

iWheel



KLW customer newsletter #4, 2015

- Alexander Garkavij: KLW is approaching position of solution supplier
- Transformation of operational team
- Certification of axles for freight wagons



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STEP BY STEP KLW IS APPROACHING POSITION OF SOLUTION SUPPLIER

STEP BY STEP KLW IS MOVING TOWARDS A SOLUTION SUPPLIER. THE FIRST STEP WAS DONE 3 YEARS AGO WITH THE LAUNCH OF STATE-OF-THE-ART IN-HOUSE STEEL MILL. IT GAVE US FLEXIBILITY IN THE MEANS OF STEEL PRODUCTION: CREATING AND EXPANDING PRODUCT PORTFOLIO OF TRANSPORT STEEL GRADES.

The next step is the realization of the strategic investment program, which provides KLW with up-to-date machining capacities for the bore drilling and coating of wheels. That gives us an opportunity to provide customers with the range of additional services. Alongside this, the program covers the increase of production capacities for wheels machining.

One more significant bound forward is the mastering of the production line for the finish-machining of railway axles at the NTRP production site. A solid technological base and a tremendous effort from our engineers let it happen.

All these technological achievements are supported with internal changes. Our production team was strengthened with international experts and due to the market demands, we centralized the function of technical engineering.

In 2016, KLW is entering a stronger and more customer-oriented phase which is prepared to take on new challenges.



**Alexander
Garkavij,**
CCO

FACTS YOU SHOULD KNOW ABOUT DNEPROPETROVSK: CITY OF KLW PRODUCTION

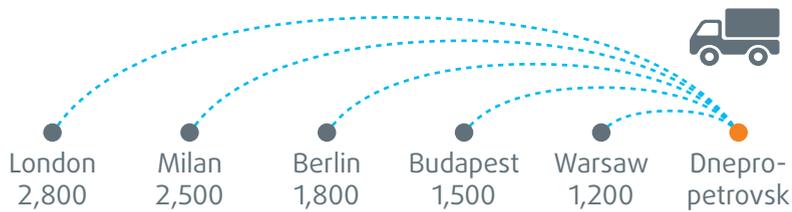
THE KLW PRODUCTION FACILITIES ARE BASED IN THE HEART OF UKRAINE – IN DNEPROPETROVSK.

WE WILL LET YOU KNOW SEVERAL FACTS ABOUT US:

■ **Ukraine is close to whole world**

Ukraine is the most favourable in terms of its geographical position and is easily accessible from a geographical point of view.

Kilometers distance to select cities from Dnepropetrovsk



Flight hours to select cities from Dnepropetrovsk



And eventually how does Interpipe feel here? You can see for yourself



Interpipe brings sports to the city life: bike rides



Interpipe is committed to promoting a healthy lifestyle: workouts



Interpipe corporate family: Contest of Children's art



66% of total sold mining and metal products in Ukraine



1st place for exports among the regions of Ukraine



Strong patriotical position



New Police Service



1 place for foreign direct investment – 7758,7 million USD (2014)



