FastSHAPES®
Terminology

Blowpipe

Blowpipe is a term to describe connected pipe work in Industrial installations.
See picture below. It is heavier than Air-conditioning and ventilation type ductwork and mainly characterized by being welded. Lighter Sheetmetal ducts are largely joined by mechanical joints.
FastSHAPES® can handle both types but it is primarily the heavier Blowpipe it excels in.

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Lobsterback

Lobster and Lobsterbacks are terms to describe Gored or Segmented bends.
A lobster is a crustacean and its shell is segmented so it can move -- hence the name.

Fig #2 Lobster, also known as a Crayfish - note the back end of the shell and its segments.

Fig #3 A pair of “Lobsterback” bends

Transforming lobsterback bend module from the FastSHAPES® set.

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Conical Bifurcations – Compound Developments

A Bifurcation is a pipe that divides into two sections.
They can be cylindrical or conical.
Typically a Conical Bifurcation will be a cylinder branching into two cones however there are a number of variations.

Fig #4 Cylindrical Bifurcation (example of shape – *www.Hobaspipe.com*)

Fig #5 Conical Bifurcation with attached Lobsterback elements

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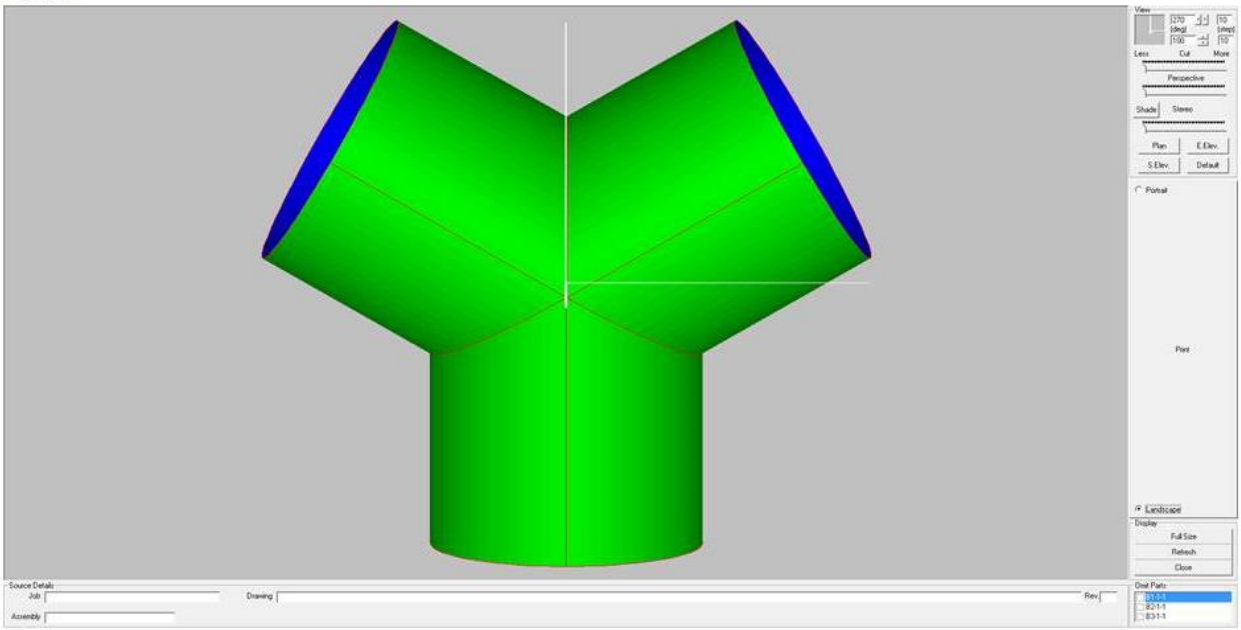
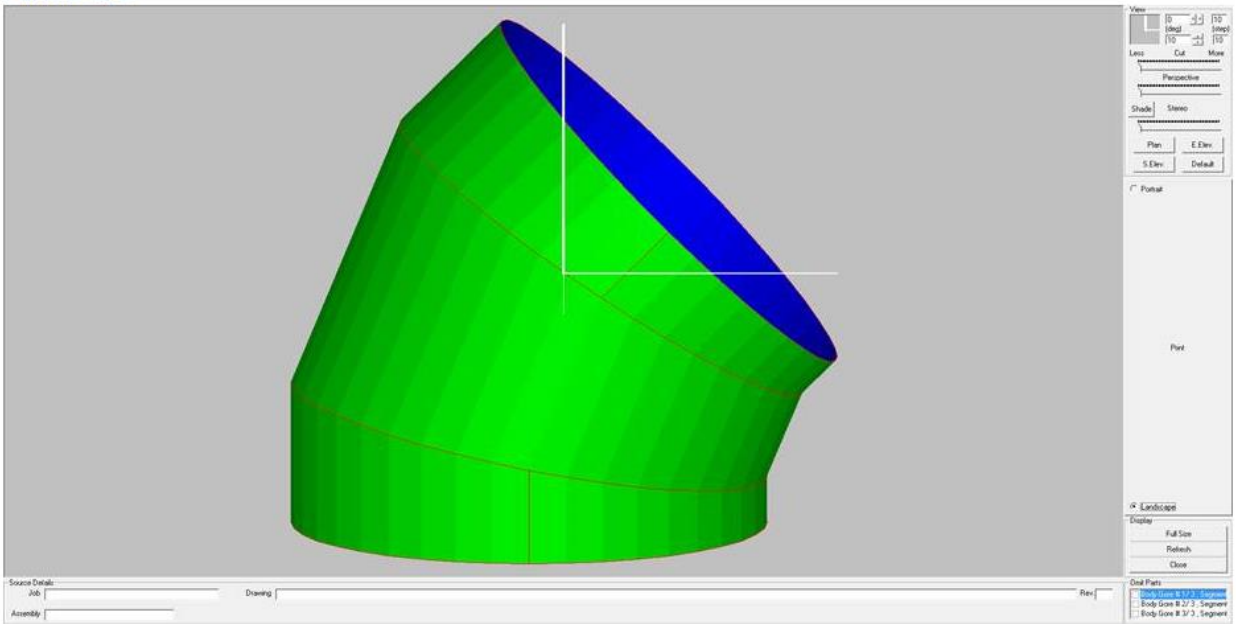
Both the bifurcations shown are examples of compound developments because there are two developments connected together. They would require both the Bifircate & Lobster modules. People doing this class of work are advised to contact a FastCAM representative for the appropriate shape modules as required.

