

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Manufacturing and Control of Engine Sealing Rings and its Improvements</b>
<b>Author's name:</b>	<b>Dylan Roulin</b>
<b>Type of thesis :</b>	master
<b>Faculty/Institute:</b>	Faculty of Mechanical Engineering (FME)
<b>Department:</b>	Department of Automotive, Combustion Engine and Railway Engineering
<b>Thesis reviewer:</b>	Gabriela Achtenová
<b>Reviewer's department:</b>	Department of Automotive, Combustion Engine and Railway Engineering

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>ordinarily challenging</b>
<i>How demanding was the assigned project?</i>	
<p>The assignment covers expectable amount of engineering knowledge. With respect to the internship at Freudenberg and the task requested by the industrial supervisor, important were also to prove soft skills, like adaptability and capability to integrate into the team, collect, sort and elaborate the necessary data.</p>	

<b>Fulfilment of assignment</b>	<b>fulfilled with minor objections</b>
<i>How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.</i>	
<p>The first task – see the reaction of Dylan's Freudenberg supervisor was fully finished. The task concerning the improvements of the absorber of robotic arm is not fulfilled. The drawings included in thesis are far from manufacturing drawings, and the documentation is not appropriate.</p>	

<b>Activity and independence when creating final thesis</b>	<b>C - good.</b>
<i>Assess that student had positive approach, time limits were met, conception was regularly consulted and was well prepared for consultations. Assess student's ability to work independently.</i>	
<p>Dylan contacted me in October 2021 to confirm the internship placement and thesis topic. His tutor should be Mr. Hořenín, but evidently such mail never reached Dylan. He was sending short reports from internship every 2 months to me. Unfortunately, it falled into spam box, which I did not check. The 18<sup>th</sup> May he sent the final thesis. During June the status was clarified and at the end of June he obtained comments with assignment what should be improved before the final submission of the thesis.</p>	

<b>Technical level</b>	<b>F - failed.</b>
<i>Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?</i>	
<p>I have the following main remarks on the technical level of the thesis:</p> <ol style="list-style-type: none"> <li>1) Page 22. Wrong tolerance field (there should always be a clearance)</li> <li>2) Page 27. From the description is not clear where from come the values of part numbers etc. From database? It was programmed some interface to read the data into xls sheet for next procedure?</li> <li>3) Page 37. Do you know other possibilities how to obtain moment of inertia?</li> <li>4) Page 44 - 53. The assignment requested to appropriately document the solutions. There is mixture of 3D models (probably not own Dylan's work), and grey "boxes" with not appropriate description. No real assembly drawing is in the thesis.</li> </ol>	

- 5) Page 54. The manufacturing drawing was requested in the assignment. The submitted result is lacking mechanical engineer standards and is not acceptable.

**Formal and language level, scope of thesis****D - satisfactory.**

*Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?*

The thesis is written in comprehensible English, well structured. Formulas are not written with equation editor and are not numbered.

**Selection of sources, citation correctness****E - sufficient.**

*Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?*

Only internet sources are used. The bibliographic citations are used in the text only. Majority of pictures and photos are copied from other sources, but none of the pictures has bibliographic citation.

**Additional commentary and evaluation (optional)**

*Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.*

None.

### III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

*The thesis is practically dedicated, done and managed by industrial company. The thesis has severe lacks of technical value, but I believe, that still fulfills the level of master thesis.*

Extra questions:

- 1) How is ensured on the radial shaft sealing (page 12), that the PTFE dynamic seal really fold like is depicted on the figure 7? The dust lip is in contact with shaft or not at all? Can you compare the properties of depicted seal and the standard radial shaft seal with one lip generally pressed against the counterface of the shaft with some radial load.
- 2) Page 33, fig. 39 - is it healthy or faulty piece? Can you explain what is really observed? Did you participate in the control?

The grade that I award for the thesis is **E - sufficient**.

Date: **24.8.2022**

Signature: