CAREER OPPORTUNITIES IN THE MANUFACTURE OF METAL PRODUCTS, MACHINERY AND EQUIPMENT IN ESTONIA

Merkuur OÜ | 2022

SMART MINDS
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MERKUUR

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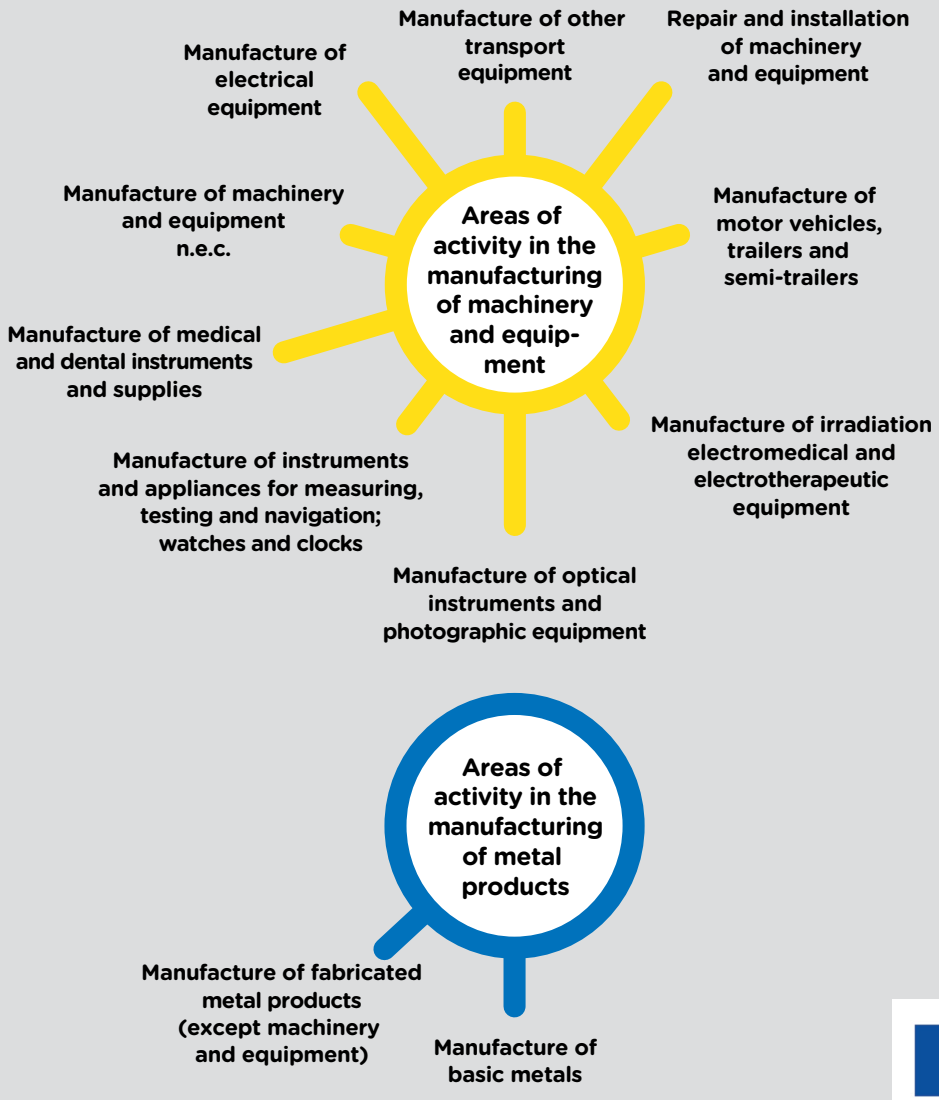
MANUFACTURING OF METAL PRODUCTS, MACHINERY AND EQUIPMENT

The manufacturing of metal products, machinery and equipment is the leading processing industry in Estonia.

- The processing industry accounts for a **third of the country's export turnover.**
- **There are more than 7,500 companies in the Estonian processing industry,** most of them small or medium-sized.

OSKA on the field of manufacturing of metal products



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MANUFACTURING OF METAL PRODUCTS, MACHINERY AND EQUIPMENT

In total, the processing industry employs around 120,000 people, the sector of manufacturing of metal products, machinery and equipment employs 35,000.

- **Managers** – sales and marketing managers, product and supply line managers, manufacturing, quality and technical managers;
- **Top and mid-level specialists** – engineers, masters and supervisors, maintenance technicians and mechatronic engineers;
- **Skilled workers** – machinery mechanics and locksmiths, welders, manufacturers of metal products and constructions, setters and operators of benches, finishers, and (equipment) assemblers.

