



MAXXOS

The hexagonal,
super strong mandrel


HAINBUCH

YOUR CHALLENGES

- High scrap rate
- Vibrations during machining
- Process variations
- High machining forces
- Workpiece tolerances
- High torques during machining
- Inaccuracies / run-out difficulties with conventional clamping devices
- Contamination on clamping device



CHALLENGES WITH CONVENTIONAL CLAMPING TECHNOLOGY

I.D. clamping with...

... 3-jaw chuck

- 3-point clamping instead of all-round clamping
- Radial clamping instead of pull-back effect
- Large interference contour, therefore difficult accessibility during machining

... hydro-expanding clamping devices

- Long-term expensive clamping device – High repair rate
- Short stroke - disadvantage especially with automatic workpiece loading
- shock susceptible in comparison to segmented clamping bushings
- Radial clamping instead of pull-back effect

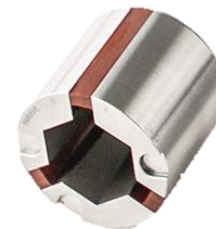
... conventionally slotted sleeves

- Short service life / susceptible to wear
- No uniform contact with the workpiece
- susceptible to contamination

MAXXOS – I.D. clamping for maximum performance

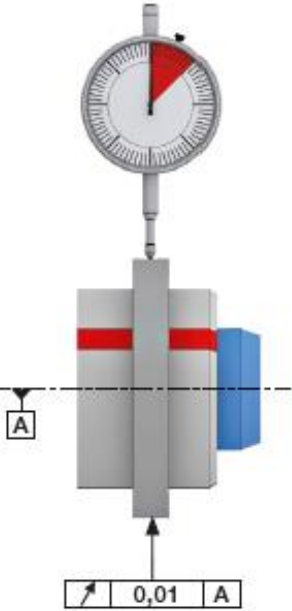
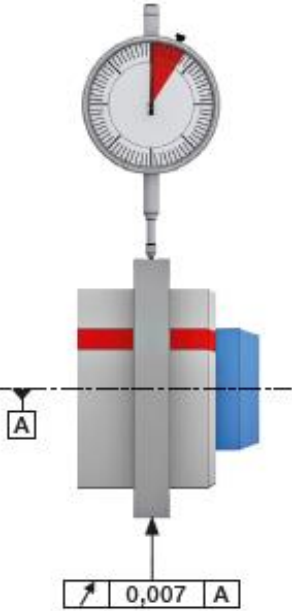
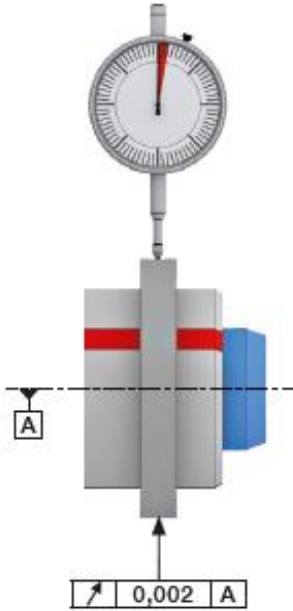
- Ideal for large-scale production
- For challenging and reliable production
- Large clamping range for automatic loading
- Pull-back effect against workpiece end-stop
- Maximum transmission forces due to hexagonal pyramid shape
- Reduction in scrap rate

- Position-orientated segmented clamping bushing [also for self-turning]
- Prepared for air sensing control



OUR SOLUTION

- Possible Concentricity $\leq 0,01$ mm / as premium version up to $\leq 0,002$ mm

			
Variant	Standard	Premium	Premium paired*
Concentricity	$\leq 10 \mu\text{m}$	$\leq 7 \mu\text{m}$	$\leq 2 \mu\text{m}$
Description	Measured on a ground concentricity control ring according to HAINBUCH standard		
<p>* Premium paired: The segmented clamping bushing is paired with your MAXXOS mandrel in our production and in this process gets a maximum concentric precision of $\leq 2 \mu\text{m}$.</p>			

Comparison of the tapered MANDO mandrel with the hexagonal pyramid shape of the MAXXOS

