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Improving Stability Through Process Refinement

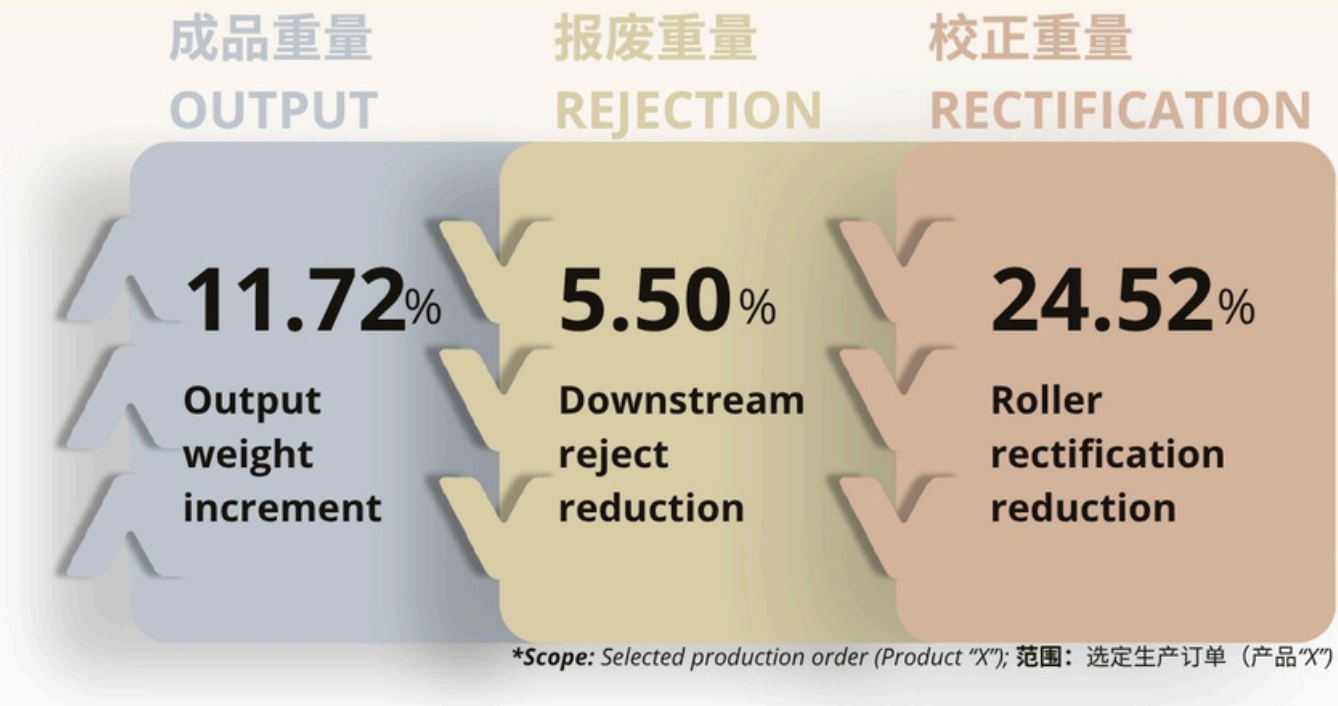
通过工艺参数优化提升生产稳定性

Consistent production performance relies on continuous monitoring, process understanding, and timely adjustment of operating conditions. Even small refinements in process parameters can contribute towards smoother production flow and improved downstream performance.

As part of ongoing continuous improvement efforts, a process parameter improvement initiative was carried out for a specific production order to further optimize production and downstream quality results. This was achieved through closer process control and optimization aligned with extrudate geometry requirements, with support from die shop collaboration. Measurable improvements were achieved across key production and quality indicators.

稳定的生产表现依赖于持续的过程监控，对工艺的深入了解，以及对运营参数的及时调整。即使是微小的参数优化，也有助于提升生产流畅性并改善下游表现。

在持续改善的推进下，团队针对特定生产订单展开了工艺参数优化活动，以进一步提升生产效率及下游质量表现。本次改善通过更精细的过程控制，并结合型材截面几何形状(extrudate geometry) 要求进行优化，同时得到模具部门的协同支持。在此基础上，各项关键生产及质量指标均取得了可量化的改善。



The improvement translated into better production efficiency and lower process losses, supporting the **"principle of cost efficiency"** through reduced waste improved material utilization, and more stable operations.

本次改善再提升生产效率及降低过程损耗方面取得成效，并通过减少浪费，提升材料利用率以及增强运行稳定性，体现了**"降本增效"**的原则。

Beyond the measurable results, the initiative also reflects the value of continuous cross-functional collaboration and practical problem-solving on the production floor. Small adjustments and shared operational understanding across teams can collectively contribute to stronger process stability, improved efficiency, and better cost performance over time.

