



PAVEL KUDRHALT:

IN 2026, WE WANT TO PRODUCE 850 MILLION ROUNDS PER YEAR

STV Group is known as a major Czech manufacturer of ammunition and military equipment and as a provider of repairs of heavy military equipment. In addition, however, the company also focuses on ammunition. In the premises of Poličské strojírný, historically the very first ammunition factory founded in 1920, we find the company STV Technology, s.r.o. This company, which was established only in 2017, specializes in the production of small-caliber ammunition. These are pistol 9 mm Luger cartridges. The company also converts originally military cartridges for civilian use. Thanks to massive investments, the company plans to expand its production range to include .223 Rem. cartridges for the civilian market and military ammunition in 9x19 mm (9 mm NATO) and 5.56x45 mm (5.56 mm NATO) calibers. With the exception of the Far East, STV Technology's exports go worldwide. Their products can be found throughout the European Union, the United States, Latin America, Africa, the Middle East, and, of course, in our country.

The dynamic development of the company was confirmed by its managing director and our guide, Mr. Pavel Kudrhalt: "We are completing an investment well in excess of half a billion CZK, expanding the production capacity for the 9 mm Luger cartridge and introducing new technologies for the production of the .223 Rem cartridge. By the end of July, we shall receive first deliveries of the machinery for .223

Remington. The second phase of delivery of this equipment will take place during September. The acquired "nines" will produce up to 160 million "nines" per year. The production volume of the .223 Remington cartridge will be roughly the same. Our goal is to have our 9x19 mm (NATO) and 5.56x45 mm (NATO) cartridges classified according to the STANAG standards already in the first quarter of 2023. This applies

to the production versions 9x19 mm, 5.56x45 M193, and 5.56x45 SS109.

In order to offer its customers a wider range of ammunition, STV Technology is investing further in machinery for production of the widely used 7.62x39mm cartridge and the increasingly popular .300AAC Blackout. This is the company's response to the current market development, which offers the possibility of exporting these cartridges, especially to the US, where there is currently a shortage of approximately 800 million rounds of 7.62x39 caliber ammunition. „We perceive this as a huge business opportunity. We expect to launch production of these calibers in 2024. The preparation of the production premises is already done, which otherwise hinders any rapid development,“ added Pavel Kudrhalt. The key investment for the future remains the expansion of production by two more production facilities for the 9 mm Luger and two more - for the .223 Rem. cartridge in combination with the 5.56x45 mm cartridge. The full start of production after these investments will take place during the first half of 2026. The projected capacity of all - already operating and new facilities - is about 850 million rounds per year. The total investment in this phase will amount to almost CZK 1 billion.



View of one of the production halls



Press for lead core die cutting



Detail of lead core die cutting press and part

This capacity will place considerable demands on strengthening logistics. "We are also planning to boost the software to ensure maximum automation of operations and online data collection. We put maximum emphasis on product quality. An important part of production is therefore the setting up of individual production processes and, above all, the strict observance of technological procedures and subsequent quality control at all stages of production. As a relatively new company, we cannot afford not to have first-class cartridges," adds Pavel Kudrhalt.

The STV INVEST a.s. group includes, among others, the company DEUS Automation a.s. oriented on the supply of single-purpose machines and equipment for the production of ammunition. DEUS is already a reliable and innovative supplier of technological equipment for the sister company, STV Technology. Currently, this equipment accounts for more than 30 % of STV Technology's total investment costs. Within two years, DEUS will be able to

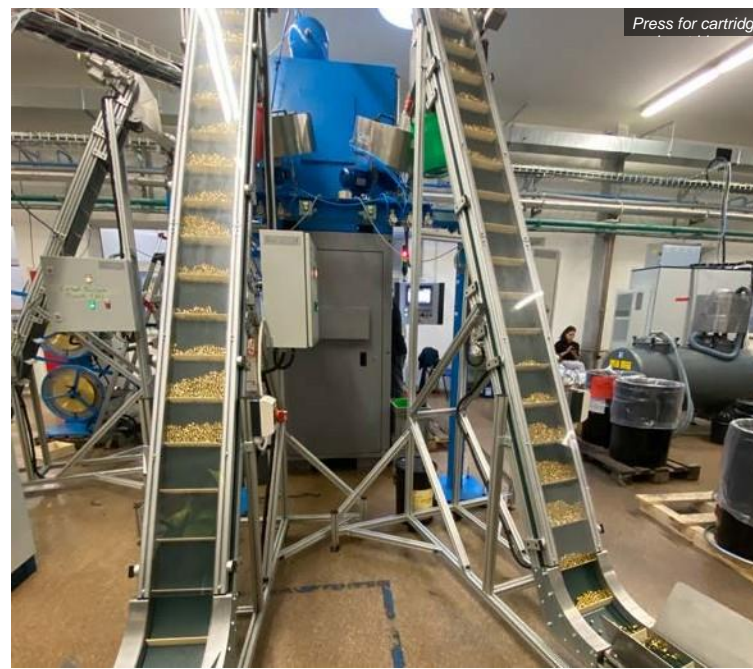
provide the complete needs of STV Technology, in other words, DEUS will become the general supplier of a complete ammunition production line not only to its sister company, but also to other potential partners.

