The Sport of Fast Color Change

Nordson Corporation

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So what’s your game plan for faster color change and a better powder coating operation? Winning performance is a play-by-play process. And with the proper planning, preparation, players and practice in place, your powder coating operation can be a winner all the way.

“Put on your game face.”

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How well equipped and trained is your color-change pit crew? While it’s important to invest in the coating horsepowers that a modern powder coating system can offer—equipped with “go fast” features like easier-to-change-colors booth systems, powder-resistant composite canopies, recipe-driven controls and automated fuel centers—high tech gear ultimately relies on the talent and training of the people who use it.

We’ve surveyed some winning powder-coating teams for tips and advice for the race to reduce color-change time—from start to finish.

Sure, there’s a wide range of powder coating systems used today—from simple spray-to-waste booths, to sophisticated cyclone- and cartridge-collector installations using roll-on/off designs. Regardless of the equipment used, many of the principles behind a fast color change, especially those related to the people, tools and training of operators, is universal.

GET THE RIGHT EQUIPMENT

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1. START WITH THE RIGHT TEAM

2. HAVE A GAME PLAN

3. SET A GOAL AND KEEP SCORE.

4. SHARP UNIFORMS

5. PRACTICE, PRACTICE, PRACTICE

6. LINT-FREE GARMENTS

“Winning is about having the whole team on the same page.”

Bill Walton

“We didn’t lose the game. We just ran out of time.”

Vince Lombardi

“Like the surgeon who asks—while reaching—for a scalpel, the color-change crew needs the proper tools to be ready and in place at the proper time to change colors in the fastest time. Air lines with extended nozzles and wands that can reach the most remote corners of the booth should be readily accessible with plenty of air power. And the proper squeegees, vacuum and other equipment can save valuable time.

The tools used to clean a powder booth also need to be right for the job. Nothing abrasive should ever be used to clean the booth surfaces since scratches—even those not visible to the eye—become places for powder to collect, making easy wipe down difficult. “Buying a cheap rubber squeegee from a discount store instead of a powder squeegee from your booth supplier means smeared powder and a worn-out canopy,” says Daniel Meheren, who oversees operations of several fast-color-change lines at Borroughs Corporation (Kalamazoo, MI).

Whether it’s losing weight, saving money or virtually any challenge—experts all agree that written, well-defined goals lead to the best results. Do you have a goal for color change? Is it 10 minutes? Nine? You need to “raise the bar” on color-change times to achieve more productivity.

One goal is to make downtime “downright annoying,” says Mike Martin, Nordson CSR, who has seen several plants designed to minimize downtime. “One customer uses a loud buzzer, while another customer switches on fast-paced, jarring music when the conveyor line is stopped.” Different approaches, but...
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START WITH THE RIGHT TEAM

Watching a good rapid color change is like watching a well-executed sport play unfold. Each player knows where he needs to be without any discussion. Most quick color changes will require a minimum of two operators on a side-collector system, or one to two operators on a cyclone system to clock fast under-10-minute times. Some customers may “blitz” the effort with more operators. “It’s too common for plants to think of these paint operators as entry level, low-wage, unskilled positions. That’s a big mistake,” says Dave Heth of Cost-Effective Powder Coatings (Northeast, PA). “When you think of how much revenue a busy paint line represents, it’s easy to justify staffing it with a crack team that takes pride in the job and is well paid.”

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HAVE A GAME PLAN

What limits color-change time is risk of contamination. So smart teams work with their production schedulers and lead line people to make sure certain families of colors or powder runs together—light-colored powder with other light-colored powders, dark powders with other dark powders. Some schedulers avoid mixing different powder resin types. For example, polyesters shouldn’t run too close to epoxies coatings, since risk of contamination is greater.

“Difficult colors, like a bright orange or green, require more color-change time and should be scheduled appropriately. A larger gap can be left on the conveyor line between families of powder or tough-to-change colors,” explains Joe Haibo, paint line supervisor at Cost-Effective.

PRACTICE, PRACTICE, PRACTICE

Professional football teams don’t wait for the two-minute warning to practice their whole team on the same page.”

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“Everyone wants to win. But not everyone is willing to prepare to win.”

Bobby Knight

10 tips that could transform your powder coating color-change team...

By Ken Kreeger, Powder Systems Group Nordson Corporation

NASCAR races can be won or lost by fractions of a second in the pits. These crews feel the car change tires and tweak the suspension in less time than we can unscrew our gas cap. It doesn’t happen by accident. Neither does a fast color change.

Does this analogy sound far-fetched? It’s not. There’s a lot in common between a top-notch pit crew and a good color-change team: the right tools, right training, plenty of practice and a team spirit that recognizes every job, no matter how seemingly simple, needs to happen at precisely the right time.

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“Can you observe a lot—just by watching.”

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The color-change procedure must be committed to in writing. Good plants provide a step-by-step description of each operator’s job along with digital photos or video of each task.

“Traditionally, there’s a lot of turnover on paint lines,” says Doug Denhoff, Yamaha Motor’s senior paint engineer. “I asked myself, ‘What would happen if we lost our best painter tomorrow?’ And then realized we’d better make sure we keep track of what we’re learning.” Are your procedures documented or stored only in the heads of your people?

Changing colors also means changing a lot of electrical and air settings. “Before we switched to our iControl system which uses recipes, we had to set a lot of parameters manually,” explains Dave Heth. “It’s important to develop a control format that’s uniform and easy to read.” Some customers have even gone so far as to develop muda that fit over the controls and are printed with arrows that point to the right settings. Anything that’s fast and foolproof is worth a trial run.

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PWR-05-3662
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The form and substance of fast-color-change booths...

Find the link to this article online at www.pfonline.com/articles/040503.html.

For more information on fast color changes for powder coating, contact Nordson Corporation, Powder Systems Group at 800-626-8303 or enter 3) Direct code 259ZH at www.pfonline.com.

“Put on your game face.”

We created an atmosphere for good color change—literally,” explains Randy Peterson, production manager for Bush Hog, where four color-change booths fill a nearly spotless clean room in its Telford, TN plant making agricultural tractors and loaders in a range of colors. A bright, clean, environmentally controlled powder room makes fast color change easier, since powder can be stored near the booth. Controlling airflow is also critical to color change. Powder from the booth shouldn’t be all over the plant—and contaminants from other operations don’t belong in the powder booth.

The best solution is a brick-and-mortar solution (or at least sheetrock). Physically isolating the powder system minimizes the potential for contamination. Since powder is hygroscopic, it absorbs water from humid air making it difficult to fluidize. An HVAC system that maintains optimum temperature and optimum relative humidity permits storage of powder near the booth—in good condition.

Some operators have found that they can purchase plastic totes for powder that are faster to use than the shipping containers by the powder manufacturer. Yet... water absorption. A well-controlled environment can solve this problem and also facilitate quicker delivery containers.

A well-designed powder room allows ample access to the booth for cleanup and provides organized storage space for tools where they are needed.

Don’t get hosed

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