Lititz Precision Products

By Aaron Recksiek, CW21

In the after-sales service industry of watchmaking and clockmaking, there is a constant need for quality tools and equipment. A high-quality machine can drastically increase your efficiency, which directly impacts your profitability. In modern workshops, much of the Swiss-made equipment has become increasingly more expensive year after year, many times becoming financially out of reach to the independent technician. Also, many brands require equipment with specific capabilities, such as water testing watches to a specific vacuum or depth, or using ultrasonic in small-parts cleaning machines. An American company has been trying to solve these issues for the last eight years, Lititz Precision Products.

John Baer is the owner, engineer, and watchmaker behind Lititz Precision Products (LPP), located in Lititz, in Lancaster County, Pennsylvania. Baer is a Pennsylvania native who, having grown up in a region of the country with a rich horological heritage (the original Hamilton Watch Company is eight miles from Lititz), was always interested in timepieces and how they worked. When it came time to choose a career, Baer wanted to attend a watchmaking school, but his parents encouraged him to pursue the more versatile vocation of engineering. He graduated with a degree in mechanical engineering from Pennsylvania State University in 1981. After college, Baer worked in several industries for different companies in their production departments, helping to refine and improve products. He also worked in tooling and fixturing of machines, including agricultural equipment for New Holland, ball bearings for The Bearing Corporation of America, and hand tools for KD Tools.

While working for large corporations, Baer was becoming increasingly frustrated with expending too much energy navigating the political climates of those companies. Eventually he decided to leave engineering behind and go back to his original interest of watchmaking. The thought of being in business for himself was appealing. Baer began taking courses from Jim Michaels at the National Association of Watch & Clock Collectors School of Horology in Colombia, Pennsylvania. The curriculum consisted of short courses to teach skills with longer breaks designed to allow the students to refine those skills in a real-world environment.

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Baer decided to open his own shop, The Lititz Watch Company, in the fall of 2001. The Lititz Watch Company consists of a showroom, located on the corner of N. Broad Street and Lincoln Avenue, filled with jewelry, clocks, watches, and many gift items. Located in the back is a workshop where all manner of watch, clock, and jewelry repair is offered. Coincidentally, around the same time, The Lititz Watch Technicum watchmaking school and Rolex USA Service Center opened their doors a half-mile up the road.

For any watchmaker or clockmaker who spends several years at the bench, the pros and cons of common tools and equipment of the trade can become increasingly apparent. For a watchmaker who is also a mechanical engineer, you can only imagine the frustrations realized with design, cost, maintenance, and repair of what seem to be the only products available on the market. Out of this frustration, Lititz Precision Products was born. Initially, Baer sold and marketed his company's first piece of equipment, the Diver 125, under the Lititz Watch Company name. After a few years, as the demand for more products grew, Lititz Precision Products split off from the Lititz Watch Company. A business partner took the reins of the Lititz Watch Company and eventually changed the name to the Lititz Watch & Jewelry Company.

John Baer in front of the Lyon astronomical clock in France.

The Diver 125 was a simple 125-bar wet pressure tester for deep-dive watches, Figure 1. It was made up of a pressure chamber, pressure gauge, pressure wheel, cover, sight glass, and knurled knobs all together in a sleek anodized aluminum housing (refer to May 2008, *Horological Times*, pages 40-41, for more detailed information). The capability to test to those depths is required by some watch brands for spare parts account access. The first major brand to recognize the Diver 125 was Omega, which still approves the tester today for access to dive watch components. John even designed and manufactured a special version of the Diver 125, capable of testing 20 watches at a time, which is currently in use at several Omega Service Centers around the world.


Fig. 1
Diver 125 housings rough machined.

As time went on, the industry's need for an alternative to the equipment currently available encouraged Lititz Precision Products to design and produce more and more tools each year, easily identifiable by their signature "Lititz red" color. With each new piece of equipment, Baer implemented his brand's philosophy: Designing an elegantly simple, reliable, easy-to-produce, and economical machine, while also using as many stock components as possible. As Baer states, "Designing a special part frequently requires tooling charges and large initial orders, driving up costs. Sometimes we will buy a component and modify it a bit. I spend a huge amount of time in design and testing. Simple, elegant mechanical design drives down price and drives up reliability." Baer does all the design work himself, even the printed circuit boards, Figure 2. The only major engineering that he doesn't do personally is the machine code which consists of "C" programming of the microprocessor. In terms of value, about 95% of all the components he uses are manufactured in the United States. All final assembly and testing is done personally by Baer in Lititz.

