

# SYNERGIES

VOLUME 23

Tomorrow's Materials Solutions...Today.

## MAGNAPLATE CELEBRATES EARTH DAY WITH NEW GARDEN



The Magnaplate team celebrates Earth Day with a new garden

Community is alive and well in Linden, NJ, if the events for Earth Day at General Magnaplate and Magnalube are anything to go by. This year the two industrial companies opened a newly built raised bed garden so all employees will be able to share in the harvest this summer and fall. What is truly unique about this endeavor is that a local New Jersey farm provided the seedlings (and expertise) while an employee donated the compost from her compost garden at home.

For over 40 years, Earth Day has inspired and mobilized individuals and organizations worldwide to demonstrate

their commitment to environmental protection and sustainability.

Candi Aversenti, CEO of General Magnaplate, and Luke Saunders, President of Magnalube, purchased materials for the beds and some soil. The seedlings came from Ralston Farm – a Mendham farm run by Bennett Haynes who is starting off his first season farming independently, and runs a local CSA (Community Supported Agriculture) for residents to buy local, seasonal food directly from a farmer.

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Candi Aversenti (General Magnaplate), Ed Aversenti (General Magnaplate), Bennett Hayes (farmer), and Luke Saunders (Magnalube)

Luke Saunders, President of Magnalube, added, “We are proud to play such an active role in this event and as a small thank you to Bennett we even lubed his tractor with one of our industrial lubricant products!”

Both General Magnaplate’s coatings and Magnalube’s lubricants extend the life of metal parts and reduce friction, which reduces scrap and the reliance on scarce resources, while lowering energy consumption.

Mayor Gerbounka of Linden, NJ, joins in the Earth Day celebration

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“We’ve always celebrated Earth Day and placed a great emphasis on recycling and the environment, but this year was something truly special,” reports Candi Aversenti, CEO of General Magnaplate. “The collaboration of industrial companies, a local farmer and an employee who is donating her own compost, shows that there is a real sense of community and a real passion for caring about the environment.”

“All of our employees were involved and we all enjoyed raking, digging and sowing seeds in the sunshine with some expert direction from Bennett Hayes. And this isn’t just for the benefit of the environment, all of those employees involved in helping out will literally be able to reap the fruits of the labor come harvest time.”



## Magnaplate Extends Global Reach with New Licensee in India

Reinforcing its position as a global provider of engineered coatings, General Magnaplate Corporation has appointed Electrochem as its licensee for the state of Maharashtra in India. Under the terms of the agreement, Electrochem will offer General Magnaplate’s Nedox® family of coatings to its customers, with the potential to add further coatings in the future.

Nedox protects most metals, including aluminum, against wear, friction, corrosion, sticking and galling. It improves parts made of less durable and/or less costly metals by adding physical properties that permit them to outperform and outwear even chrome and stainless steel. A 0.001” coating shows little or no corrosion after 14 months of continuous exposure to atmosphere and salt water, and some of the Nedox coatings are especially resistant to phosphate-free

bleach used in washdown solutions in food processing and packaging operations.

“We will be one of the first operations to offer polymer coatings in India,” commented Shrikant Bhawe, Owner of Electrochem. “India is still a relatively immature marketplace and we look forward to applying Nedox coatings to parts in the packaging, pharmaceutical, medical, and oil and gas industries. FDA compliance is a big plus and the new license will enable us to educate Indian manufacturers about the cutting edge that these types of coatings can provide.”

Edmund Aversenti, President and COO of General Magnaplate, added, “We are proud to extend our global reach to the thriving Indian manufacturing marketplace. We have been very impressed by Electrochem’s operation and look forward to a long and fruitful relationship that will ultimately make Indian OEMs more competitive by delivering superior performing parts.”

# Texas Expands Capacity – Much Larger Parts Can Be Coated

General Magnaplate Texas has extended its Nedox capacity through the investment in new, larger stainless steel and polypropylene tanks which can handle parts up to 20 feet in length.

General Magnaplate's Nedox coating protects most metals - including aluminum - against wear, friction, corrosion, sticking and galling. It improves the performance of parts made of less durable and/or less costly metals by adding physical properties that enable them to outperform and outwear even chrome and stainless steel.