除可量化的改善结果外，该活动亦体现了跨职能协作与生产现场实践性问题解决的价值。通过细微调整及跨团队的经验共享，可共同促进过程稳定性提升，效率优化及整体表现改善。

撰写/Author: Low Yu Zheng, 李海辉, Branda Yap

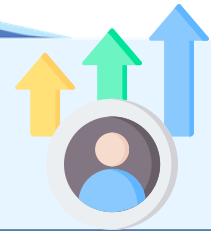
澳美宜新生产流程优化项目

PMPT PRODUCTION OPTIMIZATION

为提升生产效率、降低运营成本并确保产品质量稳定性，近期，澳美宜新生产产线实施了一系列精益自动化改造项目。通过引入自动化冲压、自动导引车（AGV）物流系统、伺服打胶系统及AI视觉检测技术，实现了显著的成本节约与质量提升。

Recently, a series of Lean Automation projects were implemented on the Aomei Yixin (PMPT Press Metal) production line. By introducing automatic punching, AGV logistics systems, servo gluing systems, and AI visual inspection, we have successfully achieved significant cost savings and quality improvements.

核心改善成果 | Key Improvement Results



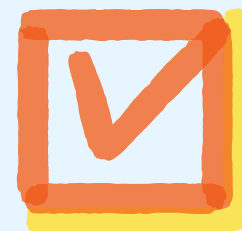
• 自动化冲压与物流系统 Automated Punching & Logistics System

改善前 Before	改善后 After	改善措施 Improvement
人工冲压与物料搬运，效率低且人力依赖度高 Manual punching and material handling, low efficiency and high labor dependency	人力节约：减少3名操作人员 投资回收期：1.8-2.5年 Labor reduction: 3 personnel eliminated ROI period: 1.8-2.5 years	引入自动冲压装置 配置3台自动导引车（AGV） Introduction of automatic punching device Deployment of 3 Automated Guided Vehicles (AGVs)

• 精准打胶系统升级 | Precision Gluing System Upgrade

改善前 Before	改善后 After	改善措施 Improvement
气动打胶系统稳定性差 胶重标准差：1.6, CPK<0.67 Air-pressure gluing system with poor stability Glue weight standard deviation: 1.6, CPK<0.67	质量提升：胶重标准差降至0.18, CPK>1.33 成本节约：年材料成本节约4.6万元 Quality improvement: Glue weight standard deviation reduced to 0.18, CPK>1.33 Cost saving: 46,000 RMB annual material cost reduction	升级为伺服打胶系统 Upgrade to servo gluing system

核心改善成果 | Key Improvement Results



- AI视觉防错检测 | AI Visual Error-Proofing

改善前 Before	改善后 After	改善措施 Improvement
人工检查漏检率高，存在质量风险 高频次质量索赔事件 High human inspection error rate with quality risks Frequent quality claim incidents	质量索赔下降30% SQR（供应商质量报告）减少30% 30% reduction in quality claims 30% decrease in SQR (Supplier Quality Reports)	引入AI视觉检测系统 Implementation of AI visual inspection system

总结

Summary

通过以上精益改善项目，澳美宜新不仅大幅降低了对人工的依赖，还通过技术手段锁定了产品质量，实现了从“人控”到“技控”的转变。

Through these Lean projects, PMPT have not only significantly reduced labor dependency but also locked in product quality through technology, achieving a shift from "Human Control" to "Technical Control".

来源：澳美宜新制造部
Courtesy of PMPT Production Department

撰写/Authors：祝宇琪

从泥泞中走来， 向新赛道奔去——技术及项目总监谭兴元

MARCHING FROM ROUGH BEGINNINGS TOWARD A NEW TRACK — GARY TAN

5月20日，齐力澳美将迎来20周年的里程碑，为了回顾这一段历程，同时也让同事们洞悉未来策略方向，市场部开启了一系列同事的访谈工作，剪辑的视频将在20周年庆典和媒体上发布；而在这背后，作为一个访谈的提问者和信息第一手接收人，我希望在持续多期的资讯快报中，呈现每一位访谈人物的具体内容和背后的故事，希望大家喜欢。

编者按：从2006年春节后一脚泥巴走进还在建设中的厂区，到如今全面负责公司项目与技术统筹，谭兴元见证了公司从一片农田到花园式工厂、从建筑型材到工业型材成功转型的全过程。本期访谈，让我们一起聆听他的二十年心路历程。

On May 20, PMI celebrates its 20th anniversary. To review our development and clarify future strategies, the Marketing Department has launched a staff interview series, with highlight videos to be shown at the anniversary ceremony and released on major media. As the interviewer, I will share each guest's story and insights in our internal newsletters.

This issue features Gary Tan, Director of Technology and Projects. He joined PMI in spring 2006 when the factory was still under construction amid muddy grounds. Having witnessed PMI grow from farmland into a garden-style manufacturing base, and transition from construction aluminum profiles to industrial profile business, he now leads the company's overall project and technical management. Let's look into his 20-year journey with PMI.

初来乍到：在磨合中起步|Early Days: Starting Amid Hardship

2006年过完春节，谭兴元正式加入公司。“当时这里还很偏远，周边是农田，道路坑坑洼洼，厂区全是泥巴，上班一脚泥，连厕所都是临时搭建的。”他回忆道，当时公司刚刚筹建，自己抱着“看一看、试一试”的态度加入。由于是马来西亚齐力铝业集团投资的外资企业，国际化氛围让他产生了浓厚的兴趣。但最初几个月，他坦言“随时可能撤退，去别的企业再找工作”。

环境的艰苦只是一方面，同事们来自五湖四海，彼此不熟悉，加上公司前景不明朗，谭兴元有好几次都想离开。“后面慢慢习惯了，发现公司确实有一些先进的东西，集团领导的理念和文化让人逐渐适应。年轻嘛，再坚持一下。”这一坚持，就是二十年。



Gary Tan officially joined the company right after the 2006 Spring Festival. “The location was remote back then, surrounded by farmland with bumpy muddy roads. The factory site was unpaved mud all over; we got mud on our shoes every day, and even the restrooms were temporary makeshift facilities,” he recalled.

At that time, PMI was still in the initial preparation stage. He joined with a simple mindset of giving it a try. As an investment of Malaysia's PRESS METAL, the company's international atmosphere greatly attracted him. Even so, he nearly resigned several months into the role and considered switching to other enterprises.

Tough working conditions were not the only challenge. Colleagues came from all over the country, unfamiliar with one another, and the company's prospect remained unclear. There were multiple moments when he intended to leave. “Gradually I adapted, and I recognized the company's advanced concepts and inclusive corporate culture. I was young, so I chose to stay and persist.” That decision to hold on turned into a rewarding 20-year journey.

从零搭建：务实选人，着眼成长|Building the Tech Team: Hiring & Growth

公司刚起步时，建筑行业如日中天，人才竞争激烈。谭兴元作为技术骨干之一，与另外两位同事（设计部主任、技术服务部主任、产品开发部主任）组成了最初的技术核心。加上从市场上招聘的绘图员、模具设计人员，以及几个刚毕业或工作一两年的年轻人，团队就这样组建起来。

“当时不是我们选别人，更多是别人选我们。”谭兴元笑称。他选择团队成员的标准很实在：品德第一。行业经验有三四年即可，不追求“大咖”——因为那时候公司条件有限，真正有经验的人也不愿意来。

团队组建后，大家边干边学。后来公司逐步从高校（如中南大学）招聘优秀毕业生，并与科研机构合作，慢慢把技术团队丰富起来。

In the company's early years, the construction industry was booming, and professional talent competition was extremely fierce. As a core technical backbone, Gary formed the initial technical leadership together with directors of the Design Department, Technical Service Department and Product Development Department. The team was further supplemented by recruited draftsmen, die design engineers, and young fresh graduates and junior professionals.



“At that time, it was not us choosing talents; it was more talents choosing us,” Gary Tan said with a smile. His recruitment standard was pragmatic: integrity first. He preferred candidates with 3–4 years of industry experience rather than top senior experts — given PMI's limited conditions back then, senior seasoned professionals were reluctant to join.

The team grew by learning while practicing. Later, PMI steadily recruited outstanding graduates from prestigious universities such as Central South University and established cooperation with research institutions, gradually expanding and empowering the technical team.



第一个教训：速度之外，更需严谨|First Lesson: Speed Never Overrides Rigor

公司初期，面对市场上已成立十年、二十年的竞争对手，谭兴元团队两个月内开发了二三十个产品系列，制作图册和产品说明书。“大家晚上没回宿舍，在外面租房住，天天搞设计。”

但速度太快也出了岔子。有一次因电脑停电，同事没有保存最新设计版本，最终采用了旧版方案。产品交付客户后，在量产装配时发现问题。团队加班加点，从配套五金件入手，花了一周时间以最小成本解决了问题。“没有造成大影响，但对我们是一个很好的提升。”谭兴元说，技术迭代永远在进行，研发体系也是在一次次解决问题中完善的。

In the early stage, facing established rivals with 10 to 20 years of industry experience, Gary Tan's team developed nearly 20 to 30 product series within just two months, completing product catalogs and technical manuals.

