



High Dynamic Performance for Heavy Model and
Mould Making Applications and Machining of Plastics

HG 5-axis Mould Making Milling System G-S-F/M

High performance machine design

Fast track to 3D models

Shorter and shorter product cycles and increasing variety of versions call for higher productivity, shorter production cycle times and outstanding performance to ensure global competitiveness of model and mould makers with their one-off and little-volume productions. With our highly dynamic portal-style 5-axis milling centre in gantry configuration, we are able to provide the best conditions to achieve this.

Materials

In dry machining technology, the machine is suitable for plastics like PU, ureol and composites such as CFRP, GFRP, and aluminium. Because the machine will be customized and configured perfectly for all materials, there is no need for touch-ups of products. This guarantees an excellent surface finishing.



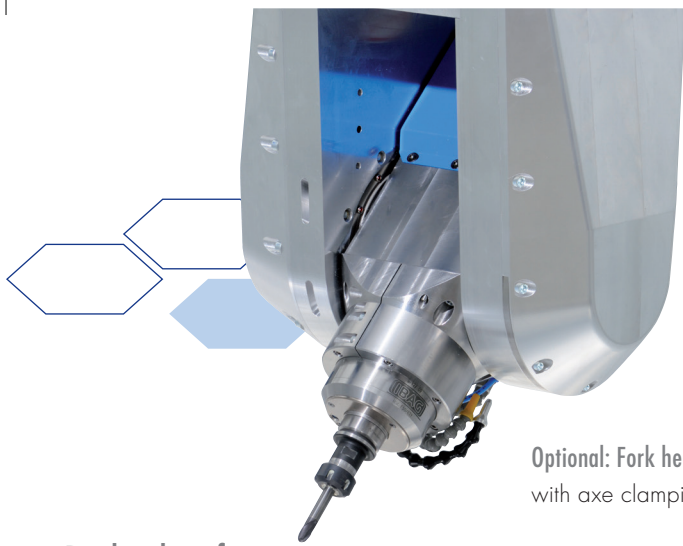
Type: G-S-F(53-25)/M

Increased productivity through highly dynamic performance

The G-S-F/M is an enhanced design for model and mould making applications. The machine is designed for highest precision, highly dynamic acceleration values and maximum productivity. The Z-axis features a direct measuring system and pneumatic driven weight compensation to obtain maximum acceleration values. Direct measuring systems are also built into the transmission outputs of the rotary C- and the A-axes.

Applications

With its 5-axis design the milling centre allows complex components to be machined intelligently and very fast. The outstanding precision meets the exacting requirements of the automotive suppliers, aircraft and aerospace industries as well as the yacht building and sanitary sectors. Potential applications include for example panelling of aircraft interiors and fuselages, moulds and models for the whole vehicle industry and sanitary products such as bathtubs and shower tubs.

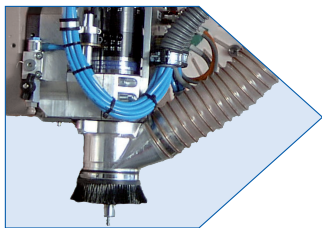


Optional: Fork head with axe clamping

Product benefits

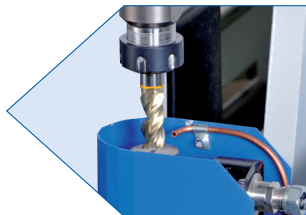
- ▶ 5-axis milling head with direct measuring system for perfect three-dimensional machining
- ▶ Clamping of the two rotary axes for heavy material removal
- ▶ Highest dynamic behaviour thanks to mutually adjusted components
- ▶ User-specific machining cycles
- ▶ Laser-calibrated linear axes
- ▶ High-efficiency and high-precision milling
- ▶ Excellent contour accuracy, even with very rapid movements
- ▶ High productivity and profitability based on high-accuracy machining, short positioning and start-up times, high feed rates and perfect surface finish without further touch-up of products
- ▶ Ease of operation, simple menu navigation with Siemens Sinumerik 840D/SL
- ▶ Low maintenance costs thanks to low-maintenance components and mutually adapted mechanics and electronics
- ▶ Excellent design: sturdy weld structure, rigid, torsion-resistant and low-wear
- ▶ The portal runs on pretensioned, low-wear linear guides with recirculating roller bearings for maximum rigidity during machining
- ▶ Vacuum grid table

