

Alterations

Alterations can be used to create additional sizes on a pattern piece, based on set amounts or body measurements. This section outlines the steps to setup and perform standard and made-to-measure alterations.

By the end of this lesson, you will be able to:

- ❖ Define alteration locations.
- ❖ Create alteration tables.
- ❖ View alterations in Pattern Design.
- ❖ Plot altered pieces.

What is an alteration?

Alterations are special movements that use point numbers to change graded patterns for additional sizes. For example, alterations can be applied to a pant pattern to create different inseam lengths. They can also be used to create custom sizes based on a customer's body measurements.

Types of Alterations

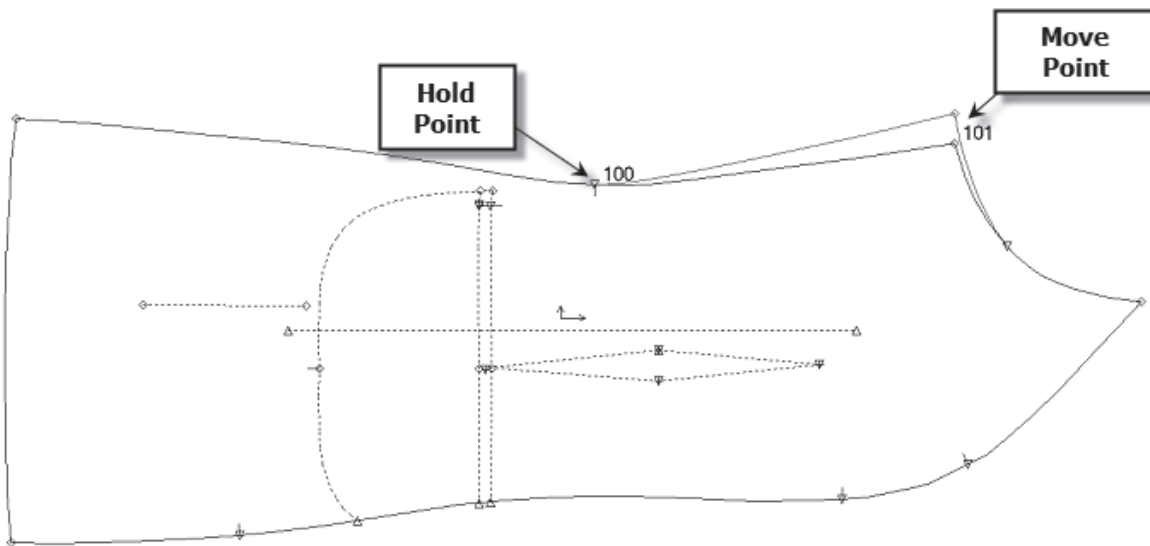
Two types of alterations can be performed in the AccuMark system:

- **Standard** alterations use movements and amounts that are standardized for all styles. This type of alteration is often referred to as a stock alteration. Altering a jacket for petite and tall sizes would be an example of a standard alteration.
- **Made-to-Measure** alterations are adjustments based on a customer's measurements. Comparing these measurements to the measurements of the unaltered garment makes this alteration. Any custom ordered item, from a suit to a bulletproof vest would be an example of a made-to-measure alteration.

Defining Alteration Locations

On each piece that will be altered, the points where adjustments need to be made must be identified. There are two types of alteration points: move points and hold points.

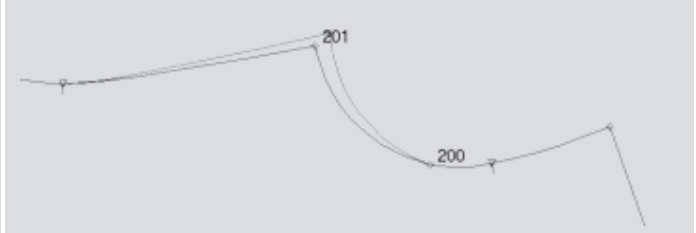
- **Move points** are the points that shift to create the alteration movement.
- **Hold points** are points that remain stationary after an alteration is made. If a hold point is used, alteration movements will blend back to 0 at these points.



