



# SOLUTIONS ADAPTED TO YOUR GOALS

COMPREHENSIVE SOLUTIONS  
FOR ENGINEERING AND SERVICE  
OF PRODUCTION EQUIPMENT.

GRAVITY CASTING, HIGH PRESSURE CASTING,  
AUTOMATION, MECHANICAL ENGINEERING  
AND OTHER SERVICES

**TALUM** • SERVICE & ENGINEERING

MEMBER OF THE GROUP T A L U M

# WE ARE A COMPANY WITH A LONG TRADITION AND PROUD OF IT

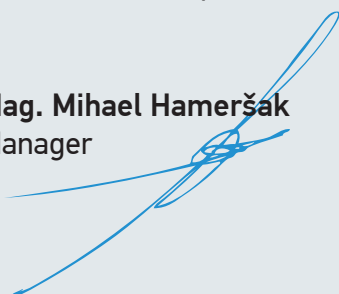
The origins of the company date back to 1954 when we started with the development of services for the parent company Talum. Along with the parent company, we have gradually developed, acquired skills and competences and learned how to live with changes.

We have developed a modern company that offers high quality, comprehensive and competitive services in the field of maintenance of production equipment and metal production. The level of quality of our services is confirmed by the ever-growing number of certificates.

All this was achieved with a proper team - qualified personnel. This is confirmed by our many years of experience in the field of solutions of the most complex challenges for the development of technologies with cost reduction, reduction of energy consumption and process automation.

We invite you to inform yourself in detail with brochures about our services below. We will be happy to answer all your questions and inquiries.

**Mag. Mihael Hameršak**  
Manager





**OUR HIGHLY QUALIFIED  
PERSONNEL PROVIDES  
QUALITY AND  
COMPREHENSIVE  
SOLUTIONS.**

36

**ENGINEERS**

in the field of electronics,  
electro energy industry,  
engineering and construction.

110

**TECHNICIANS**

Among them designers,  
electricians, locksmiths,  
welders, machine workers,  
toolmakers, metal and fireclay  
processors and builders of  
refractory linings.

200

**EMPLOYEES  
IN TOTAL**

In nearly six decades we have  
grown into a medium-sized  
company with 200 employees.



# EXCELLENT PERFORMANCE AND COMPETITIVE PRICE, YOU GET BOTH FROM US

Despite the fact that we carry out most projects in Slovenia we are getting increasingly present on foreign markets with our knowledge and experience.

- 1 **Argentina:** installation of a slugs production
- 2 **Germany:** a comprehensive renovation of tiltable casting machines and low pressure casting machines Röperwerk
- 3 **Bosnia:** construction of large solar power plants

60 YEARS  
EXPERIENCE  
IN SERVICING  
PRODUCTION  
EQUIPMENT

We are located inside the industrial park Talum



## FIELDS OF ACTIVITY

# WE MANAGE COMPLEX PROJECTS AND PAY ATTENTION TO DETAILS



### GRAVITY CASTING

Robotic casting cell – Process automation // General renewal and modernization of casting machines for gravity, tiltable and low pressure casting // Refractory linings of melting and holding furnaces // Manufacture of tools for tiltable and low pressure casting



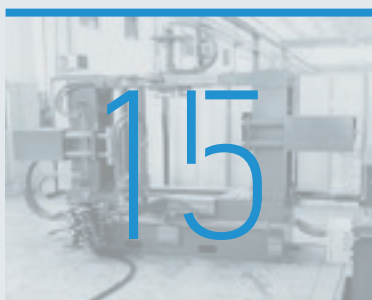
### HIGH PRESSURE CASTING

Refractory linings of melting, holding and dosing furnaces // Automation of the casting process



### AUTOMATION

Maintenance of processing and casting machines // Automation of process lines // Process automation



### MECHANICAL ENGINEERING

Manufacture of devices and machines according to the plans of the contracting authority (Manufacture of metal structures, Assembly of hydraulics and pneumatics, electrical installation, Logistics, Start up, Assembly)



### OTHER SERVICES

Production of welded products // Services of the service workshop // TOOL MAKING SERVICES



### REFERENCES



A large industrial machine, possibly a welding or assembly robot, is shown in a factory setting. The machine is green and black, with various cables and hoses connected to it. It is surrounded by yellow safety railings. In the background, there are other industrial equipment and a large white cylindrical tank. The overall scene is brightly lit, suggesting a clean and modern industrial environment.

