# Bachhuber Tech Tips

**Question:** How do we reduce our changeover time?

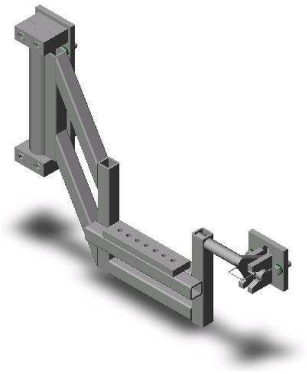
**Date:** 2005-05-05

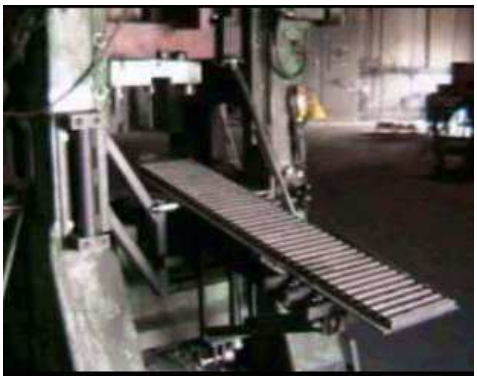
**Problem:** Our customers are constantly pressuring us to reduce run quantities in an effort to reduce inventories. Our overall direction on the shop floor is to minimize down time to maximize value added time thus allowing us to remain competitive at smaller volumes. We have started with some quick die change options and are now noticing that setting up the unloader is taking about 15-20 minutes. This was acceptable in the past, but now we must find a way to improve our efficiency!

**Analysis:** Bachhuber engineering made a trip to the customer to see their operation and analyze changeovers. The customer has a straight side press with a Model 300 unloader mounted to the front of it. After observing the operators making a few changeovers, we broke down the time elements of the removal, hookup, and setup of the unloader and started to think of ways to reduce or eliminate the big ones.

**Finding:** We discovered that most of the time was spent detaching the unloader, wheeling it around, and attaching it back up to the bolster. In contrast, it took only a couple seconds to disconnect the pin for the ram actuating arm. Because the setups were similar, the adjustments to the linkage on the unloader were minimal.

**Solution:** BMC designed a swing out mounting bracket that allows the unloader to be quickly removed for die changes. It was created in such a way that it can work with existing unloader designs and die height adjustment mechanisms. Multiple versions were designed to accommodate straight side, gap frame, four-post, and open bed presses.





Click Here to see a video of the Swing Arm Mount or visit our accessory page.

**Detail:** The designed Swing Mounting Bracket greatly reduced the amount of time needed to remove and reattach the unloader to the press. A Cost Benefit Analysis (CBA) and Return On Investment (ROI) calculation shows the impact of return with just a 5% increase in press efficiency (approximately a 1/2 hour savings every shift).

## BMC CBA Worksheet with ROI

| | | |
|---|---|---|
| **Production Impact** | | |
| Hours the press runs per day | 16 | |
| Days the press runs per week | 5 | |
| Weeks the press runs per year | 50 | |
| Economic Life in years | 7 | |
| Machine rate cost per hour | 50.00 | |
| Machine rate charged per hour | 55.00 | |
| Current production in pieces per hour | 300 | |
| Current efficiency factor | 40% | |
| Anticipated production in pieces per hour | 300 | |
| Anticipated efficiency factor | 45% | |
| Increased Pieces per hour | 15 | |
| Increased Percentage | 5% | |
| Income | 11,000 | annual |
| **Annual Savings** | | |
| Material per year | - | |
| Labor per year | - | |
| Variable Expense per year | - | |
| Savings | - | annual |
| **Investment Costs** | | |
| Equipment cost | 3,800 | |
| Taxes | - | |
| Freight and installation | 600 | |
| Investment | 4,400 | once |
| **Labor Costs** | | |
| Hookup | 200 | |
| Training | 100 | |
| Labor | 300 | once |
| **Payback Summary** | | |
| Total Positive Impact to Bottom Line | 77,000 | |
| Total Cost | 4,700 | |
| Depreciation Of Investment (DOI) | 671 | |
| Return On Investment (ROI) | 220% | |
| Payback period in months | 6 | |

Visit our documents page at www.BmcHome.com/library.cfm to download a BMC Microsoft Excel Template for flexibility in determining your own ROI.

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