Interpipe corporate family: Day of First Grader



Day of Metallurgist by Interpipe



FOCUS OUTSIDE CIS

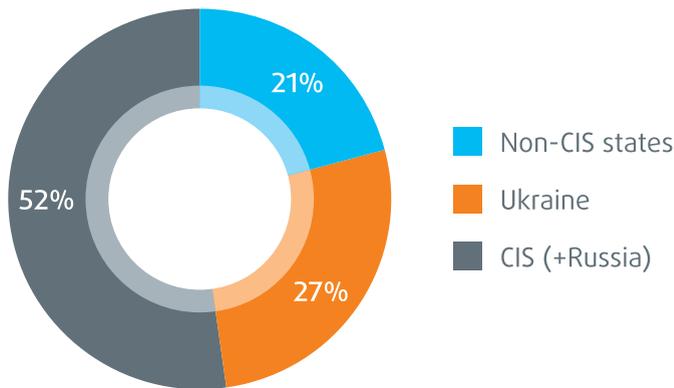
RECENT YEARS HAVE ESSENTIALLY INFLUENCED THE BUSINESS MODEL OF MANY UKRAINIAN COMPANIES AS WELL AS EUROPEAN ONES. DUE TO THE SHRINKING OF UKRAINIAN BUSINESS IN RUSSIA AND THE DECREASING SIZE OF THE UKRAINIAN ECONOMY, KLW HAS REVISED ITS BUSINESS STRATEGY. THE MAIN FOCUS HAS BEEN MASTERING COMPLEX PRODUCTS AND INCREASING THE SHARE OF SALES IN NON - CIS STATES.



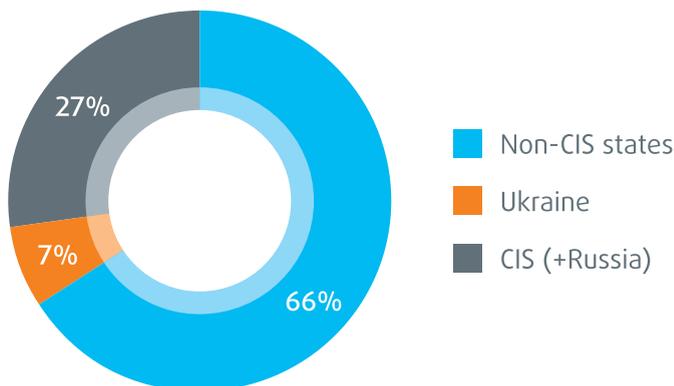
Meanwhile, the global market has been developing numerous high-tech products for both passenger and freight rolling stock. Therefore, at the beginning of 2015, KLW updated the wheel business strategy. We aimed to become a worldwide export-oriented competitive company, providing high tech solutions to the customers.

In the first results documenting 2014 vs 2015 performance in the pie charts below, we can see that together with sales reorientation, KLW has made many groundbreaking achievements in producing new products and solutions for customers.

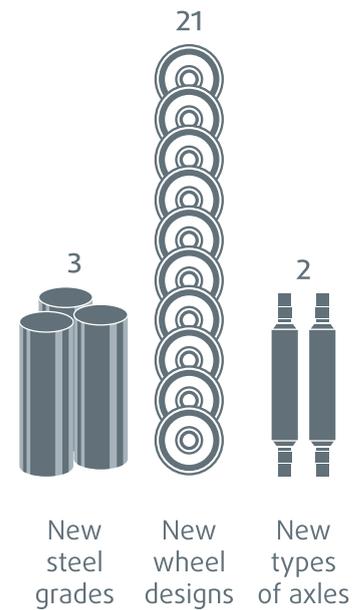
2014. Volume of sales, pieces



2015. Volume of sales, pieces



Achievements of 2015, pieces



TRANSFORMATION OF AN OPERATIONAL TEAM – KLW BECOMES STRONGER



In 2014, Interpipe began with the optimization of its business structure designed to increase effectiveness of its operations. The team of international experts aims to centralize the management of production, improve efficiency and to finish the production functions in accordance with the structure adopted by international companies. Along with building a new operational structure, KLW established an engineering and R&D department. It is represented with high professionals in the field of wheel production and will be added with new strong specialists in due course.

KLW ENGINEERING AND R&D DEPARTMENT:



Alexander Roslik,
Head of Wheel & Tire Technologies Department, Interpipe NTRP

- Years of experience in the wheel production
- Talented engineer and developer



Cyril Duhamel,
Technical Sales Manager

- Joined from Valdunes
- Have deep knowledge and expertise in technical support of sales

NEWCOMERS IN THE INTERPIPE OPERATIONAL TEAM:



Mauro Longobardo,
Interpipe Chief Operating Officer

Mauro Longobardo is responsible for the effective management of operation and maintenance of the company's industrial facilities, production planning and logistics, technical development, including R&D. Before joining Interpipe, Mauro's previous position was Deputy CEO for Strategy, Technology and Development at ChTPZ Steel. He also has more than 10 years experience at Tenaris in a variety of managerial positions across Sales, Strategy, Production, and Technical and Quality.