John Larsen, General Manager of Magnaplate's Texas plant commented, "With this new investment we now have the capacity to coat larger parts, such as the 15 foot long rotors that are used in the oil and gas industry for moving materials down-hole. In addition, we also have the ability to handle higher-volume orders with much faster processing times, which will further improve our service to customers."

In addition to the new large tanks, Magnaplate Texas also purchased a new crane with a capacity of up to 8000lbs – one of the largest in North Texas.

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familiar with this type of failure on hardened tool steel, and the recommendation was to coat a sample part with Magnagold®.

Says Chase, "Magnagold is an enhanced Titanium Nitride (TiN) Physical Vapor Deposition (PVD) coating that was developed to provide superior properties when compared to other common industry coatings such as titanium nitride, PVD or vacuum deposition. It resists wear and abrasion up to 20 times better than stainless steel – up to the equivalent of Rc85 - to extend operating life and improve performance of all "heavy-wear" parts



Crimping tool before and after coating with Magnagold.

and tools. This made it the ideal coating solution for Spyraflo's production tooling."

With a thickness 1 to 3 microns and a uniform deposition, a variety of configurations can be coated with Magnagold. Unlike conventional Chemical Vapor Deposition (CVD) coatings, which require temperatures high enough to anneal steel (which can produce distortion), the Magnagold process employs heat as low as 400F. This permits the coating of a wide variety of materials without loss of hardness or distortion.

"The first part coated with Magnagold has crimped over 500,000 assemblies so far and we have not had to service the tool once - we haven't even polished it," reports Spyraflo's Guthrie. "And now we intend to coat all of our crimping tools with Magnagold."

"Just like Spyraflo, it's not just technology that separates General Magnaplate, it's their application expertise too. Their technical applications team had experienced this type of failure before and they knew exactly which coating to apply to prevent further failure."

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#### Prevent Wear and Avoid Static Build Up

General Magnaplate's surface-enhancement coatings have been engineered to provide metal parts and other substrates with corrosion and chemical resistance, super-hardness and dry lubrication. General Magnaplate's coatings offer superior properties compared to common industry coating processes such as nickel plating, electroless nickel, hard anodizing, hardcoat anodizing, Teflon® coatings, thermal spray coatings, bright nickel plating, hard anodizing with nickel acetate, high-temperature spray coatings, titanium and vacuum deposition coatings, thin hard chrome coatings, titanium anodizing coatings, magnesium anodizing, high-temperature dry lubricants and high traction release coatings.

General Magnaplate's coatings impart properties that ensure longer life spans and greater reliability, consequently reducing replacement part expenditure and minimizing downtime needed for cleaning and repair.

As the world leader in surface-enhancement coatings, General Magnaplate solves wear, corrosion and lubrication problems throughout many industries including manufacturing, food processing, oil and gas, medical diagnostics, pharmaceuticals, aerospace, semiconductors and many more. Please see the industries section of our site for more details on the typical applications we process on a daily basis.

The technical team at General Magnaplate works alongside manufacturers to solve wear, corrosion, and lubrication problems with almost any kind of part. We are often considered an extension of our customer's engineering department. Our technical staff can be contacted directly by email if you have a specific application that needs immediate attention. If a suitable

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General Magnaplate's technical team is now available online with valuable information on how to solve your coating applications. Just visit our web site [www.magnaplate.com](http://www.magnaplate.com) and look for the live chat icon.

# Magnaplate New Jersey Announces Nadcap Accreditation

General Magnaplate is proud to announce that its New Jersey facility has achieved Nadcap accreditation.

Nadcap is the leading worldwide cooperative program of major companies designed to manage a cost-effective consensus approach to special processes and products and provide continual improvement within the aerospace and automotive industries. Its mission is to provide international, unbiased, independent manufacturing process and product assessments and certification services for the purpose of adding value, reducing total cost, and facilitating relationships between subscribers and suppliers.