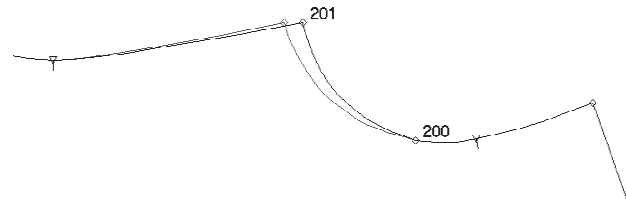
Alteration Movements

Patterns can be adjusted in several different ways. Points can be moved similar to grading movements or rotated using a hold point. When rotations are used, the length of the line segment that moves can be extended or maintained.

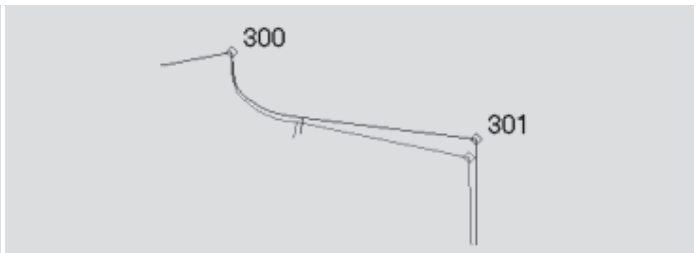
Counterclockwise No Extension (CCW No Ext) – a rotation movement; the move point is counterclockwise from the hold point. The length of the segment being moved will not change with the alteration.



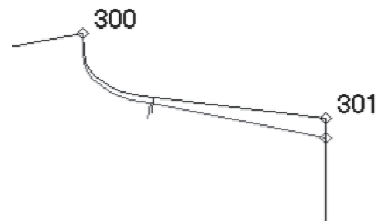
Counterclockwise Extension (CCW Ext) – a rotation movement; the move point is counterclockwise from the hold point. The line will extend or clip to meet the adjacent lines.



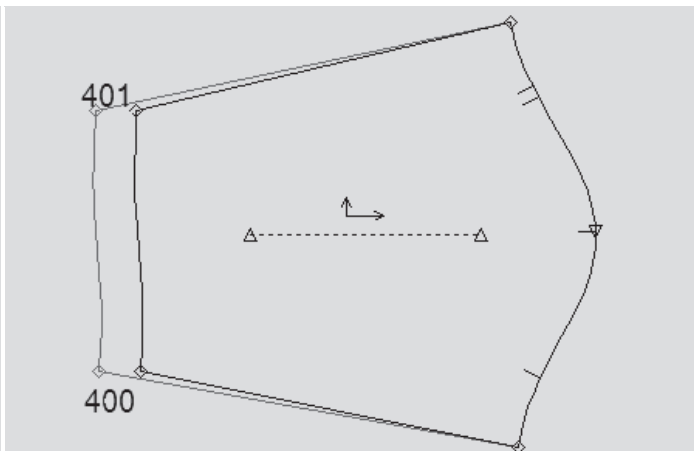
Clockwise No Extension (CW No Ext) – a rotation movement; the move point is clockwise from the hold point. The length of the segment being moved will not change with the alteration.



Clockwise Extension (CW Ext) – a rotation movement; the move point is clockwise from the hold point. The line will extend or clip to meet the adjacent lines.



XY Movement (XY Move) – horizontal or vertical movement; one or two points can be moved with this type of movement. If two points are used, the area between the numbered points will also move.



