# Spreadsheet Calculator Pricing Engine

# Before We Begin

- The Spreadsheet Calculator Pricing Engine requires a working knowledge of Excel and as such we are unable to provide free technical support for this method

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# When Applied?

- The Spreadsheet Calculator Pricing Engine is used where it is difficult or impossible to fit your needs into the Calculator Pricing Engine solution

- It provides a greater degree of flexibility and control and allows for far more complex calculations to be used

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# Are There Limitations?

- Virtually any Excel spreadsheet can be used however please note:
  - Macro's, Special Function Libraries & any controls that "float" over the spreadsheet such as dropdown lists, are not supported
  - Data to be uploaded to Pressero must reside on the first sheet

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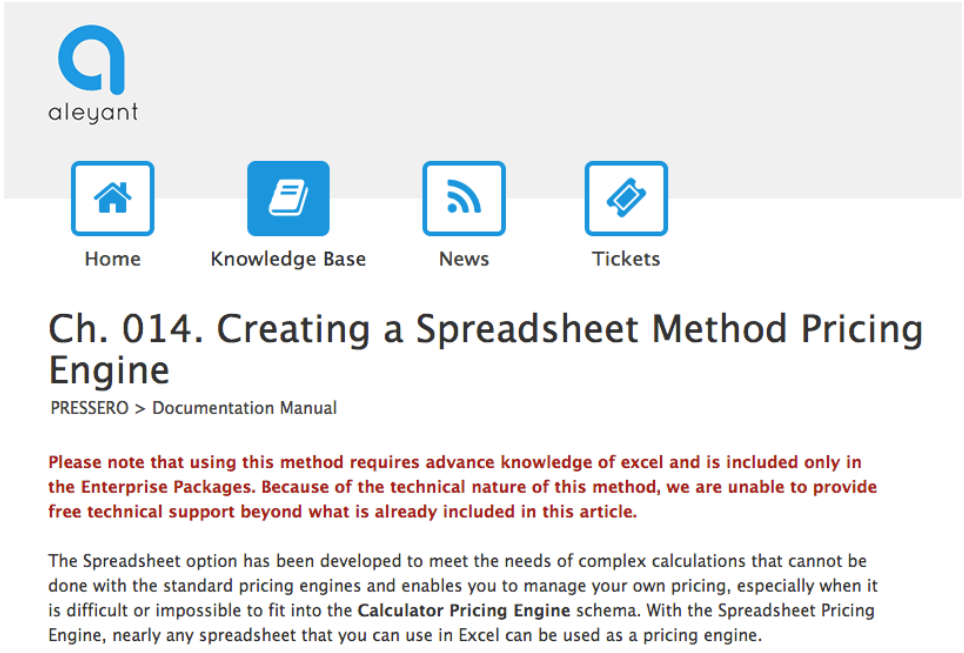
# On-Line Support

- Chapter 14 of the Pressero Online Documentation

  http://support.aleyant.com/kb/a599/ch_-014_-creating-a-spreadsheet-method-pricing-engine.aspx

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# Lets Start

- The starting point for the Spreadsheet Calculator Pricing Engine differs from the other Pricing Engine formats in that we start within Excel and not the Pressero Admin portal
  - The first stage is to create a fully working Excel sheet that reflects the product selection options, rules and pricing matrix
  - The second stage is to upload the specific data for the respective pricing engine into Pressero

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# To Reiterate Basic Rules

- Within your Excel spreadsheet
  - Macro's, Special Function Libraries & any controls that "float" over the spreadsheet such as dropdown lists, are not supported
  - Data to be uploaded to Pressero must reside on the first sheet
  - A "Quantity" Parameter must be defined for the Pricing Engine to work

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# But What About Excel Formulae?

- As stated “The Spreadsheet Calculator Pricing Engine requires a working knowledge of Excel and as such we are unable to provide free technical support for this method”

http://www.techonthenet.com/excel/formulas/

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# The Building Blocks

- Lets start with some basic guidelines
  - The Excel sheet must replicate the respective product options and calculate the final output values for the calculated “Final Price”, “Weight” and Unit or “Each Price”
  - There must be a Quantity field with a minimum value of 1
  - Think about ease of use and future updating requirements – format should be future proof

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# A Suggested Format

- Create an “Options” area that defines the specific product options as used in a Calculator Pricing Engine to define Quantity, Grid & Calculator Parameters
- Create a “Calculations” area that will be used to generate the respective formulae and test the Pricing Engine – think of this as the Final Output from the Pricing Engine

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# Options Area

- Start with the Options area as per example here

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## Spreadsheet Calculator Method Pricing Engine

**Set Price/Options Area:**

| Quantity: | |
|---|---|
| Quantity: | 1 |

| Fixed Costs: | |
|---|---|
| Prepress: | 90 |
| Cello: | 20 |

| Markup: | |
|---|---|
| Minimum: | Maximum: |
| 0 | 30 |
| Value: | 1 |

| Number of Sides: |
|---|
| 1 |
| 2 |

| Proofing: | |
|---|---|
| PDF: | 0 |
| Hard Copy: | 0 |

**Variable Cost (per Unit A3):**

| Item: | Set-Up: | Per Unit | % Charge: | Cost/1000 (A3) |
|---|---|---|---|---|
| Click: | | 0.10 | 50% | |
| Cut/Pack: | | | | 20 |
| Crease: | 20 | | | 40 |
| Fold: | 10 | | | 30 |
| Printing: | 20 | | | 100 |

