



## Mate Fully-Guided Tooling Adds Over \$200,000 of Green Light Time

Leading Ice & Beverage Systems Manufacturer Reaps Benefits From Faster Setup Times and More

Tool life is almost an obsession for the world's leading manufacturer of commercial ice and beverage dispensing systems. Since their operations require thousands of hits per tool, the company is constantly on the lookout for ways to improve tool life without sacrificing quality.

The company was evaluating its parting tool performance. It heard about Mate's fully-guided parting tool design, which was supposed to be very durable and outperform competitive products. Mate Ultra TEC® fully guided tools have a tighter clearance between punch and stripper compared to other tooling, which makes a big difference in rigidity. Mate's fully-guided design prevents side-loading and twisting forces from occurring.

### SIDE-BY-SIDE TEST PRODUCES A CLEAR WINNER

The company contacted Mate Sales Engineer Jeff Kraus who helped them set up a simple side-by-side test to see what Mate's fully guided tool could do. The test was performed 10 hours per day by the same machine operator over a five-day period on its four Amada Vipros machines. Approximately four tons of material was punched, ranging from 0.30 to 0.036-inch galvanized steel, 301 stainless steel (with and without PVC covering), and 430 stainless steel with PVC covering. Press speed was 200 hits per minute for the entire test duration.

The Mate Ultra TEC® E Station fully-guided guide assembly used a rectangle punch with a Mate fully-guided double relief clamp clearing stripper and Mate Slug Free® double relief clamp clearing die. The competitor's product was its E Station guide assembly, with a flat faced slitting insert punch, double relief clamp clearing stripper and double relief clamp clearing die.

At the end of the first day of testing, there was no noticeable difference in either tool's edge quality or in edge quality of the punched parts. On the second day, close examination revealed that the vertical slitting edge

of the Brand "X" tool had become somewhat jagged, and the press operator spent time treating the punch edges.

On the third day, the Brand "X" slitting punch had a considerable amount of galling build-up along with a few nicks on the cutting edges of the punch. It was removed from the turret, cleaned, sharpened and re-inserted into the turret. By mid-day, the tool's edge quality had been reduced so much, it was producing a 0.047" burr along all of the vertical cuts. When preparing for the next day's production test at the end of that shift, inspection revealed both cutting edges of the Brand "X" parting tool punch had several nicks with even more galling than the previous shift.

By the start of the fourth day, the press operators were complaining about the Brand "X" tool, the press downtime it caused and the time needed at the tool grinder. By 1:00 PM, it was necessary to take the Brand "X" tool out of service. Mate Ultra TEC fully-guided tool was re-inserted without any sharpening at any time during the test and produced quality parts from the very first sheet.

Mate's Ultra TEC tools set up in 16 minutes versus 20 minutes for the Brand "X" tools, but the company found that the big difference is in tool life. They were still using the Mate parting tool for 7 months with no sharpening or maintenance of any kind, which saves a considerable amount of time. Their parts are highly cosmetic and have to look exceptional the first time. They don't have time for secondary operations for burr removal, and scrapping parts is expensive.

### OVER \$200,000 GREEN LIGHT TIME AND MORE!

The company's biggest benefit from Mate Ultra TEC Fully Guided tooling was the extra capacity provided by the increased green light time. For OEM manufacturers, Mate has observed that the value to the organization when a given function is producing is between \$400 to \$600+ per hour.



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### Increased Green Light Time:

- **Before:**
  - 20 minutes x 8 setups/day = 160 minutes/day X 4 machines = 640 minutes/60 = 10.6 hours/day
- **After:**
  - 16 minutes x 8 setups/day = 128 minutes/day X 4 machines = 512 minutes/60 = 8.5 hours/day
- **Difference:**
  - 10.6 hours/day – 8.5 hours/day = 2.1 hours/day x 252 days = 529 annual hours of increased green light time

**Increased Annual Green Light Time, Estimated: \$400 per hour x 529 hours: \$212,000**

### Additional Savings:

Mate Ultra TEC Fully Guided tooling also provided the company with over \$40,000 in additional savings through eliminating daily tool maintenance and secondary operations.

- **Eliminating Daily Tool Maintenance:**
  - 4 tools x \$75 loaded labor rate x 10 hours x 252 days x 5% improvement = \$37,800
- **Eliminating Secondary Operations:**
  - 4 tools x \$75 loaded labor rate x 5 hours x 252 days x 5% improvement = \$18,900

**Net Annual Additional Labor Savings: \$40,920**