As mentioned above, ammunition quality control is a priority at STV Technology. It takes place at several levels. At the beginning, the material passes through an input check. Every delivery must have all the required certificates and documents regarding the output quality check at the supplier's site. The company processes large amounts of brass and lead in various modifications. „Therefore, we focus on the material composition of the input control of brass materials using precise spectrometers, we check the hardness and grain size. As part of this new investment, we are going to acquire a new device for testing the energy components of the ammunition. We will test primer sensitivity, primer initiation power, and primer firing. We will test the grain size, chemical composition, graphite content, and burn rate of smokeless

powder," the executive explained.

The next level of quality monitoring is the production control, which has three levels. It all starts with the operators. They measure 10 pieces of extrusions every ten minutes. In case of any discrepancy, they stop the machine and call the fitters. All parts produced within the last 10 minutes of production are collected in a so-called "quarantine" and they are checked manually.

The second level of production inter-operational control is a random inspection in any part of the production process. The principle is that the controller takes samples from the running production every two hours. If a fault is detected, the machine in question is stopped, the last two hours of production are separated and the parts are routed to the quarantine again. They are returned to production only if a manual inspection report is issued and the parts are satisfactory in all aspects.



Press for cartridge cup extrusion





Press for inserting the primer into the bed Combined machine for assembling the cartridge

The third level of inter-operational control is the 100% inspection of the parts (cartridge case and projectile) by means of extremely precise optical inspection systems.

The last level of control is the output control of the finished cartridge. It is a 100% optical inspection of the cartridge dimensions, visual inspection of its packaging, and, last but not least, a regular ballistic inspection. „The magic of our final cartridge quality is hidden in precise components, regular and careful maintenance of machines, good tools, trained and experienced operators, adherence to technological procedures, and quality input materials. Currently, the share of non-conforming products is less than half a percent, both in components and in the finished hub,” summarized Pavel Kudrhalt.

This control system allows to trace back a possible error by the batch to the level of material input into production. In the case of a defect on a cartridge case, the batch number can be used to find out from who the cups came from, when they arrived, and what their serial number is. „We inspect hundred percent of the production using optical instruments. The dimensions, surface defects, and shape defects in particular. It was my personal request, which may have made production more expensive, but as a new company on the market we cannot afford problems with quality,” explained Pavel Kudrhalt and added: “Until this day, we’ve had a single claim from May last year and that was for a malfunctioning cartridge primer, which is a purchased component, but it was our cartridge, so we acknowledged the claim.”

The foundation of a good functioning cartridge is a quality powder and primer. The suppliers for STV Technology are from France, Belgium, and the USA. STV Technology purchases its primers from the world’s leading manufacturers.

Just as it is important to carry out inspections, it is essential to have a well-developed maintenance system so that the machines are not left standing unnecessarily in continuous operation. Again, there are several levels involved. The basic thing is regular maintenance of the machine during the shift.

This includes cleaning, vacuuming, or a tool change. The next step is post-shift maintenance, when the machine is handed over between shifts. Then it is the weekly servicing - on Friday after the afternoon shift, a two-hour maintenance is carried out, followed by monthly, quarterly, semi-annual, and annual maintenance. For the semi-annual inspection, technicians come directly from the machine manufacturers to perform a detailed inspection and recommend replacements or repairs. The annual repairs are then carried out during the company collection holidays. The machine is taken apart, all parts are inspected: cams, motors, and shafts. All key machine components also have an extended warranty period.

For a company with such ambitions, it is important to have enough employees. At present, approximately 100 people work in a continuous three-shift operation. Once all investments are completed, 450 people will be needed. The training for the majority of the activities must be done in-house. Regarding that, Pavel Kudrhalt added: „Assembling the cartridge of inserting the primer requires expertise. It takes about half a year to train operators to be able to do the work on their own. In addition to the internal training system, a pyrotechnics course is a prerequisite.“

The recruitment goes well and STV Technology already hired employees for machines that are only to be installed. The production can thus start from the very first moment. In the catchment area (within 40 kilometers from Polička), there are many companies supplying the automotive industry. They may find the work at STV Technology interesting, given that companies tied to supply automotive companies often face problems caused by changes in logistics or the shortage of chips at car manufacturers. Therefore, there is no shortage of new applicants.

Not only in this sector, it is a unique project of expansion of the company and production capabilities, which is currently unparalleled in our country. „By investing half a billion, we have created production with a capacity of 360 million of rounds. However, our production volume plan is currently almost triple that. We plan to

produce 200 million rounds of both calibers this year, 360 million next year, and by the end of 2026, we want to achieve the volume of 850 million rounds per year. This is an ambitious plan and there is not much time to do it, so some extraordinary effort is required. Unlike the competitors with long history, this is not an organic incremental change, but a leap in building new capacity in a very short period of time,” said Pavel Kudrhalt, the managing director of STV Technology.

During our visit, we got the opportunity to check the characteristics of the manufactured 9 mm Luger pistol cartridge at the company’s shooting range and we have to admit that it is user-friendly and forgiving when it comes to shooting errors. The cartridge is suitable for the shooting public, who do not require extreme performance, yet the cartridge provides unparalleled accuracy and reliability.

Beyond the aforementioned investments, STV Technology is also building its own capacity for the production of pistol and rifle primers and .50 BMG (12.7x99) ammunition. The expected launch date is the end of 2024, but more on that next time.

Jan Zilvar
Photo: Mgr. Michal Pivoňka