

Date : 30 July 1998

TO WHOM IT MAY CONCERN

REFERENCE REPORT FOR CANDIDATE ING. MR. CHRISTIAN ABELE

Mr. Christian Abele has carried out his second internship training for his studies in the Department of Manufacturing Engineering and Operations (MEO3) for Automotive Loudspeakers of Bosch Group Penang from 02 March 1998 to 14 August 1998.

During this period, Mr. Christian Abele has been working in the group of Manufacturing Engineering for Loudspeakers. He was assigned to the following projects :

1. Design, plan and organize the setup of a new tweeter manufacturing line, including conceptional design, manufacturing layout and process optimizing.
2. Design and implement a spare part control system for the machines spare parts based on a programmable database system.
3. Improving Loudspeaker gluing process, which is the major bonding technique in Loudspeaker manufacturing. Development of a new dispenser needle system to reduce the spare part costs (first implemented at the Tweeter Line 10 for test run).

He was responsible for the entire setup of a new tweeter manufacturing line which is capable of producing 4000 tweeters per day in a two shift operation. This involved developing a master schedule for all required tasks, to design the layout, organize the activities, find the right vendors and control the project.

To reach the projects aim, he managed to relayout and rearrange one existing tweeter line and shifted the analysis area to a different location.

He developed a database system based on a programmable database to monitor and control the machine spare parts for the production and maintenance side. This helped the maintenance department to manage their store and to keep all required items in appropriate quantities to prevent major machine breakdown times.

He designed a new dispenser needle mechanism to reduce the replacement costs of the spare parts using standard needles for all the new dispenser types that will replace the existing dispensers piece by piece.

Additionally to his project work, the company benefited from his valuable and continual contributes to the daily business. His strong commitment and interest to adapt and integrate into our department proved that Mr. Christian Abele was able to settle in a foreign and unfamiliar environment.

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We appreciate his capability of delivering best results, regardless if working fully independent or working in a team. It was his systematic approach and his outstanding communication skills that his work within team projects not only promoted the project's success but encouraged others to contribute valuable suggestions to the finding process.

In conclusion, we would be eager to offer him a position in our company and wish him all the best for the futures success.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'U. Schweigert', written over a dotted line.

Dr. Uwe Schweigert
Department Head