

# X-PEN

ADVANCED INJECTABLE  
ASSEMBLY SOLUTIONS



POWERED BY  
**IMA** AUTOMATION

**IMA**  **MED-TECH**  
Technologies for Medical Devices

ADVANCED  
**MODULARITY**

4

ADVANCED  
**TECHNOLOGY**

6

ADVANCED  
**QUALITY**

8

ADVANCED  
**EFFICIENCY**

10

ADVANCED  
**CONNECTIVITY**

12

TECHNICAL DATA AND  
**TURNKEY SOLUTIONS**

14

**IMA MED-TECH solution. A new modular platform approach for final assembly systems of pens and autoinjectors.**

With latest robust technologies, labelling as standard, quick time-to-market, compact design, standard machine bases and market leading ROI, our X-PEN systems bring state-of-the-art technology to your fingertips.





X-PEN

# ADVANCED MODULARITY

## **Multi-variant manufacturing**

X-PEN assembles standard pens and autoinjectors with reduced changeover time and achieves outputs of up to 160 pieces per minute with integrated labelling.

## **Machine configuration tailored to customer requirements**

X-PEN can integrate processes before and after final assembly: such as direct loading of cartridges from an upstream quality control machine and integration to downstream secondary packaging.

Process stations in the X-PEN are placed according to customer needs, streamlining your production.

## **Linear Magnetic Transport System allows flexibility, modularity and speed**

The transport system is based on the motion of "movers" across a magnetic loop. Our smart transport system perfectly matches your injectable production requirements.

It is an integrated final assembly solution that is smooth, fast, efficient, quiet and of lean design.

A dedicated industrial PLC is used to manage the Magnetic Transport System loop, each mover is controlled independently.

- Low maintenance
- High repeatability
- Low noise level
- Full synchronization of movers and stations





# ADVANCED TECHNOLOGY



## **LATEST TECHNOLOGIES TO ACHIEVE ROBUSTNESS AND RELIABILITY, WITH LABELLING AS STANDARD**

### **Electrical Pick and Place**

Electrical activated pick & place moduls to reduce air consumption and have full control via PLC.

Motors for vertical and horizontal motions are fixed and both are individually controlled.

### **Press Force System**

All press operations are performed in a controlled manner. Through force-distance measurements, specifications of device manufacturers are strictly followed.

### **Precise Label Application**

Labels are fed from a reel and are presented ready for wrapping, a pick & place module transfers labels to the devices. A roller system wraps the label around the device and ensures correct alignment of the label edges.

When the reel is empty, either a manual quick change-over process is made, ensuring a rapid return to production or an automated auto change-over system ensures continuous production.

Label printing such as date and batch code, together with OCR check prior to application is available as an option. A tracking system is integrated to log each device.

# ADVANCED QUALITY

## **X-PEN guarantees quality and control**

Using both mechanical and vision systems, with inspection speeds of <80ms, your device is checked for necessary critical assembly attributes and dimensions. The vision system is triggered directly from the Linear Magnetic Transport System (LMTS), ensuring accurate device positioning at inspection.

“On the fly” vision inspection is carried out during product transfer at a controlled speed.

Having off-the-shelf standard equipment brings its own advantages. A smart machine turning a standard concept into real value in terms of reduced lead times, and footprint while maximising, efficiency and reliability.





