

State-of-the-art ePassport  
processing solutions worldwide.

**ruhlamat**  
solutions for your needs.

MACK  
GROUP



**ePASSPORT**

PASSPORT LABELLING



INLINE SECURITY  
LAMINATION



RFID CHIP ENCODING



PERSONALISATION (LASER,  
HD DOD COLOUR - INKJET)



## ruhlamat – the leading supplier of advanced solutions for passport personalisation

ruhlamat is a leading supplier of advanced solutions for the personalisation and quality control of passports and e-passports.

As experienced machine manufacturer, we do our very best to meet every customer requirement, no matter how unique or challenging. We develop and produce functional, affordable and scalable solutions, which ensure full compliance with the ICAO and ISO standards surrounding the issuance and security of MRTDs.

Our reliable state-of-the-art solutions, as well as our unrivalled expertise, has resulted in various successful project installations around the world.

### ruhlamat – customised machine solutions for

- › Chip Module Production
- › RFID Inlay Production
- › Card Personalisation
- › Card Quality Control
- › Passport Personalisation
- › Passport Quality Control
- › Special Machinery

**in** [www.linkedin.com/company/ruhlamat-gmbh](https://www.linkedin.com/company/ruhlamat-gmbh)



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**1991**

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## ePassport Personalisation





## PERFLEX® – the premium security feature for passports

PERFLEX® allows passport perforation with different character sizes using holes in different geometric shapes like squares and triangles (■▶◆◇).

Laser perforation (PERFLEX®) PC holder page



Visa pages with/without back cover

## ruhlatmat – LP2000 Pre-Personalisation

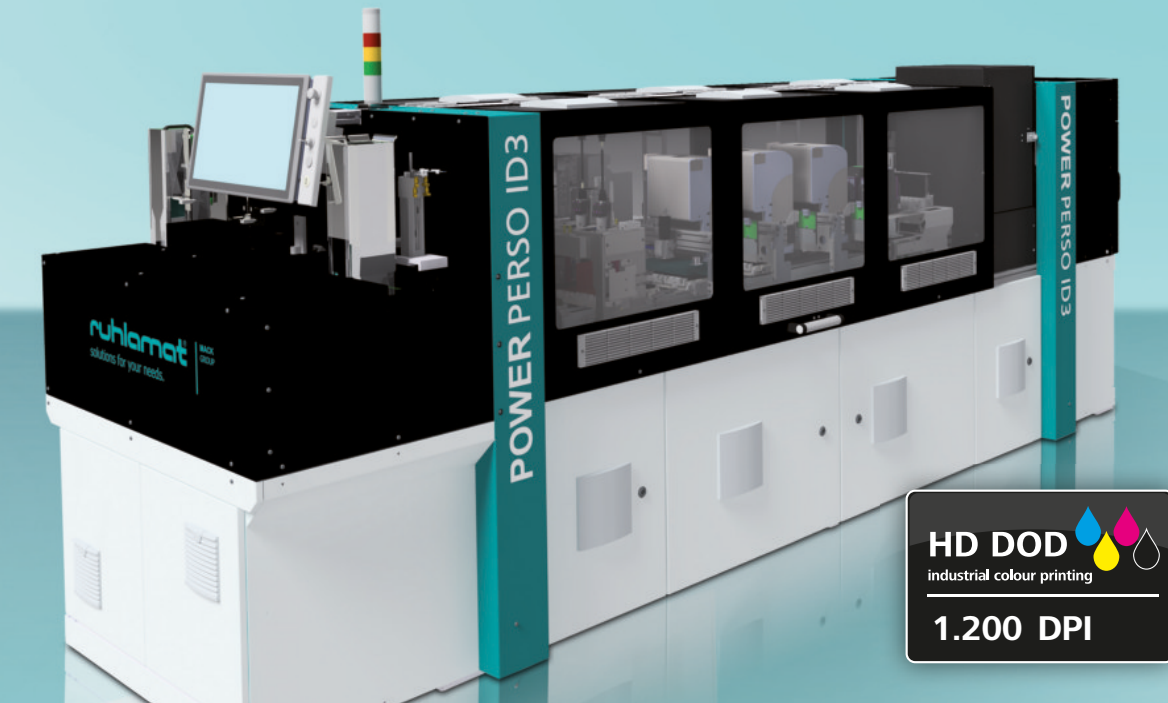
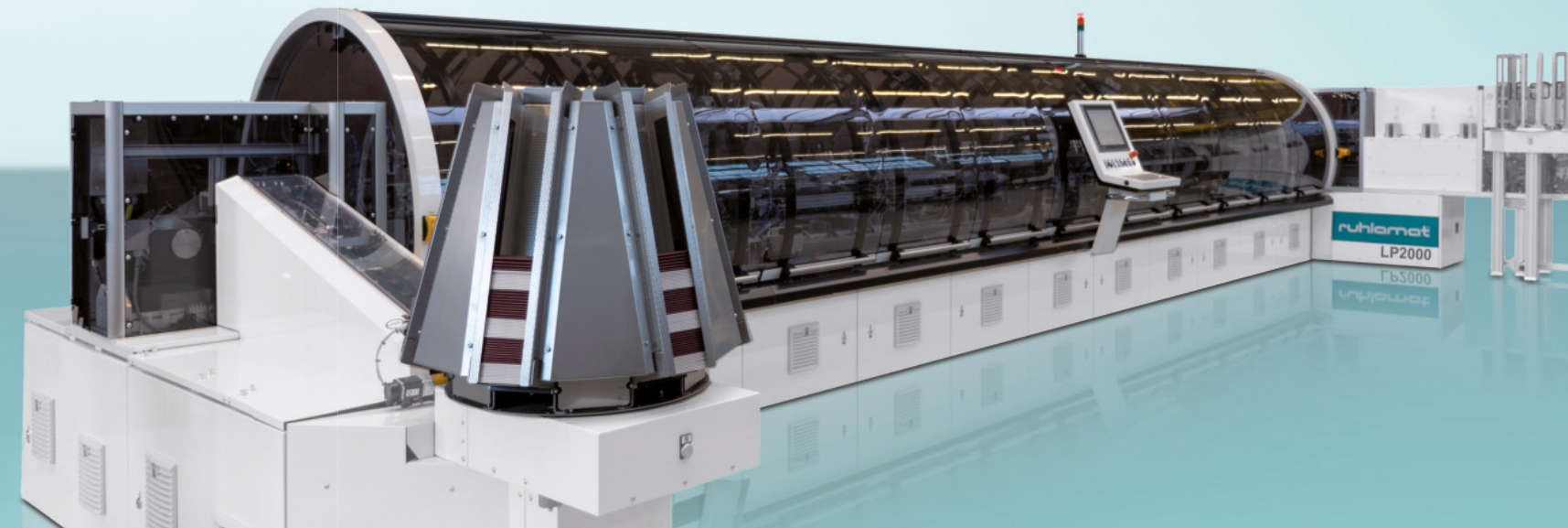
Fully automatic high-speed perforation and pre-personalisation of passports and e-passports.

