



How-to

## **VIDEO: Webinar: How to Get More Out of Your Tools: Chip Thinning, Kellering & High Feed Milling**

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### **Video Highlights**

#### **Key moments:**

**1:32** - What do we mean by kellinging?

**2:42** - History behind kellinging

**4:21** - Surface finish: Cusp Height, Stepover & Radius

**6:50** - 3D model demonstration

**8:19** - The importance of radial & axial chip thinning

**11:51** - Forward tilt on a ball nose end mill

**19:29** - What can we do to get an acceptable cusp height but take bigger stepovers?

**21:41** - Using a corner radius tool

**25:43** - Is it also effective to tilt on Swiss machines with live tools using a ball nose when machining the sphere on the face of a part?

**26:50** - High feed forces (KenFeed & 7792)

**29:37** - Advantage of radius when kellinging / how changing shape will affect it

**34:38** - Flexion of the tool

**36:08** - Equation for cusp height based on the end radius of the tool and stepover . If H is your desired cusp height, R is the radius of your end face, and of course ae is your stepover, then  $H = R - \sqrt{R^2 - (ae/2)^2}$

**36:48** - Question: Would an indexable high feed mill be applicable for CNC machines that have multiple strokes on one machined part?

**39:12** - How to program these high feed cutters

**40:55** - Application example

**43:37** - YouTube Question: Is it possible to talk (and show) a bit more about how you measure the temperature, tool load, all that. Do big machine shops do that type of measurement in-house to improve the productivity or do they usually ask you to go there and help out?

**53:47** - Increasing spindle speed with a lower radial depth-of-cut / lower engagement angle

**57:12** - Heat flux

In this webinar, Kennametal experts Danny Davis and Steve George share machining best practices and solutions for demanding aerospace and general engineering applications. They continue the discussion on chip thinning, kellering and high feed milling. You can use these tips to achieve higher material removal rates, better finishes and faster cycle times.

*Previously Featured on Kennametal's YouTube channel.*

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