There are eight stages to the Engineering design process. Each step is equally important in every Engineering project. Without the steps in the Engineering Process, projects might not fulfill their needs appropriately. In the case of the Harley Davidson V-rod model, the steps of the Engineering Process were used to create one of the most distinguishable Motorcycles of all time.

First off, Harley Davidson needed to recognize the changing needs of their consumers. Consumers were looking for a faster motorcycle with a more powerful engine. The world was changing and coming up with new technology that could make this project possible, but the designers at Harley Davidson had to come up with a way to create this powerful motorcycle with the same, traditional look of all of the other bikes. This was how they defined the problem. The Harley Davidson Company recognized the need for a faster, more powerful bike, but also defined the problem that it might be difficult to make such a product with the same “Harley” look as their previous bikes.

Next, the engineers and designers at the company had to gather information about their new project and start brainstorming conceptual ideas for the bike. Mentioned in the video, many ideas about the type of engine were being tossed around, one of which was the idea of the VR1000 engine inside the bike. This idea was quickly rethought when the engineers realized this engine would not be compatible with the traditional bike model. They needed to think about a way to recreate the traditional model into a frame that could support the powerful engine they were planning to use. Another issue that arose while brainstorming was the fact that the traditional VR1000 engine was so powerful that it generally wouldn’t last for very long periods of time or distances. Engineers and designers began working together to formulate a design for the bike which could support the powerful engine and also figure out a way to ensure that the engine would run longer than one weekend. They compared, combined and selected ideas until they came up with a rough draft.

When an idea for the new motorcycle was finally decided upon, the design process began. One of the top designers came up with the idea to build an entire bike out of clay so that alterations to the framework could be easily done within a timely manner. The engineers would then analyze the work the designers had done to decide whether the design would be appropriate for the mechanical aspect of the project. This is how the engineers and designers decided to design a plastic gas tank instead of steel because plastic is heat resistant but can be shaped to fit in oddly shaped places which was required for this bike. Also, while analyzing the designers work, the engineers realized there was not enough air flow to cool the engine, so they altered the design further to accommodate for this criterion. Many other alterations were made to the bike before it was finally ready to be tested.

After the design was decided upon, the bike went through many different types of vigorous testing to ensure that it could withstand the elements that the soon-to-be customers would put it through. Some of these tests included the wind test, the engine test, the heat test and the bumpy road test. Alterations continued to be made to the bike throughout all of these tests until the bike lived up to the standards of the Harley Davidson Company. One of the most important tests that was mentioned was when Willy G. Davidson actually got on the bike to ride it, and give it his approval. Thankfully, after about 6 years, the bike had finally passed all of the tests and was ready to be communicated to the public.
One way in which the design was communicated was through a revealing to the public. Before they revealed the bike, however, they had to decide what they would call this new, incredible design. Many ideas were thrown around before the name “V-rod” stuck. The V-rod was the first motorcycle of its kind from Harley Davidson and it needed to be properly revealed. An entire event was held where many consumers came to see the new bike from Harley Davidson. Willy G. rode the new V-rod onto the stage and everyone was in awe.

The V-rod is one of the most impressive bike designs yet. Combining a street racing engine with a traditional frame, this bike is unlike any of its kind. The V-rod would not have been possible without all of the effort that was put into the stages of the Engineering Design process. Without every single step, the bike might not have become what it is today.