

Hydraulic Expansion Clamping Tool

Hydraulic Tool

*Available for forming & Inspection
by high clamping precision !*

Run-out **2 μ m**

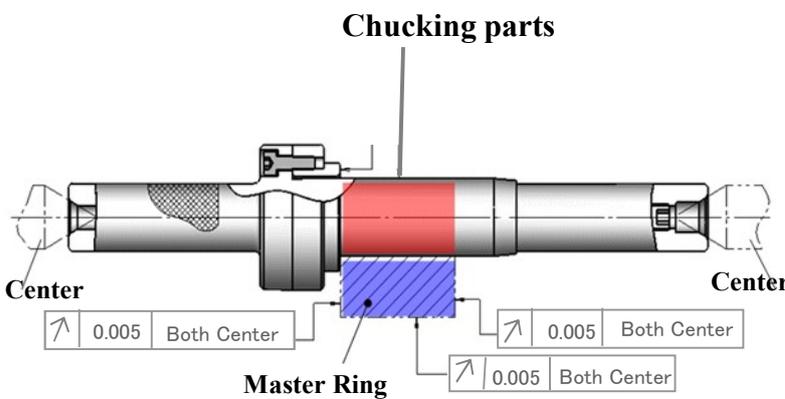
- High accurate run-out
- High accurate repetition
- High accurate clamping by one screw operation
- Automation is easily applicable

Main Specification

Run-out	Less than 2 μ m T. I. R. (for Inspection,) depends on spec
Expansion or Contraction	Note Diagram (back-side)
Diameter of Clamping parts	6 ~ ϕ 250
Operation Mode	Manual or Auto
Accessory	Hex. Bar spanner (for operation screw)

Application

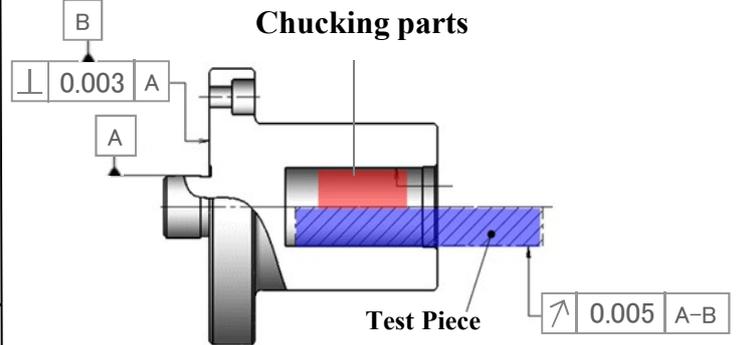
【Hydraulic Mandrel Center Type】



【Inspect a master ring by Hydraulic Mandrel】



【Hydraulic Chuck Flange Type】

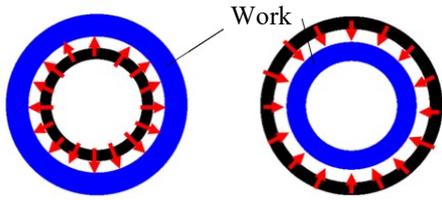


【Inspect a test piece by Hydraulic Chuck】



Influence to the workpiece in Clamping (Direct Clamping)

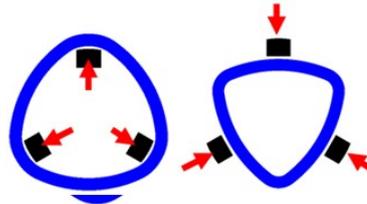
Examples



Hydraulic Mandrel/Chuck

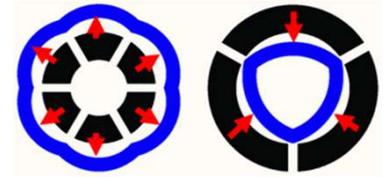
Distortion inside a workpiece is extremely less affected when clamping, because the whole circumferential surface of Shell contacts the workpiece.

