KURODA

CHALLENGE & CREATE

Hydraulic Expansion Clamping Tool

Hydraulic Tool

Available for forming & Inspection

by high clamping precision !

Run-out **1μm**

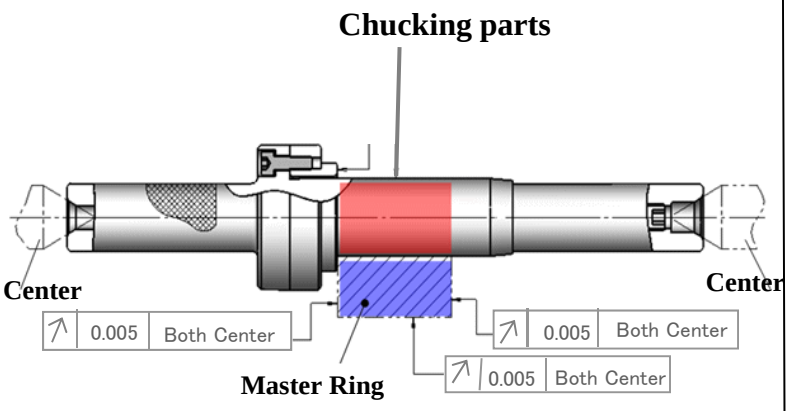
- High accurate run-out
- High accurate repetition
- High accurate clamping by one screw operation
- Automation is easily applicable

Main Specification

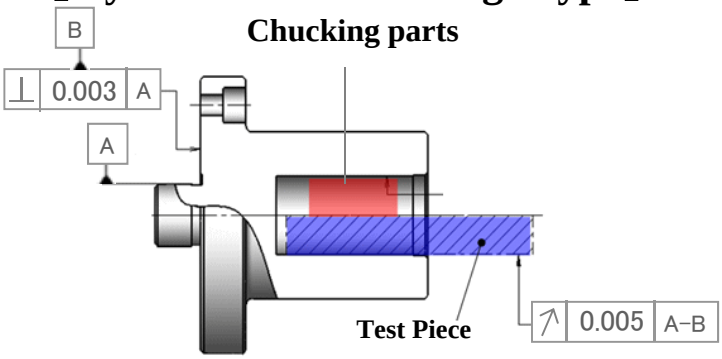
Run-out	1～5μm T. I. R. (for Inspection)
Expansion or Contraction	Note Diagram (back-side)
Diameter of Clamping parts	Mandrel 4～φ360 Chuck φ3～φ300
Operation Mode	Manual or Auto
Accessary	Hex. Bar spanner (for operation screw)

Application

【Hydraulic Mandrel Center Type】



【Hydraulic Chuck Flange Type】

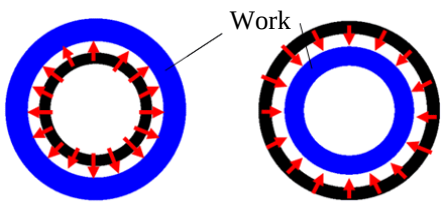


【Inspect a master ring by Hydraulic Mandrel】

【Inspect a test piece by Hydraulic Chuck】

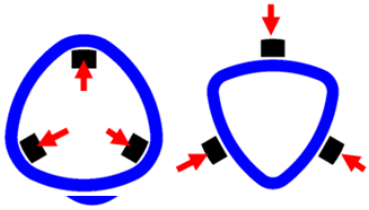
Influence to the workpiece in Clamping (Direct Clamping)

Examples



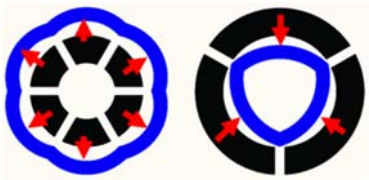
Hydraulic Mandrel／Chuck

Distortion inside a workpiece is extremely less affected when clamping, because the whole circumferential surface of Shell contacts the workpiece.
（The arc per se expands / contracts）