“The Nadcap vision is to “develop a world-class special processor supply-base for the global aerospace industry using a cost-effective industry managed accreditation process”. Without successful teamwork built on mutually trusting relationships, the Nadcap program simply would not have the fuel to make its vision a reality. Here’s to coming together, sharing together, working together, and succeeding together,” said Chetan Date, NMC Past Chairperson.

Fred Mueller, Corporate Quality and Safety Manager of General Magnaplate, reported, “We are proud to have achieved Nadcap accreditation. General Magnaplate has always been a leader in the aerospace industry, partnering with many of the OEMs and suppliers responsible for the United States’ proud history of space exploration. Nadcap’s mission to add value, reduce total cost, and build stronger relationships between vendors and customers matches our own corporate philosophy here at Magnaplate.”



## INTRODUCING LUKE SAUNDERS TO MICHIGAN, OHIO AND INDIANA

Luke Saunders joins General Magnaplate as technical sales representative for Michigan, Ohio and Indiana. A graduate of Washington University, St. Louis, Luke is well versed in industrial automation from his two-year stint with Magnalube, an industrial lubricants producer.

His broad background includes experience in communications with a Texas-based software company, in finance for a large investment and financial planning company in Washington, DC, and in marketing for an international trade company in China. Luke is proficient in Mandarin Chinese and during his studies at Washington University co-founded a company which imported translation devices to Chinese

language students in the USA. In addition, he also bought a small bike rental company while at college, which he significantly expanded from 100 to 150 bikes, while adding a maintenance component to the business too.

“We are very excited to have Luke on board,” reports Candi Aversenti, CEO of General Magnaplate. “We look forward to him taking on this new challenge in our Midwest territory and our customers can expect to benefit from his broad industrial and business experience.”

Luke can be contacted by email: [lsaunders@magnaplate.com](mailto:lsaunders@magnaplate.com) or on his cell: 908-208-5854.

## TECHNICAL FOCUS

# SPYRAFLO TRIPLES LIFE OF CRIMPING TOOL WITH MAGNAGOLD COATING

Final Attempt to Increase Tooling Life by Coating Assembly Tools Proves Fruitful for Bearing Manufacturer



Spyraflo's self-clinching and self-aligning bearings enable design engineers to easily solve the bearing mounting and alignment challenges.

Understanding the consequences of machinery failure is a given for Spyraflo, a bearings manufacturer based out of Atlanta, GA, that develops custom bearing solutions designed to deliver maintenance-free, high-performance products for all industries.

Established over 45 years ago, Spyraflo produces self-clinching and self-aligning bearing solutions designed to enable design engineers to quickly and easily solve the bearing mounting and alignment challenges that are often found with more conventional bearing products. Their self-aligning nature reduces manufacturing and assembly costs, and prevents binding in the shaft – a mode of failure familiar to many engineers.

Spyraflo's own manufacturing facility, however, was not immune to the issues of machine failure – in particular tooling used to crimp a retainer onto the bearings which holds the assembly together. This crimping process is a central part of Spyraflo's self-clinching products, and on average the machine tooling was failing every 200,000 pieces.

Made from hardened tool steel, the machine tooling would show signs of extreme wear and excess build-up of steel and aluminum. Alan Guthrie, Project Engineer at Spyraflo, and his team, had tried a number of coating processes – from aluminum and titanium nitride to hard chrome and electroless nickel – without any luck.

“We had come to the point,” reports Guthrie, “that the best solution was polishing the tool parts when they were first purchased. This would help them last for about 200,000 crimp cycles, and then after refurbishment, we would get another 100,000 or so crimps before another failure. Eventually the part would have to be replaced, which would take up to two weeks so we had to keep expensive spares in our plant to avoid a two-week downtime.”

“We have multiple machines in our facility and this failure was costing us thousands of dollars for every failure.”

“I'll admit that when General Magnaplate approached me with a solution that I had become cynical that coating the parts would be the answer. After all, we had already been through three or four other coating processes with other vendors, without any success.”

Darin Chase of General Magnaplate Texas reports that the Company's technical applications team was

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For more information, or to request literature on any of our “synergistic” surface enhancement coatings, contact:



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