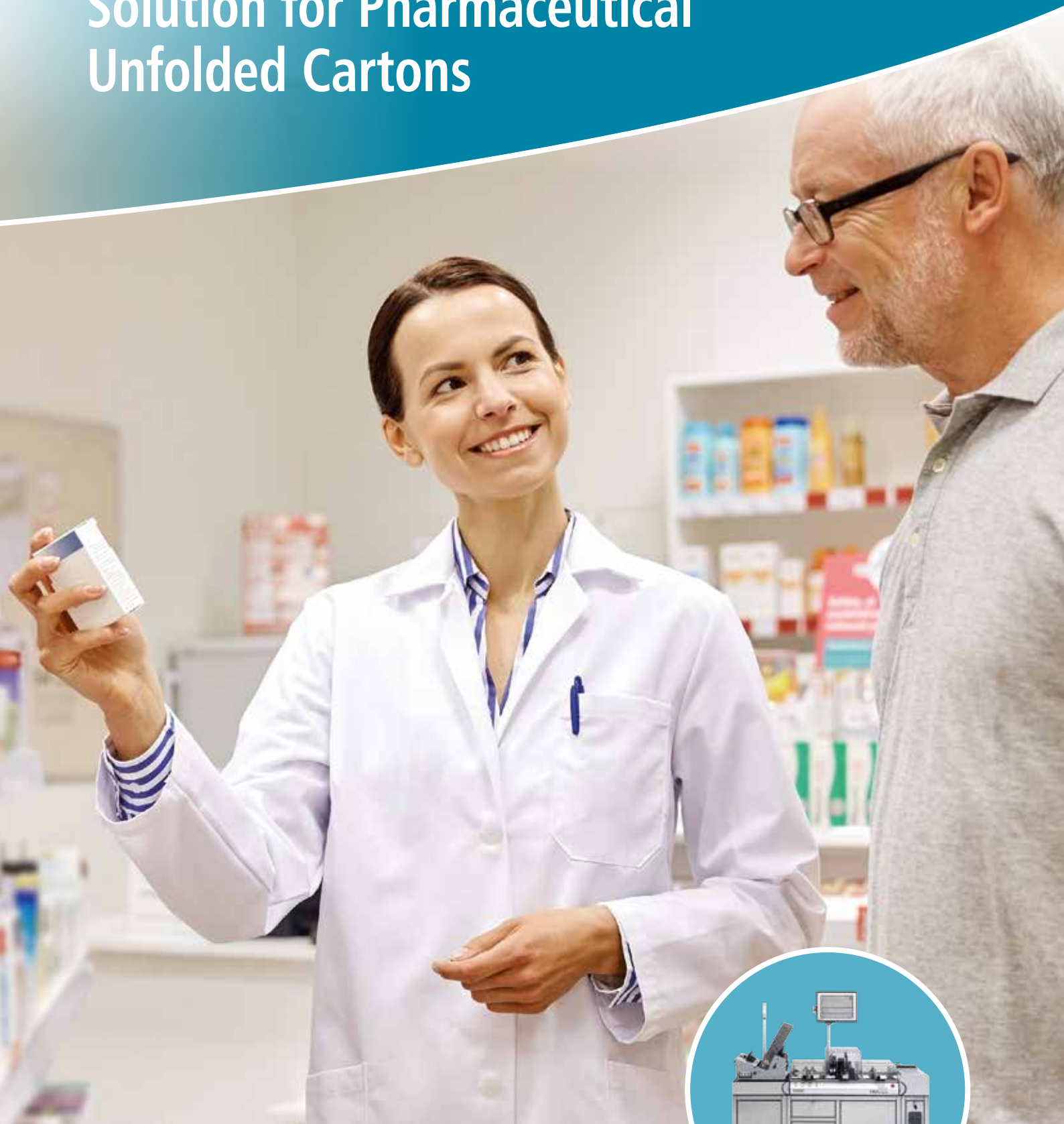


Print and Verification Solution for Pharmaceutical Unfolded Cartons



Key Benefits

PV950F Flat Carton Handling Unit

- Smooth and stable carton handling system
- High quality print ensured by vacuum chambers and built-in encoder
- The machine is prepared for printing up to 38 mm high and 145 mm long imprints
- 55x45 mm vision camera reading area (standard)
- Adjustable conveyor speed
- Integrated ejection control system
- Tool and format-free batch change
- Machine design in anodised aluminium, stainless steel and transparent polycarbonate
- Easy maintenance access to all machine parts via large top covers and removable back cover

Design, print, verify and control the machine from one interface



HSAJET® Carton Handling Unit

The HSAJET® solution is a stand-alone carton handling system for marking applications of unfolded cartons.

The design of the vacuum supported conveyance system ensures accurate transport of products, providing optimal conditions for high quality printing.

The modular design features 3 modules, i.e. feeder, printer and diverter. This allows a combination of feeder and printer, or printer and diverter for integration into existing line equipment.

Turnkey Solution

The combination of the HSAJET® software and the carton handling machine results in a compact overall solution for trouble-free print and verification of an unfolded carton in a pharmaceutical production.

