

Helicon® and Spiroid® gear forms are a proven competitive advantage. But how do they differ?

The differences between Helicon and Spiroid gear forms are all attributable to geometry. As the images to the right illustrate, Helicon pinions are cylindrical and engage a flat-faced gear. Spiroid pinions, on the other hand, have a conical shape and engage a bevel-faced gear. What does this mean for your application?

Backlash Adjustment: Helicon gear sets allow for axial shimming of the face gear to achieve backlash adjustability. Conversely, Spiroid's gear set geometry allows for axial shimming of both the face gear and pinion. Said another way, the Spiroid gear form offers finer backlash control.

Efficiency & Torque: All else being equal, efficiency and torque act as minor tradeoffs when comparing Spiroid and Helicon gear set performance. Relative to one another, Helicon gear sets gain efficiency at the expense of torque while Spiroid gear sets gain torque at the expense of efficiency. It should be noted that these differences are often negligible and can only be properly assessed within the context of a specific application.

Complexity: Spiroid's gear form geometry introduces unique challenges to hob design, hob manufacturing and overall gerset development. All of this has the potential to impact overall costs. In the right applications, these costs can be easily outweighed by Spiroid's unique advantages.

Conclusion: Throughout our 50+ year history we've found that very few applications hinge upon the differences between Helicon & Spiroid. As a result, Helicon is commonly preferred over Spiroid, except in select applications requiring a need for finite backlash control and higher torques. At the end of the day, we've learned that it is best practice to narrow your search based on desired gear OD, ratio, required torque and/or other parameters relevant to your application.



SPIROID
HIGH TORQUE GEARING