

GI-50 Internal thread grinding machine



TECHNICAL DATA:

Workpiece diameter max.	120	mm
Workpiece length max.	200	mm
Grinding length max.	160	mm*
Internal diameter min/max.	10 - 50	mm*
Swivel angle (NC A-Axis)	15	°
Angle of rotation (man. B-Axis)	20	°
Grinding wheel diameter inside max.	50	mm
Grinding wheel diameter outside max.	300	mm
Grinding wheel width max.	20	mm
Cutting speed max.	50	m/s*
Workpiece speed (C-axis) max.	1.000	min ⁻¹

**Deviations possible due to the selected spindle version.*

(subject to technical modifications)

PRODUCT INFORMATION

SMS designed a new internal thread grinding machine type GI-50 on the highest technical level.

Thus, SMS was able to meet the request of many manufacturers of ball screws and similar parts. The new developed grinding machine is able to grind nuts (internal thread) and additionally external circular / surface grinding.

The typical configuration of the GI-50 for ball screw manufacturers includes an HF grinding spindle for finishing the internal thread and an external grinding spindle for the contact surface / shoulder and the external nut diameter in one clamping.

The available dressing technology includes plunge dressing with profile roller as well as path-controlled CNC dressing (Diamond form roller) via the machine axes.

The machine is equipped with the latest drive and control technology (digital servo drives: Siemens, precision length and angle measuring systems: Heidenhain). The CNC control (Siemens 840D sl) can be programmed very easily by the operator in dialogue - on the workpiece-specific user interface from SMS (HMI) - and allows short set-up times, too.

In summary: The new GI-50 is a „must have“ when it comes to optimisation in terms of machining costs as well as the required workpiece accuracy in the production of ball screws nuts and similar parts.

Highlights of the GI-50:

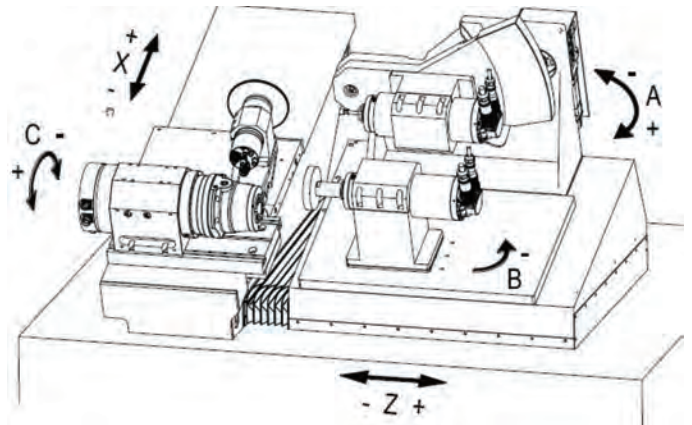
- High precision due to mineral cast machine body.
- Measuring probe for recording the pre-machined internal thread.
- Coolant supply through the workpiece spindle.
- Grinding wheels conventional or CBN.
- Grinding of internal threads metric, Whitworth, trapezoidal or special profiles.
- Ball screw nuts with gothic, radius or special profile, also with pitch offset.
- Profile correction with reduced swivel angle for large pitches possible.

Available options:

- Automatic loading through a FANUC robot.
- Non-round grinding (cams, cam rings, etc.)
- Extension by a further HF spindle to a total of 2 grinding units. When using 2 HF-internal grinding spindles, roughing and finishing the internal thread is possible
- HF-spindles optionally with HSK-receptacle or cylindrical mounting (depending on spindle)

The machine is equipped with max. 4 CNC axes:

Tool slide	Z-axis
Workpiece slide	X-axis
Workpiece drive	C-axis
Swivel angle	A-axis
Rotation angle (man.)	B-axis



Machining example: Flange nut (gothic profile)

Nominal diameter of internal thread	10 mm
Pitch p	2 mm
Thread length	20 mm
Shoulder height	8 mm
Diameter	20 mm
Cycle time (internal thread + shoulder + Ø)	124 sec.



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