| Crease: |
|---|
| No |
| Yes |

| Fold: |
|---|
| No |
| Yes |

Enter only the 4PP-A4 sheet price, the other sizes are automatically

Allows you to enter weight at later stage for future requirements

**PAPER TYPE: (Price per Sheet)**

| Paper Type: | 4PP-A4 | 4PP-A5 | 4PP-A6 | 4PP-A7 | 4PP-DL Landscape | 4PP-DL | 6PP-DL | Weight/1000 (A3) |
|---|---|---|---|---|---|---|---|---|
| Gloss 113gsm | 0.035725 | 0.0178625 | 0.00893125 | 0.004465625 | 0.011908333 | 0.01190833 | 0.0178625 | 0 |
| Gloss 128gsm | 0.038615 | 0.0193075 | 0.00965375 | 0.004826875 | 0.012871667 | 0.01287167 | 0.0193075 | 0 |
| Gloss 150gsm | 0.04587 | 0.022935 | 0.0114675 | 0.00573375 | 0.01529 | 0.01529 | 0.022935 | 0 |
| Gloss 170gsm | 0.0531 | 0.02655 | 0.013275 | 0.0066375 | 0.0177 | 0.0177 | 0.02655 | 0 |
| Gloss 200gsm | 0.06498 | 0.03249 | 0.016245 | 0.0081225 | 0.02166 | 0.02166 | 0.03249 | 0 |
| Gloss 250gsm | 0.08198 | 0.04099 | 0.020495 | 0.0102475 | 0.027326667 | 0.02732667 | 0.04099 | 0 |
| Gloss 300gsm | 0.09902 | 0.04951 | 0.024755 | 0.0123775 | 0.033006667 | 0.03300667 | 0.04951 | 0 |
| Gloss 350gsm | 0.11461 | 0.057305 | 0.0286525 | 0.01432625 | 0.038203333 | 0.03820333 | 0.057305 | 0 |
| Gloss 400gsm | 0.28978 | 0.14489 | 0.072445 | 0.0362225 | 0.096593333 | 0.09659333 | 0.14489 | 0 |
| Satin 113gsm | 0.033989 | 0.0169945 | 0.00849725 | 0.004248625 | 0.011329667 | 0.01132967 | 0.0169945 | 0 |
| Satin 128gsm | 0.038958 | 0.019479 | 0.0097395 | 0.00486975 | 0.012986 | 0.012986 | 0.019479 | 0 |
| Satin 150gsm | 0.04703 | 0.023515 | 0.0117575 | 0.00587875 | 0.015676667 | 0.01567667 | 0.023515 | 0 |
| Satin 170gsm | 0.05312 | 0.02656 | 0.01328 | 0.00664 | 0.017706667 | 0.01770667 | 0.02656 | 0 |
| Satin 200gsm | 0.06469 | 0.032345 | 0.0161725 | 0.00808625 | 0.021563333 | 0.02156333 | 0.032345 | 0 |
| Satin 250gsm | 0.083 | 0.0415 | 0.02075 | 0.010375 | 0.027666667 | 0.02766667 | 0.0415 | 0 |
| Satin 300gsm | 0.09793 | 0.048965 | 0.0244825 | 0.01224125 | 0.032643333 | 0.03264333 | 0.048965 | 0 |
| Satin 350gsm | 0.115003 | 0.0575015 | 0.02875075 | 0.014375375 | 0.038334333 | 0.03833433 | 0.0575015 | 0 |
| Satin 400gsm | 0.29429 | 0.147145 | 0.0735725 | 0.03678625 | 0.098096667 | 0.09809667 | 0.147145 | 0 |

**CELLOGLAZING:**

| Celloglazing: | Lower Qty: | Higher Qty: | Matt | | Gloss | |
|---|---|---|---|---|---|---|
| | | | Price/1 Side: | Price/2 Sides: | Price/1 Side: | Price/2 Sides: |
| None | 1 | 100 | $0.70 | $0.91 | $0.69 | $0.79 |
| Matt 1 Side | 101 | 125 | $0.58 | $0.75 | $0.57 | $0.67 |
| Matt 2 Sides | 126 | 150 | $0.51 | $0.65 | $0.50 | $0.61 |
| Gloss 1 Side | 151 | 200 | $0.40 | $0.51 | $0.39 | $0.49 |
| Gloss 2 Sides | 201 | 250 | $0.34 | $0.45 | $0.33 | $0.43 |
| | 251 | 300 | $0.30 | $0.41 | $0.29 | $0.39 |
| | 301 | 400 | $0.25 | $0.36 | $0.24 | $0.34 |
| | 401 | 500 | $0.22 | $0.32 | $0.21 | $0.30 |
| | 501 | 600 | $0.20 | $0.29 | $0.19 | $0.27 |
| | 601 | 700 | $0.19 | $0.28 | $0.18 | $0.24 |
| | 701 | 800 | $0.18 | $0.26 | $0.17 | $0.23 |
| | 801 | 900 | $0.17 | $0.24 | $0.16 | $0.21 |
| | 901 | 1000 | $0.16 | $0.23 | $0.15 | $0.19 |

**Paper Size:**

| Paper Size: | $Cut/Pack: | Lower Qty: | Higher Qty: | Qty/A4 Sheet |
|---|---|---|---|---|
| 4PP-A4 | 20 | 1 | 1000 | 1 |
| 4PP-A5 | 30 | 1 | 2000 | 2 |
| 4PP-A6 | 35 | 1 | 3000 | 3 |
| 4PP-A7 | 40 | 1 | 4000 | 4 |
| 4PP-DL Landscape | 50 | 1 | 6000 | 3 |
| 4PP-DL | 60 | 1 | 8000 | 3 |
| 6PP-DL | 70 | 1 | 16000 | 2 |

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# Options Area

- As you can see
  - Make the options area easily navigatable – the different parameters, options, pricing impact etc are easily distinguished
  - Use of colours further promotes ease of understanding making it future proof when amendments are required
  - Data can be inserted on the sheet itself or derived from other sheets or even other spreadsheets to optimise control of pricing as an example when a substrate cost changes

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# Calculations Area

- The Calculations section allows the formulae to be created and tested to validate the operation of the spreadsheet and selected paramters
- We advise breaking down the complexity of the formulae into smaller sections, allowing smaller elements to be calculated independently and thus reducing the overall complexity of the resulting formulae

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# Calculations Area

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## Spreadsheet Calculator Pricing Engine Example

### Calculations Area:

| Test Conditions: | |
|---|---|
| Quantity: | 500 |
| Number of Sides: | 1 |
| Paper Type: | Gloss 113gsm |
| Paper Size: | 4PP-a4 |
| Celloglazing: | Gloss 1 Side |
| Proofing: | PDF |
| Crease: | YES |
| Fold: | No |
| Markup (%): | 10 |

| | |
|---|---|
| COST: | 495 |
| WEIGHT: | 0 |
| EACH: | 500 |

**Costs Calculation:**

| | | |
|---|---|---|
| Fixed Costs: | 170 | Fixed = Prepress+Celloglazing setup if selected + Cut/Pack Setup charge depending on paper size selected |
| Determine Unit Paper Cost: | 0.04 | Compares Paper Size entered, and quantity is within defined limits, then uses that to determine position in Paper Type Cost table to retrieve correct UNIT cost of paper selected |
| Calculate Click Charge: | 75.00 | Factors in actual number sheets used (A3 size) for the respective Paper Size selected before applying click charge |
| Printing & Cut/Pack Charge: | 80.00 | Factors in actual number sheets used (A3 size) for the respective Paper Size selected before applying set-up cost + cost allocated/1000 A3 sheets. ALSO FACTORS IN NUMBER SIDES |
| Celloglazing Charge: | 0.21 | Takes the actual number A3 sheets as quantity field for calculation of celloglazing costs |
| Proofing: | 0 | |
| Test Quantity vrs. Paper Size: | 1 | If within limits returns 1, else 0 (used to reduce formulae in each of the cost calculations above |
| Calculate correct paper volume: | 500 | Calculates correct quantity of A3 sheets for selected Paper Size quantity |
| Check Markup not exceed Limits: | 1 | Confirms margin range is between limits defined |
| Calculate Markup: | 1.1 | Simple check ensure Markup within limits then calculates factor for application in total cost |

