Technical Data

Models 7794U-1NC and 7794U-2NC

Workpiece				
Length:min. – max.	260	mm	700	mm
Swing diameter: max.			220	mm
Bearing width: min. – max.	18	mm	70	mm
Oil seal depth: max.			12,5	mm
Operation				
Cutting speed - turning			ca. 170	m/min
Roller burnishing speed			ca. 45	m/min
Machine				
Machine dimensions including electrical panel and hydraulic unit (L/B/H) ca.:			4 x 3 x 2,5	m
Machine weight			ca. 5.500	kg
Center height			1.250	mm
Connecting data				
Total power rating			12	kVA
Air pressure connecting size			½	Zoll
Required air pressure: min.			0,6	MPa
Air consumption			ca. 10	m^3/h

Type 7794U-2NC

The 7794U-2NC is equipped with an additional NC longitudinal slide for the following processes:

- Fine turning of the flange face
- Fine turning of the flange outside diameter
- Fine turning of the flange end
- Undercut the flange end
- Fine turning of post dia meter

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Hegenscheidt MFD

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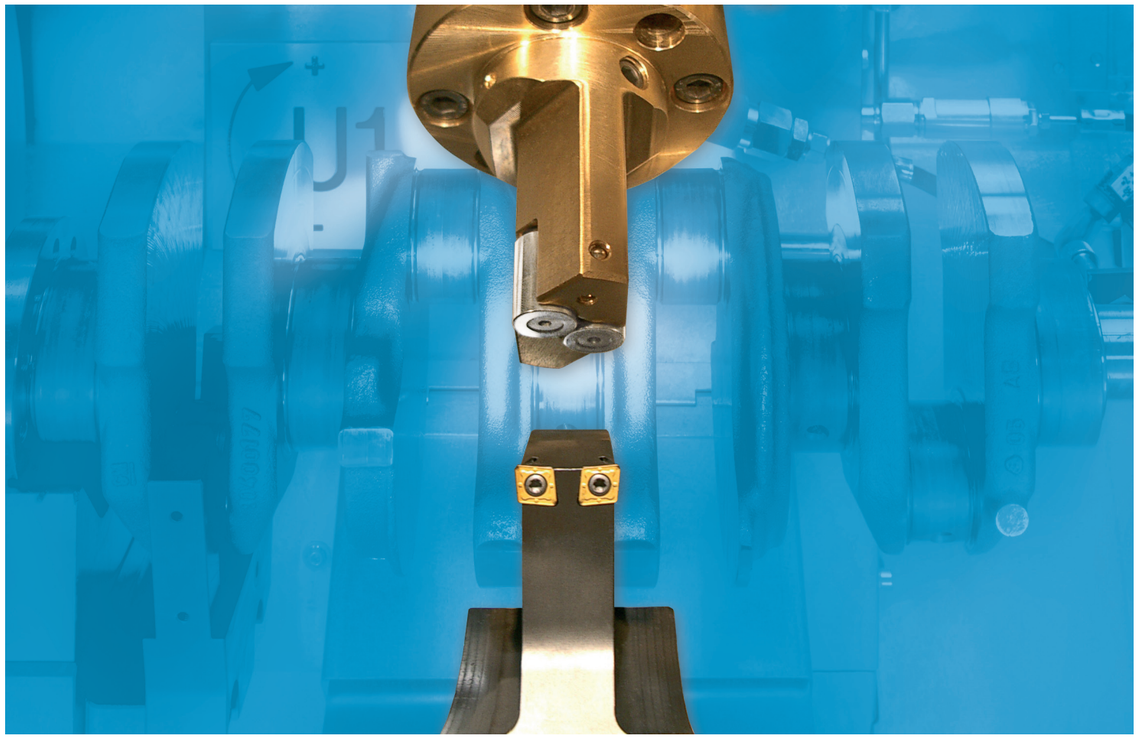
GP057EN HM-PC 4.05 Technical data subject to alterations

Universal Fine Turning & Roller Burnishing Machine for Crankshaft Production

Type 7794



For serial processing of crankshaft thrust faces and flange faces

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High Accuracy by Fine Turning

Process description

The model 7794U-1NC is designed for the automatic fine turning and roller burnishing of crankshaft thrust faces.
The fine turning operation provides high accuracy and improved parallelism of the thrust faces.
The integrated roller burnishing process provides superior surface finish with a high bearing ratio.
The machine design ensures a short machining cycle and superior tool life for both the turning and roller burnishing tools.
With an additional NC controlled tool slide, the model 7794U-2NC is capable of fine turning the flange face, post end, oil seal and reluctor seat.
Finishing the thrust face and flange face in a single set up results in excellent axial positioning capability.
The ability of this machine to manufacture all of these features in one set-up eliminates the necessity for additional operations.

Process

The crankshaft is loaded and unloaded through a gantry door by means of a gantry loader and positioned onto part locators. The crankshaft is then hydraulically clamped into position between floating quill centers.
The electronically controlled measuring probe references both pre-processed thrust faces. The reference coordinates are then transferred to the NC controlled machining slides and both thrust faces are machined consecutively.
If equipped with a second NC slide (model 7794U-2NC) the machine is capable of simultaneously processing the flange face, post end, oil seal and reluctor seat. After fine turning, the thrust faces are again electronically probed and if necessary, positional corrections made prior to the burnishing process. The hydraulic quill clamping is released prior to the burnishing operation. The roller-burnishing unit is then moved into position.
The roller burnishing process improves the bearing capability of the surface of the oil seals and improves the surface roughness to R < 0,4µm.

Machine Design

The machine and its accessories are packaged into a compact unit. This compact machine package simplifies transportation and installation.Tailstock, machine slides, the burn-ishing unit, the lateral turning slide supports and the measurement probing system are all mounted to a fabricated steel frame construction. The ergonomically designed operator panel is designed to pivot to suit the operator.

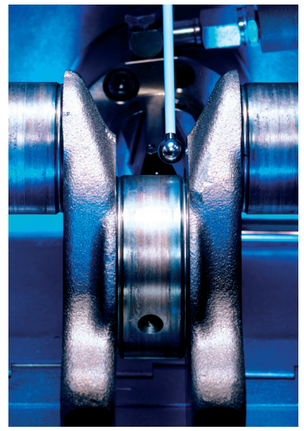
model 7794U-1NC

Excellent Surface Finish by Roller Burnishing

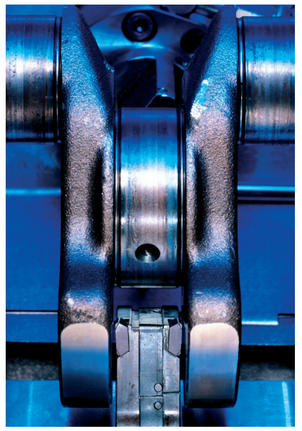
System Advantages

The model 7794U series of machines offer the following features:

- Fine turning and roller finishing replaces the conventional grin ding and polishing processes
- Excellent surface finish
- Increases the bearing surface (without aggressive peaks and valleys)
- Improvement of micro-hardness.



Fine turning tool



Measuring of the thrust bearing width with a measuring probe

Economic Advantages

The Hegenscheidt-MFD model 7794 innovative fine turning and roller burnishing machine offers the following advantages for the crankshaft process.

- Dry machining
- Turning of various materials
- Superior tool life
- High machine utilization
- Short cycle times
- High production reliability
- Low process and tooling cost
- Low maintenance cost
- Low production cost
- Low energy consumption
- The capability to process thrust faces and flange faces in one operation eliminating the necessity for an additional process step.