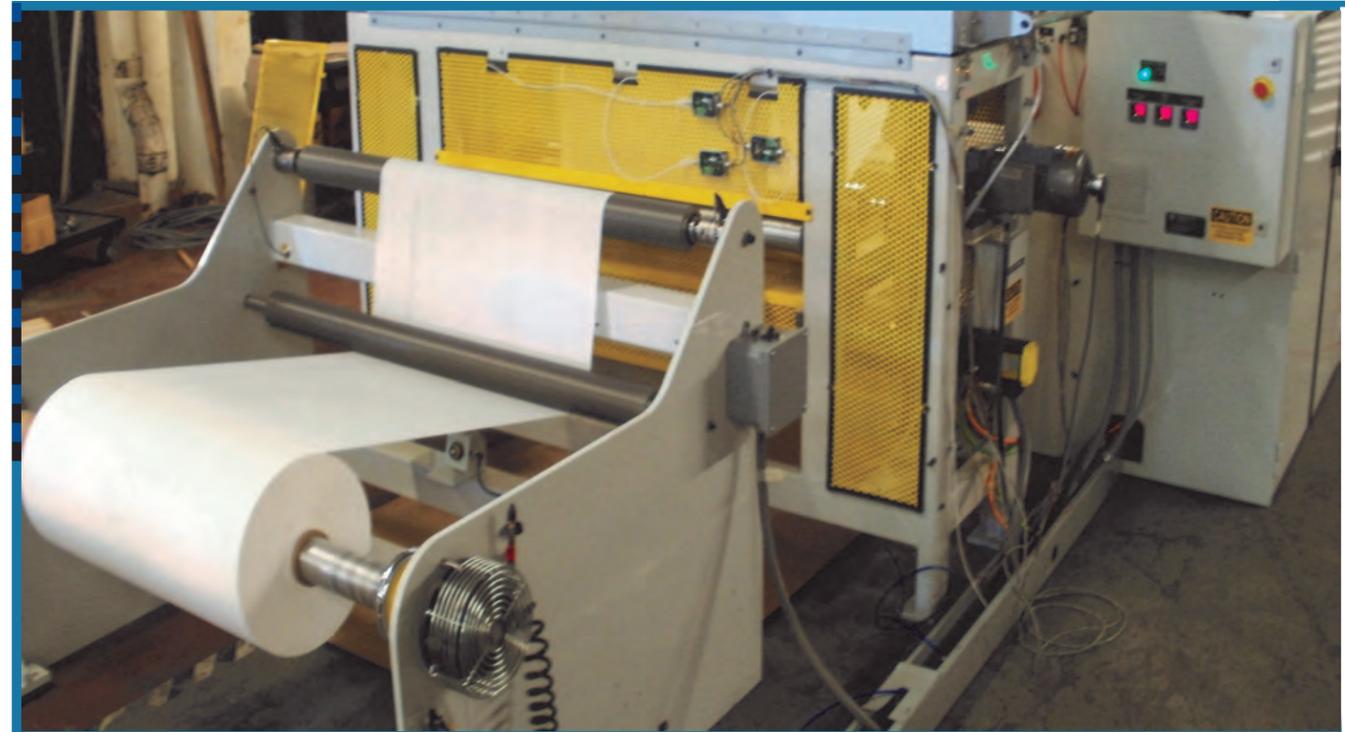


TOLL / CONTRACT PERFORATING  
FOR A WIDE RANGE OF INDUSTRIES -

- Aerotec - Aerospace Pressure Tapes  
Reflective Barrier Insulation
- Geotec - Horticulture  
Agriculture  
Horticulture  
Landscaping  
Weed-blocker  
Drainage control
- Buildtec - Reflective Insulation  
House Wrap  
Moisture Control  
Soundproofing  
Mold proofing
- Hometec - Industrial Wallpaper  
Carpeting  
Fabrics  
Acoustics  
Astroturf
- Indutech - Nonwovens, Films and Foils, Thermoplastics
- Meditec - Bandages  
Gauze  
Band-Aid  
Absorbents  
Breathable wound dressings
- Packtec - Breathable packaging  
Tapes  
Pressure Sensitive Tapes  
Laminates  
Shrink Films  
Extrusion
- Foodtec - Decreased Cooking Time  
Packaging  
Surface Texturing