## ruhlatmat – PowerPerso ID3 Personalisation

Fully automatic high-speed machine for centralised personalisation of passports and e-passports.

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**HD DOD**  
industrial colour printing  
**1.200 DPI**

### Different character sizes

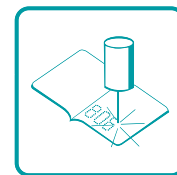
- › Basically unlimited character set (alphabetic letters, digits, symbols, limited by size only)
- › Mixed height and width of characters possible in different positions

### Difficult to counterfeit

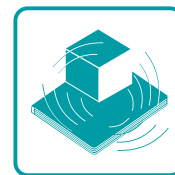
- › Arrangement of shapes/sizes within a character (set) either random or by a customised algorithm, thereby creating a unique, unforgeable feature

### Different hole shapes

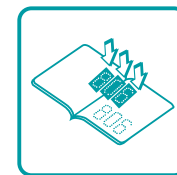
- › Laser perforated characters from any visa page through all remaining pages including or without back cover
- › Extraordinary laser perforation quality in comparison to off-the-shelf solutions due to ruhlatmat's sophisticated laser software



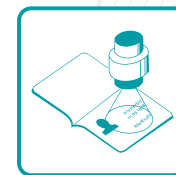
LASER PERFORATION



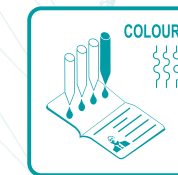
RFID CHIP ENCODING



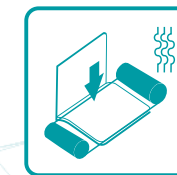
NUMBER PRINTING (MECHANICAL/INKJET)



OPTICAL INSPECTION



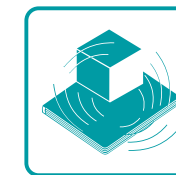
HD DOD INDUSTRIAL COLOUR PRINTING



INLINE SECURITY LAMINATION



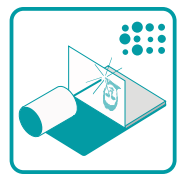
LASER ENGRAVING



RFID CHIP ENCODING



OPTICAL INSPECTION



MICROPERFORATION – DLI

#### Benefits and features:

- › State-of-the-art booklet perforation, numbering and RFID encoding
- › PERFLEX® as unique, unforgeable security feature – a „DNA“ for each passport without additional costs
- › Patented laser perforation method allowing creation of different hole shapes and character sizes
- › Inkjet printing, mechanical numbering and laser engraving as options

- › Patented, space-saving RFID encoding tower for simultaneous chip initialisation and / or encoding of e-passports
- › Multiple UID control
- › Inline quality control (optical and electronic)
- › Universal personalisation software with Data Mastery as open platform
- › Can be easily configured according to customer and project demand

#### Benefits and features:

- › Drop on Demand high-speed colour printing, laser engraving or a combination of both technologies
- › Highly secure laser engraving of polycarbonate holder page. Scalable number of lasers for maximum speed
- › High Definition Drop-on-Demand (HD DOD) colour printing on paper or PC holder page with UV curing inks
- › Printing of UV reflecting elements
- › Inline security lamination at high speed

- › Simultaneous electronic personalisation of e-passports
- › Inline quality control (optical and electronic)
- › Universal personalisation software with Data Mastery as open platform
- › Production Data Management System optionally available
- › Customised configuration with high level of flexibility and standardisation