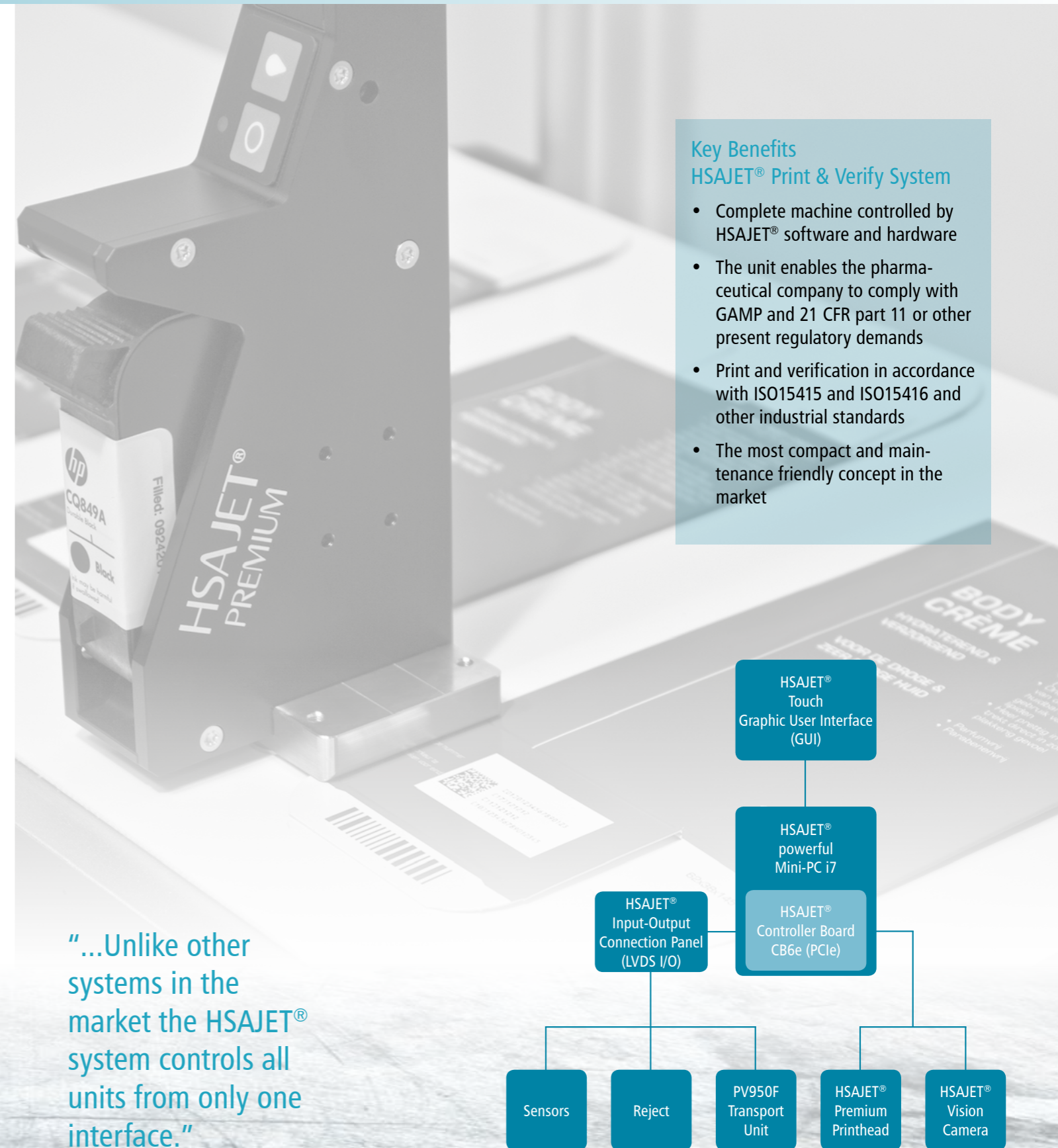
HSAJET® Print and Verification

The HSAJET® Print and Verification system is the control centre of the machine, utilizing a touch screen to provide design of jobs, control of print, verification and eject, and interfacing to other associated equipment.

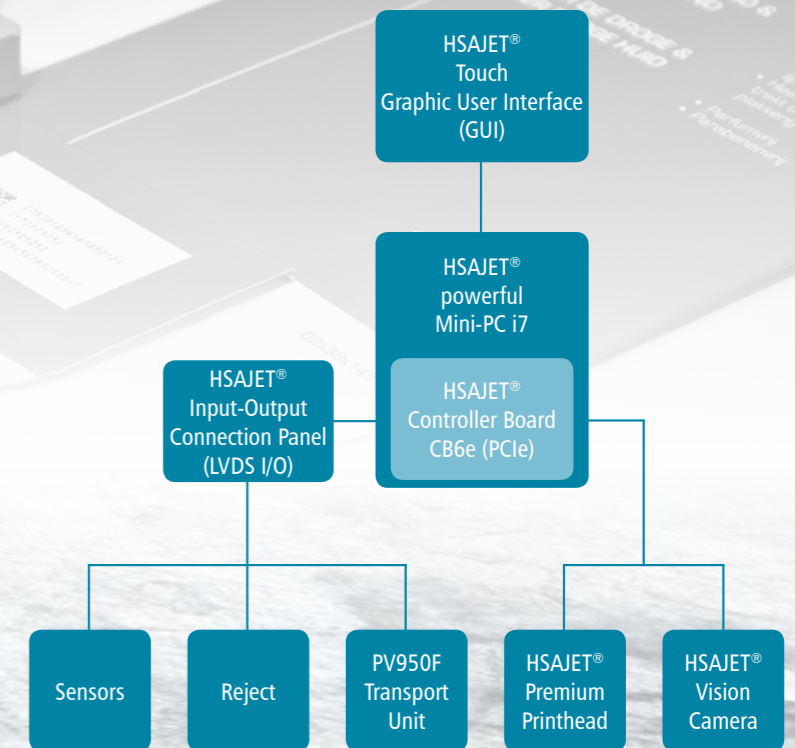
Key Benefits

HSAJET® Print & Verify System

- Complete machine controlled by HSAJET® software and hardware
- The unit enables the pharmaceutical company to comply with GAMP and 21 CFR part 11 or other present regulatory demands
- Print and verification in accordance with ISO15415 and ISO15416 and other industrial standards
- The most compact and maintenance friendly concept in the market



“...Unlike other systems in the market the HSAJET® system controls all units from only one interface.”