MANDO T211



- Higher bending rigidity [up to 60 %]
- Higher transferable torque [up to 150%]
- Significantly higher holding forces [100%] due to form fitting connection between mandrel and segmented clamping bushing
- Higher cutting performance with less vibration and therefore less tool wear
- Improved contamination resistance for automated turning and milling operations

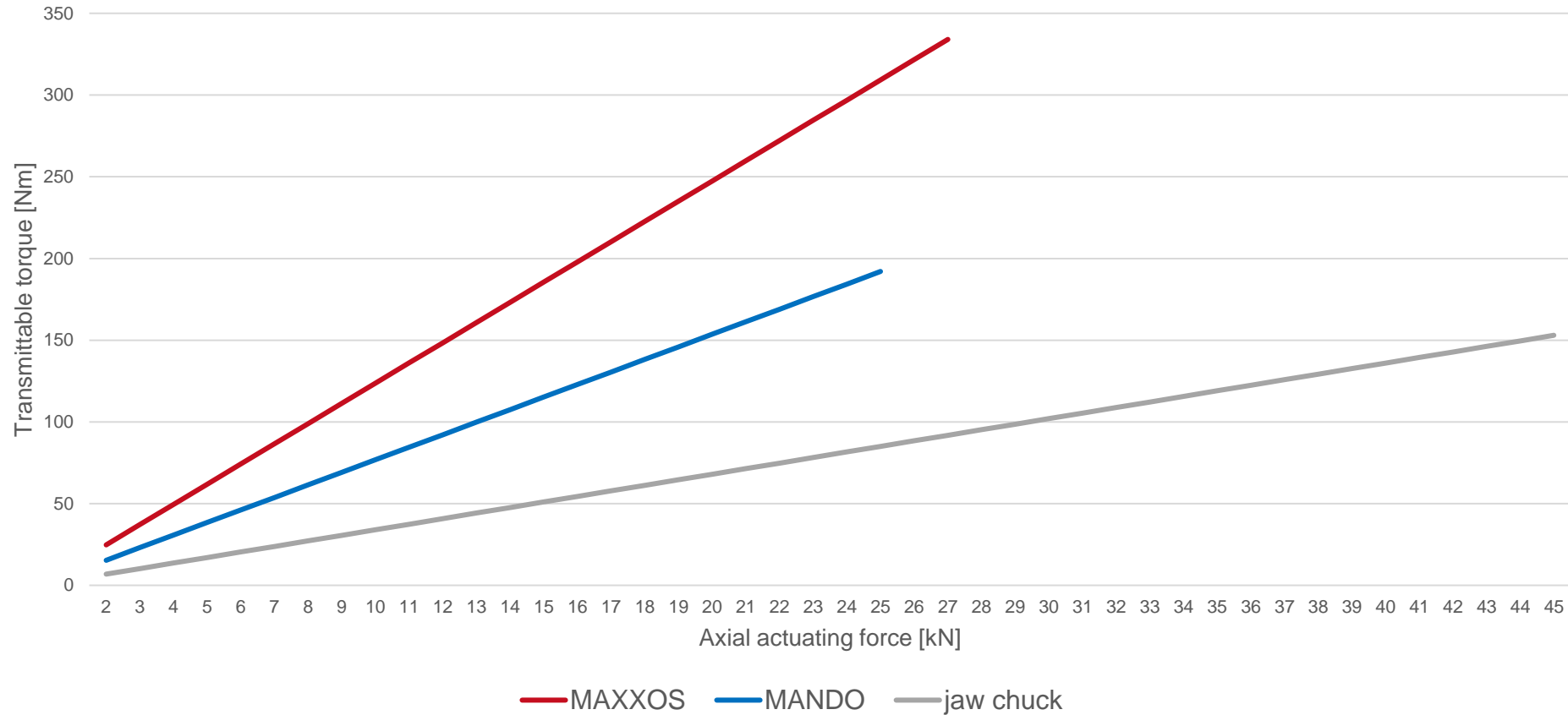
MAXXOS T211



