



## MDAutoinjector Final Assembly Series

**OUR AUTOINJECTOR ASSEMBLY SYSTEMS PROVIDE SCALABLE OUTPUT RATES RANGING FROM 2 PPM TO 320 PPM+**

Our final assembly solutions are suitable for any common three-piece autoinjector. Configured for shorter delivery times, optimized footprint, and lowered power/air usage.

# Critical Processes

The right automation solution suitable for the final assembly of common 3-piece autoinjectors, including YpsoMate® and Molly®. End-to-end solution that is configurable to your footprint. Consistent, reliable core processes based on proven ATS technologies.

| Critical Processes and ATS Solution Set |   |
|---|---|
| 1                                       | Remove drive unit from syringe unit   |
| 2                                       | Reset push plunger rod with Force Measurement – Distance Monitoring                                     |
|   | QR code printing and decoding   |
| 3                                       | Pick, orientate, inspect and insert PFS into syringe unit with Force Measurement – Distance Monitoring* |
|   | Algorithmic and AI-driven vision inspection   |
| 4                                       | Push the syringe holder to snap into syringe unit with Force Measurement – Distance Monitoring          |
| 5                                       | *Transfer and insert drive unit into syringe unit with Force Measurement – Distance Monitoring          |
|   | 100% in-process functional and process check  |

\* Multiple force measurements taking place during this setup

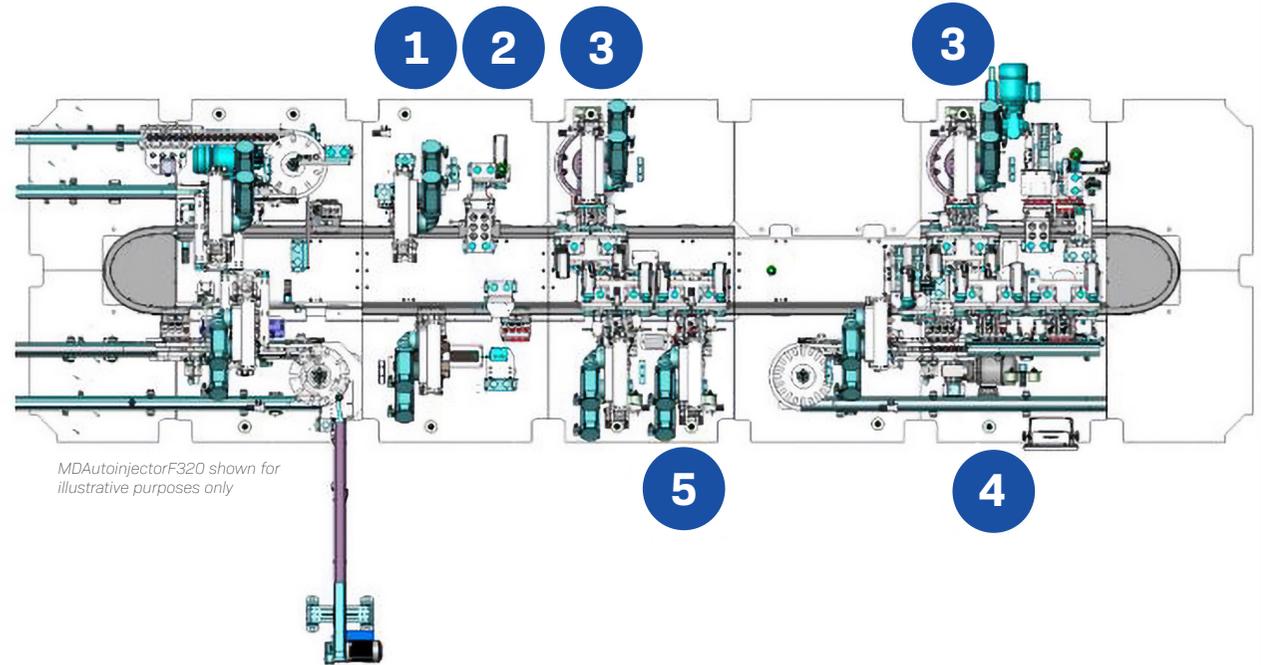
Force Measurement with Kistler Load Cell

