Innovate

Tooling Assemblies - Adaptive Trends in Complex Projects

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The challenging installation schedules and time constraints demanded when delivering turnkey projects; the need to quickly bring installed systems to the required levels of production; and the requirement to prove the quality of manufactured parts: all these factors place a range of pressures on the world's machine tool builders (MTBs).

When working with MTBs involved in turnkey projects, each partner is deeply involved in the installation, adjustment and start-up work for technical and tooling equipment that is intended for the end-user.

Efficient functioning of complete and often complicated technical systems to meet customer requirements — integrating the supply, mounting, adjustment and initiation of all interrelated elements while concurrently ensuring that all the elements work as a single cohesive system — is a fundamental need not only for project management but for project completion and success. Although metal cutting tools are always a vital part of each project, it often happens that minimal time is allowed for the balancing and tuning of the tools. As a result, additional human resources are required to complete these essential tasks, meaning that experienced tooling assembly specialists need to be on hand to perform complicated procedures in a short time space and in unfamiliar environments.

Essential supporting equipment is not supplied sometimes, and may be missing when needed for adjustment procedures. In addition, the tools and their accessories are often packed in different containers, causing unwelcome time losses when searching for necessary components. A world leader in cutting tools and related accessories, ISCAR supplies complete assemblies of rotating tools for complex turnkey projects. ISCAR MTB specialists work in constant cooperation with MTB companies involved in the management of large turnkey projects, in order to study and interpret customer needs and provide appropriate and effective solutions. These comprehensive schemes save time and cut down on the workforce required for start-up procedures, especially for larger projects. Each proposed turnkey package integrates distinctive features to maximize efficiency and simplify project implementation.

Fig. 1

Tool management

Tools are fully assembled, adjusted and balanced, and all individual tools are supplied with assembly and tooling layout drawings. If needed, each assembly can be equipped with electronic sensors for data management (Fig.1).

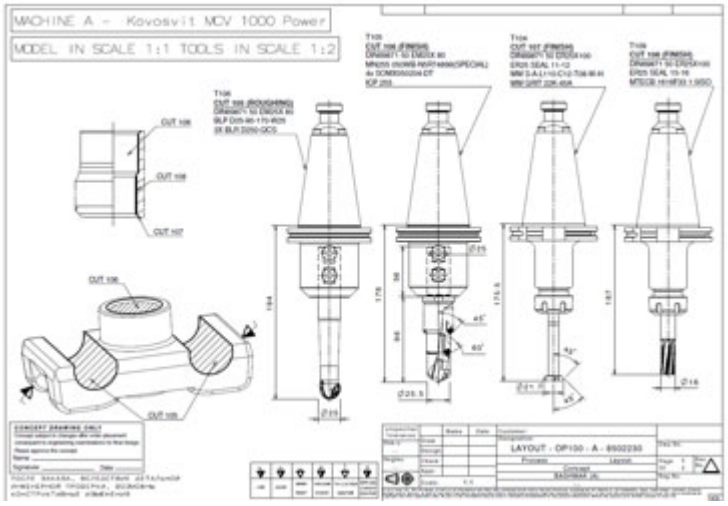

Fig. 2

Different forms of tooling layout representation can be prepared according to the complexity of the technological process or upon customer request (Fig. 2).

Fig. 3

Assembly identification and designation

Each tooling assembly is clearly marked according to its designation in the appropriate technological process (Fig. 3) with a code, tool number and other attributes necessary for tool identification within an automatic management system. This information is supplied with a customer report containing data related to the tool's dimensions for QA inspection.

For projects using tools intended for high speed machining (HSM), ISCAR is able to perform tool or assembly balancing by employing appropriate technical equipment and software for theoretical analysis and correction. The instruction guide includes an assembly drawing containing data related to balance characteristics and relevant data from balancing test results.

Fig. 4

Secure, identifiable packaging

An often overlooked aspect of cutting tool supply with turnkey schemes is quality packaging. Ultra-secure packaging, as shown in Fig. 4, ensures the safe delivery of tools and assemblies to customer sites. It also helps to guarantee that all dimensions that resulted from previous adjustment and balancing procedures are preserved.

Fig. 5

The assembled tools are wrapped and packed carefully into secure multiple-use wooden boxes. (Fig. 5). A tooling assembly route to the end user's site might involve stops for testing at a machine-producer's facility and at a local MTB dealer before reaching its final destination. The secure and reuseable packaging plays a vital role as a "temporary warehouse" during each phase of the project and when it travels between each location, particularly when there is no dedicated area for tool storage.

Locating tools

ISCAR has developed a unique identification system enabling a quick and easy search system. This allows a requested assembly to be efficiently located even amongst a huge quantity of supplied containers.

Successful cooperation between ISCAR and leading machine tool builders of multiple large and complex projects throughout the world illustrates the efficiency of the company's highly evolved methodologies for maximizing productivity and effectiveness in turnkey projects.

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