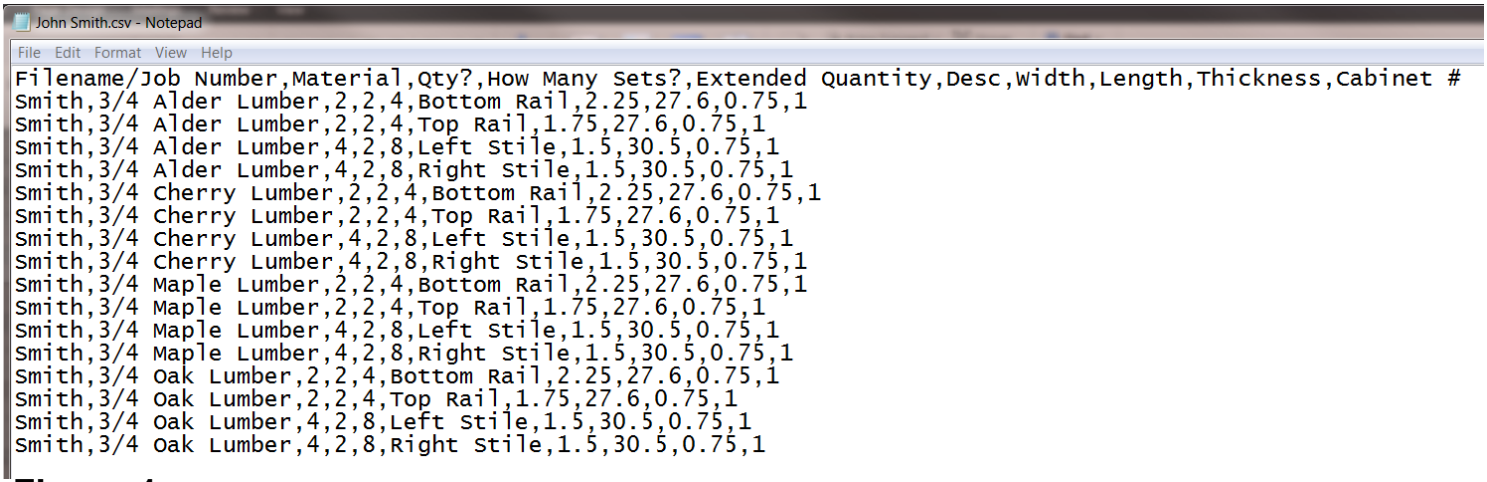
RAZORGAGE
POSITIONERS • SOFTWARE • SYSTEMS

Parts List Processor Cutlist Requriements

This document is intended to instruct in the creation of delimited files that can be successfully interpreted by the RazorGage Parts List Processor software. The Parts List Processor software referred to hereafter as PLP, is a free software utility provided by RazorGage that converts comma or semi-colon separated tabular data files into a Microsoft Access database file with an extension of .rdb. The .rdb file is read by the RazorGage Autolist, RazorOptimal, and AngleMaster software programs that control RazorGage positioners and saw systems. A user may circumvent the need for the PLP by creating his own Access database file as long as it meets the specification required. For more information on the RazorGage .rdb file specification contact the factory or download the PLP from the RazorGage website, create a .csv file per the instructions in this document, convert said .csv file to a .rdb file using the PLP, and open it in Microsoft Access to ascertain the schema.

So what is a delimited file? It is a very simple text file consisting of rows of values separated by a delimiter such as a comma. Often these files are called comm-separated value files or CSV files. The PLP can import files whose values are separated by either commas or semi-colons but for the purpose of this document we will speak only in terms of commas. In order for comma separated files to be read properly by the PLP, each row must have the same number of commas. It is not essential that a value is present between each set of commas unless it is a vital value such as length, quantity, or material type. Figure 1 shows a screen shot of a comma separated file as it appears when opened in Notepad, a free text editor included on every Windows PC.


