# ISSUE 1 (7)/ MAY 2025 IN ENGLISH

7513

BELAZ

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BELAZ GLOBAL IN ENGLISH Magazine issue 1 (7) / May 2025

The founder is OJSC "BELAZ"– the management company of the holding "BELAZ– HOLDING» Registration certificate No. 1987 dated 04.12.2024 issued by the Ministry of Information of the Republic of Belarus

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The magazine was typeset and laid out by the editorial office of BELAZ GLOBAL. Signed for printing on  $15.05.2025\,$ 

Printed in the printing house Altiora Forte INN 192378132 License №02330/471 from 29.12.2014 Order Circulation 300 copies.

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### **QUALITY MARK**

Mining dump trucks BELAZ-7513 were given a prestigious award – the State Quality mark. The president of the Republic of Belarus Alexander Lukashenko presented the award to Sergey Lesin, Director of OJSC "BELAZ".

Since 1996 there have been manufactured more than 5 550 dump trucks of this series which operate practically on all the Continents of our planet. BELAZ holds more than 70% of the world market at the segment of mining machinery of payload capacity 130-150 tons.

#### THE 5555TH BELAZ TRUCK OF 7513 SERIES INTENDED FOR MINERS OF NOVOSIBIRSK REGION

On the 3rd of April BELAZ has produced the 5 555th mining dump truck of 7513 series which was supplied to Novosibirsk region and would take part in Gorlovka coal basin development with the biggest anthracite deposits in the Russian Federation.





BELAZ ATTENDED THREE EXHIBITIONS ON THREE DIFFERENT CONTINENTS AT ONCE

Africa, Russia and Uzbekistan – we are strengthening our positions at the traditional markets and are conquering new ones!

See details at page 36

#### 80-TON BELAZ SLUG CARRIER SUPPLIED TO URAL

It shall transport foundry waste products such as hot liquid slug at one of metallurgical enterprises of Sverdlovsk region in Russia.





#### BELAZ TRUCKS SUPPLIED TO YAKUTIYA

Seventeen 90-ton BELAZ trucks were supplied to the Far East. Mining trucks of a new model BELAZ-7558P strengthen the machinery park of a large-scale refinery complex for coal mining in the Republic of Sakha (Yakutiya). BELAZ-7558P trucks are equipped with an energy-efficient 882kW (1200 h.p.) diesel engine and a modern electro-mechanical AC transmission.

#### THE FIRST BELAZ HEAVY-LOAD TRUCK DISPATCHED TO THE BELARUSSIAN NUCLEAR STATION

Specially designed vehicles were delivered to its consumer – the Belarusian nuclear station. You could find more detailed information about this unique vehicle in our previous magazine article.





OPENING BELAZ SHOPS IN VARIOUS BELARUSIAN CITIES AND TOWNS

See details at page 64





### THE 80TH VICTORIOUS MAY

The festive events dedicated to the 80th annual celebration of Victory of the Soviet people in the Great Patriotic War, were held on the 9th of May throughout Belarus. BELAZ workers took part in the event as well as our retro-machinery that crisscrossed the streets.



In Zhodino the celebrations began from laying the flowers onto the monuments to the Great Victory soldiers.

By tradition, BELAZ top managers paid tribute to the memory of the Hero of the Soviet Union – Pyotr Kupriyanov and his mother Anastasia Kupriyanova. An 18-year-old military intelligence officer, Pyotr Kupriyanov, took the enemy's bullet, hence saving the lives of many of his comrades-inarm. Anastasia Kupriyanova, his mother, who had sent to war all her five sons, became the symbol of the soviet mother-patriot: the monument erected in her honor has become one of the main symbols of the town of Zhodino. Among those who laid the flowers to this symbolic monument was General Director of BELAZ Sergey Lesin. - Victory Day - is one of the most respected and significant people's dates in Belarus. Every Belarusian keeps the memory of Great Patriotic War; it is passed from generation to generation, from heart to heart, uniting us by an invisible but still durable thread of love for the Fatherland. Especially symbolic is the fact that we've gathered by the monument to mother - patriot, Anastasia Kupriyanova, – said Sergey Lesin to BELAZ GLOBAL. - The memory of heroism of that generation is sacred and untouched, and our work results - everything that we create - is the embodiment of endless respect to those who were fighting for peace by the cost of their own lives, for us to have the right for a bright future, and for



Sergey Lesin, General Director of BELAZ (the third in the row) and Pavel Mariev, Hero of Belarus (in the center) who ruled the enterprise in 1992-2007 during the parade, Zhodino, May, 9, 2025.



which we bear responsibility today. BELAZ is part of this future. The whole 10-thousand community of our enterprise treats the deeds of bravery of the soviet people, our granddads and greatgrandfathers with pride and gratitude.

Closer to the midday the people floated the Mira Avenue. In order to honor the memory of heroes by a ceremonial parade, the citizens of various generations have gathered at the central street of Zhodino – the veterans of war and labor, the young, representatives of enterprises and organizations. Many of them joined the republican action "Belarus remembers!", taking portraits of their family members and dear ones, who took part in the Great Patriotic War.

BELAZ column was the most numerous. The civil and military machinery was overtopped by the parading retro-trucks – 30-ton BELAZ-7540 - the







The tradition of setting off fireworks in honor of the Victory Day was laid in Moscow in 1945: in the evening on the 9th of May about thirty artillery salvoes from a thousand of arms were given, and the sky was colored by the projectors beams over the capital of USSR. successor of our legendary BELAZ-540 truck, and the 40-ton BELAZ – 7548, a copy of the soviet cult comedy technical hero "The Queen of Fuel station".

An official part of the solemn events gave way to the musical event –the concert program "Our victorious May", where the creative teams of BELAZ House of Culture took part. By the end of the concert all the spectators sang altogether a song "Victory Day", the song that has become a real hymn of the 9th May Day (with Lev Leschenko as a performer). The words were written by the poet Vladimir Kharitonov prior to the 30th jubilee date of the Great Victory, the music was written by the composer David Tukhmanov.

This song became the final accord of the solemn day. The fireworks careened into the sky, bursting into colorful patterns – symbols of peace, welfare and prosperity.

The tradition of setting off fireworks in honor of the Victory Day was laid in Moscow in 1945: in the evening on the 9th of May about thirty artillery salvoes from a thousand of arms were given, and the sky was colored by the projectors beams over the capital of USSR.



# **EVERY THIRD CITIZEN**

During the Great Patriotic War Belarus has lost its every third citizen. Here we should refer to some more shocking facts and numbers

On the 22th of June 1941 German fascist troops invaded the Soviet Union: the **war began which has continued for 3 years, 10 months and 17 days.** Moreover, on the Belarusian territory it has lasted for 3 years, 1 month and 6 days – since the 22nd of June 1941 up to the 28th of July 1944. The large-scale battles and military operations took place here, including operation "Bagration" – one of the most significant offensive operations in the history of the mankind.

The first partisan battle of the Great Patriotic war was led by a legendary commander Vasily Korzh at the premises of Pinsk on the 28th June 1941.

Among the 34 million 476 thousand soviet soldiers (including 490 thousand women, that were drawn to the army and fleet) participating in the military actions at the frontier of the Great Patriotic war, more than 1 million 300 000 were Belarusians. And these were front-line soldiers only.

"People's Avengers" Tikhon Bumazhkov and Fedor Pavlovsky were first among partisans who got the honored name – the Hero of the Soviet Union in 1941.

In July 1943 Belarusian partisans made the biggest diversion at the railway station in Osipovichi, blowing up 4 German echelons with ammunition and tanks "Tiger». And one of the biggest partisan battles in the history of the war was **Polotsko-Lepelskaya battle in 1944.** 



During the Great Patriotic War, **it was Minsk where the largest urban anti-fascist "underground" movement in Europe was organized.** One of the most memorable pages in the history of Minsk resistance was the operation of liquidation of Hitler's henchman in Belarus – the gauleiter Wilhelm Kube. On the night of September 22, 1943, right in the bed of the executioner who had destroyed hundreds of thousands of lives, a deadly mine exploded. Years later, this story became the basis of the plot of a famous Soviet **film "Clock stopped at midnight"– the first movie about the heroes of Minsk underground movement**.

26 million 600 thousand Soviet people laid their entire lives at the Altar of the Fatherland for the sake of peace on Earth.

Three million Belarusian people died in the fire of the Great Patriotic War, which equals to more than **11% of the total losses of the Soviet Union.** There is no family in our republic that has not been affected by this war.

On the territory of Belarus, fascists created more than 580 death camps and mass extermination places. "Trostenets" death camp is itemized in this tragic list - the fourth largest death camp in Europe, where **more than 200 thousand people were killed**, although there is evidence that there were many more victims – about 546 thousand.