### Set Price/Options Area:

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|---|---|
| Quantity: | 1 |

| Fixed Costs: | |
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| 2 |

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|---|---|
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| Hard Copy: | 0 |

**Variable Cost (per Unit A3):**

| Item: | Set-Up: | Per Unit | % Charge: | Cost/1000 (A3) |
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| Cut/Pack: | | | | 20 |
| Crease: | 20 | | | 40 |
| Fold: | 10 | | | 30 |
| Printing: | 20 | | | 100 |

| Crease: |
|---|
| No |
| Yes |

| Fold: |
|---|
| No |
| Yes |

**CELLOGLAZING:**

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|---|---|---|---|---|---|---|
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| | 401 | 500 | $0.22 | $0.32 | $0.21 | $0.30 |
| | 501 | 600 | $0.20 | $0.29 | $0.19 | $0.27 |
| | 601 | 700 | $0.19 | $0.28 | $0.18 | $0.24 |
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| 4PP-DL | 60 | 1 | 8000 | 3 |
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Allows you to enter weight at later stage for future requirements

**PAPER TYPE: (Price per Sheet)**

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| Gloss 150gsm | 0.04587 | 0.022935 | 0.0114675 | 0.00573375 | 0.01529 | 0.01529 | 0.022935 | 0 |
| Gloss 170gsm | 0.0531 | 0.02655 | 0.013275 | 0.0066375 | 0.0177 | 0.0177 | 0.02655 | 0 |
| Gloss 200gsm | 0.06498 | 0.03249 | 0.016245 | 0.0081225 | 0.02166 | 0.02166 | 0.03249 | 0 |
| Gloss 250gsm | 0.08198 | 0.04099 | 0.020495 | 0.0102475 | 0.027326667 | 0.02732667 | 0.04099 | 0 |
| Gloss 300gsm | 0.09902 | 0.04951 | 0.024755 | 0.0123775 | 0.033006667 | 0.03300667 | 0.04951 | 0 |
| Gloss 350gsm | 0.11461 | 0.057305 | 0.028625 | 0.01432625 | 0.038203333 | 0.03820333 | 0.057305 | 0 |
| Gloss 400gsm | 0.28978 | 0.14489 | 0.072445 | 0.0362225 | 0.096593333 | 0.09659333 | 0.14489 | 0 |
| Satin 113gsm | 0.033989 | 0.0169945 | 0.00849725 | 0.004248625 | 0.011329667 | 0.01132967 | 0.0169945 | 0 |
| Satin 128gsm | 0.038958 | 0.019479 | 0.0097395 | 0.00486975 | 0.012986 | 0.012986 | 0.019479 | 0 |
| Satin 150gsm | 0.04703 | 0.023515 | 0.0117575 | 0.00587875 | 0.015676667 | 0.01567667 | 0.023515 | 0 |
| Satin 170gsm | 0.05312 | 0.02656 | 0.01328 | 0.00664 | 0.017706667 | 0.01770667 | 0.02656 | 0 |
| Satin 200gsm | 0.06469 | 0.032345 | 0.0161725 | 0.00808625 | 0.021563333 | 0.02156333 | 0.032345 | 0 |
| Satin 250gsm | 0.083 | 0.0415 | 0.02075 | 0.010375 | 0.027666667 | 0.02766667 | 0.0415 | 0 |
| Satin 300gsm | 0.09793 | 0.048965 | 0.0244825 | 0.01224125 | 0.032643333 | 0.03264333 | 0.048965 | 0 |
| Satin 350gsm | 0.115003 | 0.0575015 | 0.02875075 | 0.014375375 | 0.038334333 | 0.03833433 | 0.0575015 | 0 |
| Satin 400gsm | 0.29429 | 0.147145 | 0.0735725 | 0.03678625 | 0.098096667 | 0.09809667 | 0.147145 | 0 |

