

X-PEN SERIES

ADVANCED INJECTABLE ASSEMBLY SOLUTIONS



POWERED BY
IMA  AUTOMATION

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

X-PEN

A modular platform approach

A MODULAR PLATFORM APPROACH FOR PRE AND FINAL ASSEMBLY OF PENS AND AUTOINJECTORS.

With latest robust technologies, labelling on demand, 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.



AUTOINJECTORS *

- Pre-filled syringe based
- Mono-dose
- Fixed dose
- Non reusable

Used mainly in the treatment of diabetes, obesity, sclerosis and hepatitis.

* PFS – pre-filled syringes with needle safety device can also be handled.



PENS

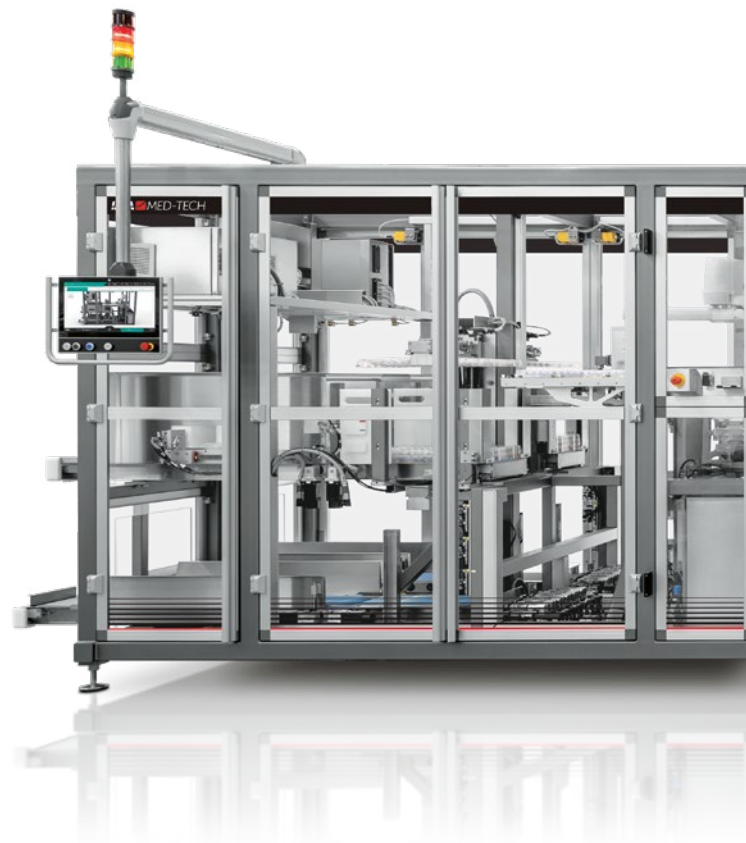
- Cartridge based
- Multi-dose
- Dose can be set-up
- Mostly non reusable

Used mainly in the treatment of diabetes, obesity, and hormone-related conditions.

KEY PROCESSES

Processes are at the heart of repeatable and robust assembly.

- 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



PRE-ASSEMBLY

- Focuses on assembly plastic and metal parts
- No sterile components or medication
- Builds the structural foundation of the device
- Ensures proper fit and alignment before final steps

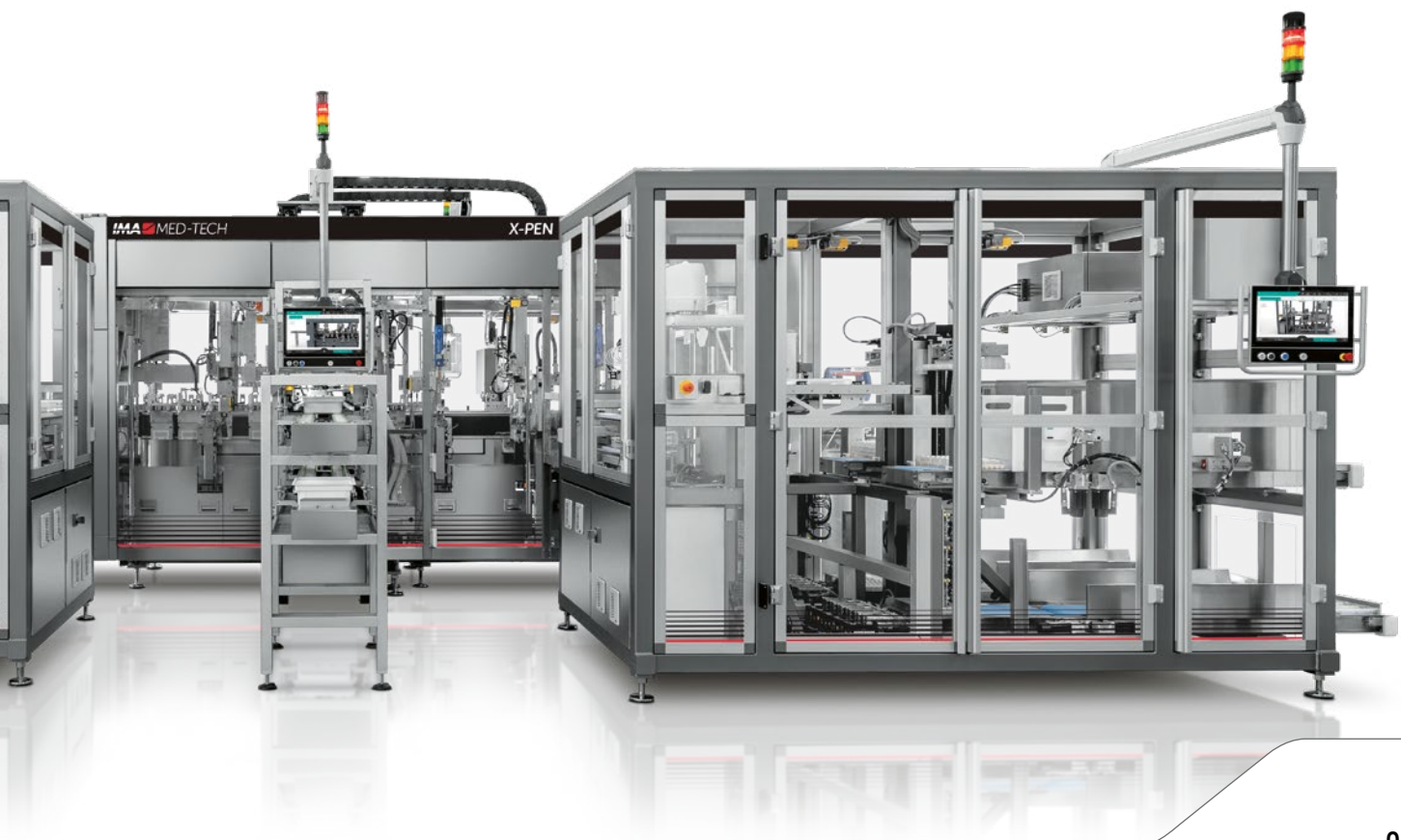
FINAL ASSEMBLY

- Combines all components including electronics and medication
- Completes the full device build
- Ensures the device is functional, sealed and ready for packaging or sterilization

COMBO

Combo Machine Capability: X-PEN can handle both injector pens and autoinjectors on the same platform with a simple recipe. This combo functionality, very rare in this category, significantly reduces capital expenditure and factory space, as manufacturers no longer need separate lines for different device types.

- 3 areas
- Pen processes
- Autoinjector processes
- Common process such as applying labels, unloading bad and good parts.
- Recipe change on HMI directly



X-PEN Portfolio

The X-PEN series offers a variety of assembly machines designed to meet the needs of different production environments, from manual to full automated systems, providing efficient solutions for assembling standard devices with varying output speeds and levels of automation. The flexibility of the X-PEN portfolio allows for seamless integration into different production lines, ensuring high-quality results and improved efficiency.

