In the beginning of time there were dinosaurs. Then man created fire. Now he wanted a motorcycle. This couldn’t be just any motorcycle. It had to have a combination of both speed and style. The motorcycle company Harley-Davidson took up this task. Currently the market demanded a faster motorcycle but because Harley-Davidson was used to manufacturing only motorcycles with style they fell short of the competition. The company already produced a motorcycle for speed in their racing division however they required their new bike to have both speed and the characteristics of a Harley-Davidson. The first problem was fitting the fast VR-1000 into a traditional Harley-Davidson frame. They realized that the traditional frame couldn’t withstand the increase in power from the new engine. Harley-Davidson studied dragsters and custom bikes to look for a solution to this problem. The solution they came up with was to implement a split support system for the frame of the bike. This appealed to both the Engineers and the Stylist of Harley-Davidson. However, during the prototyping of the new frame, they realized the frame wasn’t strong enough due to the complex design of the pipes. This complex design required pieces to be welded together instead of bent which made the structure weak. The problem that needed to be solved now was that the stylists had their hearts set on this design and the engineers now had to figure out a new process to form the pipes. They researched a newly discovered process, hydroforming, where very high water pressure is used to shape the metal pipes in a mold. Now that they solved this problem, a new problem arose. They needed to cool the engine with a radiator which has never been put on a Harley-Davidson bike before. To fix this problem the engineers designed a system that appealed to both themselves and the stylists. They created fins with a vortex generator to create air flow that was missing due to the wheel
obstructing the air flow. They also needed to move the gas tank which could no longer be put on top of the engine. They decided to place the new tank under the seat. But now the problem was that the only way a classic metal tank would fit was if it was only one gallon large. To combat this problem the engineers and the stylists both agreed on a plastic container that held more gasoline and was also resistant to heat. The next problem came with the need for a bigger muffler to deal with the increase in air flow from a bigger engine. They needed it to be legal for both emissions and noise regulations however it wasn’t going to look good if it was to be this big. So to solve this problem the engineers created a new three chamber muffler system that looked sleek and performed very well. The next problem was that the engine they wished to use was only reliable for about one weekend at a time and to replace it was very expensive. To fix this problem they worked with Porsche to design a better engine that was more reliable to run and cheaper to produce. The engine maxing out at 140 miles per hour was named the ‘Revolution’. After many rigorous durability tests the bike was finally ready for production. It was named the V-Rod after its engine which was in the shape of a V. Finally in the year 2002 the V-Rod was revealed at the Harley-Davidson owners convention.