John Smith.csv - Notepad

File Edit Format View Help

```
Filename/Job Number,Material,Qty?,How Many Sets?,Extended Quantity,Desc,Width,Length,Thickness,Cabinet #
Smith,3/4 Alder Lumber,2,2,4,Bottom Rail,2.25,27.6,0.75,1
Smith,3/4 Alder Lumber,2,2,4,Top Rail,1.75,27.6,0.75,1
Smith,3/4 Alder Lumber,4,2,8,Left Stile,1.5,30.5,0.75,1
Smith,3/4 Alder Lumber,4,2,8,Right Stile,1.5,30.5,0.75,1
Smith,3/4 Cherry Lumber,2,2,4,Bottom Rail,2.25,27.6,0.75,1
Smith,3/4 Cherry Lumber,2,2,4,Top Rail,1.75,27.6,0.75,1
Smith,3/4 Cherry Lumber,4,2,8,Left Stile,1.5,30.5,0.75,1
Smith,3/4 Cherry Lumber,4,2,8,Right Stile,1.5,30.5,0.75,1
Smith,3/4 Maple Lumber,2,2,4,Bottom Rail,2.25,27.6,0.75,1
Smith,3/4 Maple Lumber,2,2,4,Top Rail,1.75,27.6,0.75,1
Smith,3/4 Maple Lumber,4,2,8,Left Stile,1.5,30.5,0.75,1
Smith,3/4 Maple Lumber,4,2,8,Right Stile,1.5,30.5,0.75,1
Smith,3/4 Oak Lumber,2,2,4,Bottom Rail,2.25,27.6,0.75,1
Smith,3/4 Oak Lumber,2,2,4,Top Rail,1.75,27.6,0.75,1
Smith,3/4 Oak Lumber,4,2,8,Left Stile,1.5,30.5,0.75,1
Smith,3/4 Oak Lumber,4,2,8,Right Stile,1.5,30.5,0.75,1
```

Figure 1

Figure 2 shows the same file viewed in Microsoft Excel. Here it is easier to see the tabular structure of the data.

	A	B	C	D	E	F	G	H	I	J
1	Filename/Job Number	Material	Qty?	How Many Sets?	Extended Quantity	Desc	Width	Length	Thickness	Cabinet #
2	Smith	3/4 Alder Lumber	2	2	4	Bottom Rail	2.25	27.6	0.75	1
3	Smith	3/4 Alder Lumber	2	2	4	Top Rail	1.75	27.6	0.75	1
4	Smith	3/4 Alder Lumber	4	2	8	Left Stile	1.5	30.5	0.75	1
5	Smith	3/4 Alder Lumber	4	2	8	Right Stile	1.5	30.5	0.75	1
6	Smith	3/4 Cherry Lumber	2	2	4	Bottom Rail	2.25	27.6	0.75	1
7	Smith	3/4 Cherry Lumber	2	2	4	Top Rail	1.75	27.6	0.75	1
8	Smith	3/4 Cherry Lumber	4	2	8	Left Stile	1.5	30.5	0.75	1
9	Smith	3/4 Cherry Lumber	4	2	8	Right Stile	1.5	30.5	0.75	1
10	Smith	3/4 Maple Lumber	2	2	4	Bottom Rail	2.25	27.6	0.75	1
11	Smith	3/4 Maple Lumber	2	2	4	Top Rail	1.75	27.6	0.75	1
12	Smith	3/4 Maple Lumber	4	2	8	Left Stile	1.5	30.5	0.75	1
13	Smith	3/4 Maple Lumber	4	2	8	Right Stile	1.5	30.5	0.75	1
14	Smith	3/4 Oak Lumber	2	2	4	Bottom Rail	2.25	27.6	0.75	1
15	Smith	3/4 Oak Lumber	2	2	4	Top Rail	1.75	27.6	0.75	1
16	Smith	3/4 Oak Lumber	4	2	8	Left Stile	1.5	30.5	0.75	1
17	Smith	3/4 Oak Lumber	4	2	8	Right Stile	1.5	30.5	0.75	1

Figure 2

As you can see in Figures 1 and 2, the first row of the file is populated by headers. The PLP can be set to ignore the first row or even the first number of rows so that the headers won't be viewed as actual items in your cutlist. Figure 3 shows a csv file (viewed in Excel for clarity) whose first 14 rows are disorganized but whose remaining rows are tabular in format. PLP can be set to ignore the first 14 rows and only read the remaining rows. Therefore, the file below can be read by PLP.

	A	B	C	D	E	F	G	H	I	J
1	Sequence Number	Length	Quantity	Leading Edge Turn Angle	Trailing Edge Turn Angle	Leading Edge Tilt Angle	Trailing Edge Tilt Angle	Finish	Profile Number	Profile Width
2										
3	Name of NCX Variable									
4	Ccounter	Clength	CCount	CAngleLH	CAngleRH	CAngleLV	CAngleRV		BIdentNo	BWidth
5										
6	example	2 Bars and 4 Cuts								
7	1	100	1	90	90	90	90		514310	2
8	2	110	1	90	90	90	90		514310	2
9	3	90	1	90	90	90	90		514310	2
10	4	72	1	90	90	90	90		514310	2
11										
12										
13										
14	Original									
15	1	96	1	90	90	90	90	Clear	AS-0411	
16	2	96	1	90	90	90	90	Clear	AS-0411	
17	3	96	1	90	90	90	90	Clear	AS-0411	
18	4	96	1	90	90	90	90	Clear	AS-0411	
19	5	36	1	90	90	90	90	Clear	AS-0412	
20	6	36	1	90	90	90	90	Clear	AS-0412	
21	7	36	1	90	90	90	90	Clear	BE9-2553	
22	8	36	1	90	90	90	90	Clear	BE9-2553	
23	9	83,2	1	90	90	90	90	Clear	E9-0311	
24	10	83,2	1	90	90	90	90	Clear	E9-0311	
25	11	83,2	1	90	90	90	90	Clear	E9-0311	
26	12	83,2	1	90	90	90	90	Clear	E9-0311	
27	13	70,3	1	90	90	90	90	Clear	E9-0314	
28	14	70,3	1	90	90	90	90	Clear	E9-0314	
29	15	70,3	1	90	90	90	90	Clear	E9-0314	

