

# Assembly, filling and packaging of depot syringes

Precision and security in sterile production.



The assembly of depot syringes requires precise sequences and at the same time gentle treatment of the sensitive products. In addition the market requirement of safe syringe disposal after use must be met in addition on the project.

### Process sequence:

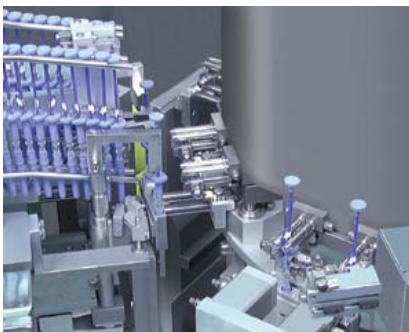
Pre-assembled syringes are unloaded from the trays by a lift system and then placed into the rotary turret. Demounting and insertion of a solid implantate takes place here.

After control for presence of the active substance the syringes are closed and turned from a vertical to a horizontal position.

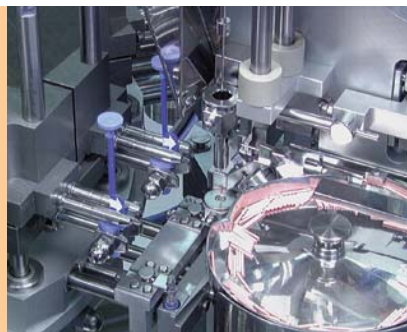
Before labeling the product is checked for correct closure. In a further assembly unit the finished syringes are inserted into protective sleeves. Packaging into prefabricated sachets is performed in the ensuing part of the line. At the end of the line these bags are stacked in trays.

### Technical data

Output: 60 Syringes / minute



Insertion of the syringes by the lift system into the turntable



Singularization of the implantates and insertion into the syringe body



Insertion of syringes into protective sleeves

# Assembly of needle-free injectors

Precision engineering  
in detail.



Needleless injectors are a progressive product for self-medication. The liquid is atomized at high pressure and enters the body via the skin. In comparison to conventional syringes this process creates much less pain.

The needleless injector is assembled and filled in a class 100 Clean Room. This process presumes exact process operations for assembly. The capsules are filled in the downline installation.

#### Our capability to do this:

- Assembly technique in Clean Room Class 100
- Configuration for Isolator technique
- Complex processes for the handling and conveyance of products
- High-precision part assembly
- Various checking techniques available

#### Technical data

Output: 120 Cartridges / minute



Assembly line for completion of the injector components



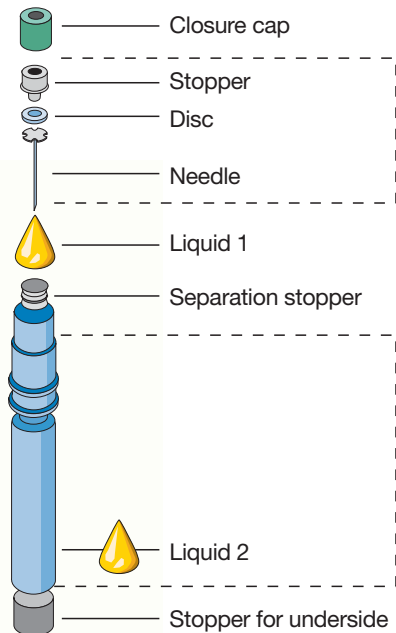
Unloading of the ready assembled products from the puck conveying system



Transfer of the injector components by means of grippers

# Assembly of multi-chamber injectors

Complex process technology for highly sensitive products.



For the design of a filling and assembly machine the special requirements for operation in a class 100 Clean Room have to be heeded. The product of the multichamber autoinjectors is composed of two separately filled active substances that are mixed in the application.

### Process sequence:

The stopper, disc and needle are put together in a puck conveying system. This pre-assembly is conveyed onwards to the filling unit. Injector bodies are fed, complemented with separation stoppers and filled with the first active substance. Insertion of the pre-assembly into the syringe body is now performed. After closure of the injectors they are used for the dosing of the second liquid. To close the filled active substance chamber, stoppers are inserted on the underside.

The finished injectors are unloaded onto a belt. Comprehensive in-process controls (IPC) and the safe ejection of fail parts provide for the highest product quality.

### Special features of the line:

- 100 % control for completeness and fill amount during the assembly and filling operations
- Arrangement of various processes in a line with a small space requirement:
  - Complex, coordinated product conveying systems
  - Feeding and insertion of components that are difficult to handle
  - Dosing of liquid substances in Clean Room conditions

### Technical data

**Output:** 4-fold uptake  
120 pieces / minute

**Dosing:** Active ingredient 1 / 0.73 ml  
active ingredient 2 / 3.18 ml

**i** You will find further informations in our "Pharma Brochure"



Introduction of the injector bodies, assembly and filling



Insertion of the needles into the stoppers and discs



Dosing of the active substance into the previously turned injectors