Pattern Preparation

Assigning Special Point Numbers

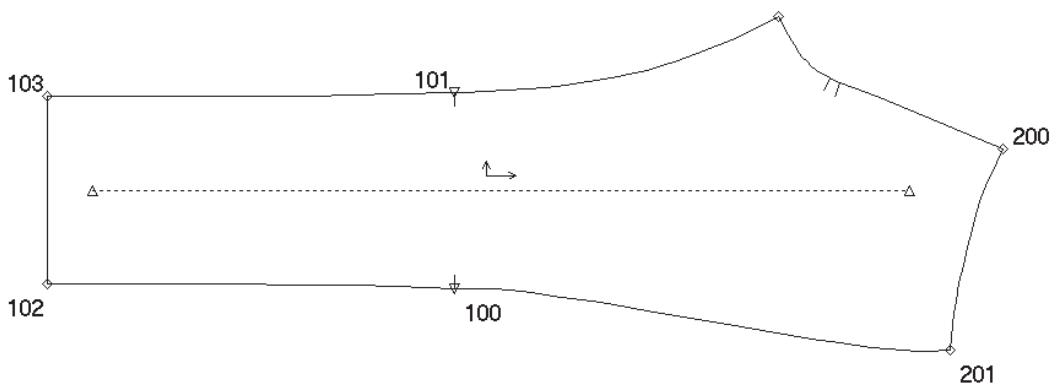
Each point identified as an alteration location must be assigned a unique, 3 or 4-digit number. These special point numbers must be unique within the model, but can be used again on other models. Made-to-measure alterations typically require more special point numbers than standard alterations since more pattern changes may be required. Special point numbers may be assigned during digitizing or in Pattern Design.

To digitize a special point number:

1. Begin digitizing the piece according to the directions for closed or mirrored pieces (see the Digitizing section for more information).
2. When digitizing a point with a special point number, press the **A** button and use the digitizing cursor to enter the point number. Enter the other codes for the point to indicate grading, notch or attribute information. For example:
 - A point with a special point number would be digitized as **A__**.
 - A graded point with a special point number would be digitized as **A__B_**.
 - A notch with a special point number would be digitized as **A__C_**.
 - A graded notch with a special point number would be digitized as **A__B_C_**.
3. Finish digitizing the piece according to the directions for closed or mirrored pieces.

To assign a special point number in Pattern Design:

1. Open the model or pieces into Pattern Design.
2. From the **View** menu, select **Point** and then **Point Numbers** to see the numbers already assigned to the piece.
3. To erase the existing point numbers assigned in digitizing, go to **Edit / Piece Utility**. Check the box for "Clear Point Numbers", select the pieces, and say OK.
4. From the **Edit** menu, select **Edit Point Info**. Select the point, type in the appropriate number in the Point ID box and click **Apply**. Repeat for other points to assign special numbers. When finished, click **OK**.
5. Save the model or pieces.



Alteration Table

Alteration rules determine the type of movement and direction for the numbered points. These rules consist of one or more point movements that make a change to the pattern. Each rule can contain several movements to make a pattern adjustment. Percentages can be used to divide measurements between different movements. All the rules used on a model must be stored in a single table.

To Create an Alteration Table:

1. In the **AccuMark Explorer**, select the storage area where the Alteration table will be stored. From the **File** menu, select **New** and then **Alteration**.

- OR -

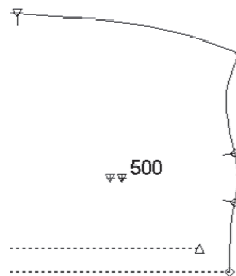
From **Launch Pad**, click on the **Marker Creation, Editors** button, and then double click the **Alteration** icon.

2. Right click on the tab at the bottom of the form that says **Rule 1** and type in a name to the rule. Rule names can be up to 10 characters. After entering the name, hit **Enter**.
3. Select the **Piece Usage** type by clicking the drop down arrow. Choose from the following options:
 - **Both** – the alteration will be applied to both pieces in a pair created in the model.
 - **Left** – the alteration will only be applied to the piece in the original digitized position (the - - column in the model).
 - **Right** – the alteration will only be applied to the opposite piece (the X column in the model).
4. Select the **Alt Type** for the first row by left clicking in the field and choosing from the drop-down menu. For more information on the Alteration Types listed, see the Alteration Movements section of this chapter.
5. Type in the point numbers that will be used for the movement. Depending on the Alteration Type chosen, enter the point numbers as follows:
 - For an XY Move, enter the first and second points to move. The area between these two points will move the same amount. The movement will blend to the previous and next grade points.