Exterior Features

PV950F



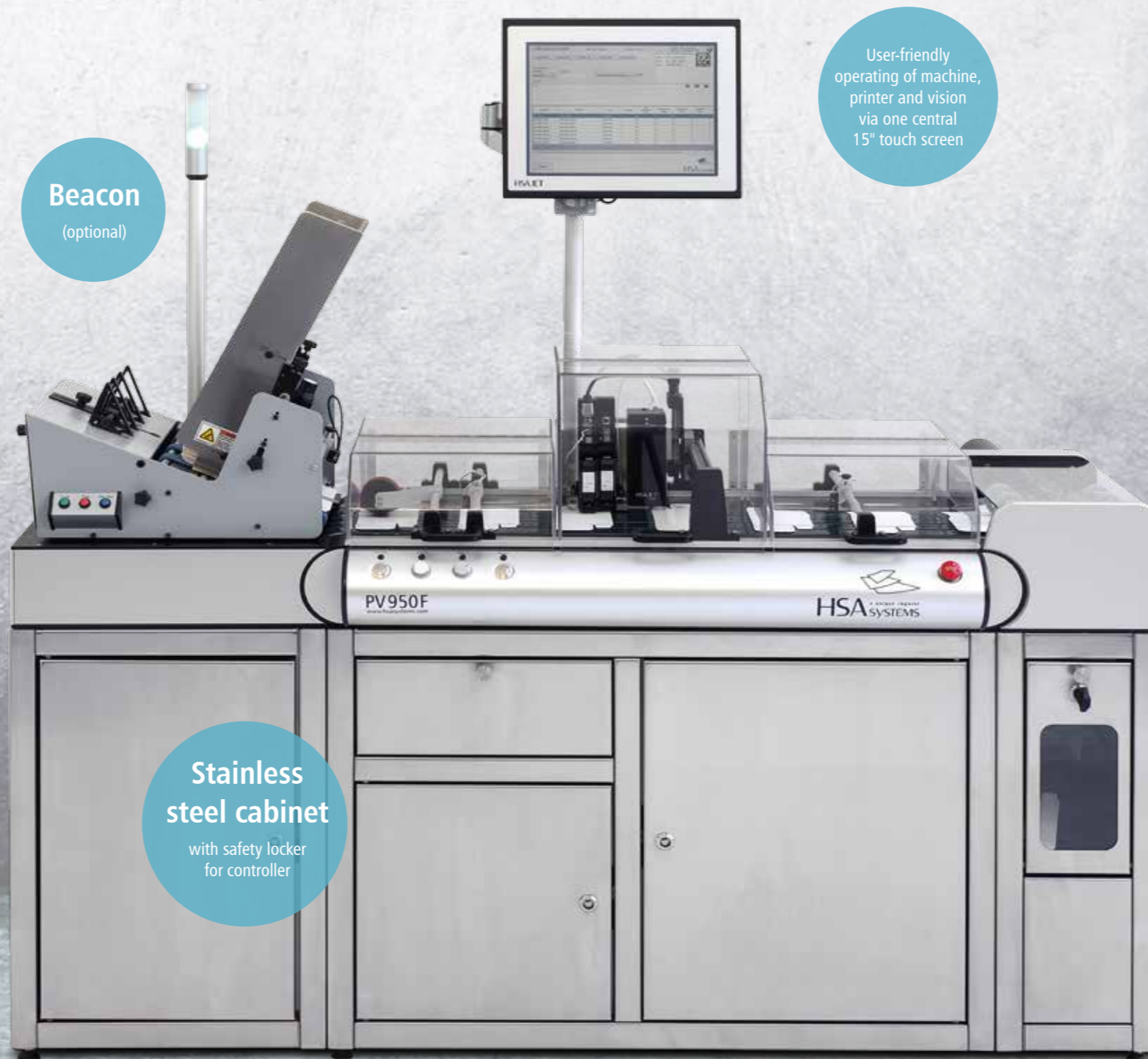
Beacon.



Flight sensor control panel on feeder.



PC On, Emergency Stop, Reset and Fan buttons are placed on front of the machine.



Beacon
(optional)

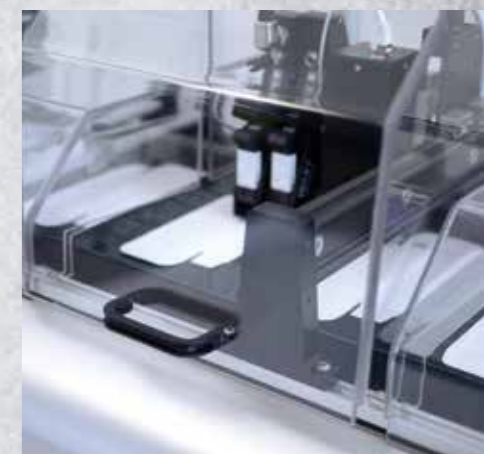
User-friendly operating of machine, printer and vision via one central 15" touch screen

Fuse and Main power connections are found on left side of the machine

Stainless steel cabinet
with safety locker for controller

Height adjustable supports

Small footprint



Transparent top cover and safety guard.