MAXXOS: THE GOLIATH FOR I.D. CLAMPING

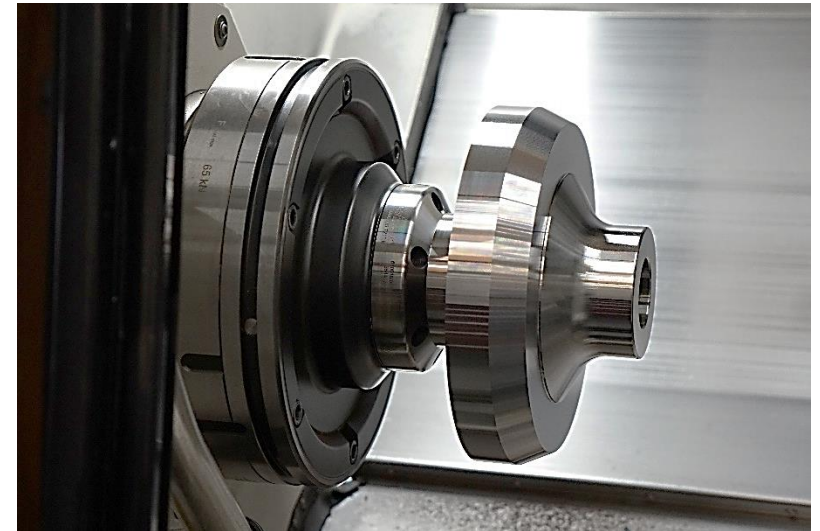
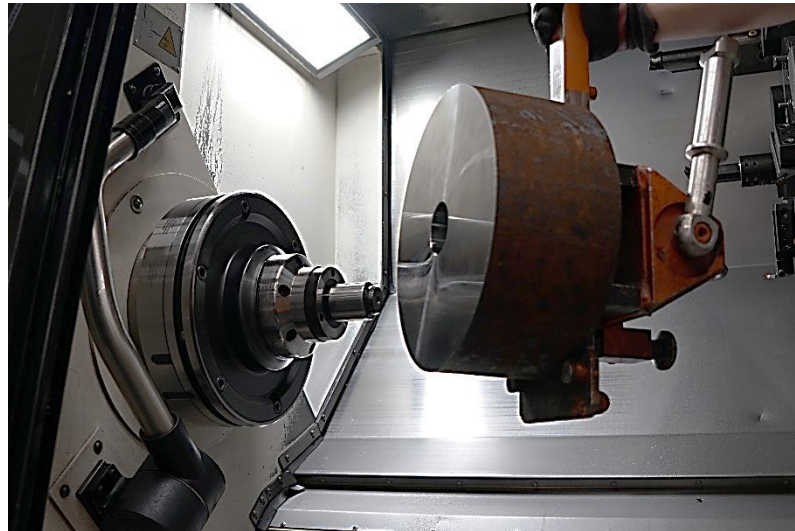
MAXXOS vs. MANDO vs. Jaw chuck

Tested at one of our engineering partners



General conditions	
workpiece	tube
Clamping-Ø	68 mm
Workpiece A.D.	130 mm
Workpiece length	170 mm
Workpiece material	Annealed steel Rm 428 N / mm ² C < 0,25 %
Clamping length jaw chuck	~ 35 mm
Clamping length mandrel	45 mm
Feed rate vc	240 m / min

