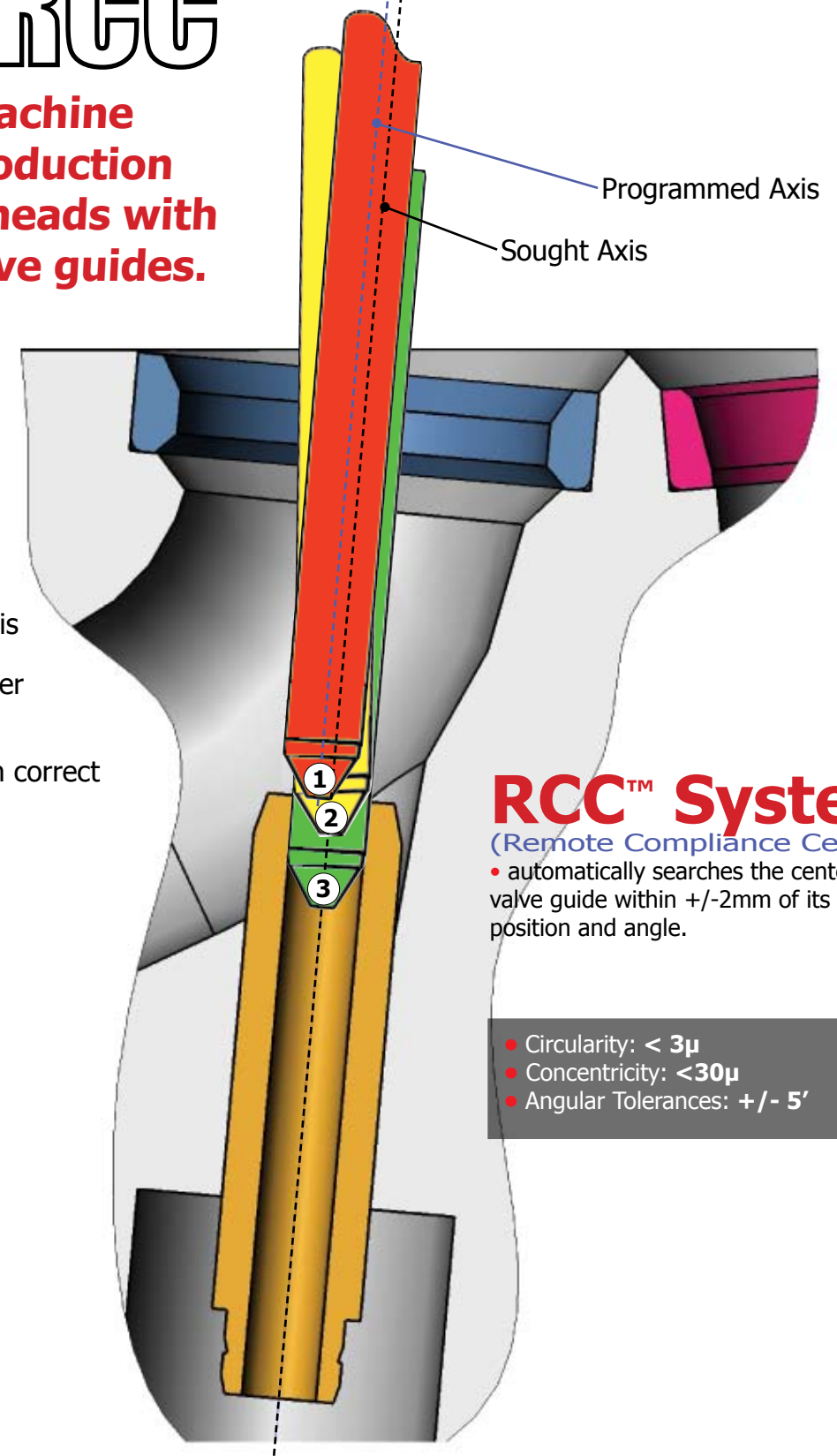


NC6-RCC™

The ideal machine for mass production of cylinder heads with finished valve guides.



- 1 Programmed axis
- 2 Inclined axis after insertion
- 3 Compliance with correct valve guide axis

RCC™ System

(Remote Compliance Center)
 • automatically searches the center of the valve guide within +/-2mm of its theoretical position and angle.

- Circularity: < 3μ
- Concentricity: <30μ
- Angular Tolerances: +/- 5'



NC6-RCC™
 Fixed-Turning® Process



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Ref:NC6-RCC-1008-EN

NC6-RCC™ - VALVE SEAT MACHINING BY INTERPOLATION OF AXES

Full Guarding

- Two automatic sliding doors are controlled separately by the program, allowing to work on either side of the machine with a **center divider** to load and/or unload one side of the equipment while a cylinder head is being machined on the other.

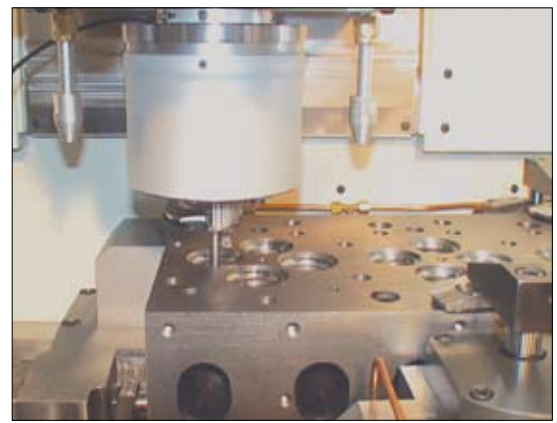


Production valve seat machining by interpolation of axes with patented RCC™ System (Remote Compliance Center)

- automatically searches the center of the valve guide within +/-2mm of its theoretical position and angle.