Alejo Duran,
Interpipe Quality Director

Alejo Duran is responsible for the development, improvement and control of the integrated quality management system in strict accordance with international standards. He also oversees the special requirements of Interpipe's and KLW's customers across all assets. Mr Duran has more than 15 years' experience in production and management. His last role was Operational Director in Tenaris Siderca in Argentina.



Zhanbek Esmahanov,
Interpipe Hse Director

Zhanbek Esmahanov is responsible for the development and introduction of the global corporate management systems of industrial safety, labour and environment protection. Zhanbek has 20 years of experience in this field. His previous roles include Lead Consultant in DuPont, Director of industrial safety in TNK-BP Commerce, and Head of HSE issues in Chevron Tengizchevroil JV.

Mauro Longobardo,
Interpipe Chief Operating Officer

"Together with Interpipe we have made a huge step: we have set a completely new service for the company. We are arranging the centralized functions of quality, technical research and development, supply chain, and industrial safety. I believe that all of us have witnessed an historical moment in the company. Thanks to the efforts of Interpipe's management team we can achieve a comprehensive and efficient transformation of the company within an extremely short period of time."



NEW STEEL GRADES

STEEL GRADE "D" FOR HIGH STRENGTH WHELLS

FROM THE START OF 2015, INTERPIPE STEEL HAS BEGUN PRODUCING STEEL GRADE "CLASS C" ACCORDING TO THE TOUGH AMERICAN STANDARD AAR M-107/M-208.

New steel grade "D" is developed to decrease life cycle costs by increasing the wheel's life. In 2014, Interpipe Steel began development of new steel grade and it was finished in 2015.

According to AAR standards, the allowable level of artificial defect (which is equivalent to the maximum of allowable natural defects in finished products) is 1,6 mm, as opposed to European requirements, which are only 2 mm.

"Class D" by Interpipe Steel has successfully passed the control on artificial defects in accordance to US standards.

Special chemical composition along with designed modes of billets' heat treatment ensures strength of ready wheels, so they can be used for heavy haul transportation. The main characteristic of steel grade "D" is the combination of high hardness (from 341 to 380 HB) and high plasticity.



Yuriy Klimchik,
Deputy Quality
Director at
Interpipe Steel:

"This steel grade is developed according to US standard AAR. This was especially the case for its production, where we implemented the ultrasonic control of finished billets on the artificial defect of 1,6 mm."

DEVELOPMENT OF STEEL CATEGORY 1 AND EA1N FOR RAILWAY OPERATORS AND WHEEL COMPANIES

In 2015, we are continuing on the production of steel grade EA1N and Category 1 for European rolling stock.

Steel grade EA1N uses railway axles for passenger and freight transport. Interpipe Steel masters this steel grade strictly according to standard EN13261. Excessive control of internal defects to 1 mm provides assurance

if necessary resistance of continuously casting billet for axles produced.

Steel of Category 1 is mastering the requirements of passenger and high-speed transport. Finished wheels from Category 1 steel are qualified for trains that develop speed from 150 to 200 km/h.



**Alexander
Garkavij,**
CCO:

"Production of Category 1 will allow KLV to enter the market of high-speed railway transport. It is a strategic and complex goal of the company for the near future. In line with steel production, we have started strategic investment project in Wheel-rolling shop on building new sites for increasing export capacities on finish-machining of wheels and axles along with providing new additional services. In-house steel production allows us to provide our customers with high quality full-cycled products.

