I. The V-ROD motorcycle was constructed out of response from the market pull. The customers at the time wanted a motorcycle that still looked like a Harley Davidson motorcycle, but had the speed and the power of a racing bike.

II. The problem was the challenge of fitting all of these different types of technology into a Harley Davidson motorcycle frame. They needed to fit a different type of engine that could perform at faster speeds into this bike, because at the time, Harley Davidson motorcycles were more built for style instead of speed. By acquiring all of the parts that they wanted into this new motorcycle, they needed to still maintain the Harley Davidson style.

III. In order to gather information on how to better prepare themselves for a faster bike, they went and studied drag racing bikes. These bikes have faster, liquid-cool engines, so that the engines do not overheat at such high temperatures. They also have the necessary framework to be able to maintain control of the bike at high speeds. They also gathered information on noise regulations for regular street conditions since the drag racing bikes cannot be used on streets. If they are going to be constructing a faster bike, it will be louder, too.

IV. When the team generated conceptual ideas, they wanted to put certain things into their motorcycle. They needed an exhaust to hold noise regulations and a liquid cool engine to cool the engine at high temperatures. They also wanted a radiator that fit the look of the Harley Davidson, but also did the job of cooling the engine after running for long periods of time. They also wanted the engine to fit the look of the other Harley Davidsons which were V-shaped. Another thing that they wanted was they wanted the bike to be customizable. They also wanted the gas tank to fit in with all the other parts, but still be big enough to fit enough gas.

V. The Harley Davidson design team was constantly comparing their information and wants with the Harley Davidson engineering team. The engineering team would look at their designs and wants, and sometimes, they would have to send the information back. The Harley Davidson teams also combined their efforts with Porsche, so that they could get the best and cheapest engine they could find.

VI. The Harley Davidson teams final were able to complete actual designs of the motorcycle they wanted. They created computer-aided designs of the bike to see it all digitally. They also created models solely out of clay, so that they could easily mold it to the way that they wanted. They were able to see from this stage that the frame needed to be bent, so they were able to bend the frame so that it fit using water-forming. They also made clay designs of the exhaust pipes because they needed to hold a specific amount of air; the designers did not want the pipes to be that big, but the engineers said the pipes needed to be a certain size to be able to fit the needs of the rest of the bike. In this stage, the wheel was adjusted. The designing team wanted the wheel to be higher, so that they could maintain the Harley Davidson style, however, the engineering team decided to accommodate them by tilting the wheel so that it could still maintain the necessary control of this high-speed bike. With all these changes to the bike, the frame and the gas tank also needed to be changed. The teams decided to make the frame aluminum to account for these changes, and since there
was a bigger engine and other parts, they decided to make the gas tank plastic so they could mold it into any shape. Because they could mold it into any shape they wanted to, it was able to fit into odd places.

VII. While in the testing stage, the teams built a prototype of the bike and road it around for a couple times to see how it would hold up. However, one of the members of the team that was riding the new bike actually broke it. They noticed that the first prototype was definitely faster than the other bikes, but it still needed work. After making the necessary changes, they built their final bike. But with this bike, they needed to put it through actual tests. They put it through an air tunnel to see if the radiator in the front was getting the necessary amount of air it needed to cool the engine. They put it through a shock test where the frame just hit constant bumps for an extended amount of time. They also put it through a radiation test where the bike was just exposed to radiation for long periods of time. They put the bike through a weather test where it was exposed to different types of weather, such as intense rains. They also put this new bike in a heat shed on idle all day to see if it could withstand intense amounts of heat for an extended period of time. Another test that was used was the Autobahn test which was a simulation in which the bike would encounter all the same obstacles as it would if it were on the Autobahn. The bike was also put into a sound-proof room to test the sound to make sure it sounded like a true Harley Davidson. Another sound test they performed was taking the bike to the streets to see if it would go over the noise regulations. With all of these tests, the teams could change and make adjustments to the bike until it worked the way that they wanted it to and in a way that still maintained the Harley Davidson look.

VIII. When the V-ROD bike was finally finished and ready-to-go, the Harley Davidson decided to release the bike in one of their showcases. At this event, the crowds were pleased to see this new and improved bike. People were finally ready to see this “revolutionary” bike after 6 hard years of work. There was a huge presentation at the 2001 Dealer Meeting where the Harley Davidson team presented this new bike. One lady even said, “This bike is going to rock the motorcycle world!”