

Red Bull Ford Powertrains Develops Turbocharger with ADT's TURBOdesign Suite

Advanced Design Technology (ADT), a global leader in turbomachinery design and optimization, is delighted to announce Red Bull Ford Powertrains selected TURBOdesign Suite software for design and optimization of Turbocharger for their 2026 Power Unit.



London, United Kingdom Apr 6, 2023 ([Issuewire.com](https://www.issuewire.com)) - TURBOdesign Suite is a unique turbomachinery design software package based on 3D Inverse Design technology. TURBOdesign Suite helps engineers significantly cut design time and cost to create breakthrough designs for high-performance fans, pumps, compressors, and turbines. Using the software, designers evaluate turbomachinery package size and performance predictions; perform detailed 3D blade design with 3D inverse design capabilities; analyse flow information per component and stage performances with links and integrations to turbomachinery-specific 3D computational fluid dynamics (CFD); and automate exploration of the design space with automatic optimization capabilities.

Red Bull Ford Powertrains is a newly created as the new power unit division based at the Red Bull Technology Campus in 2021. The company is now working towards developing a power unit that will comply with 2026 new regulations to be supplied to Oracle Red Bull Racing and Scuderia AlphaTauri from 2026.

“Turbochargers feature very complex fluid dynamic and three-dimensional effects such as the engine pulse in the turbine and the shock structures in the compressor, TURBOdesign is uniquely positioned to allow designers to control the three-dimensional flow fields at the blade design phase using 3D Inverse Design and blade loading” says Prof. Mehrdad Zangeneh, Managing Director of ADT and Professor of Thermofluids at University College London (UCL), “This makes the code extremely well suited to applications requiring extreme performances, starting from integration with power unit development and analysis tools and allowing rapid development loops to find optimal solutions in the shortest amount of time.”

“Developing a new power unit, engine, and turbocharger from initial conception opens a world of possibilities, and the ability to explore as many options as quickly as possible makes the difference to be on the first row.” says Ben Hodgkinson, Technical Director at Red Bull Ford Powertrains

“TURBOdesign allows our engineering team to streamline the development of high-performance turbochargers from the initial conception and engine matching to the detailed and optimised 3D components. TURBOdesign’s unique 3D inverse design has been identified as the most rapid and efficient way to quickly generate high-performance wheels answering the main aerodynamic and mechanical requirements.”

ADT and Red Bull Ford Powertrains are looking forward to a successful partnership for the successful development of the 2026 Power Unit.

About Advanced Design Technology, Ltd.:

Advanced Design Technology (ADT) is a global leader in the development of advanced turbomachinery design methods, which help shorten development time and improve the performance of turbomachinery components. ADT’s aim is to put designers in direct control of the aerodynamic design and to considerably shorten the design time and time to market for a range of turbomachinery products. ADT’s clients, who represent some of the leading global players in the aerospace, automotive, power generation, and marine fields, have achieved significant returns on investment in terms of reduction in design times, higher performance, and ease of know-how transfer among different design teams and projects. For more information, call +44 (0) 20 7299 1170 or go to: www.adtechnology.com

Social Media Links:

LinkedIn: <https://www.linkedin.com/company/adtechnology>

Twitter: https://twitter.com/adt_turbo

Youtube: <https://www.youtube.com/@advanceddesigntechnology/featured>

About Red Bull Powertrain 2026 Ltd.:

Red Bull Powertrains was created in 2021 to supply power units to Oracle Red Bull Racing and Scuderia AlphaTauri for the 2022 Formula One season and beyond.

Red Bull Powertrains currently works alongside Honda on the engines and will continue to do so trackside until the end of the 2025 season when the next generation of engines will be introduced. In parallel, Red Bull Powertrains is working on developing a power unit that will comply with 2026 regulations in partnership with Ford as Red Bull Ford Powertrains in a new Power Unit factory at the Red Bull Technology Campus in Milton Keynes.

Speaking about Red Bull Powertrains, CEO Christian Horner, said: “This represents a significant step for Red Bull in its Formula One journey. We now begin the work of bringing the power unit division in-house and integrating the new facilities and personnel into our Technology Campus.”



Media Contact

Advanced Design Technology Ltd.

a.panchoo@adtechnology.com

02072991170

30 Millbank, Westminster, London SW1P 4DU

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