

QDC—

Prestaging Can Cut Die-Change Time by More Than Half

Dedicated die-change equipment pays for itself quickly and ensures safe, rapid changeover time after time, and combined with a little ingenuity and elbow grease, can slice changeover by 50 percent or more.

BY LOUIS A. KREN, SENIOR EDITOR

Die carts, turntables, clamps and more. If your stamping operation spends too much time changing tooling at the expense of running it, investing in this capital equipment for quick die change (QDC) will pay for itself quickly while safely and accurately moving dies into and out of the press. But bringing in capital equipment can take time, and while studying the various equipment options and deciding on what's best for your press-line setup, there are concrete steps to be taken right off the bat that will cut the wasted time of changeover. These steps may require equipment purchase, but are guaranteed to return the investment.

That's the message from QDC specialist Gary Zunker, president of Lightning Time Savers, Nicholasville, KY. Zunker spends much time traveling to metalforming operations and working with teams to analyze and correct die-change procedures, often cutting changeover times by 50 percent or more prior to any major QDC-equipment purchases.

He let *MetalForming* in on some relatively inexpensive die-change secrets.

Prestage, Prestage, Prestage

Prestaging is key, according to Zunker, noting that such common-sense approaches are not nearly as common as they should be.

"That's the first step in successful QDC," he says.

He suggests placement of a rack at the press as an inexpensive simple step metalformers can take right away.

"Instead of having a forklift travel long distances to obtain a tool or return it to storage, which a lot of stampers continue to do today, position a small two-tier rack at the press so that the forklift can remove a die from the press, place it on one tier and take another die, already staged on another rack tier, and place it into the press," Zunker explains. "That saves a large amount of time usually taken by travel back and forth with the dies."

Suppose space does not permit permanent placement of such a rack at the press?

"If that's the case, what can I do to pull the die out quickly, take it somewhere and bring another die back?" he asks.

Rethink the Forklift

A forklift, especially one dedicated to the press, can take care of that, but it is not the ideal option.

"A forklift is the most widely used piece of equipment for die change as an alternative to investing in dedicated QDC equipment," Zunker offers. "Why anybody decided that a forklift was ideal for die changeout is beyond me. Consider safety. It's not uncommon for dies to slide off of forks. Dies may have oil on the bottom, and when transporting dies on forks, there's nothing to stop the dies from sliding off during sudden stops. And think about potential damage to the tooling. Forklift drivers drop dies into presses, bumping the dies with the forks to line them up. With sensor-loaded dies becoming more and more common, sensor damage can become a real problem in this scenario."

Another reason to avoid forklifts for die transport, according to Zunker, has to do with forklift availability.

"Shop-floor personnel use forklifts all the time to move material, parts and equipment all over the plant," he says. "So when it's time to retrieve the die for





This two-tier die cart placed near the press aids in quick die change by serving as a staging rack for a die waiting to run and at the same time can hold a die removed from the press. The setup saves on travel time for die retrieval.

the next job or pull the old tooling out of the press, personnel must track down the forklift or wait for it to show up. All of these things lead to inefficiencies and lost time.”

And one more thing: Forklifts routinely store dies in racks in a haphazard fashion, according to Zunker. Storing at odd angles or in extremely close proximity to other stored dies makes die retrieval from the racks difficult and time-consuming.

Die Carts Are Excellent Investments

The alternative? A die cart.

“A die cart solves the safety problem because it is designed to safely hold a die during transport, and it eliminates the ‘go fetch’ routine because the die cart can only do one thing—place the die into the press,” Zunker explains. “And a die cart protects the tooling and the press because it gingerly rolls the die into the press without dropping it, avoiding damage to tool components, sensors and the press itself. The die is under complete control during transportation.”

Die carts, when compared to forklifts, also add speed to the die-change equation.

“Using a forklift to place a die in the press requires a spotter to assist in alignment,” he says. “With a die cart, one person can easily changeout the die. Most die carts have v-block locators on the base of the cart, and the addition of a docking mechanism in front of the press automatically lines up the die and cart in a matter of seconds to ensure proper tool placement. So now you are centered to the die, centered to the press, and the die will go straight into the press in the correct manner.”

Again, the key to successful QDC is prestaging, but that includes not only the dies but all of the tools—wrenches, clamps, etc.—needed to finish out a die change.

Huge Time Savings

“Given some simple steps such as these, we’ve seen 50 percent changeover-time reduction or greater without spending capital dollars,” says Zunker.

As one example, he describes a metalformer, Clairon Metals, Atlanta, GA, once saddled with 78-min. die-change times on a 300-ton coil-fed press. After a three-day QDC Blitz, where Zunker worked with a team at the metalformer’s

plant, the team was able to achieve a record changeover time of 11 min.

Another metalformer, Schlage Lock Co., was able to reduce average changeover on five 200-ton coil-fed presses from 55 to 15 min. after a QDC Blitz, according to Zunker.

Says Sean McDermott, operations manager at Schlage Lock: “We had invested heavily in the equipment required to perform quick die change, but had not realized many of its benefits. With no additional investment, the simple concepts of prestaging, team setups, and ownership enabled us to achieve an 80 percent reduction in setup times within two weeks.”

As a result of that effort, the company’s output increased by more than 40 percent. Such numbers make quite an argument for examining your die-change procedures.

Zunker notes that even greater time reductions are possible given implementation of the right equipment, such as multiple tier racks and turntables that can be positioned at the press and accept the old dies while rotating and supplying the press with a new prestaged die.

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