Solstice

INTRODUCING PRAZIFLUX®

Solstice Advanced Materials PRAZIFLUX®, designed for aluminum CAB brazing, can increase your product scope, simplify your manufacturing process, and help you beat the competition.

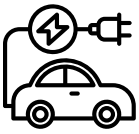
INTRODUCING PRAZIFLUX®

Conventional aluminum brazing with spraying, rolling and dipping, followed by washing, limits the size and complexity of heat exchanger products that can be produced. PRAZIFLUX® from Solstice Advanced Materials allows for an expanded manufacturing range while improving product integrity, reducing flux consumption, and minimizing flux residue.

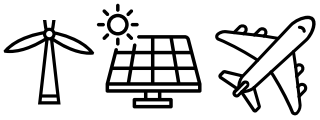
MORE PRODUCTS, MORE OPPORTUNITIES

There is a growing market for manufacturing heat exchanges in electronic vehicles (EVs), EV charging stations, solar panels and wind turbines. The aluminum parts required for these industries can be large and specialized with clients demanding low failure rates and long product lifespans.

Aluminum brazing using traditional spraying or rolling methods is corrosive, inefficient, and unable to keep up with the challenges of this thriving market. PRAZIFLUX® unleashes new possibilities and enhances your ability to meet customers' component specifications.



EVs and Charging Stations



Solar and Wind Products

ACHIEVE COMPLEX DESIGNS WITH PRECISE FLUXING

PRAZIFLUX® is designed for precise jet valve assisted flux printing. You can apply flux exactly where it is needed, using only as much as required. Contactless application allows fluxing of complex formed components such as structured heat exchangers or tubes.

With PRAZIFLUX® creating new possibilities, you can position your business as a development partner with your customer and braze using complex or lighter weight cooling plate design parameters.