	Alt Type	First PT	Second PT	Movement X	Movement Y
1	X Y MOVE	400	401	100.000%	0.000%

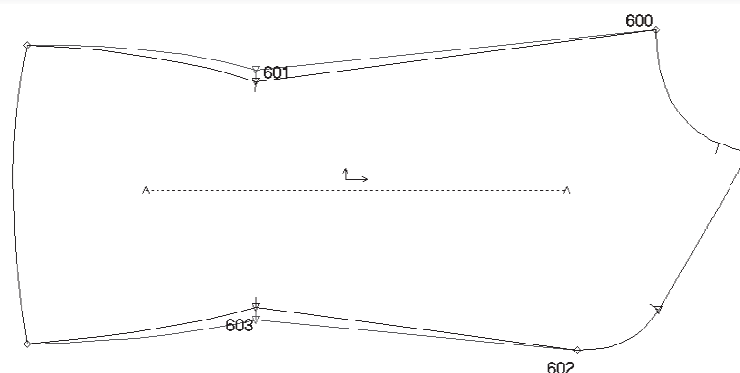
- To move a single point, use the XY Move Alteration Type and type the same number in the first and second point fields.

	Alt Type	First PT	Second PT	Movement X	Movement Y
1	X Y MOVE	500	500	500.000%	0.000%



- If the alteration type is one of the four rotation movements, the first point is the hold point and the second point is the move point.

	Alt Type	First PT	Second PT	Movement X	Movement Y
1	CCW No Ext	600	601	0.000%	50.000%
2	CW Ext	602	603	0.000%	-50.000%



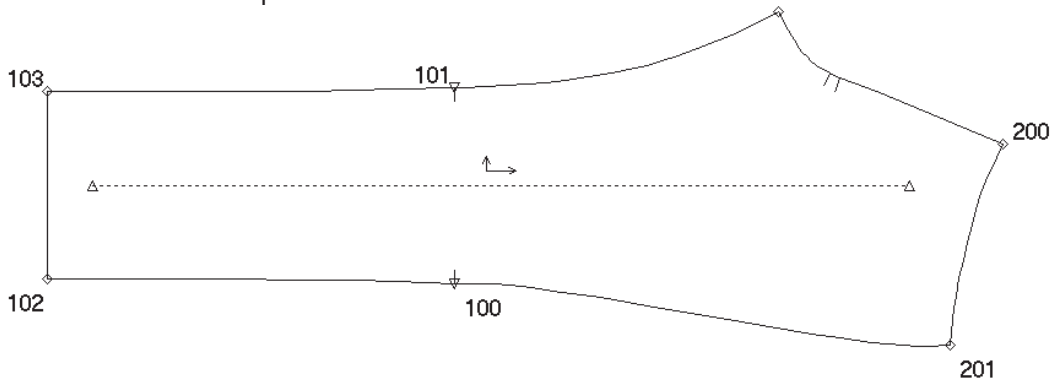
6. In the **Movement X** and **Movement Y** columns, type in a percentage. This amount indicates how much of the overall measurement to apply to the movement, as well as the direction (positive or negative). The amount to use in the alteration will be entered later in the Size Code table.
7. Continue to enter other movements for the same rule.
8. To add another rule, go to **Rule / New**. Don't forget to name this rule by right clicking on the tab at the bottom of the window.
9. When all the rules have been entered, select **Save As** from the **File** menu. Type in a name for the table and click **Save**.

Creating Basic Length Alterations

Alterations are special movements that use point numbers to change graded patterns for additional sizes. Additional options are available to create more complex alterations. Creating length alterations begins with determining locations for movement. Each location will be assigned a unique 3-digit point number, for identification purposes.

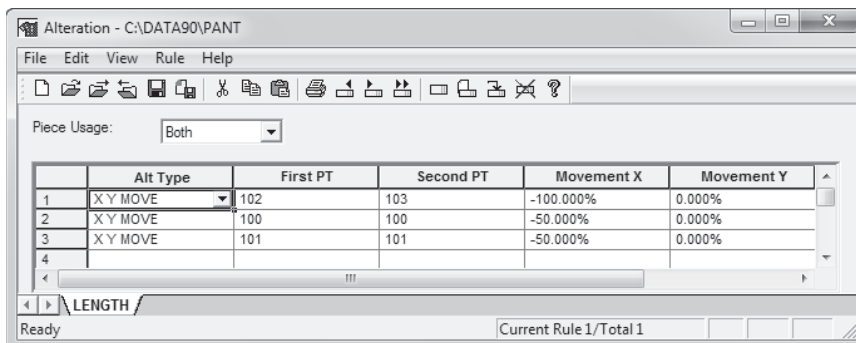
To assign a special point number:

1. Open the model or pieces into Pattern Design.
2. From the **View** tab, select **Numbers** in the **Point** panel to see the numbers already assigned to the piece.
3. To erase the existing point numbers assigned in digitizing, go to **Edit / Piece Utility**. Check the box for "Clear Point Numbers", select the pieces, and say OK.
4. From the **Edit** tab, select **Point** in the **Information** panel. Select the point, type in the appropriate number in the Point ID box and click **Apply**. Repeat for other points to assign special numbers. When finished, click **OK**.
5. Save the model or pieces.



Alteration Table

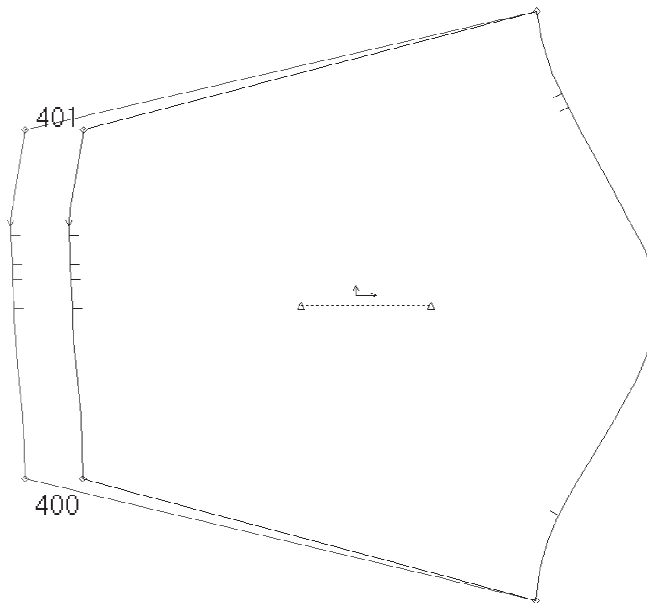
Alteration rules determine the type of movement and direction for the numbered points. These rules consist of one or more point movements that make a change to the pattern. Each rule can contain several movements to make a pattern adjustment. Percentages can be used to divide measurements between different movements. All the rules used on a model must be stored in a single table.



To Create an Alteration Table:

1. In the **AccuMark Explorer**, select the storage area where the Alteration table will be stored. From the **File** menu, select **New** and then **Alteration**.
2. Right click on the tab at the bottom of the form that says **Rule 1** and type in a name to the rule. Rule names can be up to 10 characters. After entering the name, hit **Enter**.
3. Select the **Alt Type** for the first row by left clicking in the field and choosing from the drop-down menu. For our example, we will choose **X Y Move**.
4. Type in the point numbers that will be used for the movement. For an X Y Move, enter the first and second points to move. The area between these two points will move the same amount. The movement will blend to the previous and next grade points.

	Alt Type	First PT	Second PT	Movement X	Movement Y
1	X Y MOVE	400	401	100.000%	0.000%



5. In the **Movement X** and **Movement Y** columns, type in a percentage. This amount indicates how much of the overall measurement to apply to the movement, as well as the direction (positive or negative). The amount to use in the alteration will be entered later in the Size Code table.



Percentages can be determined by dividing the amount to move by the whole amount of the alteration. For example, if the whole amount of the alteration will be 2" and the points entered need to move ¼", we divide 0.25/2.00. The percentage to enter will be 12.5%.

