

## Formula for Victory: Five Developments by Metinvest's Ukrainian Engineers that Make the Armed Forces of Ukraine Stronger

Since the beginning of the full-scale invasion, the number of soldiers in the defence forces has increased almost sixfold — from 250,000 to 1.2 million. The larger the army, the more rear support it needs. There are five to six workers who support the war effort for every soldier at the front. Someone donates to the army, someone produces weapons and someone creates new defence systems.



For three years in a row, Rinat Akhmetov's Metinvest Group has been using all its resources to fight the enemy. Oleksandr Myronenko, Chief Operating Officer of Metinvest Group, said: "Metinvest's steel saves and protects." It has already developed and implemented several important engineering solutions that help the army's defensive and offensive actions, and, in this way, Metinvest is also involved in the defence of the country. For this reason, the initiative has been named "Rinat Akhmetov's Steel Front".



### Defence solutions: Protection for tanks

Tanks were once considered to be the most powerful vehicles in warfare. Now, in the wars of the 21st century, tanks need to be thoroughly protected. Drones have been added to the large arsenal of anti-tank weapons. According to official data from the General Staff of the Armed Forces of Ukraine (AFU), Ukrainian defenders have destroyed more than 8,000 enemy tanks since the beginning of the invasion. Later, the Russians learnt to use drones. According to the Oryx analysis database, the tank losses of the Ukrainian military amount to around 800,

including five Abrams tanks. This is one tenth of the enemy's losses, but it still means that armoured vehicles need protection.

Metinvest's engineers offered a solution for such protection. As part of Rinat Akhmetov's Steel Front initiative, the Group has developed special steel screens to protect tanks.

Myronenko said: "Anti-drone steel screens not only help to protect expensive equipment from enemy damage, but also save the lives of Ukrainian soldiers. Since the beginning of the war, this has been one of the tasks of the Steel Front. We stand shoulder to shoulder with Ukraine's armed forces to defend our right to live and work on free Ukrainian land."

As of the summer of 2024, Metinvest has manufactured and delivered more than 25 additional protection systems for various types of tanks for the AFU, including for T-64 and T-72 tanks and M1 Abrams tanks.



#### **Protection for infantry: Underground bunkers**

The enterprises of Metinvest Group employ thousands of people who, in addition to the usual peacetime products, and as part of Rinat Akhmetov's Steel Front initiative, manufacture metal capsules for soldiers that are saving them from shrapnel and bullets at the front.

These structures were developed in cooperation with engineers from the Ministry of Defence. They are six metres in length and two metres in diameter — a small room that can comfortably accommodate up to ten soldiers. The capsules are buried in the ground and covered with wood. In a war where the majority of soldiers are killed by artillery, underground bunkers remain almost the only reliable way to protect them.

After additional consultations with experts from the AFU, the design was expanded to a command post. It consists of five or six separate interconnected metal mobile bunkers. Each room performs its own function: either living quarters or a sanitary facility. Another such underground room serves as the command post. This complex includes sleeping and working areas, showers and boilers, heating, lighting and communications systems. Since the beginning of the invasion, Metinvest has provided over 530 bunkers of various types to the brigades of the AFU, including both metal "hideouts" and underground command posts.





#### **Protection solutions: “Lancet catchers”**

The large number of enemy unmanned aerial vehicles (UAVs) are one of the greatest challenges for our defence forces. They monitor hundreds of kilometres of the front line and are constantly trying to hit our tanks, armoured personnel carriers and other equipment. Metinvest Group specialists have also taken part in solving this problem. They developed metal structures that stop enemy drones. The steel frame is ten metres long, five metres high and five metres wide. The frame is stretched over a chain-link mesh, and the mesh is covered with camouflage. Metinvest can produce up to five of these structures per week. They are often called “Lancet catchers” because these are the UAVs the enemy uses the most often. One of the advantages is that the mobile structure does not require much effort to install over the equipment. After it has “caught” an enemy drone, it can be easily repaired to withstand new enemy attacks.



#### **Solutions for the offensive: Mine trawls**

According to the State Emergency Service (SES), as of 2024, approximately 30% of Ukraine’s territory is mined. This issue is being addressed by SES sappers and humanitarian demining missions, but only the defence forces are engaged in demining on the front line. They need help, which Metinvest’s specialists are providing.

The modern trawls can neutralise up to ten explosions due to the fact that engineers have paired the mine-clearing rollers. One set of rollers is 6.5 tonnes in weight and 3.77 x 3.44 metres in size. The cost of manufacturing one trawl is about UAH2.5 million, including the additional equipment for tank crews required to install the device. The defence forces have already received 23 of these trawls, and a new batch is currently being manufactured.

Each trawl comes with a repair kit. Field tests at the training ground have shown the effectiveness of these designs. Andriy Belyaev, commander of the Khortytsia 23rd Separate Public Order Protection Brigade of the National Guard of Ukraine, said: “The availability of such equipment, which can be manufactured by Ukrainian enterprises, is critically important for the country during the war. This gives the security and defence forces a reliable rear guard: in this case, the Ukrainian metallurgists, miners, and engineers of Metinvest, whose work has

helped to provide the army with effective mine countermeasures.”



### **Solutions for the offensive: Buggies made of Metinvest steel**

One of the main issues at the front is how to get to the “zero line” as quickly as possible. Or to go behind the enemy’s rear without being detected. Any unarmoured vehicle cannot survive long near the front line, where enemy shells or kamikaze drones are constantly hitting. One of the solutions is all-terrain vehicles, commonly known as “buggies”. They perform the same function as conventional vehicles — transporting soldiers, weapons, ammunition, food and water to the front line. They are as good as the best off-road vehicles in terms of capability and cost much less. They can be manufactured almost on a handicraft basis — in any garage or service station. Mostly, volunteers or members of the military themselves are making them.

But the main issue is where to get metal for such cheap all-terrain vehicles. Metinvest is also helping the armed forces in this area. In March 2023, at the request of the Southern Operational Command of the AFU, Metinvest Group supplied 3.8 tonnes of rolled steel for the first ten such vehicles. In July of the same year, volunteers and soldiers produced 12 more vehicles from metal products that will now be helping the defenders. Depending on the model, the buggies can be equipped with various types of weapons, including machine guns or grenade launchers, and their crew usually consists of two or three soldiers.

Over more than two years of military aggression, the Group has already spent UAH3.5 billion to support our defenders as part of Rinat Akhmetov’s Steel Front initiative. These are not just mine trawls, metal hideouts and Lancet catchers. The Group has manufactured at its own facilities or purchased 150,000 bulletproof vests, as well as thousands of drones and thermal imagers, vehicles, communications gear and other military equipment. All of these are manufactured or purchased and supplied to Ukraine’s defence forces free of charge.

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