Rotor Grinding Machines

RNS

KAPP

Rotor Grinding Machines RNS

Application Range

Form grinding of profile shapes of screw type compressor rotors, rotary pistons, screw pump spindles and the like.

Working Range

	RNS 51	RNS 55	RNS 57	RNS 58
Profile outside dia.				
approx. mm	160	320	320	320
in	6.3	12.6	12.6	12.6
Profile length				
approx. mm	250	600	700	800
in	9.8	23.6	27.5	31.5
Profile width				
approx. mm	80	160	160	160
in	3.15	6.3	6.3	6.3
Profile height				
mm	30	70	70	70
in	1.2	2.75	2.75	2.75
Over-all workpiece length				
mm	600	1000	1500	1600
in	23.6	39.4	59.0	65.0

Tool Concept

Non-dressable CBN profile grinding wheels consisting of a hardened and precision ground steel base body with a single layer of CBN galvanically applied to the wheel form.

CNC Axes

X Feed motion of grinding support in direction of the workpiece axis

Y Infeed motion of work slide radially to the tool

Z Shift motion of grinding head in direction of the tool axis

A Index drive of work spindle

B Swivel motion of grinding head for setting the helix angle

Grinding Method

Up to a certain rotor profile size, the machine's grinding head accommodates two exchangeable grinding spindles. Each spindle can be shifted into grinding position via the Z-axis.Therefore, when grinding rotor profiles, the stock removal can be divided into rough and finish grinding.

Rotor Measuring Technology

A touch probe is mounted on the grinding head next to the grinding spindle. Together with Kapp's advanced D 300 machine control, the touch probe is integrated into the automatic cycle of the machine in order to ensure a constant rotor geometry. Specifically, this measuring technology has the following functions:

1. Precise alignment of large profiles, which are rough and finish ground in two cycles.
2. Positioning the machine axes and compensating for thermal effects on the machine environment.
3. Controlling the grinding of precise root and outer diameters.
4. Profile grinding with consistent results according to finished rotor specifications by compensating for the CBN grain wear of the finishing wheel.

This allows for highly precise grinding of rotor profiles.

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