

TTS
LNK INDUSTRIES

Experts on machining and
the production of steel structures



TTS – Transportation Technology Systems

TTS (Transportation Technology Systems) Company is able to perform the most complex technical and technological tasks regarding the production of steel structures for clients in different parts of the world. The company has successfully completed many projects concerning the manufacturing of modern equipment that meets the highest international standards.

TTS Company belongs to the construction and manufacturing group – LNK Industries – that in turn is a part of LNK Group. Extensive production facilities, modern welding equipment and skilled professionals make TTS Company a leader of the industry. Together with Latvijas Tilti, which is also a member

of the LNK Industries group of companies, TTS Company has vast experience in the construction and erection of bridge, mooring and other steel structures.

TTS Company is recognised as one of the leading exporting companies in Latvia. The company products are mainly exported to the countries of Western Europe and Scandinavia, testifying to the high quality of the products and reliability of TTS Company. The international quality control standards ISO 9001:2008, welding process quality standard ISO 3834-2 and production control standard ISO 1090-2 are introduced in TTS Company.

The technological base allows TTS Company to carry out full-cycle production of steel structures and heavy machinery. TTS Company production facilities include two workshops with a total area of over 20 000 square metres. The workshops are equipped with 30-tonne cranes and the largest painting and shot-blasting chambers among plants located in the Baltic countries. The welding lines employ 100 trained professionals, certified according to EN 287-1. The workshop also provides anti-corrosion treatment and painting of steel structures. TTS Company uses plasma cutting technology for steel cutting (plasma cutting using Smax 80mm 3-D torch, dimensions: 3000 x 15000 mm). TTS Company also employs a horizontal boring mill (TOS VARNSDORF WRD 150 Q).

The convenient geographical location of TTS Company in Riga allows delivery of the completed order to be performed anywhere in the world in the shortest possible time. TTS Company's experts are able to conduct the trial assembly of complex products directly at the factory, working through every nuance of the final assembly, thereby ensuring the accuracy and efficiency of the unit's assembly at the customer's site.

Bridge structure workshop

Welding and assembly lines for building structures

- › 50 skilled welders certified according to EN 287-1 and operators certified according to EN 1418 for working with SAW equipment
- › MIG, MAG, TIG and MSAW equipment
- › Horizontal boring mill TOS VARNSDORF WRD 150 Q
- › Plasma cutting using Smax 80mm 3-D torch, dimensions: 3000 x 15000 mm.
- › Arc welding technology for steel is tested and acknowledged as conforming to the international quality standard ISO 15614-1

Welding and assembly line for bridge beams

TTS Company was among the first companies in the Baltic states to use welding tractors with TWIN WIRE technology and inverter sources, which allowed it to significantly increase welding speed while maintaining the highest quality.

- › Capacity — 400 tonnes of bridge structures per month
- › 6 modern welding machines (TWIN WIRE)
- › Automated production slots for assembling and straightening of beams

Anti-corrosion treatment line

- › Painting chamber of 144 m² (24 x 6 m)
- › Shot-blasting chamber of 144 m² (24 x 6 m)



Manufacturing



Bridge structures

Modern equipment allows TTS Company to produce a wide range of bridge structures:

- › T- and H-beams;
- › box-section beams;
- › frame and lattice structures;
- › tubular lattice structures.

The workshops of TTS Company produce both individual structural elements (beams, pillars and columns) and flat or three-dimensional braced and unbraced systems. Typically, the structures are manufactured in sections suitable for transportation by road and rail. However, TTS Company's equipment allows sections to be produced weighing up to 50 tonnes and with overall dimensions of 6000 mm x 6000 mm x 40000 mm. Special multi-purpose assembly and welding production slots and automated welding equipment are used by TTS Company. Most of the bridge structural elements undergo the test mounting and assembling procedure to match coupled structures. Depending on the type of structure, the workshop's capacity can reach up to 800 tonnes per month.

Machined heavy frames

Production and high-precision machining of large steel structures are new services offered by TTS Company. It became possible thanks to the new heavy horizontal boring machine with solid apron. Five-axis mill allows machining of structures with dimensions up to 15000 mm x 4500 mm x 4000 mm and weighing up to 50 tonnes. Positioning accuracy of the mill does not exceed 20 microns. The machine is equipped with all the necessary tools and software for milling, boring, hole-drilling and threading. The services also include the necessary thermal processing of structures for relieving of the welding stresses.

