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## COMPANY DESCRIPTION

DeepDrive (典驱科技) is a Munich-based high-tech company set to become the category leader in electric motors for the automotive industry and beyond. Addressing the most pressing challenges of today's electric vehicles, the company's fully patented Dual Rotor motor topology delivers up to 20% higher system efficiency and up to 30% lower raw material cost compared to conventional designs – enabling high-volume EVs with more than 800 km of range while saving automakers more than €1 billion in costs when deployed at scale.

DeepDrive's motors serve as a traditional central drive, function as a generator for hybrid and range extender applications, or integrate seamlessly into the wheels as an in-wheel drive. Founded by a team with extensive experience in large-scale series production, DeepDrive is currently working with 8 of the top 10 global automakers in concrete development projects.

The company has established a local engineering team in Shanghai and targets series production in China by 2027. DeepDrive's strategic partnership with NEVEM (邦迪智能), one of China's most respected production line specialists, forms a key pillar of its China industrialization strategy.

DeepDrive is backed by leading automotive and financial investors, including Leitmotif (with Volkswagen AG as anchor investor), BMW i Ventures, Continental's Corporate Venture Capital Unit, UVC Partners, and Bayern Kapital. Senior industry leaders including Dr. Peter Mertens (former Board Member and CTO of Audi and Volvo) and Peter Hochholdinginger (former VP Production at Tesla, Lucid, and Audi) further support DeepDrive's growth.

## TECHNOLOGY DESCRIPTION – GENERAL

DeepDrive has developed and patented their Dual Rotor, Radial Flux motor technology, which is at the heart of both of their product lines: the DeepDrive In-Wheel Drive and the Central Drive. Unlike traditional radial flux motors, which only have one rotor and one stator, DeepDrive's innovative design features two rotors that move both inside and outside of the stator. This essentially creates »two motors in one«, allowing to achieve better utilisation of active materials, leading to highest efficiency and torque density.

DeepDrive's technology stands out not only for its high efficiency but also for its cost-effectiveness. Compared to the conventional radial flux motors and the axial flux motors available on the market today, DeepDrive's Dual Rotor technology is easier and more affordable to produce on a large scale.

In summary, DeepDrive's cutting-edge approach combines increased efficiency, power and torquedensity with cost-effective manufacturing, setting a new standard for the electric vehicle industry.

DeepDrive (典驱科技) 是一家总部位于慕尼黑的高科技公司, 致力于成为汽车及更广泛领域电机品类的引领者。公司拥有完全专利保护的双转子电机拓扑结构, 相比传统设计可实现系统效率提升高达20%、原材料成本降低高达30%, 不仅能够支持续航超过800公里的大规模量产车型, 还可在规模化量产后为汽车制造商节省超过10亿欧元的成本。

DeepDrive 的电机可作为传统中央电驱使用, 也可作为混合动力及增程应用的发电机, 或无缝集成于车轮作为轮毂电驱使用。公司由一支在大型量产项目中拥有丰富经验的顶级团队创立, 目前正与全球排名前十的汽车制造商中的八家开展具体量产项目合作。

公司已在上海组建本地工程团队, 目标于2027年在中国实现量产 (SOP)。DeepDrive 与邦迪智能 (NEVEM) ——中国最具影响力的电机产线专家之一——建立的战略合作伙伴关系, 是其中国工业化战略的核心支柱。

DeepDrive 获得顶尖汽车及金融投资机构支持, 包括: Leitmotif (大众汽车集团为基石投资方)、BMW i Ventures、大陆集团企业风险投资部门、UVC Partners 及 Bayern Kapital。行业资深领袖亦为公司发展提供有力支撑, 包括 Peter Mertens 博士 (前奥迪及沃尔沃汽车董事会成员兼首席技术官) 和 Peter Hochholdinginger (前特斯拉、Lucid 及奥迪生产副总裁)。

DeepDrive (典驱科技) 已研发并为其双转子径向磁通电机技术申请了专利, 该技术是其三大产品线 DeepDrive 轮毂电驱、发电机和中央电驱) 的核心。与传统只有一个转子和一个定子的径向磁通电机不同, DeepDrive 的创新设计采用两个转子, 分别在定子的内外两侧运动。这本质上创造了»二合一电机«, 能够更好地利用原材料, 从而实现最高的效率和扭矩密度。

DeepDrive 的技术不仅以其高效率脱颖而出, 还因其成本效益而备受瞩目。与市场上现有的传统径向磁通电机和轴向磁通电机相比, DeepDrive (典驱科技) 的双转子技术更易于大规模生产, 且成本更低。

总之, DeepDrive 的尖端技术将更高的效率、功率和扭矩密度与精益高效的制造相结合, 为电动汽车行业树立了新的标杆。



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TECHNOLOGY DESCRIPTION – TECHNICAL

DeepDrive's Dual Rotor technology replaces the traditional magnetic back iron with a second rotor. This design doubles the air gap area without increasing iron length, eliminating core losses in the stator yoke and providing more space for magnets. The result is a highly compact drive with increased torque density and efficiency.