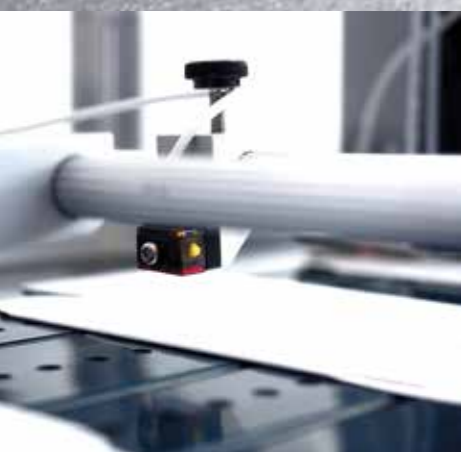
Reject bin, with lock, for rejected items.



Emergency Stop is placed on front of the machine, right side.



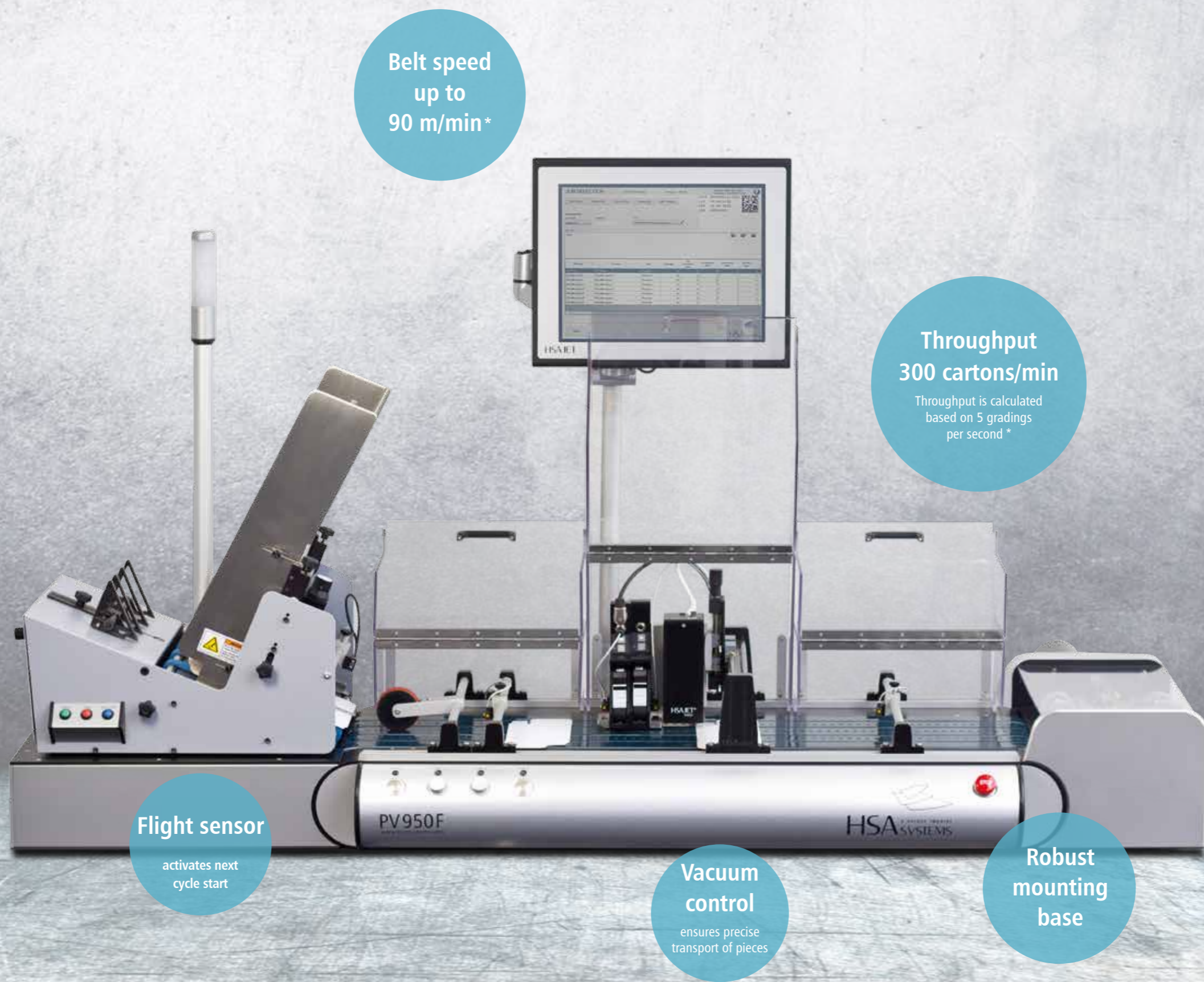
Camera and printhead on common bracket adjustable in height and across conveyor.



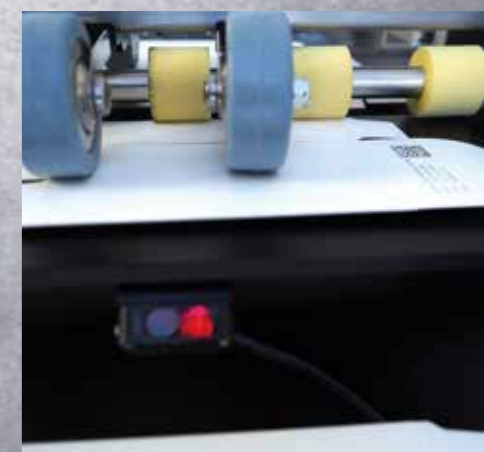
Flight sensor activates next cycle run.



