gravostar
technologies

fast – wear-resistant – process-reliable

gravostar
Marking tools

decision for the best
gravostar.com

gravostar

Process-integrated parts marking

With the gravostar marking tool, part production and marking take place in a single operation; i.e. each manufactured part comes out of the CNC machine already provided with the desired marking. The gravostar is used like a conventional cutting tool, primarily in machining centres and CNC lathes, and practically all machinable materials up to a hardness of approx. 62 HRC can be marked.

Benefits

+ Time saving
- Eliminating a separate process step for parts marking
- No additional parts handling for marking
- Short marking time (approx. 1 second / digit)

+ Reliability
- No forgotten markings
- No incorrect markings due to part mix-ups

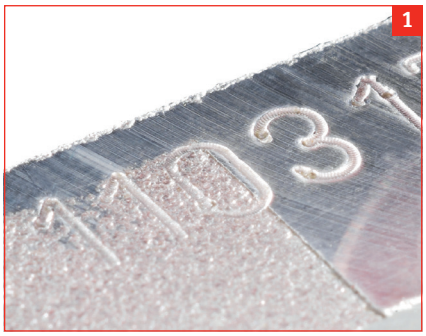
+ High degree of automation
- Marking is part of the production program
- Marking data can be automatically transferred from a higher-level database

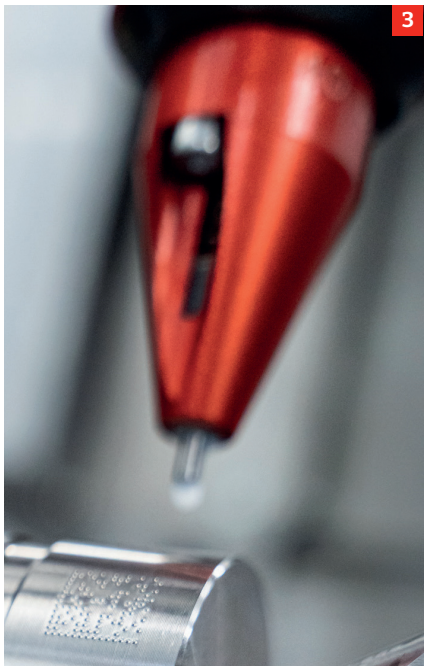
+ Individual marking
- Shape and size of the marking is variable as required
- Serial number or realtime data for absolute repeatability
- Manufacturer's logo, parts code, individually changing markings

+ Freely selectable marking area
- Use on processed, even surface
- Use on inclined or uneven surfaces
- Markings possibility on raw cast surfaces
- Automatic compensation of dimensional and positional differences of the marking surface

+ No material weakening
- Non-cutting marking process
- No severing of the material fibres
- Excellently suitable for thin and highly stressed parts

+ Highest operational reliability
- Extremely dependable process
- Practically wear-free, regrindable marking needle (hardness 92 HRC)

