

## **CUSTOM CAM MAKER EMBRACES MANUFACTURING TECHNOLOGY**

Ask John Andrews about the key to his company's success, and he'll tell you all about his Landis 3L CNC cam lobe grinders.

In 1990, John Andrews, President of Andrews Products, Inc., Rosemont, Illinois, experienced a moment of clarity that would do wonders for his grinding company. He realized that in order to stay competitive in providing OEM work for people in the performance engine business, he would have to invest in high-quality production grinding equipment. After extensive research, he decided the best choice to support his manufacturing strategy would be a Landis 3L CNC Cam Lobe Grinder.

"In retrospect, I would have to say it was the best decision we've ever made," Andrews said. "It took us out of the craft-type manufacturing technique and into a truly automated procedure. The Landis 3L has allowed us to make absolutely first-class camshafts, and all phases of our grinding process are working at optimal efficiency, from blueprint development to data handling to project administration."

The machine was kept busy nearly six days a week, which led to the purchase of a second Landis 3L in 1996. Since then, said Andrews, both machines have been running nearly 100 percent of the time, producing everything from prototype cams to high-performance custom race cams and single plate masters.

## **Dependable Camshafts Come From Dependable Machines**

The most important step in manufacturing camshafts is the finishing of cam lobe contours. The precision and accuracy with which this is accomplished is what Andrews Products has built its reputation upon. In race production cams with overall composite tolerances not exceeding 0.0004", finish grinding is often the critical factor that determines the overall performance of the engine. Andrews said that achieving these demanding tolerances in the grinding of cams pays off in the finished product.

"The camshafts produced on either of our Landis machines will out-perform and outlast anything else you can buy--and that's exactly what our customers are looking for."

This type of claim might suggest a drawn-out process, but that's not the case. When processing race cams, three steps--cam design, data downloading, and finish grinding--take only 25 minutes, with the actual finish grinding completed in 80 seconds or less. Compare this to the day and a half it used to take Andrews to do the same job using a hard master, rocking cradle-type cam grinder. The Landis 3L does the job much more quickly *and* improves tolerances by one order of magnitude.

In addition to sharp improvements in productivity and part quality, Andrews has also benefited from a dramatic increase in uptime after switching to Landis 3L machines.

"One of the greatest qualities of the Landis grinders is how well they're designed and built. The uptime reliability of our machines has been better than 99 percent. In eight years, neither machine has been down for more than one day of any given year, and that downtime can be attributed to regular maintenance and minor adjustments."

The reliability of grinding equipment is key, to be sure, but Andrews stresses that the real test of a camshaft is how well it holds up in a real engine. The shape, material and design of the camshaft have to be matched exactly with engine conditions, and the successful camshaft is one that produces the desired result *in* the engine. Camshaft designs are meticulous and brimming with engineering innovations, but they become useless if they're not able to withstand the friction, heat and normal operating conditions of the engine they've been designed for. Andrews attests that camshafts produced on Landis 3L grinders can endure even the harshest engine conditions.

“The number of incidents of cam lobes that have failed due to spalling or surface fatigue is very, very small. Usually, the failure is due to operator problems such as letting an engine run without oil, or allowing dirt to run through the engine. Failure is seldom due to the original processing. The consistency and superior performance we get from Landis machines gives us a competitive advantage over anyone in the world in grinding high performance cams for both small and large engines.”

### **The Brains Behind The Brawn**

On CNC machines, the software is just as important as the hardware. The best programs organize data efficiently and are able to download and upload files quickly to reduce downtime. Further, if a machine is used for a variety of part families, it has to be reconfigured and additional data must be downloaded to assure that the correct operation is being performed. For Andrews, this is yet another way that Landis grinders improve overall efficiency and keep the machines up and running.

“ Reconfiguring the grinder from a small engine cam to a large V-8 can be done quickly, but equally important, we can download all the data in a matter of minutes. Most of the other machines built specifically for CNC cam grinding can't do anywhere near that kind of quick data handling.”

### **One Good Machine Deserves Another...**

With their Landis 3L grinders, Andrews Products has become a leader in the production of high-performance aftermarket motorcycle and automotive camshafts.

“We’re currently working towards more floor space, and we’ll soon build an additional facility. At that point, we’ll probably need a third Landis 3L grinder.”

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Caption:

Landis 3L CNC cam lobe grinders at Andrews Products, Inc. have helped the company improve productivity, quality and uptime reliability.