or AGS+ marking side (‘up side’). Will not function if Eng.Print.AddTrussPlateOutlinesOnTrussBottom = True.

a. 

3. Eng.Print.AddTrussPlateOutlinesOnTrussBottom – Places AGS+ marks of plate outline, joint number, and plate size on the ‘down side’.

a. 

4. Eng.Print.AddTrussPrint – Original AGS printing which consists of joint numbers, plate sizes, and joint alignment marks.

a. 

b. Print heads necessary:
   i. 16 valve or higher front
   ii. 7 valve or higher rear

5. Eng.Printer.FrontPrinterValveCount – Number of valves in the front print head
   a. When using 32 valve heads the following optimization constants must be set as shown in Board Stretcher and the Blade saw.

Eng.FirstPartMinLeadingLowerEdgeToMaxTrailing	28.5
Eng.FirstPartMinLeadingUpperEdgeToMaxTrailing	28.5
Eng.FirstPartMinLength	28.5
Eng.FirstPartWithEndBevelMinLength	29.5

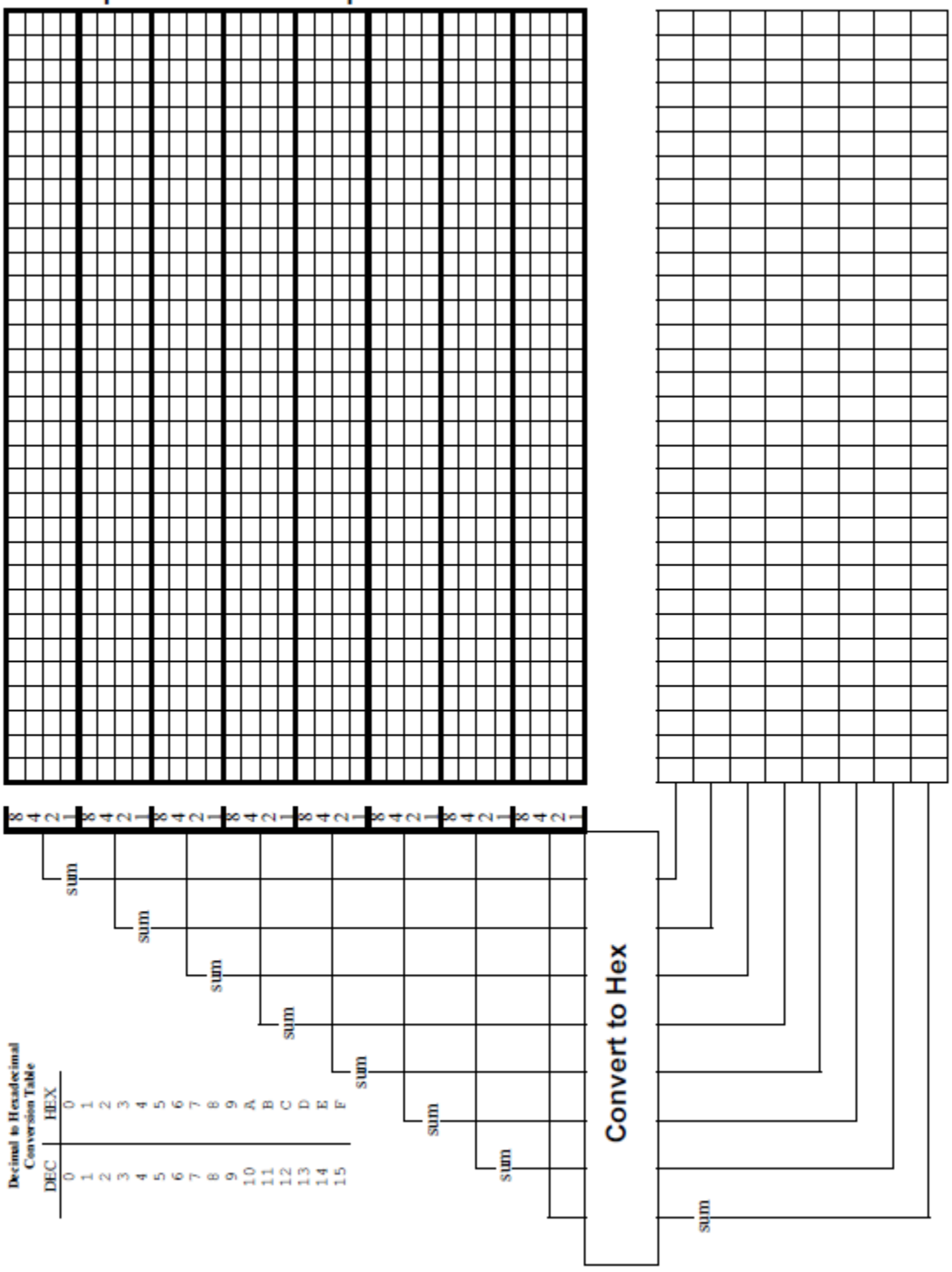
6. Eng.Printer.RearPrinterValveCount - Number of valves in the rear print head
7. Eng.Print.CountDuplicateParts – If true then parts that are physically the same and also have the same descriptions and identifiers will be counted together for the print part quantity. Having identical parts like this happens when the Mitek option Duplicate Parts is used. It is a slow process to count in this manner so it should only be used where necessary.
8. Eng.Printer.ColumnSpacing – The distance between print dots horizontally. This must be set to 27.

