

Research Work Title

## The Design and Manufacture of a 200 MW Synchronous Generator



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### Abstract

A large synchronous generator with a nominal power of 200 MW has been designed and built which is capable of providing a large portion of the electricity needed by the power grid and plays a crucial role in supplying the required power. The design of synchronous generators involves many parameters which must be determined to achieve the optimal structure. The weight of the generator has a significant impact on its costs, so it has been designed with the minimum possible weight within this power range while maintaining maximum efficiency. The Pars Generator company has produced a 200 MW generator that is 10% lighter than those produced by competing companies in the world, but with the same efficiency. One of the unique features of this generator is its design based on the concept of modularity, which means it can be adjusted to output power higher or lower than 200 MW with the lowest possible cost. Various computing tools and software, mostly developed by the company's research and development department, have been used to optimize the weight and overall efficiency of the generator. This local design has been carried out using the capabilities of the human resources in the country.

