

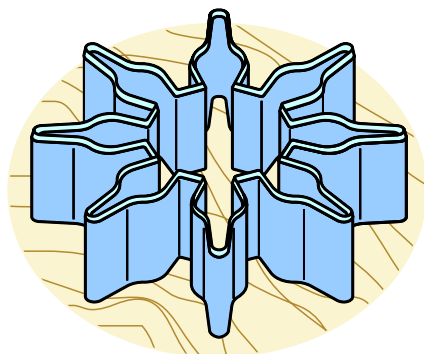


## Dieflex: A Foundation for Success. *The Diversity of Diecutting*

In reviewing any steel rule it is easy to get lost in lists of benefits and attributes, without focusing upon the real assessment of any tool, how it performs. Dieflex steel rule has the most comprehensive and impressive range of key features in the industry for both diemaking and diecutting. However, it is in on-press converting performance, where Dieflex wins the quality and productivity battle, and demonstrates why it is the platform upon which so many unique cutting edge profiles are machined.

### Performance Is the Key!

In principle the focus of any cutting tool is on efficient, smooth penetration of a substrate surface, coupled with clean, balanced displacement splitting of the material. The success of the diemaking and diecutting process is predicated upon selecting a base rule which can be machined and shaped consistently, and a precise knife edge profile, which is ideally suited to the cutting application it is applied to.



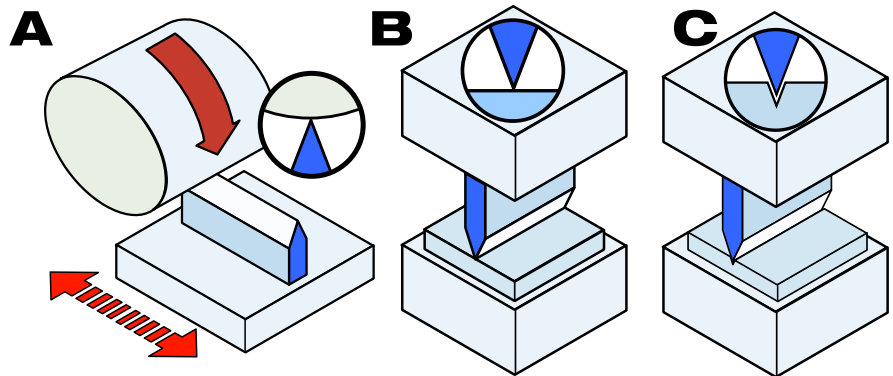
The perennial high performance of Dieflex steel knives in a diverse range of diecutting applications, and a comprehensive and an impressive range of edge treatments and profiles, enables the Sandvik team to provide an optimal solution, for every diecutting application.

For efficient diemaking, for a fast, precise press make-ready, and for diecutting quality, consistency, and productivity, Dieflex is the world wide leader in die-cutting tools.

Everyone working in the converting industry is constantly reminded of the incredible diversity of diecut products, parts and components. This extraordinary array of diecut applications utilizes an ever expanding diversity of substrates and materials. To meet this technical and commercial challenge, diecutting and toolmaking technology are continually changing and innovating. Currently the converting industry employs six (6) different types of diecutting, with many variations on each theme.

The six different types of diecutting technology are as follows:

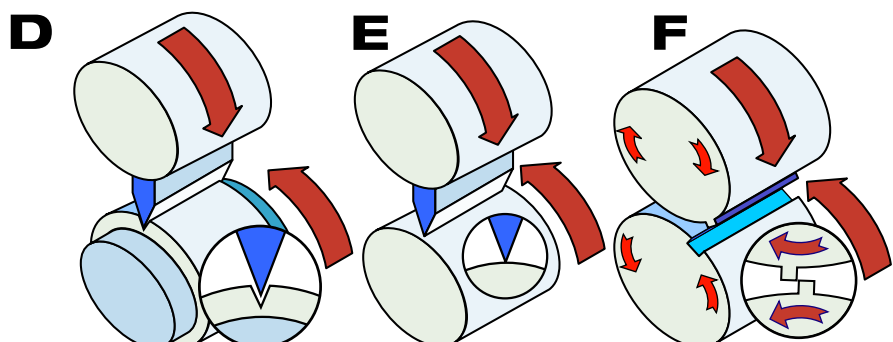
- \* **Cylinder/Flat: Steel-to-Steel: Hard Anvil Diecutting (A)**
- \* **Platen: Steel-To-Steel: Hard Anvil Diecutting (B)**
- \* **Platen: Steel-to-Sacrificial Anvil: Soft Anvil Diecutting (C)**



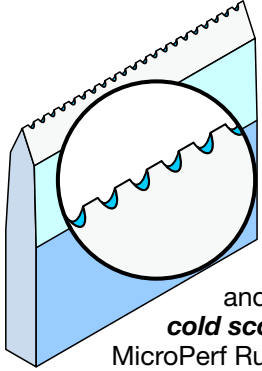
- \* **Rotary: Steel-to-Sacrificial Anvil: Soft Anvil Diecutting (D)**
- \* **Rotary: Steel-to-to Steel: Hard Anvil Diecutting (E)**
- \* **Rotary: Steel-to-Steel: Hard Anvil Diecutting (F)**

As the explosion in material, applications, & technology diversity continues, these six methods of diecutting are modified and augmented by an extraordinary range of innovative variations. Converting, diecutting, and toolmaking are constantly changing and adapting, with Sandvik at the forefront in research and development, to ensure we have the tools to meet your current and your future needs.