9. Eng.Printer.InchesPerCount – The number of inches per encoder count. This must be set to 0.006365625.
10. Eng.Printer.UsePartPrintTypes – Should be set to true when 3rd party print has been placed in the XML or MME (Australia) file which is being imported.
11. Eng.Printer.RawGraphic – The hexadecimal code used to generate the graphic pattern. More detail is provided in the "Raw Graphic Information" area of this document.
12. Eng.Printer.RawGraphicHeight – The height of the graphic in dots or valves.

Board Stretcher Raw Graphic Information

To set the Eng.Printer.RawGraphic use the conversion template below.

32 Dot Graphic Conversion Template



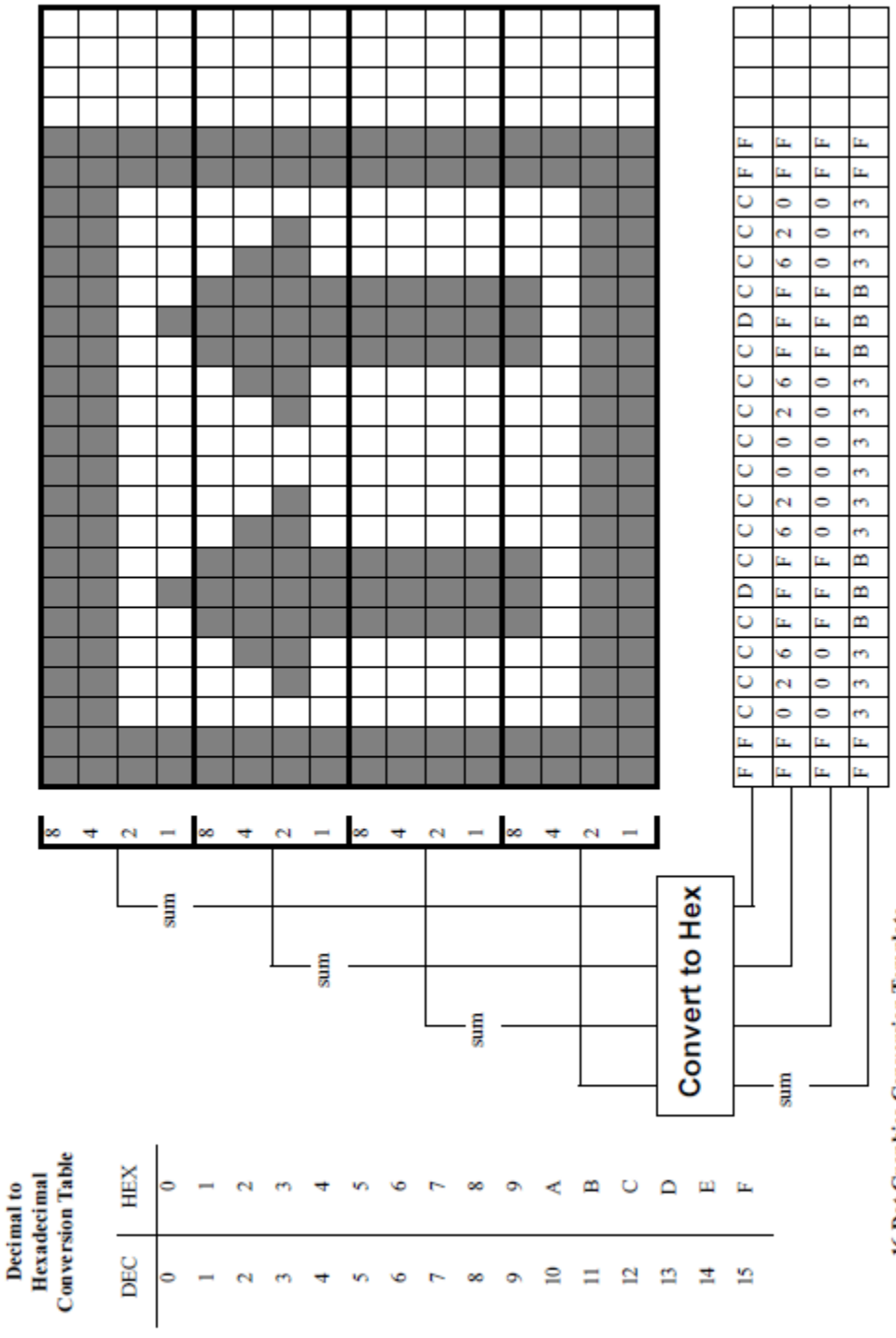
Notes:

1. Printing of logos is only currently available when using AGS+.
2. The logo will print on the face up side of each part, providing there is room on the part face.
3. The vertical and horizontal dot spacing is about 0.16 inches.

