CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The automotive industry has been developed rapidly in all country. Many car makers try to produce cars that can compete with other companies. Nowadays customers not only want the low cost cars but the cars that meet customers demand at low cost. As a result the car makers try to reduce cost in other car’s part in order to produce cars at low cost with a better condition that can give more comfortable to customers.

Today, it is common to produce structural body parts via stamping or hydroforming. The structural and complexity potential of stamped and hydroformed steel parts is very high however, machine investment costs for these manufacturing processes are significant. In addition, the tools can be complicated and costly. A process offering an economic alternative to the above mentioned is roll forming.

In conventional bumper beam, to produce this bumper beam is using stamping process but it cost a lots of money due to in stamping process it involve a lots of process likes drawing, trimming, piercing and flanging. If many process involve the
probability to make mistake is higher. It will make the cost of the bumper become higher when there a lots of mistake in each process.

1.2 PROBLEM STATEMENT

(i) Increasing demand to the comfortable cars in low cost make the car makers try to reduce cost for potential components in a car

(ii) Bumper beam has big potential to reduce the production cost by using roll forming method

1.3 PROJECT AIM AND OBJECTIVES

To use roll forming method as a replacement for stamping method in making automotive bumper beam. The objectives these studies are:

(i) To compare the stress analysis roll forming bumper beam and stamping bumper beam.

(ii) To reduce cost of bumper beam produce by using roll forming method

1.3 PROJECT SCOPES

This study will investigate the different of producing bumper beam using roll forming method compare to stamping method. The scopes of this project are:
(i) To analyze stress analysis in roll forming and stamping bumper beam.(front)
(ii) To reduce costs base on 3M method comparison that is man, machine and material
(iii) The bumper used is a Gen-2 car’s front bumper beam