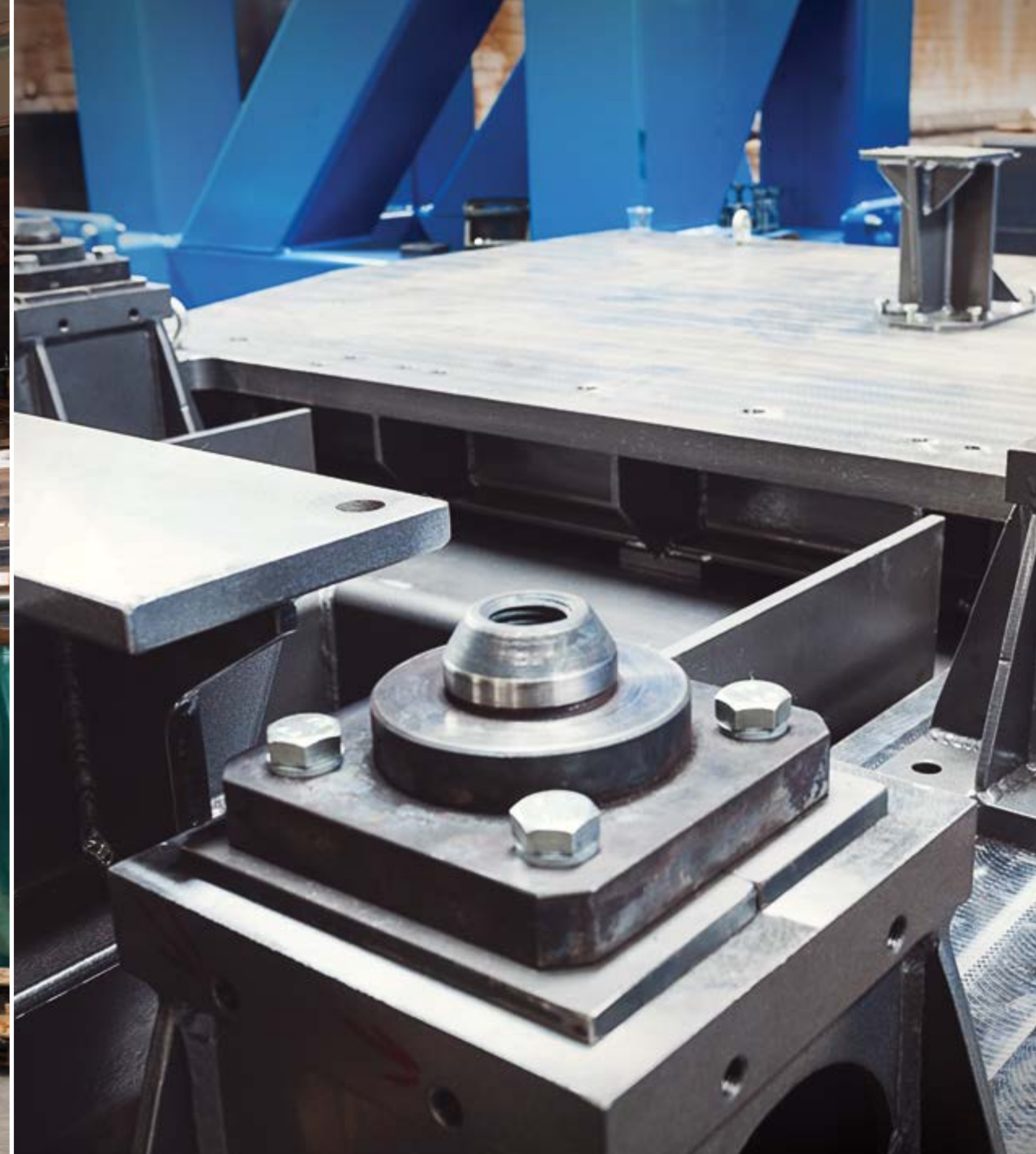
Pontoons

TTS Company produces pontoons for hydraulic engineering and other works on the surface of water. Modular design and versatile features allow pontoons to be produced of different configurations and with a lifting capacity of up to 1000 tonnes. This allows them to work with the heaviest construction machinery. Due to the modular design, TTS Company's pontoons can be quickly dismantled and transported to another site by public roads using standard highway freight. On request, the pontoons can be equipped with stake piles, containers and other associated equipment.

