Newsletter

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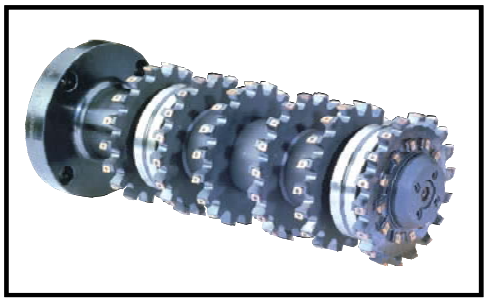

Fig. 1

Fig. 2

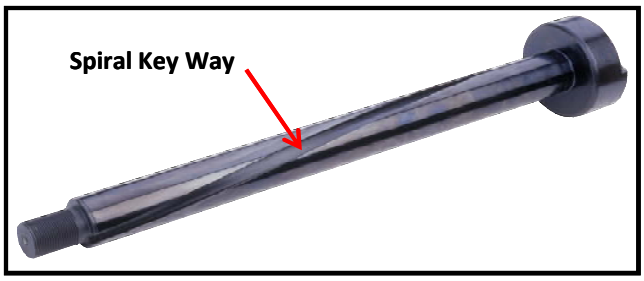

Fig. 3

While every one will agree that the cutting edge is critical when machining parts it is also important to understand that how the cutting edge is presented to the part is just as critical.

A few years ago Master Tool was asked to review an arbor milling installation by one of our customers. They were performing a bulkhead milling operation on the bottom of a cast iron engine block using an arbor mill from one of our competitors **(See Fig. 1).**

Their problems consisted of low tool life (only 1600 hits) and long tool setting time trying to adjust all of the insert cartridges.

Many companies that build half side mills or slotting cutters put two (2) keyways on the I.D. of the mounting bore **(See Fig. 2)**. The reason for this is that most cutter manufactuer's understand that it is not good practice to have more than one insert hitting the part at the same time when plunge milling. This works fine when arbor milling with two (2) cutters but when using more than two (2) cutters it allows many of the inserts to strike the part at the same time. This increases cutting pressures and potentially causes micro chipping on the cutting edges. All of this potentially reduces the maximum tool life.

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 **(See Fig. 3)**. This helical keyway staggers the common cutters into the workpiece to eliminate multi-insert stepping. The effect is a dramatically reduction in tool pressure and the potential for chatter. The half side mills all had a common key so that when they were loaded onto the arbor it ensured that no two inserts would strike at the same time.

When the bulkhead arbor was installed there was a dramatic difference in horsepower. Tool life went from 1600 hits to 4800 hits radically reducing the cost per piece on this operation.double the tool life because we doubled the number of inserts. The additional 50% increase in tool life is directly related to applying the cutting edges properly to the piece part.

For more information call or e-mail Master Tool or your local distributor:

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