

# 3D Micro Processing System LPKF PROSYS

**LPKF**

Precision Drives

Air beared XYZ drive system in portal construction, consisting of 2D-Planar stage and precision Z-axis



Extremely accuracy over  $100 \times 100 \times 100 \text{ mm}^2$



## General Description

The 3D Micro Processing System LPKF PROSYS was especially designed for micro chipping of non iron metals and tool steels. Another wide field of application is a measuring table usage. The integrated granite portal can be used for mounting a Z-axis, a milling spindle or, if necessary, sensors. In combination with the developed by LPKF 3D correction software it is possible to compensate failures in Z-direction. For more dynamic applications the two-coordinate table LPKF HS HighSpeed G and GP can be used.

## Mechanical design

The 3D Micro Processing System LPKF PROSYS is build up on a massive granite plate. A compact and plane air-guided carriage is directly driven in 2-dimensions by moving coils. These motors are balanced, that is, the drive units do not have any effect on the guidance accuracy because of the lack of magnetic attractive forces between moving and non-moving parts. A cross grid scale is integrated into the carriage, which scans both the accuracy in the axes in 2-dimensions as well as determining the position of the axes in relation to each other. The drive, the measuring system and the carriage with the object carrier form a rigid unit and they are guided together on pre-stressed, aerostatic air bearings. The Z-axis, fixed on the portal is designed as a linear motor with air bearings and balancing weights. A milling spindle is mounted on that axis, which allows precise machining during high revolutions.

## Options

- Z-Axes with various ranges of travel and accuracies
- Optical measuring systems

## Technical data (\*)

Range of travel:	100 x 100 x 100 mm <sup>2</sup>
Resolution (smallest Step):	20 nm
Repetition accuracy:	± 0,1 µm
Positioning accuracy:	± 0,5 µm (bei 20° C ± 0,5° K)
Max. Speed:	100 mm/s
Max. Drive force (XY):	30 N
Additional mass XY stage:	5 kg
Additional mass Z-axis:	3 kg
Z-Stiffness of the table:	100 N/µm

(\*) Adaptation to OEM and specific applications is made in consultation with the customer.

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