4. Ensure the graphic will fit on the shortest board height, e.g., if 2x4 then the shortest board height is 3.5 inches. The bottom valve of the 32 valve print head is 0.42 inches up from the bottom of the board so this value must be subtracted from the board height (3.5 - .42 = 3.08 inches). This is the **Maximum Height** the logo can be.
5. To find the **Height in Dots** use this equation: (Maximum Height / 0.16) + 1
    a. Use only the integer portion of the division in brackets.
        i. Example: 3.08 / .16 = 19.25
        ii. The integer portion is 19 in this case
    b. Finish the equation
        i. 19 + 1 = 20
        ii. **Height in Dots** = 20
6. The top of the template is the left side. The template must be rotated 90 degrees clockwise for use.
7. Below is an example of how to complete the template. The example is only 16 dots high but the concept is the same.

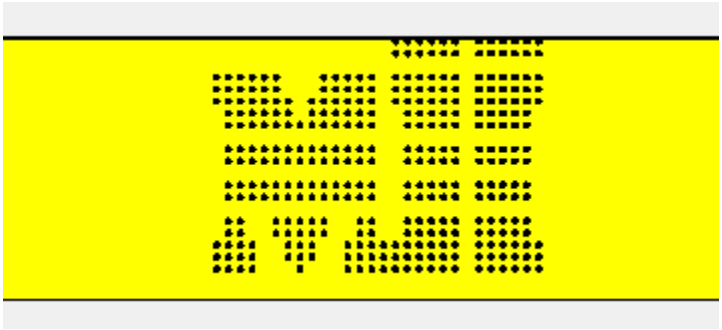
To set the Eng.Printer.RawGraphicHeight use the **Height in Dots** rounded up to the nearest multiple of 8, so in this case the **Height in Dots** value of 20 is rounded up to 24.

Sample Graphic



Example:

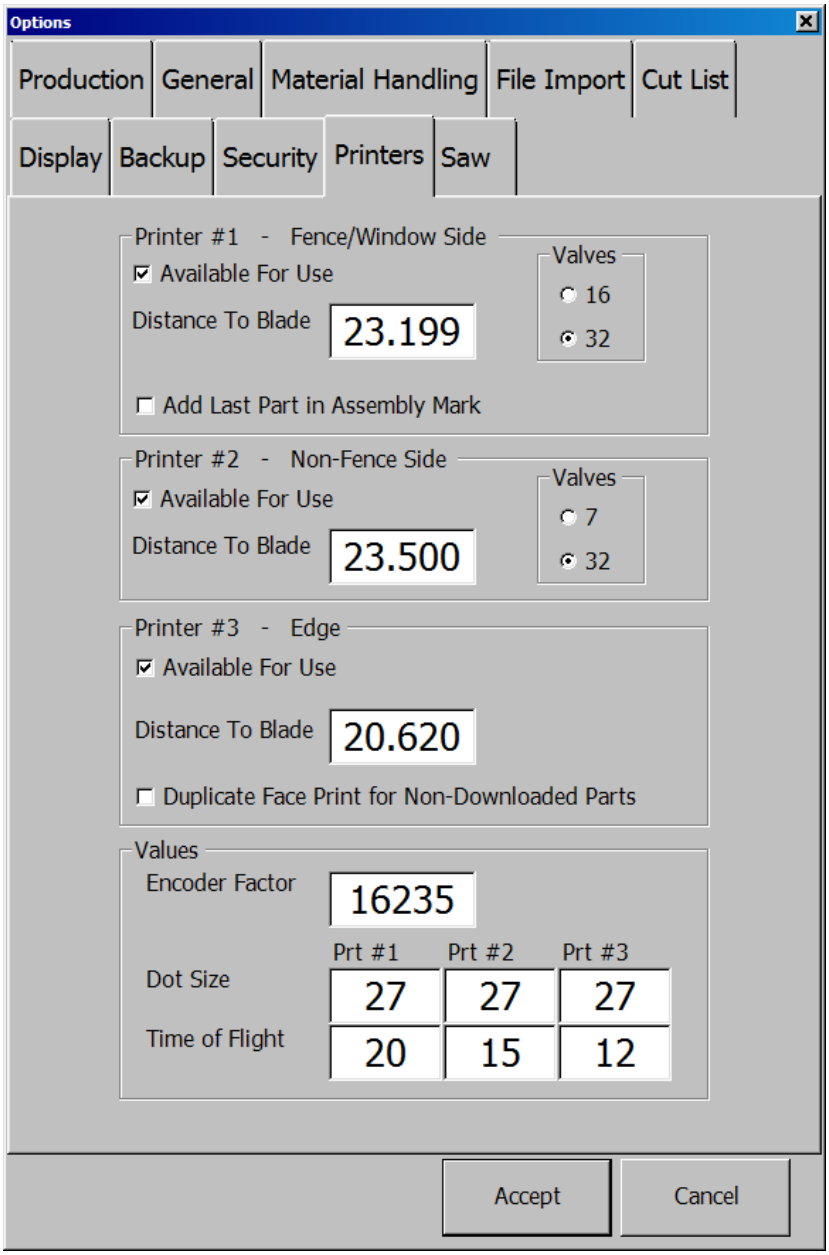
To print this logo below, use the following settings:



