

## Drive Pulley for Motorcycle Wheel Drive

### Market background of the new product

The main requirements for wheel drive pulleys for motorcycles are strength, corrosion resistance, and weight reduction. There are many examples of products which are manufactured by forging and machining in order to meet these requirements. Hitachi Powdered Metals developed a new product using the powder metallurgy process, making it possible to satisfy property requirements while also reducing cost.

### Conventional product

Manufactured by forging and machining.

### New product

To reduce costs without the machining process, a manufacturing using net shape compacting was adopted.

[Outline of the production process]

Compacting – sintering – repressing (second compacting) – steam treatment – induction hardening – tempering

### Features of the new technology

- (1) To satisfy both the necessary strength and weight reduction, the shape of the spoke part was optimized using FEM analysis.
- (2) To improve the safety factor of fatigue strength and corrosion resistance in the spoke part, steam treatment is performed.
- (3) To secure strength in the spline part, induction hardening is applied to the spline part.



### Examples of applicable products

- Drive train pulleys
- Timing train system pulleys

### Cost comparison

Conventional product = 100, new product = 70