



Master Thesis Student

BROMMA has been the leading manufacturer of crane spreaders ever since its formation in the 1960s. Today we have, by far, the highest market share of the world's spreader suppliers. In fact, our market share is higher than all our competitors' combined.

Today, we manufacture close to 2,000 spreaders of all types every year and our spreaders are currently in use in 99 of the top-100 ports worldwide.

BROMMA sales and service network has a wide-reaching footprint. We are present with own sales offices on all continents, and with an extensive network of agents, we are able to support customers in every country in the world.

More information about BROMMA can be found at www.bromma.com

Contact person

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Application to be sent to

E-mail: Mansoor.khurshid@bromma.com

Earliest starting date

Upon agreement

BROMMA

A Tradition of Innovation

Bromma is searching a

MASTER THESIS STUDENT

Bromma is now searching a Master thesis student. Master thesis titled, "static and fatigue strength assessment of riveted joints in High Strength Steel".

Background:

Lightweight structures reduce the environmental impact by decreased fuel consumption, material usage, and production resources used. A known and possibly reduced variation in the entire value stream will increase the control of safety margins hence enabling reduced lead-time and increased flexibility. The introduction of lightweight structures is connected to the possibility to use high strength steel (HSS). Welding is used as a primary joining technique for HSS but very less is known about using riveting as a joining method for HSS. By identifying the right joining method and developing finite element based static and fatigue strength evaluation methodology, a better utilization of HSS is possible, with the great potential of lightweight structures.

The master thesis student will work on these topics:

1. Design a test specimen (joining technique riveting) representing a component in spreaders. Develop fatigue-testing program and define test loads.
2. Start out with evaluating the static strength of rivet vs weld using finite element analysis. Identify a riveting configuration that would give an equivalent static strength as the current weldment.
3. Do literature survey and collect experimental data for riveted joints tested in fatigue.
4. Perform fatigue strength analysis by the aid of finite element analysis on the designed test specimens and those available in the literature using state of the art fatigue strength assessment methods.
5. Compare the fatigue strength of welded and riveted joints.

Suitable background would be:

MSc/Civilingenjör in Engineering Mechanics, solid mechanics, lightweight structures/naval architecture, material science, production engineering, welding engineering, mechanical engineering.

More information:

The work will be carried out in Bromma (Cargotec Sweden AB, Bromma) and KTH-Royal Institute of Technology. The company will provide compensation for the thesis work. The candidate will be based at KTH Department of Engineering Mechanics (within weld and composite mechanics group lead by Professor Zuheir Barsoum) Stockholm Sweden, where most of the work will be carried out.

For application and additional information:

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BROMMA is part of Cargotec, a leading provider of cargo handling solutions. BROMMA is the industry's most experienced spreader manufacturer, known worldwide for crane spreaders of exceptional reliability. Today BROMMA manufactures close to 2000 crane spreaders per year of all types and has a global market share higher than all its competitors combined.

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