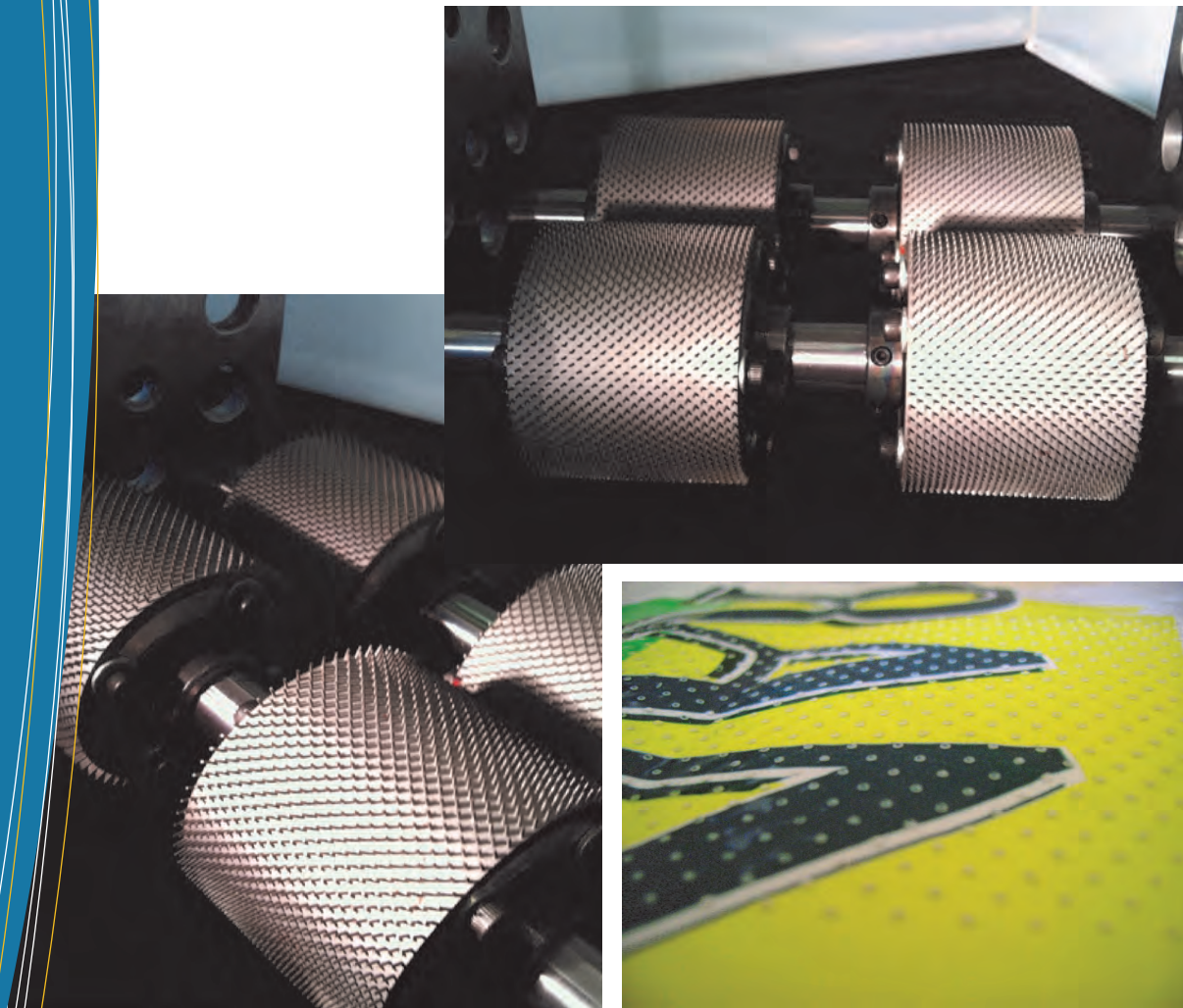


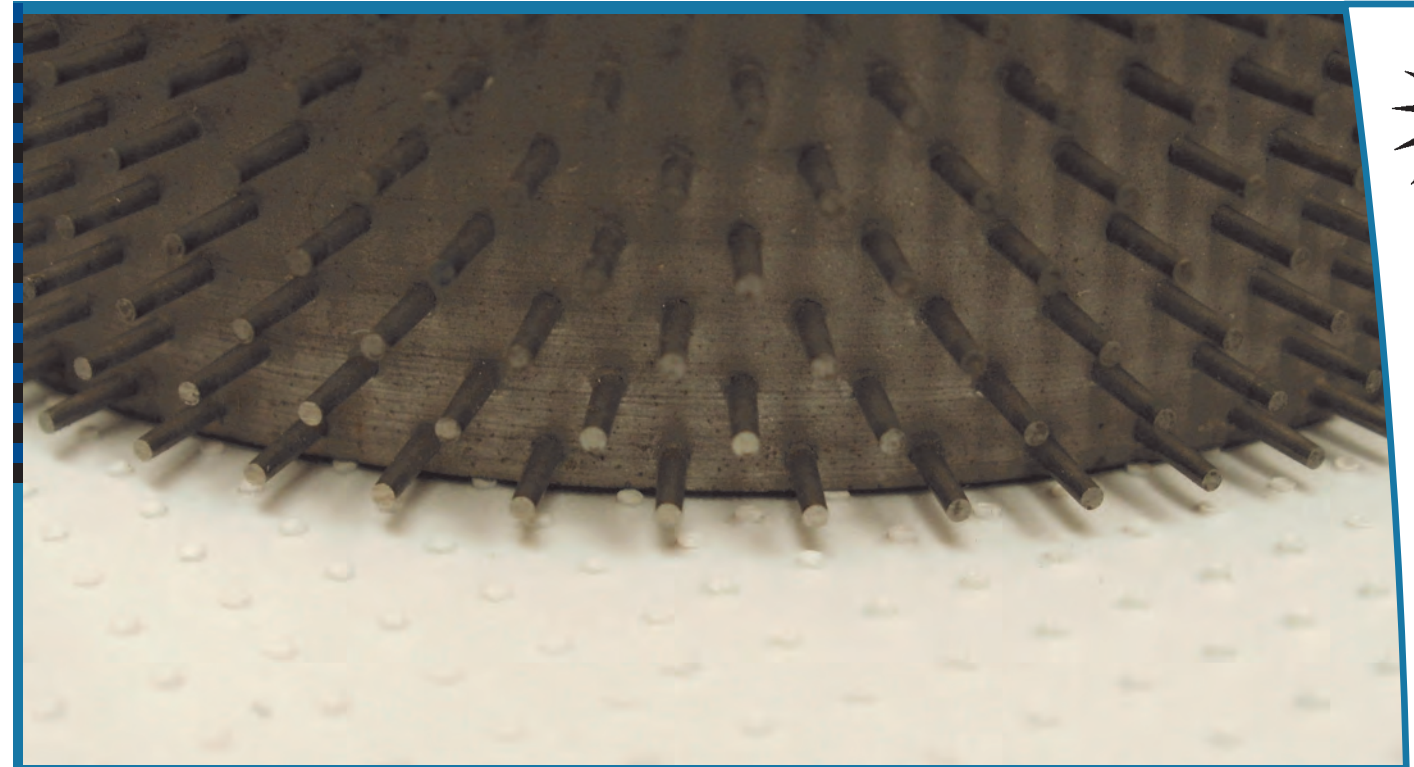
ROTARY TOOLING & MACHINERY

- In the flexible film and foil industry, films can be embossed when laid flat, or with Stewarts of America's **INSIDE-OUT** technology, bags can be embossed and / or perforated from the inside to the outside AFTER the bag is formed into a tube!
- **STEWARTS INSIDE-OUT** technology features a clever floating system that allows the embossing to appear on the outside of the bag. Perfect for anti-slip properties
- **STEWARTS INSIDE-OUT** technology is simple and effective. The embossing depth can be controlled accurately by a hand operated penetration control.