Figure 3

Figure 4 shows the another file viewed in Microsoft Excel. The data is basically arranged in tabular format but there is a problem. The first 3 rows can be ignored since they include miscellaneous data and headers but notice a second section of data near the bottom with another major heading and then another row of headers. This file, if converted to CSV format, would cause the PLP to throw an exception even if it was instructed to skip the first three rows because eventually it would encounter a row with only one piece of data. You could ignore the error and allow PLP to import the file but you would also then get more errors because the PLP would read the second row of headers as part information. Certain fields such as LENGTH, QTY, WIDTH must consist of numbers. Since the header values are TEXT, the PLP would throw an exception when it encounters some of those values.

Edge					Panel		0.00		Wood			
Series	L/R	Wide	High	Qty	Stile	Qty	Rail	Qty	Panel W	Panel H	2'longer	Qty
					0	0	-3 5/8	0	-3 7/8	-3 7/8	-1 7/8	0

In addition to the structure of the file, there are a few other issues that must be taken into consideration:

- Maximum 27 columns
- Length values must be in decimal format
- Values in comma separated lists must not contain commas
- Values in semi-colon separated lists must not contain semi-colons
- Avoid the use of special characters in your data
- Do not use commas or semi-colons in the file name

Autolist Secondary Operation & Autolist MPC (Multi Process Control)
The Autolist Secondary Operation and MPC options are an extension of the Autolist software that, in addition to optimizing, will push a piece of stock through an arrangement of 2 processes (or 7 in Autolist MPC) sequentially arranged processing stations, calculating where to position the stock for each process required on each part to be cut from the stock, and indicating the appropriate station to perform the process. For example if you have parts that need holes drilled at various locations along the length of the part, a system can be configured comprising a saw preceded by a drill and a RazorGage positioner. Using Autolist Secondary Operation, the RazorGage will push the stock through the system positioning the material for both drilling and cutting as required by each part being cut from the stock. Each line in the cutlist must contain hole location information for the part described on that line. Autolist Secondary Operation does not automatically cycle the second operation but it does indicate to the operator which operation is to be performed.

The cutlist, which must be generated by the customer, is an important factor when considering the purchase of the Autolist Secondary Operation or MPC options. The cutlist can be either a comma separated file or an Access database file. In addition to the fields typically necessary, the file requires a field for each action that is to be performed. Since each line item is a finished part, these action fields usually need to contain multiple locations. For example, if a part gets several holes, the field that contains the locations for those holes needs multiple locations. This is typical for this type of application and we handle it by separating the positions by the pipe symbol (|) The first location will describe the distance from the leading edge of the finished part to the first hole. That number is followed by the pipe symbol. The next number will be the distance from the first hole to the second hole. This will be followed by a pipe symbol. The next number will be the distance from the second hole to the third hole and so on. The comma separated file will need one column for each secondary operation to be performed

See columns six and eight in the cutlist below for an example of fields which describe locations of secondary operations.

WIDTH	PART DESC	ELEVATION NO.	LOG NUMBER	PART LENGTH	TOP NOTCH	BOTTOM NOTCH	SIDE NOTCH	DRILL
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075
150	LOG	1	2	3150	150|2850	150|2850	1575	75|1500|3075

75|1500|3075
75|1500|3075
75|1500|3075
75|1500|3075
75|1500|3075

The Autolist MPC option includes Saw Cycle Valve or Relay, Clamp Valve or Relay, Tool Safe Sensor (1 only), and 3 relays for the BCD output to signal up to 7 secondary operations. It is important to note that there is only one tool safe sensor. Usually on our Auto Cycle option we use a Tool Safe Sensor (saw retracted) and a Tool Not Safe Sensor (saw extended). With this option we do not have enough I/O to provide two saw position inputs. Also note that the secondary operation signals consist of only one output, either a valve or a relay. This output is held on for a time determined by the settings in the software. The secondary operation(s) may need logic and position sensors of their own to operate properly.

The Autolist Secondary Operation option does not have an output to automatically initiate the secondary operation. It must be initiated manually.

If you have more questions about RazorGage products visit our Downloads page and our You Tube channel. Both are accessible from the RazorGage home page, www.razorgage.com. If you would like to discuss an application, feel free to call us at (515) 232-3188.