2PPM



X-PEN LAB
UP TO 3 PPM

BENCHTOP SYSTEMS FOR INTERNAL TESTING

- DESIGNED FOR INTERNAL TESTING WITH MANUAL FEEDING.
- STANDALONE TABLETOP UNITS FOR SPACE EFFICIENCY.



X-PEN LAB
UP TO 8 PPM

MACHINE FOR INTERNAL TESTS

- ENABLES EASY TESTING OF DIFFERENT PRODUCT VARIANTS.
- OFFERS FLEXIBILITY IN MULTI-VARIANT MANUFACTURING PROCESSES.



160 PPM



X-PEN LAB

UP TO 20 PPM

SEMI-AUTOMATIC ASSEMBLY MACHINE

Designed for testing and assembling various product variants

- COMBINES OPERATOR FLEXIBILITY WITH AUTOMATED PROCESSES.
- ENSURES EFFICIENCY AND PRECISION IN MULTI-VARIANT MANUFACTURING.



X-PEN

FROM 40 TO 160 PPM

MODULAR ASSEMBLY PLATFORM

- MODULARITY: BASED ON A LINEAR MAGNETIC TRANSPORT SYSTEM (LMTS) WHICH ALLOWS FLEXIBILITY AND SPEED.
- INTEGRATED PROCESSES, SUCH AS CARTRIDGE/PFS VISION INSPECTION, PFS HANDLING WITH NO GLASS-TO-GLASS CONTACT, FORCE-DISTANCE CONTROLLED ASSEMBLY, PRIMING, LABELLING.
- QUICK TIME-TO-MARKET, COMPACT DESIGN, FAST ROI

X-PEN

Advanced modularity



REDUCED CHANGEOVER TIME

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 the production.

LINEAR MAGNETIC TRANSPORT SYSTEM ALLOWS FLEXIBILITY, MODULARITY AND SPEED

Linear Magnetic Transport System allows flexibility, modularity and speed. The transport system is based on the motion of "movers"; across a magnetic loop. The smart transport system perfectly matches injectable production requirements. It is an integrated lean design final assembly solution smooth, fast, efficient and quiet 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

X-PEN

Advanced technology



ELECTRICAL PICK AND PLACE

Electrically activated pick-and-place modules designed to reduce air consumption, fully controlled via PLC. Motors for vertical and horizontal motions are fixed and 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.

INTEGRATED LABELLING

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.

X-PEN

Advanced quality and efficiency

X-PEN GUARANTEES QUALITY AND CONTROL

Using both mechanical and vision systems, with inspection speeds of <80ms, the 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.

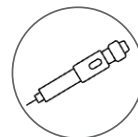
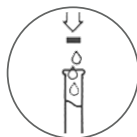
Off-the-shelf standard equipment brings its own advantages. A smart machine turning a standard concept into real value in terms of reduced lead times and footprint while maximising efficiency and reliability.

TURNKEY SOLUTIONS

Assembly and packaging integrated solutions

IMA is your 'all-in-one' provider for low, medium and high output assembly and packaging solutions, depending on customer specifications:

- Product type (blister/carton)
- Label type
- Speed



**LOADING/UNLOADING
(PRIMARY PROCESS)**

■ TLS ROBOTIC SYSTEMS



**SYRINGES FILLING
(PRIMARY PROCESS)**

■ INJECTA
■ STERIFILL RS-P
■ STERI LIF3



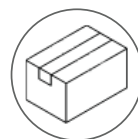
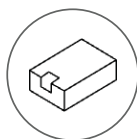
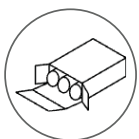
ASSEMBLY LABELLING

