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(71)Name of Applicant :

**1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY**

Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. -----

**Name of Applicant : NA**

**Address of Applicant : NA**

(72)Name of Inventor :

**1)ANANT PRAKASH AGRAWAL**

Address of Applicant :Department of Mechanical Engineering, Noida Institute of Engineering & Technology, Greater Noida. Greater Noida -----

(57) Abstract :

An improved induction duct (100) for an internal combustion engine includes an airflow channel (102) with aerodynamic vanes (104), a thermal insulation liner (106), an acoustic resonance chamber (108), and a modular coupling (112). The duct body (110) is made of dual-layer materials for thermal and vibration resistance. The design improves airflow distribution, reduces intake temperature, and suppresses noise. Experimental validation confirmed enhanced torque, reduced thermal soak, and improved acoustic performance. The invention is adaptable for modern turbocharged engines.

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