## 连续磨

### 使用小直径的刀具



到目前为止带干扰结构齿轮的硬精加工,大多数是采用不连续的成型磨工艺或是珩磨工艺实现的。

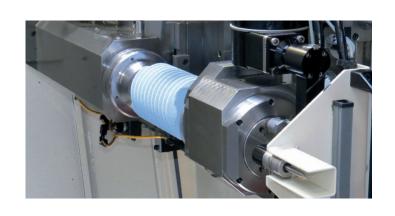
和不带干扰结构齿轮的连续磨相比较,这两种的加工工艺在生产效率和经济成本上都存在不足之处。

迄今为止,还没有相应合适的磨齿机能够连续磨削加工带干扰的齿轮工件,不能满足刀具与工件驱动器在高动力上的要求。

现在,卡帕耐尔斯的一项新研发成功地填补了这项空白,把连续磨削工艺合理的使用在带干扰的齿轮硬精加工上。

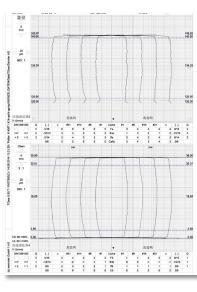
**KX 160 / 260 TWIN**机床是使用一个高速的刀具轴和一个直径为55毫米的刀具首次实现了对带干扰齿轮的连续磨削。

使用磨削刀具的最大宽度可以到160毫米,在批量生产上能达到公认的高精度质量要求,节省加工时间和降低加工成本。

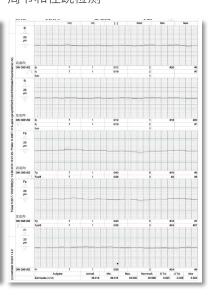




齿型和齿向检测



周节和径跳检测



最大齿顶圆直径	模数	刀具直径落	· 包围 [毫米]	最大转速 刀具	最大转速
[毫米]	[毫米]	连续磨	成型磨	り兵 [分钟 <sup>-1</sup> ]	
170 / 260	0.5 - 4.5	55 - 200	30 - 200	23 000	5 000

## GENERATING GRINDING

# KAPP NILES

#### with small tools

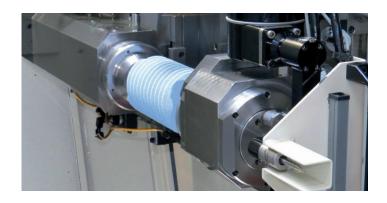
Up to now the hard finishing of gears with interfering geometry was primarily realised by discontinuous profile grinding or gear honing. Compared to continuous generating grinding of components free from interfering contours, both processes have distinct disadvantages in terms of productivity and cost-effectiveness.

Until now, no gear grinding machine was able to process gears with interfering contours using the continuous generating grinding

method due to the high dynamic demands placed on tool and workpiece drives.

A new development from KAPP NILES is now closing that gap and offers great streamlining opportunities by using continuous generating grinding for optimising the hard finishing process of complex gears.

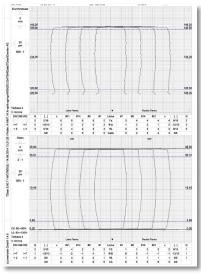
By using a high-speed grinding spindle on the KX 160 / 260 TWIN machines, gears which require a tool diameter of 55 mm can now be processed with generating grinding. In connection with the maximum tool width of 160 mm, it is possible to achieve the quality standards, processing times and costs common to serial production that were previously considered impossible for gears with interfering contours.

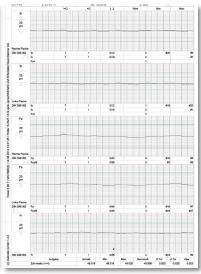




profile and flank-line measurement

pitch and runout measurement





max. tip diameter [mm]	module range [mm]	tool diameter range [mm]		max.	max.
		generating grinding	profile grinding	tool speed [min <sup>-1</sup> ]	workpiece speed [min <sup>-1</sup> ]
170 / 260	0.5 - 4.5	55 - 200	30 - 200	23,000	5,000