

**SOLUTIONS
QUALITY
FUTURE**



STAL - West Zrt.

THE SYSTEM SUPPLIER

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STAL-WEST ZRT.

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In the metal industry, reliability and precision are the key - and that's exactly what we deliver. With decades of experience, state-of-the-art technology, and dedicated expertise, STAL-West Zrt. serves its partners with excellence.

Aluminium and steel product manufacturing, surface treatment, engineering services and custom solutions - all in one place.



About Us

Surface Treatment and Coating Services

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→ Surface pre-treatment

Our chemical pre-treatment, based on Oxsilan® (BASF) technology, is a chromium-free, environmentally friendly zirconium-titanium coating. This innovative nanotechnology is similarly applied in the pre-treatment of premium cars, automotive parts manufacturing, electronic devices, and construction products. The technology ensures high-level corrosion protection and optimal coating preparation on aluminum surfaces. After applying the conversion coating, a top coat is always added, which is none other than electrostatic powder coating. Our capacity dimensions: 6900 * 480 * 1800 (mm).

→ Anodising

Anodizing is an electrochemical process used for surface treatment of aluminum and aluminum alloys. During the process, a thin, hard oxide layer forms on the surface of the metal, which protects it from corrosion, enhances wear resistance, and provides an aesthetically pleasing appearance. As the resulting oxide creates an extremely hard surface, it is resistant to UV radiation and environmental effects (scratches, weather conditions). We are one of the largest anodizing plants in Hungary, currently offering anodizing in a natural (E6/C0) color.

→ Powder coating

Powder coating is the most advanced and environmentally friendly surface treatment method for corrosion protection. It is suitable for all metal surfaces, making it one of the most sought-after coatings in the metalworking, machinery, food, and healthcare industries. It provides excellent corrosion protection, high-quality aesthetics, and a variety of RAL color shades. Electrostatic powder coating, also known as sintering, is an improved version of an earlier technology. The purpose of this method is to make the coating more durable and significantly more environmentally friendly than solvent-based painting. The process involves electrostatically charging the material—either polyester or epoxy-polyester—while the metal object attracts it

→ VIANT coating technology

A smarter way to protect against corrosion. Newly created coating technology provides greater coverage and enhanced corrosion protection on edges and internal surfaces. The VIANT process combines conversion coating and primer paint in a single coating layer. This new technology is easy to handle and provides reliable corrosion protection on edges and internal surfaces. The coating process step does not require high voltage, special equipment or constant coating temperature. Instead, VIANT results in a shorter process chain, resource savings and lower operating costs. For more information on the technology, please refer to the VIANT demonstration document.



PROFILE & SHEET METAL WORKING

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→ CNC Laser cutter

The **TruLaser 1030** fiber offers outstanding efficiency, unmatched precision and cost-effective solutions for cutting thin stainless steel, structural steel, aluminum and other sheet metals.

Working area

X axis: 3000 mm

Y axis: 1500 mm

Our machine can cut brass and copper **quickly** and **easily**.

Up to a plate thickness of 3 mm, the machine cuts with nitrogen shielding gas, so that no oxide layer is formed on the cut edge, which can cause problems when painting the product.



→ Double Disc cutting

The **ELUMATEC DG 104/01** two-head saw has two cutting discs that cut the profile on both sides simultaneously, which cuts the processing time in half. The machine is optimal for both series production and special applications.

The universal rotation and tilting of the two saw units allow for high and wide profiles as well as complex (intricate) mitre cutting.

Technical parameters of the **ELUMATEC DG 104/01 saw**

- Saw blade diameter 420 mm
- Saw blade speed 2,800 rpm
- Inward turning range 90° - 45°
- Up to 22.5° manually with digital display



→ CNC Bending

Our live bending technology enables the production of high-precision parts that meet the stringent tolerance requirements of modern components in terms of both angular range and dimensional accuracy.

1.AMADA HFE M2 1003

- Maximum bending length: 3000mm
- Bending force: 100t
- Maximum bendable wall thickness for steel: 6mm

2.AMADA HFE M2 5020

- Maximum bending length: 2000mm
- Bending force: 50t
- Maximum bendable wall thickness for steel: 6mm



→ CNC punching

CNC controlled nibbling machine with PEPS programming

Nibbling machine type: **TRUMATIC 500 R:**

- Maximum working area: **1650*5500mm**
- Maximum nibbling wall thickness for steel: 6mm
- Nibbling force: 20 t



→ TIG

In **TIG** welding, a non-consumable tungsten electrode generates the arc, while the weld zone is protected by an inert shielding gas (argon or helium). The weld can be formed either with or without the addition of filler rod.

✓ Advantages: Precise, high-quality welds with deeper and better penetration. Ideally suited for stainless steel, aluminum, and thin sheet metals — areas in which we have extensive experience.

→ MIG/MAG

In this process, a continuously fed consumable electrode (wire) provides both the arc and the filler material. The main difference lies in the type of shielding gas used:

- MIG (Metal Inert Gas – e.g. argon, helium): Suitable for welding aluminum, copper, and stainless steels.
- MAG (Metal Active Gas – e.g. CO₂ or argon-based mixtures): Primarily used for welding steels.

✓ Advantages: Fast, easily automated, and applicable to a wide range of materials.

