

I. IDENTIFICATION DATA

Thesis title:	Positioning of the dynamometer of the open-loop test stand
Author's name:	Surya Sharma
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Automotive, Combustion Engine and Railway Engineering
Thesis reviewer:	Gabriela Achtenová
Reviewer's department:	Department of Automotive, Combustion Engine and Railway Engineering

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	ordinarily challenging
<i>How demanding was the assigned project?</i>	
The assignment covers important, but expectable amount of engineering knowledge. Challenging on the project is wide spread of thematic - from the field of mechanical design, basics of sensors and electrical circuits up to the data acquisition.	

Fulfilment of assignment	fulfilled with minor objections
<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>	
The solution is described but, nothing is realized. The main reason is in pandemic lock-down, but partly also in the lack of Surya's activity. With regard to the mistakes in technical part, the report cannot really serve as guideline for fast accomplishment of the assignment.	

Activity and independence when creating final thesis	D - satisfactory.
<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>	
Surya regularly consulted, anyhow among different consultations were not always seen an advancement of the project, many times it seemed that he presented his hope or promises rather than the real work.	

Technical level	F - failed.
<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>	
I have the following main remarks on the technical level of the thesis:	
<ol style="list-style-type: none"> 1) Fig. 11 is called decision making, but in fact there is no clear distinction what is positive and what is not wanted property, no weighting factors, etc. 2) P. 39 is stated, that "at 5,7 N.m no rotation of leadscrew was observed". What is the explanation of this phenomenon? 3) P. 40, fig 24, is depicted the usable area for electric motor and its connection with gearbox. Although Surya prepared necessary drawing, nowhere is confirmed that proposed solution really fits in the empty space. 4) P. 44 are described the positions of limit switches. Scheme, or drawing would be appreciated. Further is not shown or described how to attach the switches to the frame, and what will be used as trigger. 5) P. 45, fig 31 from the scheme is not obvious that cannot happen that two people can try to operate the dyno movement in the same time (one behind computer, one manually). 6) P. 60, fig. 48 the sources 1a and 1b are the same? The description is missing. 	

- 7) P. 74, fig. 60 The mechanical limit which can stop the unwanted movement of the dynamometer on rails is the welded holder of the screw jack. The wire sensor is placed in the front of it, i.e. in case of the malfunction the sensor will be broken.
- 8) P. 75 how is attached the wire to the movable plate?
- 9) Drawing Draw-wire sensor mounting bracket: the holes $\varnothing 5 \pm 0,05$ is dedicated for a M5 bolt! Why the hole (also the one for M3 does not correspond to standardized values?
- 10) Drawing Stepper and gearbox mounting: The screw jack (gearbox) is for centering between gearbox and motor prepared with hole $\varnothing 35 H7$ – on the drawing of intermediate element is prepared the hole $\varnothing 35 \pm 0,05$! How is possible to center hole against hole? The stepper motor has flange $\varnothing 73,025 \pm 0,05$ on the intermediate element is prepared the hole $\varnothing 73,02 \pm 0,05$; what will happen if the motor will be fabricated with flange $\varnothing 73,03$ and the intermediate part would have hole with $\varnothing 73,015$? Although the whole part is designed and described as welded part, there is no drawing which will guide how to manufacture the part.

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 on the first view is nicely prepared, well structured, written in clear manner, comprehensible English. Anyhow when reading the thesis carefully, some parts are repeated, some explanations are missing. Two figures are used two times in the thesis.

Selection of sources, citation correctness

C - good.

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?

The majority of sources are internet ones for chosen purchased parts. The figures which are taken from the internet sides are correctly referenced.

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.

Please insert your comments here.

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

The thesis is practically dedicated, but was prepared during pandemic situation, which significantly complicated the correct elaboration. The thesis has severe lacks of technical value, but I believe, that still fulfills the level of master thesis.

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

Date: **7.1.2022**

Signature: