

# Run Circles Around Other Methods Of Product Assembly



# Now There's A Better Way

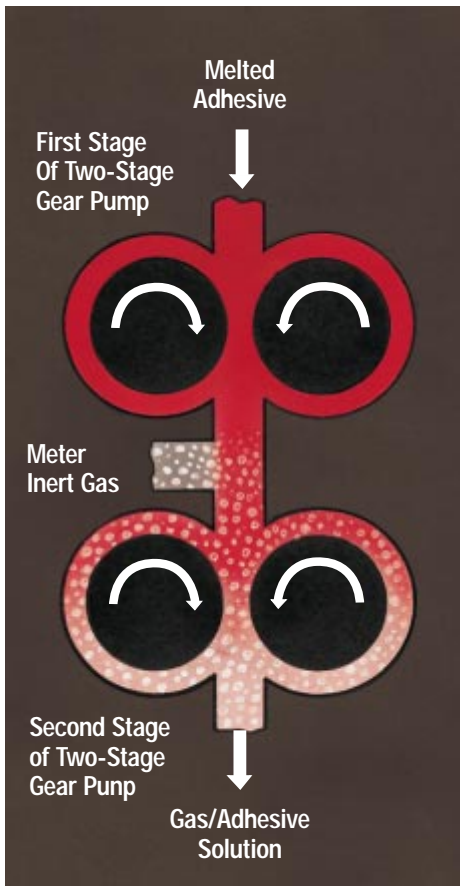


Since the introduction of the patented Nordson FoamMelt Process, foamed adhesives have quickly won an important place in assembly applications. They have achieved much of their remarkable success by out-

performing conventional hot melts and other methods of product assembly. Although standard hot melts have many desirable characteristics—fast set times, ability to fill gaps and bond difficult materials, absence of solvents, and compatibility with automation—They are not used in many applications because of their short open times, limited bond strength, thermal distortion, or material costs. The FoamMelt Process offers a way to overcome or at least minimize many of these limitations while enhancing the positive characteristics of conventional hot melts. As a result, foamed adhesives are being used today in a wide variety of manufacturing tasks, replacing not only conventional hot melts but mechanical fasteners, tapes, and cold glues as well.

## Versatile Foamed Adhesives Can Meet Most Requirements

Because the FoamMelt Process has no effect on the chemical properties of an adhesive, it works well with polymer formulations of all types. This includes ethylene vinyl acetates, polyethylenes, amorphous polypropylenes, polyesteramides, and polyamides. When used with cross-linking, moisture-cure adhesives, the Foam Melt Process can produce materials that rival epoxies in strength.



## How The FoamMelt Process Improves Adhesive Performance

The FoamMelt Process uses a patented two-stage gear pump to force inert gas into solution with melted adhesive. When the adhesive is dispensed, the gas comes out of solution to create a foamed adhesive full of small gas bubbles. One effect of the gas bubbles is to act as tiny insulators, thereby adding greatly to the open time of the adhesive. Another effect is to reduce the working viscosity of the adhesive, making it more spreadable. Because foamed adhesives spread easier to cover more surface area, adhesive consumption is reduced, sometimes by as much as 65 percent. These are just two of the ways in which the FoamMelt Process enhances adhesive performance.

## Solvent-Free Assembly

Like conventional hot melt adhesives, foamed adhesives contain no solvents. They are non-toxic and pose no solvent-related pollution problems. With increasing concerns about employee safety and proper handling of toxic materials, foamed adhesives are an ideal alternative to solvent-borne adhesives.

## Typical Benefits Of Foamed Adhesives

### Enhanced Performance

- High bond strength
- Longer open times for product positioning
- Faster set times
- Ability to bond porous or irregular surfaces
- Ability to dispense on inclined or vertical surfaces
- Ability to bond conductive metals

### Cost Reduction

- Reduced adhesive consumption
- Increased production rates
- Lower labor costs
- Long shelf life
- Reduced warehousing costs

### Better Product Appearance

- Ability to bond heat-sensitive materials
- Whiteness of adhesive
- Thin bond line

### Versatility

- Ability to modify adhesive characteristics to meet application requirements
- Ability to form gaskets

