

ASSIGNMENT

MSc MAJOR PROJECT (BMEGEÁTMWD1)

Title: **Investigation of emergency brake valve**

Author's name (code): **Márton KOZMA (PM00JV)**
Curriculum: MSc in Mechanical Engineering Modelling / spec. Fluid Mechanics
Curriculum's code: 2N-MW0-FM

Supervisor's name, title: Dr. Viktor SZENTE, assistant professor
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Advisor's name, title: Igor IBOS, senior engineer
Affiliation, address: Knorr-Bremse Vasúti Jármű Rendszerek Hungária Kft.
H-1238 Budapest, Hungary, Helsinki út 105.

Description / tasks of the project:

1. Enquire the operating principle of the NB11 type emergency brake valve.
2. Set up a model for the emergency brake valve using Siemens AMESim software.
3. Develop a measurement procedure in order to determine the required parameters of the model and carry out the tests in co-operation with test lab of Knorr-Bremse systems for rail vehicles.
4. Set up a more detailed numerical hydrodynamic simulation of the pneumatic system components (e.g. orifices) for model refinement.
5. Investigate the effects of choke geometry regarding the filling and draining properties of valve.
6. Validate the model with tests.
7. Make suggestions based on the model calculations to optimize valve function.
- 8.

Handed out / Deadline: **8th of September 2014. / 12th of December 2014.**
Budapest, 8th of September 2014.

(L.S.)

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supervisor

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Dr. János VAD, full professor
Head of Department

Received by:
Budapest, 8th of September 2014.

The undersigned declares that all prerequisite subjects of the Major Project have been fully accomplished. Otherwise, the present assignment for the Major Project and the subject's registration of BMEGEÁTMWD1 are considered to be invalid.

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student



<p>Supervisor's declaration of acceptance:</p>	<p>The submitted Project Report fulfils all requirements of the Department of Fluid Mechanics, Budapest University of Technology and Economics.</p>
<p>Supervisor's proposal for final grade of the thesis:</p>	<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p>The proposed final grade* of the Project Report:</p> <p>.....</p> </div> <p>* Please, select one: excellent (5), good (4), medium (3), acceptable (2), fail (1)</p>
<p>Date:</p>	<p>Budapest, 12th of December 2014.</p>
<p>Name / Signature:</p>	<p>.....</p> <p>supervisor</p>

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