KEY ADVANTAGES

- **Higher Efficiency:** The elimination of stator yoke losses improves efficiency, especially in low-load conditions, leading to up to 30% energy savings in typical driving cycles.
- **Increased Torque Output:** The dual air gap and larger lever arm of the outer rotor provide about 30% more torque compared to single rotor designs.
- **Reduced Noise:** The design results in low acoustic noise emissions and minimal torque ripple (less than 0.5%).
- **Cost-Effective Manufacturing:** The technology uses less electrical steel and allows for cost-effective rotor production methods, significantly reducing material and manufacturing costs.
- **Improved Cooling:** Larger cooling surfaces keep magnet temperatures low, potentially eliminating the need for rare and expensive materials like dysprosium and terbium.

PRODUCT LINES

DeepDrive's cutting-edge technology is designed to unlock the potential of today's technology for tomorrow's mobility, setting new standards in the electric vehicle industry.

IN-WHEEL DRIVE

DeepDrive's In-Wheel Drive product line offers exceptional overall efficiency and torque density, integrating compact, high-torque motors directly into the wheel hubs. This design is ideal for efficient and flexible vehicle layouts.

GENERATOR

DeepDrive's Generator combines low weight and compact dimensions with high efficiency and minimal material usage. It's engineered for direct coupling of combustion engines and electric machines, making it a smart solution for hybrid applications and extended-range concepts.

CENTRAL DRIVE

The Central Drive product line is recognised as the most efficient central drive for electric vehicles, boasting minimal material usage and significant cost benefits, making it a highly economical.

PRODUCT PORTFOLIO

All three products are based on the patented Dual Rotor technology and are designed for large-scale automotive series production.

DeepDrive (典驱科技) 的双转子技术用第二个转子取代了传统的定子磁轭。这种设计在不增加铁芯长度的情况下使气隙面积加倍, 消除了定子轭部中的铁损, 并为磁钢提供了更多布置空间。其成果是一种高度紧凑的驱动装置, 具有更高的扭矩密度和效率。

关键优势

- **更高效率:** 消除定子轭部铁损提高了效率, 尤其在低负载工况下, 在典型行驶工况中可节省高达30%的能耗。
- **更高的扭矩输出:** 双气隙以及外转子更大的力臂, 相较于单转子设计可提供约30%的额外扭矩。
- **噪音降低:** 该设计实现了较低的噪声和极小的扭矩脉动(低于0.5%)
- **精益制造:** 该技术使用更少的硅钢, 并采用高精益生产制造的转子工艺, 显著降低了原材料和制造成本。
- **改进的冷却:** 更大的冷却表面使磁钢温度保持在较低水平, 让不使用镨和铽等稀有昂贵的重金属材料成为可能。

DeepDrive 已研发并为其双转子径向磁通电机 技术申请了专利, 该技术是其三大产品线 DeepDrive 轮毂电驱、发电机和中央电驱) 的核心。与传统只有一个转子和一个定子的径向磁通电机不同, DeepDrive 的创新设计采用两个转子, 分别在定子的内外两侧运动。这本质上创造了»二合一电机«, 能够更好地利用原材料, 从而实现最高的效率和扭矩密度。

DeepDrive 的技术不仅以其高效率脱颖而出, 还 因其成本效益而备受瞩目。与市场上现有的传统径向磁通电机和轴向磁通电机相比, DeepDrive 的双转子技术更易于大规模生产, 且成本更低。

总之, DeepDrive 的尖端技术将更高的效率、功率和扭矩密度与精 轮毂电驱 DeepDrive 的轮毂电驱产品线提供卓越的系统 效率和扭矩密度, 将紧凑型高扭矩电机直接集成到轮毂中。这种设计是实现高效灵活车辆布局的理想选择。发电机 DeepDrive 的发电机将低重量、紧凑尺寸与高效率、省材料相结合。

它专为内燃机与电机的直接耦合而设计, 是混合动力应用和增程概念的智能解决方案。中央电驱 中央电驱产品线被公认为是最高效的电动汽车中央驱动装置, 以最少的材料。



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## DEEPDRIVE IN CHINA

China is the world's most advanced and fastest-evolving electric vehicle market – and a key pillar of DeepDrive's global growth strategy. DeepDrive is committed to China not only as a market, but as a production base.