“We didn't go back to the dormitory for rest; we rented apartments nearby and devoted ourselves to design work day and night.” However, excessive speed led to oversight. Once a sudden power outage caused a colleague to fail to save the latest design version, and the outdated version was adopted for mass production. Problems emerged during customer assembly after delivery. The team worked overtime for a whole week, optimized supporting hardware accessories, and resolved the issue with minimum losses.

“It did not cause major losses, but it taught us an important lesson.” As Gary Tan reflected, technical iteration is endless, and the company's R&D system has been refined time and again through solving practical problems.

转型工业材：从舒适区到新赛道|Going Industrial: Beyond the Comfort Zone

2014年左右，公司开始与汽车产业接触，意识到工业型材是未来发展方向。领导找谭兴元谈话，希望他从熟悉的门窗幕墙领域转向汽车、船舶、3C等工业材领域。

“说实话，心里也有怀疑。做了十多年门窗幕墙，轻车熟路，突然要转型，百分之五六十的经验用不上了。”但谭兴元选择边做边学。第一个汽车产品是天窗导轨，光尺寸公差就有上百个，对建材出身的技术团队是巨大挑战。

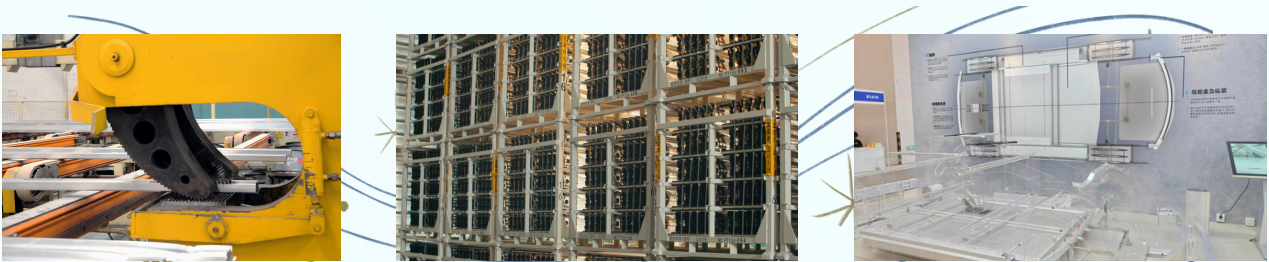
如何带动团队转型？谭兴元没有强制命令，而是循序渐进：带大家参加行业论坛、展会，看车展、工业材展；私下聚餐时分享行业资料和成功案例——“这个汽车用的是我们的产品”“那个高端手机的框架是我们做的”。让团队慢慢对新赛道产生兴趣。

Back in 2014, PMI started exploring the automotive business and decided industrial aluminum profiles would be our main future direction. The company asked Gary to leave his familiar door and curtain wall profile work, and take on automotive, marine and 3C industrial projects.

Though initially uncertain, as over half of his years of architectural experience became less applicable, Gary chose to learn and evolve with the new business.

The first project, automotive sunroof guide rails, came with extremely strict dimensional requirements, challenging the team's original construction-profile expertise.

Gary guided the team softly rather than giving direct orders. He led them to attend industry events, shared real product application cases, and gradually helped the team embrace and trust the new development track.



信心的建立：从不敢接单到占六成份额|Winning Trust: 0 to 60% Business Growth

刚开始做汽车和3C产品时，团队压力很大。“很多产品刚评估时都不敢接。”试模尺寸超差、性能不合格，反复论证修改是常态。但大家统一思想，以项目统筹的方式各司其职，逐渐形成了“严谨、精细”的文化。

如今，汽车产品在公司广东基地的占比已达55%-60%。“刚开始谁能想到发展这么快？当时觉得能做到10%、20%就OK了。”谭兴元感慨，随着国家新能源汽车政策出台，公司聚焦这一赛道，目标越来越清晰。

In the early stage of automotive and 3C business, the team faced enormous pressure. “We hesitated to take many orders at the technical evaluation stage.” Out-of-tolerance die trial dimensions and unqualified material performance were commonplace, requiring repeated verification and revision. The team aligned mindset, adopted standardized project collaboration, and gradually formed a work culture of rigor and precision.

Today, automotive products account for 55% to 60% of business at PMI's Guangdong base. “No one expected such rapid growth at the beginning; we once thought 10% to 20% would be satisfactory.” Driven by national new energy vehicle policies, PMI has further focused on this track with increasingly clear strategic positioning.