 **Stewarts of America, Inc.**
“On the sharp End of Pinpoint Technology”

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PINNED EMBOSSING TOOLING AND MACHINERY



Stewarts of America, Inc.
“On the sharp End of Pinpoint Technology”



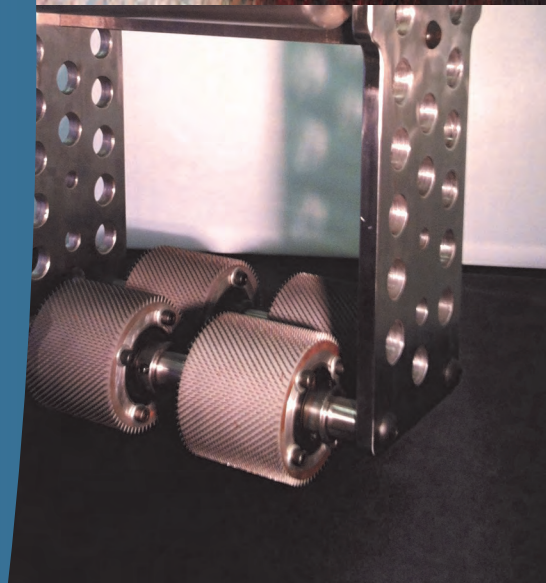
Pinned Embossing Tooling and Machinery



Precision tooling for Precision Embossing

CUSTOM MADE PINNED TOOLING FOR NEW AND EXISTING APPLICATIONS

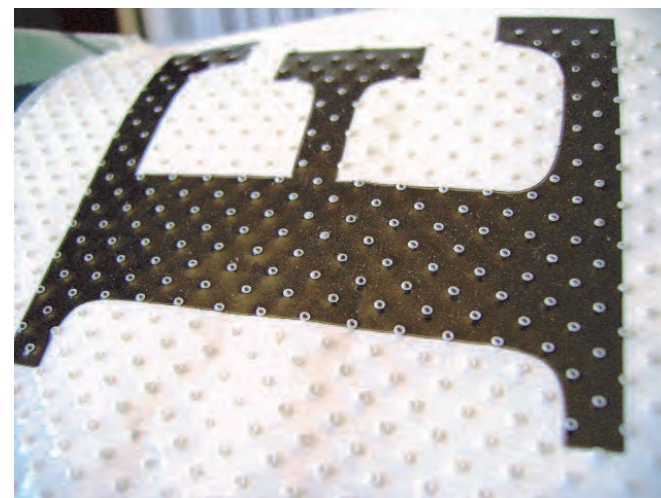
THE HOLE SOLUTION



EMBOSSING TOOLING

A number of different materials can be used as pressure rollers.

- Flat tipped pins to make a wide array of diameters
- Pins can be ground flat or ball nose pins can be used
- Films can be embossed flat or from inside a tube with **STEWARTS INSIDE-OUT technology**.

