Executive Summary

Due to extensive track use, Mini Cooper GP's (Figure A) are notorious for having brake overheating problems. In the conceptual design stages of the car, BMW engineers intended to install brake ducts to prevent overheating, but due to time constraints, the cars were shipped without the ducts they were intended to have. The goal of this project was to design and manufacture a brake duct kit for the Mini Cooper GP. After a conceptual design of the system, make-buy decisions were made for each component. The components to be made were designed using computer-aided drafting, engineering, and manufacturing software. The components manufactured for this project included left and right wheel hub brackets and a pulley bracket. The system was installed and tested to determine the effectiveness of the newly designed and manufactured brake duct kit. Installation instructions were created for a car owner to expedite the installation process.

If the decision to enter production is made, the potential revenue is $18,000. This would, however, require an investment of roughly $10,000, leaving a **net profit of approximately $8,000**. This assumes that all engineering work is already done and not factored into the expenses.

Figure A: Mini Cooper GP