saint clair systems
TEMPERATURE & VISCOSITY CONTROL

Case Study

Continuous Improvement Project for Clearcoat Yields Results

Summary: Global Tier 1 Automotive supplier establishes improvement objectives and uses material temperature control to exceed expectations.

Issue:

The company, (a Global, Tier 1 Automotive supplier with over 50 manufacturing locations), maintains a very aggressive continuous improvement program. While they were not addressing a specific issue, they were looking for new technology or innovations that could improve their productivity. Among the goals disclosed to us were as follows:

1. Reduction in clearcoat usage
2. Reduction in cutting solvent usage
3. A reduction in scrap
4. An increase in first pass yield

Analysis:

Performing an on-site review, we were able to provide the following expectation:

1. Reduction in clearcoat usage of 3%-4%
2. Reduction in cutting solvent usage by 25%-30%
3. A reduction in scrap
4. An increase in first pass yield

Solution:

Saint Clair Systems provided a simple, cost-effective temperature control unit, paired with a patented recorable coaxial hose for heat exchange. This combination allowed the customer to control the clearcoat temperature within +/- 1° F at the point of application.

See page 2 for additional details.

Company:
Tier One Automotive Supplier

Location:
Midwest United States

Material Used:
Solvent Based Clearcoat.

Summary:
The company established improvement objectives for their clearcoat application. When brainstorming ideas for improvement, they decided to investigate material temperature control.

After reviewing the technology and using the equipment on a trial basis, they determined that it was a good fit for their application.

Reviewing the results after full implementation showed that they exceeded their expectations.

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Results:

The following quote comes directly from the customer:

"*We have seen a real reduction in labor associated with problem solving and adjusting clearcoat viscosity. There's a high level of consistency in our clearcoat quality and we've seen a significant reduction in orange peel strictly due to temperature control*."

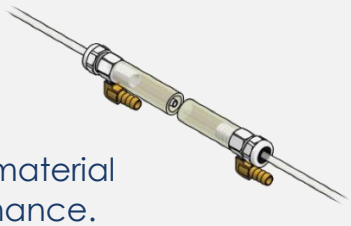
The final reults exceed their expectations:

1. Reduction in clearcoat usage of 5%-7%
2. Reduction in cutting solvent usage by 40%-65%
3. A reduction in scrap
4. An increase in first pass yield

Standard Temperature Control Unit

Given the pressures, material flow rates, plant temperature and optimal material dispense temperature, it was determined that a Temperature Control Unit with a 3kW heater and ½-ton chilling capacity would be sufficient to maintain the optimal adhesive temperature to within +/- 1° F at the point of application.

Recorable Coax Flexible Tube-in-Tube Heat Exchanger



Converts your existing material path into a heat exchanger.

Designed to be removed and reattached, allowing the material tube to be changed as required for easy system maintenance.

Ideal for painting and for controlled motion applications.

Non-conductive version available for electrostatic applications.