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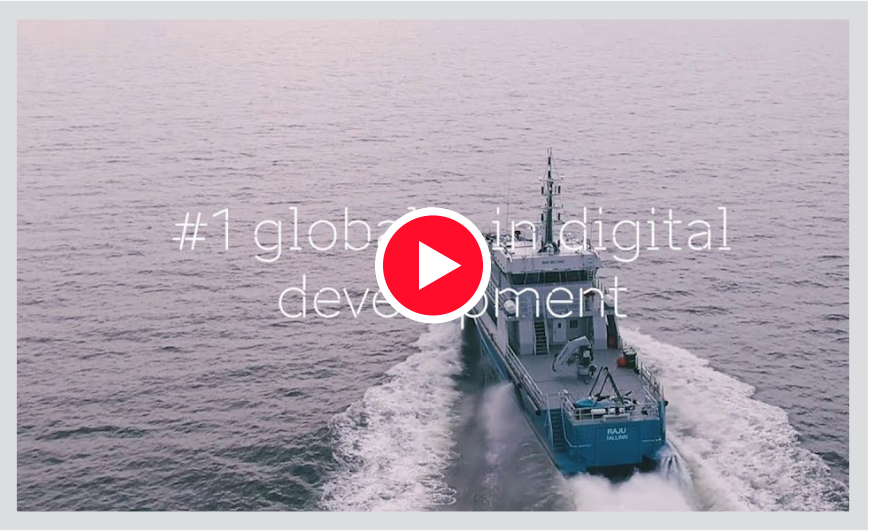
EXPORT

Estonia's primary export markets have traditionally been Scandinavian countries (Finland, Sweden, Norway and Denmark) as well as Latvia and Lithuania.

Exports of machinery and equipment increased by 6% in 2020 compared to 2019.

Swedbank's "Study on industrial undertakings 2021" showed that in 2020, the volume of exports was 3.4 billion euros, while Estonia's total exports of goods was 10.2 billion euros.



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EXPORT

In the sector of manufacturing of metal products, machinery and equipment, exports can be promoted through direct contacts, networking (e.g. company and employee visits), attending trade fairs (e.g. the Hannover Mess in Germany, Alihankinta in Finland, ELMIA in Sweden, TechIndustry in Latvia).

In recent years, digital marketing through social media has really taken off.

For example, **Dipperfox** received its first order on TikTok, where their video received 6 million global views over the course of about 1 week.

The successful start-up and online platform **Factory** use targeted sales marketing on Facebook as well as LinkedIn.

Fractory

Co-funded by the European Union

EXAMPLES OF ESTONIAN COMPANIES

Largest market participants include, for example, BLRT, Hekotek, Harju Elekter, Hanza Mechanics, Radius Machining, Fortaco Estonia, AQ Lasertool, ESTANC, Cleveron, Bestnet, TECH Group, SRC Group, Saku Metall, Maru Metall.

51% of the market is concentrated in Tallinn and Harju county. There are also fewer companies in Ida and Lääne-Viru county, Tartu county and Pärnu county.

Shipbuilders of Saaremaa, Baltic Workboats AS

Notable product development examples from Estonia:

Saunum – innovative sauna solution;
Baltic Workboats – workboats for professionals;
Palms – manufacture of forestry equipment;
Luksusjaht – manufacturing of luxury yachts;
Estelon – world class speakers;
Milrem Robotics – unmanned vehicle;
Threod Systems – drone construction.

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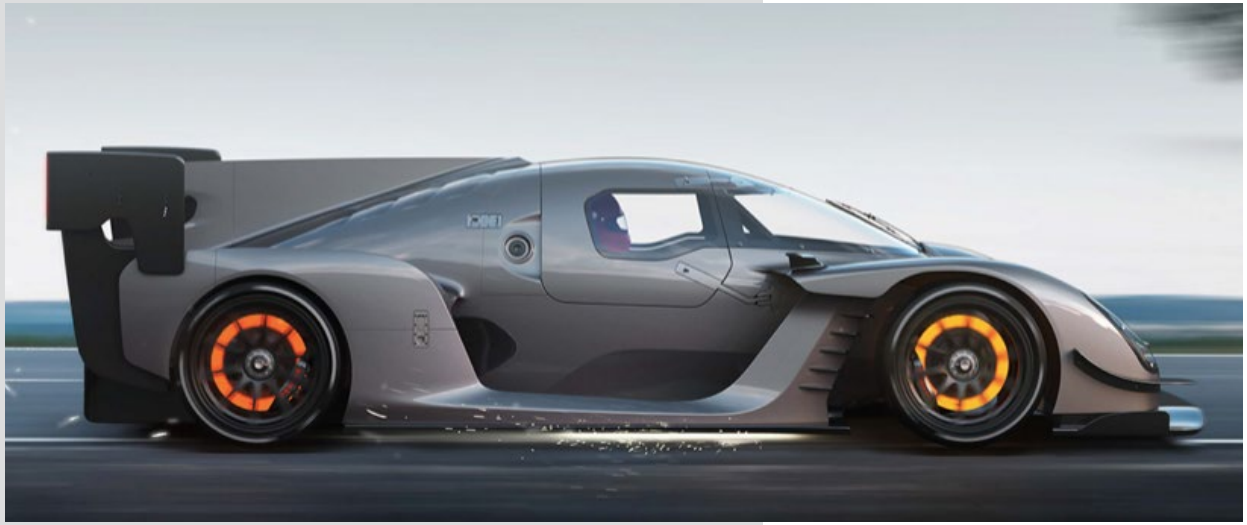
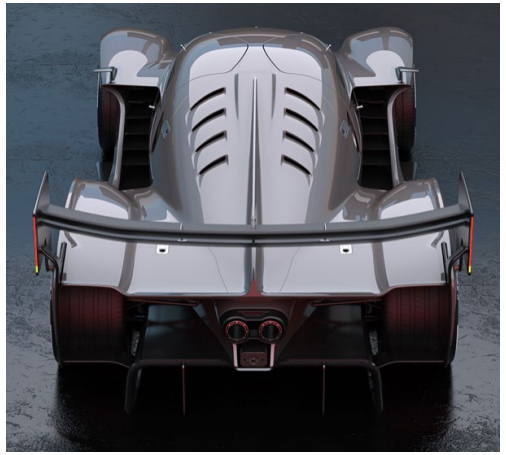
OLDBAC in-house track car





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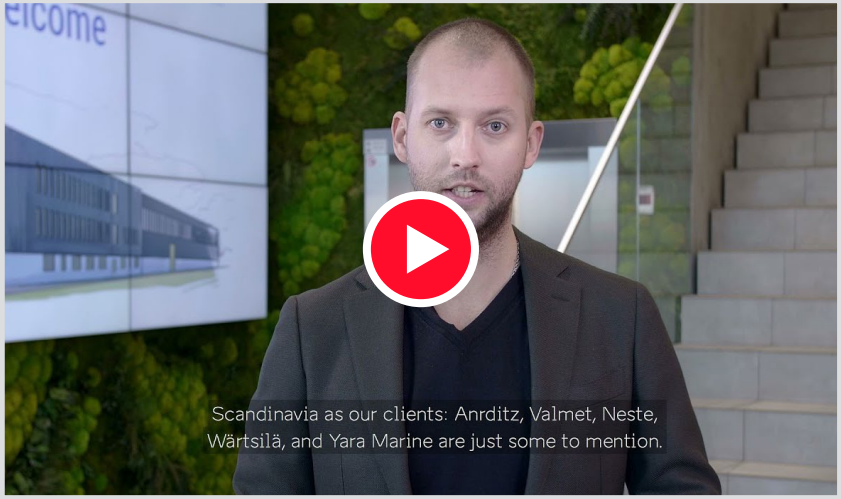
ESTANC

Estanc is the largest and most successful manufacturer of process equipment for high-impact industries in the Nordic and Baltic countries.



Established: 1992

Production area: > 12,000 m^2

Number of employees: 142

Average gross salary: € 2,270

Turnover: € 24,200,000

Export share: 97%

www.estanc.ee

Co-funded by the European Union

RESPO

Respo is one of the largest trailer brands in Northern Europe.

Established: 1990

Production area: 11,000 m^2

Number of employees: 149

Average gross salary: € 1,840

Turnover: € 29,921,614

Export share: 76%

www.respo.ee

Co-funded by the European Union

SAKU METALL

Subcontracting plant Saku Metall Allhanke Tehas AS is not just another sheet metal subcontracting company. We are able to design, manufacture and assemble sheet metal products to the highest standards and requirements at short notice.

Established: 1992

Production area: 10,000 m^2

Number of employees: 300

Average gross salary: € 1,950

Turnover: 28 million

Export share: 85%

www.sakumetall.ee

Co-funded by the European Union

FRACTORY

A cloud manufacturing platform that links engineering companies to the manufacturing market in real time, enabling engineers and purchasing managers to make the switch from data collectors to decision makers.

Fractory
making made easy

Established: 2017
Production area: 0 m^2
Number of employees: 51 in Estonia
Average gross salary: € 4,215
Turnover: € 4,383,067
Export share: 80%
www.fractory.com

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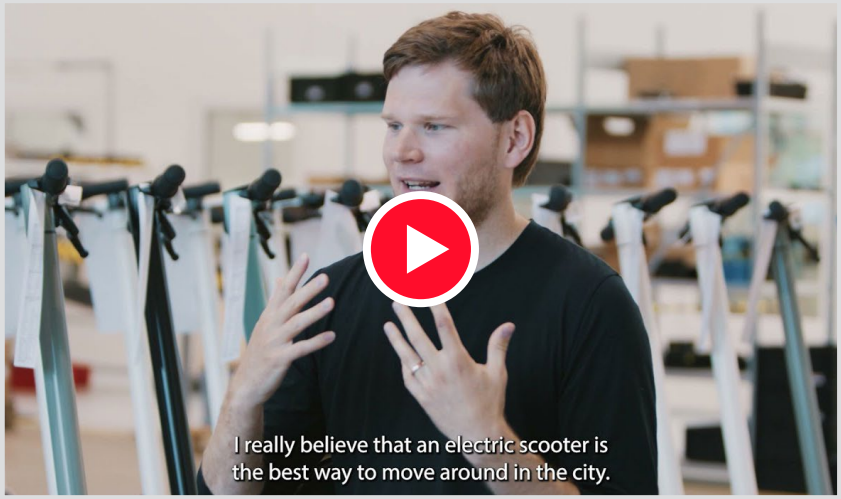
KÕU MOBILITY GROUP

Developer of IoT solutions for light electric vehicles (micro-mobility vehicles). Manufacturer and developer of electric scooters.

kōu



Established: 2014
Production area: 2,000 m^2
Number of employees: 125
Average gross salary: € 2,270
Turnover: € 9,620,791
Export share: 93%
www.koumobility.com

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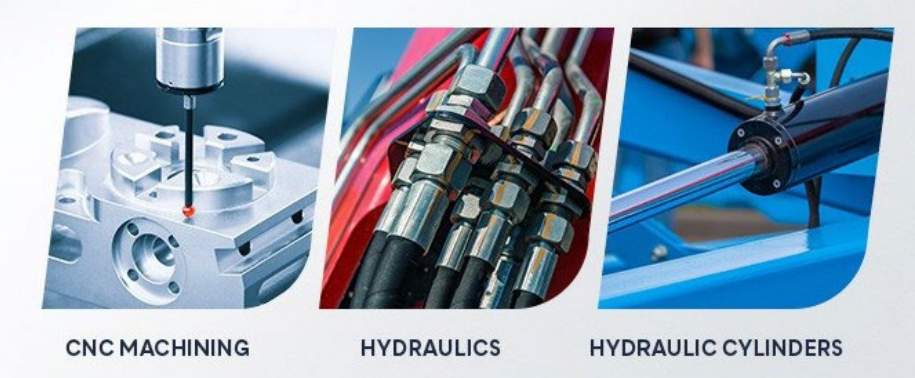
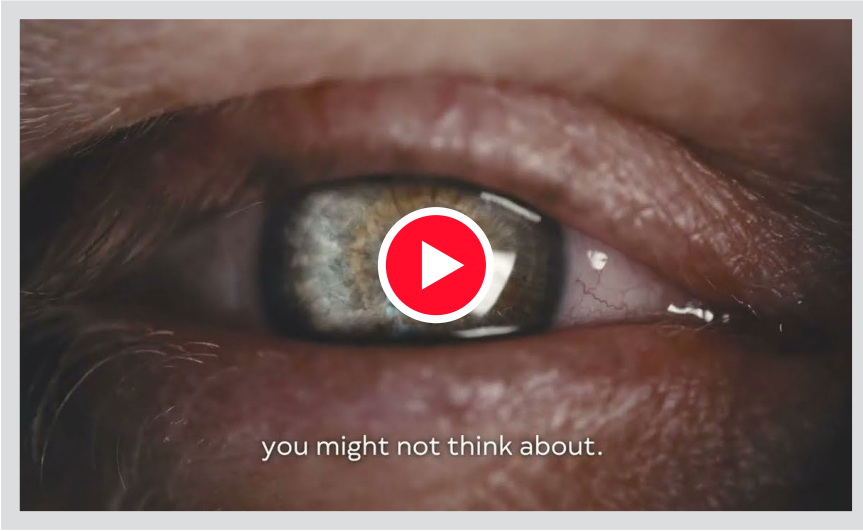
RADIUS

Radius is a contractual manufacturing company with three business units providing CNC turning and CNC milling services, hydraulic tube and hose assemblies and hydraulic cylinders to the OEM sector.





Established: 2005
Production area: 5,200 m^2
Number of employees: 85
Average gross salary: € 2,050
Turnover: € 11,000,000
Export share: 40%

www.radius.ee

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HANZA CLUSTER BALTICS

HANZA Mechanics Tartu offers comprehensive manufacturing solutions for various sectors (including medical devices and equipment for the food industry). Sheet metal production involves cutting, bending, stamping, welding and powder coating. HANZA Mechanics Narva offers manufacturing solutions for heavy machinery.

HANZA

Established: 1996
Production area: 15,000 m^2
Number of employees: 500+200
Average gross salary: € 1,400
Turnover: € 78,000,000
Export share: 92%

hanza.com

Co-funded by the European Union

CHALLENGES IN THE MANUFACTURING OF METAL PRODUCTS, MACHINERY AND EQUIPMENT

- Companies are small (more than 70% of the companies engaged in the manufacturing of machinery and equipment have <10 employees) – there are few resources and it is difficult to innovate and offer added value to products, product batches are small and the value chain is short;
- Lack of qualified workforce;
- Automation, digitalisation and robotisation;
- Identifying new export markets and finding existing ones;
- Green transition and sustainability;
- Development of own products and brands;
- Unstable economic situation, global changes in supply chains, lack of national industrial policy and strategy.

Small business entrepreneur Fredy Jäätes, Fredy OÜ

Reference: EML 85, yearbook of the Federation of Estonian Engineering Industry

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GREEN TRANSITION AND CORPORATE RESPONSIBILITY

ABB is a leading global technology company promoting the transformation of society and industry, for a more productive and sustainable future.

ABB Eesti is active in two areas:
manufacturing (generators, drives, renewable energy equipment, electrical cabinets, compact substations) and sales (transmission and distribution substation projects, medium and low voltage equipment, automation projects, robots, maintenance services).

ABB aims to produce and offer products and/or services that have no unacceptable and far-reaching environmental impacts, are safe for their proper use, are optimal in terms of their consumption of energy and natural resources, and can be either sent away for recovery or recovered or safely disposed of.

ABB considers corporate responsibility an important part of its business.

ABB: taking a green approach is natural and profitable for any organisation.

Co-funded by the European Union

FEDERATION OF ESTONIAN ENGINEERING INDUSTRY

The Federation of Estonian Engineering Industry is an Estonian non-profit association that brings together undertakings engaged in the engineering, metal and machinery industry in Estonia.

According to the Articles of Association of the federation, its objective is "the development of production, entrepreneurship and marketing in manufacturing of metal products, machinery and equipment, and the creation of favourable conditions for its members in this field."

EESTI MASINATÖÖSTUSE LIIT

Number of members: 144
(as at 25 September 2022)
www.emliit.ee
FB group Eesti Masinatööstuse Liit ja tema sõbrad

Industrial news (on Äripäev radio).
In the programme, Äripäev's editorial team focuses on different industrial fields from both a broad and practical perspective. We take a closer look at specific topics to show how sectors have grown, their current situation, new products and solutions, growth opportunities, risks and trends. We talk to specialists in the field and bring you different visions. The programme airs every other Monday at 13:00.