# ADVANCED EFFICIENCY

## All key processes integrated

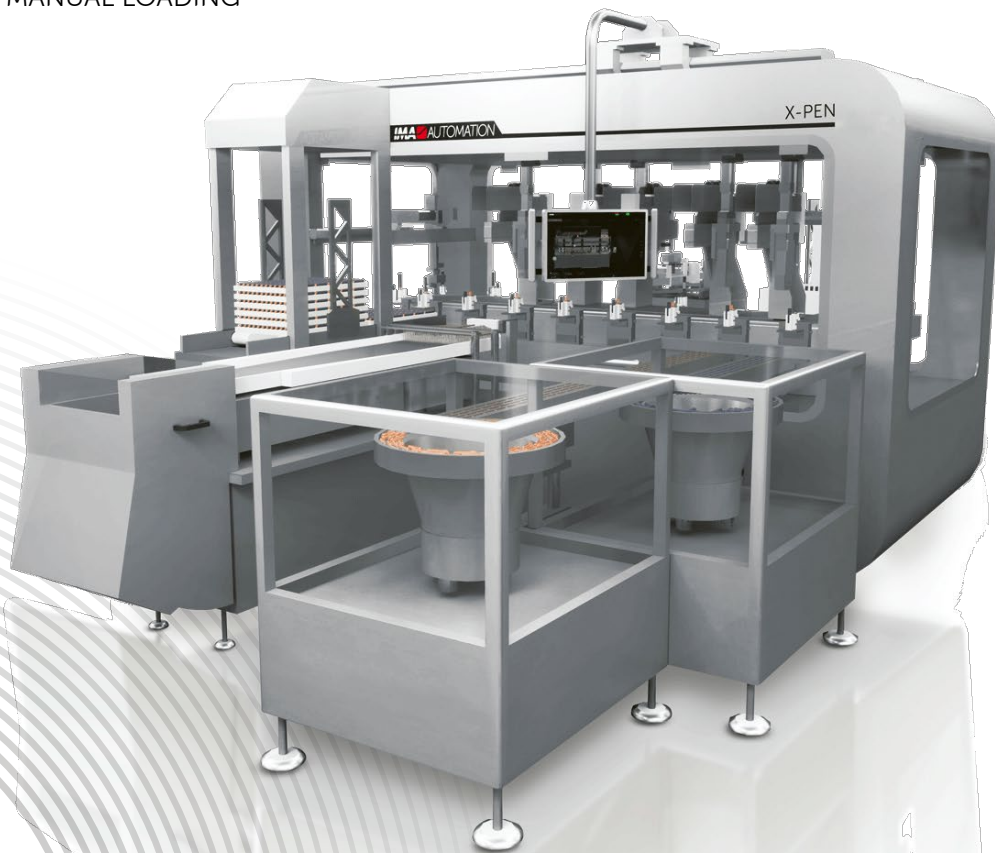
Processes are at the heart of repeatable and robust assemblies. Below are some of the many possibilities, all fully integrated into X-PEN machine.

- CARTRIDGE, CAP & CARTRIDGE HOLDER FEEDING
- PFS HANDLING WITH NO GLASS-TO-GLASS CONTACT
- ELECTRICAL PICK & PLACE
- CARTRIDGE/PFS VISION INSPECTION
- PRIMING
- PRESS FORCE SYSTEM
- LABELLING
- FUNCTIONAL TESTING
- 2D MATRIX CODE PRINTING & INSPECTION
- ON-THE-FLY VISION





