

SUCCESS

LINCOLN
ELECTRIC
THE WELDING EXPERTSSM

WAVEFORM CONTROL TECHNOLOGY™

Pulse-On-Pulse™

Aluminum

Dream Coach

Dream Coach is a Mississippi-based manufacturer of high-end, custom fabricated, all aluminum horse trailers.

- CHALLENGE -

- Wire tangling, high spatter and low travel speeds were hampering welding productivity.

- SOLUTION -

- Lincoln Electric Power MIG® 300 with Pulse-on-Pulse™ welding process.
- Python® push-pull welding guns.
- Lincoln's SuperGlaze® aluminum welding wire.

- RESULTS -

- Dream Coach was able to slash approximately 4,500 hours of welding fabrication time per year, improve weld quality, and maintain excellent weld bead appearance.



In automobiles, luxury is defined by key players such as Mercedes®, BMW®, Cadillac® and Lexus®. But when it comes to horse trailers, luxury is a custom-fabricated trailer by Dream Coach Trailer Co., of Purvis, Miss. These all-aluminum trailers, selling for up to \$150,000, provide a home away from home for equestrians as well as a well-engineered vehicle to transport prized horses.

Since 60 percent of all welds on a Dream Coach trailer are visible to the end user, maintaining high quality weld integrity while making every effort to deliver an attractive weld bead appearance is extremely important. Minimizing feeding issues with aluminum welding wire, typically more troublesome than working with stiffer steel wire, is also an issue. For these reasons, Dream Coach Trailer Company, formerly known as Diamond G Trailers, has made the switch from a competitive brand of welding equipment to the Power MIG® 300 from The Lincoln Electric Company.

According to Scott Graham, Vice President for Dream Coach Trailer Co., problems with birdnesting (or wire tangling), high levels of spatter and low travel speeds had been hampering the aluminum welding efforts with the company's previous MIG equipment. By switching to the Power MIG 300 with its complementing Python® push-pull gun, Dream Coach Trailer Co. has been able to take full advantage of Lincoln's Pulse-on-Pulse MIG process, a Lincoln Nextweld innovation. Using push-pull feeding, along with Pulse-on-Pulse waveform control, helps Dream Coach eliminate many feeding concerns and improve the overall quality of the welds.

"Pulse-on-Pulse welding reduces heat input for cleaner welds and less fumes," says Graham. "Not only does the process clean as it welds, it produces a decreased amount of spatter and enables us to weld thinner materials without burnthrough."



The future of welding is here.®

NX-4.190 6/05

Pulse-On-Pulse™

2/4

Aluminum

Dream Coach

In addition, because the Power MIG 300 is able to produce such a high quality weld, Dream Coach Trailer Co. has been able to convert some of its former TIG applications to MIG without compromising appearance. Graham estimates that the increased travel speeds MIG provides has allowed the company to cut 10 hours out of the fabricating time for each luxury trailer. And with a total of 450 trailers produced at the plant each year, it adds up to quite a substantial reduction in the cost of labor.

"Our overall weld quality using the Power MIG is excellent."



A horse of a different color...

According to Ron Hubbard, Marketing Manager of Dream Coach Trailer Co., the company custom fabricates 90 percent of its trailers to customer specifications. Sold through 26 distributors in the U.S., Canada and Puerto Rico, Dream Coach Trailer Co. is one of the few manufacturers in this industry that offers an all-aluminum trailer. "Our trailers appeal to a high-end consumer who demands quality," noted Hubbard. "For this reason, high quality welds that are visually appealing are critical."

What sets a Dream Coach trailer apart from others on the market is quality

construction that includes a three-point, V-shaped aerodynamic design, providing for greater wind deflection and more useable interior space; a stronger frame; and corrugated sidewalls which are the thickest and heaviest in the industry. Each trailer must meet the standards set forth by the Department of Transportation and the National Association of Trailer Manufacturers.

No horsing around when it comes to production...

Dream Coach Trailer Co. prides itself on being a full-service manufacturing and fabricating company, not just an assembler of parts. Most components of the trailer

(besides such items as glass products, vents, mats, tires and lights) are manufactured on site by the company's 65 employees. To produce these luxury trailers, more than 50 different extrusions, which range from 30- to 40-feet in length, are cut in-plant and welded into place. "The process is much like fitting together pieces of a puzzle," said Graham. "The extruded shapes are cut, bent and placed on the trailer."

Employees are divided into teams working in service bays. Each bay is responsible for one particular area of trailer manufacturing. These highly-skilled workers are cross-functional, familiar with all aspects of the fabricating and assembly process and able to fill in for each other on an as-needed basis.

The search for a blue-ribbon welder...

With more than 70 percent of the trailer manufacturing process dependent on manual welding, Graham needed a reliable machine that could create consistently high quality welds. This wasn't an easy task due to the challenging



nature of the welding at Dream Coach Trailer Company—thin aluminum, all-position work and tight space requirements. In addition, imperfections in the polished aluminum composing these trailers cannot be easily masked. Attaining attractive weld bead appearance is critical for final product fit and finish.