FROM  
PLANNING  
TO MACHINE  
START



# GRAVITY CASTING

## ROBOTIC CASTING CELL – PROCESS AUTOMATION

### Design and modelling

- Risk assessment
- 3D production model
- Project documentation
- Technological solutions

### Machine manufacturing

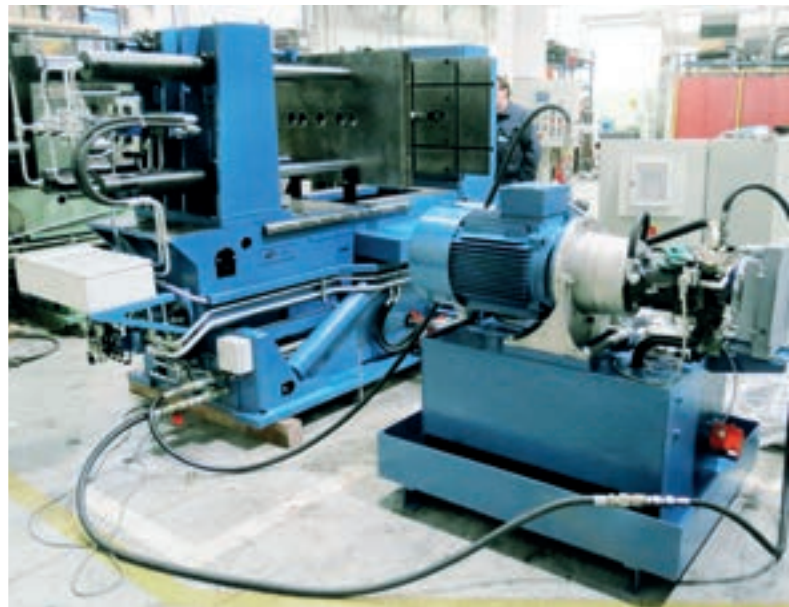
- Manufacturing of mechanical components
- Hydraulics and pneumatics
- Special hold of the robotic arm
- Electrical cabinets
- Automation and robotization

### Machine installation and start-up

- Casting machine installation
- Robot installation
- Energy supply connection
- Safety elements
- Start up and test
- Integration with other production operations

**Other activities:** spare parts support, failures elimination, improvements





## GENERAL RENEWAL AND MODERNIZATION OF CASTING MACHINES FOR GRAVITY, TILTABLE AND LOW PRESSURE CASTING

### Design – machine frame

- Machine frame repairs (various cracks and unevenness)
- Remakes and upgrades
- Change of bearings
- Sandblasting and painting

### Hydraulic equipment

- Hydraulic equipment can be modernized in order to improve the reliability and to lengthen the life time
- Repair and modernization of the hydraulic aggregate (pump, pump control, filter in the return line and the secondary circuit, temperature and fluid level control)
- Cylinder repair (seal, piston rod, cylinder tube)
- Replacement or the repair of the steel installation
- Replacement of the flexible tubes
- Installation of thermal protection on the exposed flexible tube

### Electric equipment and steering

- Modernization of the electrical equipment
- Control system modernization or replacement
- Modernization of the sensor system and safety elements
- Improvement of modification of the software according to customer specifications

