Ultra-Light Cutting Head

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At EMO 2009, the CNC controls vendor NUM will launch a ready-integrated tool head for sophisticated plasma, laser and waterjet cutting machinery applications, and exhibit an advanced 3D simulation package combining workpiece simulation with collision monitoring for the first time.

The new head design brings many technical advantages to the cutting machinery sector. Novel mechanical design means that the head provides the versatility of movement and stiffness required to implement precision cutting motion, but with the unique advantages of very low mass, and the elimination of cabling runs that must flex with the tool head movement and can cause failures. Due to its unusually light weight, the new head can be assembled easily on existing CNC machines in the plasma- and waterjet-cutting market often without additional mechanical adaptation - providing a very simple means of extending the capability of machinery from 2D to 3D applications, with precise multi-axis interpolation.

NUM will also publicly exhibit a new 3D simulation package for the first time. It combines workpiece simulation with collision monitoring and other powerful features. The computer-aided engineering software allows machine builders to offer new generations of optimisation tools with their machines - to help users to maximize manufacturing throughput and productivity. Designated True 3D, the software tool is a general-purpose version of NUM's well-known 3D simulator for multi-axis grinding applications.

NUM's True 3D is one of the first commercial CNC software simulation tools to combine both workpiece simulation and collision monitoring facilities. Also worth mentioning is the fact that the new software is not only emulating, but is simulating the actual CNC commands, hence the name True 3D, and subsequently provides an output as close as possible to the actual machined parts. It allows machinery users to virtually prototype and optimise the entire machine production process, to yield significant gains including improved machine productivity, reduced tool wear, and faster project completion.