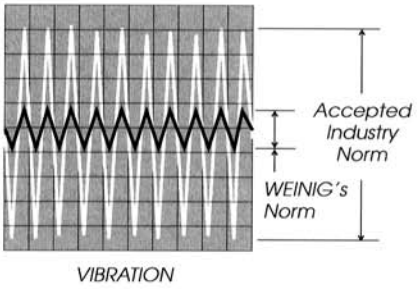
WEINIG Cutterhead Quality Assurance

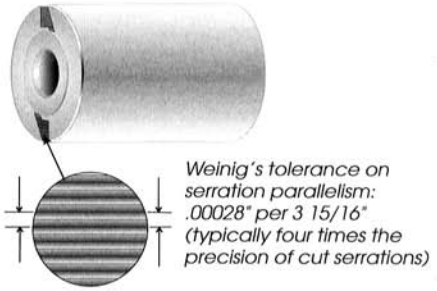
Cutterhead Balance

The dynamic balance of rotating tooling has a big effect on the life and reliability of the moulder. Every facet of product quality is affected by it. The "Q" value is the woodworking industry standard measurement of relative balance quality, and a lower value means better balance. A "Q" of 0.0 means perfect balance and a "Q" of 16.0 is acceptable. Most tooling manufacturers use 16.0 as their goal but Weinig's standard is much higher ("Q"=2.5). When you specify Weinig cutterheads you get less vibration, longer life and a more accurate finished product with better surface quality.



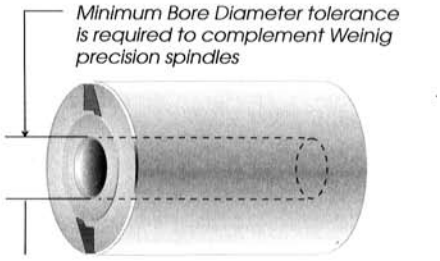
Parallel Knife-slot Serrations

It's accepted practice to create Knife-slot serrations on the cutterhead with standard metal-cutting tools. But this can result in a waved surface and less than adequate support for the knife. Weinig creates serrations by broaching the surface using titanium-coated tools. Broaching actually shapes the entire tool surface and provides near-perfect parallelism of individual serrations. This parallelism provides better knife support and exceptional surface quality of the finished profile.



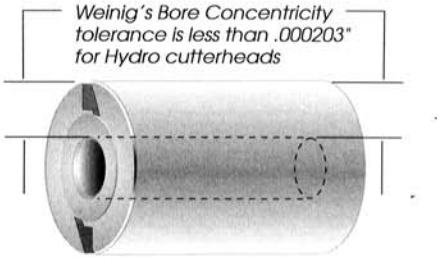
Bore Tolerance

The industry standard ISO-specified tolerance for a cutterhead with a 1-13/16" diameter bore is 0 to +25 microns. But if the tolerance is 0 microns, the cutterhead will be difficult to install on the moulder's spindle shaft, and if the tolerance is 25 microns, the tooling can be too loose on the shaft. Weinig avoids these problems by more precisely controlling the bore diameter tolerance at +5 to +20 microns.



Bore Concentricity

If the cutterhead bore is not concentric to the cutterhead body, product dimensional accuracy and surface finish suffer. Weinig hones the bore with two passes (not just one) for near perfect accuracy.



End Parallelism

A large tolerance in cutterhead end parallelism can cause out of balance running, less spindle strength and reduced product accuracy.

The Highest Quality Materials

Tools rotating at high speed are subject to enormous deformation stresses. That's why Weinig cutterheads are manufactured from heat-stabilized steel and then tested at twice the rated RPM. We make sure all components are manufactured from appropriate materials and meet our exceptional quality standards.