

Taylor Kightley

Mastercam Drives Shops Past the Competition

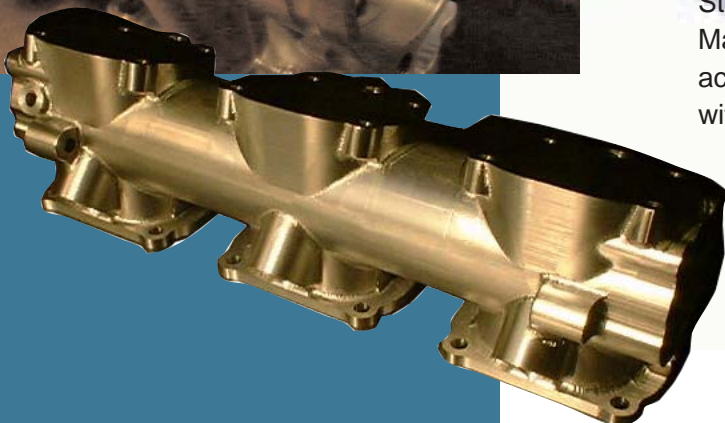
"Our experience, combined with the proven problem-solving insights of 4D Engineering and Mastercam products, has allowed us to establish a reputation and become an even more efficient company internally."

— **Phil Kightley**
 Managing Director
 Taylor Kightley Engineering
 Northampton, England

Today's best machine shops are keeping ahead of the competition by constantly expanding their capabilities and adapting new technologies. Taylor Kightley Engineering of Northampton, England is a leading supplier of precision parts for the competitive motor sports industry. Using the newest machining concepts and Mastercam's cutting-edge technology, the shop manufactures some of the most complex parts imaginable.

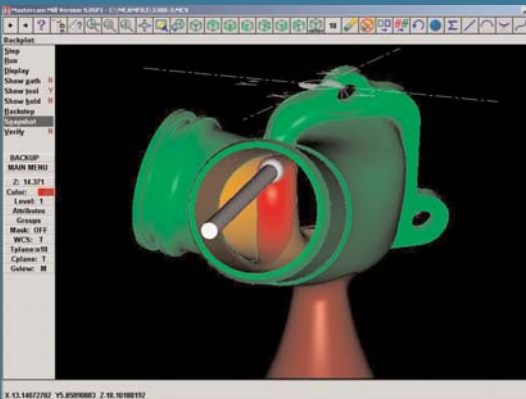
According to Phil Kightley, co-founder and Managing Director of Taylor Kightley, "There is only one place to be in manufacturing these days. And that is in the most challenging side of the machining business." Kightley knows that the squeeze is on, and he is keeping his company ahead of change by seeking out and meeting the most demanding manufacturing challenges available. Mastercam allows Taylor Kightley to "take on the most complex components and then machine them straight away," says Kightley, and the ongoing improvements to Mastercam allow his business to become more efficient and profitable in a cost-conscious world.

Taylor Kightley began using Mastercam in 1993, and has worked closely with Mastercam reseller Stewart Roney of 4D Engineering ever since. Roney and his company have helped the talented machinists at Taylor Kightley evolve using the newest and best Mastercam packages. The people at Taylor Kightley say that the combination of Stewart Roney's expertise and the capabilities of Mastercam software have given them the confidence to accept the most complicated jobs, and then machine them with skill and precision.



Mastercam®

Taylor Kightley



Water drain for car engine – machined using flow 5-axis cutting with the tool shank contained along a straight line chain.

Taylor Kightley has been an eager adopter of all new Mastercam products, which has allowed the company to become one of the most responsive contract manufacturers in the world. As engineer Rob Barnett says, "Some of the jobs look just plain impossible. But we haven't been stumped yet! Each new version of Mastercam offers new solutions, better programming, and nice productivity advantages."

Formula 1 companies present exactly the type of challenge that Taylor Kightley handles effortlessly with Mastercam. Toyota Chassis and Cosworth Engines are two of the most demanding and successful players in Formula 1 racing, and both are serviced by Taylor Kightley's ultra-modern shop, which includes 15 highly flexible and precise CNC machines.

Barnett adds, "The beauty of dealing with Formula 1 racing companies is that every incremental improvement to a precision part will provide an enormous competitive advantage when the car takes to the track." For instance, chassis stabilizing blades are designed to meet strategic airflow objectives. The part may look simple, but the shape design must be machined to 8 microns. Barnett has found that Mastercam's new surface project toolpath with 3D blend is perfect for achieving ideal shapes in one pass. Blended surfaces offer racing product suppliers significant air-flow improvements. This helps the shop get the job done quickly and accurately, which makes the customer happy and saves the time and extra cost associated with the toolpath changeover of older programs.

"We expect that companies in Formula 1, and other precision-based industries like aerospace, have found that Taylor Kightley is ready to take on the most difficult jobs and perform to the absolute highest standards," says Barnett.

For engine-related parts, Taylor Kightley never sees the easy jobs. Many of the 5-axis jobs require machining undercut areas with lollipop tools, which means it's essential for the tool shank to be contained to avoid collision. With Mastercam Version 9, the shop saves time with their most commonly used toolpath: flow 5-axis cutting with the tool shank contained along a straight line chain. Before Version 9, users had to post the NCI file of a 5-axis flowline and then use the focus 5-axis C-hook to convert the NCI to one that contained the tool shank through focus points. Now programming time is saved because this multi-stage process is self-contained in a single operation that can be easily changed and regenerated.

Mastercam®