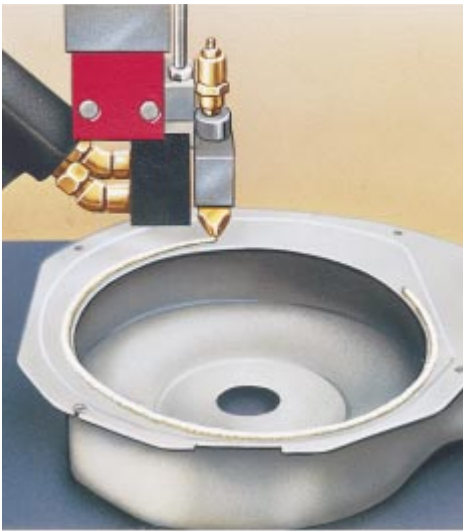
### Improved Safety

- Reduced workplace hazards
- Fewer environmental problems

# To Join, Seal And Fasten.

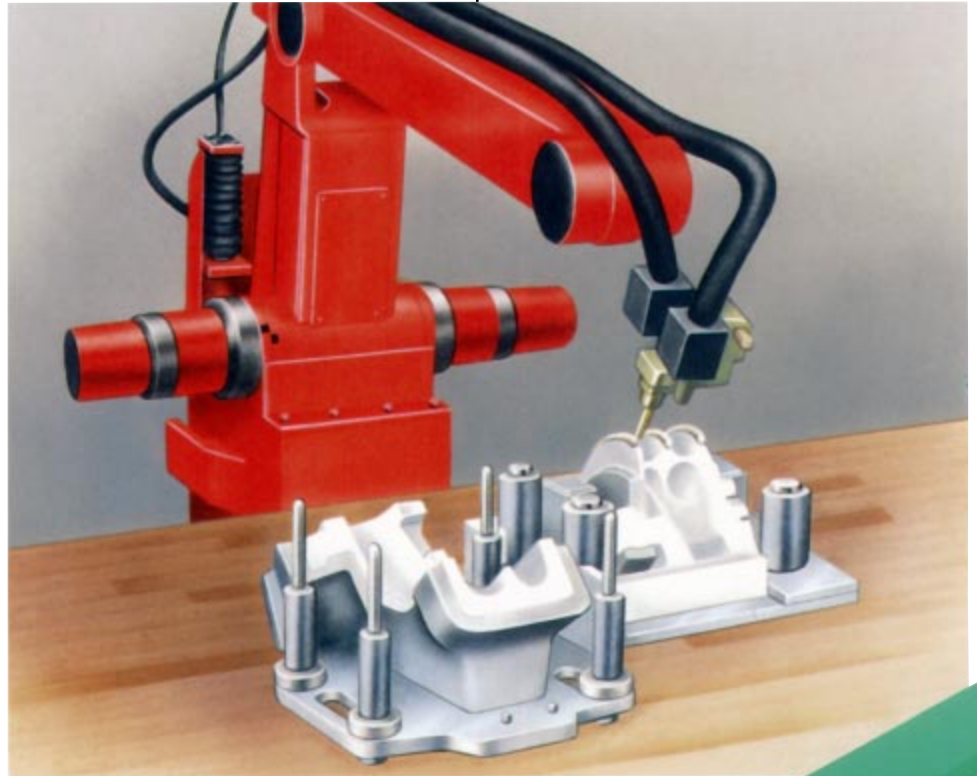
## Bonding EPS Patterns

Foamed adhesives are used in the production of polystyrene foam patterns, which are in turn used to make aluminum intake manifolds by the evaporative casting process. Foamed adhesives are ideal for bonding the pattern parts because they have long open times, thus providing sufficient time for robotic application over the full length of the joint, and because of their ability to fill gaps and irregularities between mating surfaces. Other benefits realized in this application include absence of heat distortion in the polystyrene pattern and rapid set times.



## In-Plant Gasket Production

If a foamed hot melt is allowed to cool without being compressed, the gas bubbles remain intact, producing a semi-rigid, closed-cell foam bead with elastic properties. These foam-in-place gaskets not only provide a more effective seal than conventional gaskets but are more cost efficient as well. In addition to producing gaskets for dryer blower-housings, as shown here, the Foam Melt Process is used to create gaskets for microwave ovens, vacuum cleaners, clothes washers, and many other products. The entire process can be automated for maximum cost savings and quality control.



## Battery Packs

A FoamMelt Processor and flexible automation are used to assemble battery packs. The gaps between individual batteries are filled with foamed adhesive, which quickly expands to maximize the bonding area. The result is a durable finished product that is resistant to impact, temperature changes, or chemicals.