从技术到项目统筹：一次酒店门口的等待|Sincerity: From Specialist to Director

2014年之后，谭兴元逐步从建筑型材转向工业材的项目开发。在做汽车项目的过程中，他积极与客户、销售交流，态度主动，领导便让他尝试做项目统筹。这一做就是十来年，如今他已全面负责公司的项目统筹、技术开发、客户沟通，并建立了技术服务团队和项目开发团队。



其中有一个令谭兴元印象深刻的案例。疫情期间，一位朋友介绍某知名客户来南方考察。总经理林总在马来西亚无法回来，让谭兴元“接待一下，先了解”。客户行程已排满，谭兴元还是跑到酒店门口等到很晚，简单介绍了公司情况。客户被他的诚意打动，抽了一天时间来参观。

“我们公司当时已经有汽车产品摆在那里，没有乱七八糟的门窗幕墙样品，客户觉得我们很合适。”更关键的是，在客户没有任何承诺的情况下，谭兴元团队主动提前研发了一个客户碰到的难点样品，送到客户手上，质量OK。这种服务态度加速了合作进程。如今，这家世界百强企业已成为公司的重要战略客户。

Gary Tan transitioned from architecture to industrial profile project management in 2014, eventually taking charge of overall project coordination and team building. During the pandemic, he stepped in to host a Fortune 500 client when the GM was stranded abroad. His sincerity and a clutter-free exhibition area turned a brief meeting into a full-day factory tour. Crucially, his team proactively developed customized prototypes to solve the client's technical issues before any commitment was made. This dedication secured a major strategic partnership for PMI.

统筹全局：应对不同客户的“性格”|Project Coordination & Cultural Adaptability

从跟进单一客户到负责全公司所有项目的统筹，谭兴元面临的是更复杂的客户群体：中系、欧系、日韩系，主机厂、一级供应商……要求各异，做事风格不同。“有的客户性格直爽，有的严谨细致，你得调配不同性格的人员去对接，不然天天吵架。”

团队会定期组织内外部培训，提升项目管理和服务能力，根据客户需求灵活配置资源。

Gary now oversees company-wide operations, managing a diverse portfolio of Chinese, European, Japanese, and Korean automakers. Since each client has unique requirements, he matches them with suitable team members to prevent communication conflicts. Additionally, the team conducts regular training and flexibly allocates resources to meet these customized demands.

二十年感悟：求真务实，环境育人|20 Years On: The Triumph of Pragmatism and Truth



当被问及用一个关键词概括自己的职业生涯，谭兴元选择了“求真务实”。“做技术一定要真实、实实在在。不管技术开发还是项目统筹，追求真实的过程、实在的东西，这也是一种工匠精神。”

从二十多岁到四十多岁，从泥巴路到花园式工厂，从建筑型材到汽车、3C、机器人新赛道，谭兴元感叹：

“现在公司像花园一样，以前上厕所都困难，现在环境天翻地覆。环境育人，这是我们公司的理念。”

二十年，他见证了公司的每一步成长，也完成了自己的蜕变。正如他所说：“这条路走得坚实、正确。”

MEIHAO



Summarizing his career with "pragmatism and truth-seeking," Gary Tan believes that true craftsmanship demands rigor and solid results. Having witnessed PMI's evolution from muddy roads to a modern campus, and its expansion into automotive and robotics, he reflects: "A sound environment nurtures people." Over two decades, Gary has grown alongside the company, making every step of his journey truly worthwhile.

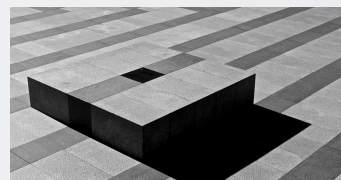
撰写/Authors: 罗炜杰Kevin Luo

培训纪实：CBAM新规下的破局与思考

CBAM: STRATEGIES FOR THE NEW RULES

为积极应对欧盟碳边境调节机制（CBAM）正式实施带来的挑战，精准把握绿色贸易新规，全面提升业务团队的低碳合规素养与供应链管理能力，5月15日，我司组织开展了以“深耕低碳赛道，破解CBAM合规难题”为主题的专项业务培训。各事业部业务骨干及供应链相关负责人参加了此次培训。

To address the EU's Carbon Border Adjustment Mechanism (CBAM) and strengthen our supply chain management, our company held a specialized training on May 15. Themed "Cultivating the Low-Carbon Track and Solving CBAM Compliance Challenges," the session was attended by core management, key business personnel, and supply chain heads.