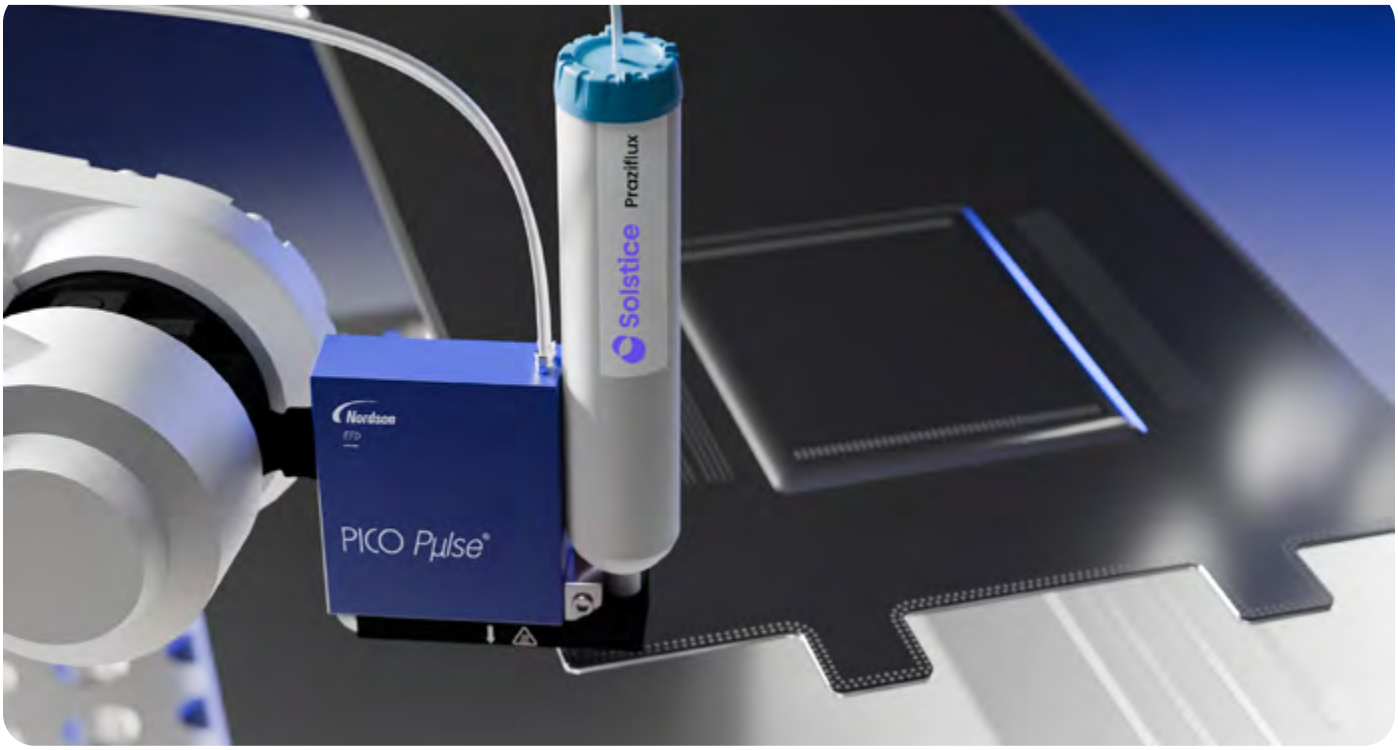
IDEAL FOR CHALLENGING PARTS

EV Battery Plates

Jet Turbine Components

Advanced Drive Assist System (ADAS)

Power Electronics



REDUCE FLUX RESIDUE

PRAZIFLUX® transforms aluminum brazing with high speed and pinpoint flux application, minimizing the amount of flux used, increasing manufacturing speed and lowering cost and product weight. Reduce messy residue and the need to clean it.

ELIMINATE POST-BRAZING WASH

Due to reduced flux and residue, using PRAZIFLUX® with jet printing technology eliminates the post-brazing wash which reduces water usage and the burden of disposing contaminated wastewater, which may contain corrosive solvents such as lithium and zinc. Removing the post-brazing wash streamlines the brazing process by lowering manufacturing time, materials usage, labor costs and waste.

IMPROVE MANUFACTURING EFFICIENCY

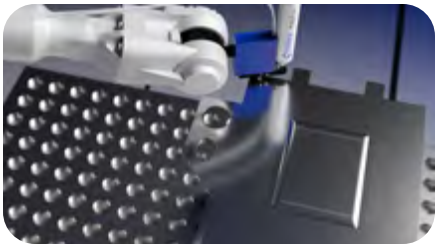
The quick and precise application of PRAZIFLUX® removes many traditional aluminum brazing steps and opens up new opportunities for productivity. By eliminating rolling, using flux with a lower melting point and eliminating the post-brazing wash segment, much of the process can be automated. This enables the ability to scale up to a more efficient manufacturing line, with robotic arms for fluxing and moving parts, while also reducing demand for natural resources and energy consumption.

Extended Product Lifecycle
Less corrosion, less abrasion and better bonding

Energy Savings
Low meltinig point requires less energy to heat

Improved Productivity
Decrease labor costs and increase manufacturing speed

Better for the Environment
No post-brazing wash waste and fewer emissions



Multi-directional fluxing
Apply flux from the top, bottom, and sides

Variable sizes, weights, and patterns
Pinpoint jetting increases strength while decreasing volume

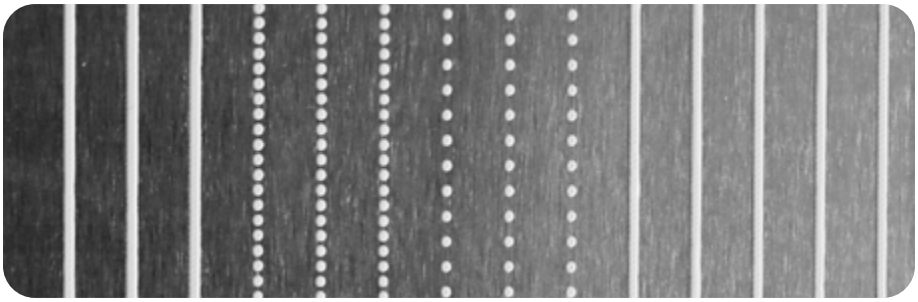
PRAZIFLUX® IN ACTION

Fluid jetting system on a 3-axis gantry robot. Photo courtesy of Nordson EFD

Benchtop Robot with Jet Valve

Similar to a commercial inkjet printer, the PICO Jetting System uses a flux cartridge and a contactless nozzle to quickly and precisely apply flux to multiple parts on two axes. Features include:

- Partial fluxing by precision dispensing on a flat or uneven surface.
- Apply flux to multiple parts simultaneously.
- Cost-effective solution to implement.



Variable dot size and patterns.

Partial fluxing by precision printing.