Scroll Chuck（Claw type）

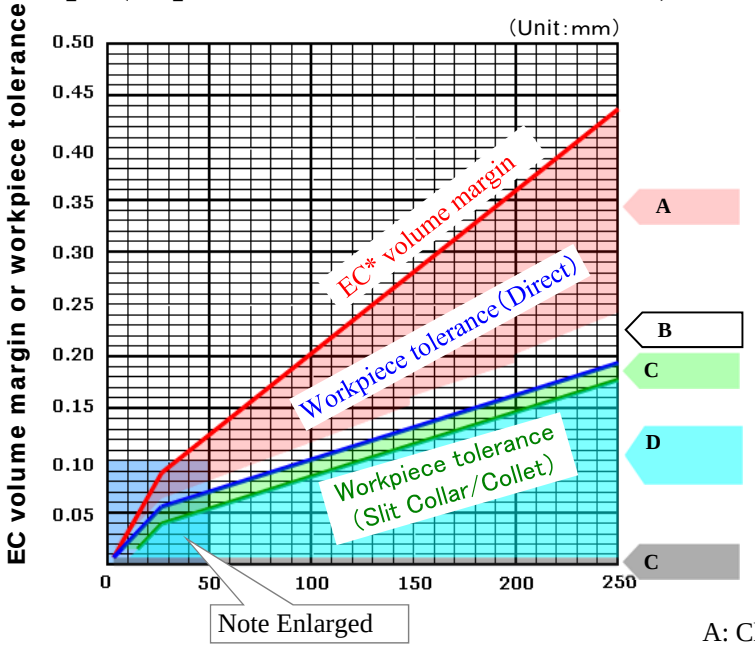
The shape of a workpiece is distorted to a triangle by clamping with some claws.

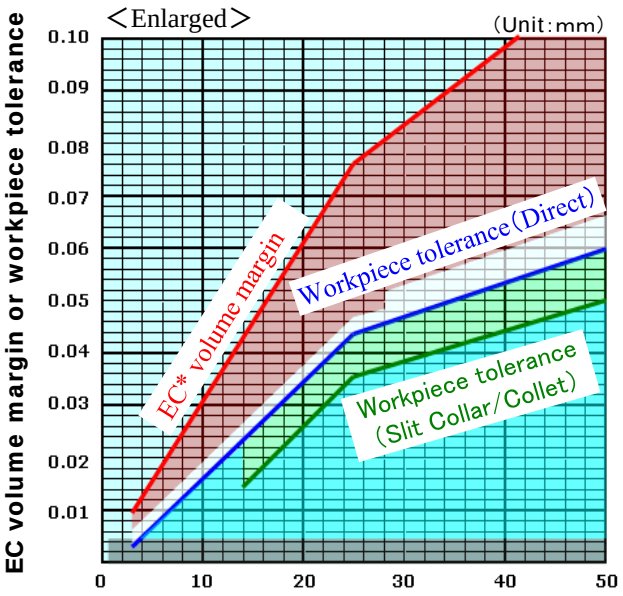


Collet Chuck

The shape of a workpiece is distorted to a flower shape by clamping with a divided ring collet.

Graph (Expansion & Contraction = EC*)





A: Clamping margin

B: Clearance

C: Manufacturing tolerance

D: Workpiece tolerance

Main application of Hydraulic tool

Application	Purpose	
Forming Process	・Machining Center ・NC Lathe ・Special／Exclusive machinery	Positioning for Workpiece（Centering） Accurate chucking Less distorted clamping Less flaw when inserting a workpiece （Compared with an arbor）
Grinding Process	・Cylindrical grinder ・Internal grinder ・Others（Surface grinder／Tool Grinder）	
Assembly	・Assembly operation ・Assembly Devices	Operation efficiency improvement Accurately repetitive Positioning （For Centering）
Inspection ・Measuring	・Center-surface plate ・Others（Gear measuring／Exclusive machines）	Accurately repetitive positioning （Special Technique is not required）

※Please refer to the operation manual in case of the use.

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