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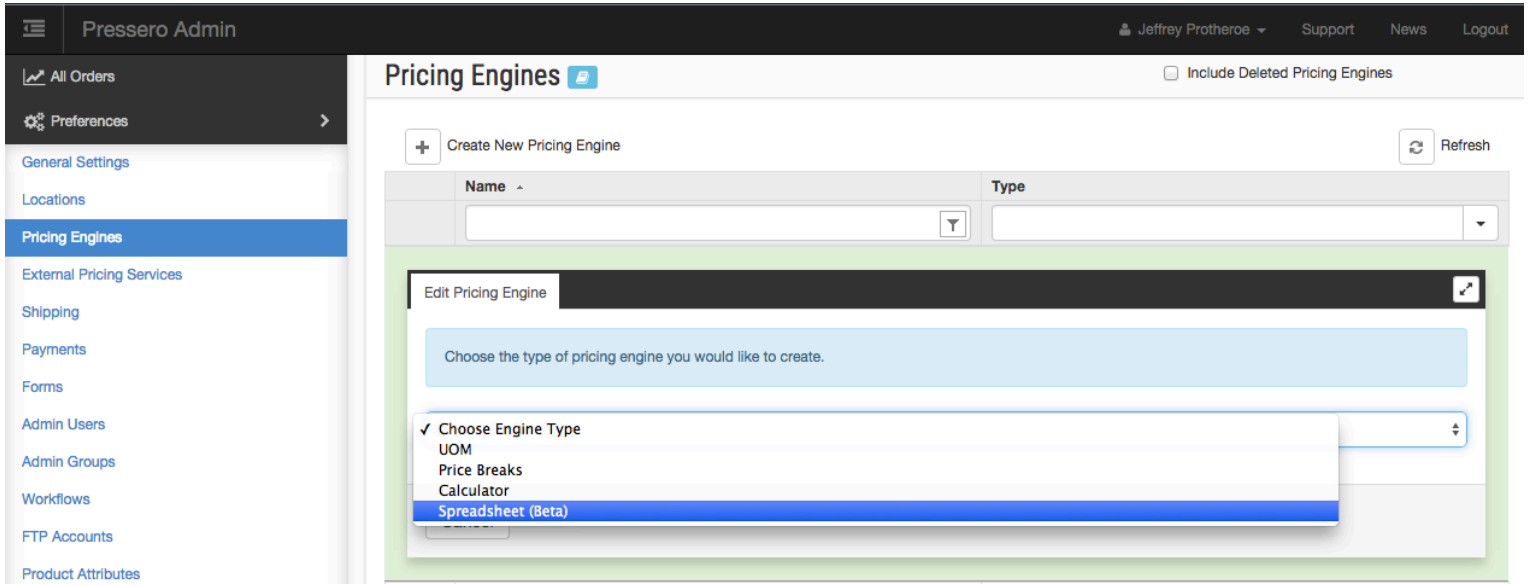
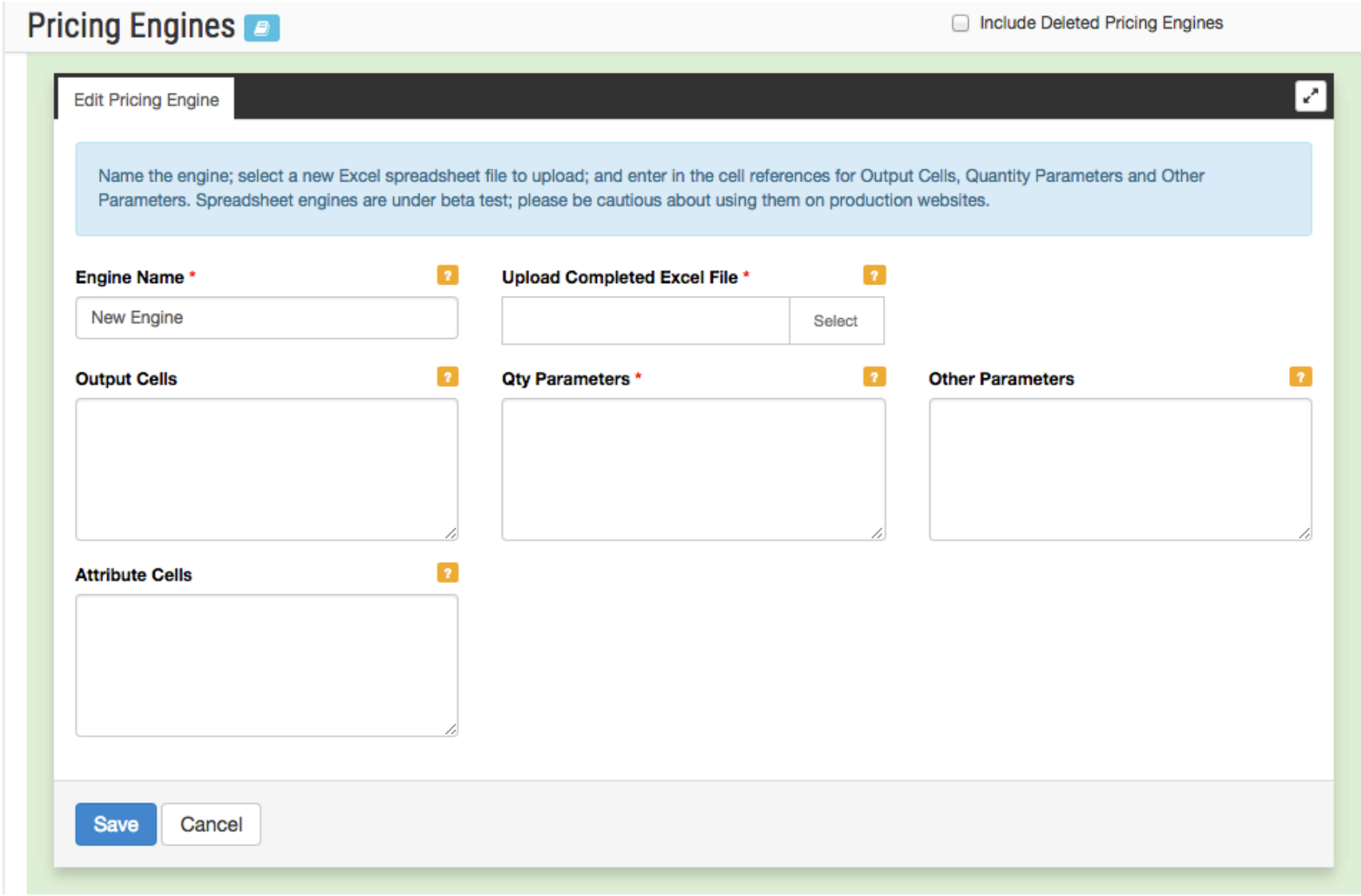
# Uploading to Pressero

- We now need to link the Excel Spreadsheet back to the respective Pricing Engine within Pressero