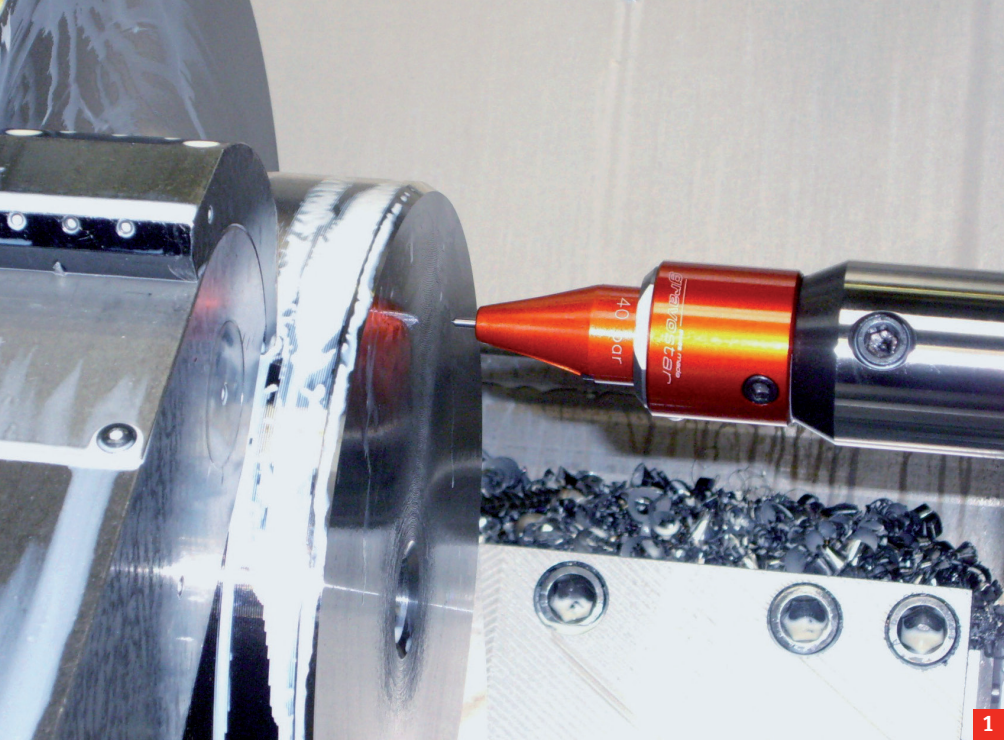




1 Marking raw cast surfaces (no defined marking surface required)
Automatic compensation of height differences.

2 Marking of round or uneven surfaces

3 Fully automated Data Matrix code marking on lathes



1

2

1 Cost-effective part marking on CNC lathes
With gravostar there is no need for driven tools.

2 Face-end marking of a drive shaft

Marking with gravostar

In principle, the marking process with gravostar corresponds to that of engraving, i.e. the desired marking carried out by the machine axes. However, in contrast to engraving, no spindle speed is required and processing can be carried out with much higher feed rates (over 5000 mm/min.).

Functional principle of the micro-percussion process

Unlike engraving, the micro-percussion process produces a fine, punctiform compaction of the material – rather than removal of material. This is achieved by the vertical oscillation of the marking needle. The needle oscillation is brought about by the impulse control system, which is integrated into the tool. As soon as the air supply or internal cooling system is activated, the needle begins to oscillate at a frequency of approx. 300 Hz. Due to the very high oscillation frequency the individual marking points are extremely close together, so that they cannot be individually recognised. Therefore the marking appears as a continuous deep line.

Entry options for the desired marking

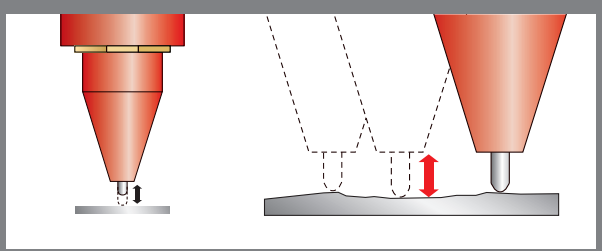
- Direct entry in the marking program on the machine tool
- Programming at the programming station (CAD/CAM) when creating the machining program
- Automatic adoption from the higher-level database

Application options

Preferred use in machining centres and CNC lathes


Automatic change via tool changer

Height compensation
Gravostar automatically compensates for dimensional differences or unevenness of the marking surface of up to 5 mm. This means: uniform marking depth even with undefined marking surface (e.g. raw castings, etc.)


Vertical oscillation frequency of the marking needle 300 Hz

Great variety of tool designs

The following is a partial overview of the tool designs available as standard. Based on the current market and customer requirements, we are continuously supplementing our product range with corresponding new and further developments.

Micro-percussion

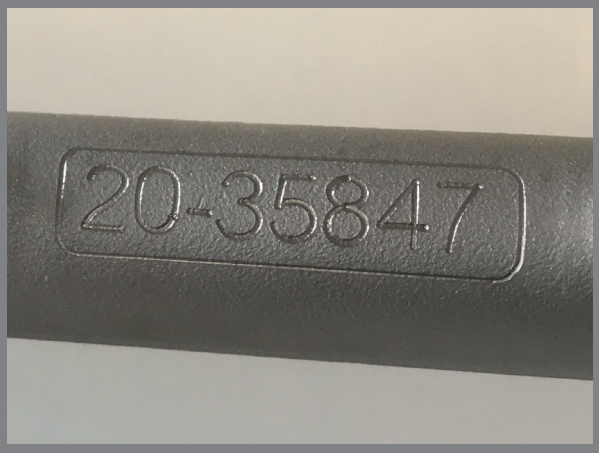
Versions with needle drive via the central coolant supply through the machine spindle (ics)

Versions with needle drive via compressed air, supplied through the machine spindle (ics)

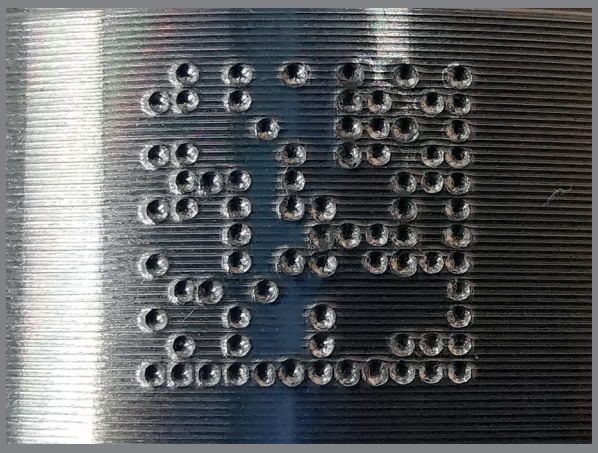
Scratch marking

Roller embossers

Special versions with integrated tool holder



Marking of text, logos etc. on flat or unfinished surface



Marking of Data Matrix Code or QR Code on any marking surface

gravostar technologies

SEH Technik GmbH – gravostar technologies
Freudenbergstrasse 1, CH-9242 Oberuzwil
Tel. +41 71 940 06 76, info@gravostar.com

decision for the best gravostar.com