

# DOUBLE HELICAL GEARS



## Grinding, Measuring, Stock Removal Documentation

# KAPP NILES

Double helical gears (herringbone gears) are characterised by a symmetric arrangement of two identical gear teeth with exactly opposite helix angles. As a result of this symmetry, the axial forces in the gearbox cancel one another.

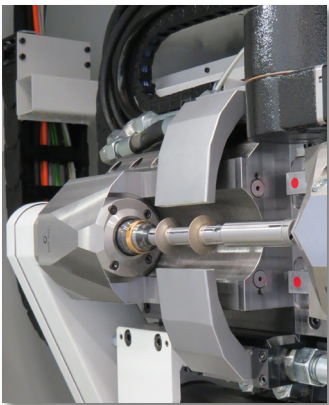
Hard gear finishing of the tooth flanks is done by profile grinding. Inherent to the process, a gap is necessary between the gear teeth for the tool run out.

This gap should be minimised as far as possible, especially in weight-critical applications, e.g. in the aerospace industry. Of course, quality and process validation must be ensured in day-to-day production.

KAPP NILES offers precision and productivity in the field of hard gear finishing with innovative solutions and unique experience also for these most critical and demanding workpieces.

KAPP NILES provides a wide range of machine concepts for grinding double helical gears in various sizes. Be it with horizontal (VX series) or with vertical workpiece axis (ZE and ZP series), all machines can be equipped with innovative solutions in regard to hardware and software for grinding double helical gears.

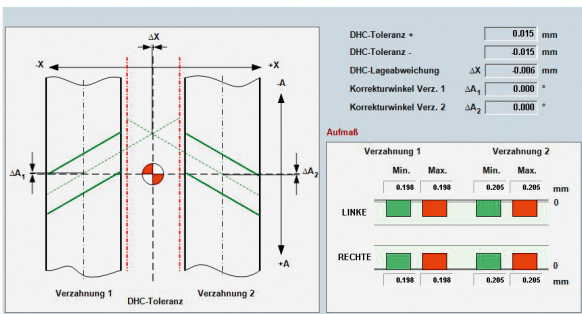
Alternatively, you can use dressable as well as non-dressable profile grinding wheels on KAPP NILES machines. When grinding double helical gears, CBN tools offer the decisive advantage that they can be designed with the optimum diameter for the gap width available and guarantee consistent quality across their entire tool life.



In most cases, a two-stage process with CBN rough machining and finishing tool is necessary for achieving the maximum material removal rates and surface quality. For this purpose, KAPP NILES has developed an optimised grinding spindle with counter-bearing, which enables unique precision and productivity even with the least wheel diameters. An in-built HSK interface reduces the tool set-up times to a minimum.

The most demanding task is the process chain of stock-oriented alignment, grinding, measuring and the documentation of the material removal by optimising the position of the DHC point. With the integrated measurement probe and the associated software packages, these tasks can be performed in a particularly user-friendly manner on KAPP NILES machines.

Optimisation DHC point / Stock removal



Measuring



Measuring positions (example VX series)