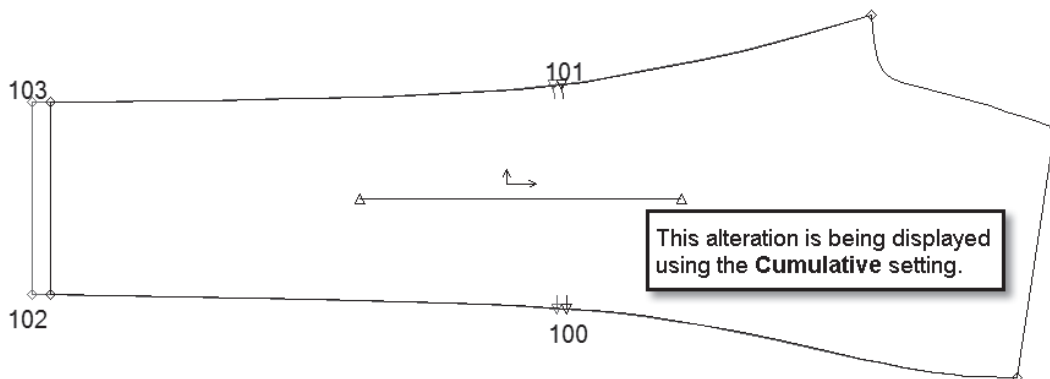
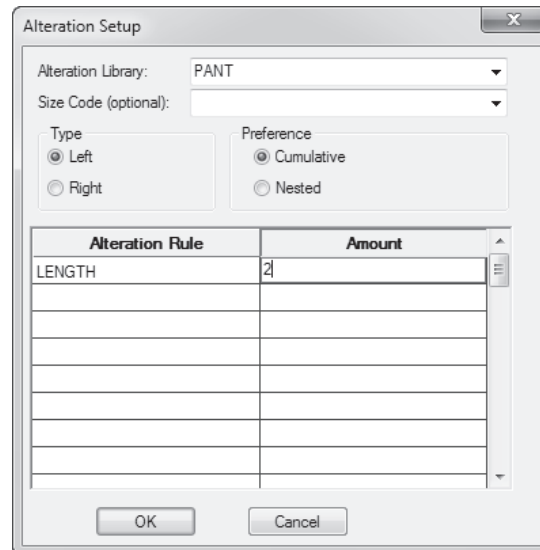
6. Continue to enter other movements for the same rule.
7. To add another rule, go to **Rule / New**. Don't forget to name this rule by right clicking on the tab at the bottom of the window.
8. When all the rules have been entered, select **Save As** from the **File** menu. Type in a name for the table and click **Save**.

Checking Alterations in Pattern Design

Alterations can be viewed in Pattern Design before plotting or making markers. This step is important to check the movement and point numbers to make sure they are moving properly.

To Check Alterations in Pattern Design:

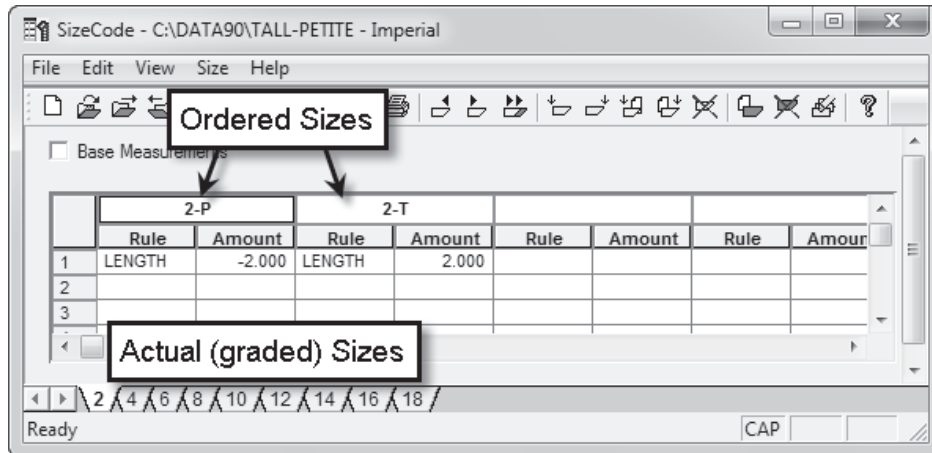
1. In **AccuMark Explorer**, locate the pattern pieces or models to check alterations. Select the pieces to view, right click and select **Open With / Pattern Design**.
2. Place the pieces in the work area.
3. From the **Grade** tab, select **Altered Sizes** in the **View** panel.
4. Select the piece(s) to view. Use the Ctrl key to select multiple pieces.
5. In the **Alteration Setup** window, select the Alteration Library from the drop-down list. Leave the **Size Code** blank.
6. For the **Type** of alteration, select from the following options:
 - **Left** – will only apply alteration rules with a Piece Usage of Left or Both.
 - **Right** – will only apply alteration rules with a Piece Usage of Right or Both.
7. Set the **Preference** to **Cumulative** or **Nested** (see Note below),
8. Right click in the empty field under **Alteration Rule**. Select the names of the rules to use from the dialog box. To select more than one, hold down the Ctrl key while selecting. When finished, click **OK**.
9. Type in the measurements to use for each rule in the **Amount** column. Keep in mind; this measurement will be multiplied by the percentages entered in the Alteration table.
10. Click **OK** at the bottom of the dialog box.
11. Select the size to display and click **OK**. The altered pattern will be superimposed over the original on the work area.