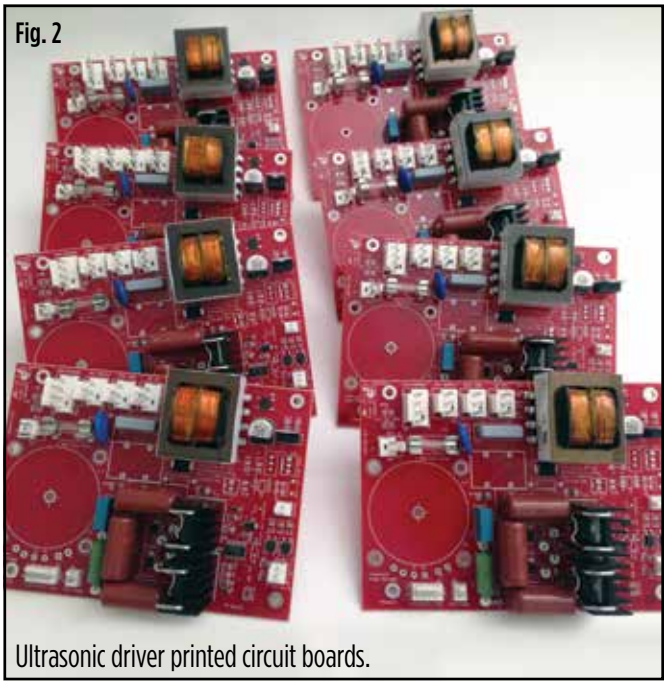
Fig. 2
Ultrasonic driver printed circuit boards.

Following the Diver 125, LPP produced the Preciso 47, a hotplate designed to accompany the wet tester which heats watch cases to a constant 47° C. In 2011, they produced both a wet vacuum leak tester and a hand setting press which can be used with several brands' pushers. The year 2012 saw the introduction of the Revolution, a more sophisticated condensation tester, which consisted of a hotplate and cold element combo. Three years ago, it was the Matador, a manual ultrasonic watch parts cleaning machine.

Fig. 3
Finished Freedoms ready to box.

The most recent venture of Baer and LPP is the Freedom automatic cleaning machine, Figure 3. This new machine is the brand's most ambitious project yet. The Freedom consists of five stations for cleaning or rinsing, all with ultrasonic, and one drying station. There are 10 user-customizable programs with agitation strength and station time programmable at each station. Surprisingly, this was the most difficult part of producing the machine. The jars used in the Freedom are an example of a stock part Baer designs into his machines and are available at any container store for about three dollars. Baer has tested the prototype machines with over 10,000 cycles, which simulates over 12 years of use in a busy workshop. The Freedom retails for $7,495, which is several thousand dollars less than similarly capable Swiss- or German-made machines. The machine also uses LPP's proprietary non-scratch baskets made of laser-sintered nylon, also made in the US. The new baskets come in about a dozen different configurations in 64mm and 80mm diameters. They can be used in various other cleaning machines such as the L&R Tempo 400, Elma RM-90, Vibrograf ACS 900, and L&R Varimatic.

Lititz Precision Products' machines are primarily sold through a network of distributors, but can also be purchased directly. They also have an extensive presence internationally and can be obtained through five distributors in Europe. Technical information on each product can be downloaded directly from www.lititzpp.com. Baer has also posted several "how to" videos on YouTube for a better understanding of how some of the machines are operated. You can contact John Baer through email at jbaer@lititzpp.com.

Sources:
www.lititzpp.com
www.youtube.com/user/LititzPrecision

Aaron Recksiek is an independent watchmaker in Salt Lake City, Utah. He is a graduate of the 2008 WOSTEP class at the Lititz Watch Technicum.