



GLUING & QUALITY INSPECTION SOLUTIONS FOR THE

FILTER MANUFACTURING INDUSTRIES



Adhesive Dispensing & Quality Assurance Systems

MELTERS & FOAMING SYSTEMS

CONSISTENT HOT MELT DOSING

Air filters in automobiles, residential, or industrial environments, as well as **hydraulic and fluid filters**, have become essential components of modern living. Filtration manufacturers must ensure filter **quality and performance** while **producing efficiently and cost-effectively** to fulfill the demands of our growing population.

Whether the process is **manual or automated**, Valco Melton offers a wide selection of **adhesive dispensing solutions** to achieve an excellent bonding on the different media substrates and cap materials used in filter manufacturing.

MELTING SYSTEMS

Valco Melton's range of hot melt units and extruder guarantee an efficient melting process for minimal adhesive degradation and a constant flow output for consistent glue application.



SMARTMELT ADHESIVE MELTERS

- Available tank capacities: 15, 30, 65 and 120 L.
- SmartMelt Series units guarantee an accurate control of the adhesive flow, ensuring application consistency, even at full production speeds and during machine ramp up and down.
- Main machine network communication protocols Profinet and Ethernet.
- Can feature up to 4 gear pumps (up to 15cc).



MEX EXTRUDERS

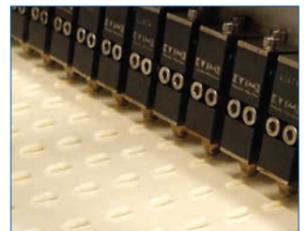
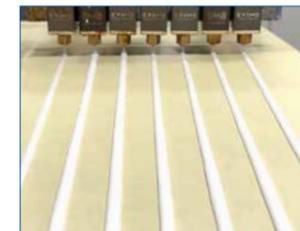
- Achieve the highest melting rates when working with adhesives delivered in granulate format, such as EVA, PO, PA, or polyester, while providing a constant, homogeneous adhesive flow for consistent operations.
- MEX Extruder melt-on-demand technology guarantees an enclosed system, preserving adhesive properties and preventing degradation.

THE FOAMING ADVANTAGE

Valco Melton's SmartFoam Series creates an homogeneous adhesive foam by using an integrated dynamic mixer to combine different types of adhesives with dry air. Adhesive density may be adjusted to the specific value required by each application, in a range of 0-50%. SmartFoam Series brings in proven performance with a variety of hot melts, including EVA's, PSA's, PUR, Polyester, and Polyolefins.

BENEFITS OF ADHESIVE FOAMING

- **Production savings.** Reduce adhesive density, and therefore adhesive usage, by up to 50%.
- **Achieve stronger bonds.** Foaming improves adhesive properties such as open time, compression, wetting on impermeable substrates, and penetration on porous materials. Additionally, it increases the contact surface.
- **Optimal for filling and gasketing.** As adhesive expands after its application, it is an optimal solution for filling gaps and sealing gaskets with less adhesive usage, resulting in lighter products.



SMARTFOAM MELTING & FOAMING UNIT

- Simplify your process by melting and foaming in one single unit with our SmartFoam Series.
- Featuring 2 adhesive outputs, SmartFoam units adapt to multiple application processes. They can be configured to feed 2 foam applications, 2 standard hot melt applications, or a combination of 1 foam and 1 standard application.



SMARTFOAM STATION INDEPENDENT FOAMING STATION

- This independent foaming station can be connected to any industry standard melting system, whether it's new or previously existing.
- Each SmartFoam Station can be configured to work on up to 4 independent adhesive streams, allowing for multiple layouts and processes.

PLEATED FILTERS

PLEATED MEDIA GLUING

Pleating the filter media increases the surface area and density available for trapping pollutant particles without affecting the air flow. Pleated filters are commonly used in residential or industrial air filtering processes, as well as in the automotive industry.

ADHESIVE APPLICATORS

CONSISTENT ADHESIVE DISPENSING

Valco Melton's hot melt applicators provide an **optimal adhesive distribution** throughout the complete application width, and are designed to work with the most common adhesives used in the filter manufacturing industry, including EVA, PUR, and polyamide.