- Local engineering team established in Shanghai
- China Series Production (SOP) targeted for 2027
- Development aligned with China NEV platform requirements
- strategic manufacturing partnership with NEVEM (邦迪智能)

## PARTNERSHIP WITH NEVEM (邦迪智能)

NEVEM is a leading specialist in electric motor manufacturing systems in China, with over 30 HairPin mass production lines delivered, pioneering the first MiniPin production line and developing the first axial flux mass production line globally. NEVEM offers full turnkey capability from process validation to line construction and quality control, and is a trusted partner to leading OEMs and Tier 1 suppliers across China.

DeepDrive and NEVEM have entered into a strategic partnership to industrialise the DeepDrive Dual Rotor motor technology in China. NEVEM will design and build a turnkey mass production line for DeepDrive Dual Rotor radial flux motor. This production setup is designed for automotive-scale series production from the outset, with joint engineering already underway.

Target: China-ready production capability by 2027.

## WHAT THIS MEANS FOR OEMS

- local manufacturing – no import dependency
- faster industrialization through proven production infrastructure
- direct engineering support via DeepDrive's Shanghai team
- scalable solution for next-generation NEV vehicles
- early collaboration opportunities now open

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中国是全球最先进、发展最快的电动汽车市场，也是 DeepDrive (典驱科技) 全球增长战略的核心支柱。DeepDrive 致力于将中国打造为其重要市场和生产基地。

- 已在上海组建本地工程团队
- 目标于2027年在中国实现量产 (SOP)
- 研发方向与中国新能源汽车平台需求高度对齐
- 与邦迪智能 (NEVEM) 建立战略制造合作伙伴关系

## 与邦迪智能的战略合作

邦迪智能 (NEVEM) 是中国领先的电机制造系统专家，已交付超过30条HairPin量产线，率先推出首条MiniPin量产线，并在全球范围内开发了首条轴向磁通电机量产线。邦迪智能提供从工艺验证到产线建设及质量管控的全套交钥匙能力，是中国各大整车厂和一级供应商的信任合作伙伴。

DeepDrive 与邦迪智能已建立战略合作关系，共同推进 DeepDrive 双转子电机技术在中国的工业化落地。邦迪智能将为 DeepDrive 双转子径向磁通电机设计并建设全套交钥匙量产线，联合工程工作已正式启动。目标：2027年实现中国本土生产能力。

## 对整车企业的意义

- 本地化制造——无进口依赖
- 依托成熟产线基础设施加速工业化
- 通过 DeepDrive 上海团队提供直接工程支持
- 面向下一代新能源汽车的可扩展解决方案
- 现已开放早期合作机会





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FOUNDING STORY

The roots of DeepDrive date back to a decade ago when most of the founders met while studying at TU Munich and participating in its student motorsport team. After graduating, their journey continued for many years at leading automotive companies including Bosch, Audi, and Infineon. They reunited in 2021 to found DeepDrive with the aim of disrupting the electric motor industry.

DeepDrive (典驱科技) 的渊源可追溯至十年前, 当时创始团队成员大多相识于慕尼黑工业大学, 并共同参与了该校的学生赛车团队。毕业后, 他们在博世、奥迪、英飞凌等顶尖汽车企业积累了多年经验。2021年, 他们重新汇聚, 共同创立了DeepDrive, 目标是颠覆电机行业。

Felix Poernbacher, Maximilian Habersbrunner, Dr.-Ing. Alexander Rosen, Markus Domme, Stefan Ender  
Dean Petrovski, Christopher Roemmelmayer





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FOUNDERS

**Felix Poernbacher**  
Co-Founder & Co-CEO  
Responsible for all corporate and strategic aspects. Brings expertise from M&A investment banking at Rothschild & Co in London and Frankfurt, and from roles as a start-up advisor and consultant at Deloitte and Simon-Kucher.

**Felix Poernbacher**  
联合创始人兼联合首席执行官  
负责公司所有企业及战略事务。曾在伦敦和法兰克福的罗斯柴尔德公司担任并购投资银行家，并在Deloitte和Simon-Kucher担任初创企业顾问。

**Maximilian Habersbrunner**  
Co-Founder  
Multiple years of experience in embedded software and power electronics development from Compact Dynamics, primarily in Formula E and WEC component development. Also worked at Audi Sport, Finepower, and Infineon.