### Gas equipment

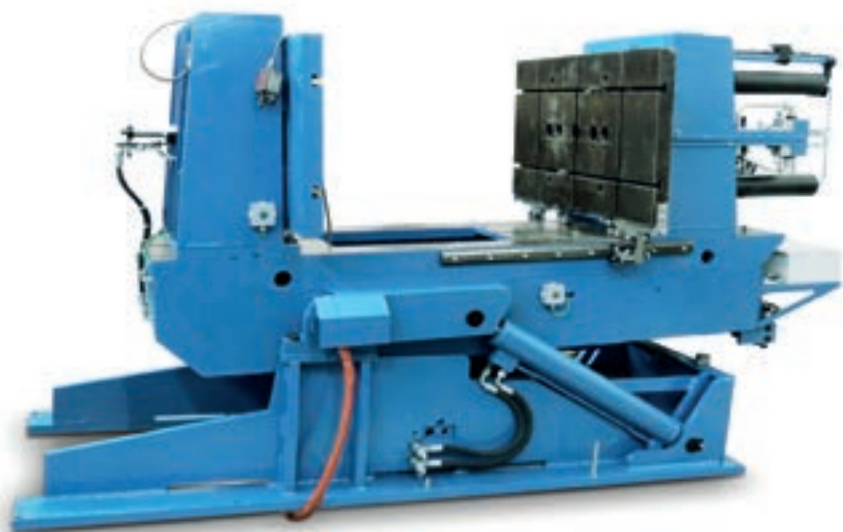
- Renovation and modernization of the gas equipment for moulds
- Renovation and modernization of the existing installation from the connection to the gas circuit to the burners on the machine

### Cooling cabinets

- Manufacturing of cooling circles for air mould cooling to customer requirements
- Control of the cooling time and the air flow through software

### Casting machine protection fence

- Manufacturing of the casting machine protecting fence according to existing guidelines
- When casting with robots there will be automatic doors installed







## REFRACTORY LININGS OF MELTING AND HOLDING FURNACES

### Refractory linings of furnaces

- Advice on the material selection
- Removal of the old lining manually and with machines
- Furnace linings with refractory concrete or brick
- Formwork production (chimneys, burners)
- Monitoring of the drying process

### Filters, pots and foundry sinks renovation

- Advice on the material selection
- Removal of the old lining manually and with machines
- Furnace linings with refractory concrete or brick
- Formwork production
- Monitoring of the drying process – for smaller products the drying process takes places in the workshop (up to 450°C)

### Manufacture of various refractory products by customers' demands

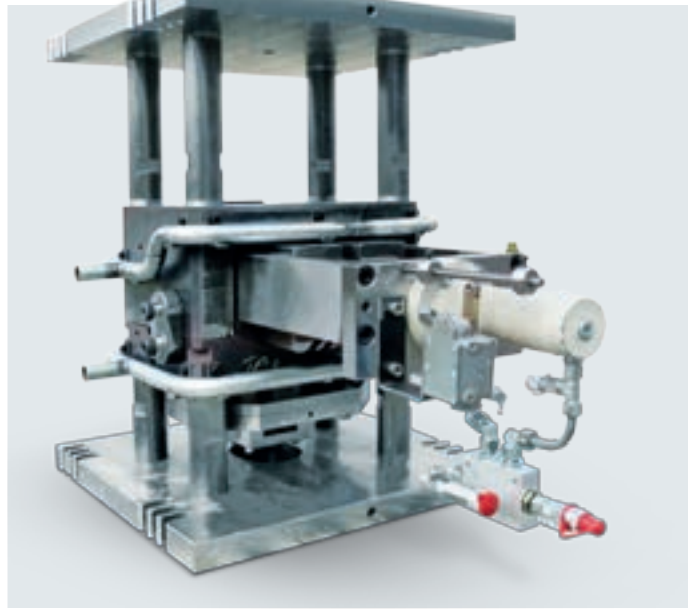
- Foundry sinks
- Filters, pots
- Wedges, plugs, barriers
- Furnace lids and doors

### Repair and maintenance

- Foundry furnace
- Various products

### Special procedure (with machines)

- Special procedure in order to extend the furnace or products usability - application of the refractory concrete (during operation).