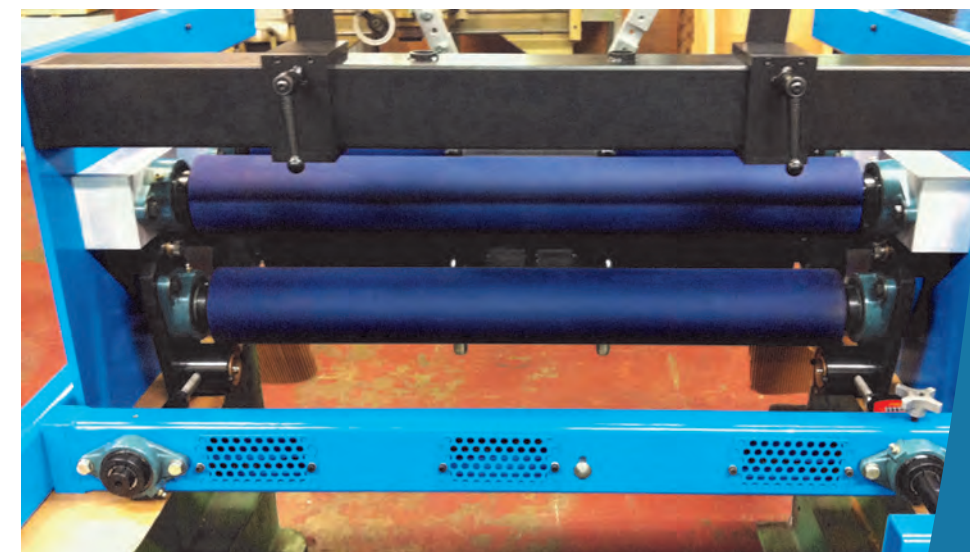


PINNED SLEEVES

- Use the most accurate pins, manufactured to world class precision
- Pins are heat treated and polished for long life.
- Round head or flat point pins can be used
- Pins are typically High Carbon Steel, but Stainless and other metals also optional.
- Wide range of pin diameters and geometries are available
- Custom pin patterns are available
- For warm applications, we Utilize a bi-metallic bronze/steel steel that optimizes thermal transfer between pins.
- Pinned sleeves can be made from Steel, Bronze, Brass, UHMW, Delrin, and a host of other materials.
- Precision fitted to center shaft to optimize thermal transfer
- For warm applications sleeves can be drilled and tapped to hold in place on center shaft
- Sleeves can be drilled with male/female dowel pins to ensure a consistent pin pattern when mounted to the center shaft.
- An internal dower can be machined into the sleeve for orientation.

PINNED PUNCH EMBOSSING

- Punches can be made with or without heating systems
- Multi position punches can be made for quick change stations
- Quick change tooling optional
- Reliable production operation
- Can be automated to be timed with your existing lines



FLEXIBLE INTEGRATION

Stewarts of America pinned tooling for embossing can be a great value add, and is easily integrated into the following standard equipment:

- Extrusion Lines
- Bonding Lines
- Thermoforming Lines
- Slitter / Re-winders
- Simple Unwinds and Rewinds
- Laminators
- Printing Presses
- Bag/Pouch Making Machines
- Post Gusseting Equipment
- and more.....

PINNED EMBOSSING TOOLING:

Max Cylinder Dia: 660mm
Length: 4000mm
Max pin pop: 5000ppin2 / 775ppcm2

A wide range of coatings are available on the various types of pinned tooling. From Teflon based Non-stick coatings, to diamond coatings that extend pin life even further than normal.

COMMON APPLICATIONS:

- **RAISED SURFACES**
- **CHANGES IN TEXTURE**
- **INCREASING SURFACE AREA**
- **INTERFERENCE FITS**
- **GRIPPING SURFACES**



Flexible Embossing Solutions for your converting needs



CUSTOM SOLUTIONS

Stewarts of America have the ability to design and manufacture a custom embossing solution for your specific application. Stewart's America's engineers are well versed in a wide range of materials and the effects that pinned embossing has on these materials. From Non-wovens to Films and Foils, Stewart's of America are your partners for the *Hole Solution*.



WEB SOLUTIONS

Visit our comprehensive website for a insight of other innovative Pinned Product solutions
 Stewart's of America offers the Industry. Signup for our e-newsletter, or download informative brochures at www.StewartsofAmerica.com



GLOBAL SOLUTIONS

Stewarts of America has agents and offices worldwide. We ship to over 50 countries . Our equipment is designed with the global market in mind, utilizing electronic components that are available internationally, with the support of our Stewart's of America trained knowledgeable local agents.