The ideal machine for mass production of cylinder heads with finished valve guides.

- completely automatic valve seat machining.
- perfect valve seat circularity regardless of material hardness.
- simple programming of any valve seat profile.
- rapid adjustment of all the parameters involved (angles, segment length...).
- automatic angular positioning of the spindle.
- multiple machining strategies available.



All numerically controlled NEWEN seat and guide machines are built on NEWEN's **FIXED-TURNING®** technology using a rotating single point cutter, whose travel results from the interpolation of 2 axes. This new technology allows to machine complex shapes (concave, convex, radii etc...) while reducing the cutting forces several hundreds of times in comparison to traditional machining methods using form tools.

Spindle and Machining Head

- The NC6-RCC™ machining head is an integral part of the spindle. No tool change is required between a roughing pass and a finishing pass, or from an intake to an exhaust valve seat.
- The wide travel of the tool holder carriage allows to machine an entire range of cylinder heads with a diameter difference within 30mm (1.18") between the smallest and the largest valve seats. The standard spindle allows valve seat machining diameters ranging from 13 to 90mm (.512"-3.54").

Standard equipment features NEWEN numerical control

Siemens, Fanuc or any other control available as an option.

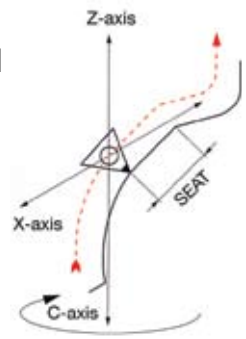


Powerful NEWEN FIXED-TURNING® Software and valve seat design capabilities. The most significant advance in operator-friendly control and the only software designed specifically for valve seat machining in the industry today.

- Off-line programming capable.

Rotating Single Point Cutters with Travel by Interpolation - NEWEN FIXED-TURNING®

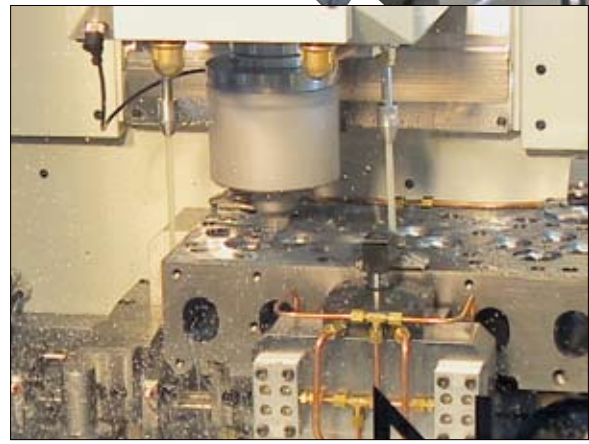
Following the example of a lathe, the NEWEN NC6-RCC™ machining spindle allows chips removal on complex and large profiles. The single point cutter allows the machining of both radii and line segments. The standard tools made of CBN, Cermets, and other modern materials, yield very high machining precisions in the hardest materials. **The specificity of the NC6-RCC™ lies in the fact that the part is stationary and the tool is the only turning element.** Therefore, very heavy and/or bulky pieces, as well as fragile parts, can be machined without distortion.



Coolant and Filtration System

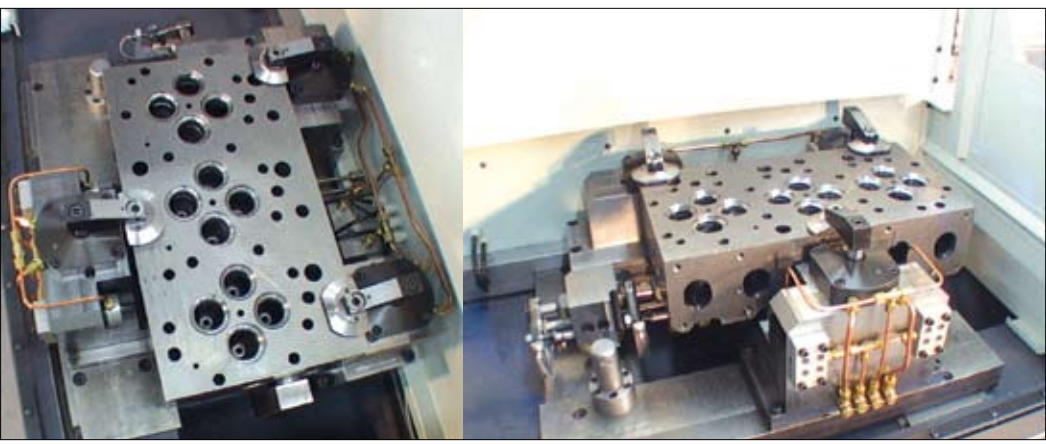
- automatic valve guide rinsing and coolant for valve guide reaming.

- Circularity: < 3μ
- Concentricity: < 30μ
- Angular Tolerances: +/- 5'
- Consistency, reliability
- Productivity (unmanned 24 hrs / day)



Optional NC C-axis

- machine can be equipped with 2 NC C-axes for dual station configuration and automatic machining of cylinder heads with multi-angle valve guide implantation.



Cylinder Heads Positioning

- NEWEN®'s R&D can propose simple yet robust custom cylinder head clamping systems that do not require the use of pallets or other costly systems.