## MANUFACTURE OF TOOLS FOR TILTABLE AND LOW PRESSURE CASTING

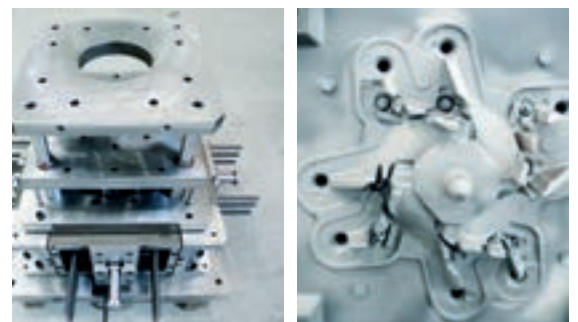
### Tools for Al sheets and aluminium casts cutting

- Tools composed of several segments or from multiple cutting elements of different forms and the associated frame
- Maximum size of 1300x700 mm
- Our tools provide the highest cutting quality
- Tools are made of various types of steel for the work at Low Temperature

### Tools for casting of the non-ferrous metals

- Design and manufacture of tools for the following casting procedures
  - Classical tiltable casting
  - Gravity casting
  - Low pressure casting
- Maximal tool dimensions 700x1000 mm
- Tools are made of tool steel for the work at high temperatures (hot)
- Manufacturing of tools for cores creation for casting of non-ferrous metals

**Design/ Construction – our engineers use professional CAD/ CAM tools: Catia, PROEngineer, AutoCAD**



# HIGH PRESSURE CASTING

## REFRACTORY LININGS OF MELTING, HOLDING AND DOSING FURNACES

We have more than fifty years of experience in the field of refractory linings and a professionally qualified staff.

Yearly we install more than 100 t of various types of concrete and 500 t of bricks of various suppliers (Gouda, Rath, Calderys, Refratechnik, Stellar Materials, Pyrotek, Rhi, Poroxtherm....)

We use high quality machines (vibration desks, calcination furnaces, vertical mixers Hoganäs Bjuf).

### Refractory linings of melting and holding furnaces

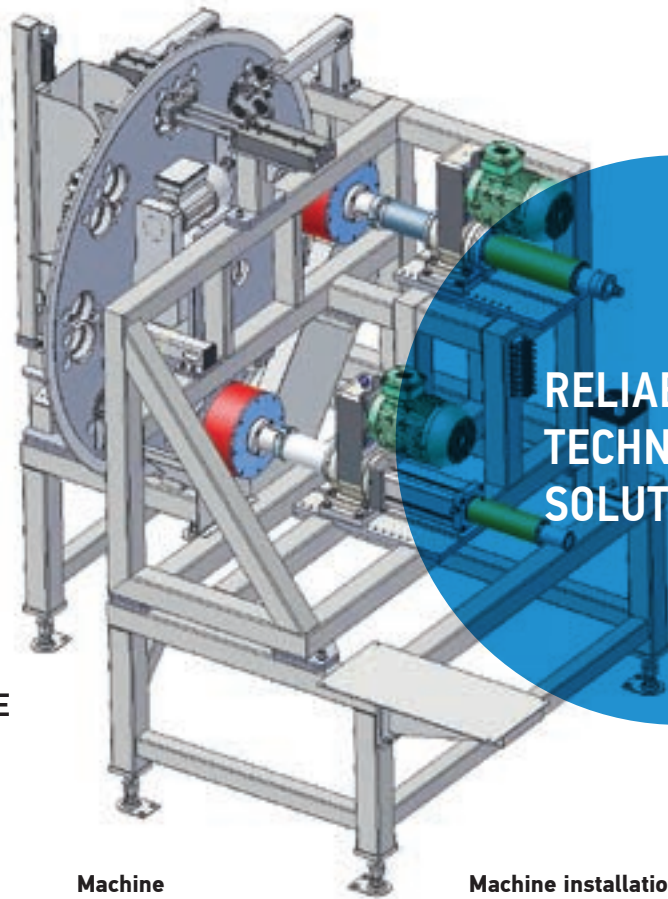
- Advice on the material selection
- Removal of the old lining manually and with machines
- Furnace linings with refractory concrete or brick
- Monitoring of the drying process

### Refractory renovation of dosing furnaces

- Removal of the refractory lining
- Laying insulation
- Formwork manufacture
- Welding anchors
- Door renovation
- Applying concrete on the floor and walls
- Building arches
- Drilling holes
- Applying concrete on the insulation coating
- Cleaning the furnace's edge and painting







