Inkjet Technology

HSAJET®

Print & Verification

SOLUTION FOR BOX PRINTING & VERIFICATION

Turnkey Print & Verification unit for pharmaceutical folded boxes

HSAJET® Box Printing Unit

The HSAJET® Box Printing Unit is a stand-alone pack handling system for automatic box marking applications.

The design of a continuous top / bottom belt conveyance system ensures accurate transportion of products, providing optimal circumstances for high quality printing.

The use of qualified components allows the fast integration into existing line concepts.

The basic machine is prepared for 2-side installation of the HSAJET TIJ 2.5 printhead and camera.

HSAJET® Print and Verification

The HSAJET® Print and Verification system is the control center of the machine, providing design of jobs, control of print, verification and eject as well as machine interface. All from a single touch monitor.

Turnkey solution

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

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

Key benefits

- Complete machine controlled by HSAJET® software and hardware
- The unit makes it possible for 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
- Smooth and stable package handling system
- Excellent in-line print quality due to percision guiding (top/bottom belt)
- Boxes can be printed on the front and the back (2nd position optional)
- Continuous adjustable conveyor speed
- Integrated ejection control system
- Contained GAMP-conform design in stainless steel and transparent polycarbonate
- Tool and format-free batch change
- User-friendly operating of machine, printer and vision via one central touch screen
- The most compact and maintenance friendly concept in the market
- Easy maintenance of all machine parts via large front cover and removable back cover

HSA A UNIQUE IMPRINT SYSTEMS

HSA USA
The first choice in package printing

Technical Details

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System Controller

The controller is built with a powerful Intel® Core i7 processor and a fast SSD hard drive for maximum processing power and minimum noise.

For printing features the controller is equipped with the HSAJET® PCI Express based CB6e interface card. It handles signals from the controller to the printhead(s), receives images from the camera and communicates with the machine I/O LVDS connection panel.

Conveying System

The system is equipped with a top and bottom belt for smooth conveying of the products. This ensures for better print quality along with accurate grading of the barcode.

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

Both drives are driven by stepper motors.

CONNECTIONS / INPUT& OUTPUT

External connections

Main power, air pressure, upstream-downstream machine control signals
Format adjustment
Tool free adjustment. Reproducible by digital display at the spindle.
Integrated mounting bracket for printhead and camera positioning.

Product position sensors

Omron E3Z-LS83-2M (3 pcs)
Omron E3Z-T81 (1 pc)
for print, camera, reject and accept

Input / Output

I/O LVDS Module
w/ 40 inputs and 32 outputs
Verification log file
Error log file
System log file

Errors & Warning

Messages, eg:

- operational disruptions production
- low ink
- machine stop at consecutive errors
- device not ready
- cartridge not inserted
- downstream not ready
- safety doors open
- air pressure below required level

Interlocking

- Queue control management with 4 sensors for box tracking location, up to loop close
- Carton length verification
- Rejection verification
- Up stream/ down stream verification (like cartonator and bundler)
- Cartridge absent/present verification
- Joint box detection

Options

- Uninterruptible power supply (UPS)
- Beacon
- Front print kit

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CONVEYOR UNIT

Dimensions
Length: 664 mm
Width: 640 mm
Height: 1015 mm
Height adjust ± 50 mm

Working height
802,5 mm ± 50 mm

Weight
90 kg (approx.)

Belt speed
5-60 m/min

Running direction
Left to right

Electrical connection
Voltage: 230 VAC / 110 VAC
Frequency: 50 Hz / 60 Hz

Cabinet
Stainless steel with key locked space for controller and reject bin

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

Emergency operation
Switch on front panel. Hardware controlled emergency stop function

Air pressure
8 bar main supply

Reject system
Air pressure box blow-out for boxes up to 250 g.
Pneumatic push out device available for >250 g products.

