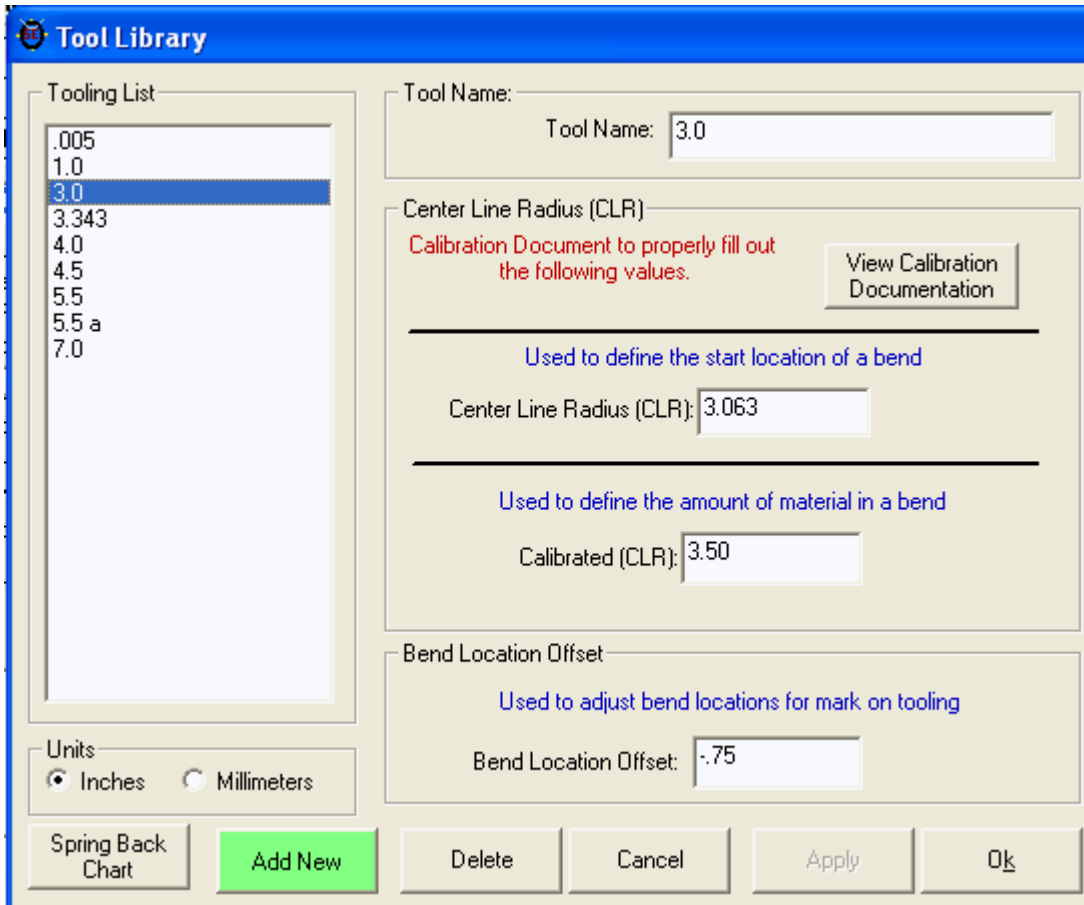


Using Spring Charts

For SE customers you have the function of Spring Charts. These allow you to put in a couple (from 2 to 20) sets of bend angles vs. spring angles and the software will calculate and display the angles for a part.

To set up the Spring Charts, go to the **"Tooling"** window under your "Tools" pull down menu. Select the Tool for the list on the left side you would like to set up and then select the **"Spring Charts"** button in the lower left corner.



The screenshot shows the "Tool Library" dialog box. On the left, a "Tooling List" contains values: .005, 1.0, 3.0 (highlighted), 3.343, 4.0, 4.5, 5.5, 5.5 a, and 7.0. Below the list are "Units" radio buttons for "Inches" (selected) and "Millimeters". At the bottom left are buttons for "Spring Back Chart" and "Add New". The main area is divided into sections: "Tool Name" with a text box containing "3.0"; "Center Line Radius (CLR)" with a red warning message "Calibration Document to properly fill out the following values." and a "View Calibration Documentation" button; a section for "Center Line Radius (CLR)" with a text box containing "3.063" and a blue instruction "Used to define the start location of a bend"; a section for "Calibrated (CLR)" with a text box containing "3.50" and a blue instruction "Used to define the amount of material in a bend"; and "Bend Location Offset" with a text box containing "-.75" and a blue instruction "Used to adjust bend locations for mark on tooling". At the bottom right are buttons for "Delete", "Cancel", "Apply", and "Ok".

Once you enter into the Spring Charts screen you will see everything is blank (assuming this is the 1st time in here with this tool). Select the **"Add"** button from the chart in the upper left hand corner.

Spring Back Angle Definitions

Definition
Tooling: 3.0

	Date	Achieved Angle	Spring Angle
Add			

Achieved Angle	Spring Angle
1	18.08
2	18.76
3	19.44
4	20.12
5	20.8
6	21.48
7	22.16
8	22.84
9	23.52
10	24.2
11	24.88
12	25.56
13	26.24
14	26.92
15	27.6
16	28.28
17	28.96
18	29.64
19	30.32
20	31
21	31.68
22	32.36
23	33.04
24	33.72
25	34.4
26	35.08
27	35.76
28	36.44
29	37.12
30	37.8
31	38.48

date	angle1	angle2	tooling
03/08/2007	20	31	
03/08/2007	45	48	
03/08/2007	90	98	

Cancel Update OK

Fill in the "Achieved Angle" and the "Spring Angle"

New Entry

Date: 03/08/2007

Achieved Angle: 90

Spring Angle: 98

Cancel Ok

Once you have filled in at least 2 sets of values the chart will fill in on the right side.

When in a part, select the **"Display Spring Angle"** check box in your tooling tab.

The screenshot shows a software interface for a document titled "Document 1". At the top, it displays "Material: 1.25" and "Tooling: 3.0" on the left, and "Cut Length: 41 1/8" and "Weight: 0" on the right. There are radio buttons for "Inches" (selected) and "Millimeters". Below this is a tabbed interface with tabs for "Simulation", "Bend Order", "Setup Sheet", "Display", "Notes", "Cut Off", "Misc.", "Tooling" (checked), and "Material" (checked). The "Tooling" tab is active, showing a dropdown menu with "3.0" selected, and a list of parameters: "CLR" (3.063), "Calibrated CLR" (3.50), "KFactor", "Loc. Offset" (-.75), and a checked "Display Spring Angle" checkbox. To the right of the tooling tab is a table with the following data:

A	B	Location	Rotation	Angle	Sprg Ang	CLR
1	1	6	0	45	47	3.063
2	2	16 1/2	-122	62	66	3.063
3	3	26 13/16	-37	90	98	3.063