LVDT – To measure distance

Cognex Vision Camera – To inspect PFS

SuperTrak CONVEYANCE™ – To move shuttle/pallet from station to station

Illuminate™ – To manage and organize production data



## ATS Builds:

- Tray and tote handling
- AGV integration
- Palletizer
- Tub & Syringe Handling
- Labeling
- Handling

### Types

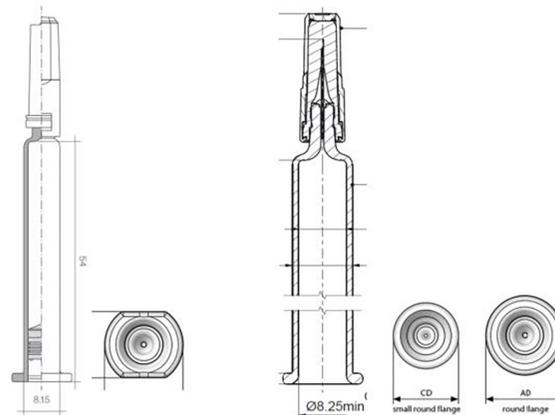
- Cut Flange
- Round Flange

### Fill Volumes

- 0.5 ml
- 1.0 ml
- 2.25 ml

### Diameter

- 11mm ± xx OD
- 14mm ± xx OD



Custom variants are possible

# Proven ATS Technologies - Ultra-low (up to 2 PPM) to Low Volume (2 to 20 PPM)

Advanced capabilities in convenient formats. These compact systems are ideal for small batch quantities without sacrificing floor space. Flexibility has been designed into the systems to allow for future scalability; base models can be configured to assemble common injectors. Cost effective and fast to quote with shorter delivery times due to standardization.



MDAutoinjectorF2

## Benchtop

- Ultra-low volume assembly
- Semi-automated, servo-driven cell for pre-testing, verifying and validating assembly
- Suitable for clinical trials and product development phase; orphan drugs, personalized medicine
- Ensure proper device assembly with force-displacement feedback

## Illuminate™

- Capture real-time OEE intelligence across lines, machines and locations
- Data-to-decision in minutes
- Identify production trends
- Facilitate visual machine learning on parts and product quality control inspection