**RELIABLE  
TECHNOLOGY  
SOLUTIONS**

## **AUTOMATION OF THE CASTING PROCESS**

### **Design and modelling**

- Risk assessment
- 3D production model
- Project documentation
- Technological solutions

### **Machine manufacturing**

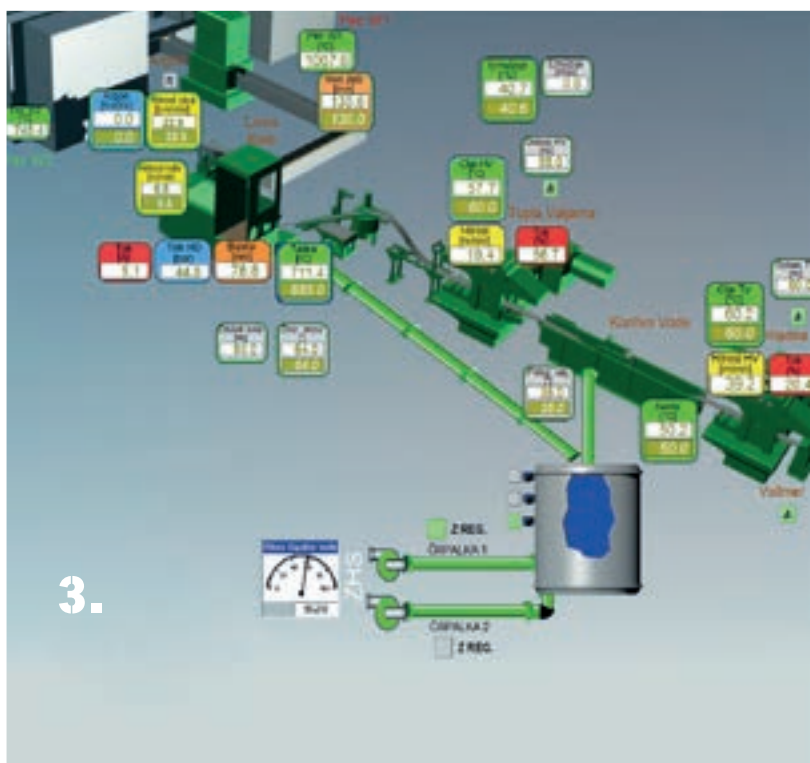
- Manufacturing of mechanical components
- Hydraulics and pneumatics
- Electrical cabinets
- Automation and robotization

### **Machine installation and start-up**

- Casting machine installation
- Energy supply connection
- Safety elements
- Start up and test
- Integration with other production operations









# AUTOMATION

## 1

### Maintenance of processing and casting machines

- Conceptual design of the machine, robot cell, 3D CNC machine
- Model simulation, analysis, drawing up of the specifications
- Electro project development, manufacture of control cabinets
- Software development, software simulation
- Device test and start up
- Training of users, submission of documents

## 2

### Automation of process lines

- Conceptual design of the line, selection of drive and regulation components, vision equipment
- Model simulation, analysis, drawing up of the specifications
- Electro project development, manufacture of control cabinets
- Software development, software simulation
- Device test and start up
- Training of users, submission of documents

## 3

### Process automation

- System model development, joint or charging model
- Simulation and analysis of measuring and regulation circles, drawing up of the specifications
- Electro project development, manufacture of control cabinets
- Software development, software simulation
- Device test and start up
- Training of users, submission of documents
- System maintenance

### Other

- Conceptual projects, studies
- Development projects
- Engineering of complex systems
- Training in the field of automation

### Software tools

- Control systems, SCADA WinCC, Citect, LabView
- Vision systems, LabView, Smart camera, Cognex
- PLC programming Siemens (Simatic Manager, TIA portal), Schneider (Unity Pro)

- Electro designing Eplan, Caddy Electrical
- Robot cells KUKA, Kuka Sim Layout, Sim Pro
- Steering equipment Siemens, Lenze, Control technique, Schneider...
- CNC steering Sinumerik, Fanuc





