# SUCCESS



#### WAVEFORM CONTROL TECHNOLOGY"

# Surface Tension Transfer<sup>®</sup> (STT<sup>®</sup>)

#### STT on Sheetmetal

New welding equipment puts stainless steel vehicle production in the fast lane.

#### - PROBLEM -

Low volume sales due to an expensive price tag caused the company to rethink its vehicle production process. Changing from carbon steel to stainless steel caused poor heat conduction, warping and distortion.

#### - SOLUTION -

Lincoln's Surface Tension Transfer process for good low heat input control, reduced spatter and less distortion.

#### - RESULTS -

Since installing Lincoln's STT, welding cleanup time has been reduced by more than 75 percent and travel speeds are up for higher productivity on the production line.



#### Mauck Special Vehicles/Advanced Bus Industries, LLC

hen four transit industry executives bought the assets of Mauck Special Vehicles (MSV), they inherited a company that offered a unique product to the market — advanced design, custom vehicles. These bus-type vehicles, outfitted with

protective painting or undercoating, leading to longer life and less maintenance – both attractive features in the mass transit industry where vehicles are subjected to heavy-duty service on a daily basis.

leather interior. televisions, VCRs and even Global Positioning Systems, only had one problem: low volume. Though celebrities such as Alan Jackson and George Foreman were among those who purchased the custom aftermarket vehicle, its expensive price tag limited the number of orders.

To take the company to a new level, the executives expanded the product line with a newly designed 30-foot model to appeal to the mass transit industry. Attributes of the previous vehicle such as aesthetic appeal, smooth ride and handling characteristics were maintained in the new vehicle. The name of the company changed to Advanced Bus Industries, L.L.C. (ABI). In changing over its Columbus, Ohio shop to accommodate the new model, ABI revamped its entire manufacturing process and turned to a new material for vehicle production — stainless steel.

With a frame composed of 100 percent stainless steel and a composite body, these vehicles are now more corrosion resistant than the previous carbon steel vehicles. Stainless steel doesn't require On the production line, stainless steel presents a challenge. It's a poor conductor of heat and therefore retains heat in the weld zone, which leads to warping and distortion.

### Since operators have more control over the arc throughout the entire welding process, travel speeds are up.

To combat this stainless steel welding problem, ABI turned to a new welding process from The Lincoln Electric Company called Surface Tension Transfer (STT). This process provides extremely accurate control of the heat input, creating high quality welds with very little spatter or distortion. In fact, with the STT machine, cleanup time at ABI has been dramatically reduced by more

# Surface Tension Transfer (STT)

STT on Sheetmetal

Mauck/ABI



than 75 percent. Additionally, since operators have more control over the arc throughout the entire welding process, travel speeds are up. Both of these factors contributed to increased vehicle production.

### Featured Lincoln Product



"To support the demand for our vehicle in the mass transit and commercial market, we plan to manufacture up to 10 vehicles per week," says Craig Shilling, Vice President, Operations at Advanced Bus Industries, L.L.C. "Rising production rates and added design enhancements caused a re-engineering of our entire manufacturing process. As a new company, ABI was fortunate to start with a clean slate. We were able to investigate and obtain the latest technology. Implementing these innovative changes in product design and assembly methodology will enable ABI to be a leader in the manufacture of high quality vehicles for the transit industry."



#### Invertec<sup>®</sup> STT II

The STT II combines high frequency inverter technology with advanced Waveform Control Technology in place of traditional short-arc GMAW welding. The STT II's precise control of the electrode current during the entire welding cycle significantly reduces smoke, spatter and grinding time. In addition, the unit offers independent control of wire feed speed and current.

#### WHAT IS NEXTWELD?

The challenges facing industrial fabricators today are increasingly difficult. Rising labor, material, and energy costs, intense domestic and global competition, a

dwindling pool of skilled workers, more stringent and specific quality demands.

Through our commitment to extensive research and investments in product development, Lincoln Electric has established



an industry benchmark for applying technology to improve the quality, lower the cost and enhance the performance of arc welding processes. Advancements in power electronics, digital communications and Waveform Control Technology<sup>™</sup> are the foundation for many of the improvements.

NEXTWELD brings you a series of Process, Technology, Application and Success Story documents like this one. NEXTWELD explains how technologies, products, processes and applications are linked together to answer the important questions that all businesses face:

- How can we work faster, work smarter, work more efficiently?
- How can we get equipment and people to perform in ways they've never had to before?
- How do we stay competitive?
- How do we maintain profitability?

NEXTWELD is the future of welding but its benefits are available to you today. Ask your Lincoln Electric representative how to improve the flexibility, efficiency and quality of your welding operations to reduce your cost of fabrication.



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