本次培训紧扣CBAM从“过渡期”迈入“实质性收费期”的最新法规动态，旨在通过深度的知识输出与实操解析，为公司出口业务的稳健发展夯实根基。培训主讲人集团可持续发展经理何翰铭结合详实的数据与模拟案例，对CBAM的核心机制、成本核算逻辑及供应链降碳策略进行了全面拆解。



With a sharp focus on CBAM's move into its definitive charging phase, the training equipped the team with the knowledge and practical tools to secure the steady growth of our export business. Group Sustainability Manager Sam He anchored the session in detailed data and real-world scenarios, providing an in-depth dissection of CBAM's core mechanisms, cost logic, and supply chain decarbonization strategies.

培训紧扣CBAM迈入实质性收费期的最新法规动态，何经理以明确CBAM的核算边界与监管趋势资讯分析为入手点，结合详实数据，深度拆解了CBAM的核心机制与成本核算逻辑，指出当前法规聚焦“摇篮到大门”直接排放，且监管范围已延伸至机械、汽车零部件等下游制成品的严峻形势。

Focusing on CBAM's shift to the definitive charging phase, Manager He analyzed accounting boundaries and regulatory trends. Using detailed data, he broke down CBAM's core mechanisms and cost logic, highlighting the critical situation of "cradle-to-gate" direct emissions and expanding regulatory scope to downstream products like machinery and auto parts.

针对破局之道，培训明确了使用低碳原材料及消费后废料的减排效益，并通过答疑厘清了核算边界与废料属性等概念，重点警示了2028年内部废料豁免取消的政策风险，为采购策略调整提供了方向。在数据复盘环节，培训客观分析了国内各工厂与海外基地的排放表现。进一步统一了“以数据驱动合规”的战略共识。

To navigate the path forward, the training underscored the emission reduction benefits of low-carbon materials and post-consumer scrap, while clarifying accounting boundaries and scrap attributes. A key takeaway was the warning regarding the post-2028 removal of the internal scrap exemption, which sets a clear course for adjusting procurement strategies. The data review session objectively analyzed emission performance across domestic and overseas facilities, further reinforcing the strategic consensus to "drive compliance with data."

这场培训在密集的知识输出中落下帷幕，但它留下的思考才刚刚开始：在碳关税的倒逼下，供应链的每一次溯源、每一吨废料的取舍，都将成为决定未来竞争力的关键筹码。

The training concluded with an intensive exchange of knowledge, yet the reflection it sparked is just beginning. Under the pressure of carbon tariffs, every supply chain trace and every decision on scrap utilization will become a critical bargaining chip determining our future competitiveness.

从经验到数字：CAE重塑铝型材接单评估与材料成型逻辑

FROM EMPIRICAL ESTIMATION TO DIGITAL REHEARSAL: CAE REDEFINES ORDER EVALUATION & MATERIAL FORMING LOGIC FOR ALUMINUM PROFILES

“

在铝型材的生产实践中，我们往往需要依赖反复的试模与经验积累来把控品质，但这不仅耗费时间，也增加了生产的不确定性。而CAE技术可以被看作是我们生产流程中的“数字预演”，它能让我们在正式投产前，就在电脑上清晰地推演出金属流动的状态与潜在风险。

In aluminum extrusion manufacturing, quality control reliant on repeated die trial runs and empirical experience is highly time-intensive and fraught with uncertainties. CAE technology serves as a digital rehearsal of the entire production workflow, enabling accurate simulation of metal flow patterns and early identification of potential defects prior to mass production.

在传统铝型材开发模式中，面对新截面“能不能做、好不好做”的拷问，企业往往依赖老师傅的“经验主义”进行模糊估算。然而，随着新能源汽车领域对定制化需求（如复杂空腔截面、高精度弯曲线）的激增，以及新型高强韧合金的广泛应用，传统试错法带来的高昂模具整改成本与漫长的交付周期，已成为制约企业竞争力的瓶颈。



Traditionally, manufacturers judge the workability of new aluminum sections merely by seasoned workers' experience. Yet booming customized demands for new energy vehicles and wide use of high-performance alloys make conventional trial-and-error methods costly in die revision and slow in delivery, greatly hindering market competitiveness.

CAE（计算机辅助工程）技术的深度引入，本质上是一场从“物理试错”到“数字孪生”的生产逻辑革命。它要求我们在开模与量产前，就在虚拟空间内完成全流程的物理仿真与极限测试，将商业风险与技术隐患消灭在萌芽状态。

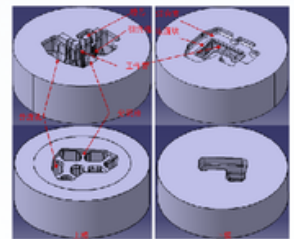
The widespread use of CAE marks a shift from physical trial tests to digital twin simulation. It enables full virtual simulation and limit testing before die making and mass production, eliminating business and technical risks in advance.

