

Design and Flow simulation on 5.0 kw Micro Hydro Vortex turbine

THE CLIENT

A US-based client offering an array of customized solutions to power generation and Renewable energy industry equipment along with performance guaranty.

THE BUSINESS NEED

Our client was seeking engineering design assistance for 5.0 kw Micro hydro vortex turbine design and CFD simulation to optimize rotor shape, Rotor Angle, cavitation, Exhaust path design

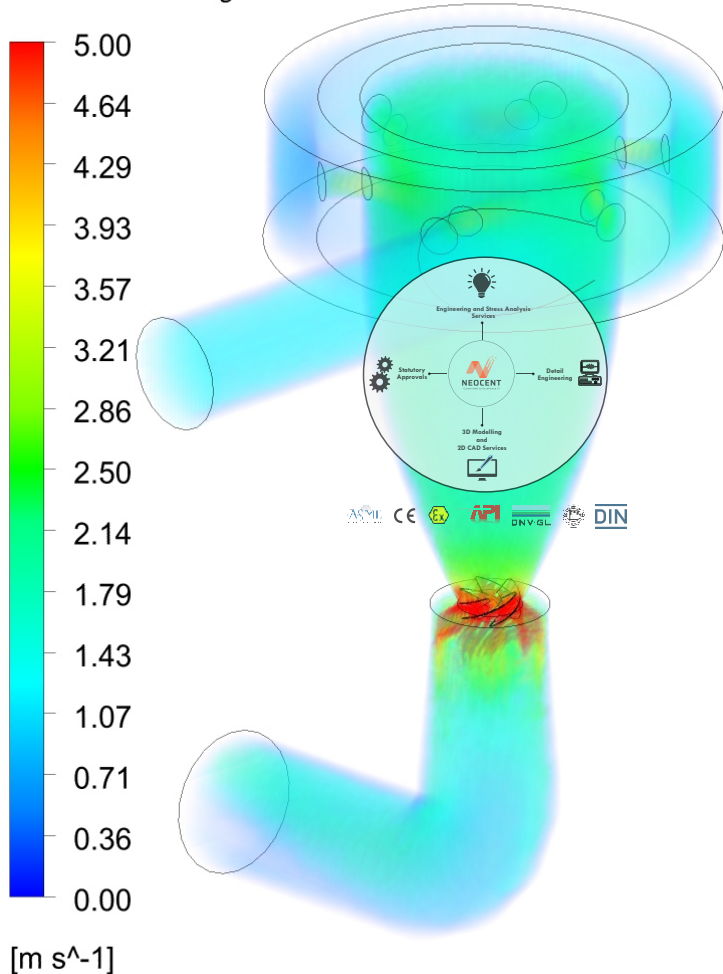
NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Details Mechanical Design, Details Process Design calculation.

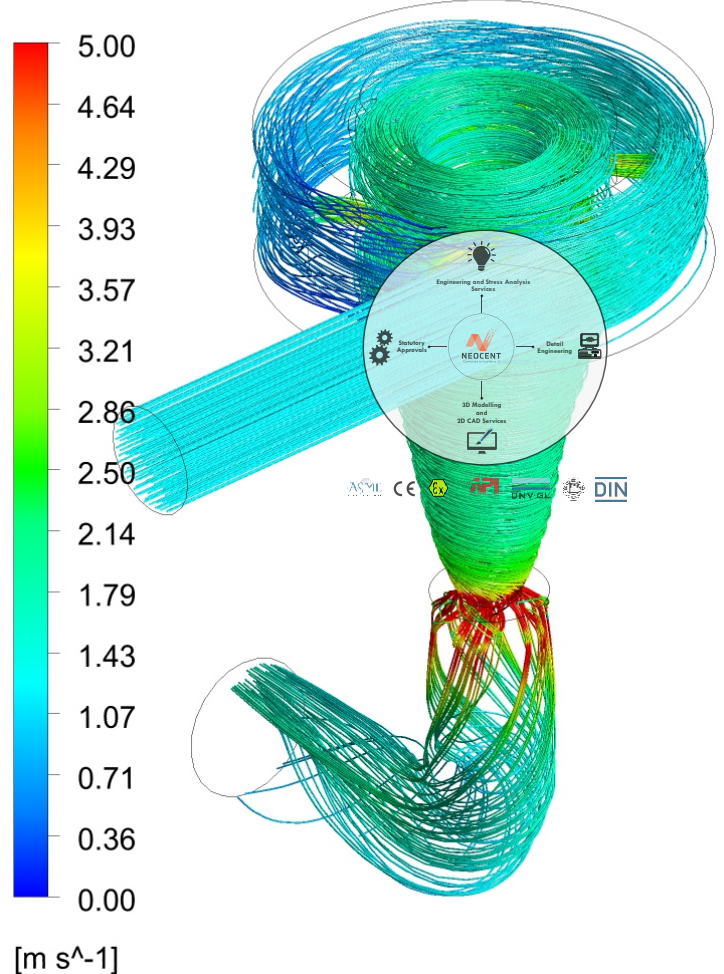
CAD Detailing : G.A Drawing, Details CFD Modeling, Details manufacturing Drawing.

Analysis : Dynamics (6-DOF) Simulation on Vortex turbine with different flow rate, Different rotor diameter, Different rotor angle.

Velocity
Volume Rendering 1



Velocity
Streamline 1



Neocent Engineering Services is a multi-discipline engineering services company. Established in 2015, we offer high-quality engineering support solutions to global EPC organizations across some of the industries listed: Automotive, Aerospace, Turbo machinery, Heavy engineering, HVAC, Oil & Gas, Material handling and Process industry.

Neocent provides detailed engineering services to EPC, EPCM, OEM, and PMC as long-term turnkey projects. Our EPCM services include Project Management, Feasibility Studies, Conceptual & Basic Engineering, Detailed Design, Procurement, Construction Management, Commissioning & Start-up, and Operations & Maintenance.

Neocent Engineering's service offering, include;

- Engineering and Stress Analysis Services
- Details Engineering
- 3D Modelling and 2D CAD Services
- Statutory Approvals

Neocent CFD Consulting Services

We provide the best and most comprehensive Computational Fluid Dynamics (CFD) analysis services. We excel in providing precise modelling to aid an accurate CFD analysis and propose effective engineering solutions.

Our Turbo machinery / Rotating machine CFD Analysis Services include:

- Aerodynamics Analysis
- CFD Combustion Analysis
- CFD Fluid-Structure interaction(FSI)
- CFD Heat Transfer Analysis
- CFD HVAC Analysis
- CFD Hydrodynamics Analysis
- CFD Multi phase Flow Analysis
- CFD Turbo-machinery Analysis

We help engineering design validate the geometry through virtual simulation prior to production and avoid last-minute hassles. To ensure accuracy in results, we also perform validity checks such as convergence analysis, boundary conditions review and hand calculations, allowing manufacturers to validate their designs faster.

In brief, clients come to us when they need high-quality work executed and documented to withstand the most rigorous reviews.

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