Options

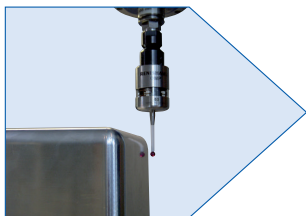


Head exhausting device

Tool measuring
for tool length correction
and for breakage control



3D tactile measuring system
for machine calibration
and measuring of components



Safety system Brankamp
with recognition of vibration
stops the machine and prevents
crash drives



HG 5-axis Mould Making Milling System G-S-F(27-15)/M

The HG 5-axis mould making milling system offers maximum process safety and productivity. Its performance characteristics can be optimized in line with your specific needs and requirements through extensive options, enhancement and customization.

Machining range in 5-axis mode

X-axis, mm	2,700 (4,000/5,300/6,600/7,900/ 9,200)
Y-axis (portal), mm	1,500 (2,500)
Z-axis	
at 45° clearance, mm	800 (1,000/1,250)
Table, aluminium, mm	4,000 x 1,500 (5,300 x 2,500/etc.)
X-axis travel range, mm	4,500 (5,800/7,100/8,400/9,700)
Y-axis travel range, mm	2,000 (3,200)
Rotation axis C	max. 540°
Swivelling axis A	± 110°

Speed of travel

Acceleration per axis	up to 3,500 mm/sec ²
Linear axes X/Y	up to 45 m/min
Linear axis Z	up to 28 m/min
Rotary axes A/C	up to 12,000°/min
Positioning accuracy	up to ± 0.030 mm
Repeatability	up to ± 0.025 mm

High-frequency milling spindle

13 kW continuous operation (S1), 16 kW (S6)	
Rotational speed	26,000 / 29,000 rev/min
Tool holder	HSK 40 E/HSK 50 F/HSK 63 F
Optional	fork head (with direct measuring system and axe clamping)

CNC control

Siemens Sinumerik 840D/SL advanced surface / look-ahead-function / VCS-rotary, Shop Mill
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Tool change magazine

dust protected, tool length up to 260 mm 12/24/36/... position magazine depending on size of machine
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Drive, electrical

digital AC servo drives/multiturn system
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Drive, mechanical

rack (X/Y) with ground helical teeth, ball screw (Z), induction-hardened and ground guides
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General data

Machine weight	12,000 to 30,000 kg
Connected load	approx. 15 kW to approx. 35 kW
Foundation	not mandatory
Synchronous servo motors	X, Y, Z, C, A, Gantry Drive System
Central lubrication	automatic

Technical training

optional, on your choice whether in the HG technology training centre or on site at the customer's
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We reserve the right to make changes due to technical improvements. Please note: This information refers to the standard version of the machine. **Of course, we specify our systems in accordance with your specific requirements.**

Options, enhancement, customization

The system is designed within a modular concept. Our flexible, compatible interfaces ensure we can always meet your specific requirements. With our cost-efficient construction customizations, we offer perfect value for money and real added value for your company: You will get a machine that suits exactly your specific requirements.

Your system partner HG GRIMME SysTech

Founded in 1987, we established ourselves globally as highly regarded machine manufacturer with an excellent track record. As your proficient system partner, we are able to offer complete one-stop solutions. Design and engineering in line with specific requirements and application-specific configuration of the machine with reliable equipment.

Our own customer support organization with domestic and worldwide support centres offers customer support by local service. On demand, we can provide a remote diagnostic link to your HG system. Our hotline service and quick response of our service teams ensure maximum system availability and close customer contact wherever you are.

Please contact us if you need any advice!



Technical training/Application technology



On-line diagnostics via internet



Project management/
Engineering department



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