In Belarus most of the cities were looted and destroyed, in total about 12,868 cities and towns were partially or completely destroyed. The infamous symbol of brutal massacre has become the village of Khatyn that was burned together with its people; the tragic fate of this village **was shared by other 290 Belarusian villages.** 





# 130-TON BELAZ MINING DUMP TRUCKS BEING STATE

# QUALITY MARK HOLDERS

# BELAZ-7513 IS THE BESTSELLER WITH THE QUALITY MARK

For the high reliability, ease at operation and servicing this truck is sometimes compared to Kalashnikov gun – the world scale masterpieces in the spheres of arms production and tanks building. This represents acknowledgment of success of the 130-ton truck on the part of people, and now it has embodied into an official confirmation.



# HONOURS

#### **Testament of professionalism**

First in the history of the sovereign Belarus the State Quality mark was given to twenty most significant Belarusian products which have passed the tough selection for the correspondence to the criteria of technological effectiveness, innovativeness and safety, as well as ecological and esthetic criteria. The president of Belarus Alexander Lukashenko has thanked everybody involved in the manufacture of these unique products and reaching the success. 130-ton mining trucks BELAZ-7513 have become the products manufactured for technological purpose aetting the highest evaluation mark. At the solemn ceremony the statuette of the Quality Mark has been given to Sergey Lesin, General Director of the enterprise.

– The mining trucks of series 7513 being awarded with the State Quality mark is most important and crucial for our company; it is the result and a well-merited recognition of many years of hard and responsible work of thousands of employees of BELAZ, their dedication and commitment, – said Sergey Lesin. – This award is a testament to the professionalism of our team, commitment to quality and continuous improvement. We are proud that BELAZ machinery contributes to the economic development of the country and has earned the trust of its consumers.

Mining dump trucks of series 7513 – are bestsellers in the BELAZ product line. Over the past decade, our company has maintained the strong leadership position in the global market in the 110-150-ton segment, taking a share of more than 70% of the world's deliveries of mining dump trucks of this class. Since 1996 to the present date, more than 5,570 trucks of 7513 series have been produced in 12 configurations and over 140 model types. 130ton trucks are worthy successors of the leading and innovative methods laid down in far 1961 by the legendary 27-ton dump truck BELAZ-540, the first holder of the Quality Mark in the automotive industry of the USSR.

#### New legend born

This product started its path to the top almost thirty years ago. The year of 1996 was marked by the assembly of a prototype model of a new generation – mining dump truck BELAZ-75131 with a load capacity of 130 tons; the truck presentation was traditionally timed to the





General Director Sergey Lesin and Deputy General Director for Strategic Development and Corporate Management Alexey Grachev at the time of presenting the award of the State Quality Mark, Palace of Independence, Minsk, 2025

Fest Day of the machine builder. Many new technical solutions have been applied in the manufacture of this truck, aimed at increasing reliability and service life – this was set and dictated by the market and tough competition from foreign manufacturers of similar machinery, established after the collapse of the USSR (at those times of planned economy principles in effect, the producers lacked problems with selling products). For the manufacture of this model the operation experience of its predecessors was also considered, i.e. 120-ton trucks 7512 series, produced by the company from 1989 to 2001.

#### Alexander Naskovets, General Design Engineer – Head of Scientific and Technical center named after A.N. Egorov:

– The predecessors of the Quality Mark awarders -120 ton dump trucks series 7512 - were equipped with an independent front suspension and significantly differed from the 130-ton trucks in their design. BELAZ-75131 trucks were designed with application of a dependent front suspension, resulting in creation of the unique configuration that provides excellent smoothness of movement, that is so advantageous in terms of comfort for the operator. In addition, the rational design of the suspension with a minimum number of relatively movable elements is characterized by reliability and durability. Operators noted these advantages of the 7513 series mining dump trucks at the start of their production, later on a number of improvements and modifications have been introduced. Over 29 years, the design of various components has changed so much that, let us say, BELAZ-75131 first and BELAZ-75131 now - these are completely different trucks. They are even different in terms of load capacity, which first was increased from 130 to 136 tons, and then up to 140 tons.



Predecessor of the Quality Mark holders - 120-ton BELAZ-7512 in one of the Russian mines



Alexander Naskovets

Vladimir Krokh

#### Vladimir Krokh, Head of Experimental workshop and Chief Engineer (1984-2008):

- The first prototype was assembled in the Experimental workshop, then considering the identified drawbacks, then the second and third one were manufactured. Engineers continued to work on BELAZ-75131, even with it being on the assembly line: units and systems design was improved, a lot of changes were put, finalizing it, basing on the comments from the consumers. In general, both design engineers and technology engineers held on tightly to the truck, sometimes working in two shifts. For example, in 2004 some radical changes were put in the design of the truck, reducing the overall width by 55 centimeters - from 6 m 95 cm to 6 m 40 cm. This made it possible to operate 130-ton trucks on the technological roads, and helped to avoid the necessity to carry out expensive works of increasing the size of their technological roads. The result of common efforts, diligence and hard work has become a good truck, which operates even more efficiently and serves longer when in good hands.

BELAZ-75131 has reached the level of the best world standards and has gradually proved that it is the one that fits to the intensively developing mining industries of Russia, other CIS countries, as well as far abroad countries. This truck has become a major breakthrough. Development and production of the 7513 series trucks gave a new impetus to the development of the company: BELAZ stood out in those difficult times, becoming one with the leading world producers of mining equipment; and 130-ton trucks have begun to enjoy the respect of miners and have won great popularity among users.

#### Today's 7513

In its work, BELAZ uses the method of assembly line production, which, however, allows applying a personal approach to the execution of each order, issuing mining dumpers, taking into account individual requirements of the customer. These requirements vary depending on the location and operating conditions of the machinery.

In February 2017, the 3,000th truck of 7513 series left the assembly line, in September 2019 – the 4,000th and in June 2023 – the 5,000th. In recent years, several new models of the top products have been offered to consumers – BELAZ-7513D, BELAZ-7513N, BELAZ-7513Q and BELAZ-7513T. And it's still the same high-performance mining machinery, bringing profits to its owners, safe and comfortable for operators.

### Yuri Morozov, Deputy General Director for Production Organization, BELAZ:

Over the long years of manufacturing
BELAZ-75131 and other dump trucks of this family
a lot of changes and modifications have been
made, that resulted in the necessity to improve
and make changes to a lot of technological
and production processes. I should highlight
here that it would be extremely difficult, let
say almost impossible to do so without highly
skilled professional specialists that work here.
Over the years, a great deal of experience has
been accumulated in the matter of quality and
timeframes of orders execution. That is why trucks
of 7513 series have gained wide recognition not



Yuri Morozov

only in the post-Soviet space, but also far beyond it. Most often, the BELAZ machinery operates in geographical regions with extreme natural and climatic conditions, which means that road and transport conditions are of prime importance. Thus, maintenance of technological roads in good condition, avoidance of overloading of mining dump trucks, timely and high-quality maintenance - all that increases the overall technical readiness rate and service life of machinery. Most miners understand these peculiarities and create the appropriate conditions, and 130-ton BELAZ trucks respond to them giving excellent operation indices. Those who have other trucks to compare with BELAZ ones are beyond doubt sure that the ones deserve the award.



The 5 555th truck-7513 sprint, April 2025

BELAZ-7513 family has become very successful. The users of this series trucks are mining companies from Russia, Uzbekistan, Kazakhstan, India, Vietnam, Mongolia, Indonesia and many other countries. The 130-ton trucks operate throughout the whole world for developing coal, non-ferrous metals, iron ore, gold, diamonds and other minerals mines. Regardless of the field of application, BELAZ trucks always display high efficiency and reliability, which makes these trucks indispensable in the modern conditions

#### Growth development

The mining industry is setting new challenges for BELAZ, and they are successfully settled, including the one for modernizing the truck topfamily. More and more trucks of 7513 series are equipped with electronics; their units and systems are improved and modernized. So, at the end of the last year, BELAZ-7513S was assembled, in which the frame was reinforced to minimize wear and tear when operating on rugged ground forms, extending the trucks service life. New technical solutions have been applied to increase the service life of the front and rear suspension elements, taking into account the high requirements for stability, maneuverability, smooth running of the dumper and operator's comfort. This is a result of use of unique digital calculation methods and computer modelling technologies that allow for virtual model life cycle processing. We plan to apply these modernization cycles to the entire range of mining dump trucks.

BELAZ machinery meets not only the demands of today's miners, but also the tomorrow's requirements. Based on decades of successful work, our company has created innovative models: robotic dumpers BELAZ-7513R, BELAZ-7513P the world's first 130-ton liquid natural gas truck, BELAZ-7513E – 120-ton accumulator-battery truck with energy recovery system, BELAZ-7513M in hybrid diesel-battery design, BELAZ-7513M H2 – a prototype dump truck operating on hydrogen fuel.



