The Harley Davidson Company began losing customers to the faster and sporty looks of racing styled bikes. Their high speed capabilities and quick acceleration attracted people to the new modern style. With a loss in customers, Harley Davidson needed to design a new fast bike that kept their original Harley Davidson style. The company was pushed to create something completely new that the world has never seen in style and performance of a motorcycle. Harley engineers were made responsible for designing a brand new style of motorcycle from the ground up. The bike was meant to be fast, stylish, and affordable. Not only was the project difficult in its design but pleasing Mr. Willy Davidson may have been the biggest problem of them all.

With a major task at hand, engineers and designers were left to gather information from, previous models, other companies, and racing styled bikes. With the need for a new faster engine, designers began to look at the performance and workings of the Harley Davidson racing bike. While brainstorming for new ideas, they reached out to Porsche for a faster engine. For the Harley look, they used the ideas of previous motorcycles. The engineer’s and designer’s task was to pull all of these concepts together. Starting with the engine, the designer’s wanted a bike that would go fast. With more power came more weight. The larger amount of mass made the engineers look to a stronger and more durable frame. This frame was meant to be stylish in shape, yet practical in design. Different metals were thought up to find the strongest frame possible for the heavy engine. With a larger engine, the bike was left with less room for other crucial components such as the gas tank, radiator, and muffler. The engineers and designers were responsible for packing the parts of the bike in this new styled frame without hurting the bike’s performance. Later on in the process, Davidson and coworkers had to brainstorm ideas for the name of the completed bike. After throwing around many names and six months later, V-Rod was the one that stuck.

After all of this brainstorming, the engineers and designers began to compare, contrast, and select the best ideas. Ultimately, they selected a liquid-cooled engine, which they placed in the center of the frame. They had to adjust the design of the frame, going to a double-barred frame, rather than the previous one-bar down the middle design. In order to pack everything into the new frame design, they used plastic for the fuel tank, due to the fact that it was more malleable and could be formed to the desired shape more easily. This new fuel tank was positioned under the seat, and the new material allowed it to hold the desired volume of gas. In order to cool the engine, they decided to place the radiator behind the front wheel. They designed it with air tunnels on both sides to allow maximum airflow. In order to make an exhaust system that followed noise regulations, they put in two tail-pipes to hold more exhaust and ultimately make the bike quieter.

Harley designers decided to use a full-size clay model in order to test their designs. The clay allowed them to re-adjust any design ideas that they did not like. With the help of this clay model, they were able to come up with a desirable shape and look for the exhaust system. While fabricating the frame, engineers resorted to using hydro-forming to create a more durable frame. After they had assembled a working prototype of the V-Rod, they began to test all of the different capabilities of the bike. They used many different types of tests such as, the heat test, water resistance test, endurance
test, a wind tunnel test, and a radio test. Once it passed all of these tests, they perfected the final design and the bike was ready for the market.

After this six year process of designing and testing this bike, they finally were ready to showcase the V-Rod and get it out into the public. The V-Rod was a huge hit at the showcase and there was a lot of buzz about the new ground-breaking ideas put into the bike. Harley Davidson had succeeded in achieving their goal of creating a fast, stylish, and original bike that the public would love.