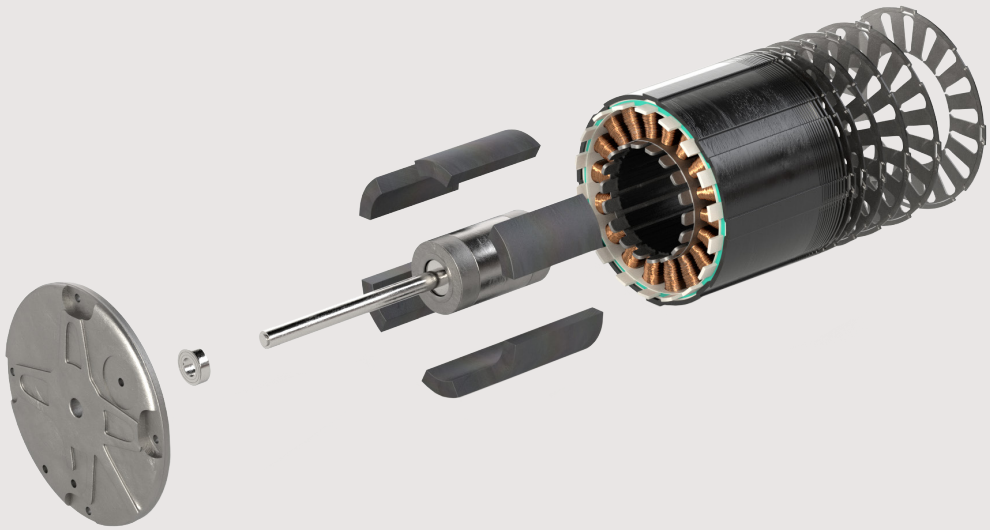
Henkel

LOCTITE®

CASE STUDY

LOCTITE Structural Adhesive Enables Reliable Motor Performance in Challenging Environment

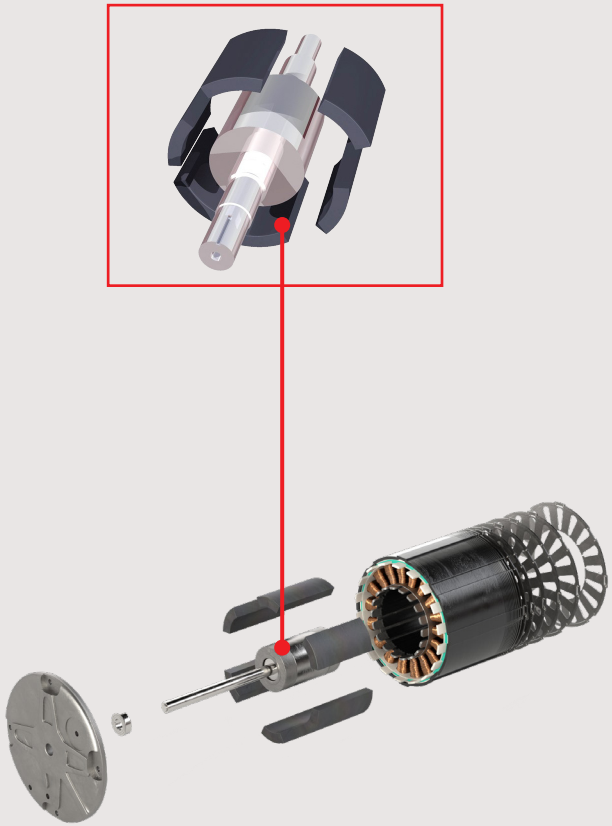


Customer Challenges

- A new motor design to be used within a demanding, high temperature/high humidity environment required a capable adhesive for magnet retention on surface permanent motors.
- Previous motor designs leveraged an adhesive for magnet bonding that, while proven and highly effective, does not deliver the heat and humidity resistance this application required.
- Processing speed was also a consideration, and the customer wanted a high speed solution consistent with existing adhesive performance while simultaneously delivering heat and humidity resistance capability.

Customer Requirements

- The adhesive has to withstand high operating temperatures of up to 135°C and relative humidity as high as 95%.
- High volume magnet to shaft bonding processing necessitates a structural adhesive that can be automatically dispensed and cured quickly.
- Long term reliability of the motor is essential to ensuring dependable function, reducing warranty claims and protecting customer brand equity.



Henkel Solution

- Henkel's technical team worked with the customer to evaluate the performance of various adhesives. Utilizing advanced testing and analysis technologies at a Henkel design center, results confirmed that universal structural bonding formulation ***LOCTITE HY 4090*** outperformed all products tested in terms of strength under high temperature and humidity.
- While the customer metrics were challenging, LOCTITE HY 4090 exceeded those criteria, showing excellent strength at temperatures as high as 150°C and at 98% relative humidity.
- From a processing perspective, LOCTITE HY 4090 also delivers advantages. The two part material is easily automated and provides fast fixturing times between 90 and 180 seconds.
- Once material analysis and qualification were confirmed, Henkel helped the customer facilitate seamless transfer to its motor manufacturing facility. The motors are now being used in application and performing as expected.

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