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Change History				
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CEN18800046	30/08/2026	CEN188V1.001	all	document creation

Senior Mechanical Engineer (Housing for HV Components, Harness and Connectors) 高压零部件壳体、线束与连接器高级机械工程师

Working place: Tianjin

Recruiting number:1

Role overview

As a Senior Mechanical Engineer for housings of HV components, harness and connectors, you will take end-to-end technical responsibility for the mechanical design and development of housings and enclosures for high-voltage components as well as HV wiring harness and connector systems of battery electric and plug-in hybrid vehicles. You will lead 3D design, material selection and tolerance management, drive mechanical packaging and integration within the vehicle environment, and coordinate closely with electrical, thermal and manufacturing engineering as well as global suppliers. As technical owner from concept phase to series production (SOP), you will safeguard mechanical integrity, sealing, thermal behavior and manufacturability, and ensure full compliance with OEM specifications and automotive industry standards.

Key Responsibilities

- Lead the design and development of housings and enclosures for HV components (e.g., inverter, OBC, DC/DC converter, BMS, PDU), considering thermal management, EMC shielding, sealing, vibration and mechanical strength requirements.
- Design and optimize HV wiring harness routing, packaging and fixation, and select and qualify HV connectors and interlock systems together with suppliers.
- Create and maintain 3D models, 2D drawings and GD&T specifications, and perform tolerance stack-up analyses for housing, harness and connector components.
- Select and qualify materials and manufacturing technologies (e.g., aluminum die casting, injection molding, sheet metal), taking into account electrical insulation, thermal conductivity and cost targets.
- Define and execute mechanical design verification plans (DVPs) covering vibration, shock, thermal cycling, IP protection, salt spray and aging according to standards such as ISO 16750 and LV 124.
- Lead root cause analysis for mechanical issues on housings, harnesses and connectors, and manage the implementation of corrective and optimization measures.
- Manage technical coordination with global suppliers and manufacturing partners regarding DFM/DFA, tooling and quality topics, ensuring on-time delivery of development milestones.
- Provide technical guidance and mentorship to junior mechanical engineers, and support team capability building in HV mechanical design methodologies.

Qualifications & Requirements

Education

- Bachelor's degree or Master's degree in Mechanical Engineering, Materials Science, Automotive Engineering or a related field.
- Excellent fresh graduates with English as a working language are also welcome.

Professional Experience

- 4+ years of professional engineering experience in mechanical design for automotive components or systems, ideally housings or HV components, wiring harness or connectors; OEM or Tier 1 supplier background preferred.
- Proven track record in housing or enclosure design, harness routing or connector application for battery electric or plug-in hybrid vehicles.
- Solid project experience covering the full vehicle development lifecycle from concept phase to series production launch.

Technical & Tool Proficiency

- In-depth knowledge of mechanical design for automotive electronic and HV components, including sealing (IP), thermal and EMC-related mechanical design.
- Strong understanding of HV harness design, connector systems, high-voltage interlock (HVIL) and creepage and clearance requirements.
- Proficiency in 3D CAD (e.g., CATIA V5 or NX) and 2D drawing creation with GD&T; experience with tolerance stack-up analysis.
- Good knowledge of materials (plastics, aluminum die casting, sheet metal) and manufacturing technologies including DFM/DFA.
- Good working knowledge of automotive test standards such as ISO 16750 and LV 124; basic understanding of FEA simulation is a plus.
- Experience with PLM/PDM systems and engineering change management.

Language Proficiency

- Native proficiency in Chinese.
- Fluent command of English (speaking, writing and reading) for cross-team and cross-border technical communication.
- German language skills are a strong plus.

Core Competencies

- Strong analytical and systems thinking ability to solve complex mechanical integration challenges.
- Structured working style, highly detail-oriented with strict standards for design quality and technical accuracy.
- Excellent communication and coordination skills to collaborate effectively with internal teams and global suppliers.
- Proactive problem-solving mindset, able to independently identify technical bottlenecks and drive solution implementation.
- Highly motivated, fast learner with an open mindset, able to manage multiple priorities in a fast-paced environment.