RAILWAY AXLES: COMPLEX SOLUTIONS

INTERPIPE NTRP FROM THE END OF 2014 PRODUCES AXLES WITH ROLLING AND ROUGH MACHINING. ALONG WITH THIS IN Q3 2015 INTERPIPE STARTED INVESTMENT PROJECT TO CREATE THE SHOP FOR PRODUCTION OF FINISHED RAILWAY AXLES.

In April 2015 the mill received a certificate of axles requirements of TSI CR RST WAG "Quality management system of production" and EN 13261 "Rail Transport. Wheel sets and trolleys. Axles. The requirements for the product".

The audit, which confirmed the quality of our railway axles was held by Czech company VUZ. Auditors checked the production of heavy load railway axles, as well as sites of the mill involved in their manufacture. In addition to this, the auditors reviewed all regulatory documentation in the technical department.

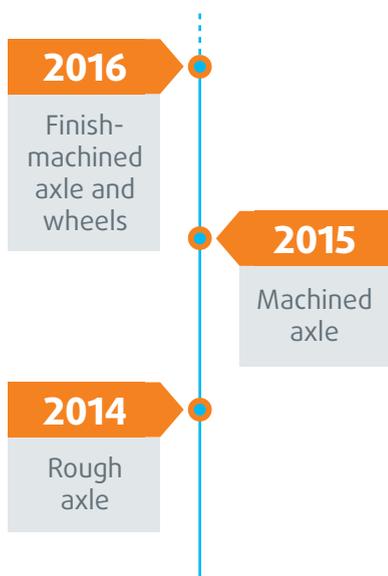
Capacity of line for axle machining totals to 10 000 pieces per year. Moreover, Interpipe is building a shop for finish-machining axles. New line will allow the production of 6 000 finish-machined railway



axles per year in compliance with TSI standards for European market and AAR standards for American

market. New equipment on the line will include MPI unit and Ultrasonic unit.

From rough to finished axle



Alexander Roslik, Head of Wheel & Tire Technologies Department, Interpipe NTRP said:



"We have analyzed the best global practices during the research of alternatives of axles production technology. As a result, we found the technology in which you can get the rough axles without forging operation – by rolling on the pilger mill. Similar technology is used by only a few companies, including French company Valdunes, one of the leading manufacturers of railway wheels in Europe. In March, we have certified the production of heavy-haul railway axles with new technology according to European standards. From my point of view, this is not the limit – the technology should be improved on a permanent basis."



STRATEGIC INVESTMENT PROGRAM. IN FOCUS: ADDITIONAL SERVICES AND EXPANDING OF MACHINING CAPACITIES

IN 2015, INTERPIPE HAS STARTED ITS NEW INVESTMENT PROGRAM FOR BUILDING OF NEW LINES FOR WHEEL PRODUCTS ON EXPORT MARKETS. REALIZATION OF IT WILL ALLOW KLW IN 2016 TO INCREASE FINISHING CAPACITIES WHEELS MACHINING FOR COMPLEX WHEELS, DEVELOP CAPACITY FOR DRILLING AND BORING, PAINTING ESPECIALLY FOR CLIENTS' NEEDS.

In 2015, Interpipe has started its new investment program for wheels finish-machining and the increase of its capacity. The strategic goals of the program is to provide customers with additional services like finishing bore, drilling of web and surface protection of the wheel. Along with it is to increase machining capacities.

Goals of strategic investments:

- to provide customers with additional services on finishing bore in the wheel
- to increase machining capacities for machining and finishing processes
- to add machining activities not performed earlier like drilling of the hub
- to improve the quality of surface protection of the wheels
- to improve the control systems of output quality

**THE TOTAL INVESTMENT
IN THE PROGRAM:
\$ USD 23.1 MILLION**

INVESTMENT PROGRAM WILL BE REALIZED IN TWO STEPS. FIRST STEP – INSTALLATION OF NEW EQUIPMENT FOR FINISH-MACHINING

Finish-machining is demanded on all segments of world market. Growing market of high-speed rail transportation needs its own design features. After the realization of the 1st step our final wheel will be finally processed, drilled and painted, which will fully meet the requirements of end users – rail operators.



