

BORRIES complete solution For the DotPeening tasks of the aircraft industry

- The integrated BORRIES DotPeening solution

Extremely high precision geometrical properties (AS 9132 specification) of dots and matrix

- Model 350 extremely precise dot peening mechanism with 3 NC axis, 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-dimensionality) 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."
 - Quality indices are assigned in classes A to F with an additional overall configurable evaluation for "OK" - "Warning" and "Not OK". All individual measurement values are saved completely in a database. This allows for graphical trend illustrations and detailed evaluations.
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- **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, bar-code scanner or keyboard input. WysiWyg layout editor displays actual work piece image as bitmap.
 - Compactly integrated **compact 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. Reproducible positioning with all 3 NC axis (3 µm) allows calibration as ISO 9001 proofing system.

Technical Data

Property	Dimensions, Weight, Unit, Explanation
• Marking area	100 x 50 mm
• Z-axis	300 mm, other sizes on request
• Typical marking process time	10 x 10 dot DataMatrix: 10 sec MFR 12345/SER ABC123 as 18 x 18 dot DataMatrix and as clear text: 30 sec
• Typical verification time	18 x 18 dot DataMatrix: 3 sec
• DataMatrix formats	10 x 10 ... 52 x 52 [dots], 1,9 x 1,9 ... 9,0 x 9,0 [mm] (EN 9132) 8 x 18; 8 x 32; 12 x 26; 12 x 36; 16 x 36; 16 x 48 [dots], 1,5 x 3,4 ... 5,8 x 12,7 [mm] (EN 9132)
• Mains	115 VAC/ 230 VAC, 300 W
• Data-Input	Serial port (COM, TTY, RS232, RS422), USB, Ethernet
• PC requirements	Industrial standard, 2 GHz (min 1 GHz), WIN 2000, XP (or NT+SP6), 512 MB (min 256 MB)

WINDOWS® Software

VisuWin PRO (professional) is the convenient 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 reading, order number or other data. Alternatively data interface with HOST computer system. Marking order preparation (inclusive marking data) at other (network) location possible. Eight authorization levels for a secure usage are available.

VisuWin-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 an easy 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 AS 9132 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 9001** and similar quality specifications
- Suitable for **"first article inspection"** production lot



Technical details are subject to change.

Stylus- and scribe marking technology

- Flexible applicable system (marking depth, height and width of marking text are individually selectable)
- It can be used to mark on angular, slightly arched and round surfaces.
- Very low noise level with the scriber technology
- An attractive mark is created in a short time
- 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
- No specific safety equipment is needed (for example during the Laser process)
- Low operating costs
- Marking of clear text (7x5, 9x7, VibroPeening) and DataMatrix/ DotPeening possible

We offer you:

- „Built-in“ units and special installations for marking alpha-numeric signs, special characters and 2-D codes
- Simple workshop units with special attachments as well as mobile tools

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
- Its code legible with hand-guided or stationary mounted scanning systems, even after surfaces treatments (for example hardening, sand-blasting or coating)
- No function limits as found with standard barcodes
- Highest level of error correction (reliability and robustness)
- Suitable for a direct product marking (dot matrix marking, Laser)
- Readable in every adjustment
- Marking size scalable according to the surface condition
- **DotPeening:** Identical process whereby DataMatrix Codes are marked according to the aircraft ATA Spec. 2000/ AS 9132 "direct part marking guideline".

We offer you:

- DataMatrix marking systems, which can also mark clear text
- Code reading systems, which can be integrated in the marking unit
- High-precision systems with electrically-driven marking heads
- Verifications systems (calibrated verification) for the First-article-inspection