We are looking forward to your application! Please send us your complete application file in English mentioning your earliest possible entry date by e-mail to: careers@cenergy.asia

工作地点: 天津

招聘人数: 1 人

岗位概述

作为高压零部件壳体、线束与连接器高级机械工程师，你将全面负责纯电动及插电混动汽车高压零部件壳体/罩体以及高压线束与连接器系统的机械设计开发端到端技术工作。你将主导三维设计、材料选择与公差管理，推动机械布置与整车环境下的集成，并与电气、热管理、制造工程及全球供应商紧密协作。作为从概念阶段到量产（SOP）全项目周期的技术负责人，你将保障机械强度、密封、热行为与可制造性，确保方案完全符合主机厂技术规范与汽车行业标准。

主要工作职责

- 主导高压零部件（如逆变器、OBC、DC/DC 变换器、BMS、高压配电单元等）壳体与罩体的设计开发，综合考虑热管理、EMC 屏蔽、密封、振动与机械强度要求。
- 设计并优化高压线束的走向、布置与固定方案，与供应商共同选择并认可高压连接器及互锁系统。
- 创建并维护三维模型、二维图纸与 GD&T 规范，开展壳体、线束与连接器部件的公差叠加分析。
- 选择并认可材料与制造工艺（如铝压铸、注塑、钣金），兼顾电气绝缘、导热性能与成本目标。
- 制定并执行机械设计验证计划（DVP），按 ISO 16750、LV 124 等标准覆盖振动、冲击、温度循环、IP 防护、盐雾与老化试验。
- 牵头壳体、线束与连接器机械问题的根本原因分析，管理纠正与优化措施的落地，推动问题按时闭环。
- 管理面向全球供应商与制造伙伴的 DFM/DFA、模具与质量类技术协调，保障开发节点按时交付。
- 为初级机械工程师提供技术指导与带教，助力团队在高压机械设计方法上的能力建设。

任职资格与要求

教育背景

- 机械工程、材料科学、汽车工程或相关专业本科及以上学历。
- 能将英语作为工作语言的优秀应届毕业生也可投递。

专业经验

- 4 年以上汽车零部件或系统机械设计领域工程经验，有壳体/高压零部件、线束或连接器方向经验者优先，有主机厂或一级供应商背景优先。
- 具备纯电动或插电混动车型壳体设计、线束布置或连接器应用的成熟项目经验。
- 拥有覆盖从概念阶段到量产启动全整车开发周期的项目经历。

专业技能与工具能力

- 深入掌握汽车电子与高压零部件机械设计知识，包括密封（IP）、热相关与 EMC 相关的机械设计。
- 深入理解高压线束设计、连接器系统、高压互锁（HVIL）及爬电距离与电气间隙要求。
- 熟练使用 CATIA V5 或 NX 等三维 CAD 软件及 GD&T 二维图纸绘制，具备公差叠加分析经验。
- 熟悉塑料、铝压铸、钣金等材料与制造工艺知识，掌握 DFM/DFA 方法。

- 熟悉 ISO 16750、LV 124 等汽车试验标准；了解有限元仿真者优先。
- 会使用 PLM/PDM 系统并进行工程变更管理。

语言能力

- 中文母语水平，听说读写流利。
- 英语流利，可胜任跨团队、跨国界的技术沟通与文档工作。
- 具备德语能力者优先。

核心胜任力

- 优秀的分析与系统思维能力，能够解决复杂的机械集成挑战。
- 工作方式结构化，注重细节，对设计质量与技术准确性有严格标准。
- 出色的沟通协调能力，可高效对接内部团队与全球供应商。
- 积极主动的问题解决思维，能独立识别技术瓶颈并推动方案落地。
- 自驱力强，学习速度快，心态开放，能在快节奏环境中管理多项优先级任务。

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careers@cenergy.asia