



## Vance & Hines Case Study

### Pushing the Performance Envelope Since 1979

[Vance & Hines](#) has represented the gold standard for aftermarket motorcycle parts and accessories since 1979. Founded by legendary quarter-mile racers Terry Vance and Byron Hines, the company is recognized for always pushing the envelope.

While most bike enthusiasts came to know Vance & Hines for distinctive exhaust systems, the community increasingly trusts the company for accessories that feature leading edge technology.

### The Challenge

The [Fuelpak FP3](#) is the most capable and cost-effective fuel management solution currently available for Delphi-equipped Harley-Davidson motorcycles. “This modification can impact fuel economy and performance as it alters the air/fuel



ratio, causing the bike to run much leaner,” said Larry Hinds, manufacturing manager at Vance & Hines. “Our classic Fuelpak devices solved those issues. With the new FP3, we added functionality like increased horsepower, quicker throttle response, and increased fuel efficiency.”

As the current generation of fuel management systems neared end of product life, demand grew for a solution with exciting new feature sets.

Vance & Hines had the idea of linking the FP3 with the user’s smart phone via Bluetooth to provide a more dynamic interface.

“The smartphone integration gave us the ability to not only fix performance issues, but also enhance the rider experience,” said Hinds. “That meant the FP3 would utilize Bluetooth technology and more robust, complex PCBs.”

## Vance & Hines Depends on Sunstone Circuits® for Quality, High Performance PCBs

Smartphone integration means the FP3 demands a lot from a PCB and its manufacturer. High performance boards in small form factors are nothing new for Sunstone.

“The Apple Chip was necessary for the iPhone integration and it presented a design challenge,” said Hinds. “Sunstone helped us by using an extended pad link, making it easier to verify the chip had been soldered in properly.”

Recognizing potential issues prior to manufacture reduces the potential for rework, ensures functionality, and improves cost effectiveness.

But, collaboration does not end with Design for Manufacturability (DFM). Sunstone partners with Vance & Hines from prototype to production.

## Empowering High Volume, Just-in-Time (JIT) Production

“Even though the FP3 is a fairly high volume product, we use just-in-time (JIT) style of manufacturing,” said Hinds.

“We don’t feel like we’re sending our orders into a black hole,” said Hinds. “There’s someone on the other end who cares.”

This production method called Kanban, or “blank card,” requires the supplier to commit to a predictable production turnaround. “We set aside six weeks of board inventory and put a card on it,” said Hinds. “When we crack open that box, it signals us to place a PCB order that Sunstone can easily deliver within six weeks.”

Responsiveness is clearly critical for Vance & Hines’ production strategy. In addition to collaborative prototyping services and capacity for high volume PCB production, Sunstone keeps communication lines open at all times. “We don’t feel like we’re sending our orders into a black hole,” said Hinds. “There’s someone on the other end who cares.”

### People Are a Business Advantage

Despite being an organization that produces thousands of boards every week, Sunstone retains its ground-level customer focus. “What impresses me is that they are a thinking, caring, human organization,” said Hinds. “They are very personable. There is a human touch to what they do.”

Not content to blindly process orders, Sunstone’s production team scrutinizes every production order, even if it is a PCB they have manufactured many times before.

## Going the Extra Mile

“Instead of robotically manufacturing boards, Sunstone has a thought process behind their work,” said Hinds.

That process in its simplest form is taking every measure necessary to ensure quality before production begins. Anything that can interfere with quality or performance raises a red flag and a proactive call to Hinds at Vance & Hines.

“A new employee accidentally sent over some specs that called for a tin-lead finish, rather than the silver RoHS (Restriction of Hazardous Substances) we normally use,” said Hinds.

That anomaly raised the alarm at Sunstone. Their Sunstone rep contacted Hinds to confirm the unusual order. It had been made in error. That email saved an entire production run.

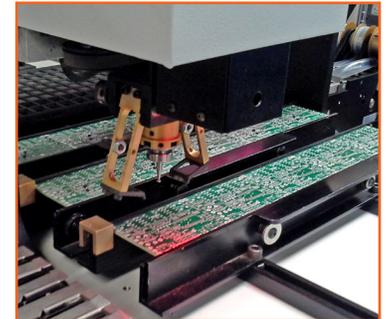
“A lot of our products are sold overseas in countries with zero tolerance for lead-based products, so we have to use the silver RoHS finish,” said Hinds. “I didn’t have to tell anyone at Sunstone. They knew it and called me before a batch of unusable PCBs was manufactured.”

## Why Vance & Hines Keeps Coming Back

“Sunstone makes us feel as if we are their only customer.”

“Sunstone checks every box,” said Hinds.

From expertise needed for effective prototyping to proactive customer service that saves both time and money, Sunstone continues to earn the business of Vance & Hines. The commitment is simple and lasting: build the right board the right way, every time. No exceptions.



For Hinds, this means focusing on expanding the FP3 feature sets, not worrying about supporting basic functions. The FP3 integrates with Android and Apple devices for Harley-Davidson, and will soon be available for a myriad of bikes.

“We have more opportunities to gain competitive advantage because we know our PCB partner can handle anything and everything we throw at them,” said Hinds. “Sunstone makes us feel as if we are their only customer.”