

GRINDING



# HAUSER H45 & H55 TECHNOLOGY TO MEASURE

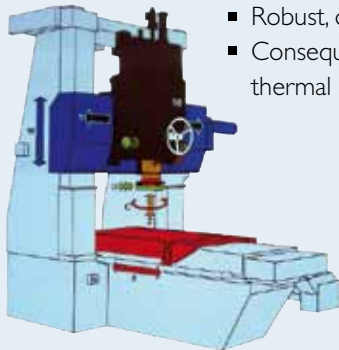


[www.kellenberger.com](http://www.kellenberger.com)

 **KELLENBERGER**

# Jig grinding machine Hauser H45-400 & H55-400

## The basic requirements for high accuracy



### 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



### 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 300i with integrated PC, we have created HAUSER SOFTWARE CYCLES, ensuring that the control will perfectly cover all the special requirements of jig grinding.



### Easy optimal expansion

#### **ATC automatic tool changer**

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



#### **Grinding motor**

Grinding motor 70S ATC with its extremely wide range of application, from 9000 min-1 to 70000 min-1. This grinding motor, and its state of the arts 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 and for the establishment of measuring protocols.



#### **Rotary and rotary tilting axes**

A- and A-B axes in customized version are available as additional units.

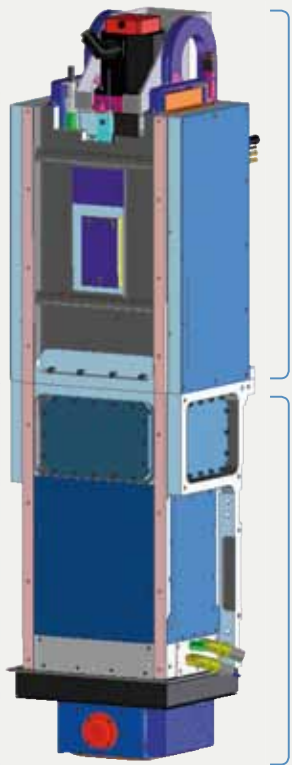


#### **New HAUSER jig grinding head**

Stands for an unparalleled variety of grinding- and milling strategies, thanks to the grinding head configuration with axis Z, C, and U.



# New Hauser jig grinding head



**Drive section**

**Precision section**

High-grade rigidity and stiffness leads in duplicating the stock removal capability and cuts in half the spark out time.

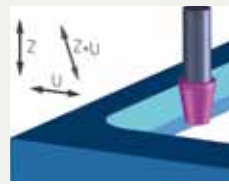
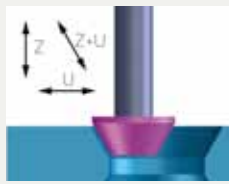
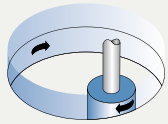
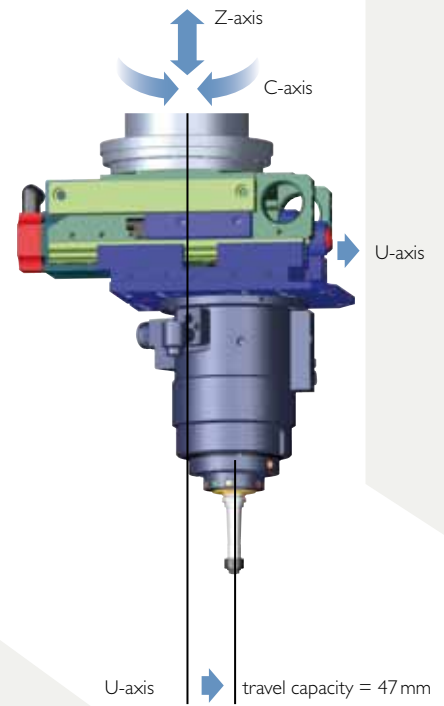
Allows the combination of grinding and hard milling.

Significant boost in stroke speed and stroke frequency leads into reduced grinding cycle time.

Hydrostatic guided spindle bearing system allows circular accuracies within  $\leq 0.5\mu\text{m}$  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.



## Technology overlap: Jig grinding and hard milling

Thanks to the most modern grinding head technology, the combination of high accurate jig grinding with complementary hard milling becomes a focal point and is successfully used.



# Technical data

Machine type		H45	H55
<b>Work range</b>			
Range of adjustment X,Y	mm	700×500	1'300×800
Vertical adjustment of grinding head (W)	mm	500	635
Clearance between table surface and U-axis carrier plate for grinding motor	mm	max. 785	max. 905
Clearance between upright columns	mm	750	970
Diameter ground in planetary mode, with grinding wheel Ø 50 mm/70S:			
• grinding motor 70S in U-axis center position, automatic grinding mode	mm	max. 144	max. 144
• grinding motor 70S with extension plates, semi-automatic mode	mm	max. 360	max. 360
Diameter ground in planetary mode, with grinding wheel Ø 100 mm/40S:			
• grinding motor 40S in U-axis center position, automatic grinding mode	mm	max. 194	max. 194
• grinding motor 40S with extension plates, semi-automatic mode	mm	max. 360	max. 360
Taper grinding, included angle (divergent and convergent)	degree	max. 90	max. 90
<b>Table</b>			
Working surface	mm	770×630	1'440×860
6/7 T-slots, width	mm	14	14
Permissible table load	kg	max. 500	max. 800 (1'500)
<b>Feeds</b>			
Table and saddle X,Y,W			
• Machining speed	mm/min	0–2'000	0–2'000
• Traversing speed	mm/min	4'000	4'000
<b>Grinding spindle Z, C, U</b>			
Diameter of the spindle sleeve	mm	125	125
Basic machine is prepared for use of the following grinding spindle speeds:			
• for electric grinding motor 40S, infinitely adjustable & programmable	min-l	4'000–40'000	4'000–40'000
• for electric grinding motor 22S, infinitely adjustable & programmable	min-l	4'500–22'500	4'500–22'500
• for electric grinding motor 45S, infinitely adjustable & programmable	min-l	9'000–45'000	9'000–45'000
• for electric grinding motor 70S, infinitely adjustable & programmable	min-l	9'000–70'000	9'000–70'000
• System to allow use of grinding turbine T 13	min-l	up to 130'000	up to 130'000
C-axis planetary mode:			
• Planetary mode, infinitely adjustable and programmable	min-l	5–350	5–350
• C-axis follow-up mode, AC servo drive	min-l	up to 10	up to 10
Z-axis in alternating stroke mode:			
• Z-alternating stroke movement, infinitely adjustable	mm/min	Vmin. 0,500	Vmin. 0,500
• Z-alternating stroke movement, infinitely adjustable	mm/min	Vmax. 22'000	Vmax. 22'000
• Z-stroke frequency	Hz	max. 8	max. 8
• Z-stroke length, infinitely adjustable	mm	0,1 up to 170	0,1 up to 170
U-axis radial travel capacity (in CNC-mode)	mm	von –3 up to +47	von –3 up to +47
<b>Accuracy</b>			
Positional uncertainty of the axes X,Y and W, corresponding to VDI/DGQ 3441	mm	0,0025	0,0025

All specifications and designs are subject to alterations without notice

# Competence and a world-wide partnership



First-class sales and service organization for all the major international markets with local well-trained staff. KELLENBERGER guarantees expert advice and support for evaluation, purchase, installation and services of our high-quality grinding systems.

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