

Brilliant balancing ideas

for better tools, longer wheel life, and more durable spindles



Smart solutions for balancing: Clamping nuts with movable weights and the Equi'Z balancing machine

Call: +1 (540) 940-5977
Email: info@toolroom.solutions
Web: www.toolroom.solutions

Even if you already make beautiful tools without doing it, balancing your grinding wheels will make an *immediate improvement* in your *surface finish* and *edge quality*. That means happier customers and higher sales. Plus your *throughput* will be *higher* and wheels and spindles will last longer, reducing your costs. Balancing your finished tools will improve their performance in high speed machining, again making your customers happy. We've got *two* very bright ideas for balancing:

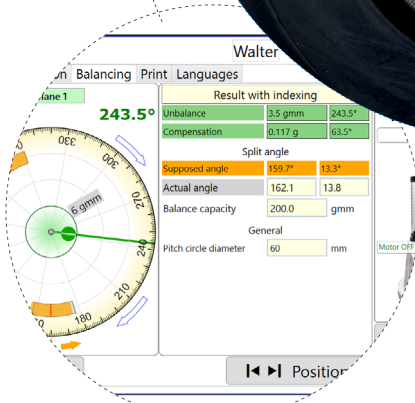
Idea #1: The Equi'Z balancing machine

- **Accurate:** Easily detects an imbalance of less than 0.1g and compensates for any imbalance by >95%, achieving qualities of <G2.5
- **Economical:** Much less than competing systems of comparable capability
- **Easy!** Requires no programming knowledge to operate. Automatically positions the spindle while a laser indicates where to make the adjustment



More on the EQUI'Z

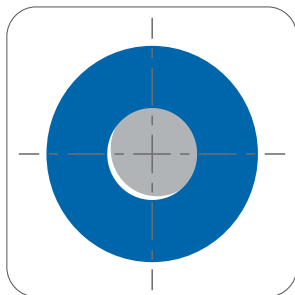
- **Self-sufficient:** Self-calibrating. Works on any stable bench.
- **Light** enough to move without special equipment
- **Versatile:**
 - Offers 4 different corrective methods: adjustable rings/weights, fixed position compensation, material removal, & material addition
 - Displays results as DIN quality grade, unbalance in grams, or unbalance in gmm with a resolution of 0.1 gmm!
 - Handles a variety wheel sets and tool holders (e.g. SK40, HSK 40F, HSK 50F, etc)
 - Change spindles in seconds



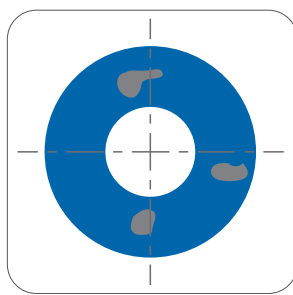
A large screen and graphical menus also help make the Equi'Z easy to operate

Imbalance factors:

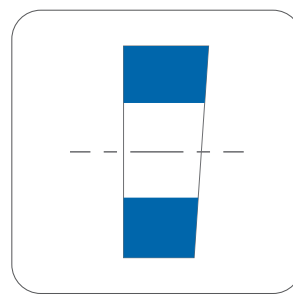
Tolerance of the grinding wheel bore



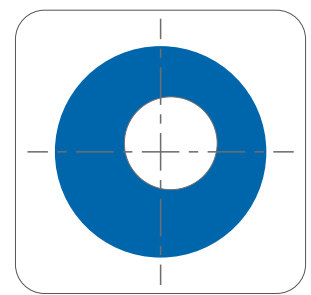
Homogeneity of the grinding wheel



Parallelism of the grinding wheel



Concentricity of the grinding wheel



Imbalance consequences:

Reduced surface quality (chatter)

Reduced dimensional accuracy of the workpiece and increased dressing costs

High grinding wheel wear (short service life)

Spindle wear (unnecessary repairs and machine downtime)