Reject bin
Reject bin secured with key lock

Complies to
CE directives

VISION SYSTEM

Camera
HSAJET VS2

Resolution
1280 x 1024 px

Inspection area
45 x 45 mm

Light
Integrated light
Optimal diffuser against stray light

USER INTERFACE

Display
15" Touch monitor

Software
HSAJET PGH-software
Features
Multi-lingual
Design, print and verification
Controls the machine from one interface

VERIFICATION & GRADING

Verification
Verification of printed 1D/2D code and text content

Grading
Quality of 1D/2D code is determined Grade level between F and A (0-4).
Quality of Unicode text is dertemined with a font-based reference scheme 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 according to ISO/IEC 15417

Text standard
OCR-B font (possible to use other fonts)

PRINTING SYSTEM

Technology
HSAJET Premium printheads
HP TIJ 2.5 technology

Print height
12.7-25.4 mm / ½"-1" / 1 to 2 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
HP 45 ink cartridges, water and solvent based inks

Printhead features, eg.
Purge and ink reset button
LED indication for cartridge detection and low ink
Switch for cartridge detection

Machine controller
I/O LVDS connection board
CB6e controller board
Intel® Core i7 processor

PRODUCTION

Print position
Print on back
Print on front (optional)

Carton box size (max)
A: 40-210 mm (leading edge)
B: 10-75 mm (height)
C: 125 mm (printed side)

Throughput
300[1] units/min (average sized product)
480[1] units/min (special product size and machine configuration).
1) The actual throughput is dependent on the distance between products, box surface, stability and rigidity of the box.

Precision position control
A precise box position control controls top and bottom motors.
Exact box position is known throughout the conveyor belt. If incorrect box position, conveyor stops.

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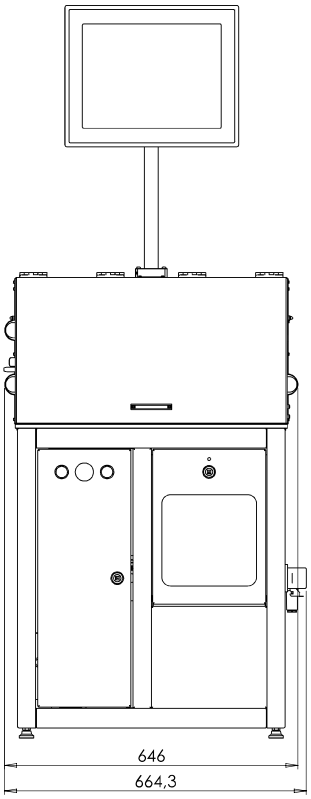
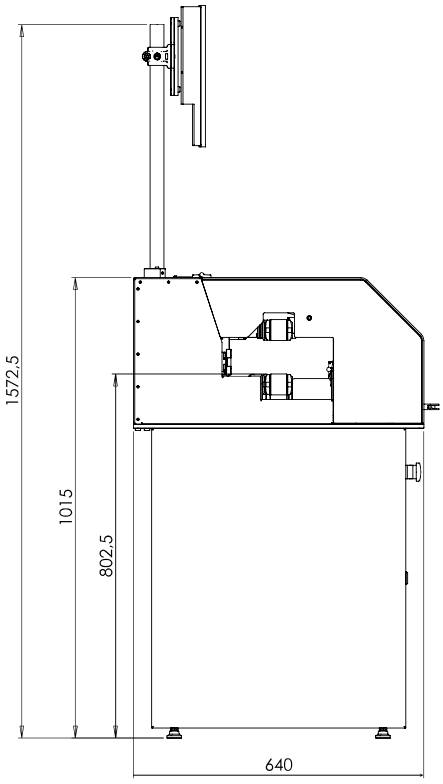
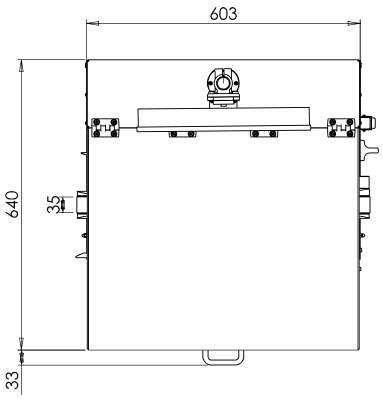
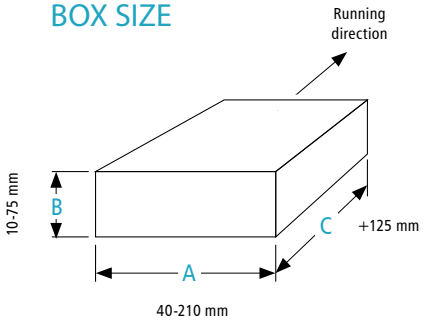






BOX SIZE



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