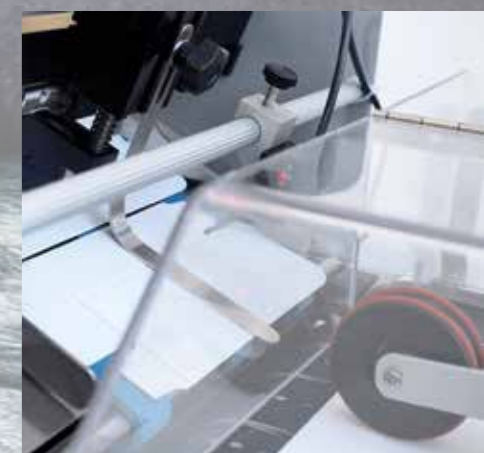
Vision Inspection Camera featuring code verification and grading.



Integrated ejection control system with eject verification sensor.



Accept verification sensor.



Guide wheel keeps the product in place on conveyor.

*) Product dependent



The software is designed with focus on intuitiveness, taking the hassle out of handling a complete print and verification system



From the touch interface both print, vision and machine controlling are handled

Multi-lingual interface
Wizard-based job creation
Real-time production and verification status

SOFTWARE

A number of features have been included to provide a self-explanatory user interface

- Easy and intuitive system operation with wizard based job creation.
- Automatic creation of human readable application identifiers.
- Visual level of information kept to "what is necessary" for the operator.
- Automatic preparation of vision control. No teaching needed.
- Process control function for system proof.

Machine control

The speed synchronisation between the top and bottom belts is done through the software and no manual settings are required.

Access control

The software is protected by a customizable user level access control, preventing unauthorized access. Double password protects sensitive functionalities.

Extensive access and logging for added security

Multi-level access control of unlimited number of users. System shut-down upon consecutive failed access attempts.

Job wizard

The wizard provides trouble-free creation of datamatrix codes that follow the GS1 structure.

Even complex jobs with multiple application identifiers are easily created. Human readable text is automatically created and positioned on the layout.

Job selection and execution

Print jobs are stored in a job library featuring a folder structure and "quick search" function for easy access. In production mode information on current status is provided by the software regularly.

Remote controlling via XML

Connection of databases for serialisation is an intuitive and trouble-free task. Our XML-based remote controlling protocol provides added flexibility for integration purposes, such as connection for track and trace solutions.

USER INTERFACE

Display

15" Touch monitor adjustable in X-Y-Z positions.

Software

HSAJET® multi-lingual software for Printing, Grading and HMI (PGH).

EXTENSIVE LOG

Full Audit Trail

The software features a full audit trail, which is provided for all events. All data related to the actual printing and verification is logged and time stamped.

- System events, like emergency switch activation and safety doors being opened, are logged and time stamped.

- All printed information is provided with quality grade and verification status.
- Images of all rejected items are stored for later review.
- Creation of jobs, operator intervention and any changes made in the software are logged and time stamped.

