BORRIES complete solutions

For the DotPeening tasks of the aircraft industry

- **The integrated BORRIES DotPeening solution**

Extremely high precision geometrical properties (EN9132 specification) for dots and matrix

- Model 350 extremely precise dot peening mechanism with 3 NC axes, electronically controlled peening head with integrated distance sensing grants reproducible dot and matrix geometry.

Various different work pieces, materials and surface structures

- WINDOWS® based WYSIWYG software supports easy and fast new layout generation, individual parameter settings for each application and on-the-click pop-up of the settings for each work piece.

Low quantities but high value of work pieces

- Precise and reproducible process control grants first time o.k. marking with no need for trial and error.

100% proof of marking quality required

- Verification system is specifically designed to meet the properties (3-dimensionallity) of dot-peened DataMatrix codes on metal.
- System provides convenient series production automatism as well as sophisticated lab analysis features for parameter set-up of new work pieces and first-article-inspection.

How to prove good marking quality if the customer (e.g. main contractor) refuses?

- Verification results are kept in data base together with marked data.
- Even images may be saved and allow to trace the properties of each and every dot.

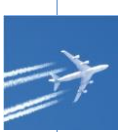
DotPeening marking unit 350

Technical data sheet

- High precision DotPeening machine
- Both systems specifically designed to meet the **EN 9132 requirements** for dot-peened DataMatrix codes and the **ATA SPEC2000** „direct part marking guideline“
- DataMatrix coding directly on metal work pieces
- Clear text marking in dot matrix font (5x7) or vibro peening
- 3-axis NC controller for **real time process control**
- **High precision electro-marking head** designed for DotPeening
- Built-in **height sensor for automated fine positioning** eliminates work piece tolerances
- Programmed working height for each work piece
- Special parameter controlling for force, acceleration and duration of stroke for optimal adjustment of the marking strength and the specific effective times enables excellent adaption even to „difficult materials“
- **Frequently proved, sophisticated marking unit** made from high- precise linear axes and ball screws. Better accuracy than 3 µm of the NC drives. Longterm precision and stability with minimum maintenance

- **Intuitively using WINDOWS® software** as bracket and frame for all with the focus on safe, trouble-free series production on the one side and on laboratory-like analysis on the other. Data entry via Ethernet, barcode scanner or keyboard input. WYSIWYG layout editor displays actual work piece image as bitmap

- Compactly integrated **vision system** with very precise measurement for verifying of coding. Integrated solid state illumination with electronic controlled intensity. Light beam in same optical axis with camera sensor.



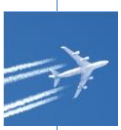
Technical data

Property	Dimensions, Unit, Explanations
• Marking area	100 x 50 mm
• Z-axis	160 mm, other sizes on request
• Typical marking process time	10x10 dot DataMatrix, 10 sec MFR 12345/SER ABC123 as 18x18 dot DataMatrix and as clear text: 30 sec
• Typical verification time	18x18 dot DataMatrix: 3 sec
• DataMatrix formats	10x10 … 52x52 [dots], 1,9x1,9 … 9,0x9,0 [mm] (EN 9132) 8x18; 8x32; 12x26; 12x36; 16x36; 16x48 [dots], 1,5x3,4 ... 5,8x12,7 [mm] (EN 9132)
• Mains	115 VAC/ 230 VAC, 300 W
• Data-Input	Serial port (COM), USB, Ethernet
• PC (recommended)	Industrial standard, 2 Ghz (min 1,5 GHz), WinXP, Win7, min. 2 Gb RAM (4 Gb for 64 bit)

Variants of marking heads

With vision system




Windows® Software

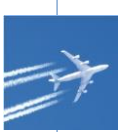
VisuWin PRO (professional) is the convenience BORRIES universal marking program. User may change the menu language at any time. Designed to allow integration into any manufacturing control system and structures. Marking orders saved and called-up later simply. The marking data are integrated via barcode scanning, order number or other data. Alternatively data interfaces with HOST computer system. Marking order preparation (inclusive marking data) at other (network) location is possible. Eight authorization levels for a secure usage are available.

WisuWin SE (standard edition) is available for conventional single processing with direct input of marking data for each individual order without complex data administration. This version of the program has a simple structure and is suited for stand-alone applications. There is no verification system integrable.

Vision system for calibrated verification

- Verification camera **specially developed for Dot-Peening** on metal
- Designed to meet the requirements of the AS9132 specifications
- Integrated illumination, reproducible by extra control
- NC axis ensures read distance is **tolerance-free**
- **No falsification** because the images are taken exactly vertically
- **Quality evaluation** is configurable for every single feature and all together **from A to F** and in a trend illustration directly available.
- Output of the overall quality status „OK“ – „Warning“ – „Not OK“ weighted from single features for a **simple and secure production monitoring** during the coding
- **Individual measurement** values in database for trend analysis
- Graphical trend illustrations and detailed evaluations are possible
- WINDOWS® software for **detailed analysis**
- Each individual dot can be inspected (**Zoom inspection**)
- **Calibratable testing system as defined by ISO** specifications
- Suitable for „**first article inspection**“ production lot




General information

Stylus marking technology

- Flexible applicable system (marking depth, height and width of the marking text are individually selectable)
- It can be used to mark on angular, slightly arched and round surfaces
- Low impact force to the component
- Permanent and durable marking
- Marking is resistant against heat treatment processes and most of the surface treatments (for example hardening, sand-blasting or coating)
- Non-cutting, material deforming technology
- No thermic impact on the material
- Low operating costs
- Marking of clear text (7x5, 9x7, VibroPeening) and DataMatrix/DotPeening possible

DataMatrix – DotPeening

- DataMatrix: A code that contains the largest amount of data in the smallest possible space with maximum safety of readability
- Stylus code and clear text are durable and permanent
- Applicable on different materials and surfaces
- The code is legible with hand-guided or stationary mounted scanning systems - code reading systems can also be integrated in the marking unit
- No function limits as found with standard barcodes
- Highest level of error correction (reliability and robustness) - verification systems (calibrated verification) for the „first-article-inspection“
- Suitable for a direct product marking
- Readable in every adjustment
- Marking size scalable according to the surface condition
- **DotPeening**: Identical marking process whereby DataMatrix codes are marked according to the aircraft ATA SPEC2000/ EN 9132 „direct part marking guidline“