■ X-PEN

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SECONDARY PACKAGING

- X1, X2, XL1, XL2
- FLEXA



CARTON LABELLING

- AP 400

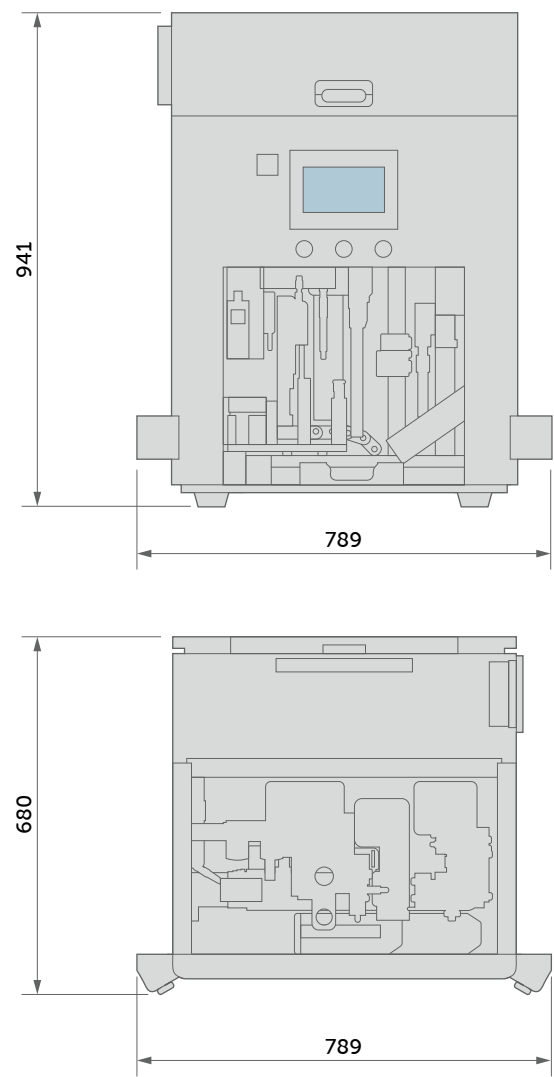


END-OF-LINE

- CP18-MINIFLEX

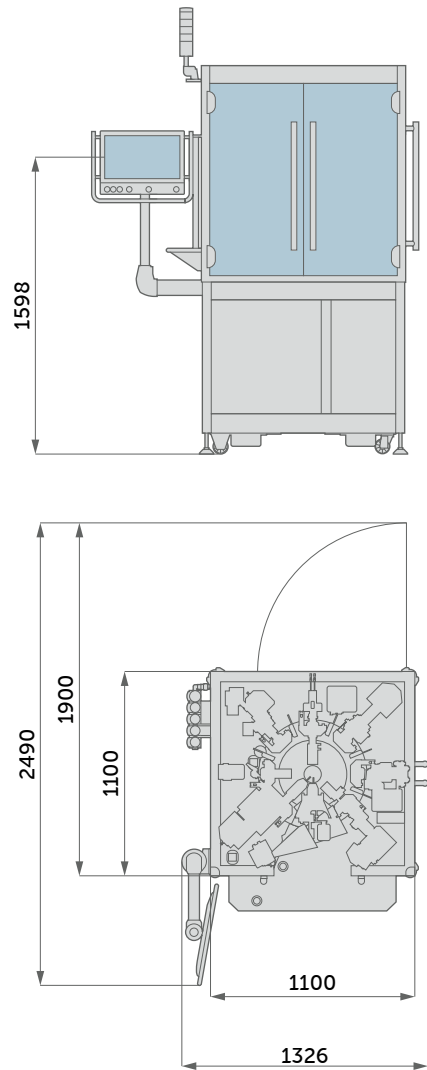
TECHNICAL DATA

X-PEN LAB UP TO 3 PPM



X-PEN LAB UP TO 3 PPM	
Throughput	Up to 3 PPM
Autonomy	N/A
Dimensions	0.8 m x 1 m x 0,7 m
Power requirements	240V 1PH+N+PE In=10 A P=2.5kW
Noise level	<65 dB