Part A



Parts B & C



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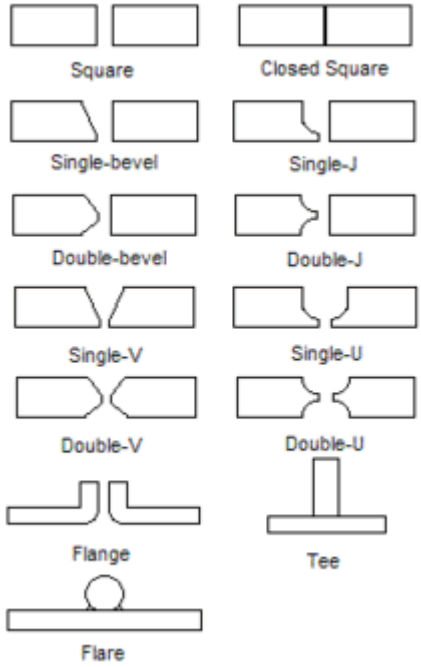
Butt Weld

In welding and fabrication Butt refers to two parts which meet or “butt together” usually in the same plane.

BUTT WELDS



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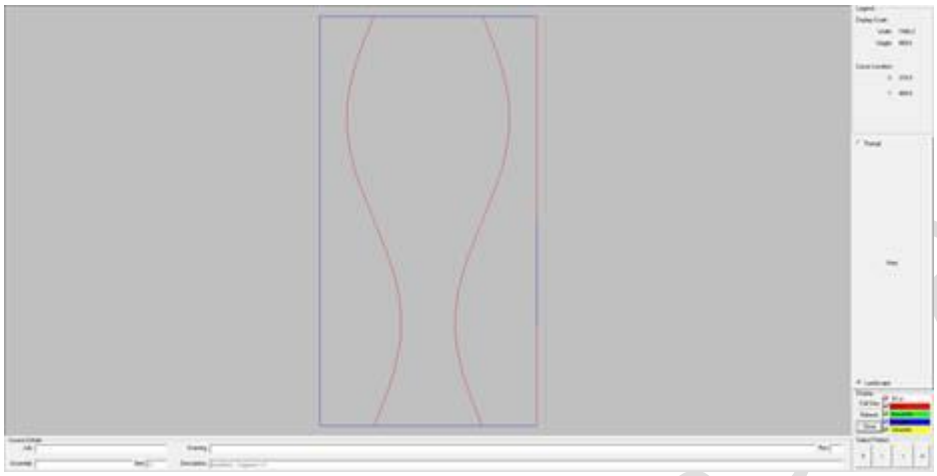
Back to Back

Back to back in the fabrication context means to rotate one part and fit it up against another part to save material. This is a very useful technique when making a lobsterback.



With the components placed back to back they now have common seams between them.
We can now Stitch Cut these seams meaning we leave uncut “stitches” between the common parts.

