

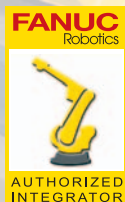


RESEARCH AND PRODUCTION COMPANY

**TECHVAGONMASH**



Special process equipment for  
transport machine building  
enterprises



**Kawasaki Robot**  
AUTHORIZED INTEGRATOR





## ABOUT THE COMPANY

Research and production enterprise "Techvagonmash" has a forty-year experience of design and manufacturing of special process equipment for enterprises of transport machine building.

Our company is a legal successor of VNIPTIvagon (All-union scientific research design-technological institute of railway-car building) – head technological organization on design of transport machine building enterprises.

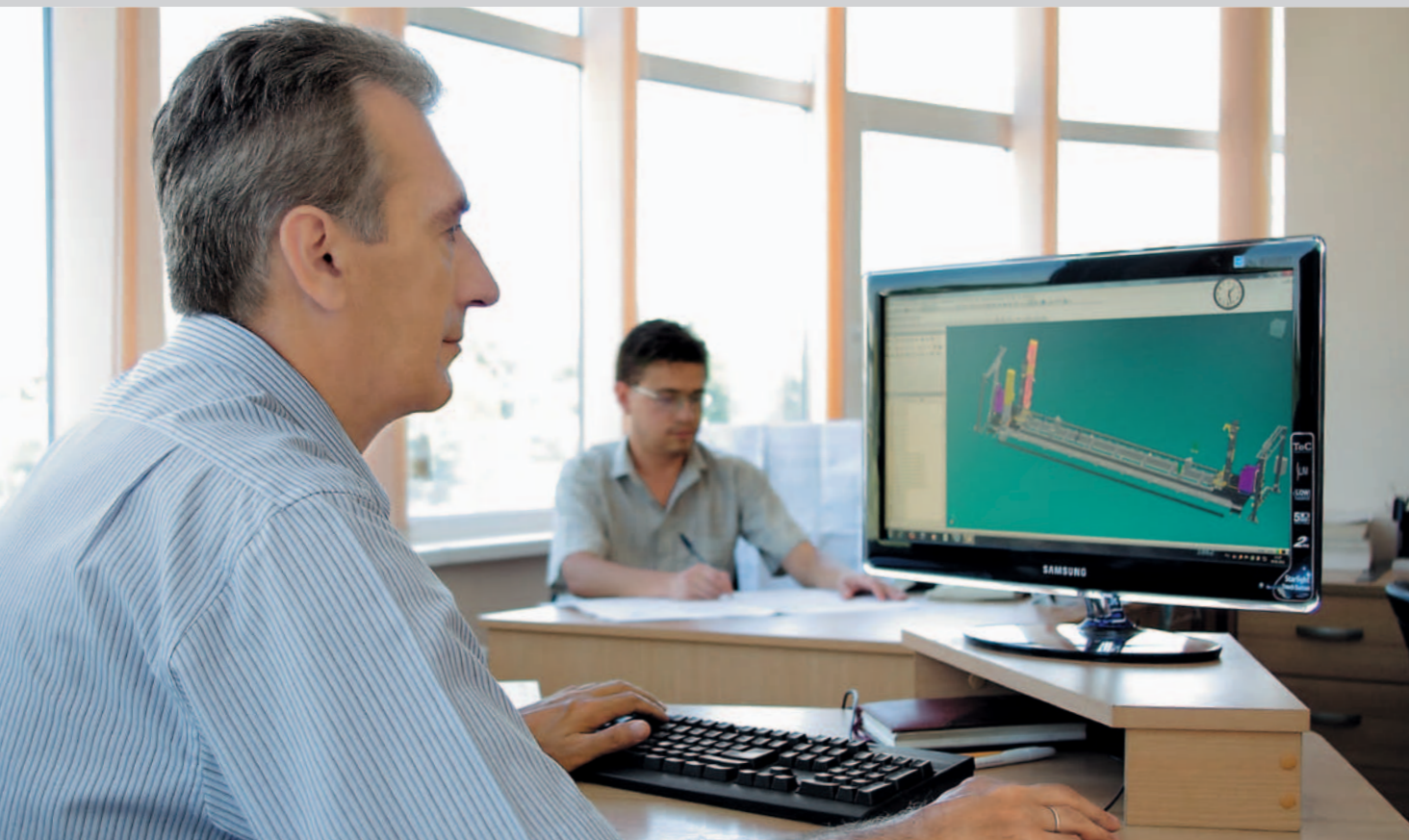
The main areas of the company's activity are:

- comprehensive design and equipping of transport machine building enterprises;
- design and manufacturing of special process equipment for railroad cars manufacture;
- process equipment for railroad cars repair;
- robot-operated welding units;
- shotblasting equipment;
- spray-and-drying cabinets;
- filter-ventilating equipment;
- equipment for construction and repair of oil pipelines, gas pipelines.