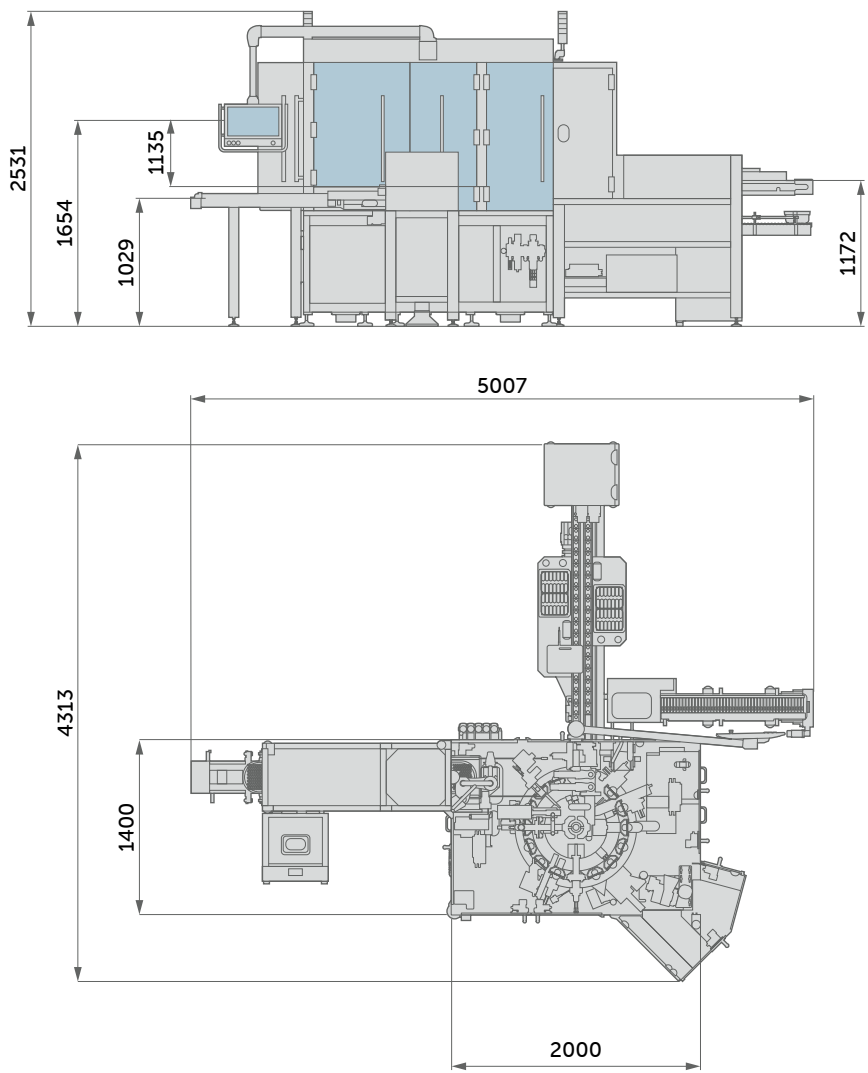
X-PEN LAB UP TO 8 PPM



X-PEN LAB UP TO 8 PPM	
Throughput	Up to 8 PPM
Autonomy	N/A
Dimensions	1.3 m x 1.1 m x 2.1 m
Power requirements	400V 3PH+N+PE In= 5A P=3.5kW
Noise level	<65 dB

