

# Newsletter Newsletter



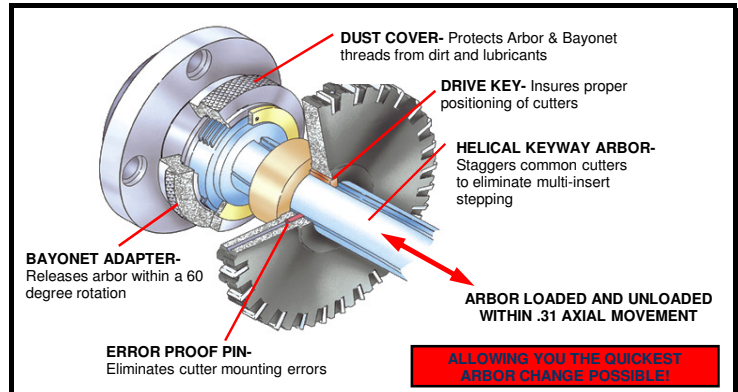
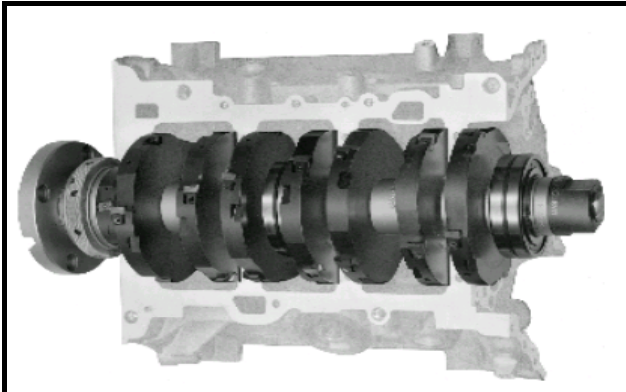
## **Master Tool**

**Innovators of Special Design & Build Tooling Systems**

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**M**aster Tool was recently contacted by one of our Canadian customers to review their arbor milling process on their cast iron engine block bulkhead.

They were currently performing the bulkhead milling in two separate machine stations (every other journal in each station) with adjustable pocket half side mill cutters from one of our competitors. Their problems consisted of low tool life (only 1600 hits) and long tool setting time trying to adjust all of the insert cartridges.

Addressing the tool life issue was relatively easy. We suggested fixed insert pocket (no adjustment) cutters. This permitted doubling the number of inserts. It also dramatically reduced the tool setting problem since no tool setting was required.

We also used an arbor with a helical rather than straight keyway (a Master Tool exclusive feature). This helical keyway staggers the common cutters into the workpiece to eliminate multi-insert stepping. The effect is a dramatic reduction in tool pressure and the potential for chatter.

Lastly, we suggested cutting all of the journals in one station rather than two. The machine builder advised the customer that this was not possible because of horsepower restrictions. Our calculations showed otherwise and we guaranteed the success of the operation.

When the bulkhead arbor was installed (on one station only) there was no noticeable difference in horsepower. Tool life went from 1600 hits to 4800 hits dramatically reducing the cost per piece on this operation.

In addition, the customer loaded a full set of arbors in both stations - run for a week on one station (with the other station off) and then switches stations. This means he has zero downtime for tool changes.

The next step is to gradually increase the chip load (because of the higher density of inserts) which will increase the tool life even further.