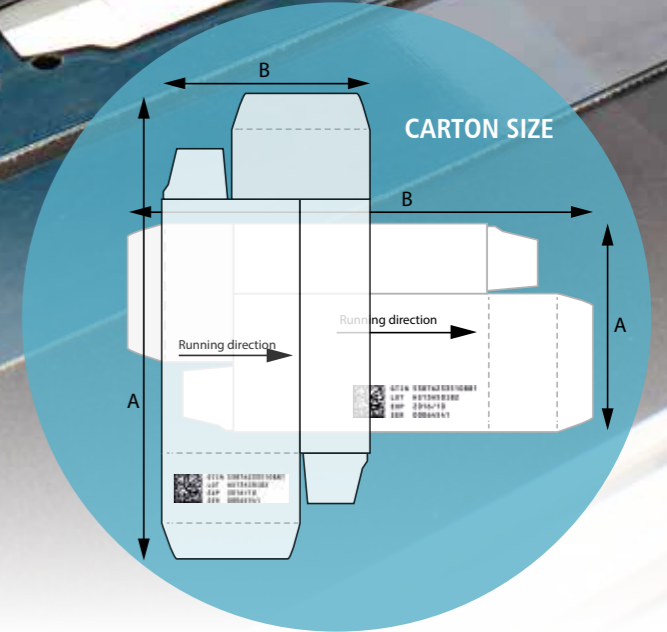
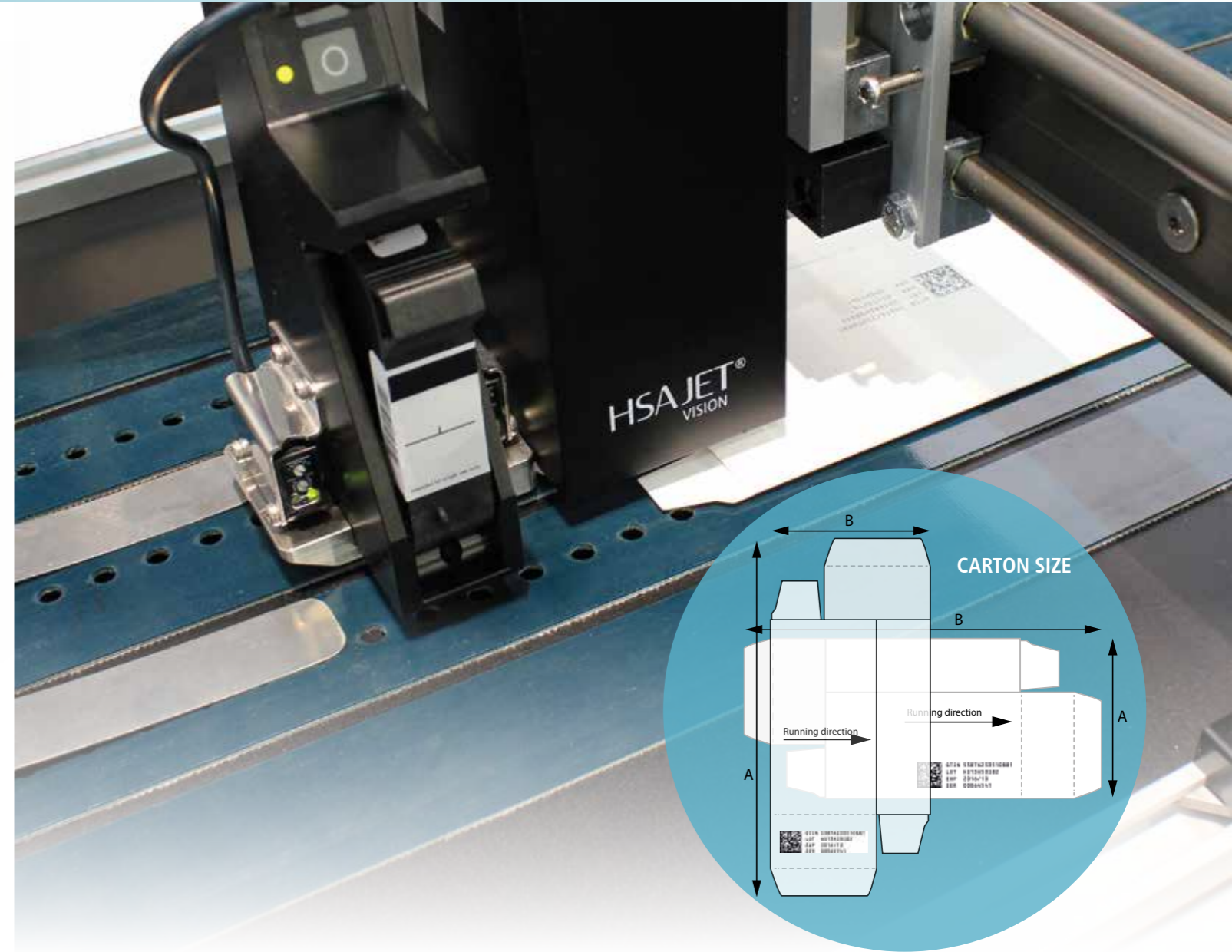
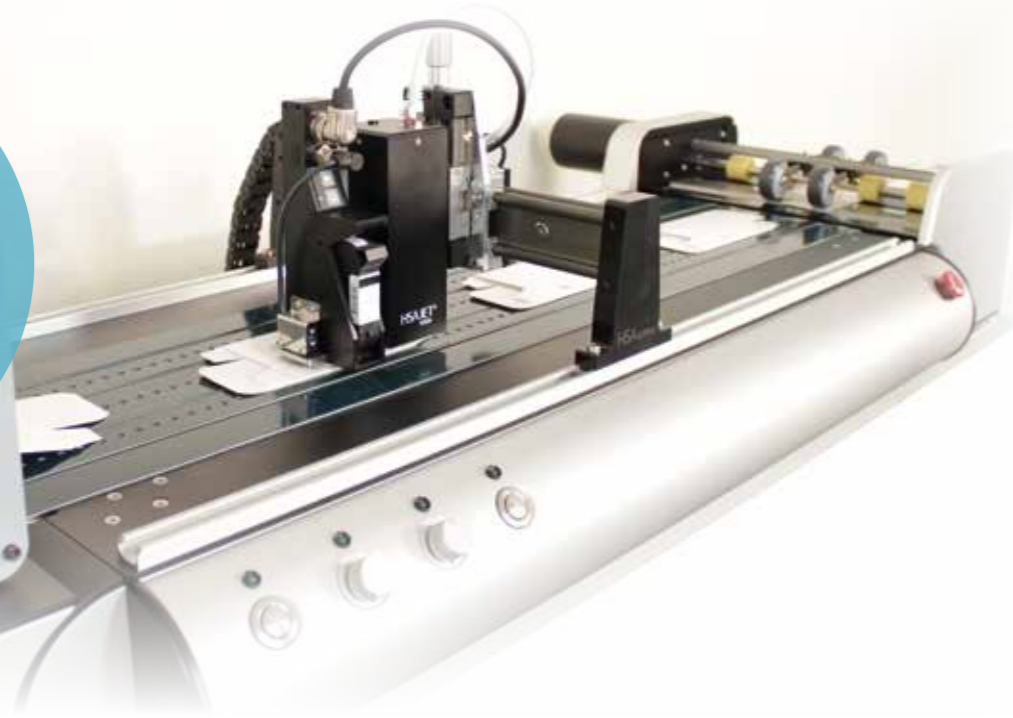
SQL database

The logs are stored using the built-in SQL database for later review or proof. The data can be exported or printed. Access to all functions is protected by user level control.





