



The Key Measurement— what every designer should know

Pattern cutting has always been something of a black art and every pattern cutter has always had his particular ideas and preferences. He did, however, know the basic rules. In the past the skill was taught manually, using a mean forme and two-dimensional shoe standard. Standard styles had certain measurements and proportions that would ensure a good fit on the last and foot, and offer the best pattern lock for cutting the leather.

The mass use of CAD pattern systems has changed all this and pattern cutters are no longer taught in the same way. Indeed, there are many—and some say too many—who do not fully understand the basic principles of pattern cutting. This is why there are so many ill-fitting patterns in so many factories. Shoe upper patterns are not only critical for the manufacturing process, but have a profound effect on comfort and wear.

The problem is how do you know where the key reference points for a particular style should fall on the last's surface? Until now, this has been somewhat haphazard and often driven purely by styling at the expense of good pattern cutting practice and at the cost of ill-fitting patterns. A designer may well be able to draw on to the last's surface either manually or through CAD, but there is no way to guarantee that the lines will fall in the ideal place.

A new system

Consultant David Lyon has gained over 50 years experience as a designer. He has cut just about every type of pattern possible, has taught the subject and has acted as a design and pattern consultant for many international companies. It is safe to say that there is very little he does not know about the subject.

He has now published a book on a system called Percentage Pattern Cutting. This is an on-the-last technique that uses the proportions of the selected last to create the required design. There are no fixed measurements or angles. Design lines are drawn on to the last by using various percentages of a single length taken from the last—*The Key Measurement*.▶

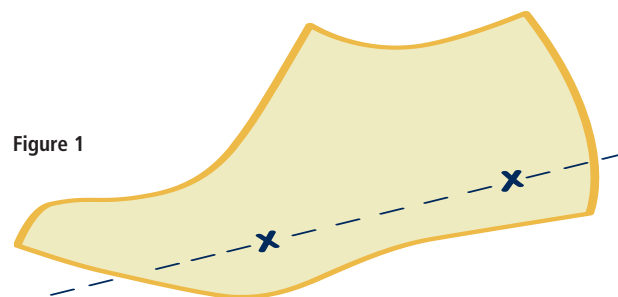


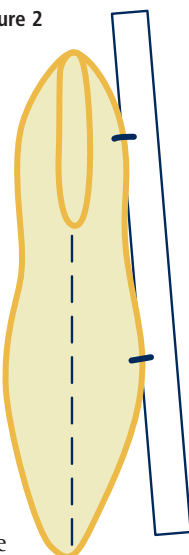
Figure 1

The Key Measurement

Every last has its own Key Measurement. To find it, a line must be drawn on the outer side of the last and the Outside Joint Spot identified. The last is held upright against a flat edge and marked where they touch front and back. The front position is the Outside Joint Spot (*Figures 1 & 2*).

To find the Key Measurement, a line is drawn on the outside of the last using a flexible tape measure. This is the Outside Joint Line (OJL) and runs from the bottom edge of the last to the front centre line. It must be taken through the OJS and be at 90 degrees to the front centre line. The OJL is carefully measured and this is the Key Measurement. Percentage Pattern Cutting is based entirely on this one measurement (*Figure 3*).

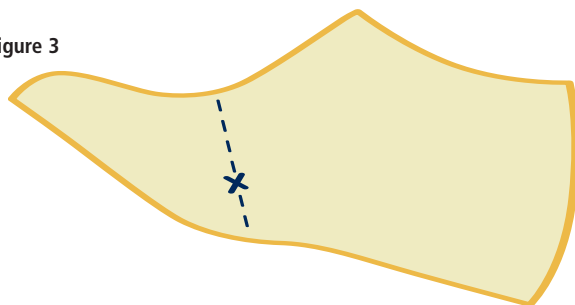
Figure 2



8. Point L is on C-D and 100% of the KM from point D. Connect point K to point L and amend to downward curve.
9. Point M is on A-B and point N on L-K. M-N is 10% of the KM away from and parallel to the front centre line.
10. Shape corners CMN and MNL. Position Facing Stay at point C.
11. Tongue – point P is on front centre line and 15% of the KM above point K. Point R is on K-L and 30% of the KM from point K.
12. Position eyelets as required depending upon fashion or individual choice.

The inner side of the last has the same design lines as the outside.

Figure 3



How does it work?

The trick is to know how to translate this simple measurement into the style required. The book covers 20 different style types with their further adaptations. The easiest way to see how this works is to take an example and follow it through using the Derby/Gibson tie shoe as an example. This is a popular cut in all genders and categories. The key point from a pattern point of view, is the Stay or Tab position.

- Too high or too narrow—the forepart will not pull down easily to the last and foot entry will be restricted
- Too low or too wide—the shoe will lack balance and over-large facings will be needed to hold the foot.

How to proceed (*Figure 4*)

1. Mark A-B (the Outside Joint Line). Point C is 50% of A-B. With a narrow tape measure connect C to D (Back Point).
2. Mark Vamp Point E on front centre line 20% of the KM down from point C.
3. Mark point F on the bottom edge of the last. A-F is 80% of the KM.
4. Draw F-G parallel to A-B. Point G is on C-D.
5. Mark point H on A-B. H is 10% of KM below point C.
6. H-J is parallel to C-D with point J on line F-G. Shape corner FJH.
7. Facings – point K is on the centre line. B-K is 80% of the KM.

An effective tool

At first sight, this may appear complicated. It is in fact very simple and, above all, it will work on any last. Once these basic pattern points have been created, they can be developed on the last or digitally transferred to a CAD system and developed there. The book contains Percentage Pattern details for some 20 basic upper cuts plus additional problem solving hints. It was primarily aimed at college students and, as such, has been produced in a simple black and white ring-clip format to keep the price as low as possible. However, it is clearly a useful tool that can prevent problems in lasting and improve both quality and output in many factories. It is, therefore, something that every designer and pattern cutter should perhaps seek to possess. 📖

Figure 4