The Sandvik Archive identification number for the full text of this article is **C001**. To download the article visit the Sandvik Web Site listed on page 2.



**“Plasti-Crease” A Transparent Container Revolution**



The rapid growth and proliferation of plastic, transparent printed cartons and containers, has established this discipline as a viable packaging option in a diverse range of end use applications. However, the success of this material in this application has exposed key constraints in achieving high volume, efficient converting manufacturing. The key problem is effective and low cost creasing and folding. Fortunately, the method which solves the majority of these problems, and which is gaining acceptance throughout the industry is **cold scoring/creasing** the material using a specially developed MicroPerf Rule called **Plasti-Crease**.

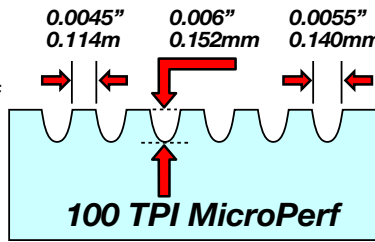
**The Development of a Cold Creasing, Plastic Folding Solution**

The world leader in **MicroPerf Rule** is **Zimmer Industries**, of New Jersey, who are working exclusively on these key projects with Sandvik. Zimmer innovated and patented many variations in MicroPerf Technology and they are the leading force in using MicroPerf for cold scoring and folding plastic materials.

Their experience in this field enabled the team to determine that a profile of **100 teeth per inch or 25.4 mm** was the most effective profile for cold creasing and folding plastic materials. **See above**. Customer success has led to the current evolution of this highly effective product, utilizing the 100 teeth per inch profile, a 0.0045” or 0.114 mm wide “tooth”, and an elliptical “gullet”, of 0.0055” or 0.140 mm width and a depth of 0.006” or 0.152 mm. **See right**.

**Plastic Creasing Innovation: Summary**

The development of a highly effective MicroPerf cold creasing solution for transparent material, was by no means an overnight success, however, the problem solving ability of the Zimmer Team is legendary, and their customers are delighted with their mutual success.



The global introduction of **Plasti-Crease** by **Sandvik**, has accelerated growth in creasing and folding plastic applications and related products. More and more converting organizations are enjoying the simplicity, the consistency, and the quality of cold creasing plastic, made cost effective by **Sandvik Plasti-Crease**. **Article Reference: Q001**

**A Key Diemaking Technique: “Oil Ruling”**

One of the perennial problems in laser diemaking is the progressive loss of moisture from the plywood dieboard. This **“drying-out”** of the veneer layers causes the dieboard to shrink, and it causes the fibers on both sides of each kerf channel to contract. This fiber contraction and subsequent channel expansion, causes loose rules.

Experienced diemakers have used a technique for many years which has proven to minimize progressive moisture loss, and to provide many benefits to extend the life of the die, and to improve on-press performance.

This technique is called **“Oil Ruling”** and it is simple to organize and easy to implement. Using the shallow top of a biscuit or cookie tin, a piece of thin foam is cut to fit the inside of the tin. This is then soaked in standard motor oil.

Each time a piece of rule is ready to be inserted into the dieboard, it is first dipped into the foam so the bottom of the rule receives a thin coating of oil. Every time a rule is driven into the dieboard, the oil coats and seals the sides of each lasercut kerf slot.

**Who is Sandvik?**

**“The reliable partner for competitive solutions.”**

**Sandvik** is a very large, very successful, and very diversified company, with facilities and service in all the major industrial centers around the world. But this is true of many organizations, and the more relevant question is:

How does forming a technical relationship with **Sandvik** maximize the productive potential of diemaking and of diecutting/converting?

This is a great question, because essentially, effective business is a person to person dialogue, where both participants are focused upon a common goal. How can we provide the most effective tool if we do not have a good understanding of your material, of your product, and of your application?

In future editions of this publication, we will introduce profiles and mini-biographies of Sandvik team members working in the converting industry, in different parts of the world. From Sweden to South Africa, from China to Canada, and from Australia to America, we will collect the ideas, the trends, and the technical developments, which drive our team members and our global industry.

By getting to know Sandvik people and their passion for your success, we feel it will be easier to communicate, to work together, and to succeed together.

This technique seals the exposed fiber ends, it makes rule insertion easier, & rule seating is perfect.

This is a superb technique, with many benefits in diemaking and in on-press diecutting performance.

