

New Energy Vehicle

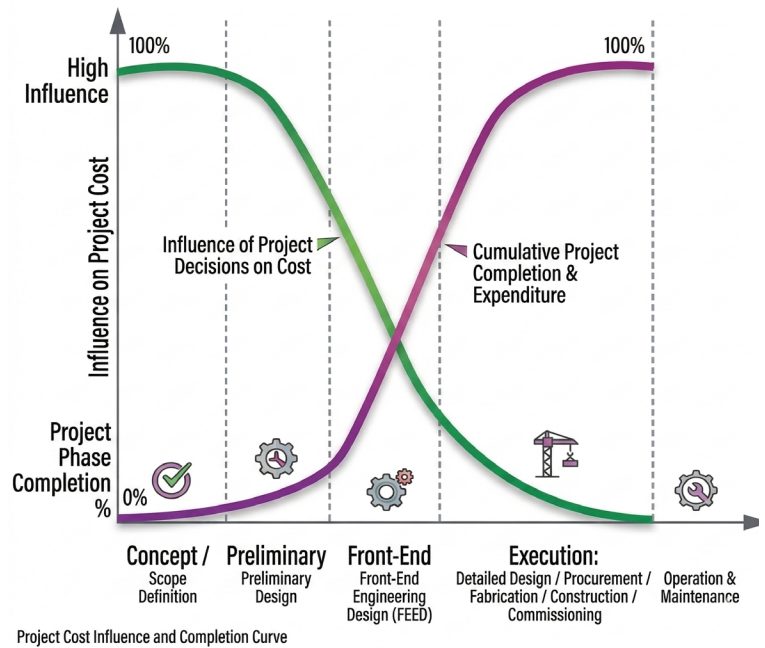
One-Stop Fastening & Connection Solutions



Industry Challenges

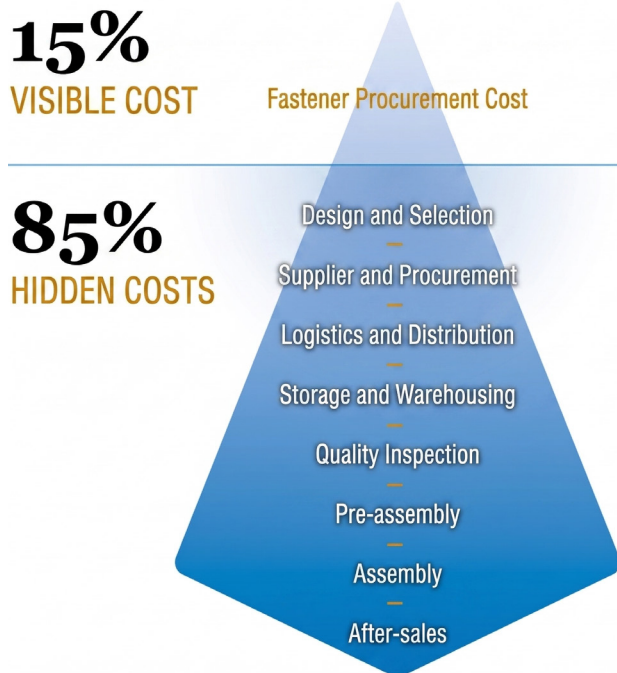
Project Cycle Cost Impact Model

In today's rapidly evolving society, the core challenge facing enterprise R&D lies in this paradox: the early-stage decision-making window is extremely narrow, yet it locks in the majority of costs; while substantial investments are made in the later stages, the cost of correcting mistakes becomes prohibitively high—resulting in a serious mismatch between risks and returns. This requires enterprises to make accurate judgments at the very early stage to address market uncertainty.



The 15-85 Law

Another challenge facing enterprises today is this: excessive focus on explicit procurement costs, while ignoring the implicit costs that account for 85% of the total. Enterprises often lack systematic coordination across design, supply chain, after-sales and other links, leading to high manufacturing costs, rework, quality and after-sales issues caused by early-stage decision-making errors—ultimately driving up the total cost of ownership (TCO) significantly.