**Maximilian Habersbrunner**  
联合创始人  
拥有多年嵌入式软件和电力电子开发经验，曾在Compact Dynamics主要参与Formula E和WEC零部件开发，并曾任职于奥迪运动、Finepower和英飞凌。

**Dr.-Ing. Alexander Rosen**  
Co-Founder & Chief Engineer  
Former senior expert and lead designer for e-drives at Bosch. Pivotal role at the Fraunhofer Institute with research experience in wheel hub motors, fault-tolerant electric machines, and manufacturing technologies.

**Alexander Rosen**  
博士 — 联合创始人兼总工程师  
曾在博世担任电驱动高级专家和首席设计师。在Fraunhofer研究所担任关键角色，在轮毂电机、容错电机及制造技术方面拥有丰富研究经验。

**Markus Domme**  
Co-Founder  
Leads the mechanical engineering team. Previously worked at Bosch as a development engineer in high-volume electrification projects with additional experience at BMW.

**Markus Domme**  
联合创始人  
领导机械工程团队。曾任职于博世，担任大批量电气化项

**Stefan Ender**  
Co-Founder & Co-CEO  
Oversees all product-related aspects including procurement, engineering, and sales. Previously managed high-profile electrification projects at Bosch with additional experience in engineering and project management at Audi.

**Stefan Ender**  
联合创始人兼联合首席执行官  
负责所有产品相关事务，包括采购、研发和销售。曾管理博世备受瞩目的电气化项目，并在奥迪拥有工程和项目管理方面的经验。

**Dean Petrovski**  
Co-Founder  
Responsible for all production and industrialisation aspects. Previously worked at Bosch on one of the largest e-mobility projects and gained expertise at BMW Motorsport.

**Dean Petrovski**  
联合创始人  
负责所有生产和工业化事务。曾任职于博世，参与最大的电驱动项目之一，并在宝马赛车运动部积累了专业知识。

**Christopher Roemmelmayer**  
Co-Founder  
Significant expertise in software systems engineering for automotive systems gained at Infineon. Now leads DeepDrive's software development efforts.

**Christopher Römmelmayer**  
联合创始人  
在英飞凌积累了汽车系统软件工程方面的丰富专业知识，现领导DeepDrive(典驱科技)的软件开发工作。



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## QUOTES

Felix Poernbacher  
Co-Founder & Co-CEO, DeepDrive

»China is one of the world's most important and most dynamic markets for electric drive technology – and we are committed to being a serious, long-term player here.

As part of our global expansion, we have established a local office in Shanghai, we are building a local Chinese engineering team, and we are working with leading local partners including NEVEM, one of China's most respected production line suppliers.

We bring the same technology and the same standards that have earned us the trust of leading OEMs and Tier 1 suppliers in Europe and globally – and we are here to grow with the Chinese market for the long term.«

Dr.-Ing. Alexander Rosen  
Co-Founder & Chief Engineer, DeepDrive

»Our Dual Rotor architecture enables a new class of electric drive products that simply cannot be achieved with conventional motor designs. Our In-Wheel Drive delivers 2,500 Nm peak torque and 200 kW per wheel at just 36 kg – including the inverter.

Our Generator achieves 95.5% system efficiency at under 26.5 kg, making it the most efficient and most compact solution in its class. China's EV market moves faster than anywhere else in the world – and that is exactly why these numbers matter here.

OEMs in China demand higher performance, lower cost, and faster industrialization simultaneously. Our technology delivers all three. These are not theoretical targets – they are production-validated specifications, developed for large-scale manufacturing.

China's market is evolving fast – and we believe this combination of efficiency, compactness, and production readiness is exactly what the next generation of Chinese electric vehicles will require.«

Marcus Behrendt  
Managing Director, BMW i Ventures

»With its unique patented e-motor architecture, DeepDrive will set the bar much higher for new standards for electrical powertrains. The highly efficient e-motor concept offers major advantages in terms of weight, cost, and packaging.

