

Small Parts. Big Engineering Capability. CTSP Redefines Precision Part Value Through Big-Picture Engineering



小零件背後，是一整套工程能力！金泰興以「全局思考」重新定義精密零件的價值

In high-end manufacturing, small threaded inserts can affect product strength, durability, reliability, assembly efficiency, and mass-production stability. A manufacturer's value therefore depends not only on producing parts to drawings, but on understanding their role within the customer's product, assembly process, and production environment. **CTSP integrates design, materials, manufacturing, quality, installation, and production requirements to reduce risk, improve efficiency, and create greater value.**

From Build-to-Print to Big-Picture Engineering

As products become lighter, more precise, reliable, and complex, traditional build-to-print manufacturing is often insufficient. Material, tolerances, geometry, surface treatment, installation, and manufacturing processes are interconnected, affecting assembly, fastening performance, service life, and production stability. With more than 20 years of experience, CTSP extends its expertise into product development and engineering collaboration. **By discussing materials, geometry, tolerances, processes, installation, application requirements, and mass-production feasibility, CTSP identifies risks early and resolves complex issues before mass production.**

Engineering Capability from Design to Mass Production

True engineering capability must translate design into stable, repeatable, scalable production. CTSP manufactures more than 20 million precision components per month. Automated machining, vision measurement, optical sorting, and digital process management turn customized requirements into controlled, repeatable processes. Its engineering and quality systems integrate process control, inspection, and traceability from raw materials through final shipment. Automation delivers not only capacity, but consistent quality through standardization, digitalization, automated inspection, and systematic control.

Materials, Quality, Cost, and Risk—Considered Together

CTSP evaluates brass, stainless steel, carbon and alloy steels, and aluminum alloys together with geometry, installation conditions, mechanical requirements, application environments, surface treatment, and production volume. The best solution is not necessarily the most expensive material or complex process, but one that meets performance requirements while balancing quality, manufacturability, risk, and cost. Early design decisions can affect tooling, machining, inspection, assembly, production stability, and total manufacturing cost. **CTSP provides engineering support from development through mass production, reducing trial-and-error, revisions, abnormalities, quality issues, and downstream risks.**

Beyond Manufacturing: Integrated Supply Chain Capability

Customers increasingly emphasize material sourcing, traceability, supply chain transparency, regulatory compliance, documentation, sustainability, and supply stability. Precision manufacturing therefore requires integrated engineering, manufacturing, quality, information, compliance, and supply chain management. CTSP is transforming into an engineering-oriented manufacturing partner, connecting requirements, design, materials, process development, testing, production, quality control, documentation, traceability, and delivery. Early involvement helps identify issues when they are easier and less costly to resolve.

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From a Single Component to the Complete Application

An insert's performance depends not only on the insert itself, but also on mating materials, installation methods, torque, pull-out requirements, geometry, operating environment, and assembly processes. CTSP evaluates the complete application to develop solutions practical for both performance and mass production.

Quality Is Designed into the Process

Quality cannot depend solely on final inspection. CTSP combines process planning, tooling control, dimensional inspection, automated optical sorting, production monitoring, and traceability to minimize variation, improve repeatability, and maintain stable quality across batches.

Small Part, Big Impact

Behind every threaded insert lies expertise in materials, precision machining, tooling, surface treatment, quality control, automated inspection, engineering, and mass-production management. By integrating these capabilities, CTSP creates value beyond a component's physical size. Its big-picture engineering strategy simplifies complex customer challenges and advances toward integrated engineering services—from design to mass production, material selection to quality verification, and individual components to complete applications. For CTSP, advanced manufacturing is not simply about making a small part better, but making it contribute to the success of the entire product. 

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