CASE EXAMPLES

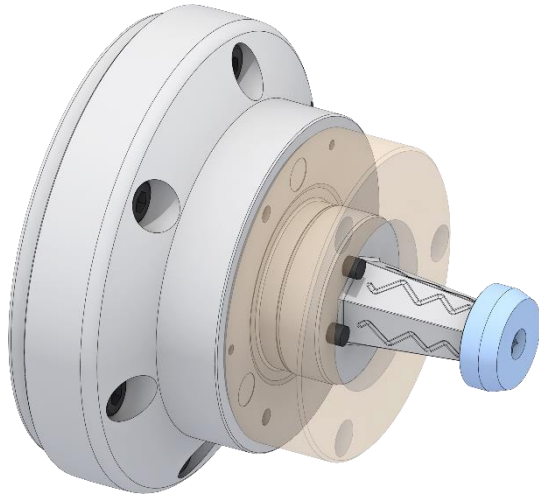


CASE EXAMPLES



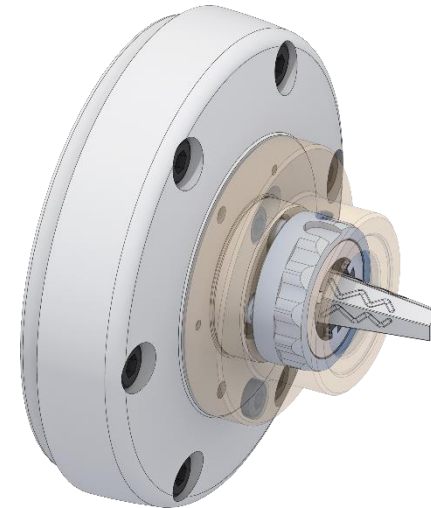
MAXXOS T211

- Pull-back with draw bolt
- Workpiece stabilization through pull-back effect against workpiece end-stop
- More favourable segmented clamping bushings compared to MAXXOS T212



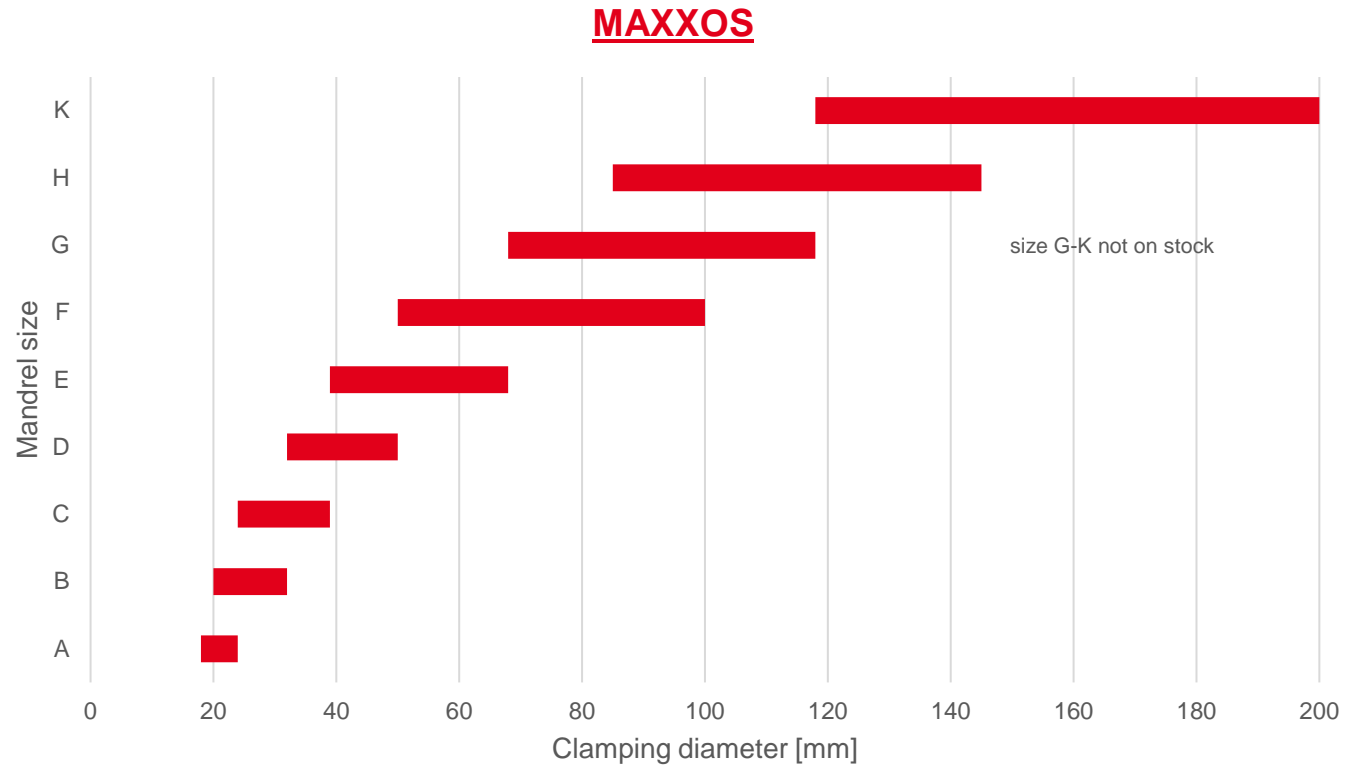
MAXXOS T212 [Coming soon...]