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CAREER AND FURTHER EDUCATION OPPORTUNITIES

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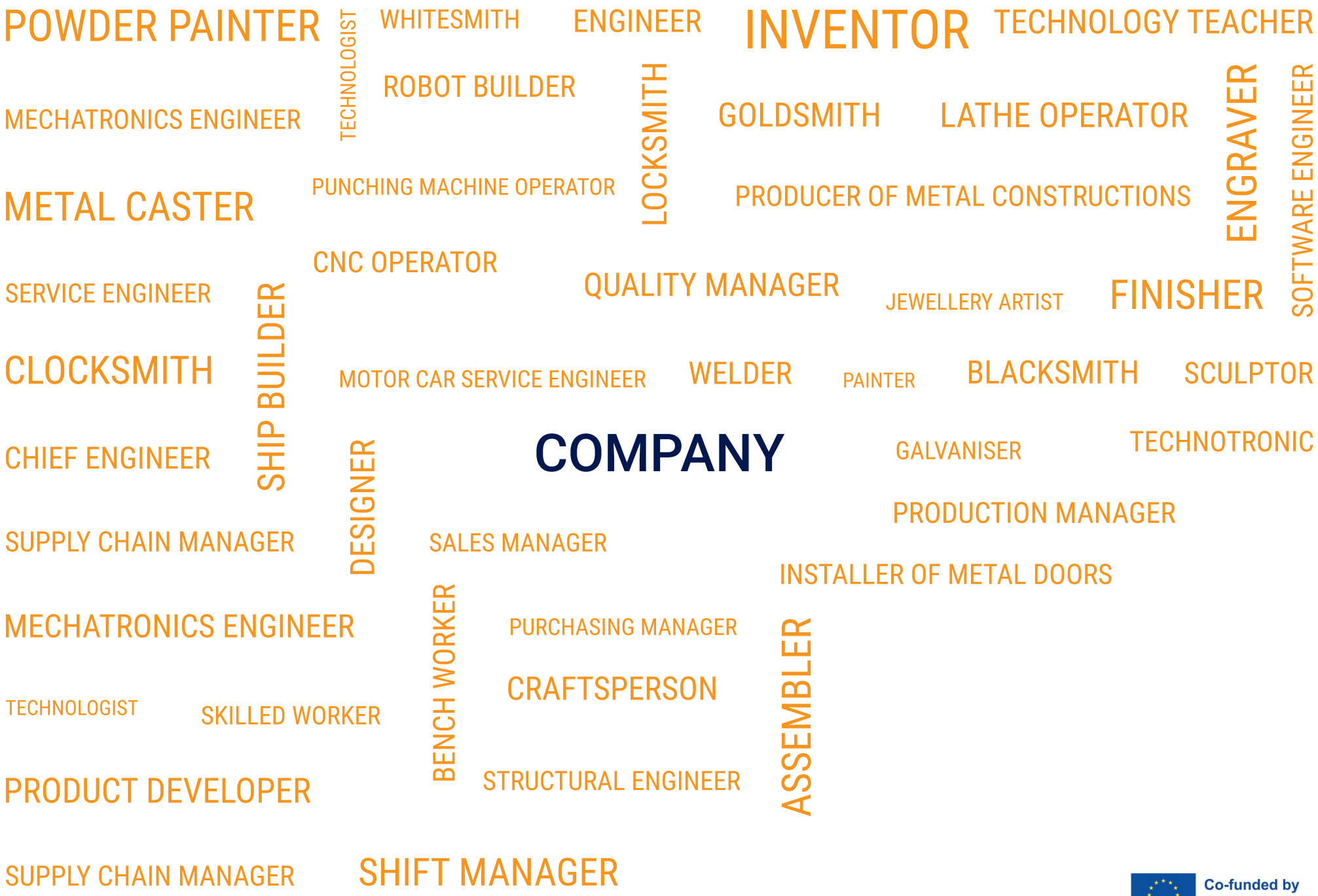

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FURTHER EDUCATION OPPORTUNITIES IN VOCATIONAL TRAINING

- Ida-Virumaa Vocational Training Centre
- Tallinn Lasnamäe Mechanics School
- Võrumaa Vocational Education Centre
- Tartu Vocational College
- Viljandi Vocational Training Centre
- Tallinn Centre of Industrial Education
- Pärnumaa Vocational Education Centre
- Rakvere Vocational School
- Tallinn Polytechnic School

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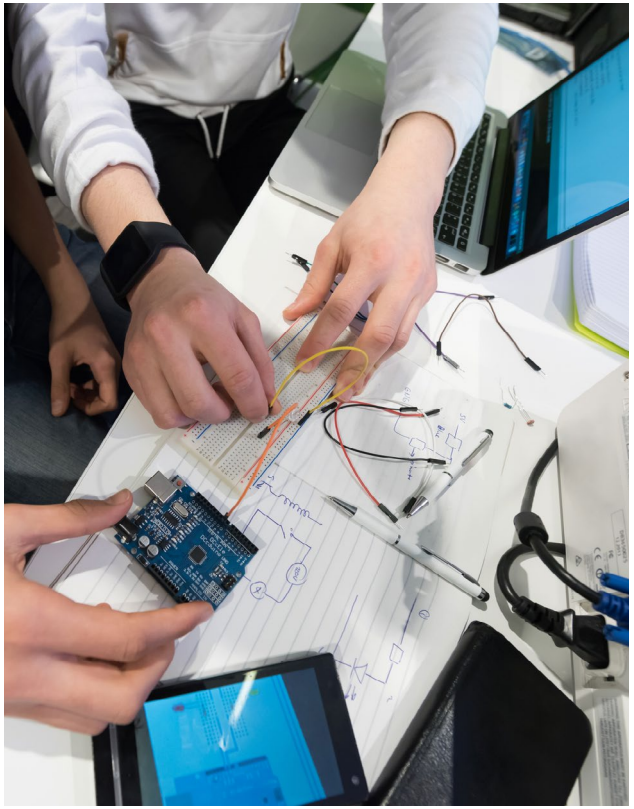
FURTHER EDUCATION OPPORTUNITIES IN HIGHER EDUCATION INSTITUTIONS

- Tallinn University of Technology
- University of Tartu
- TTK University of Applied Sciences
- Estonian University of Life Sciences
- Cleveron Academy



