JET APPLIED BRAZING FLUX

Honeywell's new Jet Applied Brazing Flux designed for aluminum CAB brazing can increase your product scope, simplify the manufacturing process and help you beat the competition.

HEAT EXCHANGERS

- PVT HYBRID PANELS
- POWER ELECTRONICS
- ADVANCED DRIVER ASSIST SYSTEM
- TRANSMISSION SYSTEMS
- EV BATTERY PLATES

Honeywell

JET APPLIED BRAZING FLUX

Conventional aluminum brazing with spraying, rolling and dipping followed by washing, limits the size and complexity of heat exchanger products that can be produced. Honeywell Jet Applied Brazing Flux allows for an expanded manufacturing range while improving product integrity, reducing flux consumption, and significantly reducing flux residue.

MORE PRODUCTS, MORE OPPORTUNITIES

There is a growing market in manufacturing heat exchangers for electric 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 lifespan.

Aluminum brazing using traditional spraying or rolling methods is corrosive and inefficient, unable to keep up with the challenges in this thriving market. Honeywell Jet Applied Brazing Flux unleashes new possibilities and enhances your ability to meet component specifications from your customer.

EVs and Charging Stations

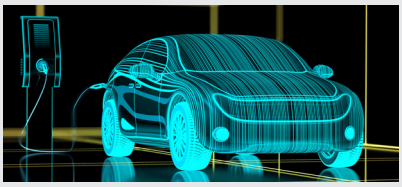
Solar and Wind Products

ACHIEVE COMPLEX DESIGNS WITH PRECISE FLUXING

Honeywell Jet Applied Brazing Flux 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 like structured cold plates or tubes.

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

IDEAL FOR CHALLENGING PARTS:

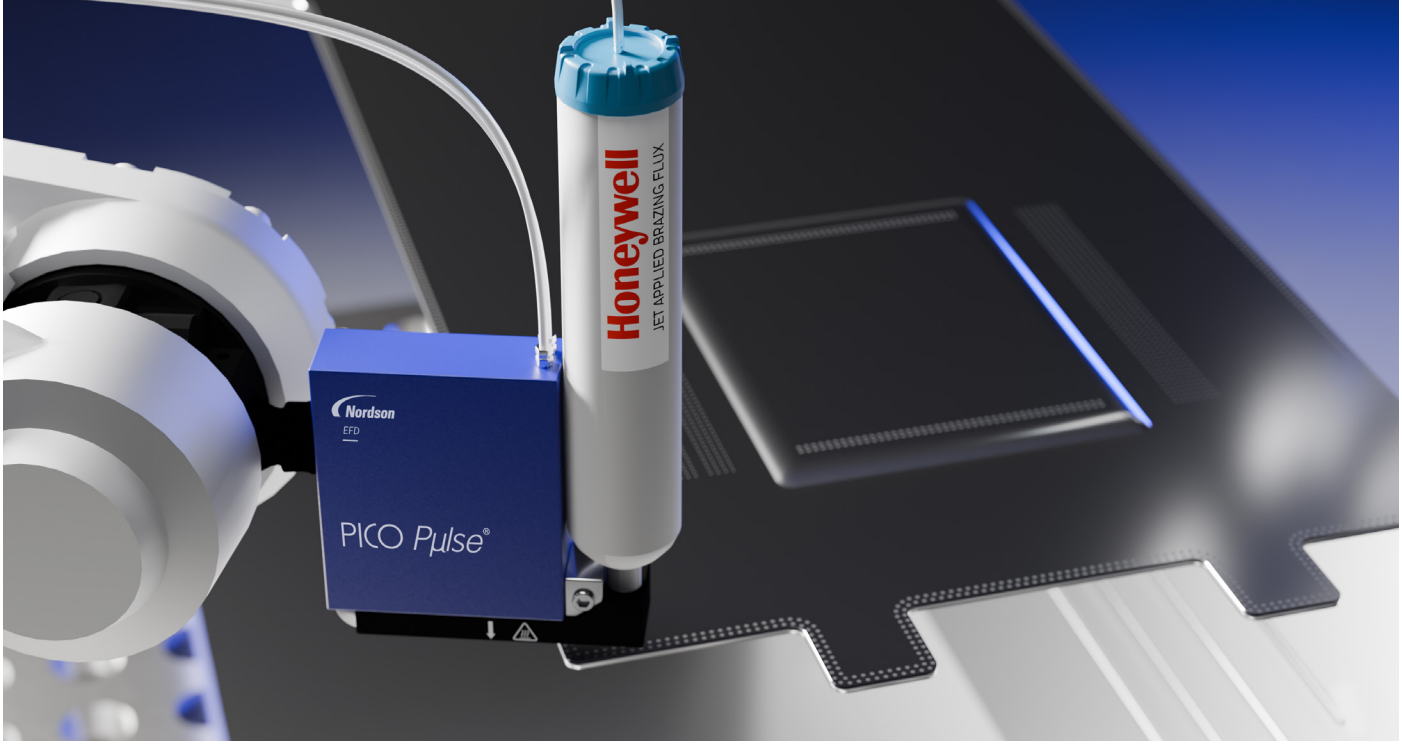


EV Battery Plates

PVT Hybrid Panels

Advanced Drive Assist System (ADAS)

Power Electronics



REDUCE FLUX RESIDUE

Honeywell Jet Applied Brazing Flux transforms aluminum brazing with high speed and pinpoint flux application, minimizing the amount of flux used, increasing manufacturing speed and reducing both cost and product weight. Reduce messy residue and the need to clean it.

ELIMINATE POST-BRAZING WASH

Due to reduced flux and residue, using Honeywell Jet Applied Brazing Flux with jet printing technology eliminates the post-brazing wash which reduces water usage and the burden of contaminated wastewater disposal, which may contain corrosive solvents such as lithium and zinc. Removing the post-brazing wash improves the entire brazing process by lowering manufacturing time, materials usage, labor costs, and waste.

IMPROVE MANUFACTURING EFFICIENCY

The quick and precise application of Honeywell Jet Applied Brazing Flux removes many of the old steps of traditional aluminum brazing and opens new opportunities in productivity. By eliminating the rolling, using flux with a lower melting point, and eliminating the post-brazing wash segment, much of the process can now 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 melting point requires less energy to heat

Improved Productivity

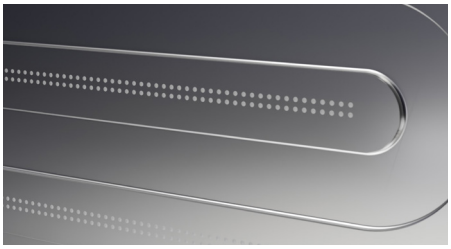
Decrease labor costs and increase manufacturing speed

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

JET APPLIED BRAZING FLUX TECHNOLOGY IN ACTION

Honeywell Jet Applied Brazing Flux can be applied using two different methods:

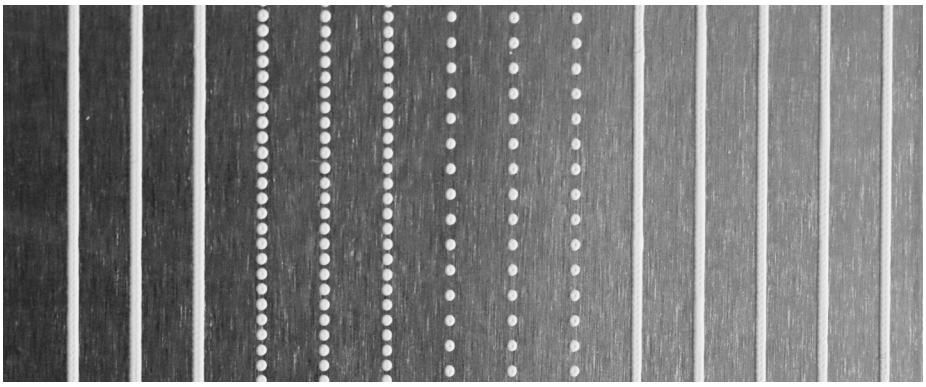
Fluid jetting system on a 3-axis gantry robot. Photo courtesy of Nordson EFD

Trusted Jet Applied Flux Partner.