→ STUD WELDING

Stud welding is a resistance welding technique in which a metal stud, bolt, or weld nut is fused to a metal surface using an electric arc. It is commonly used in the production of structural elements, electrical enclosures, and steel structures.

✓ Advantages: Fast, creates strong joints, and does not require pre-punched holes.



WELDING

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ROBOT WELDING (STEEL)

Yaskawa ArcSystem 8000:

A modular, high-performance welding system that delivers precise and fast arc welding. Its advanced control system and automated processes make it ideal for high-volume production, minimizing defects and spatter.

Yaskawa ArcWorld C:

Compact, turnkey robotic welding cell that is quick to install and easy to integrate. The Motoman AR1440 robot and YRC1000 controller ensure precise and efficient welding.

Our **Yaskawa systems** are integrated with premium Fronius welding machines, guaranteeing unmatched welding quality and maximum productivity. The perfect match of innovative technology ensures superior weld quality, minimal rework and increased efficiency, giving our customers a competitive edge in modern manufacturing.



SUPER ACTIVE ALUMINIUM ROBOT WELDING

Thanks to the servo wire feed built into the welding gun and Panasonic's **Super Active TAWERS** technology, stable weld quality and low (almost zero) spattering are achieved during the MIG welding process. Controlled wire guidance ensures precise droplet separation, reducing deposits and the need for rework.

During the **SAWP** process, the system detects short circuit and dynamically adjusts wire feed to maintain a stable arc and weld. This allows for faster welding while handling wider flange geometry.

The Stitch Pulse function is particularly ideal for aluminium welding, as it reduces heat input by 'turning the arc on and off', thus avoiding material burn-through. Super Active technology initially retracts the wire from the melt and then switches to normal pulse, ensuring a smooth melt and spatter-free arc. The outstanding feature of the machine is that it can process large products up to 5 metres long thanks to the mobile robot.



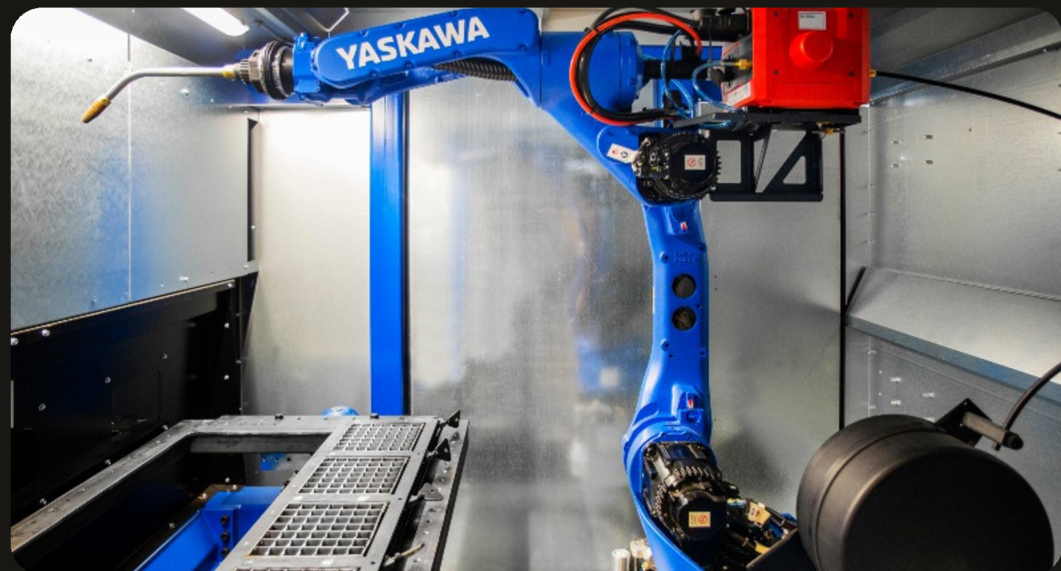
LASER WELDING

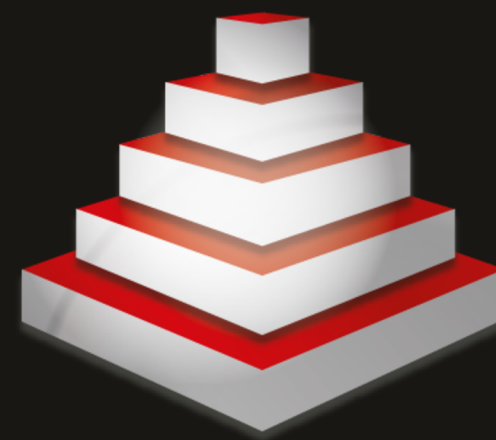
Laser welding is a high precision and fast process used for welding various metals, including steel and aluminium. The **3 kW** laser is capable of creating deep fusion, strong and aesthetic welds with minimal heat input.

Advantages:

- High welding speed - Faster than conventional arc welding processes.
- Minimal heat exposure - Reduces material warpage and heat damage.
- Precise and clean welds - Post-machining is often unnecessary.
- Versatility - Suitable for welding different material thicknesses and types.

The **3 kW** laser is the optimum solution for welding thin and medium-thin sheets in industrial applications where speed, precision and cost-effectiveness are of paramount importance.





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