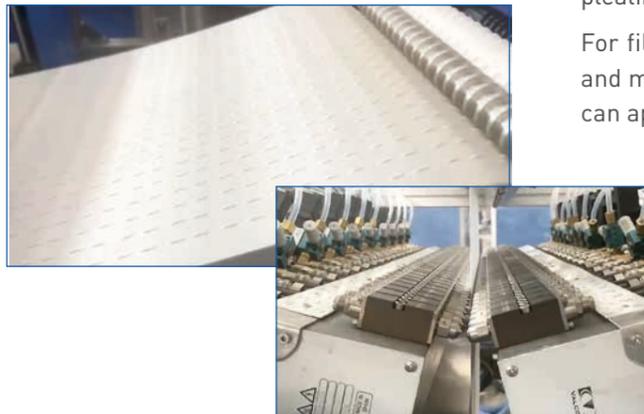
- **MS Series** is our **standard** applicator, offering precise and flexible control for a variety of applications.
- **ME Series** applicators incorporate double-effect technology for a cleaner cut-off.
- **MKF Series** insulated hot melt applicators feature a compact design and double-effect technology, which makes them ideally suited for the **higher-speed, most demanding** filter pleating lines.



FILTER PLEATING

Our range of MS or MKF modular hot melt applicators are designed for a consistent performance on **continuous or intermittent** filter pleating processes.

For filter manufacturers looking to reduce their hot melt usage and maximize their production efficiency, these applicator series can apply **foamed hot melt beads or dots**.



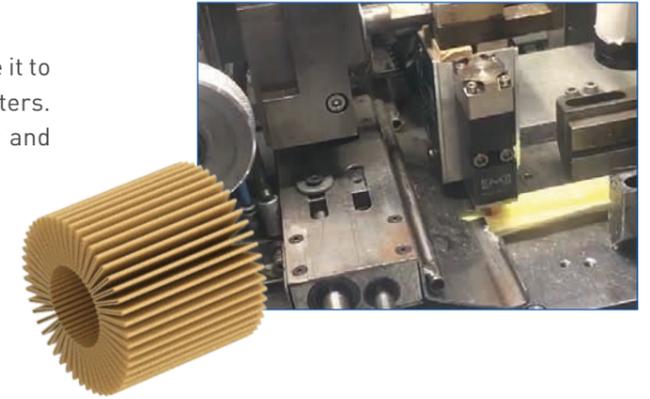
PLEATED FILTERS

SEAM GLUING & STABILIZATION

FIRST TO LAST PLEAT SEAM GLUING

A hot melt bead must be applied along the first pleat to secure it to the last pleat in order to create cylinder or circular canister filters. These are frequently used in the manufacturing of hydraulic and other fluid filters.

Single-module ME applicators are an excellent choice for first-to-last pleat seam gluing, providing a **precise application and cut-off**, that glues and secures the pleated media cylinder.

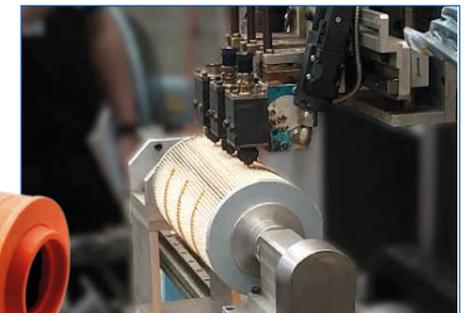
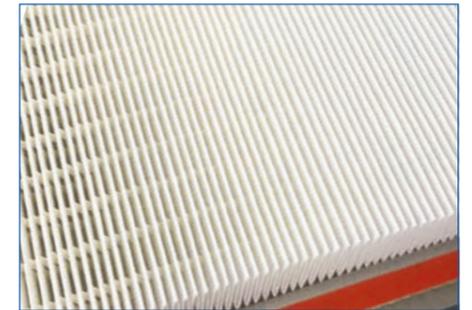


PLEAT STABILIZATION

The pleats must be secured after the pleating process. To keep the folded shape in place, one or more adhesive beads are applied to the top of the pleated media.

This stabilization process is important for both panel and cylinder pleated media, where the spiral wrap that secures the cylinder shape is often applied over the metal casing.

This process may be done **manually, semi-automatically, or fully automatically**. Valco Melton's selection of hot melt applicators provides the ideal dispensing device for any kind of procedure.

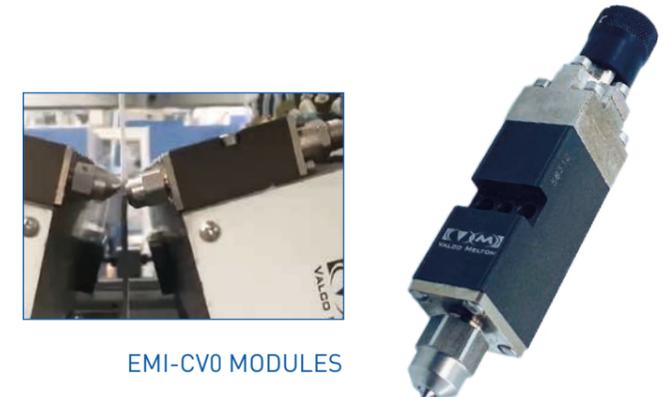


PRECISE CUT-OFF

FOR INTERMITTENT APPLICATIONS

In applications where an **excellent cut-off** is required, our hot melt applicators may incorporate our **EMI-CV0 modules**. These zero-cavity modules are designed to **prevent adhesive tailing and char buildup** on the tip, which could cause nozzle clogging.

