

E-Coat and Powder Coat on One Line

One Line E-Coating and Powder Coating Saves Time and Money

As an OEM you are under constant pressure from your customers to reduce costs without any loss in quality or service. Not an easy thing to do when you've been squeezing every drop of productivity out of your equipment and staff for years. You are constantly pressing your operations staff to find new ways to reduce costs and keep margins at a reasonable level.

Here's an idea that may help. When you have parts that require E-coating and powder coating, one way to reduce costs is to choose a company that offers E-Coating and Powder Coating on the same line. By using a one line supplier for these services you:

- Save the transportation costs of moving the parts to a separate facility
- Save the time it takes to ship parts
- Save re-racking time and additional labor costs when the job is done at the same site
- One company to talk to when you need to change specifications or parts. All the accountability is with one supplier.

Greg Johnson, President of H.E. Orr gives his perspective on Orr's system of e-coating and powder coating on the same line. "We did a careful analysis back in 1998 and 1999 and determined that there was an unmet need in the market for combining both coating processes on the same line. Very few companies across the country are set up this way. We felt that we could save customers time and money by making the investment in this equipment. Since installing it in 2000, our customers have been very happy with the savings and quality we deliver."

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An important benefit of e-coating and powder coating on the same line is cost savings. Running E-coating and powder coating on the same line at H.E. Orr makes it cheap to add e-coat to a part that manufacturers have traditionally only powder coated. They choose to do this to improve the durability of the finish and create an added value for their customers. Many manufacturers were sending parts to two separate companies for coating. It's a rare situation where Orr can't save these companies time and money.

Keeping work-in-process inventories to a minimum is important for every manufacturer. Just-in-time inventory is the norm. H.E. Orr's standard turnaround time is 48 hours for parts getting both e-coat and powder coat. This short lead time is possible because parts are coated in one operation and no re-racking is required.

H.E. Orr is e-coating and/or powder coating over 6 million parts per year for two major Japanese automakers and dozens of other smaller companies. In this environment quality, consistency, delivery schedules and labeling are all of critical importance. "H.E. Orr Company gives us great service and fast turnaround," stated Brian Aldrich, Vice President of Operations for Brindle Products, Inc. "They seem to get us out of jams all the time and this means a

lot to me," Aldrich concluded.

Greg Johnson went on to say, "Everyone

Extensive testing takes place throughout the coating process. in the plant is dedicated to making sure our customers get exactly what they need from every part we coat. I'm really proud of the team we've assembled here. They all really care about the customer and the quality of parts that we ship every day. We have a 53-year tradition of delivering what we promise. Our responsiveness to customers has really carried us through in these tough economic times."

On The Inside

Zinc Phosphate 8-Stage Pre-Treatment for Superior Quality

One key to assuring the high quality output of H. E. Orr's coating process is the care and attention taken to pre-treat every part. Orr utilizes an 8-stage pretreatment process that establishes an outstanding bonding surface prior to coating. To many, this sounds like more steps than needed, but customers of H. E. Orr appreciate the consistency and quality that the pretreatment process generates.

• *Step 1*- An alkaline cleansing solution that removes most contaminants

• *Step 2-* A second cleanse in an alkaline solution to remove any contaminants that were not removed in step one. This insures that parts are free of anything that would impair adhesion.

• *Step 3*- Thorough rinsing to remove any solution from the part

• *Step 4*- Second rinse to prep for zinc phosphate activation

• *Step 5-* Zinc phosphate coating. Orr uses zinc phosphate, rather than cheaper iron phosphate because it is a crystalline

coating that chemically adheres to the substrate. Zinc phosphate is extremely adherent providing a uniform coating with improved coating adhesion properties. It coats better in recessed areas and provides better corrosion resistance. Because of these qualities it is the standard for

the automotive industry and at H.E Orr.

• *Step 6*- Rinse to remove any excess zinc phosphate from the parts

• Step 7- Rinse again

• *Step 8*- Fresh deionized rinse with Halo spray of virgin deionized water as final step.

Art Gregory, H.E Orr's quality control manager states that, "Every step matters in the pre-treatment process. To some it may seem excessive, but after doing this for over 50 years we know what it takes to deliver consistent products to our customers. We have strict quality control steps in place to insure that our equipment is functioning properly and that the levels of chemicals in solution are at the optimum level for the best performance."

Different coaters use different methods to pre-treat parts. Iron phosphate is a cheaper process and it makes equipment easier to maintain. However, Orr's experience demonstrates that the higher quality provided by zinc phosphate pre-treatment process is worth the effort it takes to deliver a superior quality product.







Meeting Salt Spray Test Requirements.

In-House Salt-Spray Testing

The coating business is all about meeting customer specifications and consistently delivering quality parts on time. Part of the process is testing to ensure that every part that comes off the line meets quality standards.

Every product gets extensive testing to make sure that it meets customer requirements. The most common test is the Salt Spray test. In this test, coating samples are collected on 3" x 9" plates. The plates are run through the coating line at the same time as customer parts. This ensures that the test plates are coated in the same manner as the parts.

Once the plates come off the line they are logged in and prepared for testing. This preparation includes cross-hatching. By cross-hatching some of the plates prior to testing, we can determine how the part will perform if it is damaged in the field. We do this by measuring the spread of corrosion around the cross-hatched area.

The plates (with and without cross-hatching) are put in the Salt Spray test chamber where a



concentrated salt fog or mist is generated. This process simulates the conditions a part may be exposed to while in use, albeit at a severely accelerated rate. Since few things corrode like salt, the salt spray test is the industry standard. The ratings are



based on the hours the plate can last in the chamber without any signs of corrosion.

Depending on the metals coated

and the process used, our team of engineers, technicians and quality control experts will work with you to establish a coating system that will meet your requirements for salt spray test hours. We rigorously test parts at regular intervals to ensure that the proper coatings are being applied over the days, weeks or months that your parts are running. It is this commitment to quality and testing that has earned H.E. Orr its solid reputation in the industry.



Services and Contacts

Founded in 1957, The H.E. Orr Company is a world-class organization with a reputation built on superior quality, on-time delivery, competitive pricing and technical expertise. Cellular manufacturing utilizing the best of both past and state-of-the art technology:

- E-Coat Painting
- Powder Coating Top coat
- Wire Forming
- Cold forming
- Wire drawing
- Metallurgical lab
- CAD/CAM

• Hot upset forging

Coordinate Measuring Machine

A diverse product line serving the automotive, agricultural and a variety of other industries.

- Wheel Wrenches
- Automotive Tool-kits
- Accessory Tools
- Tillage Tools
- Hoot Stay Assembly
 - **Key Contacts:**

Donna Garman, CEO Greg Johnson, President Shawn Hull, Plant Engineer









Donna J. Garman, CEO H.E. Orr is owned and led by CEO Donna J. Garman. Donna is planning for the future of H.E. Orr by making constant improvements to the processes and new market niches to fill. "We're committed to providing exceptional customer service along with the highest quality coating," stated Garman. We have an excellent team in place and we are well positioned for growth," she concluded.

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