**MACHINERY  
AND DEVICES  
ACCORDING TO  
YOUR PLANS**



# MECHANICAL ENGINEERING

**MANUFACTURE OF DEVICES AND  
MACHINES ACCORDING TO THE PLANS  
OF THE CONTRACTING AUTHORITY**

Manufacture of  
metal structures

Assembly of  
hydraulics

Assembly of  
pneumatics

Assembly of  
electrical installation

Logistics

Start up

Assembly







# OTHER SERVICES



## PRODUCTION OF WELDED PRODUCTS

Various welded products (as required also thermally processed to reduce the material stresses resulting from the welding)

### Welding types (attests)

- MIG
- MAG
- TIG
- Aluminium welding

### Metal sheet cutting

- Oxygen cutting (sheet metal thickness up to 160 mm)
- Plasma cutting (sheet metal thickness up to 45 mm)

**Sheet metal bending:** 18 mm thickness, length up to 2500 mm

### Tube manufacturing

- Up to 1000 diameter
- Wall thickness up to 20 mm
- Tube height up to 2000 mm

**Workshop:** width 20 m, height 8 m,, length 70 m

**Cranes:** 5t, 7t and 15t

OUR QUALITY IS  
CONFIRMED BY  
CERTIFICATES



ISO 9001



## SERVICES OF THE SERVICE WORKSHOP

### HYDRAULICS SERVICE

#### Hydraulic power units

- Production of power units according to the customer's needs
- Repair – maintenance
- Renovation, modernization, development

#### Hydraulic cylinders

- Manufacture according to the customer's needs
- Service and repair (up to 5 m of length)
- Testing on the test stand

#### Hydraulic pumps

- Pumps service and repair (up to 160ccm/ turn)
- Testing on the test stand (pQ diagram)

#### Services and repairs testing on the test stand

- Assembly of the hydraulic equipment
- Assembly of the hydraulic equipment on place
- Assembly of hydraulic parts in the workshop
- Monitoring hydraulic fluids
- Measurement of the contamination of hydraulic fluids with hard particles according to ISO 4406/99
- Monitoring hydraulic fluids is carried out according to a pre-determined scheme

### PNEUMATICS

#### Pneumatic systems

- Design
- Extensions and modernization of pneumatic systems
- Service and repair of pneumatic systems (also for pressures up to 240 bar)

#### Compressors – vacuum pumps

- Maintenance and service of the compressors
- Vacuum pumps renewal
- Air dryers repair and maintenance

#### Pneumatic cylinders

- Manufacture of special cylinders
- Service and general restoration (also for cylinders that operates under special conditions - high temperature)

#### Valves and other pneumatic equipment

- Repair and valve tests (also valves for higher temperature loads as well as components for high pressures up to 240 bars)
- Air discharge control with ultrasound
- Service of reduction gears and blowers