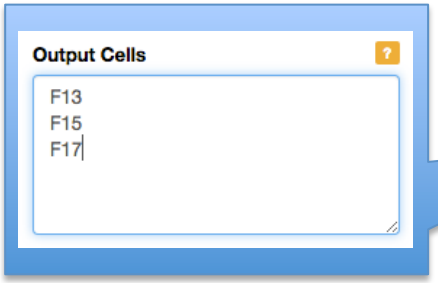


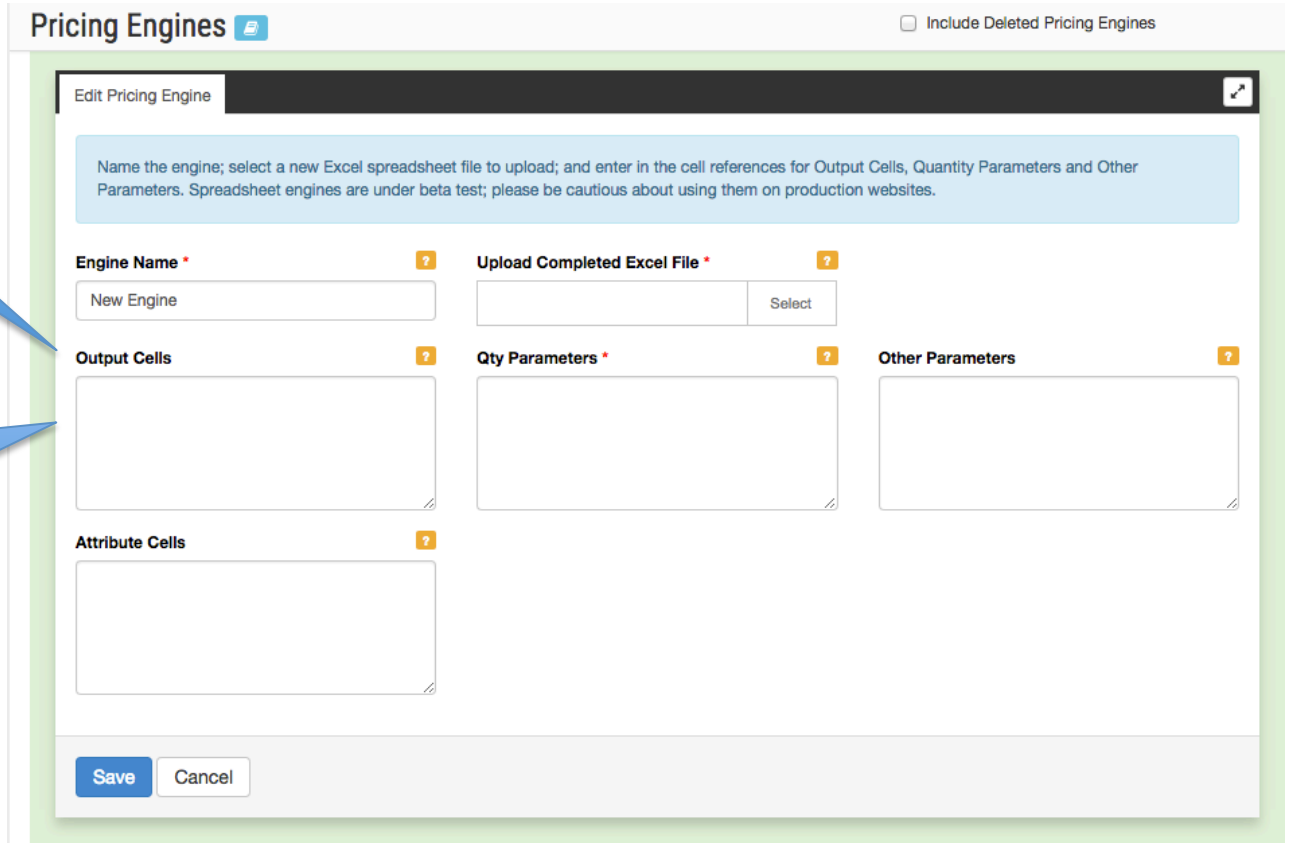
# Uploading to Pressero



# Output Cells

Displays values of:
Total Price
Weight
Unit (each) Price

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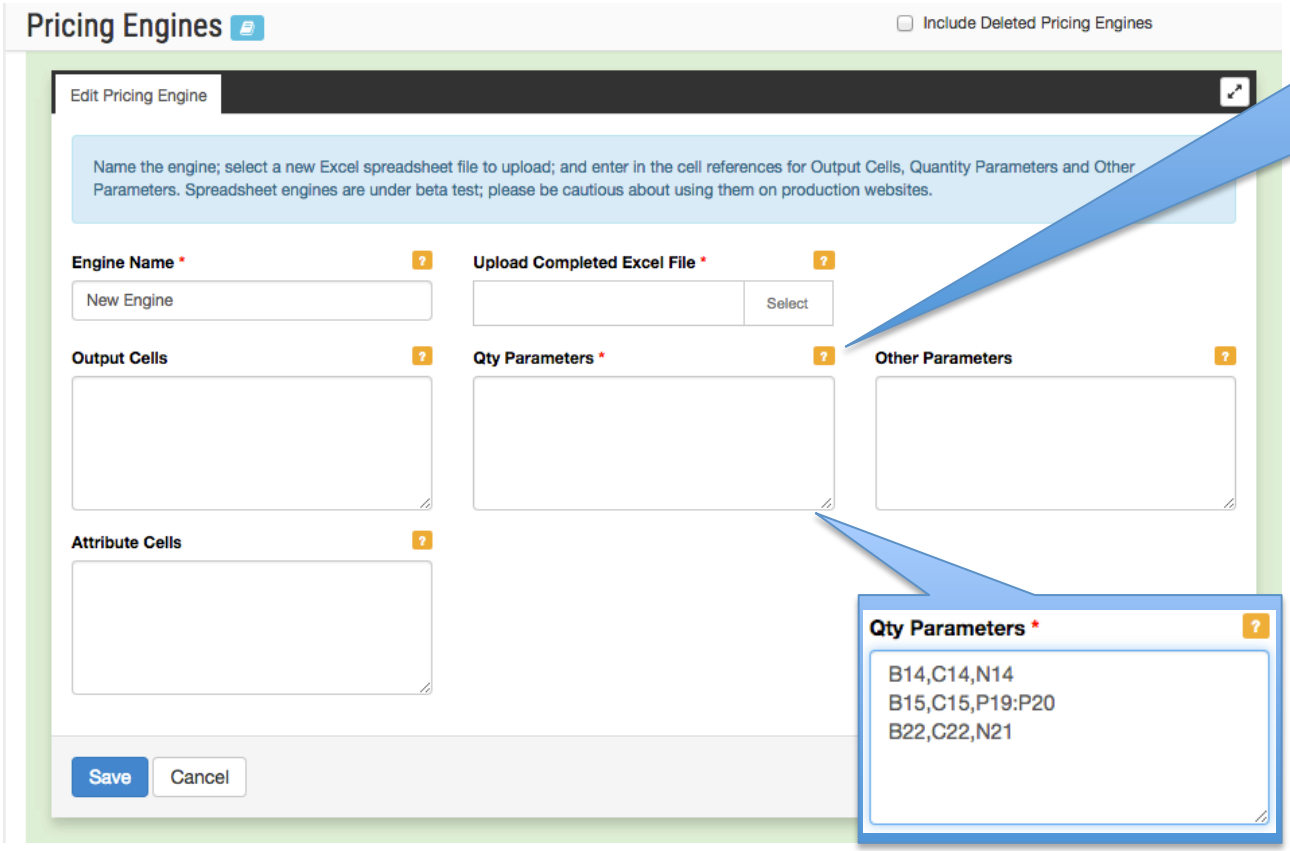
# Qty Parameters




Qty Parameters:
Consist of three elements
Prompt Cell (Name)
Simulated User Selection
Range Cell(s)