## DESIGN-ENGINEERING DEPARTMENT

Design of manufactured equipment is performed by means of computerized technique with cutting-edge CAD systems.



Special analysis systems are used at the design stage during performance of most mechanical calculations of parts and units of the manufactured products, dynamic analyses and modal analysis of equipment structures.

These systems allow to perform stress analysis, stability loss analysis, optimization, frequency and thermal analyses, vibration and shock strength calculations.



Capabilities of these software products allow the specialists of our company to determine the reliability of the structure fast and precisely at the design stage, as well as to complete any assigned task.

## PROCESS ENGINEERING DEPARTMENT

IT IS A HIGHLY PROFESSIONAL TEAM WHICH PERFORMS COMPLEX DESIGN OF TECHNICAL REEQUIPMENT AND SETTING-UP OF NEW CAPACITIES OF THE TRANSPORT MACHINE BUILDING ENTERPRISES.

During the last two years the department has developed and issued project documentation on the following plants:

**“Vagonmash” JSC** – project of modern subway cars manufacturing organization;

**“Orsk Railway Car Building Plant” JSC** – organization of freight cars manufacturing and repair;

**“Kazakhstan Railway Car Building Company” LLP** – organization of manufacturing of freight cars based on “Taman” railway car shed, Ekibastuz;

**“Osipovichi Railway Car Building Plant” CJSC** – organization of manufacturing of tank containers and freight cars;

**“Roslavl Railroad Car Repair Plant” JSC** – gondola cars manufacturing organization;

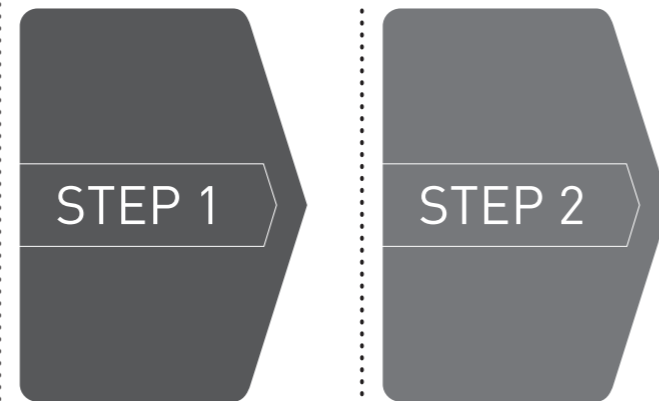
**“Zheldorekspeditsiya” LLC** – organization of manufacturing of luggage cars;

