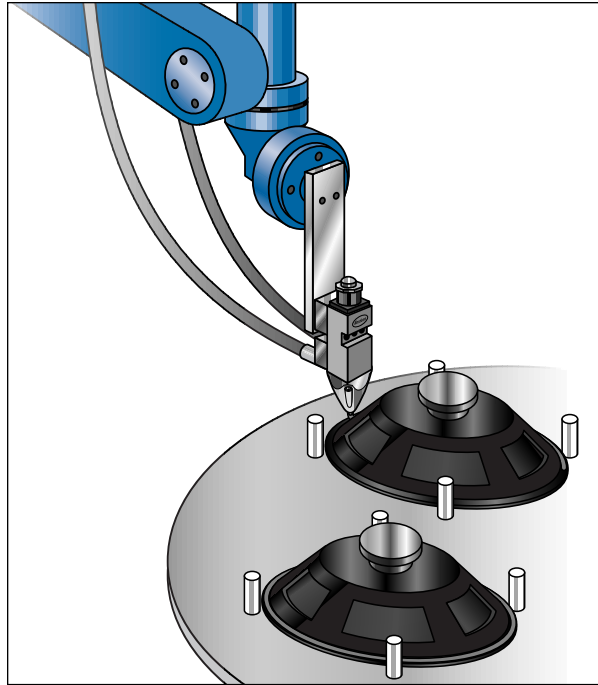
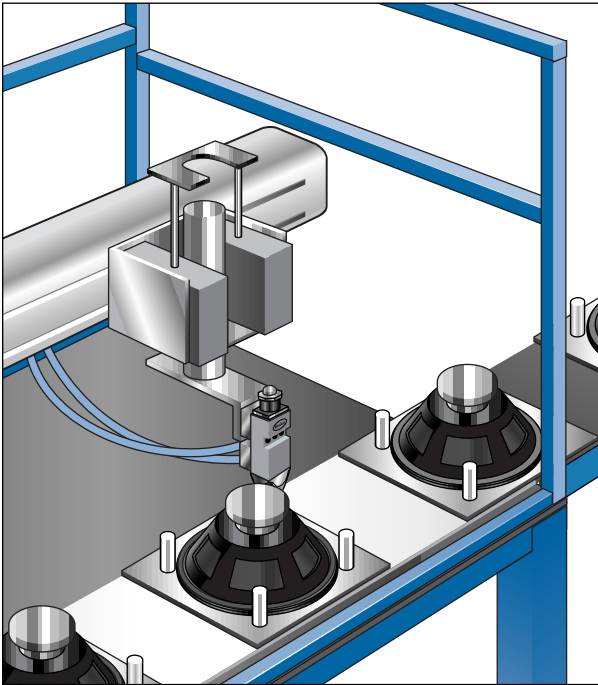


GASKETING APPLICATION SOLUTIONS

AUTOMATED SPEAKER GASKETING



Situation

Audio speakers are used in consumer entertainment systems and automobiles, and range in size from 2 inches to 18 inches depending on the application. Gaskets are typically applied to the perimeter of the speaker frame to dampen vibration, provide acoustical sealing and prevent air and water from damaging the speaker.

Traditional speaker gaskets can be manufactured from paper, cork, urethane strips or urethane sheet stock, which are die cut and layer packaged in boxes. The back of the gasket material is coated with a pressure-sensitive adhesive covered by release paper. Once the gasket is removed from the sheet, the remaining material located in the center and around the gasket, along with the release paper, is waste.

The die-cut gaskets are manually applied to the speakers in an assembly process that can require from two to ten operators, depending on the line speed and complexity of the gasket.

Many of today's speaker assembly lines are highly automated. Manual application of the speaker gasket is done off-line, interrupting and slowing production, and creating excessive material handling and waste as well as higher material costs.

Nordson Solution

Using foamed technology to apply automotive speaker gaskets offers a more efficient production alternative than manually placed die-cut gaskets. The Nordson system utilizes a FoamMelt® unit, two heated hoses and an H200 dispensing module. Nordson offers three automation solutions to accompany the system: an X,Y, Z automation table, six-axis robot, or a part spinner.

Based on production requirements, the speakers can be conveyed automatically on a pallet into the FoamMelt gasketing station, or an operator can manually transfer them to a rotary turntable.

In the gasketing cell, the FoamMelt unit combines a single component thermoplastic hot melt with inert gas to provide a foamed material. The foamed mixture flows through the heated hoses to the H200 dispensing module, which applies the material to the speaker frame.