Most of these innovations belong to the family "ECO-BELAZ" and are a good example of the course for environmental friendliness, followed by our company. The applied technologies reduce operating costs and improve the environmental situation in the places where the machinery works because of minimization or complete absence of harmful emissions into the atmosphere.

High evaluation of BELAZ-7513
 dump trucks inspires us for new
 achievements and for conquering
 new heights, – says General Director
 Sergey Lesin. – I am personally
 convicted that the best is yet to
 come.









# THE FIRST ROAD GRADER BELAZ

E) BELNZ

70 t weight

455 mm

7,3 m



ADVANCED basic equipment

#### ERGONOMIC cabin

### **ALWAYS AVAILABLE**

spare parts



# BELAZ-79770: ROAD GRADER HEAVY-CLASS WEIGHT – 70 TONS

The first mining grader manufactured by BELAZ is ready to demonstrate all its power and performance in open mining conditions. This is a completely new type of mining machinery for our company; it expands the range of special equipment produced at BELAZ enterprise for mining and transportation operations.



BELAZ Grader will lay and service technological roads, prepare convenient areas for reversal movements and parking vehicles, and also move large volumes of soil while planning and profiling working areas and slopes. Grader is also indispensable for clearing roads off snowdrifts. In general, this kind of mining equipment influences the safety of the road cuts.

Powerful 600 h.p. diesel engine (448 kW) and the unladen mass of more than 70 tons enable the grader to develop a traction force for at least 412 kN and a breaking depth of up to 455 mm. Transmission is hydro-mechanical (4+3), based on the transmission of BELAZ serial production. The gearbox allows the grader to run smoothly and at full capacity, switching to the required gear depending on the load and the required speed. Using the transmission of our own production is a guarantee for our potential customers of constant spare parts availability at our dealers', which in consequence minimizes the downtime during maintenance. Another new development of our specialists as part of BELAZ-79770 grader – is a driving axle, which along with the hydro-mechanical transmission allows the vehicle to reach a maximum speed of 28 km/ h, and also secures its high passability.

The articulated semi-frames made of durable steel secure reliability and durability of the entire structure. Adjustable blade 7.3 m wide and 1 m high is the main working member of BELAZ-79770, designed for high loads. It is made of high strength steel, lined with sheets of wear-resistant steel. The blade is placed between the front and rear wheels. The main advantage of this arrangement is lower amplitude of oscillations of the blade cutting edge during the grader moving on uneven surfaces if compared to other similar equipment.

Wide working ranges of the grader blade position are envisaged: the possibility of its transverse and vertical rotation planes, shift, lifting and lowering.





Heads of BELAZ production workshops and Deputy General Director for Production Yuri Morozov (in the center) during the grader acceptance, April 2025

Maximal blade can be deepened for 625 mm. Its cutting angle can reach 40 degrees, the angle of rotation is 59 degrees. The grader is capable of reaching out for much bigger area than, for example, a bulldozer.

Modern approaches for hydraulic drive control are applied in the grader design. Here, electrohydraulic control is used to eliminate the necessity to use high pressure and high temperature hydraulic hoses in the cab, which in total has increased safety and improved the microclimate of the operator's workplace.

Control by means of ergonomic joysticks installed in the seat armrests, ensures comfortable working and precise positioning of the working bodies. The signal from them comes to the controllers, which under a specially designed program (own development of the company), control the hydraulics and, respectively, the working equipment and steering. Grader is equipped with a comfortable cabin, meeting all safety standards. The key parameters of the vehicle are reflected on the touch-screen display of the electronic instrument panel, which allows quickly detecting and eliminating malfunctions and also greatly simplify the operator's work. Large glass area of the cabin combined with a modern video surveillance system provides the operator with a full view of the working area, excluding "blind areas». Centralized lubrication system, modern twocomponent fire extinguishing system, LED lighting – all these systems are already included in the basic configuration.

In June, BELAZ-79770 grader will be presented to the general public at the International Mining Technology Exhibition "Russian Coal and Mining 2025" in Novokuznetsk, after which it will undergo operational tests in one of the mines of the Russian Federation. BELAZ-79770 heavy-duty mining grader is a multi-functional vehicle that combines such characteristics as versatility, high performance, reliability, maneuverability and safety. By its main technical parameters, BELAZ grader is a good match for the best foreign counterparts that left the Russian market being under sanctions pressure and will be an excellent choice for efficient work in the mining industry.

Manufacturing a heavy-duty mining grader is a complex project, which became a real challenge for BELAZ specialists, because the specifics of production of such machinery had to be learned from scratch. In the world, in general there are only two manufacturers of this type of vehicles. BELAZ has become the third one. Grader is designed for road maintenance in operating mines, where 130-ton (or above) BELAZ trucks operate. According to preliminary calculations of specialists, at least 10 units of this type can be manufactured per year, making up for their deficit on the Russian market.











# A NEW CLASS OF UNDERGROUND EQUIPMENT



### **UNDERGROUND EQUIPMENT**

# BELAZ-4076: ONE OF THE MOST POWERFUL UNDERGROUND LOADERS IN THE WORLD



Developing the line of equipment for underground mining, BELAZ has created a new loader, model BELAZ-4076 with payload capacity of 17.2 tons.

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A new loader was assembled for the first time in BELAZ workshops. Taking into account the wide demand for underground equipment among consumers, the management of our company made a strategic decision to transfer the assembly production of high-capacity underground equipment from the site of the Mogilev branch to the main enterprise located in Zhodino. This will allow not only to increase the output of demanded products for underground works, but also to increase their service life and reliability.

Taking into account the wide demand for underground equipment among consumers, the management of our company has made a strategic decision to transfer the assembly production of high-capacity underground equipment - loaders of 14 and 17.2 tons and dump trucks of 50 tons from the site of the Mogilev branch to the main enterprise in Zhodino. This will allow not only to increase the output of demanded products for underground works, but also to increase their service life and reliability. Now such equipment will be produced under the **BELAZ** brand.

#### Universal loader

The main purpose of BELAZ-4076 is efficient loading and transportation of loosened rock mass in tight conditions of mine transportation arteries.

The low profile and high maneuverability allow the loader to work confidently in the most inaccessible places, where common equipment cannot reach. At the same time, the maximum productivity of the loader is achieved with its shuttle scheme of movement with the range of cargo transportation from 50 to 300 m and optimal air temperature from  $-10^{\circ}$ C to  $+35^{\circ}$ C.

However, BELAZ-4076 is the universal loader, which can be successfully used in conditions of open-pit mining, tunnel construction and other load-haul operations of any degree of complexity.

#### Increased payload capacity and efficiency every day

BELAZ-4076 has a number of new design solutions. The payload capacity of the loader has been increased by 1.2 tons (from 16 to 17.2 tons) – now the loader can load and transport even more rock mass at a time, increasing productivity and reducing work process time.

BELAZ-4076 is equipped with a 480-horsepower diesel engine (353 kW), a reliable BELAZ hydromechanical transmission (4+4) with automatic control system, fuel tank of 680-liter and reliable reverse brakes.





The loader has a strong articulated frame and bucket capacity of 7.2 cubic meters. The beam lifts a loaded bucket in 8.5 seconds, lowers it in 6 seconds and dumps it in 3.2 seconds.

During preliminary factory tests, the design and systems of the BELAZ-4076 loader were finalized in close cooperation with Nornickel specialists. Constant interaction with customers and consideration of their operating experience allows us to design the vehicle that is maximally adapted to complex and often extreme operating conditions and increases its market demand.

#### Comfortable and safe working place

The new loader is designed to provide comfortable and safe working conditions for the operator. The ROPS and FOPS-certified cab, vibration mounts and excellent visibility meet the highest safety standards. The single-seat cab is equipped with a sprung seat, heater, ventilation and air conditioning system, visual monitoring of the working area and the main parameters of the loader systems.

The basic configuration of BELAZ-4076 includes systems of automatic firefighting of the engine compartment, centralized lubrication, tire pressure control, all-round video viewing. As options, the underground loader can be equipped with a loading (weighing) control system, a system for preventing dangerous approaches and collision protection.

#### Packaged supplies

Responding to the current demands of mining companies, BELAZ offers its customers packaged supplies of underground equipment for mining processes. Thus, according to calculations, the greatest efficiency of operation of underground loader BELAZ-4076 is achieved when it works with underground dump truck MoAZ-75851 of 50 ton payload capacity. And this vehicle, by the way, will be upgraded as well.

Six MoAZ-75851 dump trucks are currently operating at Nornickel's Kayerkansky mine. Based on the results of their pilot operation, BELAZ and Nornickel specialists will make a number of changes to the dump truck's configuration, which will allow creating an improved version of the 50-tonne underground truck by the end of 2025.