- TRAY LOADING
- PALLETISING
- MANUAL LOADING

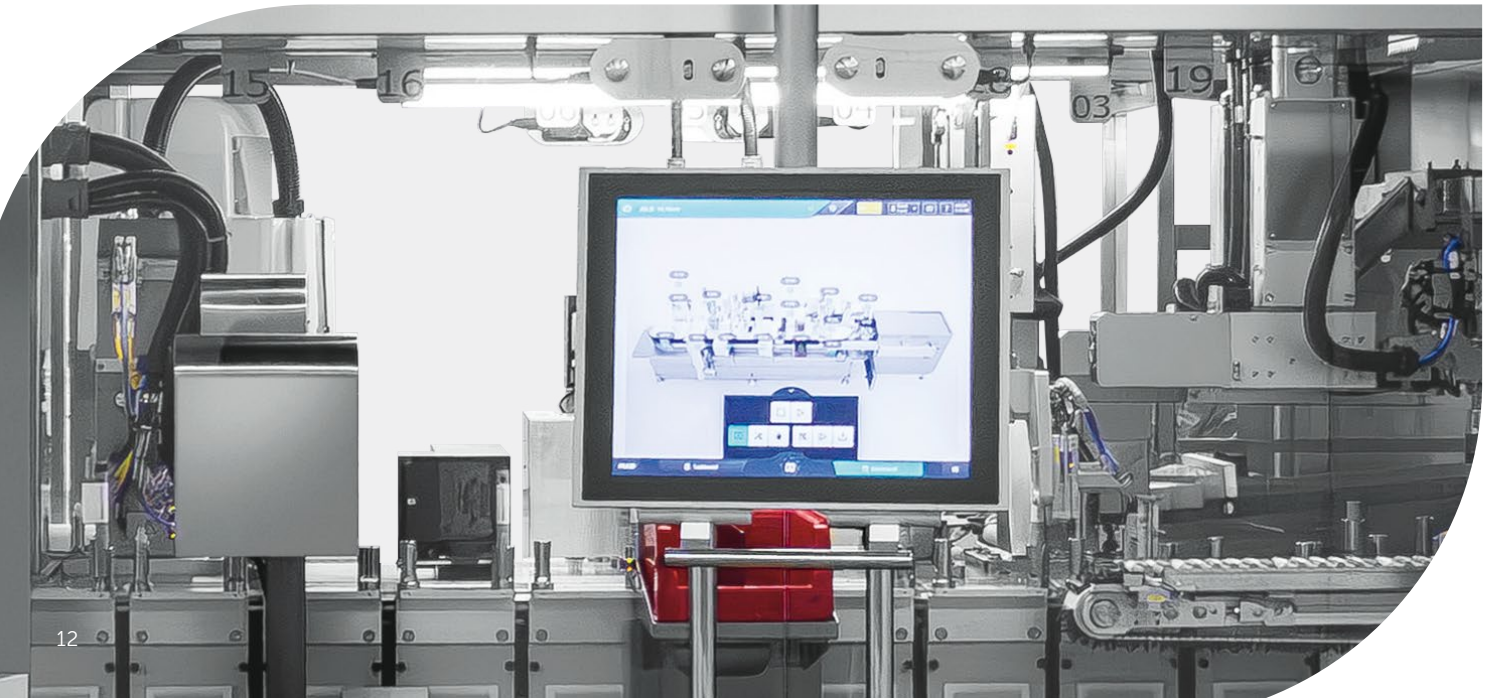


# ADVANCED CONNECTIVITY

## IMA Group standard HMI concept

Ease of use and having user friendly information at your fingertip's aids operator and engineer efficiency, MTTR (Mean Time to Repair) is minimal with our 2D & 3D images and descriptions in any language.

- SIMPLE, MODULAR SYSTEMS
- STANDARD BASES
- CUSTOMISABLE
- HMI WITH SLIDING MOVEMENT TO IMPROVE ERGONOMICS
- CROSS-PLATFORM CLIENTS
- OPC/UA AS CORE TECHNOLOGY



## ARTIFICIAL INTELLIGENCE, DIGITAL TWINS, VIRTUAL COMMISSIONING, ADVANCED PLANT MONITORING.

IMA Automation has integrated these and other innovations in order to revolutionise production processes, optimise operations, and ensure high-quality control, ensuring flexible and sustainable production.



### Digital twins & industrial metaverse

IMA Automation brings digital replicas of plants to life to simulate and optimise production processes, reducing downtime and improving maintenance. The use of virtual and augmented reality contributes to more effective staff training.

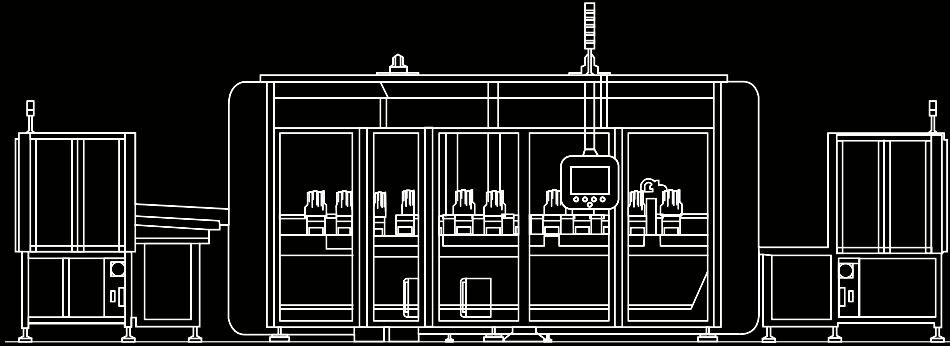
### IOT and artificial intelligence

Real-time monitoring systems collect data from sensors to analyse plant performance and optimise operational efficiency. The implementation of AI algorithms for predictive maintenance and production data analysis supports continuous quality improvement of products, while advanced analytics tools predict faults and anomalies, enabling proactive intervention, and reducing downtime.