## Gasketing For Standing-Seam Roofs

Foamed adhesives are widely used in the production of sheet metal standing-seam roofs. A bead of adhesive is automatically applied to the roof seam during the manufacturing process and allowed to cool, forming a durable and resilient gasket. Gaskets produced in this way are far superior to field-applied sealants, which are more costly and often result in leaks.



## V-Grooving

Cabinets, countertops, and speaker enclosures benefit from the ability of foamed adhesives to fill gaps, conform to irregular surfaces and set faster. Here a foamed adhesive is being applied to particle board before it is folded to form a speaker cabinet. Cabinet production can be increased because the time delay required for good bonding is eliminated.

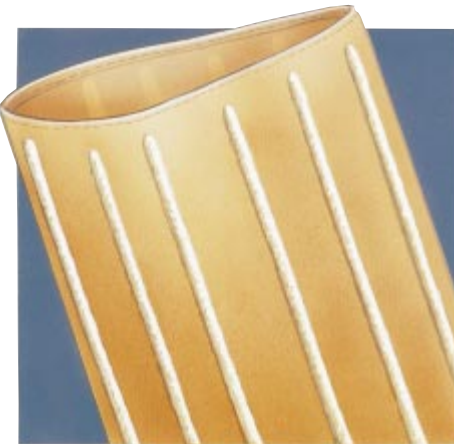
## Bookbinding

Used to bond covers to signature blocks in the bookbinding industry, the FoamMelt Process improves product quality while reducing production costs. According to the manager of one bookbinding operation, "The FoamMelt system provides the thin bond we need at the hinges to get a clean break and a squared edge. As a result, we were able to bid on and win a \$400,000 finishing project."



## Bonding Insulation

The longer open times and increased spreadability of foamed adhesives make them ideal for bonding insulation to metal parts. When used to attach fiberglass panels to refrigerator cabinets, the FoamMelt Process produces savings because less adhesive is needed to obtain the required open time for assembly. Foamed adhesives are also used to bond fiberglass panels to air ducts and polystyrene insulation to aluminum siding.

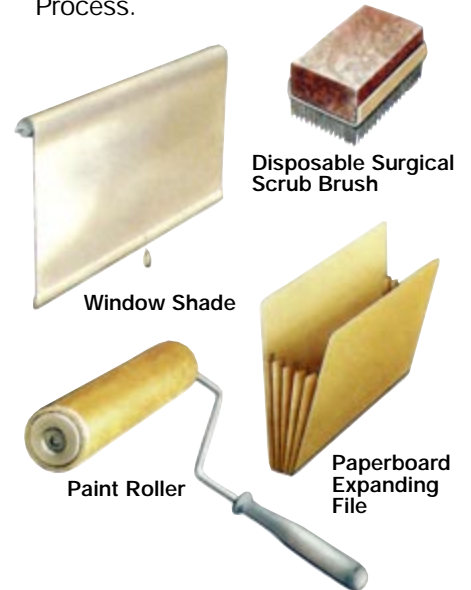


## Production Of Bag Filters

By replacing plastisols with foamed adhesives, producers of air bag filters can eliminate the costly oven-curing process. With their excellent gap-filling qualities, foamed adhesives effectively fill the thread holes created in the sewing process. In addition, special grades of hot melts can be used to produce flame-retardant filters.

## The Unlimited Potential Of Foamed Adhesives

Foamed adhesives are now being used successfully in a wide variety of industries to assemble everything from diapers to air ducts. Whether it's for the adhesive savings, solvent-free assembly, or another benefit, manufacturers are finding more and more reasons to switch to the FoamMelt Process.



## The Nordson Package of Values Comes With Every Sale

Our factory-trained sales representatives and system engineers stand ready to analyze your needs and combine our broad range of equipment into a system tailored to your requirements. Application assistance before the sale and follow-up service from numerous locations worldwide are among the many customer services included in the Nordson Package of Values. Call today and put Nordson service and technology to work for you.

©1989 Nordson Corporation - 12/89

306-18-778-1



Nordson Corporation  
11475 Lakefield Drive  
Duluth, Georgia 30097-1511  
Toll Free (800) 683-2314  
Internet: [www.nordson.com](http://www.nordson.com)