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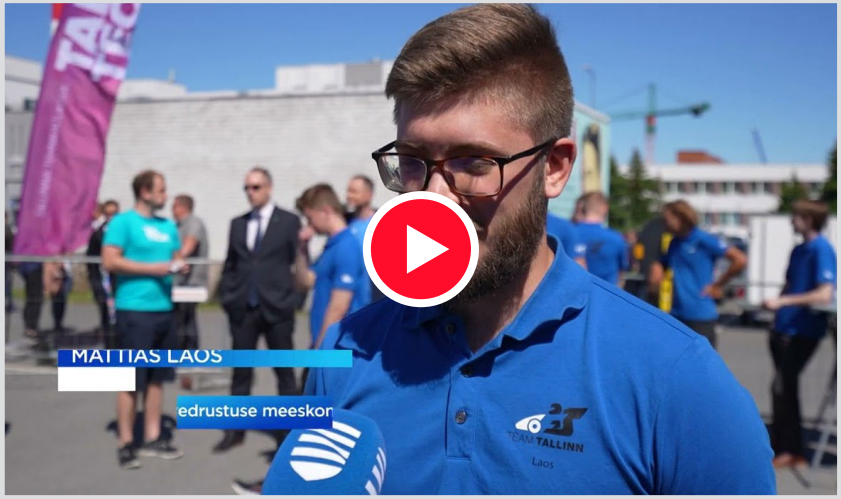
FORMULA STUDENT

Formula Student is a product development competition aimed mainly at engineering students and first took place in Estonia in 2006. The team of Formula Student Tallinn comprises of students from Tallinn University of Technology and TTK University of Applied Sciences.

The Formula Student product development competition involves the design, construction and subsequent demonstration of a single-seater formula car, completing various tests and racing it on a track.

Taking part in the project will give students real-life experience on how to design and construct a car, and it shows young engineers the financial side of the automotive industry.



Co-funded by the European Union

PNEUMOBIIL TECHNICS 5 (T5)

Pneumobiil Technics 5 (T5) is a compressed air-powered formula vehicle developed by the Society of Engineering Students and its design draws on the prototype machines competing at Le Mans.

What makes the T5 Pneumobike special is the extensive use of 3D-printing technology. Many of the engine and chassis components are made of stainless steel and aluminium using SLS. The aluminium tubular frame of the vehicle is covered by plastic body panels made using FDM technology.

The Technics 5 compressed air formula is fitted with a National Instruments cRIO controller that makes it “smart” and allows real-time monitoring, modification and analysis of the processes taking place inside the vehicle.

Co-funded by the European Union

SOLARIDE

Solaride started in 2020 on the initiative of two students from the University of Tartu to build the first solar car in the Baltics

Today this is an interdisciplinary education and cooperation project whose main focus is the development of future talents and the popularisation of technology education.

More than 300 high school students, university students, mentors, trainers and partners are involved in the project.

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OSKA REPORT ON MANUFACTURING OF METAL PRODUCTS, MACHINERY AND EQUIPMENT

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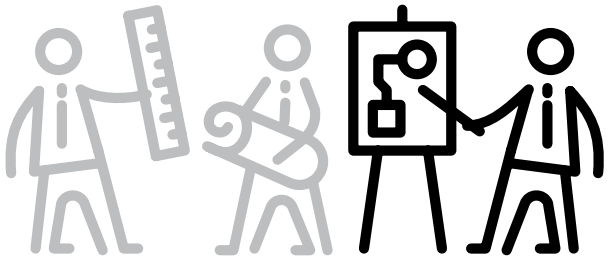
Processing industry

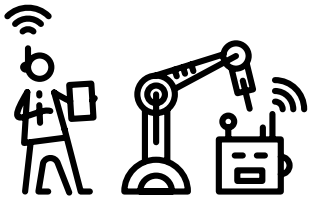
Problems to be solved



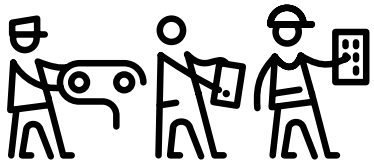
2/3 of engineers are missing

Poor product development and marketing skills

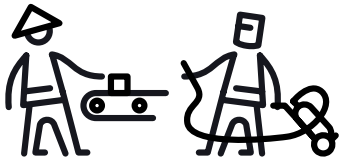
Workers show increasingly more shortages in ICT and general skills



There is a need for employees with knowledge of materials technology and high-tech equipment



Among skilled workers, there is a shortage of robotics, automation and mechatronics engineers



Companies need foreign labour during the “transition period”

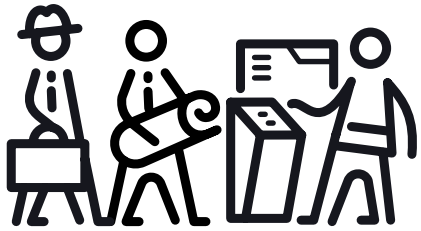
Solving these problems will boost living standards and overall economic growth