Should alterations be displayed Nested or Cumulative? Selecting Nested will create a separate pattern for each rule requested. These patterns will be stacked on the work area like a graded nest. Each piece will display in a separate color. If Cumulative is chosen, a single pattern piece will be created from all the rules requested. This view is useful to see how all the rules blend.

Creating a Standard Size Code

The Size Code table creates new, altered sizes by listing all the rules and amounts to change a graded size into the new size. The number of Size Codes needed depends on the type of alterations (standard or made-to-measure) and the quantity of alterations. Standard alterations generally require one Size Code per type of finished item (shirt, pant, etc.). Each Size Code may be used for different styles as long as the alteration base amounts are the same for each style.



To Create a Standard Size Code:

1. In the **AccuMark Explorer**, select the storage area where the Alteration table will be stored. From the **File** menu, select **New** and then **Size Code**.
- OR -
From **Launch Pad**, click on the **Marker Creation, Editors** button, and then double click the **Size Code** icon.
2. Right click on the **1ASIZE** tab at the bottom of the Size Code window. Type in the name of the first **Actual** (graded) **Size** and hit **Enter**.
3. Type in the name of the **Ordered Size** at the top of the first column. This is the name of the size with the alterations applied. In the example above, 7-P is used for the 7 Petite size. The size name can be up to 6 characters.
4. Click in the first box in the **Rule** column. Click on the lookup button. To select the Alteration table, click in the box provided and click on the lookup button. Choose the appropriate table from the list and click **Open**. Select the rules that will be used to create this size from the list. Use the Ctrl key to select more than one. When finished, click **OK**.
5. Type the measurement to use for each rule in the **Amount** column. These values can be positive or negative, depending on the results desired.

The value typed into the Amount column will be multiplied by the percentage from the Alteration table to calculate the actual amount for the movement.

6. Enter additional **Ordered Sizes, Rules** and **Amounts** for other sizes that will use the same Actual Size. In the example, sizes 7-P, 7-T and 7-XT are all based on size 7, so they have been entered on the same page of the editor.
7. To add more Actual Sizes, the current size can be copied or a new, blank page can be added. Choose one of the following options to create additional **Actual Sizes**:

- **Size / New Actual / Insert Before Current** – creates a new, blank Actual Size page to the left of the current page.
 - **Size / New Actual / Insert After Current**– creates a new, blank Actual Size page to the right of the current page.
 - **Size / Copy Actual / Insert Before Current** – copies the current Actual Size to a new page to the left of the current page.
 - **Size / Copy Actual / Insert After Current** – copies the current Actual Size to a new page to the left of the current page.
8. Once a new Actual Size has been added, right click on the tab at the bottom and enter the name of the Actual (graded) Size. When finished, hit **Enter**.
 9. Depending on how the new **Actual Size** was added, the information will need to be typed in or changed for the new size:
 - If the new size was copied from another size, change the Ordered Size name, Rules and Amounts as needed for the new Actual Size.
 - If the new size was added as a blank page, enter the appropriate information as detailed in steps 3-6.
 10. Continue to add more Actual Sizes and Ordered Sizes until every altered size has been accounted for.
 11. From the **File** menu, select **Save As**. Type in a name for the Size Code and click **Save**.