Thus, we get an ideal pair for underground works – the loader with payload capacity of 17.2 tons and a 50-ton dump truck.

### **BELAZ - NORNICKEL: STRATEGIC PARTNERSHIP IN THE UNDERGROUND EQUIPMENT SEGMENT**

At the beginning of 2025, the companies signed the agreement on long-term cooperation in the development of production of import-substituting samples of underground mining equipment.

The document was signed by Sergey Lesin, General Director of OJSC "BELAZ" – Management Company of Holding "BELAZ-HOLDING", and Nikolay Utkin, First Vice President, Head of Government Relations, Metallurgical Company "Norilsk Nickell".

The agreement covers production of loaders and underground dump trucks by BELAZ, as well as testing of underground equipment and its maintenance at mining enterprises of Nornickel.

#### Nikolay Utkin,

First Vice President, PJSC "Mining and Metallurgical Company "Norilsk Nickel":

– The conditions at our mines are harsh, mining is carried out at horizons below a thousand meters, so we have a great need for underground equipment with increased reliability. When companies from unfriendly countries stopped supplying vehicles and spare parts, we found ourselves in a difficult situation. Our colleagues from BELAZ quickly responded to our request, and today we already have six first test underground dump trucks in operation. Their finalization continues, and I am sure that in a year it will be a new 50-tons dump truck fully adapted to our conditions. In general, we are impressed by the plans and tasks that BELAZ is demonstrating: we realize that the company's high-quality, reliable, import-substituting products will be in high demand not only by Nornickel, but also by the entire mining industry of Russia.



Nikolay Utkin and Sergey Lesin during the Agreement signing

**Sergey Lesin,** General Director of OJSC "BELAZ" – Management Company of Holding "BELAZ-HOLDING":

 In the segment of underground equipment, where we were previously not so widely represented, we focus on the heavy class - dump trucks with payload capacity of 30-50 tons and loaders with payload capacity of 16-17 tons. By signing the agreement with Nornickel, we have found a partner who has the highest expertise in the field of underground mining. Moreover, we have received a test area on which we will be able to work out our equipment in terms of reliability with maximum loads and get a result that we will be proud of. All this will allow us not only to meet the current market needs of our key partner, the Russian Federation, but also to set new standards in the mining industry by offering the highest quality underground equipment.

### AIRCRAFT TUG BELAZ-54011

For aircrafts with take-off weight up to 150 tons

Boeing 737

Airbus A320

Airbus A321





9728 MA, 42

....

SAFETY. COMFORT. PERFORMANCE.



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# AIR HARBOR MANAGER

BELAZ is actively working on the assembly of a new aircraft tug BELAZ-54011, which should become a real discovery for airports. The prototype vehicle is designed specifically for handling aircraft with takeoff weights from 50 to 150 tons – such as Boeing 737, Airbus A320, A321. For example, in Russia today this is the main class of aircrafts for passenger air transportation.

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BELAZ-54011 is a highly mobile and maneuverable towing vehicle of special functional purpose. The aircraft tug with 4x4 well arrangement will be effective in performing specific tasks at airfields with artificial pavement – such as transporting aircraft over short distances to teletraps and over long distances to parking, maintenance or repair sites.

Almost all key components of our reliable partners from the Republic of Belarus and the Russian Federation have been combined in one new product.

The "heart" of the aircraft tug is a four–stroke turbocharged diesel engine of Belarusian production, EURO-3 environmental class and rated power of 115 kW (156 hp). Reinforced drive axles are also of domestic production. They are fully controllable for maximum maneuverability and equipped with hydraulically operated multi-disc brakes. The radiators are Russian.

The power unit of BELAZ-54011 also includes a hydro-mechanical transmission of an alternative manufacturer from a friendly country. The gearbox with six forward and three reverse gears allows to realize the required traction force with maximum efficiency. It is designed to provide break-free gear shifting under load and will enable precise lowspeed maneuvering movements for docking to the aircraft.

The well-developed configuration of the main components of the vehicle makes it possible to use domestic tires of increased dimension 10.00R20 in the new model of the BELAZ aircraft tug.

The important feature of BELAZ-54011 aircraft tug is its ability to quickly change its trailing weight from 12 to 18 tons for efficient operation depending on the condition of the asphalt concrete pavement of the airfield: whether it is dry, wet or icy, – say specialists of the plant's design bureau.
To adapt the aircraft tug to the specifics of work in different weather conditions and to a certain type of aircraft allows a special ballast, placed in the frame between the wheels of the front and

An important feature of BELAZ-54011 aircraft tug i s its ability to quickly change its trailing weight from 12 to 18 tons for efficient operation depending on the condition of the asphalt concrete pavement of the airfield: whether it is dry, wet or icy.

# DEVELOPMENTS



BELAZ-75010 aircraft tug at Boris Volynov International Airport in Novokuznetsk.

rear axle of the vehicle and easily replaceable by an standard forklift. The higher the weight of the ballast, the better tires traction on the road surface.

The advanced steering system of the aircraft tug will allow the operator to choose the optimal turning mode from four variants: front wheels only, rear wheels only, synchronous turning with all wheels at once and the so-called "crab" turning. Thanks to this BELAZ-54011 will be able to easily maneuver in the limited spaces of hangars, and at the most complicated trajectory of movement, which is especially important in the places of aircraft parking on the airfield and at the telletraps on the airport apron. At the same time, the maximum speed when the aircraft tug is traveling without an airplane will be 30 km/h forward and up to 12 km/h when towing an aircraft.

It should be noted that the more than two-year operation of the previous model of similar class of BELAZ-54010 aircraft tug at Boris Volynov International Airport in Novokuznetsk has been a good help in creating a new model of BELAZ aircraft tug for air harbors.

BELAZ-54011 has a comfortable operator's cabin with an air-compressed seat, a well-thought-out video viewing system, modern air conditioning and heating systems, good interior noise insulation and an electronic dashboard. All the optics in the vehicle are fully LED.

To ensure safety, the aircraft tug is equipped with emergency stop buttons in the cabin and on the frame of the aircraft tug, fire extinguishing system of the engine compartment and additionally installed fire extinguishers in the cabin and on the frame.

The new aircraft tug BELAZ-54011 will meet the high technical requirements of the International Air Transport Association (IATA) and has all the perspectives to become popular vehicle on the market.

# PROMOTION



### APRIL WAS TRADITIONALLY A RICH MONTH FOR BELAZ IN TERMS OF EXHIBITIONS

We have successfully presented our vehicles at three most important international sites: Zimbabwe International Trade Fair (Bulawayo), Mining World Russia (Moscow) and "INNOPROM. Central Asia"(Tashkent).

At each of the exhibitions, visitors were able to evaluate innovative BELAZ models, get all the necessary information about the vehicles, as well as immerse themselves in virtual reality.

BELAZ's stand at the Zimbabwe International Trade Fair received special attention from highranking guests: President of the Republic of Zimbabwe Emmerson Mnangagwa and President of the Republic of Mozambique Daniel Chapo, which underlines the strategic importance of the South African market for BELAZ.

The Belarusian side offered the President of Zimbabwe Emmerson Mnangagwa to visit our company within the framework of his future visit to Belarus together with representatives of the business community, where they would be able to get acquainted with the advanced assembly lines, the latest models of vehicles and, of course, personally test BELAZ. The proposal received a positive response, and already on 13 May 2025 representatives of the mining industry of Zimbabwe visited BELAZ!

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President of the Republic of Zimbabwe Emmerson Mnangagwa at the BELAZ stand, Bulawayo, April, 2025



Represantatives of the mining industry of Zimbabwe, Zhodino, May, 2025



BELAZ at an exhibition in Bulawayo...

At Mining World Russia, in addition to BELAZ's new products, MOAZ models were presented, including the new MOAZ-4076 load-haul dumper. The business aspect of the exposition was also active – negotiations were held with 60 companies, including leading Russian universities, the development of relations with which is also one of BELAZ's key activities.

At "INNOPROM. Central Asia», the BELAZ stand was visited by Alexander Ogorodnikov, Ambassador of Belarus to Uzbekistan, Oleg Korobchenko, Minister of Industry and Trade of Tatarstan, and numerous representatives of business circles, which testifies to the high interest in BELAZ products in the Central Asian region.

By completing work at these three significant sites, BELAZ has strengthened its positions in key markets and opened new horizons. We will continue to expand the geography of our supplies and offer innovative, reliable equipment that meets the highest requirements of the mining industry anywhere in the world.