Each module has a manual **micro-adjustment** mechanism that controls the adhesive flow.



EMI-CV0 MODULES

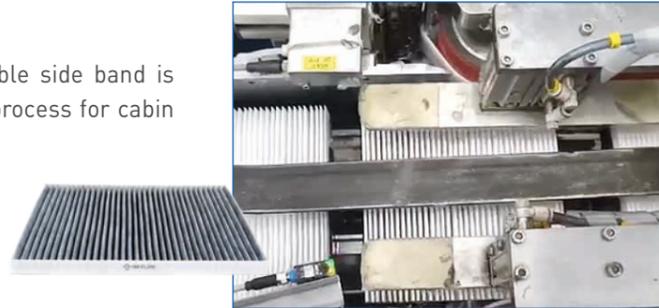
FILTER ASSEMBLY

EDGE BONDING, FRAMES & CAPS

Following pleating and stabilization, an edge band is bonded around the pleated filter material. Alternatively, the filter is bonded and sealed to a frame or housing. This will give structural support, allowing the filter to maintain its shape and fit properly into the system in which it will be employed, such as HVAC units or air intake systems in vehicles.

EDGE BONDING

During the edge bonding or edge sealing process, a flexible side band is adhered to the sides of the filter panel. This is a common process for cabin filter manufacturing.



CLEARCUT SERIES

ENCLOSED GLUING SYSTEMS

ClearCut enclosed hot melt application systems are ideally suited for working with reactive hot melts, as it prevents degradation associated with roller systems while providing better glue usage control. Additionally, it allows users to switch from standard to foam edge band coatings.

- Work on high-speed, intermittent edge banding processes.
- Achieve a precise and clean cut-off thanks to their snuff-back module technology.
- Install anywhere. Available in 3 different applicator formats: *Standard*, *Slim*, and *Zero*, to fit into the most constricted spaces, whether it's a new or existing line.
- Work with different edge band widths. Manual or motorized application width adjustment.



Incorporate our **Flow Metering Systems** to precisely track adhesive usage. This enables filter manufacturers to monitor application consistency throughout the full production batch, ensuring no deviations from the set goals, thereby controlling and improving production efficiency.

FRAME & END CAP BONDING

Frame and end cap bonding play an important role in determining the overall filter performance.

Valco Melton's solutions guarantee a consistent application, for a leakage-free sealing between the pleated filter media and its housing. Switch from standard to foam hot melt application for your bonding and gasketing to get lighter end-products and a more efficient and cost-effective process.



POLYAMIDE APPLICATIONS

HIGH-RESISTANCE BONDING

Certain filters require a particularly strong, flexible, and heat-resistant bonding. It is in these cases when polyamide adhesives are best suited, ensuring the durability, efficiency, and safety of the filters. Valco Melton offers a selection of melters that can work with polyamide, from high-flow melting tanks and extruders to melt-on-demand units.

BENEFITS OF POLYAMIDE HOT MELT ADHESIVES

- **Heat Resistance:** Polyamides can withstand high temperatures, making them suitable for filters exposed to heat, such as automotive filters.
- **Chemical Resistance:** These adhesives resist degradation when exposed to fuels, oils, and other chemicals.
- **Flexibility:** Polyamide adhesives remain flexible after curing, allowing them to endure the mechanical stresses that filters may experience.
- **Strong Bonding:** They provide strong adhesion to various substrates like metals, plastics, and filter media.



POLYAMIDE HANDLING

MELT-ON-DEMAND SOLUTIONS

Prolonged exposure to heat, moisture, and oxygen have an impact on the performance of polyamide adhesives. Consequently, it's critical to operate in an enclosed system and to minimize the amount of time the melted adhesive remains in the tank.



At Valco Melton, we support filter manufacturers working with polyamide adhesives with our range of melt-on-demand solutions.

- For manufacturing processes requiring high melting and dosing capacities, our **MEX** range of extruders provides a constant, homogeneous flow.
- In lower glue consumption processes, **e-Kube Zero** units combine melt-on-demand technology with an enclosed adhesive feeding system, minimizing exposure to degrading factors.
- All our hot melt applicators achieve excellent performance when working with polyamide adhesives.

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