

ENGINEERING

Company engineering policy

Design-and-engineering and research-and-development school of NKMZ is known for its unique machines in the field of rolling-mills, draglines, press-forging and handling equipment engineering.

Company engineering policy consists in bringing scientific-research and experimental development works to production stage.

Due to this policy conditions for continuous implementation of advanced technological processes in metallurgical, welding, mechanical assembly and other divisions are created.

Computer system of production design engineering used at NKMZ is based on modern software and hardware facilities. It realizes product data management through the whole life cycle: from conceptual engineering to operation stage.

Product life cycle management in the unified information environment



Always keeping up with the times

						
Mining and mineral-processing equipment	Sinking equipment	Metallurgical equipment	Rolling-mill equipment and rolls	Press-forging equipment	Handling and special-purpose equipment	Parts of power-generating equipment, ship building and general engineering
since 1934 year	since 1935 year	since 1936 year	since 1937 year	since 1951 year	since 1938 year	since 1990 year

Mining and mineral-processing equipment

NKMZ has been manufacturing the mining equipment since 1935. Just then the first coal-pulverizing mills was produced for thermal electric power plants, mine winders and tunneling shields needed for building of the phase 1 of Moscow underground.

NKMZ has supplied in different countries 18 rotor complexes, more than 2000 shovel excavators, 3000 mills and crushers of different types and modifications and more than 2000 of mine winders.

A special place in the NKMZ nomenclature is occupied by the production of steeply inclined conveyors, which effectively solve the problem of minerals transporting from deep opencasts.



Sinking equipment

More than 2000 mine winders with the NKMZ brand are operated in many countries of the world, they attract customers with their load capacity, reliability and maintainability.

Nowadays PJSC NKMZ is best placed to manufacture integrated equipment for mine shafts and equip the coal mining complex with high-production reliable machines of new generation.

Heading equipment of PJSC NKMZ perfectly approved itself during operation in the conditions of mine workings of any complexity.

Nowadays more than 200 roadheaders are working in the coal industry of Ukraine, Russia and Kazakhstan, significantly increasing the rate of sinking and, thereby, increasing minerals extraction.



Metallurgical equipment

NKMZ develops and manufactures the basic elements of blast-furnace equipment that provide technological processes from the charge preparation to the production of cast iron, its storage and transportation.

Today, about 100 stationary mixers with capacities from 450 to 2500 tons are operated in 12 countries of the world, more than 110 mobile mixers with capacities from 150 to 600 tons operate in three countries.

The engineering and production potential of NKMZ makes it possible to fully equip the metallurgical plant with supplied automated process control systems, which can reduce the human factor, optimize the consumption of material resources, and achieve high product quality:

- arc steel-smelting furnaces;
- after-furnace steel treatment facilities;
- deep vacuum treating facilities;
- billet and slab continuous-casting machines;
- integrated casting and rolling complexes of combined rolling and steel rolling, direct chill rolling of aluminium and its alloys.



Rolling-mill equipment and rolls

In 1936 the first in USSR and Europe powerful slabbing mill 1100 for the Zaporizhstal integrated iron-and-steel works was manufactured at NKMZ.

Since then, NKMZ has designed and manufactured 104 rolling mills of various types, which operate at the largest integrated iron-and-steel works in 20 countries. Each of our rolling mills is the unique industrial complex. More than 70% of flat rolled stock in the CIS is produced on the mills with the NKMZ trademark.

NKMZ designs and manufactures:

- ferrous and non-ferrous wide strip hot and cold rolling mills;
- plate mills;
- cogging, billet and bar mills.

Our rolling mills, as well as finishing and sheet-finishing equipment, are produced in the necessary configuration and equipped with the most modern automated process control systems.

Since 1934, NKMZ has been producing high-quality forged rolls of various sizes and purposes. Their annual production exceeds 50000 tons.



Press-forging equipment and heat-treatment machinery

Since 1936 NKMZ is the acknowledged leader in producing of various-purpose press-forging machines. Several hundred types of various press-forging equipment have been supplied to the customers in different countries of the world, including CIS countries, Bulgaria, Brazil, Hungary, Germany, Egypt, Italy, India, China, Poland, France, Japan.

Nowadays NKMZ creates forging equipment, which enables the customer to produce forgings weighing from 1 t up to 120 t out of carbon and alloyed steel ingots.

In addition, our company can also manufacture and deliver as a single package automated forging complexes, consisting of hydraulic forging press, forging manipulator, heat-treatment and crane equipment.

Modern horizontal-forging units under NKMZ trademark allow the customs to perform hot die forging out of steel grades and non-ferrous metals in matrixes with vertical slot during gross and large batch production.

For metal treatment by impact method the company produces steam-driven arch-form forging hammers (weight of falling parts - up to 3 t) and bridge-type hammers (weight of falling parts - up to 8 t).



Handling and special-purpose equipment

NKMZ mastered the crane industry in 1935, manufacturing unique portal cranes for the Moskva-Volga canal and heavy-duty travelling gantry cranes for the erection of Hydroelectric Power Plants equipment and metallurgical plants servicing.

In the last quarter of the 20-th century, 150 unique types of machines were designed for the defense and space systems of the USSR, and then in the procedure of conversion a wide range of self-propelled handling equipment was developed and mastered by production.

Overhead travelling cranes made by NKMZ are the main handling equipment of the manufacturing workshops in all fields of industry, indoor and outdoor storage sites. At the present time the plant manufactures overhead travelling electric cranes with lifting capacity from 5 to 630 t and width of bay up to 40 m.

The accumulated experience allows offering today modern travelling gantry and semi-gantry cranes for erection and maintenance of HPPs, bucket loaders, container and portal cranes as well as other types of handling equipment to the customers.

Width of bay, hoisting height, operating modes and control system for any of the above mentioned crane types will be made according to the customer's requirements.



Components for power-generating equipment, shipbuilding industry and general engineering

NKMZ is closely connected with the energy sector, starting from the casting in 1934 for the first time in the USSR of the nozzle lower part for the turbine with a capacity of 25000 kW.

Subsequently, the company carried out responsible orders for hydraulic power industry, as well as manufactured propeller shafts for nuclear-powered icebreakers, submarines and aircraft-carriers.

NKMZ supplies a wide range of products for nuclear power stations, wind-electric sets, electrical engineering industry, shipbuilding.

Application of the advanced technologies in steel-making, forging and heat treatment facilities enables to produce high-quality reliable parts and blanks for components of wind-powered generators; shafts and shaft blanks of large electric motors and electric generators, turbines of hydro- and thermal power plants; structural elements and assemblies of hydroelectric power plants, pipelines of nuclear and thermal power plants; parts and blanks for components of shipbuilding and general technical engineering.

Annual production output of power generating equipment makes over 5000 t.