A typical stitch pattern would be to miss the first 25mm then cut say 300 mmm then leave an uncut section of say 25mm along the length of the seams.
This holds the parts together so they can be rolled as one panel.

If you try and roll the parts without doing this the narrower sections tend to over-roll and the wider sections tend to under-roll. i.e. they are not round and this makes it difficult to assemble.
The problem is greater the thicker the material.

In production you would roll the lobsterback as one then break the stitches with an oxy torch, hand plasma or grinder then rotate every second part 180dg and assemble.
Because they are now equally cylindrical it is much easier to construct.

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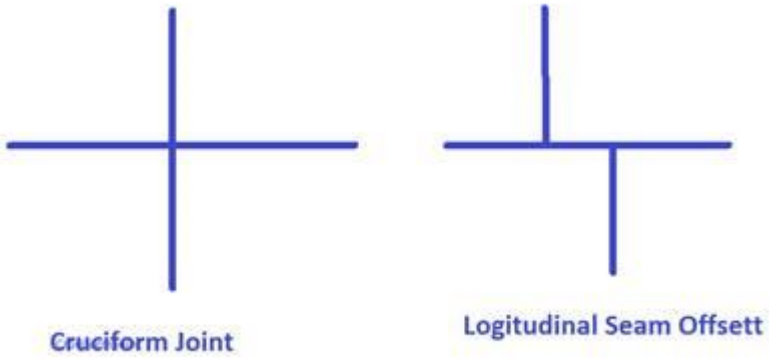
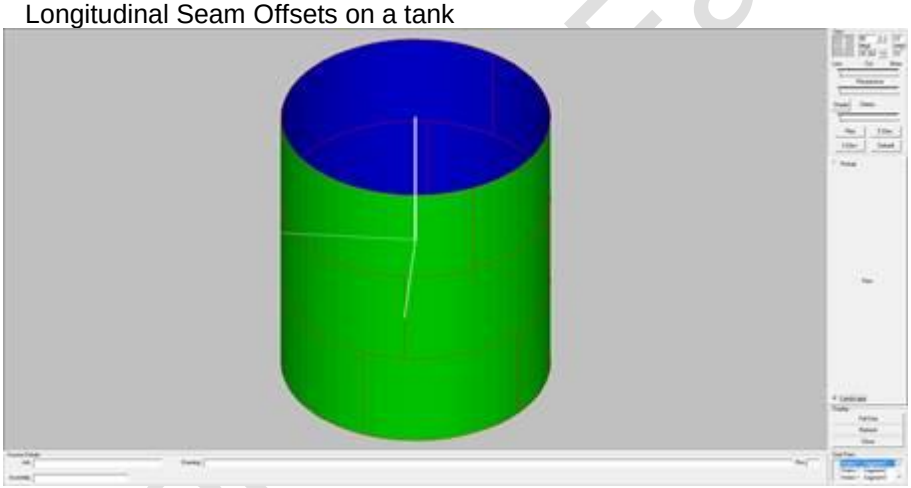
Longitudinal Seam Offsets

Cruciform joints (as shown below) are generally avoided in fabrication.

To do this the seams are offset, i.e. moved apart.
The minimum offset in most fabrication is 8*T
Or eight times the material thickness



Longitudinal Seam Offsets on a tank



Note: When adding offsets you also need to consider "GREEN". See following.

