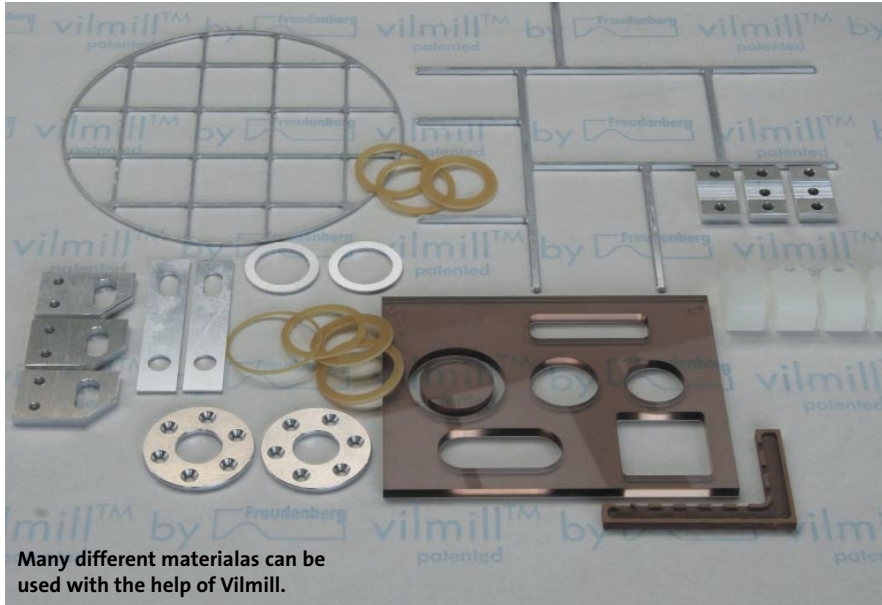


# Vilmill optimizes milling

Intensive development work by Freudenberg Vliesstoffe has led to new approaches in the technology for securing work pieces which signal a quantum leap for users of milling machines - the product is called Vilmill.



In machining thin and generally light-weight work pieces such as aluminum or plastic sheets, the operating forces and therefore the feed rates for milling at high speeds are significantly dependent upon the means for holding the work pieces securely in place as they are cut out and separated from the remaining sheet. Production problems increase in the manufacture of small items, where most of the usual vacuum technology cannot find sufficiently large surfaces to hold the piece in place during the separation process.

## Frequently beset by problems

Approaches such as using paper to increase the traction between the work piece and the work bench or fixing the work piece with the help of adhesive spray are widely used in practice, but in everyday operation these aids are frequently beset by problems and at best only represent a partial solution. As a consequence of these problems, the feed rates to the milling machine have to be reduced, rejection rates can become unacceptable or more processing is required to remove additional attachment points. From the technical point of view

the ability to meet clients' requests for filigree pieces is limited and leads to disappointment because of poor profitability or because certain things are simply not feasible technically.

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Vilmill is a substrate developed in a joint venture which is laid between the work piece and the milling table. Vilmill has an integrated adhesion layer which is only activated during the milling process. When suction is applied, its selected fiber structure acts as a diffuser and increases the vacuum efficiency. Both effects lead to a much improved and reversible means of securing the work pieces and the remaining material during the milling process until they are removed.

With its specially developed layer, Vilmill is designed to allow a multiplicity of different materials (aluminum, plastics, especially also glass fiber and carbon fiber, brass, copper, composite materials or similar) to be used in the machining process. Vilmill™ is eco-

logically safe and, in compliance with the local regulations, can be disposed of or incinerated so that no other problematic materials are introduced into the machining process.

The many and diverse practical tests with this new patented process harnessing Vilmill have delivered amazing results which will revolutionize the milling industry:

- The feed rate of appropriately powered machines can be increased by 100%, even for filigree pieces. The limiting factor is now the milling machine and no longer poor fixing of the work pieces during processing;
- Fixing the pieces allows greater precision and dimensional accuracy in the milled items, reducing the necessity for reworking and achieving higher quality;
- Work pieces are often made out of expensive materials. The secure fixing allows cut out sections to be positioned closer together, resulting in better utilization of the material and therefore reducing costs.;
- Even small items are safely embedded into the special adhesion layer and held securely enough to allow safe automatic processing. Used as a base in the machine Vilmill also protects the milling table and provides an ideal way to remove the pieces from the milling table;
- Vilmill is available in rolls of different widths appropriate for various applications and therefore can be easily used with older machines anywhere in the world.

Vilmill™ blue/BK5080 is being put to very successful use in the aerospace industry for milling thin aluminum sheets. Other areas of application include general aluminum and plastics machining with particular emphasis on the production of front panels and advertising materials. Vilmill black/BZ5790 is mainly used in these sectors. Vilmill is available exclusively from Freudenberg Vliesstoffe.

[www.vilmill.com](http://www.vilmill.com)