Reference: OSKA processing industry. Short report on the study 2022

Need for general skills and attitudes in the processing industry

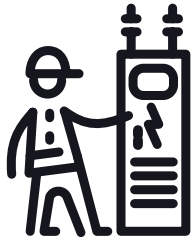
SPECIALISTS

- capacity for transdisciplinary cooperation
- ability to make descisions
- creativity
- process management
- innovation
- intercultural competence
- people management



ALL EMPLOYEES

- teamwork skills
- analysis skills
- adaptability
- expressive skills
- initiative
- ability to learn
- language skills



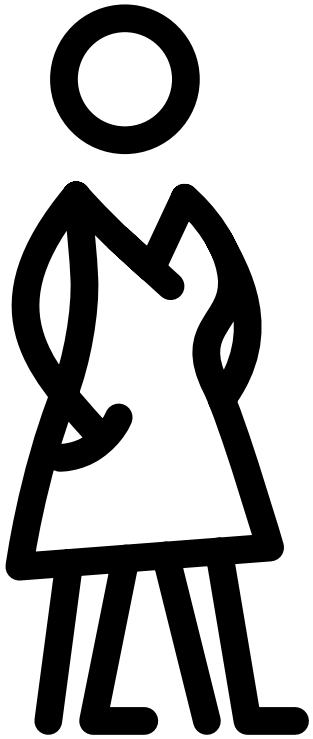
SKILLED WORKERS

- ability to see the big picture
- sense of obligation
- will to work
- interest in the area
- accuracy
- spatial thinking
- planning skills

Reference: OSKA processing industry. Short report on the study 2022

Important industry-specific ICT skills and knowledge of future employees in the processing industry

- development skills related to high-tech industrial equipment and equipment fleets
- knowledge of materials and raw materials
- knowledge of optimisation
- knowledge of quality management
- knowledge of science



- basic digital skills at advanced user level
- skills on how to use and programme sector-specific software solutions
- ability to be "smart customer"
- knowledge of cyber security
- data analysis skills

Reference: OSKA processing industry. Short report on the study 2022

MERKUUR (EE)

The Merkuur team has developed mobile workshops to introduce various trades, techniques and tools in the metal and wood industries to young people and to offer them hands-on opportunities to test the tasks associated with these trades in order to raise their career awareness and competitiveness in the fields of technology and engineering.

Established: 2008

Number of employees: 5

Average gross salary: € 1,465

Turnover: € 126,623

www.merkuur.eu

Co-funded by the European Union

TEHNOBUSS (LV)

The central aim of the platform “TehnoBuss” is to develop closer cooperation between educational institutions, employers and young people of all ages.

We want to help current students become prospective professionals with a smart mind and professional skills that are sought after in Latvian companies.

TehnoBuss

Co-funded by the European Union

PROJECT SUMMARY

Project name: Better career guidance in Mechanical Engineering and Metalworking Industries **(BetterCareer)**
Project duration:
1 November 2021 to 31 October 2022
Project number: 2021-1-LV01-KA210-SCH-000031207

Mechanical engineering and metalworking industry play a crucial role in European economy. One of the main challenges of the industry is the lack of skilled specialists.

A survey, which was made in November 2020 by Latvian and Estonian mechanical engineering and metalworking associations, shows that 40.7% of 7-9 grade pupils in general education in Latvia and 34.5% of 7-9 grade pupils in general education in Estonia still have not decided where they will continue their studies. Therefore, it is important to share information about career opportunities and prospective in the mechanical engineering and metalworking industry to make these areas more attractive for students and the wider public.

Project's aims:
1) to provide modern and interesting career guidance materials about mechanical engineering and metalworking industry
2) to train career guidance consultants, STEM teachers and other educators and specialists in general education institutions about career prospects in mechanical engineering and metalworking industry.

Project's target groups:
1) career guidance consultants, STEM teachers and other educators and specialists in general education institutions;
2) 7-9 grade pupils in general education institutions;
3) wider society, as well as people living in rural and remote areas.

Project's main results are:
1) preparation of career guidance materials about mechanical engineering and metalworking industry in Estonian, Latvian and English;
2) organisation of training for career guidance specialists and educators to introduce career opportunities and success stories in mechanical engineering and metalworking industry.

Co-funded by the European Union

Material is produced within **Erasmus+** programme project “Better career guidance in Mechanical Engineering and Metalworking Industries”, No.2021-1-LV01-KA210-SCH-000031207 (2021-2022).

Project partners:
Tehnobuss Latvia (Latvia) www.tehnobuss.lv
Sihtasutus Smart minds (Latvia) www.smartminds.lv
Merkuur OÜ (Estonia) www.merkuur.eu

MERKUUR

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