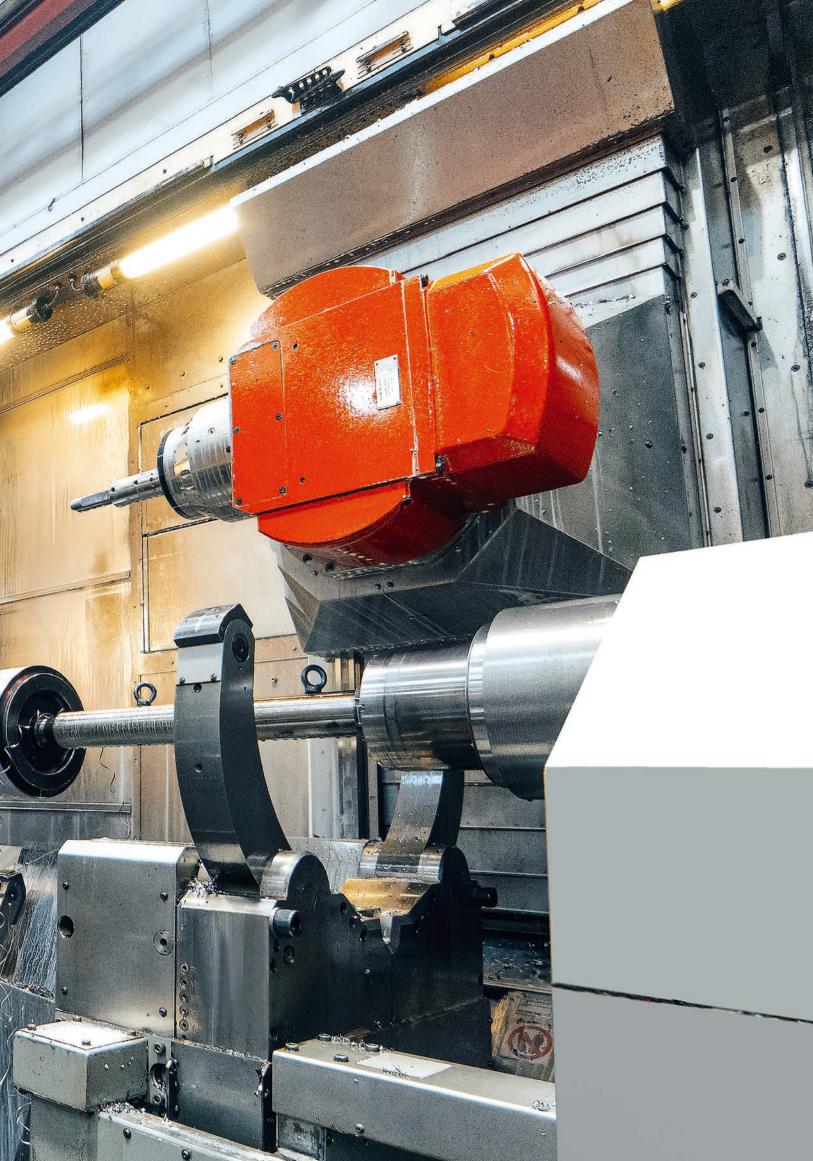


in Tashkent ...



.. and in Moscow

# MODERNISATIO



# BELAZ INVESTS \$62,5 MILLION IN 2024 IN THE PURCHASE OF HIGH-TECH EQUIPMENT

We will tell you about some of the acquisitions.

#### ION-PLASMA NITRIDING UNIT



Created by Belarusian scientists together with BELAZ specialists.

Ion-plasma nitriding is a chemical-thermal treatment of parts, which is aimed at hardening of the most wearable parts of a dump truck – crown pinions of motor-wheel reduction gear (MWRG).

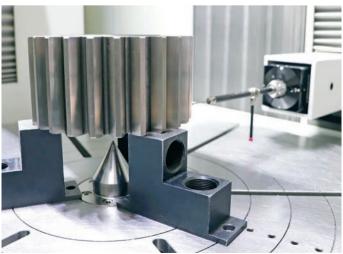
The process takes place in a vacuum chamber, where a concentrated stream of nitrogen ions forms a nitrided layer on the surface of the part, which helps to increase the hardness, strength and wear resistance of MWRG pinions, and, as a result, the service life of mining dump trucks in general.

The coordinate method of measurement allows you to clearly control compliance with the design documentation of geometric parameters and characteristics of product surfaces – parallelism, alignment, angles, perpendicularity and others.

And to do it quickly and with the highest accuracy, which is necessary for mating parts (for example, gears) in the most critical units of dump trucks. Today six coordinate measuring machines are operating in different BELAZ workshops, the largest of the machines is a three-coordinate machine used for automatic control of large-size parts with complex spatial shape, such as MWRG bodies, rear and front wheel hubs, half-frames, etc.

In terms of its capabilities, this machine surpasses the analogues available in Belarus and even in the CIS countries.

# COORDINATE MEASURING MACHINES



#### ROBOTISED TECHNOLOGICAL COMPLEX FOR WELDING OF PLATFORM ELEMENTS OF DUMP TRUCKS

This is a modern welding robot complex (RTC), which performs automatic welding of dump truck platform bases without human assistance.

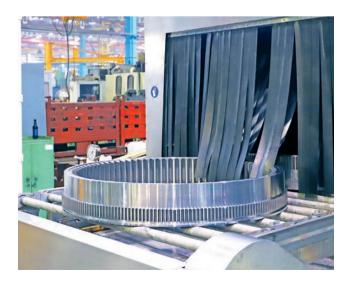
Thanks to the high-precision work of two "mobile arms" of manipulators installed on a mobile gantry and productive welding equipment, the high quality of welded joints is ensured. In addition, the RTC allows to increase the speed of welding operations at minimising time spent on preparation and processing of products and to increase their safety.



## INDUCTION HEATING UNITS

Five energy-efficient induction heating units have been commissioned, working in close pair with the presses. The new units heat up steel workpieces in a matter of seconds. The red-hot workpiece is immediately placed under the press, where it can be easily shaped and dimensioned. Products made using this technology are many times more accurate than products made by rolling.





#### AUTOMATED WALK-THROUGH WASHING TUNNEL TYPE MACHINE WITH PROGRAMME CONTROL

Using a pressurised washing solution, it effectively cleans body parts, motor-wheel reduction gear pinions, dump truck brake system components from oil, small chips, dust and other contaminants produced after turning and milling. This is a high quality process of washing and drying of products before they are put through the production cycle.

# LAUNCH OF A NEW INTERNATIONAL PROJECT

10 M

# UEHTP KOMMETEHUNY



# INVESTMENT IN THE DEVELOPMENT OF MINING INDUSTRY AND FUTURE MINERS

BELAZ continues to implement its strategy aimed at training highly qualified engineers for the mining industry. On February 21st, a new cutting edge technology laboratory, which is unique un the world, was opened on the basis of one of the leading technical universities in Russia – Empress Catherine II Saint Petersburg Mining University.

# **EDUCATION**







The event took place on a symbolic date - the day of the 30th anniversary of the signing of the Treaty of Friendship, Good-Neighborliness and Cooperation between the Republic of Belarus and the Russian Federation.

The opening ceremony was attended by highranking guests: Viktor Karankevich - Deputy Prime Minister of Belarus, Dmitry Mezentsev -State Secretary of the Union State, Kirill Polyakov – Vice Governor of St. Petersburg, Vasily Osmakov – First Deputy Minister of Industry and Trade of Russia, Denis Bakey – Deputy Minister of Industry of Belarus, as well as Vladimir Litvinenko – Rector of the St. Petersburg Mining University and Sergey Lesin – General Director of BELAZ. The laboratory "Autonomous Electromechanical Systems for Electric Motion of Mining Equipment" is the only laboratory where students can recreate all power, mechanical and technological processes of the power plant of BELAZ dump truck using real technical units and assemblies as examples.

This is the sixth laboratory opened at BELAZ Competence Center in the city on the Neva. In addition to it, five more laboratories are actively operating: training and laboratory complexes, Digital Mining Production, Intelligent Mining Equipment and the laboratory On-board Systems of BELAZ equipment. BELAZ consistently develops cooperation with the best universities in Russia and CIS countries, investing significant resources in the development of competencies of future generations of engineers,
Sergey Lesin is convinced. – The development of human resources is one of the key areas in the work to strengthen the mining industry and engineering school of our key partner – the Russian Federation.

At the opening ceremony of the laboratory, Viktor Karankevich noted the importance of the development of BELAZ Competence Center for the peoples of the Union State:

- Three years ago with the participation of the Prime Minister of the Republic of Belarus Roman Golovchenko the BELAZ Competence Center was opened, which is effectively functioning and developing. One of the directions of our state is to create all kinds of conditions for all-round development of the youth. Close interaction between our countries in industry, science and education is a pledge of cordial goodneighborliness and prosperity of the peoples of Belarus and Russia.