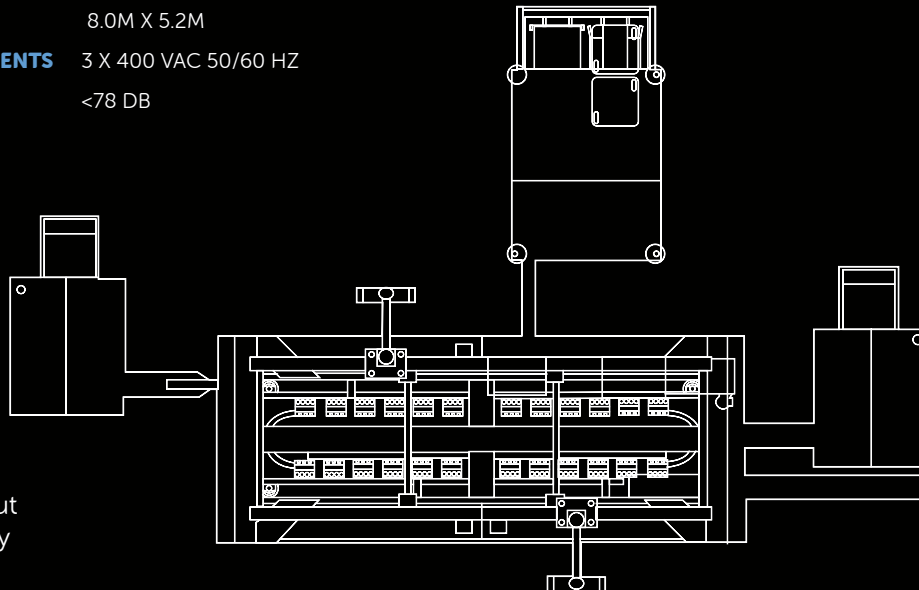
### Intelligent automation and cybersecurity

Advanced automation solutions combine robotics, machine learning and intelligent sensors in order to increase productivity and reduce errors, all with the guarantee of advanced data protection systems, capable of preserving the security of sensitive information and the operational continuity of digital infrastructures.

# TECHNICAL DATA



<b>THROUGHPUT</b>	UP TO 160 PPM
<b>AUTONOMY</b>	60 OR 30 MINUTES
<b>DIMENSIONS</b>	8.0M X 5.2M
<b>POWER REQUIREMENTS</b>	3 X 400 VAC 50/60 HZ
<b>NOISE LEVEL</b>	<78 DB



Example of layout  
for Pen Assembly

# TURNKEY SOLUTIONS

## Assembly and packaging integrated solutions

IMA is your 'all-in-one' provider for low, medium and high output assembly and packaging solutions.



ASSEMBLY



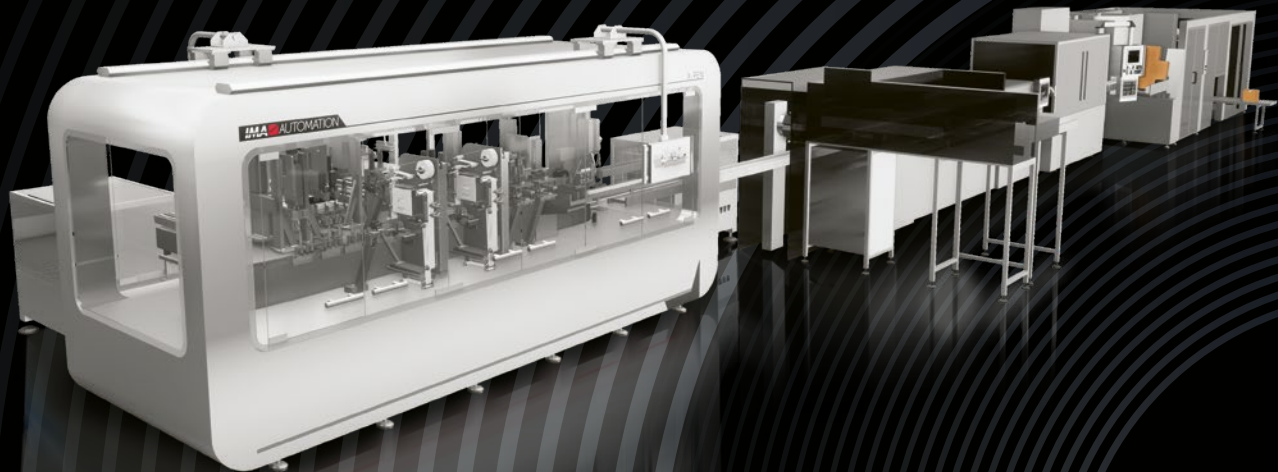
SECONDARY PACKAGING



CARTON LABELLING



END-OF-LINE



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