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

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TOLL/CONTRACT  
PERFORATING SERVICES

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



Toll/Contract Perforating Services



# Punch Needle Perforating and Embossing

## WHY TOLL / CONTRACT PERFORATION?

- We have setup the ability to toll perforate for a number of reasons.
  - 1) To improve customers ability to go from product idea to conceptual design to actual product faster
  - 2) To allow customers to get a perforated product in hand in a cost effective manner
  - 3) To allow customers to be able to get to market almost immediately with product while their equipment is being built.
  - 4) Proof of concept. Samples from a production environment that will exactly reflect results you will see from your own perforating unit once built.
  - 5) Ability to tweak MVTR / OTR with in house state of the art, precision laboratory equipment.
  - 6) Research and development to optimize our own tooling and machinery to serve you, the customer, better.

## TECHNOLOGY OPTIONS

Stewarts of America offer a wide range of toll perforating technologies For Nano, Micro and Macro Perforation:

- Hot needle perforation
- Cold needle perforation
- Laser perforation
- Thermal (Flame) perforation
- ESD (Electro-Static Discharge) perforation
- Punch perforation (Vertical)

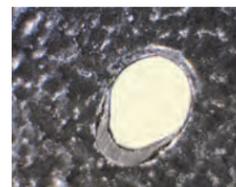
There are no good ways or bad ways to perforate. It completely depends on your application, type of material, and results you require.



Spun-bound Non-Woven



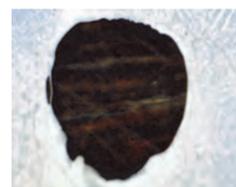
Woven Polypropylene



ABS sheet



PVC



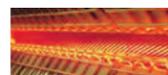
Air-laid Non-Woven



HDPE / LDPE

## TOLL / CONTRACT PERFORATION SERVICES THE HOLE SOLUTION

### HOT NEEDLE PERFORATING



- Consists of a heated pinned roller against either a brush roller or a rubber covered roller
- A wide verity of pin sizes, pin patterns can be used.
- Wide range of materials can be used with hot perforation—  
Non-wovens any poly based film.
- Up to 80" (2000mm) wide
- A number of pin patterns and pin diameters already in stock
- Works for Nano, Micro and Macro perforation
- Creates strengthening welt around the melted hole

### COLD NEEDLE PERFORATING



- Consists of a room temperature pinned roller against either a brush roller or a rubber covered roller
- A wide verity of pin sizes, pin patterns can be used.
- Wide range of materials can be used with hot perforation—  
Non-wovens any poly based film.
- Up to 80" (2000mm) wide
- A number of pin patterns and pin diameters already in stock
- Works for Nano, Micro and Macro perforation

### LASER PERFORATING



- Consists of 6 programmable laser heads across the web
- Very precise hole control capability
- Slits can be made as well as round holes
- Laser simply burns a hole in the web. Burn time and intensity are programmable
- Works for Nano, Micro and Macro perforation

### THERMAL ( FLAME) PERFORATING



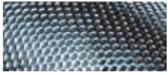
- Perforating cylinder is etched copper
- Web runs over a water cooled perforating cylinder
- High output gas burner creates holes in the film
- Great for very dense populations of holes 5,000 per square inch plus
- Used exclusively on bi-oriented substrates such as

### ESD (ELECTRO STATIC DISCHARGE)

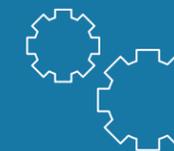


- Diagonally offset electrodes fire creating an arc through the material
- Freq. controller allows changes in hole sizes and hole patterns
- Great for thin-gauge plastics and paper for venting and filtration

### PUNCH PERFORATING (VERTICAL)



- Male and female punch and die set
- Removes the "chad" that is sheared from the hole
- Clean, open hole remains.
- Wide verity of hole sizes and patterns available
- Works well on thicker materials such as artificial leather and vinyl



## CUSTOM SOLUTIONS

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



## WEB SOLUTIONS

Visit our comprehensive website for a insight of other innovative Pinned Product solutions Stewarts of America offers the Industry. Signup for our e-newsletter, or download informative brochures at [www.StewartsofAmerica.com](http://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 Stewarts of America trained knowledgeable local agents.



Flexible Perforating Solutions for your converting needs