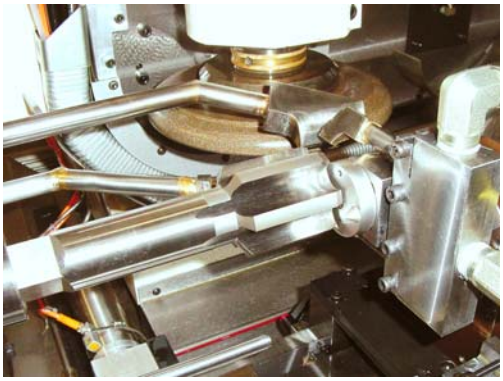
UNIVERSAL FLUTE GRINDER (UFG-25)

RENOWNED FOR ITS PRODUCTIVE FLUTE GRINDING CAPABILITY

Models: UFG-12, UFG-25, UFG-50

Shown Above: UFG-25
Powered up with short delivery time!

UFG INSIDE



The flute in a rotary cutting tool is the deep groove or grooves ground along the outside diameter of the tool. This groove or flute provides a channel for chips to escape from the cutting edge of the tool. The flute can also provide a channel for cutting fluid to reach the cutting edge of the tool. Depending on the type of tool being manufactured, there may be 1 or more flutes. Some tools have straight flutes that are ground parallel along a portion of the length of the tool. Examples of straight fluted tools would include reamers and taps. Other cutting tools have flutes that spiral around the outside of tool in the form of a helix. Examples of spiral-fluted tools are twist drills, and end mills.

Traditionally, most flute grinding has been completed on older mechanical grinding machines. The machines were produced by a variety of manufacturers over the years and have become the workhorses of the tool grinding industry. But with the advent of just-in-time deliveries, complicated flute profiles, and a shortage of skilled help, many tool manufacturers have turned to CNC (Computer Numerical Control) for a solution. The challenge for machine tool builders is to design a flexible CNC machine that will grind a large variety of flute types, at the high production rates of a mechanical grinder, with setup times measured in minutes instead of hours.

One alternative is to retrofit used mechanical grinders with CNC controls. This eliminates the need for changing lead screws when changing the machine over to produce different parts. Setup time is reduced, but the machine is still limited in its ability to produce a large variety of parts. For example, there may be limitations when trying to produce right hand spiral tools and left hand spiral tools on the same machine. Retrofitting also requires a large investment to be made in an old machine. The cost of a retrofit can be up to twenty times the current value of the original machine.

Continue on next page..

Sold to large tool manufacturer!

In Pipeline!

Machine Demo!

Advanced 5µ Filtration

PEEL GRINDER, PPG	ROTARY TRANSFER, RTG	UNIVERSAL FLUTE, UFG	AFS-8-200, FILTRATION
HSS, CARBIDE & STAINLESS BLANKS GROUND TO HIGH TOLERANCE	COMPLETE PRODUCTION OF TOOLS & PARTS IN UP TO 6 STATIONS	FLUTE GRINDING WITH CONVENTIONAL OR SUPERABRASIVE WHEELS	INTEGRATED SLUDGE DRYER TO RECYCLE AND PROLONG OIL USAGE

For more information on ITM machines, please visit us at www.itmfl.com

ITM

ITM has a UFG-25 that is powered up for machine demonstrations.
Call us at 386-446-0500 to schedule an appointment or to request a sample part!!

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Another alternative would be to purchase a new five-axis cnc grinder. Because they are CNC controlled, five-axis grinders set up quickly. Also, depending on the type of tool being produced, a five-axis machine can usually produce a complete tool (including end work) in one clamping. This can be a very practical approach on complicated tools being manufactured in lower volumes. However, when you only need to grind flutes, five-axis machines carry a high price tag and usually lack the power and rigidity to match the fluting speed of a mechanical flute grinder.

POWER, RIGIDITY, AND FLEXIBILITY

International Tool Machines (ITM) designed their Flute Series CNC Universal Flute Grinders to be as rigid as the older mechanical grinders while offering the flexibility to produce a wide range of flute types with very short setup times. The Universal Flute Grinder (UFG) was developed after many of ITM's customers expressed an interest in a cost effective replacement for their mechanical flute grinders. To satisfy their request, ITM used proven components from their Series UFG Grinders and a FANUC's CNC to create the Flute Series.

The UFG-12 and UFG-25 Universal Flute Grinders were designed from the ground up to be a replacement for aging mechanical flute grinders. The machine is built on a heavy stress-relieved base to provide rigidity and dampening. It can be equipped with a 30 hp, 4½ diameter spindle that accepts up to ten-inch diameter wheels. The UFG has four programmable axes. The A axis controls tool rotation (index and lead control), the X axis controls flute length, the Z axis controls flute depth, and the U axis controls the wheel head angle (helix control and dressing position). Switching from right hand, to left hand, to straight fluted tools requires no mechanical adjustments. When an operator changes from one part to the next he or she only needs to call up the part program, mount and dress the correct wheel, and go. The UFG is also able to grind special tools such as right hand cut tools with left hand spirals.

The dressing of conventional, CBN, and vitrified diamond wheels is done in the machine. When dressing, the U axis retracts into the 0 position. The X and Z axes move the wheel across a 3mm diamond roll dressing the correct flute profile on the wheel. And, when an automatic loader is used, wheel dressing occurs during the load/unload cycle with no increase in cycle time.

By combining proven ITM designs with cutting edge CNC control technology, ITM has created a flute grinder that truly is a cost effective replacement for the thousands of aging mechanical flute grinders in use around the world.

For more information on ITM machines, please visit us at www.itmfl.com