**“Popasna Railroad Car Building Plant” ALC** – organization of gondola cars manufacturing.



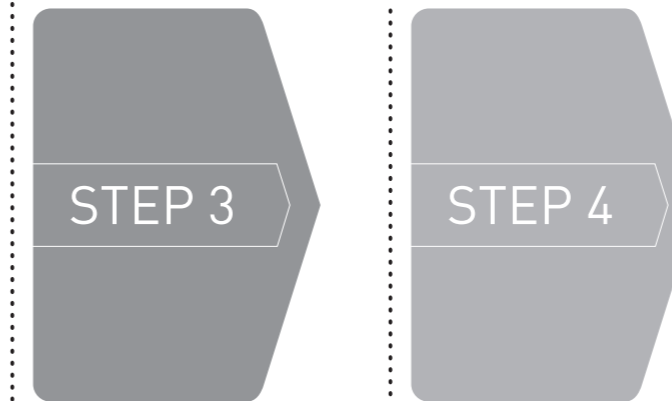
# FROM DESIGN TO TURNKEY

Pre-design works



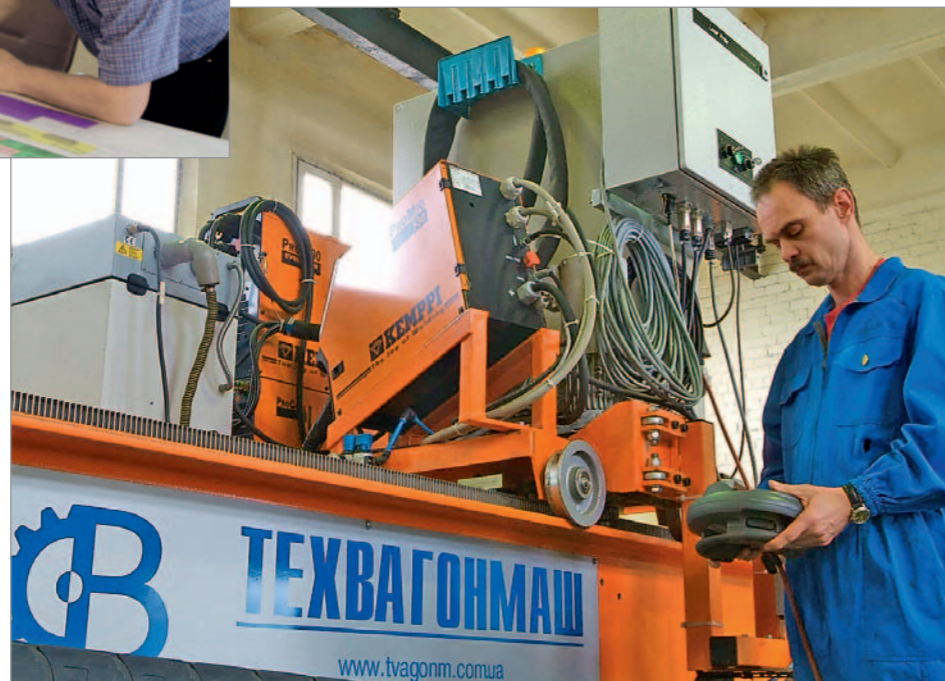
Detail design

Designing of special process equipment



Manufacturing of special process equipment

Supervised installation and commissioning, training of the personnel



The competitive advantage of the Research and Production Enterprise "Techvagonmah" is that the company provides a full set of services from the design stage to the supervised installation and commissioning stage including manufacture of special process equipment.

## PRODUCTION

Independent audit, performed by the representatives of TÜV Rheinland (Germany) – a world leader in the sphere of quality management systems certification confirmed the compliance of the Research and Production Enterprise “Techvagonmash” quality management system to the requirements of international standard ISO 9001:2008.

### MACHINING DEPARTMENT

performs the whole range of machining works.

The department is fitted up with:

- up-to-date multipurpose equipment;
- machining centers;
- equipment with CNC.

### ASSEMBLY-WELDING DEPARTMENT

is completely fitted up with up-to-date welding equipment made by Fronius company.

The main workers of the assembly-welding department are highly qualified metalworkers and welders.

### BLANK PREPARATION DEPARTMENT

is fitted up with up-to-date automated equipment for plasma and gas cutting, for metal bending.

Cutting of profiled metal-roll is performed on the up-to-date band saw machines.

All the metal-roll going into production, is descaled and derusted in the shot blasting chamber.

Welding specialists completed training in Paton Electric Welding Institute, and at present the enterprise is undergoing certification on the welding quality requirements in accordance with ISO 3834.