## SwiftCell™

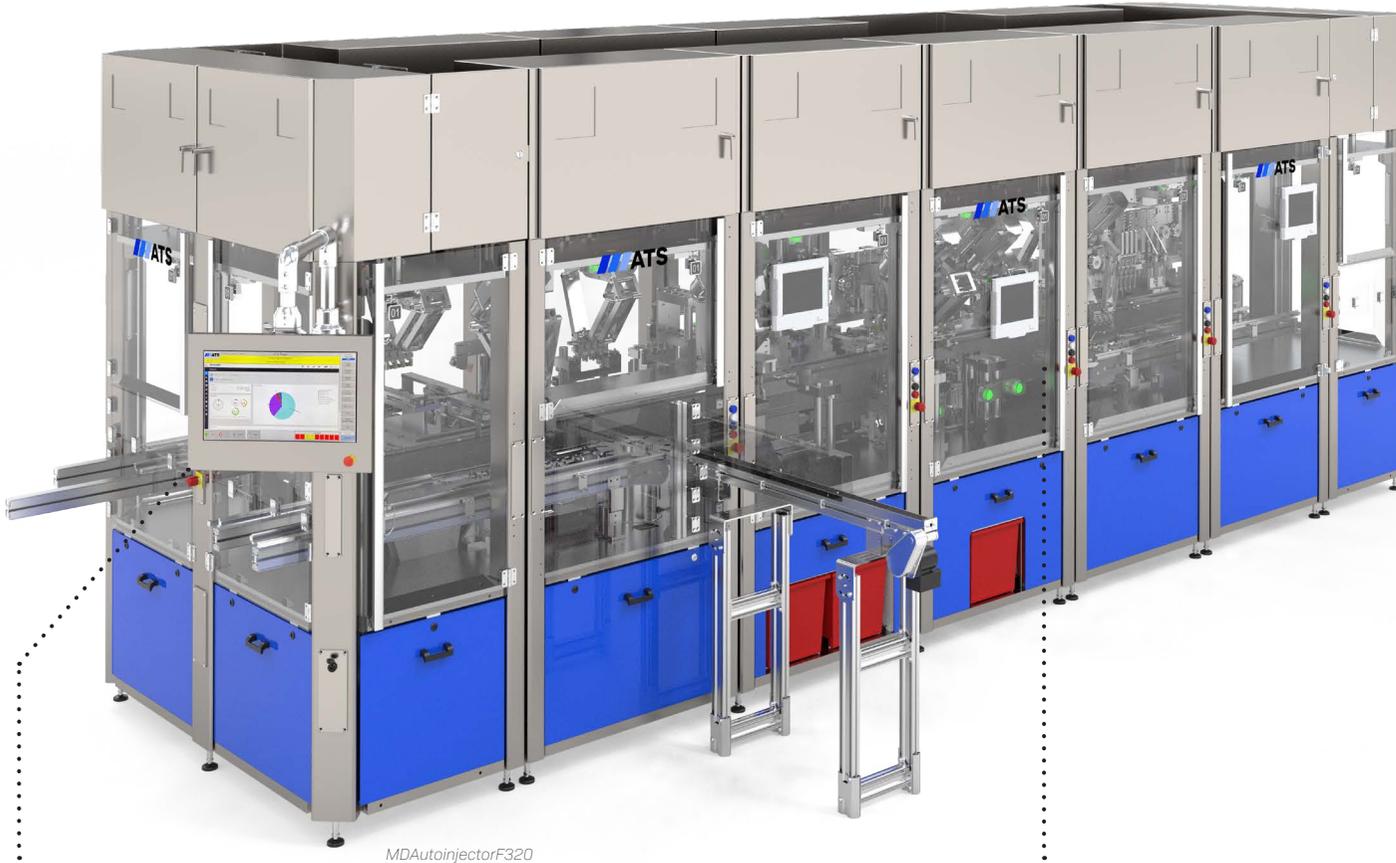
- Standardized assembly modules designed to meet the highest regulatory standards
- Pick and choose standardized modules for transport, infeed/outfeed, and process stations
- Fixed process grid dimension for easy adaption



MDAutoinjectorF20

# Proven ATS Technologies - Mid (20 to 160 PPM) to High Volume (160 to 320+ PPM)

ATS is an integrator of life science solutions to some of the world's largest companies. Over more than 45 years we have developed both standardized platforms and customized options to meet demanding product, process and production needs. Our innovations drive your success.



MDAutoinjectorF320

## **Illuminate™**

- Capture real-time OEE intelligence across lines, machines and locations
- Data-to-decision in minutes
- Identify production trends
- Facilitate visual machine learning on parts and product quality control inspection

## **SuperTrak™**

- Multiple configurations to maximize floor space
- Easily deploy and re-deploy your automation system as business demands change
- Save significant engineering and integration time to get to production faster

## **Symphoni™**

- Exceptionally versatile
- Clinical production @ 2 PPM to commercialization @ 320+ PPM
- High flexibility of pallets & robots
- Ultra-precise motion control with a delicate touch
- End-to-end digital awareness, mapped out in 1-millisecond intervals, verified 200 times per second by self-diagnostics

## **Dynamics™**

- Central machine layout to access all PLCs (up to 19)
- Device-based setup & configuration
- Automated design error-checking
- Position Cam configuration (real-time graphs)
- Output Cam setup



# Configurable solutions for a broad range of outputs

As the demand for tools for the self-administration of drugs increases, so does the need for manufacturing systems that are safe, reliable, compliant, time-efficient and customizable. Our final assembly solutions are suitable for the assembly of any common three-piece autoinjector; pre-engineered and tested for shorter delivery times, optimized footprint, and lowered power/air usage.

## /// Features

- Perfect for manufacturing either low or high volumes of items, and for both semi- and fully-automated assembly
- Configured for lower design costs and faster delivery
- Accommodates both round and cut flange syringes
- Quick retooling of stations to accommodate new products or variants, and introduction of new stations/modules
- 1 person required to run Symphoni™
- Various component loading options available from manual to fully automated

## /// What we can deliver

- Rapid time to market
- A wide variety of customization options such as manual workstations, feeder units or tray handling can be added. Process technologies and testing systems can be integrated, such as vision systems
- The Symphoni™ platform's patented assembly technology that eliminates non-value-added delays while carefully respecting essential process time
- Drug delivery device assembly systems delivered worldwide



YpsoMate® autoinjectors shown actual size

| Solution Type      | Output                        | Platform   |
|--------------------|-------------------------------|------------|
| MDAutoinjectorF2   | Ultra low-volume<br>0 - 2 PPM | Benchtop   |
| MDAutoinjectorF20  | Low volume<br>2 - 20 PPM      | SwiftCell™ |
| MDAutoinjectorF160 | Medium volume<br>20 - 160 PPM | SuperTrak™ |
| MDAutoinjectorF320 | High volume<br>160 - 320+ PPM | Symphoni™  |

### Standard Inspections Offered

|   |  |
|---|--|
|  | Tray full/empty (FSA/LSA)<br>3D tray scan - robot EOAT positioning (FSA/LSA) |
|  | SKU identification (FSA/LSA)   |
|  | Measure force vs Displacement<br>PFS --> FSA & RSA --> FSA                   |
|  | Other position & orientation checks as needed                                |

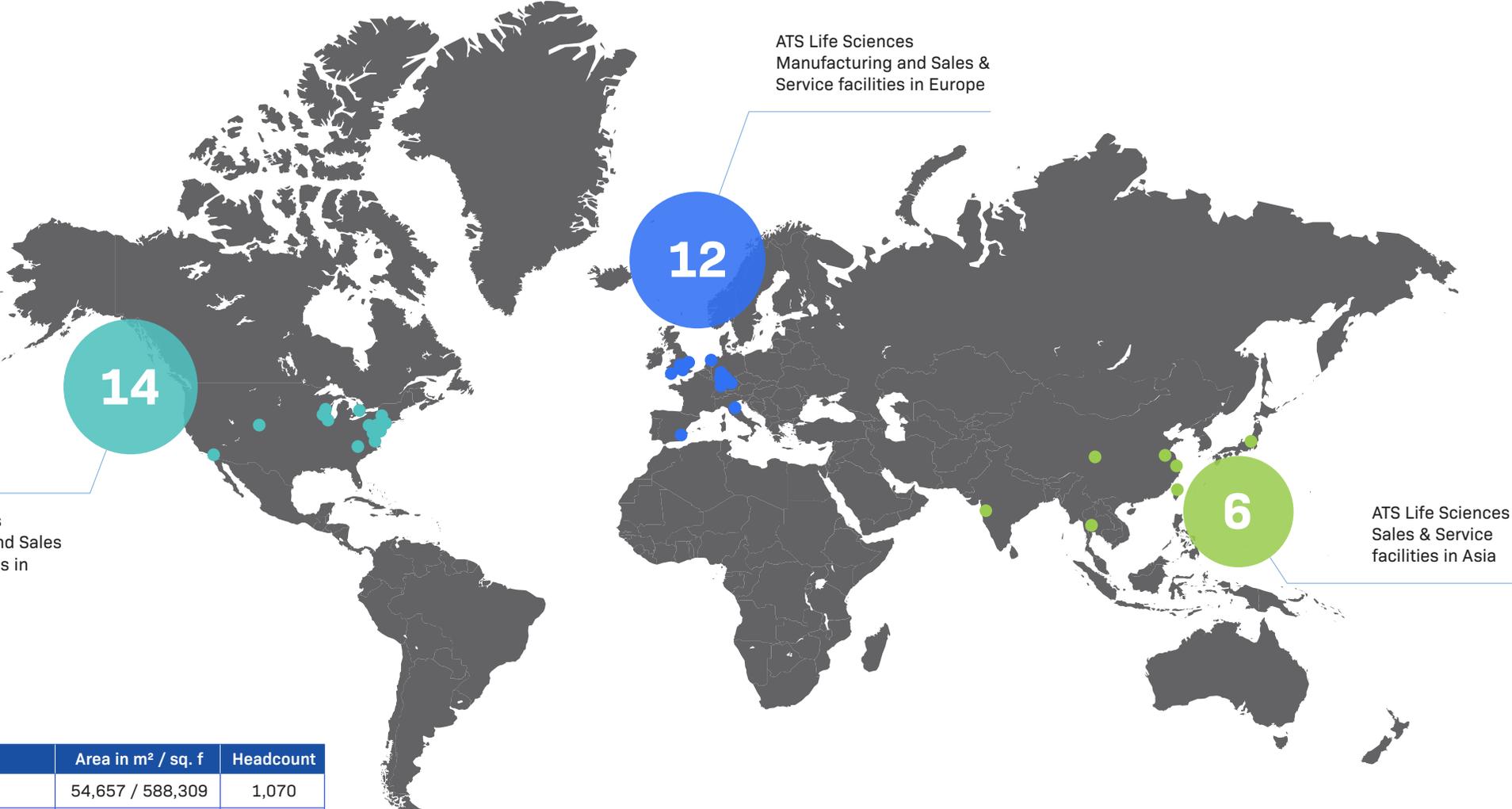
FSA - Front Sub Assembly, RSA - Rear Sub Assembly, PFS - Pre-Filled Syringe, EOAT - End of Arm Tooling