Eng.Printer.RawGraphic =
01C00701F6DF01F6DF01F6C701F6C001F6D80076DE0016DF0076DE01F6D801F6C001F6C701F6DF01F6DF0000070DC0070DF6DF0DF6DF0DF6DF0DF6DF0DF6DF0DF6DF0000000DF6DF0DF6DF0DF6DF0DF6DF0DF6DF0DC007

Eng.Printer.RawGraphicHeight = 24

Blade Saw Tools – Options – Printer



1. **Printer #1**
    a. **Available For Use** – Checked if there is a print head in this location and it is to be used. There is always a print head in this location so this should always be checked.
    b. **Valves** – Select the number of valves on the print head installed.
    Note: If "Available For Use" is unchecked and then re-checked the "Valves" setting on printer #1 and #2 will default to 16 valves and 7 valves respectively.
    c. **Distance to Blade** – Distance from the valves center to the pivot of the saw blade. This is automatically set during printer calibration.

d. **Add Last Part in Assembly Mark** – Prints a special character on the last part in an assembly (job) to exit the saw.
    i. Mark attributes:
        1. The size of a small text character as to be able to fit on small parts
        2. Is the combination of an “L” for last and “P” for part.
            a. 
        3. Will always be printed. If there is not room on the part the leftmost character in the print will be removed and substituted with the last part mark.

2. **Printer #2**
    a. **Available For Use** – Checked if there is a print head in this location and it is to be used.
    Valves – Select the number of valves on the print head installed.
    Note: If “Available For Use” is unchecked and then re-checked the “Valves” setting on printer #1 and #2 will default to 16 valves and 7 valves respectively.
    b. **Distance to Blade** – Distance from the valves center to the pivot of the saw blade. This is automatically set during printer calibration.
3. **Printer #3**
    a. **Available For Use** – Checked if there is a print head in this location and it is to be used.
    b. **Distance to Blade** – Distance from the valves center to the pivot of the saw blade. This is automatically set during printer calibration.
    c. **Duplicate Face Print for Non-Downloaded Parts** – Duplicates the print from the front face on the edge for Remainders, Keyed In parts, and parts that are edited during a Redo.
4. **Values**
    a. **Encoder Factor** – The number of printer encoder counts per meter. This is automatically set during printer calibration.
    b. **Dot Size** – The amount of time the print head valves are opened to form an ink dot. This value must be set to 27.
    c. **Time of Flight** – The amount of time it takes for the ink to travel from the head to the board. This is automatically set during printer calibration.

<u>Blade Configuration Printing Settings</u>

Note: This is a subset of configuration settings for printing. The settings shown in Tools – Options are not shown below.

1. Eng.Print.SmallPrint - Only 7 valve high (about 1 inch) print will be used on all heads edge for Remainders, Keyed In parts, and parts that are edited during a Redo.

2. Eng.Printer.PrintFlushMarks – Prints vertical lines on the leading waste of the first board after “Start Cutting” is pressed to flush the print head for improved mark quality on the first board.
3. All the Eng.PrintField settings are for print on Remainders, Keyed In parts, and parts that are edited during a Redo. These settings can be copied from the Board Stretcher configuration if the same label print which Board Stretcher creates is desired. In Board Stretcher these are set in the Tools – Option – Print form.
4. Eng.PrintHead.Edge.ColumnSpacing = The number of encoder counts between dots on the edge print head. This must be set to 794.
5. Eng.PrintHead.FrontFace.ColumnSpacing = The number of encoder counts between dots on the front print head. This must be set to 794.
6. Eng.PrintHead.RearFace.ColumnSpacing = The number of encoder counts between dots on the rear print head. This must be set to 794.