Dream Coach Trailer's previous welding machines were creating numerous problems—troublesome feeding, greater amounts of spatter and 'smut', a sooty by-product of aluminum welding.

Pulse-On-Pulse™

3/4

Aluminum

Dream Coach



The Power MIG 300 is operated with one-knob synergic control, allowing users to set parameters such as wire feed speed. The unit will automatically adjust itself to the corresponding proper voltage and will constantly monitor the changing characteristic of the arc, making the unit easy to use, even for the novice welder.

"Our overall weld quality using the Power MIG is excellent," reported Graham. "All of our problems with burnthrough, porosity and warpage have been eliminated. We have less re-welds and have the added benefit of less fumes."

It takes the company's 28 welding operators approximately 30 hours to complete all the welding on an average-sized trailer. Welds can range from 1/2-inch long to the full length of the trailer (up to 44-feet long). The aluminum utilized is 6061-T6 alloy in thicknesses from .080" to .250".

"All of our problems with burnthrough, porosity and warpage have been eliminated. We have less re-welds and have added benefit of less fumes."

Currently, 75 percent of the trailer production is completed using the Pulse-on-Pulse MIG process, while TIG is used specifically for the thin, square exterior door frames. "Roof caps and divider gates used to be TIG welded, but Power MIG's high-quality welds are now used without compromising quality or appearance, significantly reducing labor," explained Graham.

By adding to troubleshooting and post-weld clean-up time, these issues directly affected productivity.

When looking for new welding machines, Graham spent time comparison shopping, but was sold when he saw a demonstration of Lincoln's Power MIG 300 with its synergic pulse capabilities for true Pulse-on-Pulse welding.

The Power MIG also feeds aluminum wire long distances, reliably and flawlessly, due to the engineered synchronization of the push drive motor inside the power source/wire feeder with the pull drive motor in the gun. To enhance arc action, the Power MIG features Lincoln's Chopper Technology™ for greater arc stability and better starts. Its Lincoln Nextweld™ Waveform Control Technology™ includes waveform programs specifically designed for aluminum applications.

Dream Coach Trailer Company takes advantage of one of the most advanced gooseneck welding guns on the market, the Python® push-pull gun, featuring an ergonomic handle design, high amperage capability, and the ability to weld in tight spots.



The Triple Crown...welding equipment, wire and service

In addition to the Lincoln welding equipment, Dream Coach Trailer Co.

also utilizes Lincoln's .035" diameter SuperGlaze® 4043 aluminum welding wire for smooth feeding to 25 feet and a more stable arc. Lincoln precisely controls the chemical composition to produce consistent physical properties and minimize impurities and porosity. The wire helps Dream Coach Trailer Co. save on contact tip usage.

Pulse-On-Pulse™

4/4

Aluminum

Dream Coach

Jerry Simmons, the local Lincoln Electric representative, provided in-house training to all welding operators on the use of the Power MIG and the new Pulse-on-Pulse process. According to Graham, Dream Coach Inc. also relies on Simmons' expertise for technical information when it comes to the welding.

Going the distance...

Dream Coach Trailer Co. has seen phenomenal growth over the last few

years. With continued growth projected into the future, the company has added an additional six welding stations utilizing Lincoln's Power MIG welders over the last 12 months.

Hubbard sums it up this way "With the Lincoln units, we are spending less down time in troubleshooting problems which enables us to spend more time building trailers and enhancing our bottom line."

Featured Lincoln Products



Power MIG® 350 MP

Advanced Applications, Advanced Processes, Advanced Control.

When you want the flexibility of more than just a MIG machine, the Power MIG 350MP is the choice for you.

Performance:

Lincoln Chopper Technology™ delivers more welding processes than just MIG or flux-cored. The Power MIG 350MP also welds excellent in stick, TIG, and advanced processes such as Power Mode™ and Pulse-On-Pulse™.

In addition, future waveforms of either special or improved welding processes can be downloaded into the machine making it expandable. This means the machine you buy today won't be obsolete tomorrow.

Also, with the simplicity and sophistication of synergic control, no other power source in this category offers so much!

Great For:

- Manufacturing
- Heavy, Light and Aluminum Fabrication



SuperGlaze™ 4043 Aluminum MIG Wire

SuperGlaze 4043 is a great choice for the welding of heat-treatable base alloys and more specifically the 6XXX series alloys. It has a lower melting point and more fluidity than the 5XXX series filler alloys and is preferred by welders because of its favorable operating characteristics. ER4043 type wires are also less sensitive to weld cracking with the 6XXX series base alloys. SuperGlaze 4043 is suitable for sustained elevated temperature service, i.e. above 150°F (65°C).

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

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.



THE WELDING EXPERTS™

THE LINCOLN ELECTRIC COMPANY

www.lincolnelectric.com

1.216.481.8100