The cartons are moved along the conveyor by 5 belts and 2 vacuum chambers ensuring a precise transport prior to and during printing rendering a high print quality



IMPRINT

Technology

HSAJET® Premium printheads
HP TIJ 2.5 technology

Print dimension

Height up to 38.1 mm (1½")
Length up to 145 mm (5.7"), standard

Print features

1D code
2D code
Human readable
Date
Time
Counter
Bitmaps
Freely created text
Serialisation (via database connectivity)

PRINTING SYSTEM

Technology

HSAJET® Premium printheads
HP TIJ 2.5 technology

Print height

Choose between 12.7, 25.4 or 38.1 mm
(½"-1"-1½") 1, 2 or 3 pens

Resolution

Up to 600 dpi

Print distance

0.5-5.0 mm dependent on ink and speed, typically 0.5-2.0 mm (nozzle to print surface).

Ink supply

HP45 ink cartridges, dye and pigmented, water or solvent based inks.

Printhead features, e.g.

Purge and ink reset buttons.
LED indication for cartridge detection and low ink.
Cartridge detect switch.

System controller

Mini-PC cabinet
Intel® Core i7 processor
SSD hard drive for maximum processing power and reliability.
I/O LVDS connection panel

The printing features of the controller are provided by the HSAJET®, PCI Express based, CB6e card which acts as the interface between the controller, printhead, camera and the I/O connection panel.

PRODUCTION

Carton size (min-max)

A: 75-285 mm (leading edge)
B: 75-275 mm (height)

Throughput

200¹ units/min (average sized product).
250² units/min (special product size and machine configuration).

Carton orientation

Cartons can be placed with longest side either parallel to or perpendicular to running direction.

1) Printing and verifying 1 Datamatrix and 4 lines of text (150 mm long product)
2) The actual throughput is dependent on size, shape and quality of the product



VERIFICATION & GRADING

Verification

Verification of printed text, 1D, 2D code.

Grading

Quality of 1D/2D code is determined with grade level between F and A (0-4).

Quality of Unicode text is determined with a font-based reference scheme and grade level between 0 and 100.

Qualification of printed items

In accordance with industrial standards, ISO/IEC 15415 and 15416.

Datamatrix standard

According to GS1 and ISO/IEC 16022

Barcode standard

PIATS code based on Code 128C according to ISO/IEC 15417

Text standard

OCR-B font (possible to use other fonts)

COMPLIANCE

GAMP

The system is made following the guidelines, enabling the customer to comply with GAMP.

21 CFR Part 11

The system is made following the guidelines, enabling the customer to comply with 21 CFR Part 11.



CONTROLS & SYSTEM MONITORING

System management

All settings and control of print, vision and machine interface are carried out via HSAJET® software.

Access control

User level access control with 6 user groups.

Unlimited number of users can be created.

Administrator managed access definition.

Time limited access definition with automatic expiry.

Interlocking

Queue control management with four sensors for carton location tracking.

Carton length verification.

Rejection verification.

Up-stream/down-stream verification (like cartonator and bundler).

Cartridge absent/present verification.

No-gap between boxes detection.

Warnings in software

A message will notify the user when an error or other incidents occurs such as;

Low ink level in cartridge(s).

Device not ready.

Cartridge not inserted.

Up-stream/down-stream not ready.

Top cover open.

Air pressure below required level (optional).

The system will automatically stop after multiple consecutive errors.

VISION SYSTEM

Camera

HSAJET® VS2

Resolution

1280 x 1024 px

Inspection area

55 x 45 mm standard

Light

Integrated light.

Shielding against stray light with diffuser for glossy substrates.



VALIDATION PACKAGE (optional)

DQ, IQ and OQ validation package available. The validation package is a generic series of documents and templates, which can be edited to meet specific customer requirements in following the GAMP guidelines.

The validation pack includes

- Design Qualification (DQ) with functional specification
- Installation Qualification (IQ)
- Operational Qualification (OQ) with template test schematics

MAIN MODULE

Conveyor

Weight 33.5 kg (conveyor only)

Drives

DC motors

Belt dimensions

Length: 2213 mm
1 belt 50 mm wide, punched
2 belts 35 mm wide, punched
2 belts 35 mm wide, unpunched

Belt speed

5-90 m/min

Running direction

Left to right

Conveyor finish

Anodised aluminium

Top cover

Transparent polycarbonate.
Cover equipped with safeguard switch to stop the machine if opened during production.

Brackets and Supports

Stainless steel.
Anodised aluminium.

Printhead & Camera mountings

Integrated common adjustable bracket for printhead and camera for correct positioning in height and across.

Format adjustment

Tool free adjustment

Connection panel

In-/output panel built in cabinet

Cabinet for conveyor

1 drawer and 2 doors with key locked space for controller and connection panel.

MAIN MODULE

ELECTRICAL

Electrical connection

Main switch (lockable)
Industrial power cable
Voltage (1 phase): 115 / 230 VAC
Frequency: 50Hz / 60 Hz
Power consumption: 180 W
Fuse: 1.6A / 0.8A

Power backup

Uninterruptible Power Supply (UPS) for shutting down system properly in case of unexpected power disruption (optional).

Electrical panel

PC On, Emergency Stop, Reset and Fan control buttons.

Emergency operation

Switch on front panel.
Hardware controlled emergency stop function.

CONNECTIONS

External connections

Main power
Air pressure
Upstream/Downstream machine control signals for interaction with other machines.

Product position sensors

for print, camera, reject and accept
Baumer FHCK 07P6901 (4 pcs)

Input / Output

I/O Connection Panel (LVDS) with 40 inputs and 32 outputs.

