

## KOKKUVÕTE

Autori töö eesmärgiks oli modelleerida ning koostada laserkeevituse jaoks sobiv rakised, mida kasutades saab keevitada laserkeevituse robotiga kliendi Iron Baltic OÜ poolt toodetavat saha.

Kliendi poolt saadetud mudel ei vastanud Laserline OÜ masinapargi võimekusele, seega oli vaja esmalt konstrueerida sobiv saha mudel, mida oleks võimalik laserkeevitusrobotiga keevitada. Kooskõlastades kliendiga leiti sobiv lahendus, järgnes rakiste projekteerimine.

Esimene rakis sai loodud eesmärgiga fikseerida detailide asukohad kasutades punktkeevitust. Esimene rakis koostati keerukam, sest oli vaja tagada kliendi poolt nõutavad tolerantsid ning robot laserkeevituses on väga tähtis tagada detailide täpne asukoht. Teine rakis võetakse kasutusele selleks, et lõpetada keevitus vajalikest kohtadest.

Mõlemad rakise prototüüp on koostatud terasest S355 MC, aga selleks, et tagada rakiste jätkusuutlikus tuleb lõplik lahendus kulumiskindlast terasest Hardox® 400.

Esimese rakise prototüüp on sobiv, et keevitada kokku ka saha prototüüp, mida klient saab kontrollida. Hakates tootma suuremate mahtudega, on vaja seda siiski parendada. Teine rakis oli sobilik.

Edaspidi on plaanis koostada painutusrobotile haarats, et saaks automatiseerida Hõlma painutust ning tagada väiksemad tolerantsid.

## **SUMMARY**

The purpose of this thesis was to model and construct two fixtures which will be used to weld a plow using robotic laser welding.

The model which the work is based on was not proper for Laserline OÜ machine park, so before the fixture constructing could begin there had to be made some changes which were controlled by the client for whom the plow was for.

First fixture was created for point welding, so the locations of plow details are correct. This fixture was more complicated because it was necessary to guarantee correct tolerances. The second fixture is used to complete the welding process.

The material for both fixtures will be Hardox® 400, however the prototype was made using available materials, which was S355 MC.

The first prototype is suitable for the welding of the plow prototype, which the client can verify. When the production numbers increase, it will need some improvements. The second fixture is suitable.

Next step for the production of this plow will be constructing a gripper for robotic bending in order to automate the bending of "Hölm" and to secure smaller tolerances.