

Flex-Line™ Robotic Filler

Key Features

- Ability to handle vials, syringes, cartridges
- Small footprint, fast changeover, and short lead time
- One FAT, SAT, and validation, accelerate market entry
- Conformance to gmp guidelines. Annex 1 and 21 CFR Part 11
- Robotic handling, no-touch transfer (ntt), automated de-bagging

Filler Specifications

| | |
|---|--|
| Dimensions (mm) | W: 2580, L: 3430, H: 3030 |
| Vial Running Surface Height | 950 mm +/- 20 mm |
| Vial Range | 2R - 50R |
| Syringe Range | 1 mL - 5 mL |
| Cartridge Range ¹ | 1 mL - 3 mL |
| Weight ¹ | 7,000 kg Approx. |
| In-feed System | Semi-automatic Debagging |
| Dosing System | Piston pumps |
| Weight Check | Statistical weigh check (1 load cell) |
| Mechanical Plungering | Mechanical plungering and stoppering |
| Outfeed System | Machine outfeed via rolling conveyor |
| De-lidding & Filling Enclosure | Comecer Isolator |
| Debagging Enclosure | Restricted Access Barrier (RABS) |
| Contact Parts | Electropolished AISI-316L |
| Surface Bench Material | AISI-316L (fine-brushed) stainless steel |
| Exterior Panels | Exterior Panels AISI-304 stainless steel |
| Electrical Cabinet | IP 54; cabinet located remotely |
| HMI | HMI, Panell PC 18,5" |
| Main Drive and Critical Movements | Servo Motor |
| Utility Requirement (other options available) | 400 Volt 3 Phase + Neutral + Ground 50/60 Hz 7kW approx. |
| Air Consumption | 800 NI/min (Max) – 6 bars (87 psi) |
| Regulations | CE Mark, GMP, Annex 11/ 21CFR part 11, UL 508A |
| Documentation Package | Package 0 - Includes layouts, FS, manual, and FAT docs |



| Container | Capacity (ml) | Filling Speed UPM (max) | Nest Quantity | Filling Accuracy (+/-) |
|-------------------|---------------|-------------------------|---------------|------------------------|
| VIALS | | | | |
| 2R | 4.0 | 140 | 100 | 1% |
| 4R | 6.0 | 140 | 100 | 1% |
| 10R | 13.5 | 70 | 48 | 1% |
| 20R | 32.5 | 50 | 24 | 1% |
| 30R | 32.5 | 30 | 24 | 1% |
| 50R | 37.5 | 30 | 16 | 1% |
| SYRINGES | | | | |
| 1 mL long | 1.0 | 200 | 100 | 1% |
| 1 mL short | 1.0 | 200 | 100 | 1% |
| 3 mL | 3.0 | 150 | 100 | 1% |
| 5 mL | 5.0 | 70 | 48 | 1% |
| CARTRIDGES | | | | |
| 1.5 mL | 1.0 | 150 | 100 | 1% |
| 1.8 mL | 1.8 | 150 | 100 | 1% |
| 3 mL | 3.0 | 140 | 100 | 1% |

*Mechanical speed of machine with water

Isolator Specifications

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|---------------------------------|--|
| Isolator Unidirection Air Speed | 0.45 m/s ± 20% |
| Operating Pressure | +15 Pa to +30 Pa with Respect to Installation Area |
| Operating Temperature | Ambient 20°C |
| Operating Humidity | Range 30% to 60% |
| EMS | Viable & Non-Viable PMS |

All Grade A Chambers Will Consist of the Following:

- AISI-316L stainless steel chambers with Mirror Bright internal surface finish Ra<0.5 µm
- Enclosure air tight class 3 ISO 10648-2
- The particle content in the air of the LAF chambers in operational conditions complies with the ISO 14644-1 and EEC-cGMP requisites
- Grade A "At rest" (EEC-cGMP)
- Class ISO 5 (ISO 14644-1) ≤ 3520 particles/m³ for particles Ø ≤ 0.5 µm
- Access Doors made with hinged safe tempered glass panels
- Chambers tightness ensured by inflatable gasket system and electromechanical interlocks
- The chamber is designed to take air from a Class C or Class D room
- Ventilation System: Inlet/Outlet Frequency controlled fans, ON/OFF Pneumatic valves for the air interception

Included in Scope:

- Lockable base guarding made of AISI 304 Scotch Brite RA<0.8 µm
- Inlet H14 laminar filters
- Glove Ports and extenders (final quantity determined during Mock-up)
- Glove flanges and internal barriers for glove detection
- Anemometer sensor (for chamber equipped with laminar airflow only)
- Pressure transmitters for filter obstruction and chamber's pressure regulation
- AISI 316L flange for automatic machine integration
- Hinged front view panels with inflatable seals made of FDA approved Silicon rubber, each panel is supplied with handles and integrated safety switches
- All internal angles have a minimum radius of curvature of 20 mm to facilitate the cleaning and sterilization operations
- Ventilation System: Inlet/Outlet Frequency controlled fans, ON/OFF Pneumatic valves for the air interception
- All welds are ground, smoothed, and polished
- All welds are passivated and pickled
- All stainless steel is welded using TIG method (in argon atmosphere)

Additional Flex-Line™ Options

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| Debagging Extension Uni Directional Air Flow (UDAF) |
| Manual Debagging |
| Nitrogen Purging During Filling |
| Product Tank 8 L |
| Tank Mixer |
| Disposable Surge/Product Bag |
| Product recirculation |
| Peristaltic pumps |
| Vacuum Plungering |
| UDAF Module |
| O-RABS |
| NVPC-VPC supports |
| PMS Complete system |
| Exit conveyor |
| Outfeed UDAF extension |
| Siemens or Allen Bradley I/O & Communications |
| Additional change Parts |
| Stainless Steel Remote Cabinet |
| Documentation Package 1 - Includes documentation package 0 and HDS, SDS, SAT and IQOQ docs |
| Documentation Package 2 - Includes documentation package 0 and 1, RTM (requirements traceability matrix), CCL (commissioning check list), and summary report |