ULAN-UDE AVIATION PLANT CARRIED OUT MODERNIZATION OF PRODUCTION EQUIPMENT FOR STAMPING AND MACHINING

News / Manufacturer

Ulan-Ude Aviation Plant of the Russian Helicopters holding (part of the Rostec State Corporation) has successfully implemented an investment project for creating modern, high-performance stamping and machining production. The production facility no. 64 went through a major overhaul during the process. The project was aimed at developing new stamping technologies, the introduction of seamless techniques for manufacturing sheet metal, reducing the labor intensity share of manual labor of production.

"We're planning to launch the modernized stamping and machining production in its full capacity during the second half of 2020", said the Managing Director of Ulan-Ude Aviation Plant, Leonid Belykh. "We have replaced outdated equipment by purchasing and putting into operation modern stamping, cutting and forming technology, as well as upgraded storage systems. Production facility no 64 went through a major overhaul, turning it into modernized workshop for stamping and machining operations. The reconstructed facility has a new ventilation system and creates comfortable conditions for the company's employees. In general, based on the results of the project implementation,labor intensity

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will be reduced by 34.7% and production cost by 26.9%.

After the project is fully completed, sheet metal parts will be manufactured on a modern digitally controlled elastoforming press, introduced in June 2019. We have already designed all parts for the Mi-171A2/A3 and Ka-226 helicopters to be manufactured on the new press. In October 2019 we also put into operation press for longitudinal and transversal stretch forming of metal sheets (coverings), combining the functionality of several different stamping machines used earlier in the facility. Modern stamping equipment will replace obsolete and worn-out hydraulic presses and power hammers, ensuring the safety of the production process.

To transfer the designs of the old product range to the new equipment, we created a bureau for modeling sheet stamping processes, which uses modern software, simulates the shaping process and develops new tools made of modified wood for the production of parts on the new equipment. We've also built an automated warehouse for storing the tools used by the new equipment. Specialized software helps the warehouse worker to keep detailed records on tools and effectively locate them in the warehouse or directly at the presses, keep records of storage and delivery of sheet metal.

The investment project also introduces modern systems for cutting. Cutting and monitoring during manufacture is now carried out using digital technology. Milling of parts will be carried by multi-axis machining system. Storage and transport of sheet metal for cutting operations is carried out using an automated warehouse. The modernization of the cutting facility increased productivity by 15-50% (depending on the type of parts), and the labor intensity of finishing operations has decreased by a third. Since 2017, using high-performance milling technology has saved up to 1,000 operating hours every year. Thanks to the implementation of a program for group cutting of parts of various configurations and cutting layouts, material consumption has decreased by 15%, and monitoring of sheet metal consumption allows to make purchases in advance for the required volumes of production.

Modern equipment is located in the newly created production areas in the facility 64, which were previously empty. The production site is provided with all the necessary energy resources and a separate transformer substation was built on the site. Ulan-Ude Aviation Plant JSC is one of the production enterprises of the Russian Helicopters holding. The modern production and technological capacity of the plant makes it possible to manufacture new types of aircraft quickly and combine the creation of prototypes with the line production of equipment. In over 75 years of existence, more than 8,000 aircraft have been built at the plant. Today, the plant specializes in the production of Mi-8AMT (Mi-171E), Mi-171 and Mi- 8AMTSh (Mi-171Sh) helicopters.

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