Intelligent Forging of High Precision Gears

Introduction
Replace the conventional gear forming process. No longer need to have multiple processes in forging gear blanks and cutting tooth. The precision of the precision machining gear can reach JIS3 to 4 or above. First domestic rotary demolding and near net shape forging. Tooth compensation technology and Multi-action Single forging forming technology, coupled with a screw top mechanism to develop high-precision gears with negative draft angles, such as umbrella-shaped or spiral gears. High strength, the material utilization rate increased by 2/3 and the production efficiency increased by 5 times.

Parametric gear software for constructing tooth shape
Incorporate SolidWorks interface

Tooth shape and parameter compensation module
Deformation and theoretical tooth surface topology comparison
Compensated shape
Theoretical tooth shape
Elastic tooth shape
(Forged blanks + molds)

Construct the gear surface by inputting the gear parameters directly

Honors / Patents
- 2017 Taipei International Invention Show and Technomart Platinum Award
- Compensation molding of gear molds (patent number I557586) and forging device for spiral bevel gears (patent number I558482), 4 patents of Taiwan, the US and Mainland China.

Industrial Applications / Case Studies
Development of key components for high-performance reels
Spiral bevel gear
Helical gear

Confirm the manufacturing process conditions and precision control of tooth during the design phase. Incorporate end customers' requirements for manufacturing and forming applications to improve the precision and the strength. Effectively reduce percentage of materials waste and replace the conventional manufacturing processes and increase manufacturing speed.

Helical gear