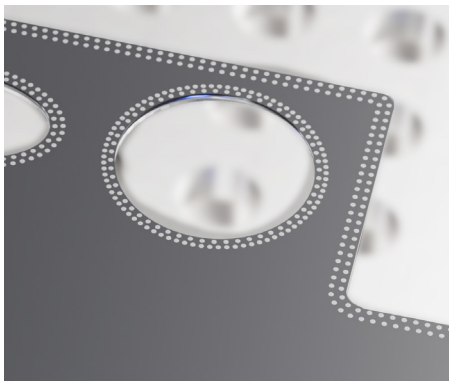
Benchtop Robot with Jet Valve

Similar to a commercial inkjet printer, **PICO Jetting System** utilizes 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 cooling plate components.
- Apply flux to large aluminum parts, achievable by the reach of your robotic arm.
- Apply flux to three-dimensional parts separately or simultaneously.
- Add robotic arms directly into your manufacturing line space.

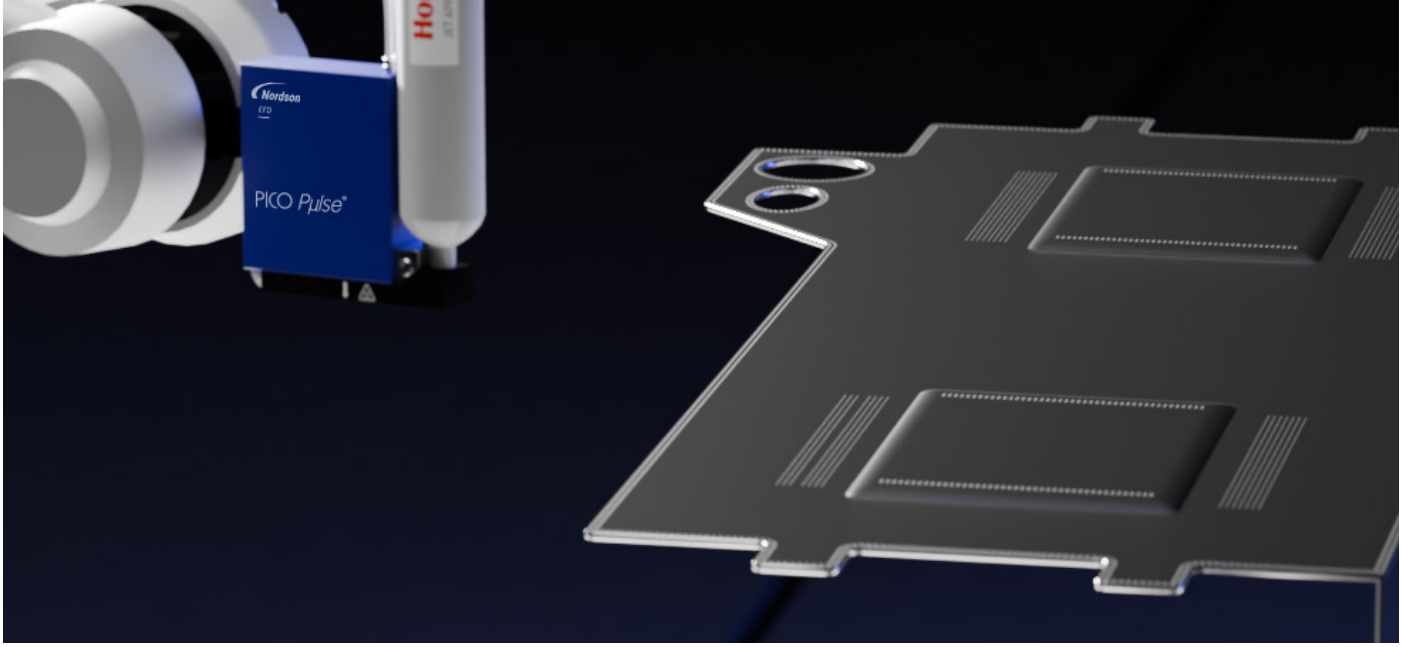
KRIEG
LACKIEREN + BESCHICHTEN

Trusted Jet Applied Flux Partner.

WHAT YOU CAN ACHIEVE

As an innovative approach to aluminum brazing, Honeywell Jet Applied Brazing Flux removes the past constraints of traditional methods and creates new benefits:

- 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 corrosion resistance.
- Reduced residue, no overspray and no post-brazing wash.
- Faster manufacturing than traditional brazing methods.



JET APPLIED BRAZING FLUX 40 MF 6.1

The Honeywell Jet Applied Brazing Flux is a 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 usage.

