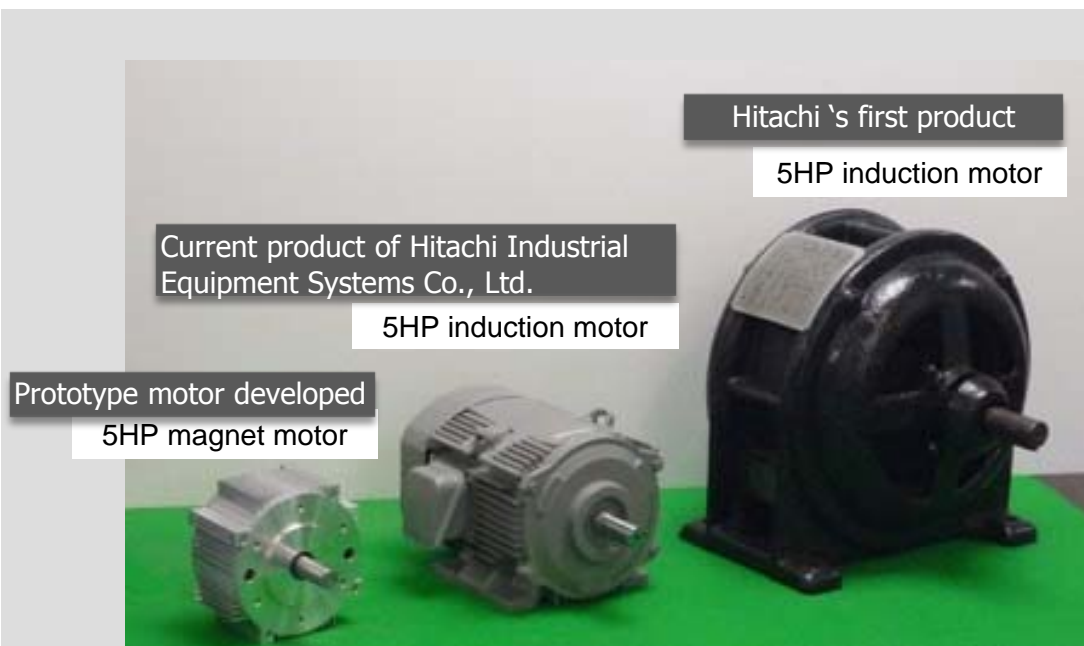


## 100<sup>th</sup> anniversary technology

Hitachi, Ltd., web site 【10<sup>th</sup> May 2010 News Release】 <http://www.hitachi.co.jp/New/cnews/month/2010/05/0524.html>

Hitachi Research Laboratory  
Hitachi Industrial Equipment Systems Co., Ltd

### Prototype of Hitachi's first 5HP induction motor recreated at 1/15<sup>th</sup> original size



*How small can we make Hitachi's original product, "the 5HP induction motor," using today's advanced technology?*

Hitachi, Ltd. and Hitachi Industrial Equipment Systems Co., Ltd. took on this challenge as a centennial anniversary project. Applying the Hitachi Group's advanced design, thermal dissipation, and material technologies, a prototype motor 1/15 the original size with 94% efficiency was achieved.

#### ■ Hitachi Group synergy in making the motor prototype

【Hitachi Research Laboratory and  
Hitachi Industrial Equipment Systems Co., Ltd】

- High radiation technology
- Motor magnetic field - Thermo-magnetic field coupling analysis
- Optimum design

【Hitachi Metals, Ltd.】

- Rotor material: Nd-Fe-B sintered magnet

【Hitachi Cable, Ltd.】

- Enamel wire

【Hitachi Chemical Company, Ltd.】

- Organic material

#### ■ Exhibitions/Presentations

- Presentation at the IEEJ joint technical meeting\* held on 28<sup>th</sup> May 2010 in Tokyo, Japan.
- To be exhibited at various Hitachi, Ltd. and Hitachi Industrial Equipment Systems Co., Ltd. exhibitions after June.

#### A word from the development team

*Although motors may seem to be old technology, the challenge to reduce size and increase efficiency is still continuing today. The technology applied in this prototype motor will be used in future products.*

\*The Institute of Electrical Engineers of Japan (IEEJ) Joint technical meeting on rotating machinery, semiconductor power converters and motor drives.