Robotic Arm(s) with Jet Valve

Adding the **PICO Jet Valve** to a robotic arm or multiple arms allows for even more freedom and complexity. Flux can be precisely applied in all directions and part sizes can be increased. Features include:

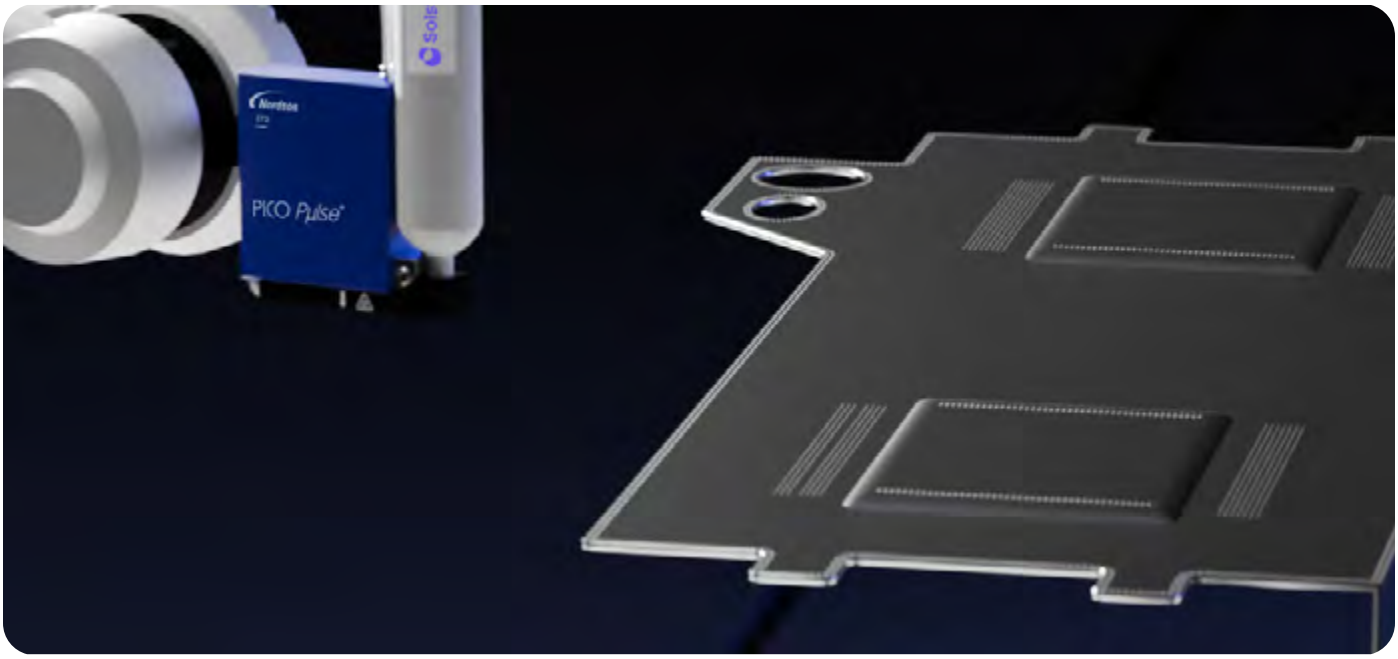
- Leverage multiple robotic arms for simultaneous multi-directional jet applied fluxing.
- Employ robotic arms configured with a PICO Jet Valve and a gripper to rapidly switch between fluxing and assembling heat exchanger components.
- Apply flux to large aluminum parts via the reach of your robotic arm.
- Apply flux to three-dimensional parts separately or simultaneously.
- Add robotic arms to your manufacturing line.

Robotic arm with jet valve

WHAT YOU CAN ACHIEVE

As an innovative approach to aluminum brazing, PRAZIFLUX® removes the constraints of traditional methods and creates new benefits, including:

- Micron-level variable dot size and flux weight (~ 0.015g/m to ~ 1 g/m).
- Precise variable pattern and line density.
- Lower flux usage and increased resistance to corrosion.
- Reduced residue, no overspray and no post-brazing wash.
- Faster manufacturing than traditional brazing methods.



TECHNICAL DETAILS

PRAZIFLUX® is thixotropic liquid engineered for partial fluxing using contactless jet dispensers for the brazing of aluminum alloys in an industrial CAB oven. It is a unique multi-constituent phase material providing an exceptionally low melting temperature (552 ± 3.0°C), saving on brazing time and reducing energy use.

Common aluminum brazing requires high temperatures for the brazing and abundant water for the post-brazing wash. Applying PRAZIFLUX® with jet dispensers removes the post-brazing wash, which significantly reduces water consumption.

Our advanced flux is composed of particles several times smaller than the diameter of a human hair, which prevents hard sediments from forming in process equipment or from blocking jet nozzles. It is applied only on the joint areas required, reducing flux residue by up to 95%.