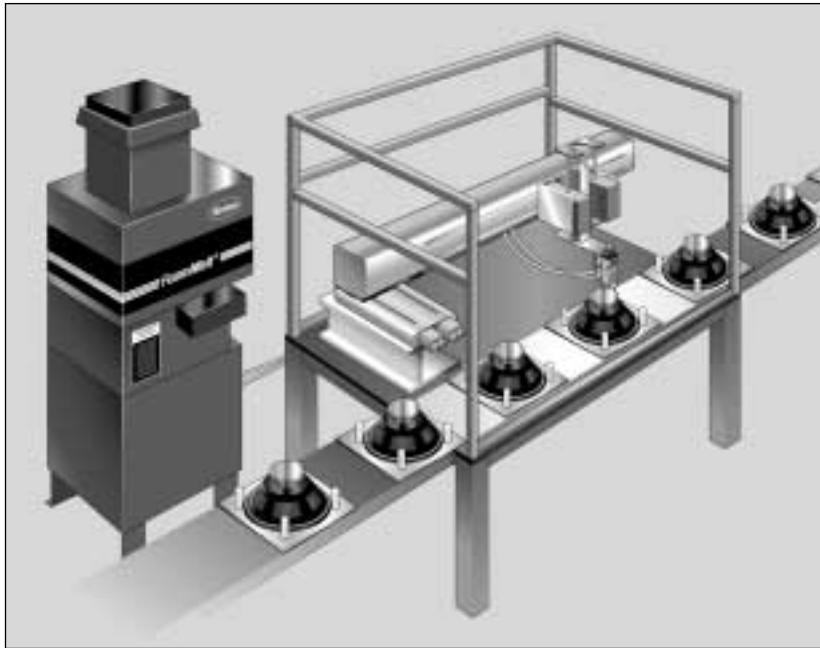
By using an automated process, speaker manufacturers significantly reduce labor costs, as fewer operators are required to manage the work cell. Productivity is also increased because bottlenecks from excessive part handling are eliminated. In addition, foamed material is often less costly than die cut gaskets, reducing overall material costs.

These combined savings result in a system that pays for itself in one year or less in most cases.

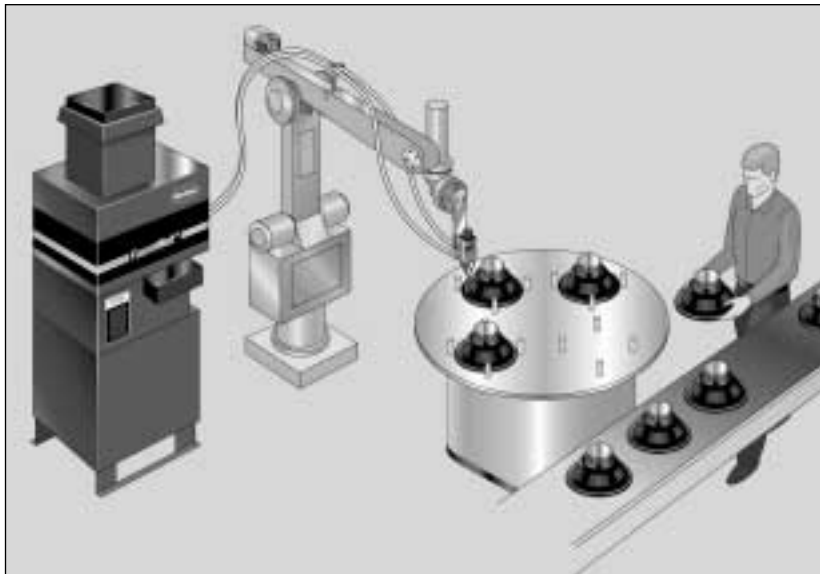
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GASKETING APPLICATION SOLUTIONS



On-line application with speakers on pallet.



Off-line application with speakers on turntable.

Benefits

- Automated application of gaskets reduces labor costs by decreasing the number of operators required to manage the work cell.
- Material cost savings can be achieved using foamed adhesive in place of die-cut gaskets.
- Automated gasketing increases productivity by reducing manufacturing bottlenecks from excessive part handling.
- Automation also improves product quality by providing repeatability from part to part, and by assuring accurate gasket placement.
- A single 50 pound box of hot melt material replaces up to 7,500 gaskets (based on 3 grams per gasket for a 6x9 speaker), reducing inventory and expense.
- Compared to die-cut gaskets, the waste generated from foamed material is minimal and can be recyclable, eliminating the need to dispose of unused gasketing sheets and release paper.

Backup That Keeps You Productive

Nordson offers a broad range of application equipment to tailor a system that is right for you.

Our promise of customer satisfaction is backed by a team of application engineers, sales specialists and service technicians. The Nordson Package of Values[®] helps keep you productive and profitable with local sales and service, support, readily available parts, comprehensive product manuals and customer training programs.

Nordson reserves the right to make design changes to products to improve their function. These changes may occur between printings.



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