

TECHNICAL DATA CNC-Rotary-Grinding Machine

manufacturer	KEHREN
type	Ri 8/4-CNC
built	1998
control	SINUMERIK 840 D



working area, measurement

rotary - diameter	800 mm
grinding – diameter	800 mm
max. work piece – swing diameter	900 mm

vertical movement grinding head (z-axis)

max. vertical working stroke	900 mm
drive system	AC – feed motor
feed	0,010 – 3.000 mm/min
rapid	5.800 mm/min
position measuring system	linear scale (0,001 mm)
guidance system:	pretensioned linear rolling bearings with hardened and grinded guideways.

Cross movement of saddle (X-Achse)

drive system	AC – feed motor
feed	0,010 – 6.000 mm/min
rapid	15.000 mm/min
position measuring system	linear scale (0,001 mm)
guidance system	hydrostatic guideways, V-Flat guide

rotary table

diameter	800 mm
Drive system	AC – feed motor with worm gear
drive range	5-150 min-1
table load max.	500 kg
guidance system	hydrostatic, radial und axial tensioned

turret (B-axis)

local section	1°
swing range	+/- 95°
station times for 90° swiveling	ca. 4 sec.
drive system	AC- feed motor with worm gear
guidance system	pretensioned roller bearing
positioning	plane gear (Hirth) 1° and hydr. tensioned

grinding spindle

number of grinding spindles 2, swivel in automatically

The speed of the grinding spindle is adjustable steplessly through change of peripheral speed via CNC control. The peripheral speed is kept automatically constant.

spindle 1

reinforced design with direct drive and external taper (TSEV 120 x 400) for internal- and external cylindrical grinding.

diameter	120 mm
grinding high	300 mm
depth of immersion	250 mm
power	5,5 kW
speed	1.500-4.000 min-1
dimensions of grinding wheel	250 x 60 x 76 mm

spindle 2

reinforced design with belt transmission and external taper (TSAV 120 x 315) for surface grinding

diameter	120	mm
max. grinding height	700	mm
power	7,5	kW
speed	1.500-4.000	min-1
dimensions of grinding wheel	400 x 60 x 127	mm

dressing unit

The dressing unit is fixed on the saddle. There are different dressing tools mounted for the grinding wheel peripheral and face side.

The contact between grinding wheel and dresser is set by a sensor. Due to this fact, only very small steps of approx. 0,010 mm are needed to dress the grinding wheel.

Wheel wear and dressing amount will be automatically offset by the control. Thus, the dressing duration as well as the grinding wheel use will be essential reduced.

The dressing procedure can be initiated

- by the NC-program
- by reaching a preset spindle workload
- anytime by the operator

coolant equipment

tank volume	1.000	l
flow rate	150	l/min
pressure	2	bar

magnetic shot off valve for each grinding spindle

automatic gravity band filter unit

immersion cooling unit for temperature control of coolant

CNC-control

SINUMERIK 840 D

32-Bit-Microprocessor-CNC-continuous path control with integrated PLC.

- flat control panel with 9,5" TFT-colour screen, MMC 102 with disk 120 MB, MS-DOS 6.2/Windows 3.11 and Intel 486 SX and 4 MB RAM
- digital drive engineering
- universal Interface RS 232 C
- electronical hand wheel
- Whet- and power control unit

Extended KEHREN – application software:

- comprehensive machine specific indicate display in clear text (operation-, fault-, alert messages) - constant peripheral speed of grinding wheels
- automatical traversing the reference marks
- simple and comfortable programming through operator guidance and grinding menu supported by true color graphic for e.g.
- internal grinding
- external grinding
- surface - and – face grinding
- taper grinding
- cylinder compensation
- automatical cycles for measurement stop, intermediate dressing and for the electronical hand wheel with the job to follow up at the interrupted point.
- compensation of the grinding abrasion
- Ethernet connection

dimensions

length/width/height	6,5 x 4,0 x 3,1	m
weight	11.600	kg
operation voltage	400 V, 50 Hz	
main fuse	80 A	

Accessories, miscellaneous

hydrostatic guidance of rotary table and saddle
magnetic clamping chuck Ø 800 mm with radial pol pitches and t-nuts
magnetic clamping regulation stepless
autom. unit to reserve polarity
coolant for electric cabinet
steel cover for lower column guideway
double cover for the bed guideway
dressing unit at the bed saddle
paper band - filter
recooling equipment for coolant
grinding mist exhausting 1.200 m³/h
various accessories on grinding disc tapers, grinding disks etc.