



- Faster and cleaner than gluing methods
- No breakage as with using screws
- Rattle-free assembly
- Single and multiple station machines



HA Industry's Hot Air/Cold Stake process is one of the most cost-effective methods for mechanically attaching thermoplastic components, and is equally effective for fastening dissimilar materials, including metal to plastic. The process reforms studs and bosses, producing a mechanical bond. Each stud (or boss) is softened by blowing a controlled flow of heated air in a localized area. After the stud is softened, a cold metal stake under light pressure reforms it into the desired shape, such as a domed or flat rivet. As the stud is being formed, heat is extracted from the plastic, ensuring a solid, rattle-free component assembly.

Benefits of this process include short cycle time, tight assemblies and excellent repeatability and process control. Added advantages are the ability to simultaneously stake multiple bosses on different planes and angles, simplified fixture design and machine reliability. The ultimate benefit for you is the elimination of fasteners and adhesives for attaching components.

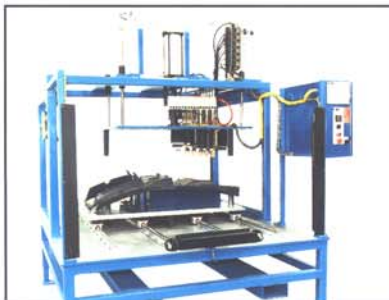
Our machines are successfully integrated in the assembly production of interior and exterior trim, functional parts, decorative assemblies, electrical components and medical devices.

## Value Added Machine Features

- Controlled air flow produces high integrity assemblies
- Fixture silhouette on the panel available
- Individual heater element monitoring provides continuous process control
- Fast, comprehensive process monitoring with optional touch screen
- Quick disconnect heater elements allow fast changeover
- Modular components offer ease of maintenance and changeover

## Single or Multiple Station Machines

Our application engineers can review your part design and production requirements and determine which type of machine is best suited for your needs: single station with multiple hot air tooling for single operation processing or multiple stations for sequentially processing more complex components. These machines can feature other assembly functions such as clip or fastener driving, test and verification.



We've designed and built hundreds of Hot Air/Cold Stake systems for a variety of production applications.

## HA: the Resource

HA Industries has the machine-building expertise for both large programs and individual machines. Our manufacturing capacity and rapid turnaround time lets us produce machines for virtually any size program. Many projects are designed and built in less than twelve weeks.

Our extensive in-house mechanical and electrical expertise supports you from machine concept to completion. Throughout the program we work hand-in-hand with you, and this commitment continues with service and follow-up after your machine is put into production. HA has supplied and supported installations worldwide.

Call us. We'll recommend the most cost efficient means for your plastic assembly applications.



HA INDUSTRIES, INC.  
5510 Gatewood Street  
Sterling Heights, MI 48310  
586-939-0550 • 586-939-0553 Fax  
[www.ha-industries.com](http://www.ha-industries.com)

