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विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY
सत्यमेव जयते

BITS Pilani
TECHNOLOGY
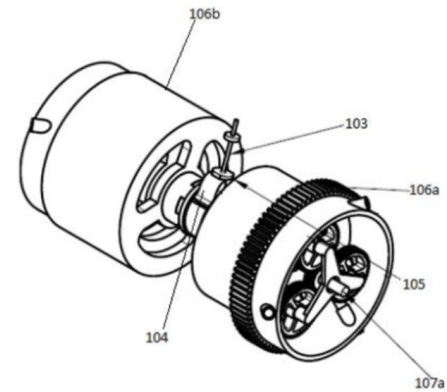**ENABLING**
CENTRE
DST Supported

PENDING

(IN202111041819)
Camshaft and valve follower assembly for continuously variable valve timing and continuously variable valve duration

NEED

Internal combustion engines are challenged by the need for optimal fuel efficiency and lower emissions. Standard valve control is limited, often affecting performance and emission standards. What if valve timing and duration could be precisely controlled for each driving condition?

TECHNOLOGY OVERVIEW

This patented technology provides an innovative camshaft and valve follower assembly that enables continuous variation of valve timing (CVVT) and valve duration (CVVD) in internal combustion engines. It improves fuel efficiency, performance, and reduces emissions by adjusting these parameters in real-time.

TECHNOLOGY KEY FEATURES

1) Continuous valve timing and duration control. 2) Two concentric shafts with adjustable angular displacement. 3) Non-backdrivable mechanism for power transfer. 4) Electronically controlled motors for precise feedback control.

Read more here

MARKET ANALYSIS

The global automotive engine market is projected to grow at a CAGR of 4.2% from 2023 to 2033. In India, demand for high-performance, fuel-efficient engines is expected to rise, especially with stricter emissions regulations. This patent addresses both the performance and environmental needs. (Source: Grand View Research, MarketsandMarkets)

Target Industries

1) Automotive manufacturers developing high-performance, fuel-efficient engines 2) OEMs focusing on emission reduction technologies for internal combustion engines 3) Engine performance upgrade providers enhancing fuel efficiency in hybrid and electric vehicles.

AT A GLANCE

- SDG 9 (Industry, Innovation, and Infrastructure), SDG 13 (Climate Action), SDG 12 (Responsible Consumption and Production)

Technology is available for licensing/ co-development.

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