(The arc per se expands / contracts)



Scroll Chuck (Claw type)

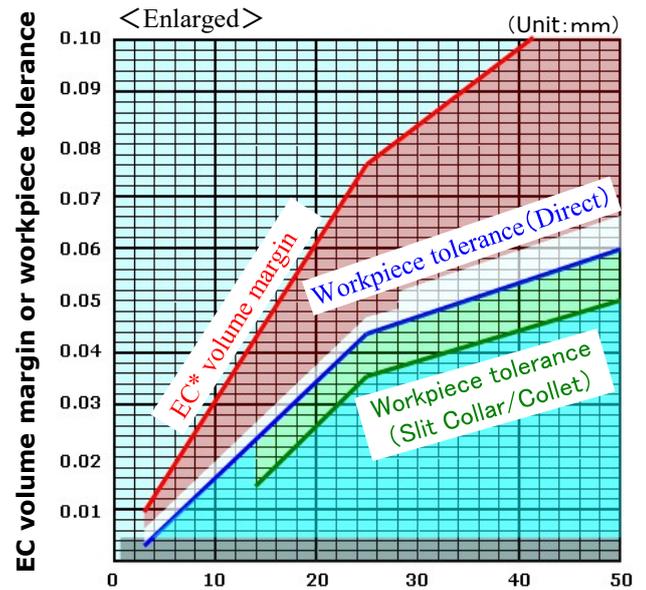
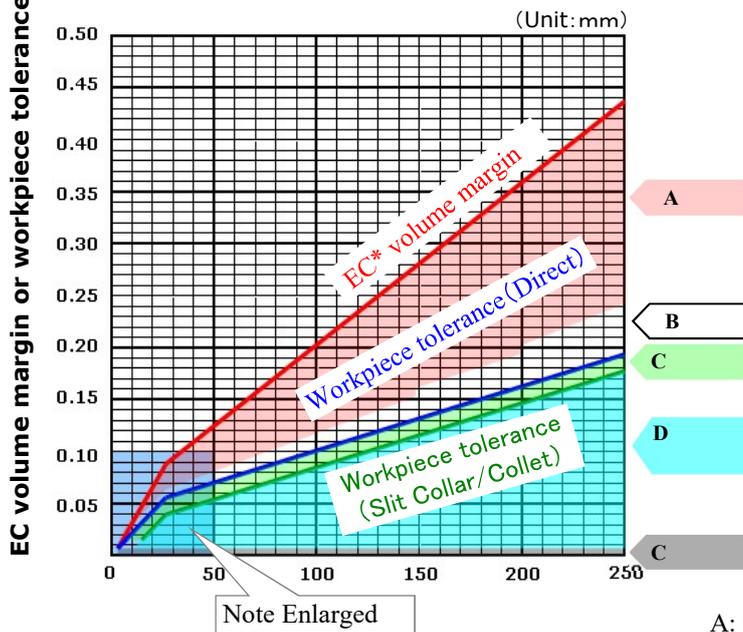
The shape of a workpiece is distorted to a triangle by clamping with some claws.



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

C: Manufacturing tolerance

B: Clearance

D: Workpiece tolerance

Main application of Hydraulic tool

Application	Purpose	
Forming Process	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ Cylindrical grinder ▪ Internal grinder ▪ Others (Surface grinder/Tool Grinder) 	
Assembly	<ul style="list-style-type: none"> ▪ Assembly operation ▪ Assembly Devices 	Operation efficiency improvement Accurately repetitive Positioning (For Centering)
Inspection - Measuring	<ul style="list-style-type: none"> ▪ 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.

KURODA
PRECISION INDUSTRIES LTD.

HEAD OFFICE :KawasakiTechCenter 20F,580-16Horikawa-cho,Saiwai-ku,Kawasaki,Kanagawa,212-8560,Japan

TEL:+81-44-555-3801 FAX:+81-44-555-1479

URL <https://www.kuroda-precision.co.jp>

E-mail:tlg_j@kuroda-precision.co.jp