

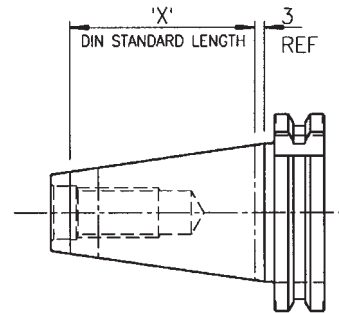
PRECISION TOOLHOLDERS

General Product Specifications

1 - Taper Accuracy

For all 7/24 tapers ground at Coventry Toolholders, sizes are controlled to within the AT3 Taper Tolerance specification. The AT3 specification for the popular 40 and 50 size tapers is:-

Taper	Rate of Taper	Measuring Length	Roundness max error	Straightness	Surface Error
40 Series	000/003	59	.001	.001	Rz 2.5
50 Series	000/004	92	.002	.001	Rz 2.5



All dimensions in 'mm'

Coventry Toolholders guarantee compliance with the above standards by :

All drawing information issued to manufacturing is specified to the above standard.

Tapers are ground using CNC grinding machines and 100% inspected during the manufacturing process.

The use of Marposs electronic gauging systems, with 0.0002 mm readout capability, to check the three critical features - size, straightness and roundness of each taper. This enables Coventry Toolholders to guarantee taper accuracy within AT3 standards.

Regular calibration of process gauges to a master calibrated standard held in a standards room. The master gauge is traceable to national standards.

2 - Toolholder Material

Coventry Toolholders source a commercially available alloyed case hardening steel from UK based BSI approved stockholders. This is used on the majority of standard toolholders and guarantees a minimum tensile core strength of $\leq 800\text{N/mm}$. Higher-grade steels are used for HSK tapers, hydraulic toolholders and high-speed applications allowing core strengths of up to $\leq 1000\text{N/mm}$.

For the majority of Toolholding applications, Coventry Toolholders heat treatment specifications ensure that 58 - 60 HRC minimum, with a minimum case depth of 0.6 mm is achieved when using the alloyed case hardening steel. Samples are tested at regular intervals to ensure these standards are met.

Where the toolholder section thickness and surface hardness is critical (e.g. HSK 32 and 40 tapers) special steel and heat treatment processes are used to ensure optimum balance between core strength and surface hardness.

3 - Balancing

Coventry Toolholders can offer BALANCED BY DESIGN and DYNAMICALLY BALANCED toolholders to suit customers specifications.

A range of standard toolholders are available BALANCED BY DESIGN to reduce the out of balance effect of standard features, such as vee flange orientation notches and end mill locking screws.

Please discuss your balancing requirements with our engineers to ensure optimum performance for your machining process.

4 - Concentricity

Detailed below are some typical Coventry Toolholders concentricity standards. Coventry Toolholders work within these standards to ensure all toolholders meet or exceed these specifications.

Item	Toolholder Type	Coventry Toolholders Standard (Dimensions in mm)
1	Weldon Type	Max TIR 0.008 at nose
2	ER Collet Chuck Body	Max TIR 0.0025, internal to external Taper
3	ER Collet Chuck with Collet	Max TIR - 0.008 (ER11-12) - 0.010 (ER20-50) back endtaper to test bar collet
4	Jacobs drill chuck	Max TIR 0.04 (depends on drill chuck specification)
5	Combi shell mill type	Taper to spigot 0.008 max TIR taper to face 0.01 max TIR
6	Hydraulic/Heat Shrink high performance toolholder	Max TIR 0.003 at nose Max TIR 0.005 at 4 x bore diameter