Within the 1st step, we are implementing equipment for finishing machining of the bore in the wheel hub for the mounting of wheels, for bore drilling of the disc, for the installation of brakes disc, and for coating with operating covers. As far as new equipment is concerned, we are refreshing of control measuring equipment.

SECOND STEP –CAPACITY INCREASE FOR MACHINING OPERATIONS.

At the moment KLW feels the lack of capacities of finishing machining operations. Today capacity of wheel-rolling shop allows producing only 30 000 tons of finished wheels per year. Due to this fact, wheel-rolling shop implements new equipment to increase the capacity of machining operations to 9000 pieces per month.

We are implementing six lathes for machining operations with down-loading manipulators, shot-blast machine, modernization of wheel control, acceptance stand and marking machine.

NEW TECHNOLOGIES AS A RESULT OF INVESTMENT PROGRAM 2015-2016:

Lathes for increased output

For finish machining of bore in the wheel hub for mounting of wheels

For bore drilling of the disc for the installation of brakes disc

For the coating with operating covers

Modernization of wheel control and acceptance stand

Shot-blast machine

New control measuring equipment

**THE REALIZATION
OF BOTH STEPS
OF THE INVESTMENT
PROGRAM ALLOWS KLW
TO PROVIDE CUSTOMERS
WITH ADDITIONAL
SERVICES**

WE UNDERSTAND OUR EUROPEAN CLIENT



– How can you characterize modern European railway operators and companies?

– My characteristic will be not new. It touches not only consumers of wheel products, but the consumers as a whole. Each consumer faces different problems: our clients traditionally have three problems – commercial, technical and logistical. Thus they want to get one solution of their problems from one supplier.



– According to this how should universal supplier look like?

– If we say about the supplying company, like a person, I'd say, that it should be universally professional. Demands of the market are really high and specific. For example, railway companies tend to order hi-end and individual designs, but in rather small amounts. It is a tough challenge for the supplier: to spend time and money on develop-

THE REORIENTATION OF THE EXPORT MARKET NEEDS COMPLETE UNDERSTANDING OF THE NEW TYPE OF CLIENTS. WE THEREFORE ASKED KWL EUROPEAN SALES MANAGER NICLAS ERIKSSON WHAT OUR CLIENT NEEDS.

Special requirements of EU market

- Small volumes of orders
- One order can include several designs of wheels
- Hi-end and individual design
- Secure shipment
- Proved high quality
- Different levels of certifications

ment of a new design, to produce such a small amount of wheels, but to keep this at a competitive price. Suppliers should regularly bring new products and designs onto the market, be ready for small orders, provide all necessary certifications and ensure on-time delivery.

– Does KWL correspond the requirements of European market?

– KWL has a lot of advantageous features for railway companies and operators: in-house steel production, a favourable geographical position and 40 years of production experience. Today KWL is known as a reliable supplier of wheels and tyres. The company is also developing and moving forward.

– What does the company do now?

– We have made an important step: today we are producing railway axles. Along with mastering new complex products, we are regularly certifying additional wheel designs with different levels of machining.

– You speak a lot about mastering new designs. How is this process realized in KWL?

– This year we introduced a new structure of technical and engineering support for railway production. Technical engineering in the company unites the analyzing and forecasting of market trends, the determination of clients' needs on materials and designs, the creating of production programs and finally control of production according to all requirements – including both meeting international standards and clients' needs. Technical and engineering support has five main functions that makes KWL a reliable modern supplier of complex solutions on the world market.