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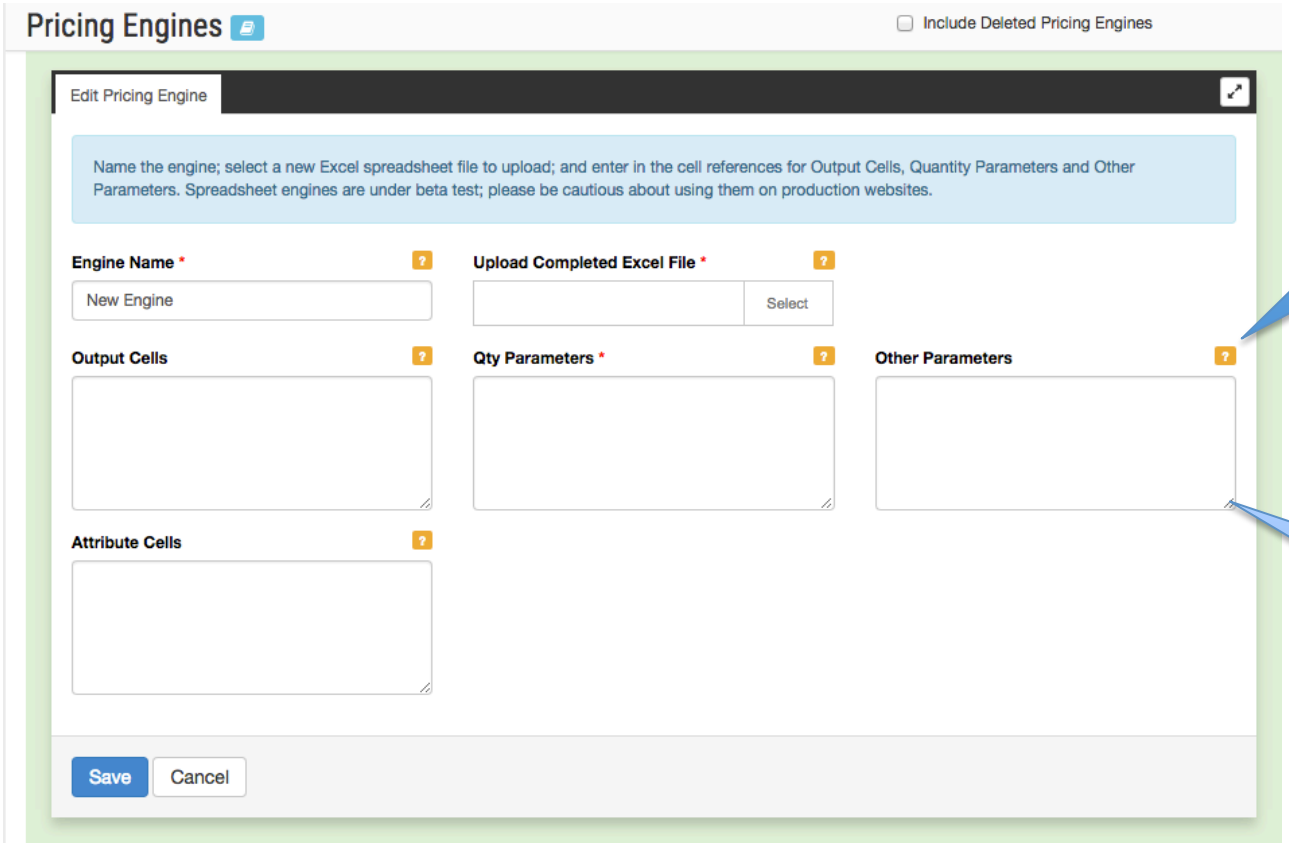
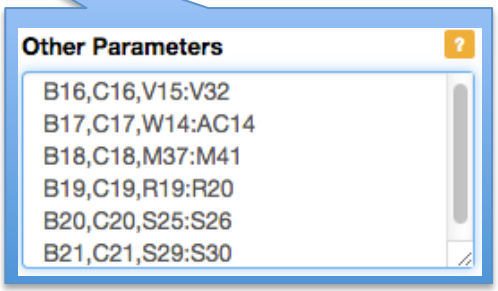
# Other Parameters




Other Parameters:
Consist of three elements
Prompt Cell (Name)
Simulated User Selection
Range Cell(s)

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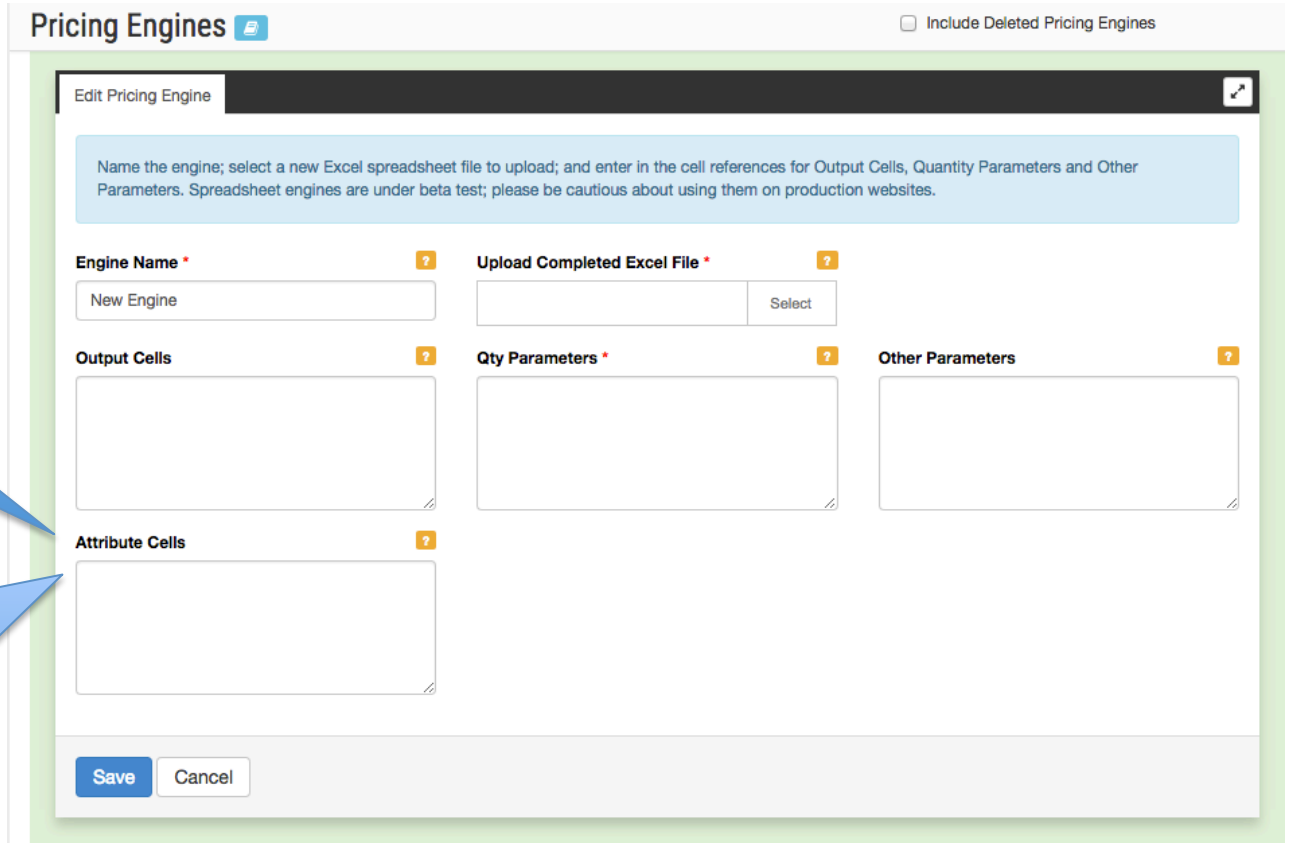
# Attribute Cells