The culmination of the Russian-Belarusian meeting was the signing of the Agreement on Scientific and Technical Cooperation between BELAZ and the Mining University. The previous agreement, which was valid for five years starting from 2019, was recognized by all parties as more than successful.

The document provides for training and retraining of specialists for the fuel and energy and mineral resources complexes using technical resources of the laboratories of BELAZ Competence Center, joint scientific and educational practices and events. This means that BELAZ Competence Center will undoubtedly continue its development.

– BELAZ is our academic partner, the company that consciously works with the university to obtain that invaluable product called "human capital". Equipment today is relevant for drillers, geologists, specialists of any mining industry, including underground mining. The opening of the new laboratory is not only a vivid example of integration of the two countries, but also an example of real work of the company, which, unlike many others, works for tomorrow, – Vladimir Litvinenko is convinced. – BELAZ Competence Center is the best in the university today. I think that we have a great perspective and great opportunities.









Vladimir Litvinenko: "The opening of a new laboratory is not only a vivid example of the integration of the two countries, but also an example of the real work of the company that, unlike many, works for tomorrow».

> Vladimir Litvinenko, Rector of the St. Petersburg Mining University of Empress Catherine II, presented the letters of thanks for active contribution and participation in the creation and development of BELAZ Competence Center to Sergey Lesin - General Director of BELAZ, Alexey Grachev – Deputy General Director for Strategic Development and Corporate Management, Lyudmila Makarevich - Head of the Bureau for Development of Educational and Technical Potential, as well as Natalia Kholodulina - Marketing Director of the General distributor of BELAZ in Russia, to the member of Board of Directors of our dealer "AVTOTEHINMASH" Ltd. Yuri Homich and RUSELPROM Concern, represented by Alexander Bychkov, Head of the project "KTEO for BELAZ Mining Dump Truck", who made the implementation of such a large-scale project possible.

In its turn, Sergey Lesin acknowledged the personal contribution to the establishment and development of BELAZ Competence Center by thanking Vladimir Litvinenko, Rector of SPMU, as well as pro-rectors and employees of the Mining University.

On the opening day of the new laboratory, a strategic discussion "The Role of engineering personnel in ensuring sustainable development and information security of machine-building and mining industries" was also held, moderated by Alexey Grachev, Deputy General Director of BELAZ, and Yuri Zhukovsky, Director of the Educational Center for Digital Technologies at SPMU. During the discussion, the participants exchanged opinions on the need for joint training of highly qualified specialists capable of solving complex topical tasks of the mining industry.

– Today we opened the laboratory, which has become the flagship of BELAZ Competence Center. It required colossal efforts and financial investments, but it is an investment in innovative production and sustainable development of the mining industry and future miners, – concluded Alexey Grachev.







## **"IN FUTURE WE WILL BE ABLE TO OPERATE THE VEHICLE RIGHT WITHIN THE WALLS OF THE UNIVERSITY"**

Why do BELAZ and the Mining University need a new laboratory, what is its purpose and strategic importance for the development of joint projects in the field of artificial intelligence?



Alexey Grachev, Deputy General Director for Strategic Development and Corporate Management of BELAZ, told the readers of BELAZ GLOBAL magazine about this. He is one of the people who originated the BELAZ Competence Center and continues to supervise this unique educational project. We met right after the opening of the laboratory, right there and asked a few questions.



The training and simulator complex of the Competence Center is equipped with virtual reality technologies

#### - Alexey Igorevich, what is the BELAZ Competence Center for you?

- The Competence Center is a powerful creative tandem of the global manufacturer of mining equipment and one of the best mining universities in the world, which allows developing and implementing joint innovative solutions for the mining industry. BELAZ mining equipment is constantly being improved, modernized, and becomes more complex, and in order to increase its operational efficiency, not only students, but also specialists from almost all mineral companies in the Russian Federation are trained at the Center using modern equipment and innovative technologies. Moreover, under the auspices of the UNESCO Center for Mining Education, international educational programs are being conducted here for representatives of Africa, China, Iran, Armenia and two dozen other countries, and all this with the direct participation of BELAZ company. The Center opened its doors for the first time on March 30, 2022 and has been steadily developing since then.

#### - What is its peculiarity?

- The Center's laboratories are equipped with exclusive equipment - laboratory complexes and stands, which allow to get acquainted in practice with the operation of hydraulic drive, electrohydraulic drive and automatic equipment, electric drive, operation of onboard systems and others. Initially, the Center included two laboratories in the format of a joint Scientific-Research institute: "Intelligent Mining Management" and "Intelligent Mining Equipment" and two testing grounds where the results were experimented: "Training and Laboratory Complex of BELAZ" and "Training and Simulator Complex of BELAZ". Today we opened a new laboratory "Autonomous electromechanical systems for electric motion of mining equipment".

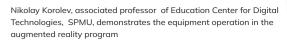


Another new laboratory - "On-board systems of BELAZ vehicles"





Preparation of the new laboratory is a rather long, complicated and responsible process. Some of the equipment did not pass through any doors and was delivered to the classroom located on the fifth floor of the university through a window









Load bench simulating the operation of internal combustion engine and motor-wheels  $% \left( {{{\rm{D}}_{\rm{B}}}} \right)$ 





Alexei Grachev and Yury Zhukovsky during the presentation of the new laboratory

#### - What for the new laboratory was created?

– The laboratory "Autonomous electromechanical systems for electric motion of mining equipment" is a new high-tech space where students and teachers will work together to ensure environmental friendliness and safe operation of BELAZ electrically driven mining equipment. The best engineering minds of both the university and BELAZ have been working on the project for more than three years, and for good reason: it is an original solution in which everything – from idea to realization – is realized on its own.

#### - What is the purpose of the laboratory?

– This is a unique space, which allows to recreate the process of operation of the power plant of a dump truck right within the university walls using real assemblies and units of BELAZ equipment. The laboratory provides excellent conditions for practical training of students and those who operate our equipment. There is nothing like it anywhere else in the world.

#### – How does it work?

The generator powers the dump truck. On a classic vehicle, it is driven by a diesel engine, but here we have replaced it with an electric one. This pair provides the whole laboratory with electricity. We used a real cabinet, such cabinets are on real dump trucks. The rear axle of the dump truck – with two electric motors, one of them turns the

#### Yury Zhukovsky,

Director of the Educational Center Digital Technologies of the Empress Catherine II Saint Petersburg Mining University, Doctor of Technical Sciences:

- This laboratory provides opportunities to implement more than 50 educational programs and allows to eliminate the staff shortage for mining and engineering companies in more than 10 engineering specialties – from mechanical engineering, electric power engineering, electric drive and digital technologies. For all these specialties, the lab can be used as a practical tool to consolidate skills and experience. Digital technologies are both electronics and high-level control systems. The direction and infrastructure that is in place and functioning today creates a comfortable and technological environment for high-level engineers. During these three years since the beginning of work on the creation of the laboratory, it has already become a center of attraction for the brightest and most talented engineering minds from Russia and Belarus. And the capabilities we have laid down here will allow the equipment of BELAZ mining dump truck to work harder, be more productive and meet the requirements of safe and clean mining production to the maximum extent possible in the future.

wheels, and the second – load, with the help of which in the process of study students will be able to simulate the load. Here there is also a cabinet that allows these loads to be recreated. So we got two electric motors as on a dump truck, two motors that simulate the load and actually powering all of this together with control in one lab.

#### - What is the uniqueness of this project?

– In one laboratory, we have a unique opportunity to interact with the dump truck as if it were in real operation. We can get the same load as when a dump truck is moving uphill or downhill, with or without a load. That previously required a trip to a mine, a lot of manipulations, costs and possibly no data, can be done in this laboratory without leaving its walls. In the future, we will be able to control a whole machine right within the walls of the university...

### - Are there any plans for further expansion of BELAZ Competence Center?

– Functionally, the Competence Center will be continuously expanded. We have already discussed with our partners what set of new tools can be added to the laboratories, and in the near future we will start realization of one more very promising and demanded project.... But we will tell BELAZ GLOBAL readers about it exclusively in one of the next edition. Stay with us!



# BELAZ COMPETENCE CENTRE - NOW IN BELARUS



Expanding cooperation with leading technical universities for joint training of specialists in the field of mechanical engineering, BELAZ will open a Competence Centre at the Belarusian National Technical University this year.



Sergey Kharitonchik, Rector of BNTU, and Sergey Lesin, General Director of BELAZ

Thus, on 13 December 2024, BELAZ and BNTU signed an agreement to found an innovative BELAZ Competence Centre on the basis of the university. This will be a unique platform for Belarus that will ensure close co-operation between the world's leading manufacturer of quarry machinery and one of the largest largest technical universities in the country.

The BELAZ Competence Centre at BNTU will include two training laboratories: "Training and Laboratory Complex" and "Intelligent Mining Engineering and Systems Engineering".