## PRODUCT RANGE

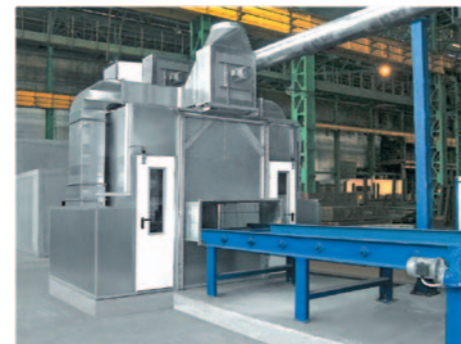
### SHOT BLASTING AND PRESERVATION LINES FOR METAL-ROLL



Shot blasting and preservation line for metal roll



Shotblasting chamber for cleaning of metal-roll



Spray chamber

### SHOT BLASTING EQUIPMENT



### AUTOMATED STORAGE SYSTEMS FOR METAL-ROLL

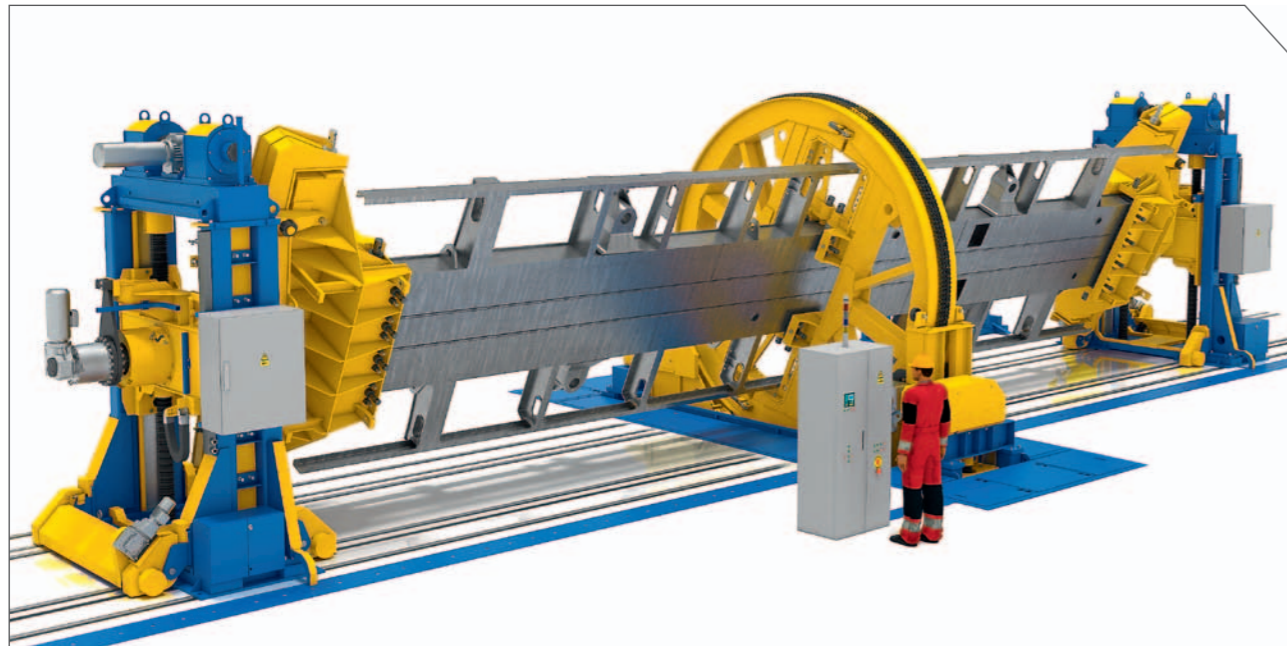


Automated storage system for section material



Automated storage system for sheet products

ROTATORS WITH VERTICAL LIFT



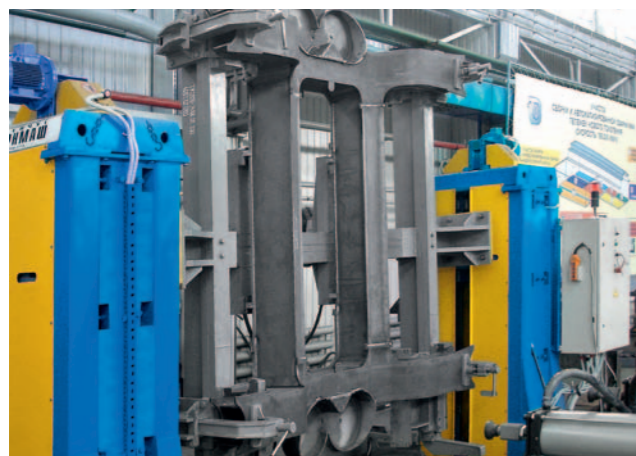
Rotator with vertical lift for electric locomotive underframes welding, load carrying capacity 40 t



Rotator with vertical lift, load carrying capacity 10 t



Rotator stand for double-deck passenger cars underframes welding, load carrying capacity 10 t