Attribute Cells:
Used primarily with integration to 3rd party systems to pass further production related details such as finishing, press used etc.

Requires two attributes:
Attribute Key (process stage such as finishing, press, etc)
Attribute Value (the process or machine e.g. Staple, Perfect Bind, Heidelberg etc

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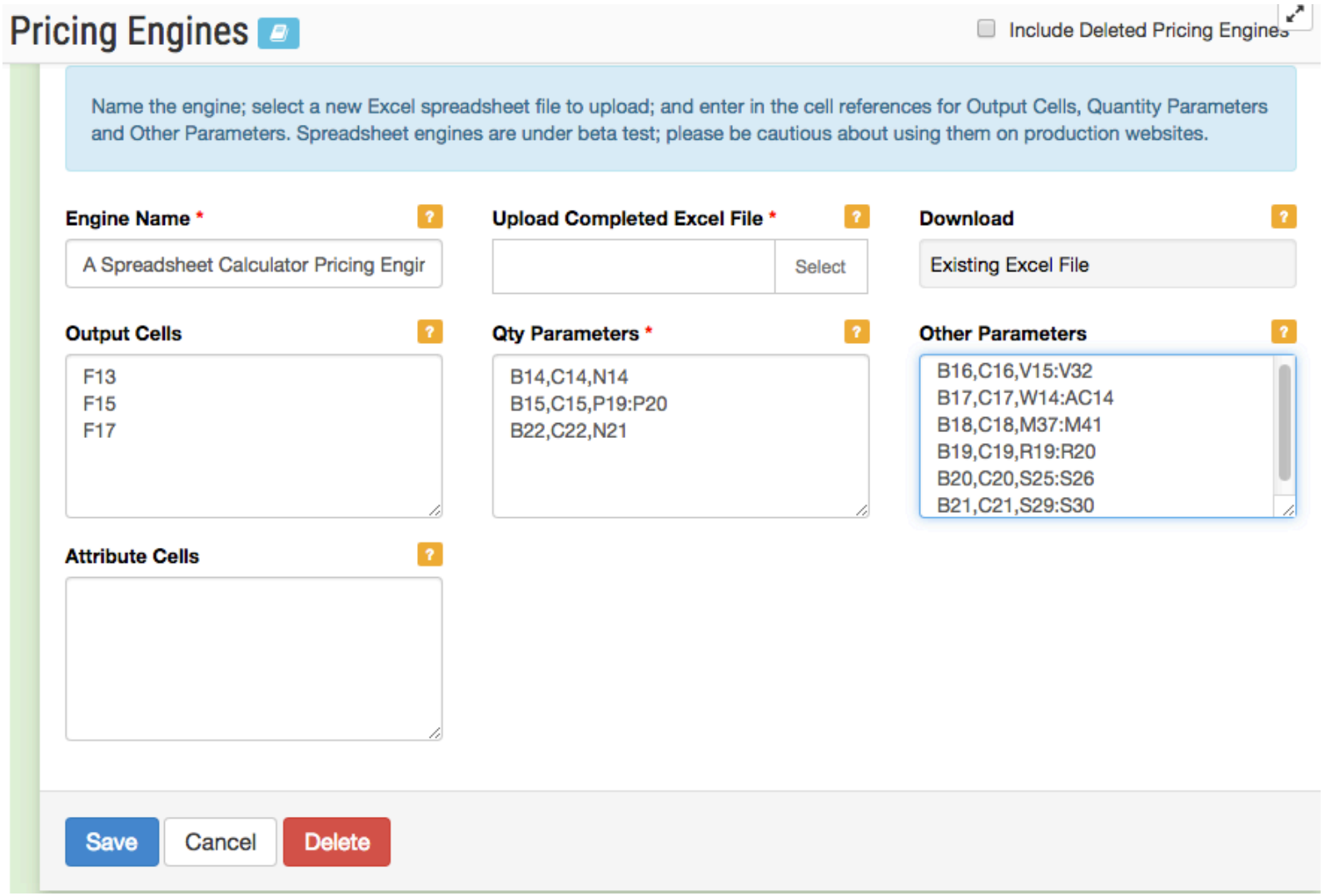
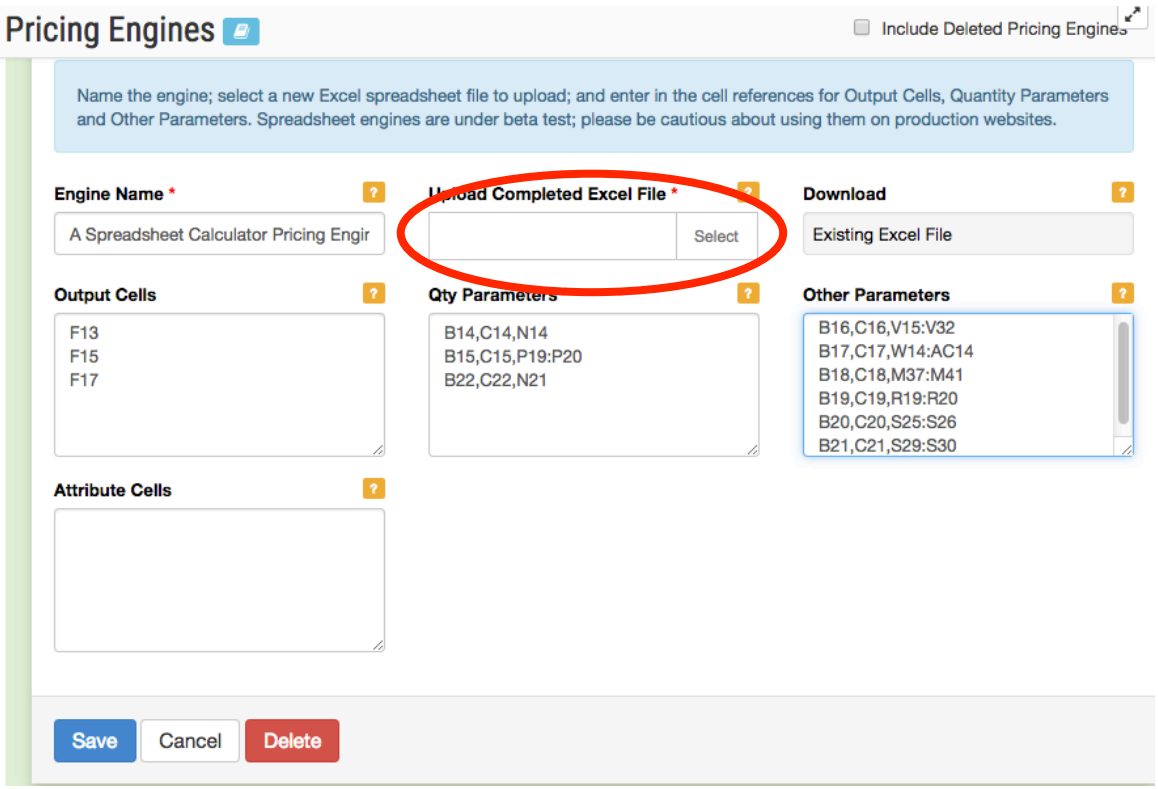
# We End Up With