- Pull-back without draw bolt
- Workpiece stabilization through pull-back effect against workpiece end-stop
- Innovative bayonet connection of the segmented clamping bushing with the coupling shell
- No interfering contour by draw bolt



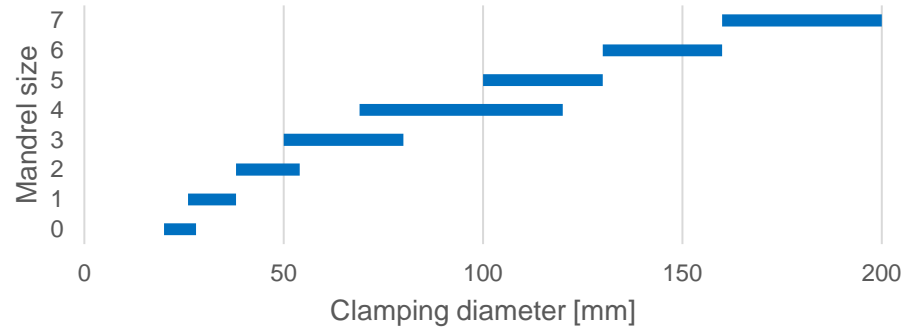
AVAILABLE SIZES

Size	Clamping range	Stock availability
A	18 – 24	x
B	20 – 32	x
C	24 – 39	x
D	32 – 50	x
E	39 – 68	x
F	50 – 100	x
G	68 – 118	
H	85 – 145	
K	118 – 200	

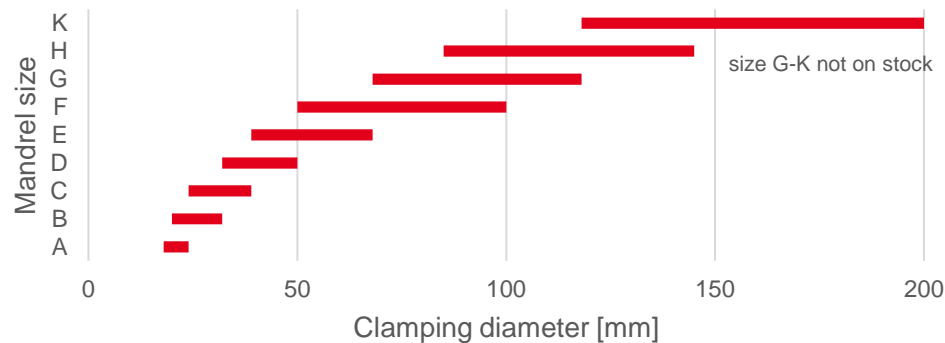


AVAILABLE SIZES



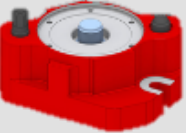

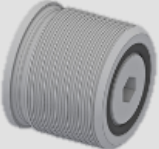
MANDO



MAXXOS



- Optimised overlap of clamping ranges
- More flexible choice of size
 - With the smaller size, additional workpieces with a smaller diameter can be clamped
 - With the larger size, greater process reliability can be achieved through increased rigidity and holding force
- Significant increase of torque transfer
- Reduced interference contour

	Product category	Description
	SE segmented clamping bushings	Serves as a clamping element on the mandrel and achieves maximum concentricity due to form-fit on the clamping pyramid.
	Flanges & drawtube adapter	Connection between the clamping device and the machine spindle. Enables flexible use of the mandrel on different machines.
	Stationary clamping devices with mandrel actuating units	For the stationary use of mandrels e.g. for milling and 5-sided machining
	End-stop blanks	Prefabricated blanks that can be customized to the diameter and length of your workpiece.
	LAK-Adapter	Adapter for air sensing control as a location of the air lance.

Please find more information about our products at:

www.hainbuch.com

As well as in our webshop at:

www.shop.hainbuch.com