Rotator with vertical lift, load carrying capacity 4,5 t



Rotator with vertical lift for passenger cars roofs welding

EQUIPMENT FOR CAR UNDERFRAME ASSEMBLY AND WELDING



Overhead rotator



Rotator for underframe welding



Gondola car underframes assembly and welding stand



Multipurpose jig for assembly and welding of passenger car underframes

STAND FOR AUTOMATIC WELDING OF CENTER SILL WITH I-BEAM



ROBOTIC CENTER FOR CENTER SILL LONGITUDINAL SEAM WELDING



CENTER SILL ASSEMBLY STAND



LINE FOR BODY SIDE FRAMES MANUFACTURING





CAR UNDERFRAMES DRILLING AND RIVETING LINE



AUTOMATED LINE FOR CENTER SILL DRILLING



STANDS FOR ASSEMBLY AND WELDING OF CAR CROSSBEARERS



Bolsters assembly and welding line



Front beams assembly stand



Intermediate beams assembly and welding line

LINE FOR ROBOIC WELDING OF CAR CROSSBEARERS



Gondola car underframes assembly and welding stand



EQUIPMENT FOR ASSEMBLY AND WELDING OF SIDE WALLS

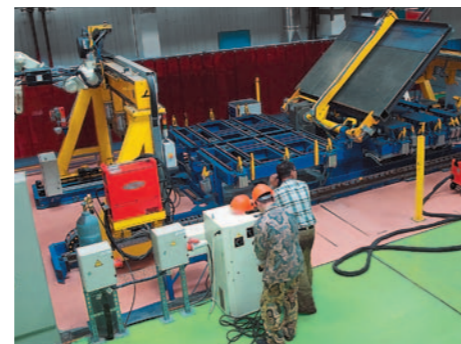


Gondola car side walls assembly and welding line



Jig-rotator for passenger car side walls assembly and welding

EQUIPMENT FOR ASSEMBLY AND ROBOTIC WELDING OF END WALLS



EQUIPMENT FOR BODY ASSEMBLY AND WELDING



Gondola car body assembly and welding stand



Rotator for body welding



Roller-type jacks

EQUIPMENT FOR CAR ROOF ASSEMBLY AND WELDING



Assembly and welding stand for passenger car roof sheathing



Boxcar roof assembly and welding stand



Rotator for roof welding

AUTOMATED LINE  
FOR CENTER SILL I-BEAM AND BOTTOM CORD MANUFACTURE



EQUIPMENT FOR TANKS AND VESSELS MANUFACTURE



Tank assembly and welding line

Head-to-shell assembly stand

EQUIPMENT FOR GONDOLA CAR HATCH COVERS MANUFACTURE



Integrated mechanized line for assembly and welding of gondola car hatch covers



Stand for recess-making



Heads measuring and selection stand



Sheet assembly and welding line



Tank head assembly and welding, edges trimming stand

EQUIPMENT FOR RAILROAD CARS BRAKE SYSTEM MANUFACTURE



Rod tension test stand



Head-to-shell assembly stand



Stand for automatic head-to-shell welding



Resistance welding plant for rods



Shotblasting plant for cleaning of pipes inner surface



Pipes magnetic particle inspection stand



Bath for pipes testing

UTILITY VEHICLES



Transfer table



Transfer table



Transporting carriage



Transfer table



Turn-table

EQUIPMENT FOR SURFACE PREPARATION AND PAINTING



Spray and drying cabinet



Lifting platforms for operators



Spray and drying cabinet

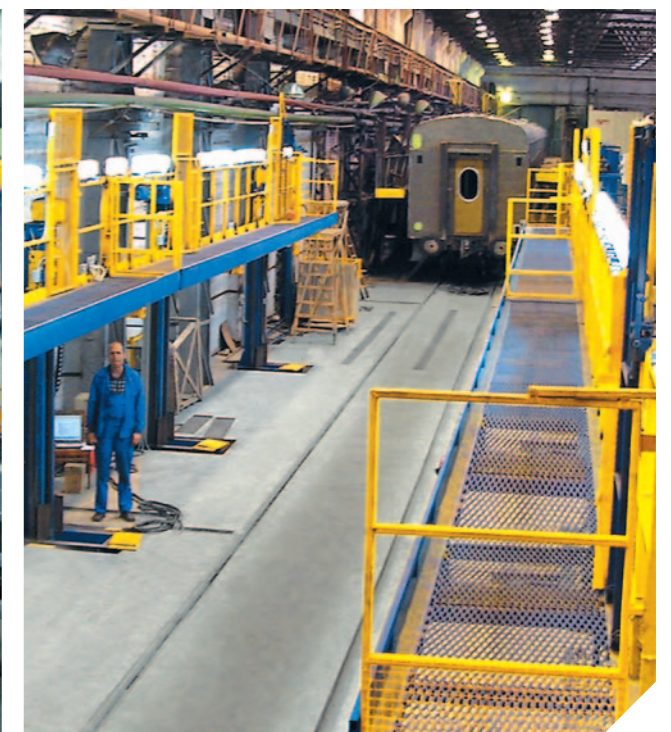


Shotblasting chamber for cars



Shotblasting chamber for car underframes

ELEVATING SCAFFOLD



## QUALITY SYSTEM

COMPANY'S POLICY IN THE SPHERE OF QUALITY ASSURANCE IS AIMED AT MEETING THE HIGHEST REQUIREMENTS OF THE CUSTOMERS, AND IT IS BASED ON OVERALL OBSERVATION OF NATIONAL AND INTERNATIONAL QUALITY STANDARDS, ON PRODUCTION CERTIFICATION AND ALL PRODUCT TYPES CERTIFICATION.

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## PATENTS

Research and Production Enterprise “Techvagonmash” owns a great number of know-how, patents and engineering solutions related to constructive decisions of output and developed products.



## REFERENCE LIST

Our customers are large-scale enterprises of transport machine-building, metal structures manufacture plants, power machine building enterprises.

During the last years our enterprise has developed a number of projects and has taken part in equipping of all railroad car building plants which are under construction.





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