In the training and laboratory complex, students will be able to "hone"their knowledge at the stands "Hydraulic Drive and Electrohydraulic Automation», "Electrohydraulic Drives and Automation», "Experimental Fluid Mechanics" and "Electric Drive». The laboratory "Intelligent Mining Vehicles and Systems Engineering" will organise work with the BELAZ intelligent monitoring and predictive analytics system, students will also be given the opportunity to develop solutions in the field of unmanned transport. The students will also be able to master design and technological engineering, 3D modelling, and use VR capabilities to study the design of a mining dump truck, its operating principles, its maintenance process, and assembly/disassembly of the main units.

BELAZ is a world-class company that makes serious steps to develop education. A good example of this is the Mining University in St.
Petersburg, with which they have worked out many technologies. Having signed the agreement, we are creating the most serious educational laboratories, there is nowhere else in the world like it. This is our joint pass to a good engineering tomorrow,"said rector of BNTU Sergey Kharitonchik.

Today BELAZ successfully cooperates with seven leading technical universities in Russia, where 11 specialised training laboratories have been established – in Kemerovo, Ekaterinburg, Moscow, Krasnoyarsk, Apatity, and the BELAZ Competence Centre operates at the Empress Catherine II St. Petersburg Mining University.





# THE WINNER OF BELAZ CHALLENGE 2025 – THE TEAM OF THE EMPRESS CATHERINE II SAINT PETERSBURG MINING UNIVERSITY

# THE BEST IN THE BELAZ CHALLENGE FOR THE SECOND TIME IN A ROW WERE STUDENTS FROM THE CITY ON THE NEVA RIVER

In total, 10 teams from Belarus, Russia and Uzbekistan competed for the title of champion of the 5th anniversary championship on solving machine-building cases.



Traditionally, on the first day of the championship its participants got acquainted with the glorious history and modern achievements of BELAZ by visiting the company's museum, visited the workshops and the demonstration site with samples of manufactured vehicles, taking pictures of themselves against the backdrop of the worldfamous steel giants. And, of course, not without the first competitive tests. These were the tasks of the brainstorm "Start BELAZ!", which was won by the team of the branch of Murmansk Arctic University in Apatity (branch of MAU, Apatity, Russia), having got a unique opportunity to drive a 90-tons dump truck around the factory testing ground. It should be said that the real star of the brainstorm, and some subsequent battles, was a student of the branch of MAU Daria Marushkova, who proved that girls are competent in vehicles.

The participants of the V Championship showed an incredible level of preparation, teamwork, desire to win and gained invaluable experience and knowledge that will be useful as they move forward to success, which will not be long in coming. This was noted in their speeches to the students by Alexey Grachev and Yury Morozov Deputy General Directors of BELAZ. The programme of the main competition day turned out to be extremely rich in terms of various intellectual competitions.

The first was a competition of presentations of the teams. The "Most creative video presentations" were recognised to be those of the already mentioned branch of MAU (Apatity, Russia) and the branch of NUST MISIS (Almalyk, Uzbekistan),















which participated in the last year's championship online, and this time sent its team to BELAZ.

The teams presented themselves to the jury and competitors, after which they proceeded to practice-oriented cases. The best solution to the case "Thermal State of an Internal Combustion Engine" was proposed by a trio of participants from the Kuzbass State Technical University named after T.F.Gorbachev (KuzSTU, Kemerovo, Russia), the best design solution was proposed by students of the Ural State Mining University (UrSMU, Ekaterinburg, Russia), the best economic justification was proposed by representatives of the National University of Science and Technology MISIS (NUST MISIS, Moscow, Russia). And the most non-standard approach in solving this case was recognised by the Almalyk branch of NUST MISIS (Almalyk, Uzbekistan)

The case "Technical and Economic Optimisation of the Quarry Vehicle Fleet" had its favourites: Belarusian National Technical University (BNTU, Minsk, Belarus) – the best solution, the Empress Catherine II St. Petersburg Mining University (SPMI, St. Petersburg, Russia) – the most nonstandard approach, Siberian Federal University (SFU, Krasnoyarsk, Russia) – the best economic justification.

The competition programme was rounded off with the traditional mechanical engineering quiz "BELAZ, please!" The students demonstrated great savvy and teamwork. The representatives of the Gubkin branch of NUST MISIS (Gubkin, Russia) were particularly successful in this, winning the quiz and receiving the loud title of "intellectual champions".

The winners of special nominations were also called to the scene at the awarding ceremony to receive diplomas and memorable prizes: "For Active Participation" – State Technical University of Gomel named after P.O. Sukhoi (Gomel, Belarus), "Best Team Spirit" – Gubkin branch of NUST MISIS, "Recognition of the Student League" (voted by the championship participants themselves) – Almalyk branch of NUST MISIS. In addition, a photo contest "BELAZ in the Lens" was held, which was won by the teams of three Russian universities - SPMI (St. Petersburg), UrSMU (Ekaterinburg) and NUST MISIS (Moscow), as well as the Uzbekistan branch of NUST MISIS (Almalyk).

As a result of all competitions, the Grand Prix and the title of BELAZ CHALLENGE 2025 champion was won by the team of the Empress Catherine II Saint Petersburg Mining University. This student team fully justified its informal name "KPD101", showing more than 100 per cent efficiency of its actions. The winners got a unique opportunity to undergo industrial practice at the BELAZ plant. Their colleagues from the champion team of SPMI, who won the Challenge last year, realised a similar opportunity with great benefit for themselves.

BELAZ CHALLENGE 2025 is over, but it is only the beginning for the participants! In addition to prizes and gifts, students gained invaluable knowledge and experience, made new acquaintances, got a lot of emotions and vivid impressions, which will undoubtedly become a solid foundation for their successful future.







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# **10 YEARS OF BRIGHT IMPRESSIONS**

More than 300 thousand tourists from three dozen countries of the world have visited BELAZ over the entire period of implementation of the project "BELAZ - the brand of Belarus", which hospitably opened the doors of the plant. This year BELAZ's industrial tourism celebrates its tenth anniversary



Over 12 thousand excursions have been organised at the plant over this decade. Tens of thousands of guests have received unforgettable impressions and experienced vivid emotions from driving in the cab of a huge dump truck. About 200 thousand children and young people have immersed into the universe of big machines over these years.

BELAZ's openness and active promotion of industrial tourism contribute to solving a wide range of important strategic business tasks - strengthening the positive image and recognisability of the BELAZ brand, popularisation of the company as one of the world's leading manufacturers of mining vehicles, and, consequently, investment attractiveness and increased demand for its products.

Today, tours to the homeland of BELAZ are held during all four seasons, seven days a week, and are in high demand among connoisseurs of industrial travel: an average of 12-14 tourist groups a day come to the plant. The overall statistics speak for themselves: in 2024, the number of tourists visiting the plant has increased by more than 6 thousand people, from 51 thousand visitors at the end of 2023 to more than 57 thousand in 2024. By the way, more than 32 thousand tourists visited BELAZ in 2022 - it turns out that their number has almost doubled in two years! The trend of growth in visits will continue in the current 2025 year.

Many people are eager to take advantage of unique BELAZ offers – to see with their own eyes where and how the legendary vehicles are created, to get a sea of impressions not only from contact with the specifics of production and modern technologies, but also from a ride on a real dump truck. Tourists have a great demand for such an active holiday with the experience of immersion in the process.

The BELAZ excursion route combines all the main factory "sights" and the most "delicious" thematic locations for tourists – modernised workshop of

the main assembly line for dump trucks, unique museum and large-scale exhibition exposition, 450-ton BELAZ-record holder of the Guinness Book of Records in person, the first shop of branded products BELAZ SHOP with a diverse and original assortment, extraordinary photo zones with samples of retro equipment to create emotionally vivid and atmospheric pictures.

Special programmes for holidays and school holidays with surprises and gifts, thematic campaigns and activities for different target groups of tourists, preparation of interactive zones, expansion of the range of merchandise - all this helps to make tourist trips to BELAZ even more interesting and attractive today.

Meanwhile, industrial tourism is not just a fascinating excursion and entertainment for the eyes of fans of huge vehicles, it is also an effective tool for career guidance, i.e. attracting young people's attention to production and, in the future, strengthening the plant's personnel potential. By demonstrating modern workshops for assembling mining machines, the company interests young people in the prospects of self-realisation and professional growth in machine building, promotes









popularisation of technical professions, and increases the interest of the new generation in working and engineering professions.

Today, BELAZ continues to work purposefully on improving the level of tourist services, expanding awareness of the excursions offered, developing the industrial tourism infrastructure and creating a comfortable, informative and safe environment for visitors. Today BELAZ partners are the leading travel agencies in Belarus.