Common aluminum brazing requires high temperatures for the brazing and abundant water for the post-brazing wash. Applying Honeywell Jet Applied Brazing Flux with jet dispensers removes the post-brazing wash, which eliminates most water consumption.

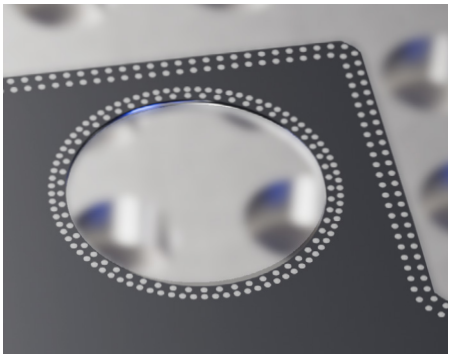
Our advanced flux is composed of particles several times smaller than the diameter of a human hair, which prevents hard sediments from forming in process equipment and from blocking jet nozzles. It is applied only on the joint areas required, reducing flux residue by up to 95%.

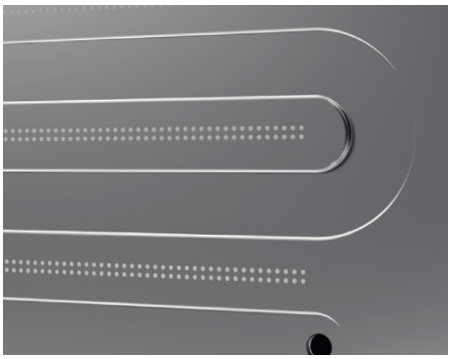
Application

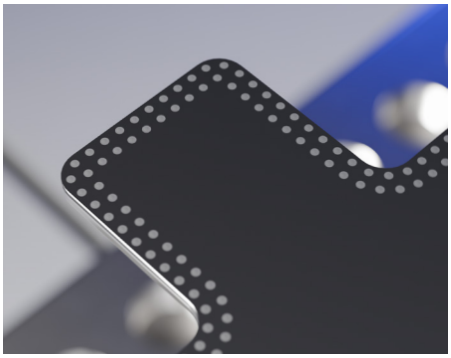
- Brazing of aluminum alloys in a CAB oven.
- Partial fluxing using contactless jet dispensers.
- Jet Applied Brazing Flux 40MF 6.1 dispense can be varied to generate continuous lines or flexible dot matrix geometries.
- Apply of 0.01 - 0.05g per running meter with a 10% tolerance.
- Recommended settings for 0.035g/m flux load: Use 300˚m 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

