KELLENBERGER H4000

TECHNOLOGY TO MEASURE

KELLENBERGER

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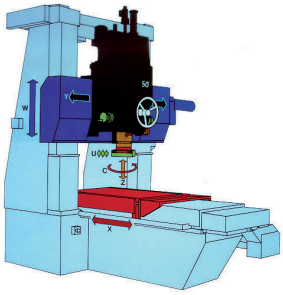
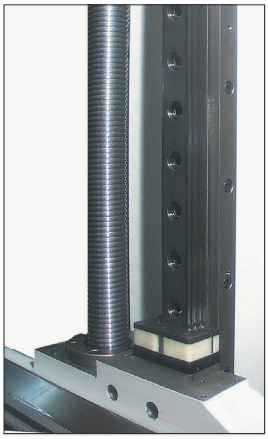
OPTIONS AND ACCESSORIES



MACHINE
- Robust, distortion-resistant module
- Consequent lay-out with regard to thermal stability



GUIDEWAYS / MEASURING SYSTEMS / AXES DRIVES
- Sliding guideways wherever required
- Linear guideways wherever possible
- Absolutely smooth stroke reversal
- Measuring systems optimally positioned with regard to the measuring technique
- Axes drives in the centre of friction

GUIDEWAYS
- Scraped sliding guideways in X and Y axis
- Oil pressurized guideway- lubricating system, to avoid stick-slip effect

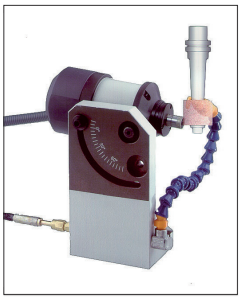
ATC automatic tool changer
ATC automatic tool changer with 12 magazine positions, permitting automatic machining with grinding wheels from Ø 3 mm to Ø 50 mm (alternatively with grinding wheels from Ø 0,3 mm to Ø 5 mm).

CONTROL SYSTEM
If you appreciate user friendly menu-programming and insist on the advantages of ISO/DIN programming, then the HAUSER product will be the right choice.

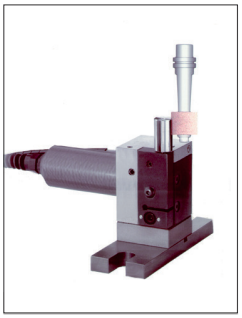
As standard, the X,Y, C, U, Z and W axes are CNC controlled. Based on the FANUC 30i-B with integrated PC, we have created HAUSER SOFTWARE CYCLES, ensuring that the control will perfectly cover all the special requirements of jig grinding.

ATC AUTOMATIC TOOL CHANGER
ATC automatic tool changer with 12 magazine positions, permitting automatic machining with grinding wheels from Ø 3 mm to Ø 50 mm (alternatively with grinding wheels from Ø 0,3 mm to Ø 5 mm).

GRINDING MOTOR
Grinding motor 70S ATC with its extremely wide range of application, from 9'000 min^{-1} to 65'000 min^{-1}. This grinding motor, and its state-of-the-art design is an absolute must for getting optimal use out of the grinding tool changer.



CBN DRESSING UNIT
CBN dressing unit with HF drive, for conditioning (dressing) vitrified and resinoid bond CBN grinding wheels.



MSS
MSS – multi-sensor-system for automatic suppression of "air grinding" and for automatic grinding wheel calibration.

MEASURING PROBE
Measuring probe for the automatic best fit of work-pieces.

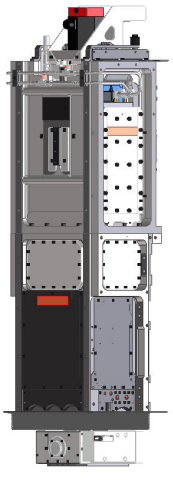
ROTARY AND ROTARY TILTING AXES
A- and A-B axes in customized version are available as additional units.