DeepDrive's Dual Rotor technology is not just revolutionarily more efficient in power consumption but also significantly more cost efficient than existing technologies. And on top of that it is designed for easy mass production.«

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Felix Poernbacher  
联合创始人兼联合首席执行官, DeepDrive (典驱科技)

»中国是全球最重要、最具活力的电驱技术市场之一, 我们致力于在这里成为一个认真的长期参与者。作为全球扩张战略的一部分, 我们已在上海设立本地办公室, 正在组建本地中国工程团队, 并与包括邦迪智能在内的领先本地合作伙伴携手合作。

我们将同样的技术与标准带到中国——正是这些技术与标准赢得了欧洲及全球领先整车厂和一级供应商的信任。我们来到中国, 是为了与中国市场共同成长, 长期深耕。«

Alexander Rosen博士  
DeepDrive 联合创始人兼总工程师

»我们的双转子架构开创了一类传统电机设计根本无法实现的全新电驱产品。我们的轮毂电驱在仅36公斤的重量下(含逆变器)实现了单轮2,500 Nm峰值扭矩和200 kW峰值功率。我们的增程发电机以低于26.5公斤的重量实现95.5%的系统效率, 是同类产品中效率最高、结构最紧凑的解决方案。

中国电动汽车市场的迭代速度居全球之首——这正是这些数字在中国格外重要的原因。中国整车企业同时追求更高性能、更低成本与更快工业化。我们的技术三者兼顾。这些不是理论指标——而是面向规模化制造验证的量产规格。中国市场正在快速演进, 我们相信, 效率、紧凑性与量产就绪性的结合, 正是下一代中国电动汽车所需要的。«

Marcus Behrendt  
董事总经理, BMW i Ventures

»凭借其具有独家专利的电机架构, DeepDrive 将为电力驱动系统树立更高的新标准。这种高效电机概念在重量、成本和集成度方面具有显著优势。

DeepDrive 的双转子技术不仅在能耗效率方面具有革命性, 而且比现有技术更具成本效益。最重要的是, 它专为大规模生产而设计。«



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## QUOTES

Jürgen Bilo  
Managing Director, Continental's CVC Unit

»After seeing the efficiency and the overall concept, we are convinced that DeepDrive will make a huge difference in the e-mobility market. This technology combined with DeepDrive's excellent team convinced us to invest in the company.«

Jens Wiese  
Co-Founder & Managing Partner, Leitmotif

»Investing into innovators that have the potential to become category-defining companies, transforming their respective industries is at the heart of Leitmotif's strategy. Our investment in DeepDrive builds upon this mission. Its innovative technology has already attracted interest from some of the world's largest automakers and is set to help them build the most efficient EVs through its collaborative business model.«

Dr. Peter Mertens  
Board Member, DeepDrive / Former CTO, Audi & Volvo

»The benchmarks in performance and sustainability DeepDrive has achieved will not only be a game changer in terms of efficiency and cost savings for automakers, but it will also significantly reduce the carbon footprint of EVs.«

Andreas Unseld  
Partner, UVC Partners

»We are thrilled to continue our support for DeepDrive. As their first backer, it has been an honor to guide their journey from the beginning. DeepDrive exemplifies the remarkable capabilities of the German startup and tech ecosystem, demonstrating cutting-edge innovation and a commitment to building a sustainable future.«

Monika Steger  
Managing Director, Bayern Kapital

»The automotive industry is one of the most important pillars of the economy in Germany and Bavaria – and it is in the midst of a transformation phase towards e-mobility. DeepDrive's technology not only enables electric vehicles with greater range but also allows for cost savings in automotive production.«

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Jürgen Bilo  
董事总经理, 大陆集团企业风险投资部门

»在了解了其效率和整体概念后,我们深信DeepDrive(典驱科技)将在电动出行市场产生巨大影响。这项技术与典驱科技的卓越团队相结合,使我们决定投资这家公司。«

Jens Wiese  
联合创始人兼管理合伙人, Leitmotif

»投资那些有潜力成为产品定义者、并能够重塑其所在行业的创新者,是Leitmotif战略的核心所在。我们对DeepDrive的投资正践行了这一使命。其创新技术已吸引了全球多家大型车企的关注,并将通过其协作式的商业模式,助力这些车企打造出最高效的电动汽车。«

Peter Mertens 博士  
DeepDrive 董事会成员 / 前奥迪及沃尔沃首席技术官

»DeepDrive在性能与可持续性上所取得的突破性成果,不仅将为车企带来效率与成本方面的巨大优势,还将显著降低电动汽车的碳足迹。«

Andreas Unseld  
合伙人, UVC Partners

»我们非常激动能继续支持DeepDrive。作为他们的首个支持者,很荣幸能从一开始就陪伴他们的旅程。DeepDrive 展现了德国初创企业和技术生态系统的卓越能力。«

Monika Steger  
Bayern Kapital 董事总经理

»汽车行业是德国和巴伐利亚州最重要的经济支柱之一,目前正处在向电动出行转型的阶段。DeepDrive 的技术不仅能实现更长续航的电动汽车,还能在汽车生产中节省成本。«





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