
RECENT DEVELOPMENTS IN SUSTAINABLE MANUFACTURING OF GEARS: A REVIEW

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ABSTRACT

Most socially aware manufacturers place a premium on awareness. Manufacturers must comply with a variety of stringent environmental criteria in order to remain competitive on a global basis. The manufacturing industry as a whole is working to increase efficiency and quality of products while also keeping the environment pure and sustainable. This could only be done by using environmentally friendly fluids and lubricating techniques when machining, decreasing waste, active waste management, and eliminating energy usage, among other things. The key services providers to other manufacturing and industrial segments, including the gear manufacturing industries, are also working on implementing strategies aimed at improved sustainability. A few more latest developments in gear manufacturing to improve sustainability can be summarized as reducing its use of mineral-based lubricating oil by employing alternate solution lubrication techniques such as least amount lubrication (MQL) and dry machining, material saving, waste reduction, reducing power consumption, and maintaining efficiency by reducing the number of gear manufacturing operations. This study examines and summarizes the present state of technologies for gear manufacture that is environmentally sustainable, as well as suggests strategies to improve productivity and the quality while maintaining environmental sustainability.

KEYWORDS: *Gear Machining, Minimum Quantity, Lubrication, Sustainable Manufacturing.*

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