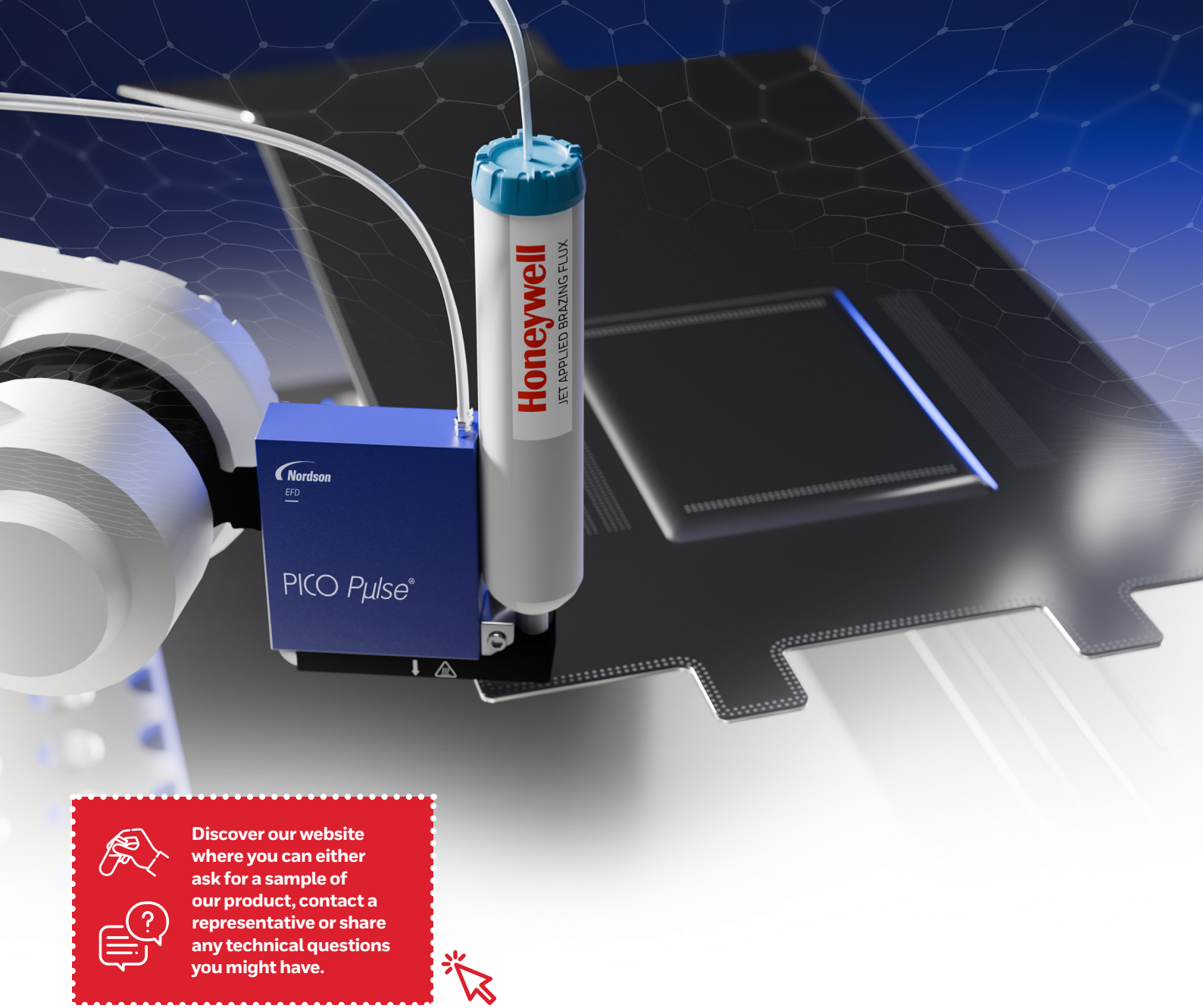
To maximize brazing efficiency, you can work with our chemists to create custom formulations to fit your manufacturing workflows, like fast or slow drying flux and brazing high-strength aluminum alloys that may contain barrier layers.







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



Discover our website where you can either ask for a sample of our product, contact a representative or share any technical questions you might have.

For more information visit
www.hwll.co/JABF

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THE FUTURE IS WHAT WE MAKE IT

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