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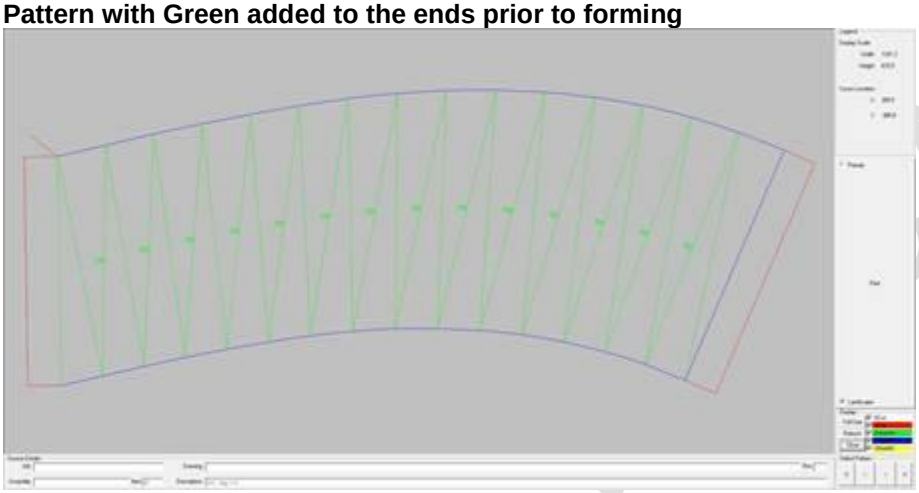
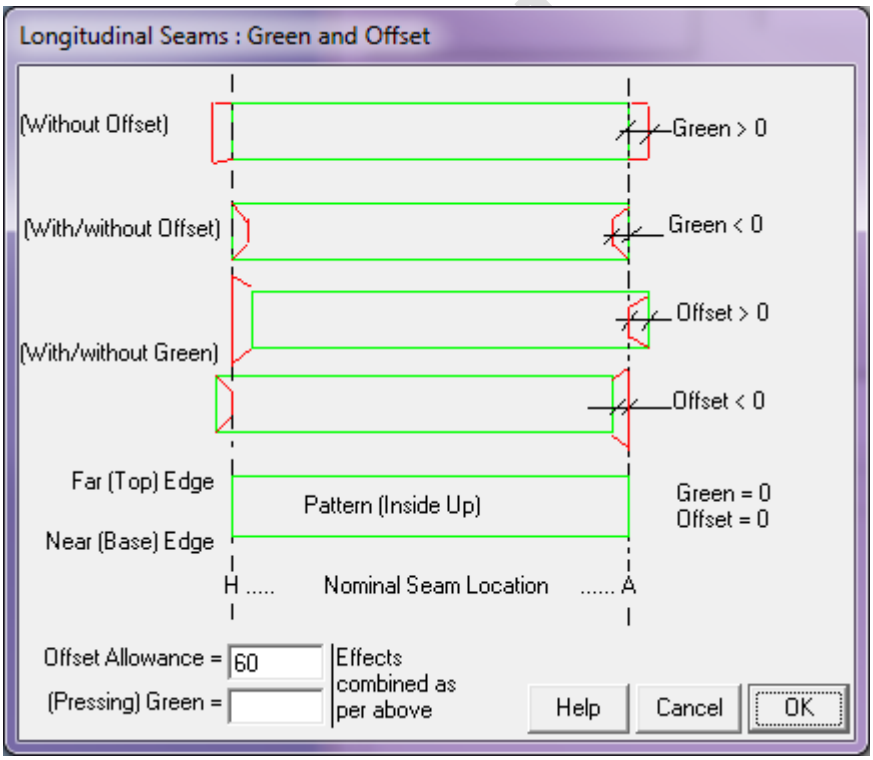
Green Allowance

This is a margin or allowance added to the pattern so it can be formed or rolled fully.
The problem is you can only form up to a minimum distance from the edge of the pattern. To get around this the pattern has green added to it before forming.
The green is trimmed off after forming and usually the welding prep is added as you trim the material.

Pattern with Green added to the ends prior to forming



The Longitudinal offset would be added to one side and subtracted from the other.



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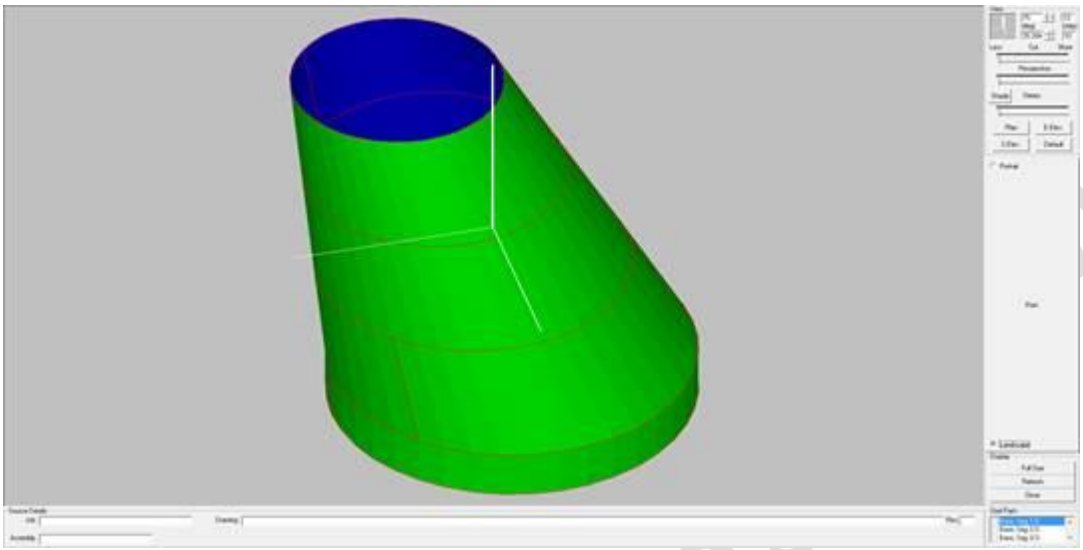
Offset Cone with collar and longitudinal seam offsets



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