Services Offered by ZCJ

Total Cost Optimization Expert from Prototype Design to After-Sales



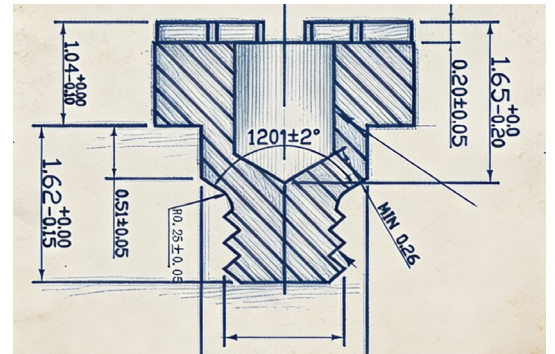
Rapid Prototypes



Professional Training



Professional Testing Services



Professional Design Consulting

CURRENT SCHEME

OPTIMIZED SCHEME

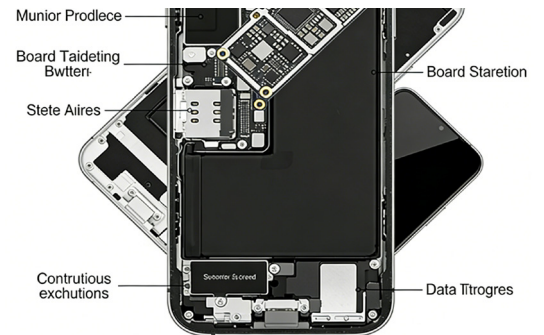
INCREASE ROOT RADIUS TO R0.8
CORNER RADIUS REMOVED

OPTIMIZATION PROPOSAL I:
 - CHANGE FROM HOT FORGING TO COLD FORGING PROCESS; FORMING CAVITY INCREASED
 - MATERIAL CHANGED TO 10B21
 - TOOLING COST: 78,000 RMB
 - MOQ: 100,000 UNITS, TOTAL PRODUCTION 500,000 UNITS.

PROPOSAL II:
 1: REMOVE 4 R5.0 CORNERS, MAKE INTO STRAIGHT SIDES.
 2: INCREASE ROOT RADIUS TO R0.8.