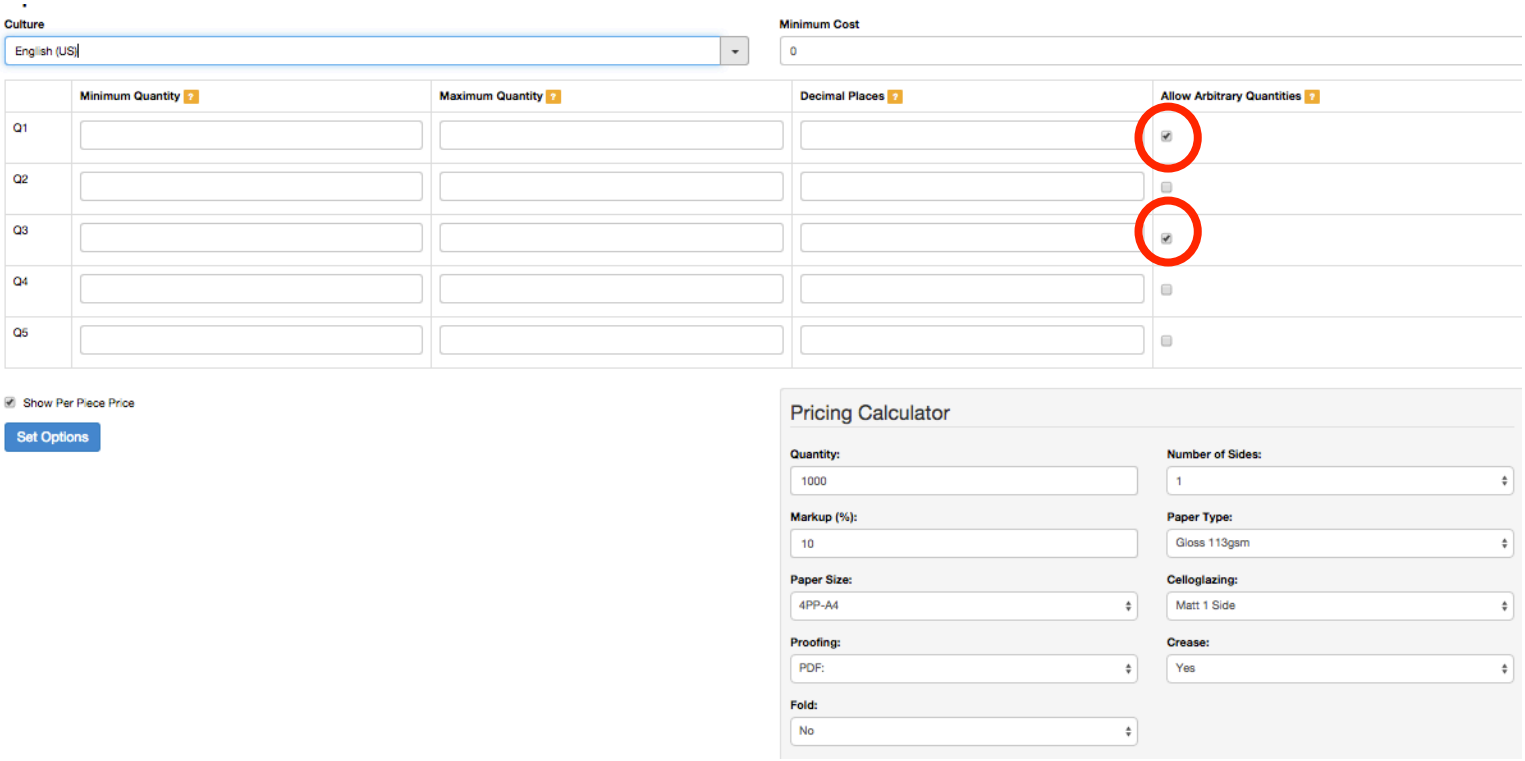
# Load the Excel File

- Load the Excel file to the Spreadsheet Pricing Engine and SAVE



# Reopen & Test

- Finally before assignment to a Product we test the Pricing Engine – Please note to set the “Allow Arbitrary Values” where relevant



# Conclusions

- With a working knowledge of Excel, the Spreadsheet Calculator Pricing Engine approach is a powerful and versatile tool
- If the rules are followed it is a simple, easy to use solution that can be optimised to significantly reduce the number of pricing engines deployed and provide for complex operational parameters to be utilised

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