Specific structures

TTS Company also manufactures various special-purpose steel structures and equipment – portals, booms and end carriages for cranes, frames for heavy wood-processing equipment, hoppers, ramps, scaffolds and other structures.

High-precision machining of steel structures



TTS Company uses high-precision heavy horizontal boring mill with solid apron TOS Varnsdorf WRD-150.

It performs drilling, boring, milling and threading with high accuracy and efficiency, and handles three-dimensional parts of great size, weight and complexity made of steel, cast iron or cast steel. Such structures are used in power engineering, woodworking, shipbuilding, transport engineering, mining industry and manufacturing of die moulds. 5-axis machine allows machining of elements weighing up to 50 tonnes with processing accuracy of not more than 20 microns.



Projects



South Bridge

Riga, Latvia

The biggest construction project in the modern history of Latvia — South Bridge — is a 7 km-long transport system (the bridge itself and a modern system of traffic interchanges).

- › Length: 803 m
- › Width: ~34 m
- › Weight of bridge steel structures: ~6266 tonnes

Production of bridge steel structures: 2004–2008



Drawbridge across the River Venta

Ventspils, Latvia

This is the only drawbridge in Latvia. During its reconstruction, TTS Company designed and created a lifting device that moves heavy spans weighing over 140 tonnes, as well as other steel bridge structures, with the highest possible precision.

- › Length: 275 m
- › Width: 19.2 m
- › Total weight: 1497 tonnes

Production of bridge steel structures: 2009–2010





Pedestrian bridge

Alytus, Lithuania

TTS Company has manufactured a bridge span structure consisting of three 3D frames. The bridge connects two very steep banks of the River Neman and is supported by only two pillars, each about 100 metres above water level.

- › Length: 240 m
- › Weight: ~486 tonnes

Production of bridge steel structures: 2014



Frame of the ship loading machine

Estonia

TTS Company has manufactured, erected and tested more than 100 tonnes of steel structures for the ship loading machine, including:

- › self-propelled tool frame
- › 60 m long derrick boom
- › boom lifting mechanism
- › swivel wheel modules
- › belt feeder elements

Production of steel structures: 2015





Construction frame for office building in Vilnius

Vilnius, Lithuania

This assembly consists of two flat frames connected with transverse H-beams forming a rigid structure. Each frame weighs approximately 110 tonnes and consists of box-section beams connected and welded to steel sheets forming crosswise blocks.

- › Consists of two flat frames 7.5 x 25 m each
- › Weight ~ 225 tonnes

In order to transport the structure from Riga to the site in Vilnius, the frame was designed and made from five separate elements. All elements of the structure were assembled together in Vilnius and seams of the structure were polished and welded with full penetration.

Production of steel structures: 2014





Conveyor galleries and transfer towers

Rīga, Latvia

TTS Company has designed and manufactured load-bearing steel structures for the marine terminal for the transshipment of mineral fertilisers.

- › The total length of the gallery is 1.5 km
- › Transfer towers – 800 tonnes
- › Steel for wagon unloading station – 200 tonnes

Production of steel structures: 2013



Equipment for coal-fired power plant

Stanari, Bosnia and Herzegovina

300 MW Thermal Power Plant near the opencast coal mine. TTS Company has produced 1200 tonnes of steel structures:

- › ramps for dump truck unloading
- › belt tensioners
- › hoppers and feeders
- › pontoons
- › service platforms
- › transfer nodes

Production of steel structures: 2014





Frame of the ship loading machine

Wilhelmshaven, Germany

TTS Company has produced 200 tonnes of steel structures.

- › Length: 54.505 m
- › Width: 10.632 m, 9 metres between the rails
- › Height: 16.956 m

Production of steel structures: 2011



Helicopter transmission test rig

Riga, Latvia

TTS Company has produced 30,708 tonnes of steel structures

- › Width: 7.068 m
- › Length: 7.778 m
- › Height: 4.508 m
- › Weight: ~50 tonnes

Production of steel structures: 2013





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LNK GROUP

TTS (Transportation Technology Systems) Company belongs to *LNK Industries* that is a part of *LNK Group*. *LNK Industries* consists of four companies: *Latvijas Tilti JSC* – hydraulic engineering projects, as well as the design and construction of bridges and road overpasses, *Enfort LLC* – design and construction of civil and industrial buildings, *TTS (Transportation Technology Systems) LLC* – production of equipment for the transportation of materials, as well as the production of large-sized steel structures and *LNK Industries JSC* – turn-key project management.



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