



## REFERENCE LETTER

Youssef Belmkaddem, born 17<sup>th</sup> of March, 1994, has performed internship work at Parker Hannifin Manufacturing Sweden AB, Pump and Motor Division, in Trollhättan during the period 2018-09-03 to 2019-02-22.

His duties during the internship at the R&D department was focused on development of hydraulic pumps. Youssef has handled several different kinds of tasks. He helped us to evaluate Comsol as a structural dynamics simulation software. He also made improvements to our pump simulation software, Hopsan. That task included advanced geometry and force analysis but also some basic programming. Together with another student he made a concept study for a sensor integration project that is a part of our condition monitoring project.

All the work has been carried out in a structured manner with a high degree of independence.

We have been very impressed by Youssef's work performance and his overall conduct during his stay at our organization. Moreover, we found him to be a positive, motivated and hardworking individual that was easy and fun to work together with.

We would like to give Youssef our best recommendations and we wish him success in his future endeavors.

With annual sales exceeding \$13 billion in fiscal year 2018, Parker Hannifin ([www.parker.com](http://www.parker.com)) is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of mobile, industrial and aerospace markets. The company employs approximately 60,000 people in 48 countries around the world. Sweden have 900 employees, mainly working in the divisions for mobile hydraulics and pneumatics. Pump & Motor Division manufactures and sells pumps and motors for hydraulics, used in industrial -, mobile - and marine - applications.

Trollhättan 2019-02-22

A handwritten signature in blue ink, reading "Anders Hildingsson", written over a horizontal dashed line.

*Anders Hildingsson*  
Act. R&D Manager  
Parker Hannifin Corp.