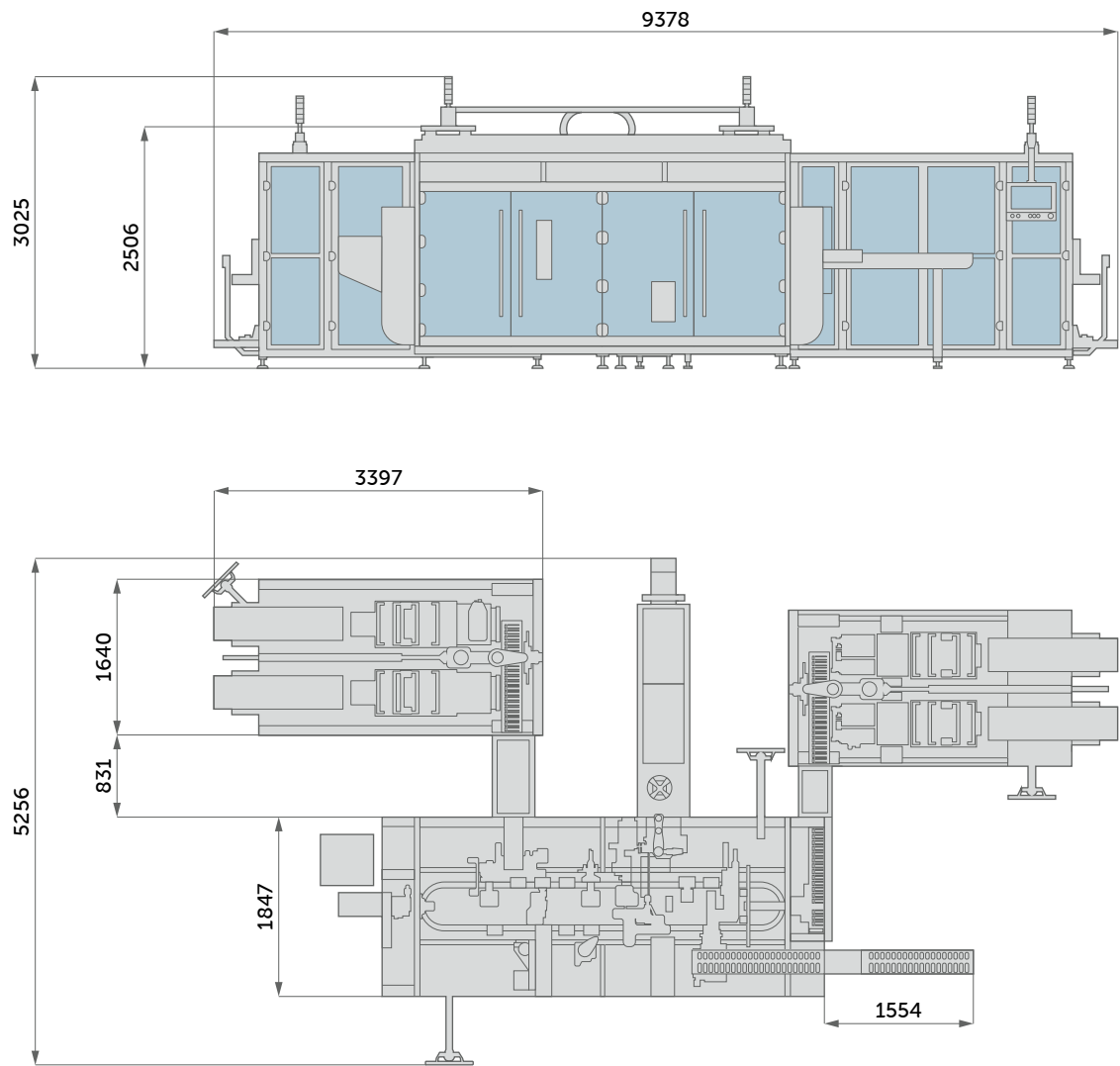
TECHNICAL DATA

X-PEN LAB UP TO 20 PPM



X-PEN LAB UP TO 20 PPM	
Throughput	Up to 20 PPM
Autonomy	N/A
Dimensions	5.0 m x 4.3 m x 2.5 m
Power requirements	400V 3PH+N+PE In ≈ 8.6 A P = 6 kW
Noise level	<78 dB

