

TYAZHMASH increases production by 80% with CATIA and 3DVIA

To maintain its lead in the heavy machinery market, Russia's JSC 'TYAZHMASH' had to shorten product development cycle times. They chose CATIA PLM Express to support all engineering work and 3DVIA Composer to create all its technical documentation, helping the company create technical documentation in half the time.

Established in 1941, Russia's Joint Stock Company 'TYAZHMASH' is a leading manufacturer of world-renowned products for the industrial equipment, energy, and transportation sectors. JSC 'TYAZHMASH' products are used to equip thermal, hydro and nuclear power plants. They are also used in large integrated mining plants, open and shaft mines, blast furnaces, cement and chemical plants, and at space launch sites. JSC 'TYAZHMASH' can handle complex orders and has a solid reputation due to the high quality of its products as well as their durability and serviceability.

MANAGING LARGE ASSEMBLIES WITH CATIA PLM EXPRESS

In order to maintain its leading position in the heavy machinery production market, JSC 'TYAZHMASH' had to shorten design and engineering cycle times and to model extremely large installations. This limited its choice of CAD systems to those that support large assemblies and the interaction between individual components. After comparing the different solutions available on the market, JSC 'TYAZHMASH' selected Dassault Systèmes (DS) Product Lifecycle Management (PLM) solutions CATIA PLM Express and, more recently, 3DVIA Composer. This choice was, in part, based on the solutions' adaptability and ability to efficiently handle engineering tasks performed by experts in various fields.

BETTER QUALITY, REDUCED DEVELOPMENT TIME

The introduction of DS PLM solutions in the design and engineering departments provided designers with an incentive to switch from the drafting table to 3D virtual applications in only two years. As a result, the company now enjoys significant time savings when developing new products and business processes. In addition, using an in-house measurement and inspection tool from which parameters are then entered into CATIA, JSC 'TYAZHMASH' has improved assembly quality, ensured precision and can make verifications for customers, even on large installations. This significantly accelerated the production process and improved the quality of its products.

In order to improve machining quality, JSC 'TYAZHMASH' purchased 5-axis high-speed milling machines and NC



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General Director, JSC 'TYAZHMASH'

machines where simulation paths are entirely managed using CATIA. All parts manufactured by the milling machines require no additional finishing. Thanks to CATIA Machining solutions, productivity increased and JSC 'TYAZHMASH' was able to undertake complicated projects under extremely tight deadlines, resulting in an increase in the number of contracts signed with customers. "I asked our teams to put in place an all-in-one and out-of-the-box PLM solution enabling us to manufacture right the first time. CATIA PLM Express enabled us to increase production volumes by 80% and to decrease our product rejects by 50%," said D.S. Trifonov, General Director, JSC 'TYAZHMASH'.

CREATING 3D TECHNICAL DOCUMENTATION WITH 3DVIA COMPOSER

During the design and manufacturing processes, a considerable amount of information, including product models and related technical information, is accumulated. Prior to the implementation of 3DVIA Composer, JSC 'TYAZHMASH' struggled to coordinate the assembly phase and the parts completion phase, resulting in a waste of resources and loss of time. Inconsistencies between the designs and associated technical documentation reduced productivity.

Today, users without any special CAD skills can use 3DVIA Composer to create 3D-presentation materials using digital models of the designed products, improving the quality of the documentation. Using interactive and graphic elements reduces the quantity of text needed, allowing the company to minimize translation costs. This is important since JSC 'TYAZHMASH' has many customers all over the world. "We can now create our documentation with 3DVIA Composer during the product design process, improving efficiency," said



Trifonov. "This enables us to reduce the time spent on rework and updating documentation when making design changes. As a matter of fact, 3DVIA Composer helped reduce the time required to prepare technical documentation by 50%," he said.

INCREASED VALUE AND CREDIBILITY

Using DS PLM solutions has had a positive impact on JSC 'TYAZHMASH's business image. Demonstrating PLM solutions to potential local and international customers has enabled the company to sign over 40% of its contracts with prior booking. "PLM solutions significantly increase our company's value and credibility among customers," said Trifonov. 📍

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