可行性评估与模具流变优化：拒绝“接不住的单”，实现数字化预演

Feasibility Assessment & Die Flow Optimization

在前端接单与报价阶段，CAE是我们规避商业风险的“数字防线”。当面对客户复杂的截面图纸时，我们不再需要盲目承诺交期。

- 设备匹配与极限预警：通过快速构建二维或三维的挤压仿真模型，系统可在几分钟内精准演算现有设备的吨位储备、挤压比是否满足成型要求，提前预警可能出现的充不满、严重变形等成形极限风险。
- 金属流变与模具设计：深入模具设计内核，CAE能够模拟铝棒在型腔内的金属流变行为。通过拓扑优化与流速分析，我们可以提前发现并解决因金属流动不均导致的扭拧、波浪等缺陷，精准优化分流孔、阻流坎及工作带设计。这不仅确保了在报价阶段就能划定科学的技术底线，更极大降低了后续修模、试模的隐性成本。



In order receiving and quotation, CAE serves as a reliable digital tool for risk control. It quickly builds extrusion simulation models to verify equipment tonnage and extrusion ratio, and warns of forming defects such as incomplete filling and distortion.

It also simulates internal metal flow of aluminum billets, optimizes die structure, flow distribution and working belt design, effectively avoiding twisting and waving flaws. This sets clear technical standards at the quotation stage and lowers subsequent die adjustment costs.

材料性能深挖与全工序成型预测：用数据驱动工艺极限

In-depth Material Research & Full-process Forming Prediction

随着轻量化趋势的深入，客户对材料性能的边界探索愈发苛刻。CAE技术赋予了我们透视材料本质与工艺全过程的能力：

- 微观组织与合金适配：CAE不仅能宏观模拟成型，更能深入微观层面，分析不同铝合金成分在特定温度与挤压速度下的微观组织演变（如晶粒粗化、再结晶率）。通过模拟预测材料的屈强比、延伸率及高温流变应力，我们可以在设计初期评估新材料的适配性，甚至主动向客户推荐高性价比的替代合金方案。
- 利用CAE技术将质量控制大幅前移，使得产品质量在制造前就进行设计，并在试产中做验证与调整，避开摸石头过河的开发。这种策略能根据后续复杂加工的严苛结果做反向开发，知道测试前期的材料性能，尺寸和表面做调整。通过前置性的分析与调整，帮助我们在量产前锁定最优的材料与工艺匹配窗口，大幅减少试错成本与实践。

Against stricter lightweight requirements, CAE analyzes alloy composition, microstructure changes and mechanical properties under different processing conditions. It evaluates material adaptability in early design and offers cost-efficient alloy alternatives.

CAE shifts quality control upstream, ensuring quality is designed in before manufacturing. This reverse development approach allows early adjustments to material, dimensions, and surface based on processing demands. By locking in the optimal process window pre-production, we drastically cut trial-and-error costs and risks.

效率与成本的双重博弈：打破“单根时间”与“生产力”的迷思

Efficiency Improvement & Full-chain Cost Reduction

CAE的应用不仅在于解决“能不能做”，更在于解决“如何高效做”。在实际生产中，单根挤压时间的缩短并不直接等同于生产力的同比例提升。

- 系统级效率优化：通过CAE对铸锭长度、冲头速度、模具温度等参数进行多目标耦合优化，我们能够在保证型材表面质量（避免热裂、热脆）的前提下，寻找设备负荷与生产节拍的平衡点。
- 成本控制：CAE技术通过强大的仿真能力，能够在开发早期精准预知潜在不良，并将传统的经验试错转化为可量化的改进路径。通过在虚拟环境中提前锁定最优解，规避了后期的质量成本。

CAE helps balance production rhythm and equipment load by optimizing billet size, extrusion speed and temperature, ensuring stable product quality while raising overall productivity.

Leveraging powerful simulation, CAE predicts potential defects early in development, transforming traditional trial-and-error into quantifiable improvement paths. By locking in the optimal solution virtually, we effectively avoid downstream quality costs.

用数据代替直觉，在数字化转型的浪潮下，CAE已不再仅仅是辅助工具，而是铝型材企业构建核心技术壁垒、实现高质量交付的必备引擎。

Replacing intuition with data-driven insights. Amid the tide of digital transformation, CAE has evolved beyond a mere support tool into a vital engine. It empowers aluminum profile companies to establish core technical barriers and ensure high-quality delivery.

撰写/Authors：祝宇琪

MORE THAN MOM

A Love That Grew With Time | 在岁月里慢慢长成的爱

No one can replace a mother. But sometimes, life sends someone who loves us in her own way — and slowly, she becomes home too.