Verification log file

Error log file

System log file

FEEDER MODULE

Feeder

Streamfeeder model 710BC
(product dependent)

Technical Data 710BC

Product size (min) 95 x 95 mm
Product size (max) 305 x 305 mm
optional product size available
Product thickness 0.076-19 mm
Belt speed 101.6 m/min
Batch size 1-50 pieces
Electrical requirements
115/230 VAC, 50/60 Hz, 3A
Dimensions (LxWxH) mm
Weight 19.5 kg

Feeder extension table

Dim 467x386x140 mm (LxWxH)
Weight 6.4 kg

Cabinet for feeder

1 door with key locked space
Dimensions: drawing overleaf

EXIT MODULE

Diverter unit

Electro mechanical gate
Controlled automatically via main module

Cabinet for diverter

Reject bin, 1 door with key locked space

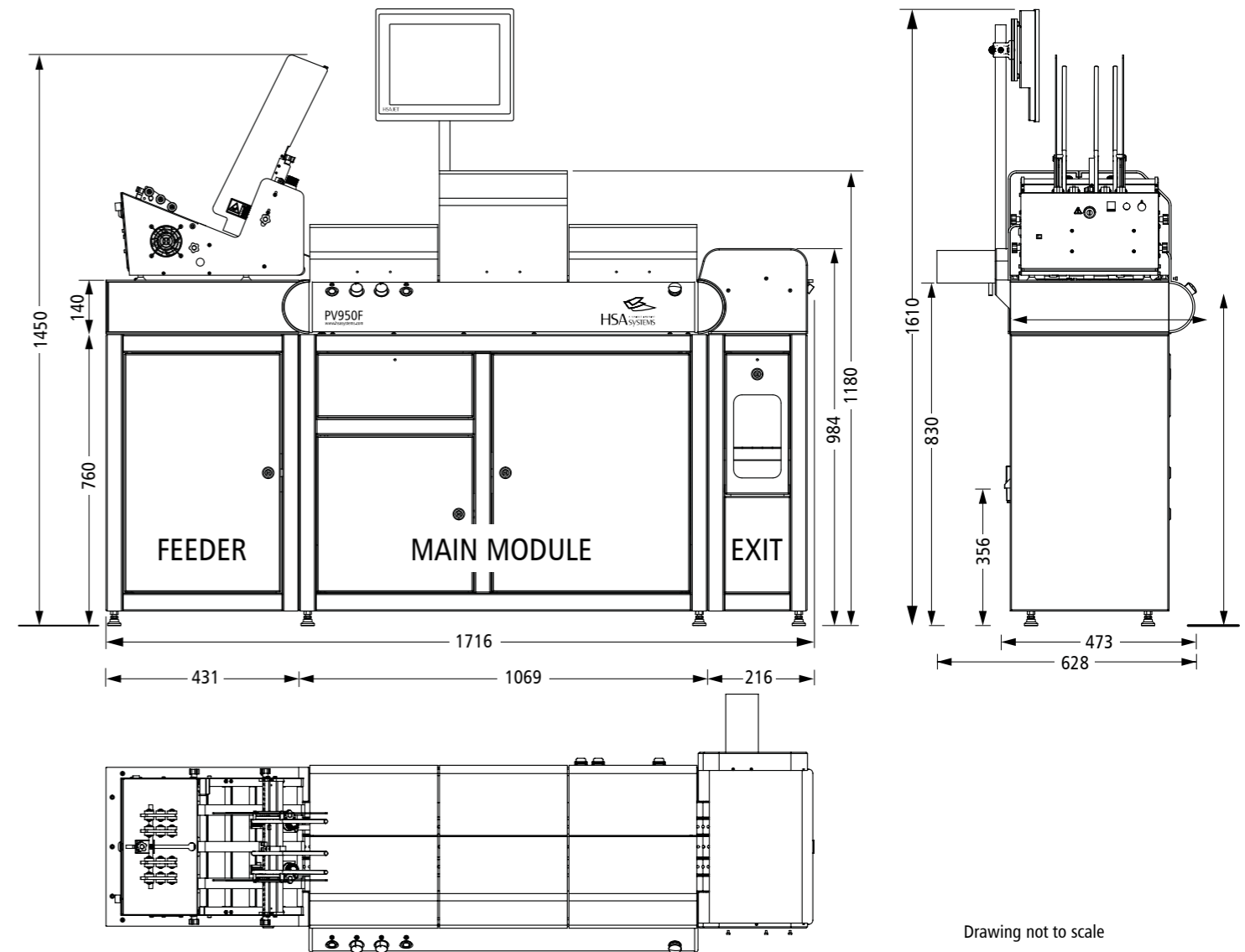
COMPLIANCE

Protection class

IP54

Complies to

CE directives



Drawing not to scale

OVERALL DIMENSIONS

Dimensions

Length: 1716 mm
Width: 628 mm
Height: 1383 mm
Height adjust: +50 mm

Working height

840 mm +50 mm

Weight

Cabinet stainless steel 77 kg
Anodised aluminium 14 kg (optional)

ACCESSORIES & OPTIONS

Beacon

3-colour beacon for display of current status.

Exit conveyor

Standard dimension 300 mm wide, 1200 mm long for end-to-end or angled position

Solution for Pharmaceutical unfolded Cartons



DISTRIBUTOR:



HSA A UNIQUE IMPRINT
SYSTEMS

HSA Systems (head offices)
DENMARK | SKOVLUNDE +45 4494 0222 | ODENSE +45 6610 3401

HSA Systems (subsidiary offices)
FRANCE +33 1 4815 5050 | GERMANY +49 5257 938 6777

www.hsasystems.com | mail@hsasystems.com