For the convenience of tourists, visits to the plant are organised daily from 8.00 to 20.00 without weekends. A BELAZ excursion call centre is available.

#### +375177527979

By calling it, everyone can book a tour, having previously agreed the date and time of their visit.



Render of the exhibition area with interactive zone for tourists



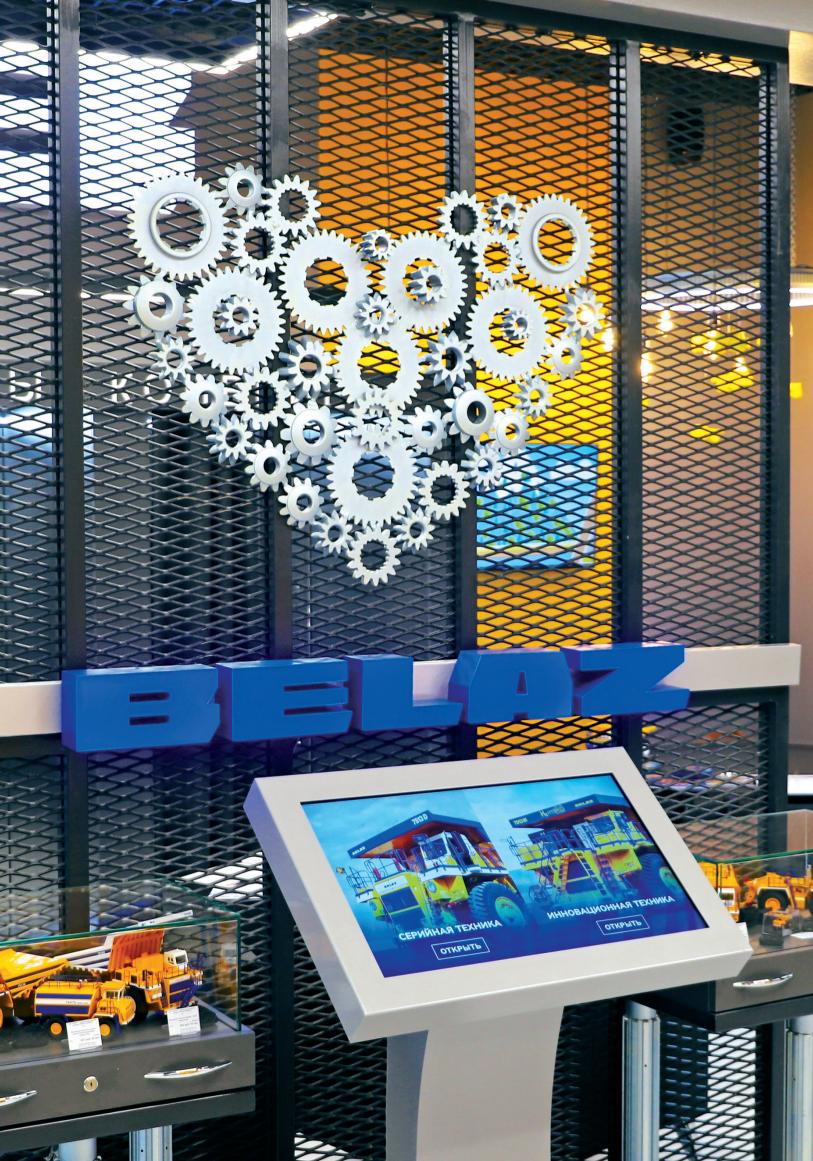
#### Alexey Grachev,

Deputy General Director for strategic development and corporate management of OJSC "BELAZ" – Management Company of Holding "BELAZ-HOLDING":

- BELAZ became the first in the machine-building industry of Belarus to open its doors to tourists. The project started with an idea: to introduce and show the unique production facility to the public, to attract attention and instill love for the brand. This idea turned out to be in such demand that the number of those who wanted to get to the enterprise and see the unique vehicles is increasing every year. To continue surprising our tourists, we are constantly developing. Thus, the nearest plans include creation of new attractive locations and objects of tourist interest. For example, an interactive room will be created at the production site of super-heavy vehicles, which will be interesting for both children and adults. Moreover, a large-scale exhibition will be organised, where we will present a wide range of BELAZ vehicles. There will be new models of vehicles, including a retro part with the legendary first dump trucks and other machines that help BELAZ to work in the quarry. We will open the exhibition area already this summer and we will be sure to tell the readers of BELAZ GLOBAL magazine about it. Moreover, in December 2024 we opened the first shop of branded products BELAZ SHOP in the homeland of dump trucks - in the city of Zhodino, and in May 2025, the BELAZ SHOP conceptual space also opened its doors in the capital's shopping centre "Pershy Natsyjanalny gandlevy dom" ("The First National Trade House").

# CONCEPTUAL SPACE FOR BRANDED MERCHANDISE





# **BELAZ OPENS BELAZ SHOPS IN DIFFERENT CITIES OF BELARUS**

In December 2024, BELAZ solemnly opened its first shop of branded products in its hometown Zhodino, and already in May this year – in one of the largest shopping centres of Minsk "Pershy Natsyjanalny gandlevy dom" ("The First National Trade House").





Sergey Lesin and Alexander Tsivako at the opening of BELAZ SHOP in Zhodino

The BELAZ SHOP was a real discovery and attracted a lot of attention from shop visitors.

The solemn start of the new project in Zhodino was given by Sergey Lesin, General Director of BELAZ and Alexander Tsivako, Chairman of Zhodino City Executive Committee, in Minsk the branded blue ribbon of the shop was cut by Sergey Lesin, Andrey Konyushko, First Deputy Minister of Industry, Alexander Evseev, Chairman of the Economy Committee of Minsk City Executive Committee.

– This is a very significant event for us. It marks the appearance of not just a new shop, but a real conceptual space where the atmosphere reflects the spirit of BELAZ, its power and consistently high quality, – said Sergey Lesin. – The first BELAZ SHOP in Minsk could open its doors only here, in the shopping centre "Pershy" ("The First»). This is a landmark location where the best Belarusian brands, the pride of our country, are presented. It is a great honour for BELAZ to become a part of this community of leaders and contribute to the promotion of Belarusian quality and traditions.



Andrey Konyushko, Sergey Lesin and Alexander Evseev at the opening of BELAZ SHOP in Minsk



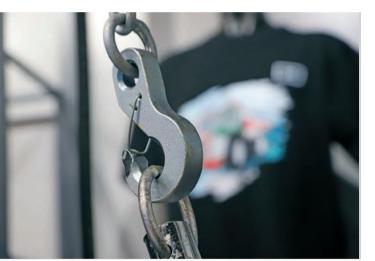




BELAZ SHOP is a whole world of first-class merchandise, created with the same love and attention to detail as our legendary dump trucks. It is not just a shop of branded souvenirs and clothes, but a conceptual space with its own unique atmosphere – a real Fashion Conveyor!

In the shopping centre "Pershy" ("The First") the heart of BELAZ SHOP is the front part of the dump truck with a payload capacity of 130 tons, which this year was honoured with the State Quality Mark. This composition fulfils two functions at once: as a checkout area, where you are met by a salesperson who is always ready to help you with your choice, and as an original photo-zone for the best photos. Opposite it, as a reminder of our love for you, there is a heart, which is made by the factory workers from real gears. In addition, the whole space uses dump truck spare parts the chandelier, table legs and many other interior details are made of their elements.









Special attention was paid to the children's zone in the shops. In Zhodino there is a branded photo zone, and in Minsk there is a space for creativity: its table is made of a wheel from the smallest BELAZ, inside of which there is an imitation of a real coal mine! Here children can draw, put puzzles together and watch cartoons about our little hero Belazik.

And what is a shop without shopping! The shop offers original merchandise, which, we are sure that it will be an ideal gift for all BELAZ brand lovers. BELAZ SHOP offers a wide range of clothes – T-shirts, hoodies, sports suits, as well as various branded products – from magnets to suitcases.

Especially for our young fans we have prepared a collection of stylish and comfortable clothes, as well as key chains, rulers, cars and a real constructor – now you can build a BELAZ dump truck yourself!

However, to do it, you need to work hard: there are more than 600 parts in the set! The opening of BELAZ SHOP in Minsk is not just the launch of the shop, it is the creation of a comfortable space where you can have a great time and buy original gifts for yourself and your loved ones, demonstrating your love for powerful BELAZ vehicles and Belarusian industry in general. We are sure that BELAZ SHOP will become a place of attraction, where everyone will be able to buy something from the legendary plant and enjoy the beauty and quality of our products.













# **BELAZ SHOP**

**Q** Zhodino. Zhodino shopping centre, 20 Lenina str.

 Minsk. Shopping centre "Pershy natsiyanalny gandlevy dom" ("The First National Trade House»), 134 Independence Ave. No.124-125