没有人能取代母亲的位置。但有时候，生命会安排另一个人走进我们的人生。她不曾取代谁，只是用陪伴与爱，慢慢成为我们心里另一个“Mak”。

I lost my mother when I was 8 years old, at an age when I needed a mother's love the most. A year later, my father remarried and you came into our lives. At first, it was hard for me to accept because I believe no one could ever replace my mother.

我在8岁那年失去了母亲，那是我最需要母爱的年纪。一年后，父亲再婚，而您走进了我们的生活。起初，我很难接受，因为我始终觉得，没有人能够取代我的母亲。

But as I grew older, I began to see things differently. I began to see your patience, kindness, sacrifices, and your sincere love for us.

但随着我慢慢长大，我开始用不同的角度看事情。我开始看见你的耐心、善良、付出，还有你对我们真诚的爱。

Dear Mak, Zaleha binti Bachok, you never tried to replace my mother, you simply loved and raised us as your own. Thank you for making our family feel complete again.



亲爱的Mak, Zaleha binti Bachok, 你从未想过取代我的母亲，你只是把我们当成自己的孩子一样疼爱 and 照顾。谢谢你让我们的家再次变得完整。

Without even realizing it, you became “Mak” in my heart — not just by name, but by love. I pray that you are always blessed with happiness and good health.

不知不觉中，您已经成为我心里的“Mak”——不只是一个称呼，而是真正因为爱。我祈愿您永远幸福安康。

And to my late mother, Rugayah binti Zakaria... our love for you has never faded, not even for a moment. Your absence is always felt, but so is your presence in our hearts. We carry you in our prayers every single day, and we hold on to the hope that one day, we will meet you again in Jannah.

而对于我已故的母亲，Rugayah binti Zakaria.....我们对您的爱从未消散，哪怕一刻也没有。您的离开我们一直感受得到，但您也一直活在我们的心里。我们每天都在为您祈祷，并怀着希望，有一天我们能在天堂再次相见。

Happy Mother's Day to both the women I call “Mak.”

-Norhaiza



撰写/Author: Norhaiza
编辑/Editor: Fatimah

MORE THAN MOM

Her Strength Became Our Shelter | 她的坚强，成了我们的依靠

After loss, her love became our comfort, her faith became our guide, and her strength became our shelter.

父亲离开以后，她把悲伤藏在心里，却把温柔和力量留给了我们。



When I think about love, strength, and sacrifice, I think about my mother, Yana Sodhi.

当我想到爱、力量和牺牲时，我想到的是我的母亲，Yana Sodhi。

Growing up, I never truly realized how much she sacrificed for our family. She woke up early every day to make sure everything was ready for us, and no matter how tired she was, she always carried a gentle smile.

在成长过程中，我从未真正明白她为我付出了多少。她每天清晨早早起床，只为了确保家里的一切都准备妥当。不管她有多疲惫，她脸上总是带着温柔的笑容。

Whether I am happy or sad, my mother understands me without me even saying a word. That is how deep her love is. Sometimes, I hurt her with my words and my attitude... but she remains patient, loving me the same way no matter what.

无论我开心还是难过，我的母亲总能在我还没开口之前就明白我的感受。这就是她爱的深度。有时候，我会因为自己的言语和态度伤害她.....但无论如何，她始终耐心地爱着我，从未改变。

There were moments in my life when I felt tired and lost hope. During those times, she would gently remind me, "You are stronger than you think." Her words gave me strength when I needed it the most.

在人生某些时刻，我也曾感到疲惫和失去希望。那时候，她总会轻轻地提醒我：“你比自己想象中更坚强。”她的话语，总是在我最需要的时候给予我力量。

After my father's passing, my mother became even stronger—for us. She carried her pain silently, yet stood as our support and guided us forward. Her strength during that time is something I can never fully put into words.

在父亲离世后，我的母亲为了我们变得更加坚强。她默默承受着自己的伤痛，却始终成为我们的依靠，带领我们继续前行。那段时间里她所展现出的坚强，是我永远无法完全用言语表达的。

She didn't just teach me how to live, but how to love, forgive, and trust in God. Her life is a true example of faith. Today, I realize that everything I am is because of her prayers, her sacrifices, and her endless love.

她不仅教会我如何生活，也教会我如何去爱、去原谅，以及相信上天。她的一生，是真正信仰的榜样。直到今天，我才明白，如今的我，都是因为她的祈祷、她的付出，以及她无尽的爱。

Thank you & Love you, Amma for being my strength, my guide, and my greatest blessing. May God bless you always with good health, joy, and peace.

谢谢你，我爱你，Amma。谢谢你成为我的力量、我的指引，以及我生命中最大的祝福。愿上天永远赐予你健康、快乐与平安。

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