IF ABOVE CONDITIONS AND PROCESSES ARE MET, UNIT COST REDUCED BY 0.75 RMB, TOTAL COST SAVINGS: 375,000 RMB

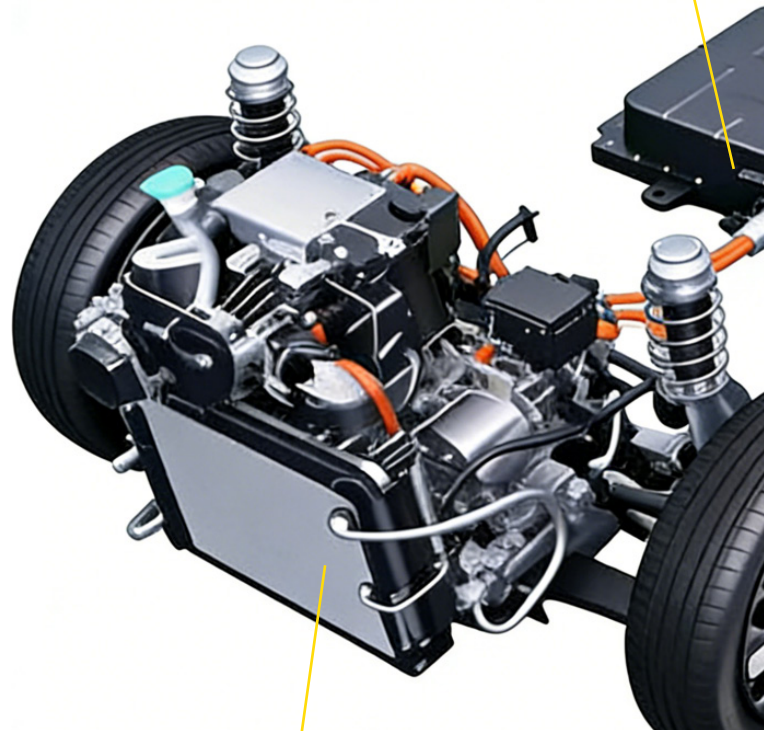
Continuous Process Improvement



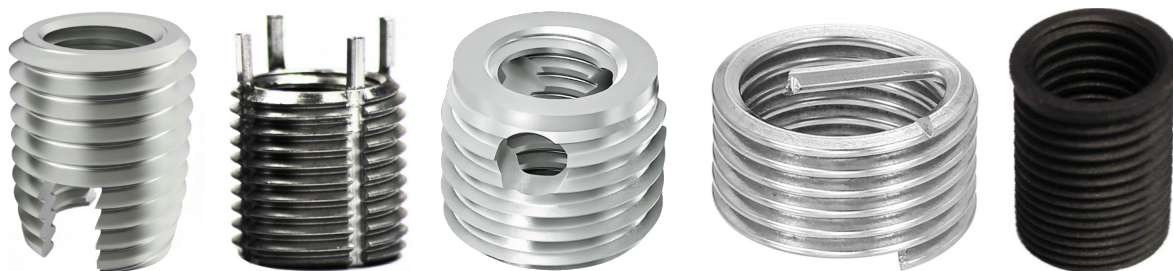
Professional Teardown & Analysis



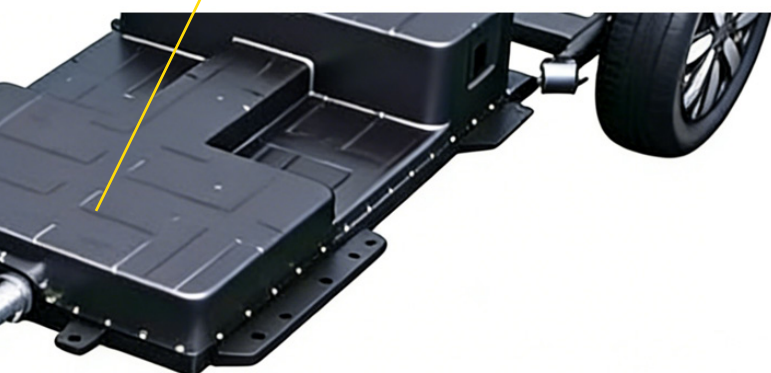
Riveting Products - Blind & Clinching Rivets
(Sealed & Non-sealed)



Screws - Locking, Sealing, Captive Screws, etc.



Thread Reinforcing Inserts for Light Alloys (Mg, Al)



Glued Mg Alloy against Galvanic Corrosion



Sleeves Made by Cold Forging + CNC Machining

Thread Inserts

Thread inserts are mainly used to enhance the threaded connection performance of lightweight structural parts.

Although they do not directly form the "apparent musculature" of EV, they play a vital role in ensuring high-precision, long-life and lightweight internal structural connections.

Thread inserts made of carbon steel and stainless steel can achieve strength grades above 8.8.



Galvanic Corrosion Protection

Anti-galvanic corrosion adhesive is used to prevent galvanic corrosion that occurs when high-strength aluminum alloy bolts are connected to magnesium alloy die castings.

Its principle lies in the small potential difference between the alloy and magnesium alloy, while the adhesive coating on the bolt head provides physical isolation.



Clinching Parts

Clinching parts are used for fastening and grounding connections of sheet metal and thin die castings in vehicle bodies, chassis, and e-powertrain. Crimped and connected by clinching riveting equipment.



Clinching Parts

Rivet nuts, rivet bolts and blind rivets are used for mechanical connection of sheet metal in chassis and battery packs.

Pre-applied adhesive on the heads of rivet nuts and blind rivets provides waterproofing and sealing, with a sealing level up to IP68.



Locking, Sealing, and Captive Screws

Bolts achieve locking through combination and pre-coated thread locking compound (chemical or physical). Sealing up to IP68 can also be realized by pre-coating compound on the head or thread, or adding a sealing ring.

Brexit screws (PEM studs) can be removed from the panel without the screw falling off.



Sleeves

Structural sleeves for chassis profile and battery packs.

Sleeves made by Al alloy can be directly produced by cold forging instead of CNC machining, thus achieving lower overall cost and higher production efficiency.



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