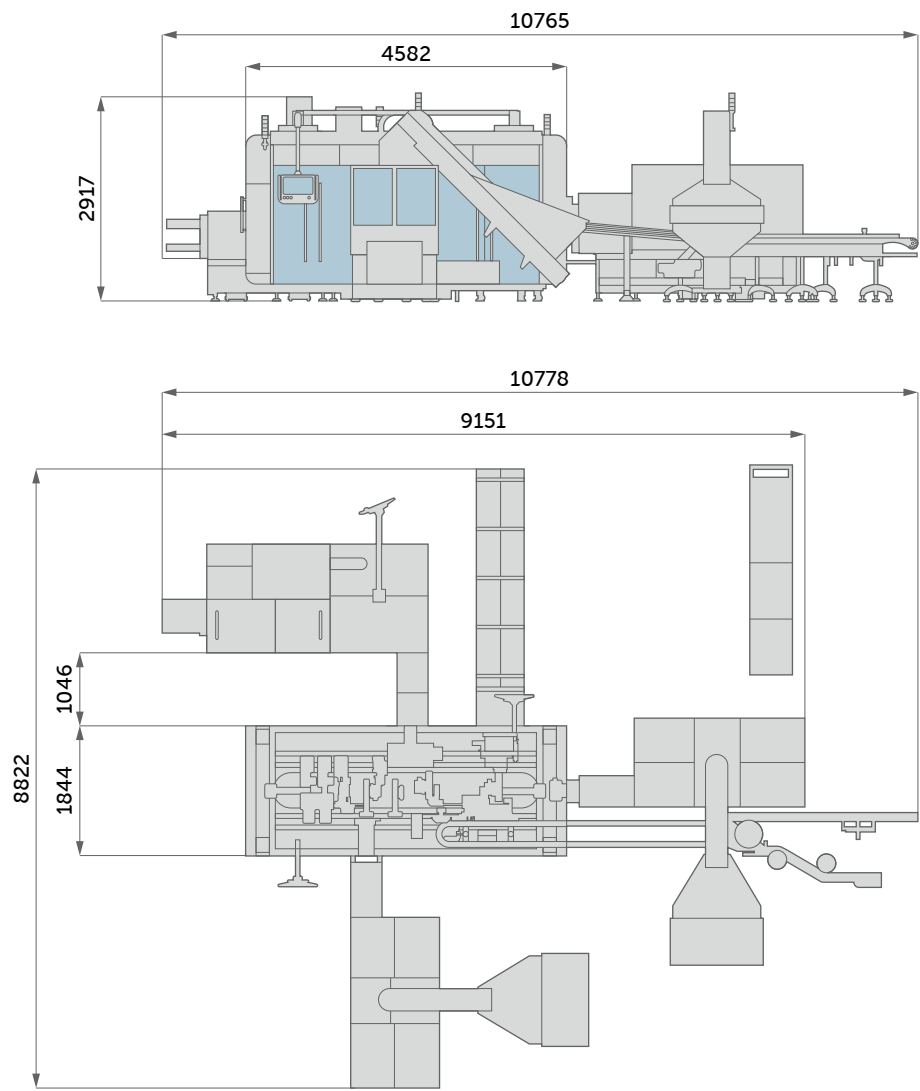
X-PEN | AUTOINJECTOR



X-PEN AUTOINJECTOR	
Throughput	Up to 160 PPM
Autonomy	15 or 30 minutes
Dimensions	9.4 m x 5.3 m x 3 m
Power requirements	400V 3PH+N+PE In= 10A P=7kW
Noise level	<78 dB

TECHNICAL DATA

X-PEN | PEN



X-PEN PEN	
Throughput	Up to 160 PPM
Autonomy	15 or 30 minutes
Dimensions	10.8 m x 8.8 m x 2.9 m
Power requirements	400V 3PH+N+PE In= 10A P=7kW
Noise level	<78 dB

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