

## Forging operational improvement...

### The Company

This company is the premier supplier of large upset forgings in the United States and has a long-standing reputation for high-quality and highly reliable products. Its forgings are produced by unionized steelworkers using an upset forging process.

These products are then machined by its customers to create axles, pinions, spindles, and tubes that are used in a variety of heavy-equipment industrial applications such as: harvesting equipment, earth-movers, vehicles, forklifts, and many others.



### The Situation

A slowdown in business due to weakened demand for domestic steel forgings had changed the company's business. Instead of committing to high volume runs as they had in the past, customers were requiring lower volume runs and a higher variety of products.

As this migration from a high volume/low variety to a low volume/high variety environment continued, the company realized its relatively long setup times severely limited its ability to meet customers' changing demands in a cost-effective manner.

### The Approach

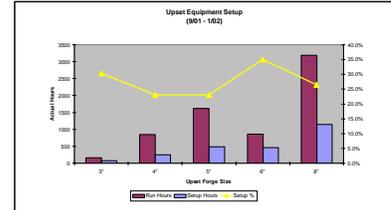
Keystone was introduced to the company as a result of successful work performed at one of its sister companies. To address the issues the company was facing, Keystone led two separate teams of unionized employees in the analysis, design, and implementation of setup reduction activities on the upset forgings.

The efforts were conducted in a "blitz" format that required full dedication of these employees for one week. Additionally, other personnel including maintenance, tool room, material handlers, and engineering were called upon as needed.

Keystone began the process by videotaping two representative setups conducted by the project team members. All of the team members then reviewed the tapes and identified potential opportunities for improvement.

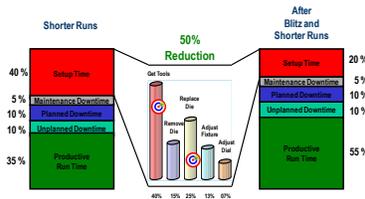
### The Results

Each of the setup reduction blitzes realized significant results, decreasing overall setup times by almost 50%.



By realizing these results across all upset forgings in the operation, the company will increase its productive time by the equivalent of one full crew for ten months.

The format of the project allowed the operators an opportunity to implement ideas they had in the past and new ones that were developed. As a result, in addition to the increase in productive time, the project also benefited the company by improving the union/management working relationship.



Keystone not only assisted in the identification of these opportunities, but also in the prioritization and development of action plans. Members of the team proceeded to implement those activities throughout the remainder of the week.

At the end of the project, team members conducted a final setup and compared the before and after setup results. They then presented their results to management.