FUNCTIONS OF KWL TECHNICAL AND ENGINEERING SUPPORT

1. Customer relation management: designs, FEM analysis, thermomechanical calculations, acoustic calculation, preparation of technical specifications, technical reports based on inquiries and orders from customers.
2. Technological preparation of production of pilot batches and batches for certification.
3. Carrying out of the certification process of products and technologies.
4. Implementation of works on the research and development: creation of own designs of railway products, steel grades and wheel solutions.
5. Customer support: analysis of customer satisfaction by obtaining their feedback on the quality indicators of production during operation.



EXPERTISE IN FREIGHT RAILWAY PRODUCTS FOR AMERICAN MARKET

KLW HAS A STRONG EXPERTISE ON FREIGHT AND THE LOCOMOTIVE RAILWAY MARKET. IN 2014 KLW RE-ENTERED THE US MARKET WITH A WIDE RANGE OF PRODUCTS AND ENGINEERING CAPACITIES. NOW WE WILL SHARE WITH YOU OUR ACHIEVEMENTS AND PLANS FOR THE FUTURE.

Next year it will be 15 years since the first shipment of freight and locomotive wheels with a unique design on the US continent. Since 2001, we have been producing high quality forged wheels for freight and locomotive rolling stock.



Inna Shevtsova,
Sales Manager on
American markets:

KLW is a customer-oriented company, which is always moving forward market trends. Our aim for 2016 is to expand our market presence like freight and locomotive railway products suppliers have done. In order to do this, we are expanding our product portfolio and certifying new types of freight wheels. We have already started negotiations with railway-car repair works and railway operators for 2016 planning. Moreover, with the new steel grade D for heavy haul transport, we will be ready to enter the Canadian railway market again.

2014-2015 KLW: COMPETITIVE AND RELIABLE SUPPLIER ON THE AMERICAN MARKET

Engineering	Recertificated 9 designs by AAR
New products	Axles according to AAR standards
Special steel grades	B, C, F
New equipment	Machine for bar-coding
Control	Ultrasonic control according to new tough conditions of AAR standard
Logistic services	DDP-conditions and door-to-door shipping

KLW ENTERING 2016

New designs	5 mixed designs for special requirements (combination of American and European standards)
New investment programs	<ul style="list-style-type: none"> ■ To increase capacity of finish-machining of wheels ■ To increase capacity of machined axles
New equipment	Marking machine
New steel grades	D for heavy haul transport



**New equipment for bar-coding
ZT230 INDUSTRIAL
PRINTER (ZEBRA, USA)**

Resolution: 300 dpi
Print methods: direct-thermal or thermal-transfer
Type of labels: X-treme 5000 Ideally suited for barcode labeling applications requiring more frequent format

CAPITAL OF UKRAINE WILL “RUN” ON K LW WHEELS

K LW IS ALSO PURSUING A PARTNER RELATIONSHIP WITH PASSENGER ROLLING STOCK, KIEV METRO. TECHNICAL SPECIALISTS ARE MASTERING NOISELESS WHEEL CONSTRUCTIONS.

Citizens of the Ukrainian capital face the problem of a high level of noise in the metro. So far, the average person spends at least 40 minutes (maximum to 1,5 hour) per day underground, Kiev Metro got worried about how to make the metro safe for health. With regards to this, K LW needs to produce new types of wheels for passenger wagons.

The project is aimed at producing noiseless wheels to make the trip on the Kiev metro quiet. The noiseless wheel construction can be achieved by the production of compound wheels with rubber mounting or with noise-attenuating collets. Interpipe NTRP conducts special engineering development and testing for achieving low level of noise.



Alexander Roslik,
Head of Wheel
& Tire Technologies
Department,
Interpipe NTRP:

“The construction of noiseless wheels is a challenging project for any wheel producer. It is “green field” development, which demands exclusive designing, estimation of noise level, fatigue and running tests. At the current moment, we have created a design for the new wheel and are ready for the realization of the production program and certification. In any case we will put as much effort as it is needed to keep the Kiev metro as our national partner.”