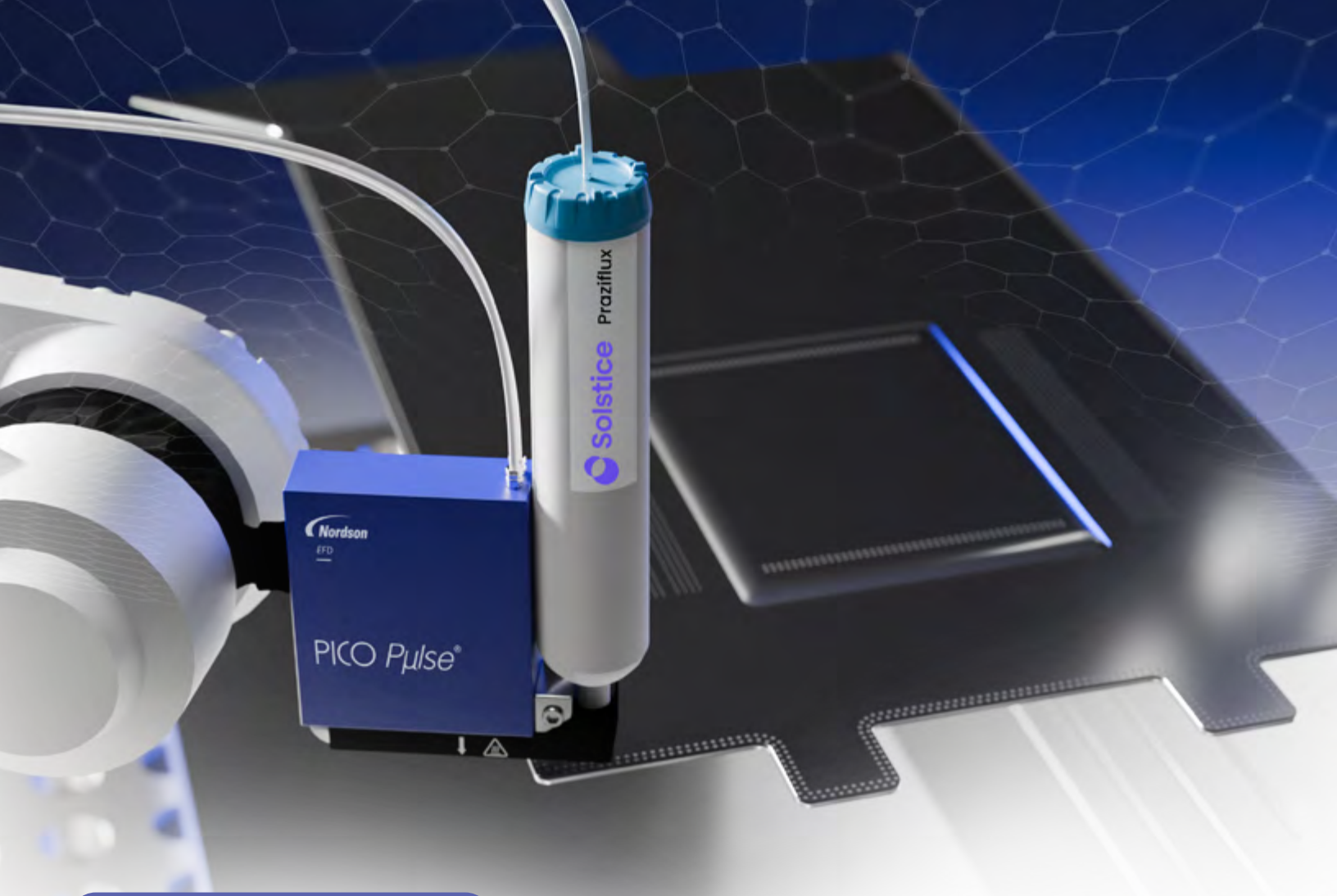
APPLICATION

- Brazing of aluminum alloys in a CAB oven.
- Partial fluxing using contactless jet dispensers
- PRAZIFLUX® dispense can be varied to generate continuous lines or flexible dot matrix geometries.
- Apply 0.01 - 0.05g per running meter with a 10% tolerance.
- Recommended settings for 0.035g/m flux load: Use 300µm nozzle, 1 bar media pressure and 250 Hz.
- Dry coating weights are very easy to change via the media pressure (1:100 range), the jetting frequency (up to 400 Hz) or the nozzle diameter.

CUSTOMIZABLE BLENDS

To maximize brazing efficiency, you can work with our chemists to create custom formulations to fit your manufacturing workflows, like fast or slow drying flux and brazing high-strength aluminum alloys that may contain barrier layers.

Apply flux with pinpoint accuracy and in complex geometries to fulfill design requirements.



Discover our website where you can contact a representative or pose any technical questions you have.

For More Information Visit
https://go.solstice.com/praziflux

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