| One (1) F320 Machine       | Multiple Autoinjector Assembly   |
|----------------------------|--|
| Off-the-shelf              | Standard and proven station designs<br>Standard Spare parts > 70%  |
| Electronic CAM software    | CAMs are digital, as opposed to physical plates and shafts   |
| *Future variants           | Add new component nest in the shuttle<br>Change EOAT (end-of-arm-tooling)<br>Just configure existing program |
| Tooling changeover         | Fully automated, recipe driven   |
| 70 - 90% tooling reduction | 4-up @ 320 PPM on Symphoni™ vs 20-up @ 320 PPM on traditional platforms                                      |
| High speed                 | Up to 120 strokes per minute; cycle time as low as 800 ms  |
| High throughput            | Up to 95% machine OEE  |
| Rate change                | Touch & Go (HMI)   |
| Component range            | 3, or custom   |

\*Different variants (SKUs) within a product family, with different form-factors but the same assembly sequence, can be configured to run on the same system

# Our Global Footprint

ATS Life Sciences Systems provides high-quality, high-value automation solutions to manufacturers of medical technology and pharmaceutical products where regulatory compliance is critical. With manufacturing sites in North America and Europe, we have a highly flexible supply base.



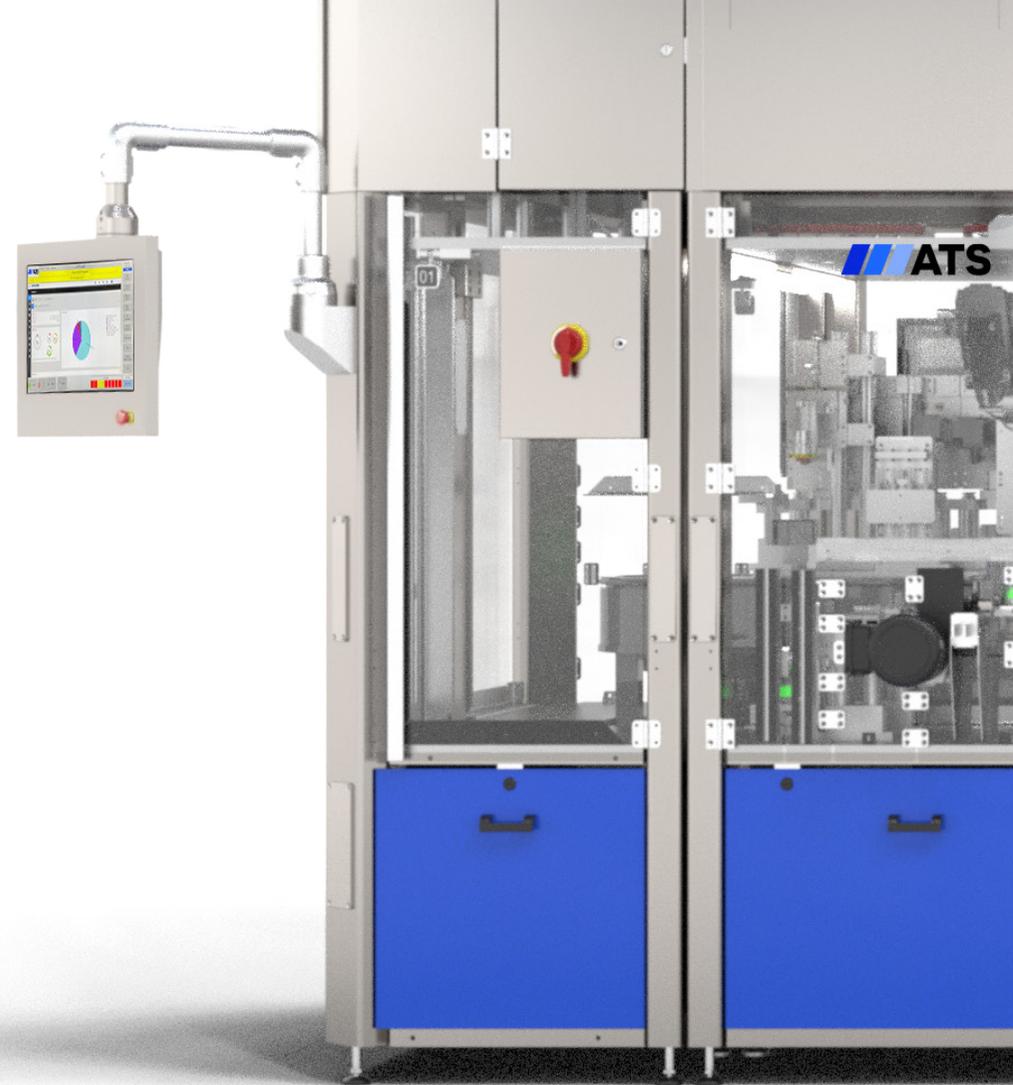
ATS Life Sciences Manufacturing and Sales & Service facilities in North America

ATS Life Sciences Manufacturing and Sales & Service facilities in Europe

ATS Life Sciences Sales & Service facilities in Asia

| Site                | Area in m <sup>2</sup> / sq. f | Headcount |
|---------------------|--------------------------------|-----------|
| LS Cambridge        | 54,657 / 588,309               | 1,070     |
| LS REM Cambridge    | 10,962 / 118,000               | 125       |
| IWK                 | 30,500 / 328,299               | 550       |
| Comecer             | 15,735 / 169,400               | 375       |
| BioDot              | 1,393 / 15,000                 | 93        |
| Scientific Products | 28,000 / 300,000               | 800       |
| Avidity             | 13,191 / 142,000               | 380       |





Leading life sciences companies trust us to solve their production needs. Let's discuss how  
ATS automated autoinjector assembly equipment can deliver for you.



Contact us at [lifesciences@atsautomation.com](mailto:lifesciences@atsautomation.com)

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