NEW CERTIFICATIONS IN 2015: NEW DESIGNS AND PRODUCTS FOR FREIGHT ROLLING STOCK

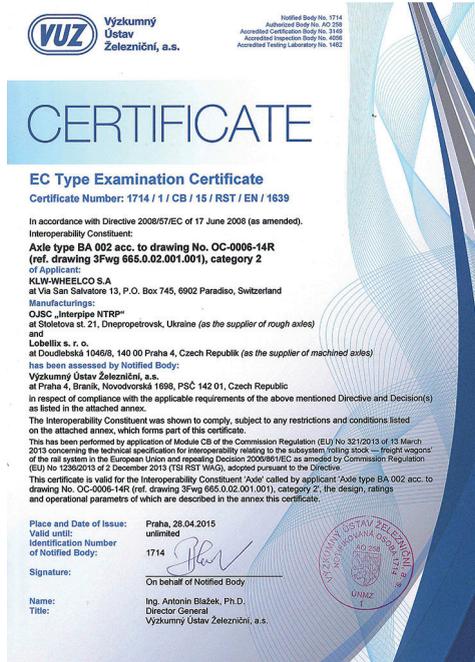
RAILWAY AXLES FOR FREIGHT WAGONS

In Q3 INTERPIPE NTRP successfully passed audits by VUZ and Quality Austria Companies. As a result, it has obtained all required conformance certificates, enabling the supply of axles, manufactured at the facilities of INTERPIPE NTRP Maintenance and Mechanical Shop, to INTERPIPE customers from the European Union.

Alexander Kriger, Railway wheels, tires, and axles Production Technology Department Manager at INTERPIPE Technical Department:

"Auditors have repeatedly noted the mastering of new products by our company within quite short periods of time. The project of machined axle manufacturing was launched in February 2014, and in H1 2015 we obtained the right to supply machined and finish-machined axles to the European market.

To ensure the possibility of the serial manufacturing of these products, we have already initiated several investment projects: all preliminary contractual work for new equipment delivery has been already finalized, and we are currently carrying out construction operations."



CERTIFICATED WHEELS AND AXLES IN 2015

Wheels	VA 004, VA 005, VA 314
Axles	VA 002, VA 302



WHEEL-ROLLING SHOP

INTERPIPE NTRP, CELEBRATED 80TH ANNIVERSARY THIS YEAR!



Vladimir Novohatnuy,
Chief of WRS:

"Wheel-rolling shop is the only shop in the Ukraine which produces all-rolled wheels. We are celebrating our 40 year anniversary this year, but it is not the reason to stop developing. The future of the shop is the increasing of production machined wheels for export and entering the segment of high-speed trains."

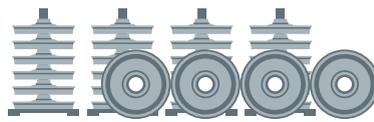
Wheel-rolling shop today:

734 employees

 587 men  147 women

**12 million tons of wheel,
produced from 1935.**

**More than 80 countries
in sales' geography.**



More than 200 types of wheels.

More than 50 types of tyres.

How many roads were passed: from the history of WRS

- 1933** Foundation of WRS on the "Nizhnedneprovskiy" mill named after Karl Liebknecht (in future Interpipe NTRP).
- 1935** First rolling of wheels.
- 1941** Produced 1 million of wheels.
- 1950-s** New sites: heat treatment department and machining line.
- 1960-s** Our wheels entered the world market for the first time. The first export batch consisting of 239 wheels was ordered by the GDR.
- 1970-s** Reconstruction of the rolling line. New equipment: water presses, rolling mill, rolling table, through-type furnace with isothermal equalizing.
- 1984** Building of tyres line.
- 1990-s** New equipment for quality control.
- 1999** Creation of KLV brand.
- 2000-s** Realization of huge investment programs: construction line for full-profile wheel processing and export site.



KLW

An Interpipe Brand

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