TECHNICAL SPECIFICATIONS

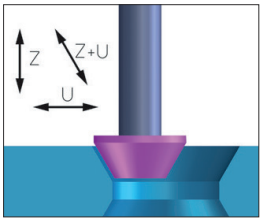
Machine type	Unit	
Work range		
Range of adjustment X, Y	mm	1'300×800
Vertical adjustment of grinding head (W)	mm	635
Clearance between table surface and U-axis carrier plate for grinding motor	mm	max. 905
Clearance between upright columns	mm	970
Diameter ground in planetary mode, with grinding wheel Ø 50 mm/70HS:		
• grinding motor 70HS in U-axis center position, automatic grinding mode	mm	max. 144
• grinding motor 70HS with extension plates, semi-automatic mode	mm	max. 360
Diameter ground in planetary mode, with grinding wheel Ø 100 mm/40HS:		
• grinding motor 40HS in U-axis center position, automatic grinding mode	mm	max. 194
• grinding motor 40HS with extension plates, semi-automatic mode	mm	max. 360
Taper grinding, included angle (divergent and convergent)	degree	max. 120
Table		
Working surface	mm	1'440 × 860
7 T-slots, width	mm	14
Permissible table load	kg	max. 800 (1'500)
Feeds		
Table and saddle X, Y, W		
• Machining speed	mm/min	0 – 2'000
• Traversing speed	mm/min	4'000
Grinding spindle Z, C, U		
Diameter of the spindle sleeve	mm	125
Basic machine is prepared for use of the following grinding spindle speeds:		
• for electric grinding motor 40HS, infinitely adjustable & programmable	min^{-1}	4'000 – 40'000
• for electric grinding motor 70HS, infinitely adjustable & programmable	min^{-1}	9'000 – 65'000
• System to allow use of grinding turbine T15	min^{-1}	up to 150'000
C-axis planetary mode:		
• Planetary mode, infinitely adjustable and programmable	min^{-1}	5 – 350
• C-axis follow-up mode, AC servo drive	min^{-1}	up to 10
Z-axis in alternating stroke mode:		
• Z-alternating stroke movement, infinitely adjustable	mm/min	Vmin. 0,500
• Z-alternating stroke movement, infinitely adjustable	mm/min	Vmax. 22'000
• Z-stroke frequency	Hz	max. 8
• Z-stroke length, infinitely adjustable	mm	0,1 up to 170
U-axis radial travel capacity (in CNC-mode)	mm	from –3 up to +47
Accuracy		
Positional uncertainty of the axes X, Y and W, corresponding to VDI/DGQ 3441	mm	0,0025

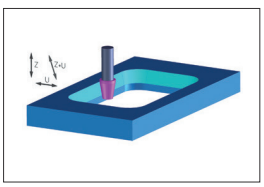
All specifications and designs are subject to alterations without notice

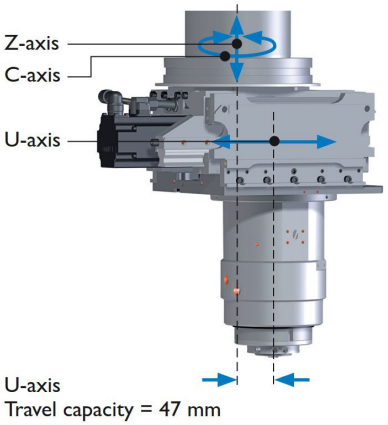
NEW HAUSER JIG GRINDING HEAD



- High-grade rigidity and stiffness leads in duplicating the stock removal capability and cuts spark out time in half.
- Significant boost in stroke speed and stroke frequency leads into reduced grinding cycle time.
- Hydrostatic guided spindle bearing system allows circular accuracies within < 0.5µm in planetary grinding.
- Unparalleled U-axis capacity up to +47 mm increases the grinding autonomy. Automated taper grinding with help of Z-U-axis interpolation.







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