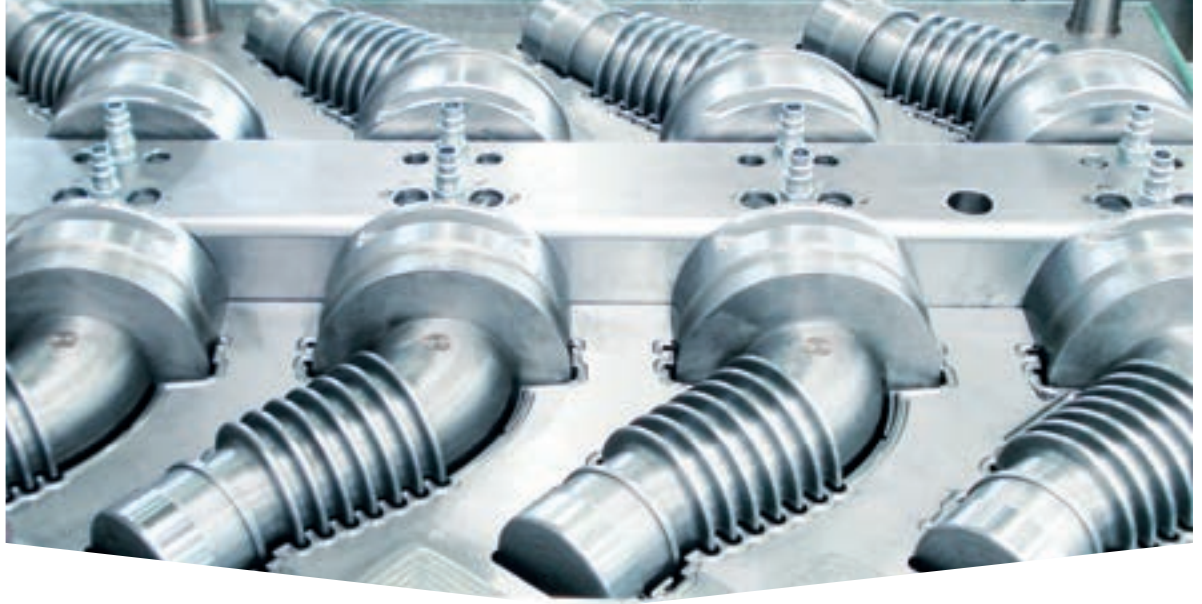
### SERVICE AND RENEWAL OF REDUCTION GEARS AND BLOWERS

#### Service and renewal of all types of reductions gears

- Replacement of worn elements
- Replacement of seals
- Service of the lubrication system

#### Service and renewal of blowers

- Replacement of seals
- Replacement of worn elements



## TOOL MAKING SERVICES

### Development, design and manufacture of equipment and components for various manufacturing processes

- Various clamping devices for mechanical processing
- Appliances for tightness control

### Repair and maintenance of tools

- Sharpening cutting elements
- Manufacture of individual tool sets
- Tools upgrade by positioning products
- Mechanical
- Electronical (laser)

### Manufacture of mechanical elements

- Axes
- Bearings
- Casings
- Chainrings
- Sockets
- Wheels







INSTALLATION  
OF A SLUGS  
PRODUCTION  
IN ARGENTINA  
(Exal, 2014)





# REFERENCES



MODERNIZATION OF THE  
PRODUCTION LINE FOR CASTING

Talum Rondelice d.o.o.



STAMPING LINE

Talum Rondelice d.o.o. 2013



COMPLETE RENOVATION OF LOW-  
PRESSURE AND TILT CASTING  
MACHINES RÖPERWERK

Talum Ulitki d.o.o.



## THE AUTOMATION OF THE TILT CASTING PROCESS

Talum Ulitki d.o.o.



## GRAVITY CASTING MACHINE

Agis zavore d.d.



## AUTOMATED PROCESSING OF CASTINGS

Mariborska livarna Maribor d.o.o.



## THE DEVELOPMENT AND MANUFACTURING OF THE MECHANICAL SLUGS PROCESSING

Talum Rondelice d.o.o., 2013



## IGNITION FURNACE

Bosio d.o.o.







## THE RECONSTRUCTION OF BILLETS CASTING MACHINE

Talum Livarna d. o. o.

### Declaration of the supplier of refractory materials

*"Our supervisor Mr. Cees de Groene was impressed by the high quality of your (Talum Servis in inzeniring) refractory installation crew!"*

**Edwin Aalbers,**  
Gouda Refractories BV



## FERMENTER

Schmack Biogas GmbH



## THE MANUFACTURE AND INSTALLATION OF SILO ALUMINA

Silkem d.o.o.



## REVAMPING OF THE ELECTROLYSIS FURNACE

Talum Aluminij d.o.o.





SLOVENIA, EU

## TALUM • SERVICE & ENGINEERING

MEMBER OF THE GROUP T A L U M

### TALUM SERVIS IN INŽENIRING d.o.o.

Tovarniška cesta 10  
2325 Kidričevo  
Slovenia, EU

Phone: +386 2 79 95 701  
[servis.inzeniring@talum.si](mailto:servis.inzeniring@talum.si)

### SALES

#### **Borut Kostanjevec**

Phone: +386 2 7995 141  
Mobile: +386 31 370 929  
[borut.kostanjevec@talum.si](mailto:borut.kostanjevec@talum.si)

#### **Andrej Brumen**

Phone: +386 2 7995 715  
Mobile: +386 41 800 141  
[andrej.brumen@talum.si](mailto:andrej.brumen@talum.si)

[www.talum-tsi.si](http://www.talum-tsi.si)