Here's a clever way to add balancing capability to all your wheel sets

Many standard wheel adapters offer no mechanism for balancing, and many which *do* have such a mechanism are a hassle to use. We offer an excellent solution for virtually all adapters:

Clamping nuts with movable weights

- **Simple:** Just replace the existing clamping nut
- **Easy:** Your Equi'Z or comparable balancing machine will tell you where to position the precision ground weights. They slide easily in the track and are secured with a standard hex wrench
- **Effective:** Depending on the wheel arbor you can add up to 200 gmm
- **Versatile:** Balancing nuts are available for most major tool grinders, including Walter, ANCA, Rollomatic, Reinecker, Vollmer, Saacke, EWAG, & Schneeberger. See the next page for examples.



We offer balancing clamping nuts for most major tool grinders for both 20 mm and 1¼ inch shanks



We also offer adjustable ring balancing systems

Choose from the most commonly needed balancing nuts & associated hardware

For Walter, Vollmer, Rollomatic w/ 1¼" shaft	
Item No.	Description
350020022	Clamping nut with balancing option ø60 x 9 M32x1.5 (without weights)
350020023	Balancing weight pair for clamping nut 350020022, ø60 mm, 150 gmm
350040030	Clamping nut wrench PC 39 for 350020022

For ANCA w/ 1¼" shaft	
Item No.	Description
350020026	Clamping nut with balancing option ø47 x 12 M31.5x1.5 (w/o weights)
350020021	Balancing weight pair for clamping nut 350020026, ø50 mm, 100 gmm
350040030	Clamping nut wrench TK 39 for 350020026

For Deckel/ISOG, EWAG, Haas, Reinecker, Saacke, Schneeberger, Schütte, TTB, & Walter w/20 mm shaft & 35 mm ring set	
Item No.	Description
350020080	Clamping nut with balancing option ø35 x 40 x 8 M20x1.0 (w/o weights)
350020081	Balancing weight pair for clamping nut 350020080, ø35 mm, 40gmm
350040040	Clamping nut wrench PC 29 for 350020080

For ANCA, Haas, Reinecker, Saacke, Schneeberger, Schütte, Strausak, & Walter w/20 mm shaft & 50 mm ring set	
Item No.	Description
350020020	Clamping nut with balancing option ø50 x 8.5 M20x1.0 (without weights)
350020021	Balancing weight pair for clamping nut 350020020, ø50 mm, 100 gmm
350040010	Clamping nut wrench TK 27 for 350020020



A "universal assembly device" and clamping nut wrench. The assembly device grips a wide variety of wheel adapters, giving you a handy station to build wheel sets for multiple machines

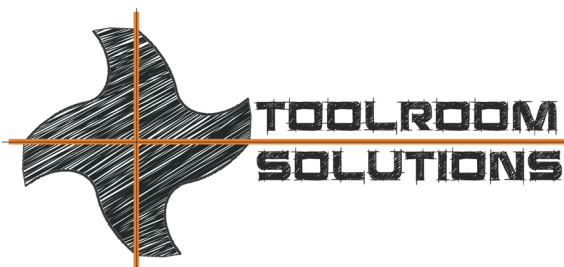
Don't see what you need? We may still have it and if it's not in stock delivery can be as fast as one week. Give us a call!

More data on the benefits of balancing

Centrifugal forces increase quadratically with changes in speed. So doubling the operating speed quadruples the force acting on the bearing!

In one real world test, we ground 30 tools on a WALTER machine with an unbalanced wheel set (quality grade G25) and another 30 tools with a balanced set (quality grade G2). Spindle load decreased by 30% and wheel wear became almost unmeasurable.

Using conservative figures based on experience, balancing wheels and tools will also boost metal removal rates by 10%. This alone will pay for the EquiZ within a year, even assuming a machine rate of only \$115/hour and one shift per day.



Call: +1 (540) 940-5977
Email: info@toolroom.solutions
Web: www.toolroom.solutions

BECAUSE IT WON'T GRIND ITSELF