

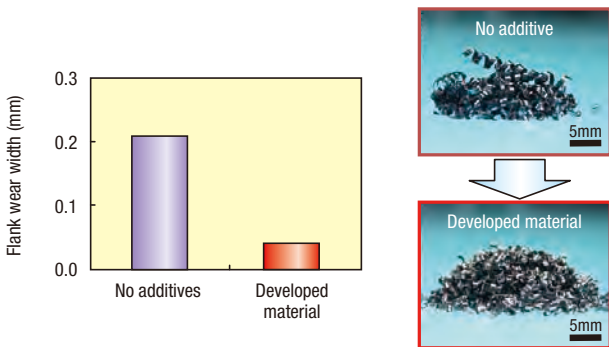
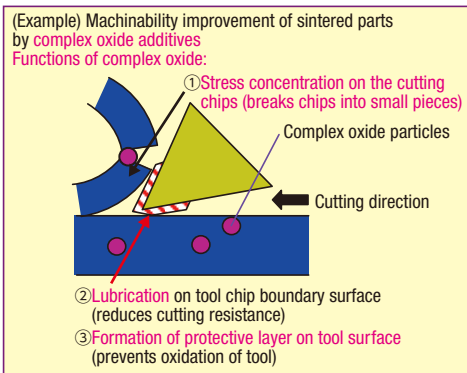


Iron Powder & Magnetic Materials

Further exploiting iron- and steelmaking processes, JFE Steel produces iron powder and develops new products for more advanced sintered parts, improving the alloying design flexibility and preventing the powder segregation.

Segregation-Free Powders

JFE Steel has been developing segregation free premixed powders, in which graphite, copper, and other materials are bonded on the surface of iron powder particles. Powder technologies, including the surface treatment and particle mixing techniques, are applied to design the segregation free powders which realize new functions in sintered parts.

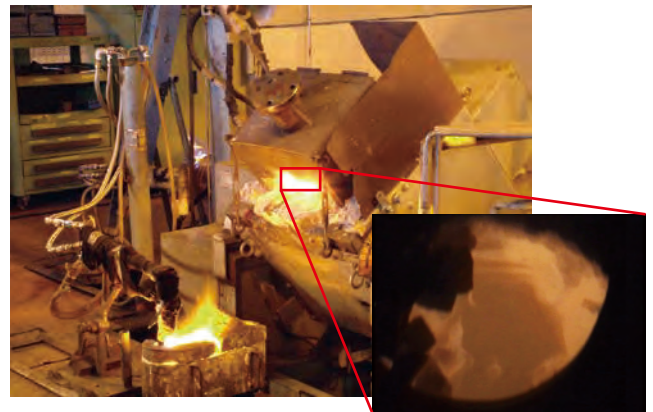


Flank wear width of tools and chip appearance after 500 m lathe turnings

- Workpiece Fe-2%Cu-0.8%C sintered body
- Feed speed 200m/min, depth 0.5 mm, Feed rate 0.1mm/rev

Powder Production Technology

Numerical calculations and process simulators are applied in R&D of production technology, especially for improvement of productivity and quality.



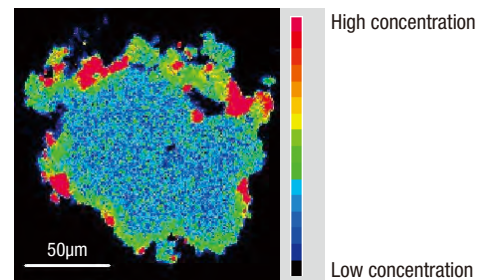
Water atomizer for test production of alloyed powders



Annealing furnace for simulating final reduction process

Alloyed Steel Powders

A number of alloyed steel powders have been developed based on alloying and microstructure control technologies. A hybrid-type Mo alloyed steel powder with a heterogeneous structure, in which Mo is concentrated on the particle surface, contributes to the production of high strength sintered parts.



Mo distribution in cross-section of hybrid-type Mo alloyed steel powder particle